Telehealth: Delivering the Right Care, at the Right Place, at the Right Time

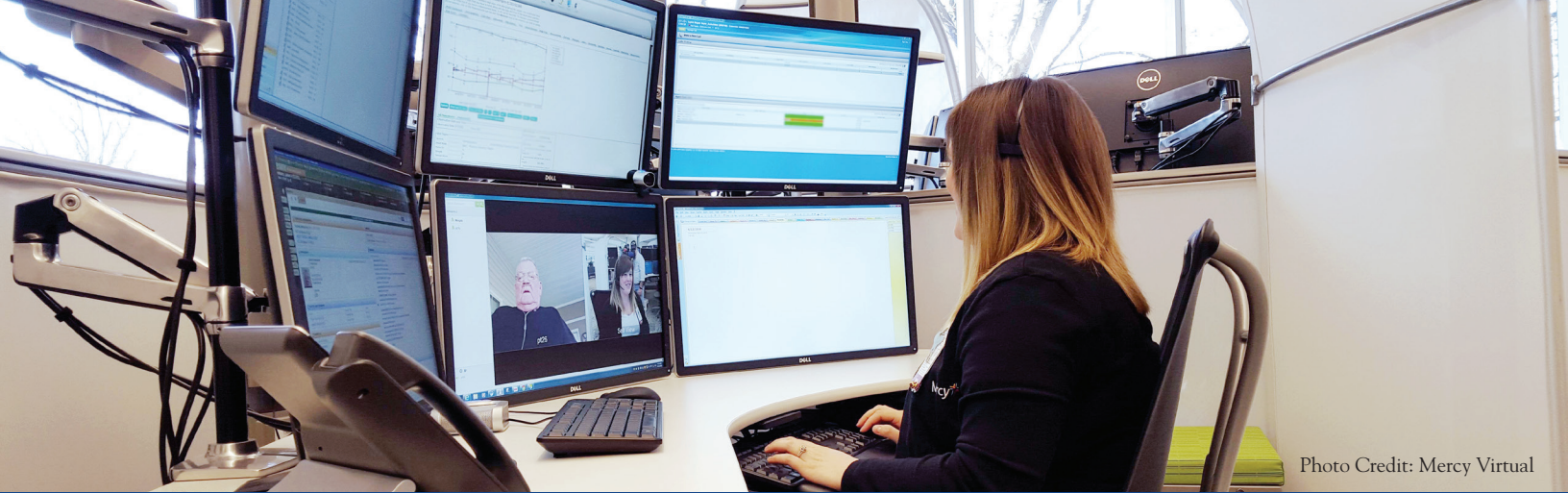*Case Examples of AHA Members in Action*

American Hospital Association ®

Photo Credit: Mercy Virtual

Telehealth: Delivering the Right Care, at the Right Place, at the Right Time
Case Examples of AHA Members in Action

Introduction

Telehealth is changing health care delivery. Through videoconferencing, remote monitoring, electronic consults and wireless communications, telehealth expands patient access while improving patient outcomes and satisfaction.

Telehealth offers a wide-range of benefits, such as:

- Immediate, around-the-clock access to physicians, specialists, and other health care providers that otherwise would not be available in many communities;

- The ability to perform remote monitoring without requiring patients to leave their homes;

- Less expensive and more convenient care options for patients; and

- Improved care outcomes.

Telehealth solutions also have the potential to improve hospital workforce stability, while empowering local physicians through access to distant specialists that can collaborate on diagnosis and a patient's treatment plan.

Hospitals and health systems are at the forefront of expanding telehealth. More than 65 percent of hospitals have implemented telehealth in at least one care unit, while an additional 13 percent plan to implement telehealth within the next year.

This AHA report explores a range of innovative solutions that hospitals and health systems are utilizing to deliver the right care, at the right place, at the right time. These examples illustrate the ingenuity of health care providers that have created measurable improvements in patient outcomes and savings for the health care system.

Additional AHA telehealth resources can be found at www.aha.org/telehealth.

Information about the AHA's efforts to ensure access to health care in vulnerable communities can be found at www.aha.org/ensuringaccess.

American Hospital Association

Overview

Beginning in 1993, Avera Health offered Avera eCARE Consult services to rural hospitals within the Avera Health footprint. Avera eCARE delivered 24/7 access to a wide range of medical specialists and referrals to specialty care for a growing number of underserved populations and communities. Ten years later, Avera eCARE expanded to provide eCARE ICU services.

In 2009, eCARE Emergency and Pharmacy services for all of Avera's rural hospitals were launched. Additional funding from the Helmsley Charitable Trust and other sources allowed expansion to more than 200 facilities across eight states and the ability to serve customers outside Avera Health. By 2012, Avera eCARE services were available for long-term care and correctional facilities. To date, Avera eCARE has extended its service offerings to include behavioral health, school health, and AveraNow (a direct to consumer service). Telemedicine professionals work together 24/7/365 in the eHelm, a virtual hospital hub, created in 2012 with the support of the Helmsley Charitable Trust.

Source: Avera eCare 2017

Health care systems, hospitals, outpatient clinics, long-term care organizations and correctional facilities partner with Avera eCARE to support their onsite staff members and services; deliver fast response to patients' health needs, including urgent and critical care; help avoid unnecessary transfers; reduce patient travel time and expense by improving care for residents where they live; and coordinate referrals to additional medical specialists.

Since 2009, eCARE Pharmacy has provided remote, around-the-clock pharmacy coverage for more than 1 million patients across 95 sites. No matter the size or location of a facility, a hospital can ensure medication safety for patients 24 hours a day by partnering with eCARE Pharmacy. Hospitals gain access to licensed and clinically-trained pharmacists for real-time, first dose order reviews and instant consultations on medication-related issues or concerns.

The eCARE Pharmacy team works together in a virtual hospital hub and collaborates with a customer hospital's pharmacy and/or professional staff to assist with complex situations, while ensuring patients receive the most effective medications.

How eCARE Pharmacy Works:

1. The eCARE Pharmacy team works with a customer hospital's staff to learn their medication-related processes and integrate eCARE Pharmacy services into their workflow.

2. The team implements and integrates the necessary software and hardware into hospital systems, allowing the team to receive and prioritize real-time orders. eCARE Pharmacy staff work within the hospital's electronic medical record as a seamless part of the care team.

3. All new prescriptions are placed in the queue at the virtual hospital hub where licensed and experienced clinical pharmacists receive and review medication orders 24 hours a day.

4. eCARE Pharmacy staff provide the hospital's prescriber or nursing staff with recommendations on preparation, administration and safe use. Drug interactions and duplicate orders are carefully watched to ensure patients receive the precise medication ordered.

5. Beyond real-time medication review, the customer hospital receives ongoing monitoring of medication therapy the entire time a patient stays with them.

6. Hospital staff can contact eCARE Pharmacy staff at any time – even in the middle of the night – to consult on medication-related issues or concerns. The eCARE Pharmacy team supplies monthly reporting, ongoing education and recommendations to continually improve processes and delivery of care.

> " Avera eCARE Pharmacy has been a great resource and provides peace of mind. I always say that even though I'm not here 24/7, I'm responsible 24/7. Hospital calls outside of work hours have greatly decreased. It's been a weight lifted off my shoulders. "
>
> - Diane Dady, RPh, Director of Pharmacy, Mobridge (S.D.) Regional Hospital

Impact

The eCARE Pharmacy program helps customer hospitals by:

- Complying with medication regulations from The Joint Commission and federal and state governments;

- Reducing the risks of medication errors, offering the option of divesting daytime order review from their pharmacists, and allowing them to focus on medication reconciliation;

- Assisting with patient counseling and patient rounds with providers;

- Delivering the most effective medications for each patient;

- Staying up-to-date with current evidence-based medication practices;

- Providing support for the move toward bedside medication verification, electronic medication administration records and computerized physician order entry;

- Gaining access to the eCARE Pharmacy workflow/order management software.

Clinical results for the past 12 months include 34,179 interventions, 8,012 avoided adverse drug events and a 17-minute average turnaround time.

Lessons Learned

eCARE Pharmacy adapted to working with smaller, rural hospitals early on. Successful integration required eCARE Pharmacy leaders to support the rural hospital with a wide variety of pharmacy-related projects, including guiding electronic health record (EHR) module installations, automating dispensing integration and developing pharmacy policies. Over several years, eCARE Pharmacy built a toolkit of best practices and templates for supporting these smaller facilities to better assist with their in-house pharmacy efforts.

Future Goals

eCARE Pharmacy has continuous goals for program growth within the region, including engagement with existing customers to identify needs beyond order review for inpatients. eCARE Pharmacy supports other Avera eCARE service lines in their clinical expansion efforts. Pharmacists are being continually recognized for their important role in medication safety and efficacy across the continuum in clinics, hospitals and long-term care facilities. Avera eCARE continues to explore other opportunities to leverage pharmacists via telemedicine within a variety of care settings.

Contact: Deanna Larson
Chief Executive Officer, Avera eCARE
Telephone: 605-322-4723
Email: deanna.larson@avera.org

Overview

More than a decade ago, Banner embraced telehealth with the launch of its tele-ICU system, which has consistently improved outcomes across the organization. Building on the success of the program, Banner deployed the tele-ICU model outside the hospital in 2013 to target patients with multiple chronic conditions. According to the Centers for Disease Control and Prevention, chronic diseases are responsible for seven of 10 deaths each year, and treating people with chronic diseases accounts for 86 percent of our nation's health care costs. Within the population of Banner's own health plan, 5 percent of its patients accounted for 50 percent of health care spending because of multiple chronic conditions.

> **"Consumers are ready for this change, and health care organizations are starting to catch up to those expectations."**
>
> - Deborah Dahl, Vice President, Patient Care Innovation; Banner Health

To better manage its chronically ill population, Banner's Intensive Ambulatory Care (IAC) telehealth pilot enrolled members within its health network for whom the system was at-risk financially. To participate, patients needed to receive treatment for five or more chronic conditions and to have accumulated a previous 12-month spend of more than $20,000 for those conditions. Participants were provided with remote patient monitoring tools – such as scales, glucometers and heart monitors – that were Bluetooth enabled, along with a tablet for video visits.

"The goal for the pilot was to improve the quality of life for participants, while reducing costs by looking for adverse trends and intervening before those trends became adverse outcomes," says Deborah Dahl, Banner's vice president of patient care innovation.

Banner created a full-time telehealth team composed of physicians, pharmacists, social workers, cognitive behavioral therapists, and registered nurses "behind the camera," while certified nursing assistants trained in motivational interviewing, learning phenotypes and learning activation functioned as health coaches in the field. Central to the team's approach was developing a personal relationship with each patient.

"Many telehealth solutions are focused on episodic events, so there isn't the time or need to build a relationship," says Dahl. "But in the IAC program, we wanted to motivate our patients to make behavior changes where appropriate and help them be generally happier. Achieving that requires a personal connection and trust."
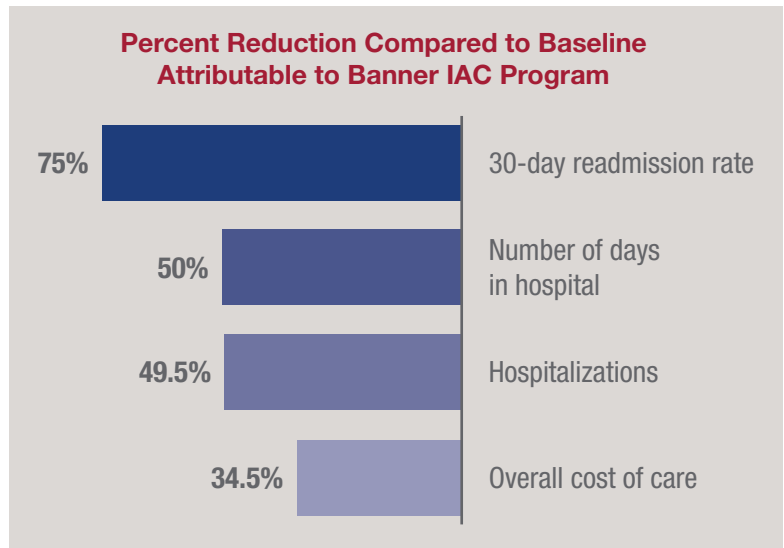
Impact

In an updated study that builds on the original pilot data released in 2015, Banner and its technology partner Phillips examined 1,283 patients who had at least one year of treatment pre-IAC and one year post-IAC implementation to compare the impact of the IAC program on patient outcomes.

The analysis of patient results over the first full year of the program revealed that the IAC program helped by:

- Reducing overall costs of care by 34.5 percent. These savings was driven primarily by a reduction in hospitalization rates and days in the hospital, as well as a reduction in professional service and outpatient costs.

- Reducing hospitalizations by 49.5 percent. Before enrollment in the IAC program, there were 10.9

hospitalizations per 100 patients per month; after enrollment, the acute and long-term hospitalization rate dropped to 5.5 hospitalizations per 100 patients per month.

- Reducing the number of days in hospital by 50 percent. Prior to enrollment, the average number of days in the hospital was 60 days per 100 patients per month, compared with 30 days after enrollment.

- Reducing the 30-day readmission rate by 75 percent. The 30-day readmission rate went from 20 percent before enrollment to 5 percent after enrollment.

Percent Reduction Compared to Baseline Attributable to Banner IAC Program

75%	30-day readmission rate
50%	Number of days in hospital
49.5%	Hospitalizations
34.5%	Overall cost of care

Lessons Learned

Well into the pilot, the Banner telehealth team learned that the terminology they used did not always resonate with patients. "We had patients that we would visit at home two weeks after an inpatient stay who believed that because they were out of the hospital, they were no longer 'sick' and didn't need to monitor their health," says Dahl. "They didn't understand what we meant by 'chronic' condition." Dahl believes they could have recruited even more participants had they met with them during the hospital discharge process, which would have allowed the team to be more proactive.

Dahl also believes there is ample opportunity to enhance the medication reconciliation process with patients. During participant onboarding, pharmacists from the telehealth team conduct video visits with each patient to review medications prescribed by their specialists. Of the 1,200 patients who have participated in the IAC pilot over three years, not a single patient's electronic medical record matched the medications that the patient was actually taking at home. "We've been talking about interoperability in health care for years," says Dahl. "There's a huge opportunity in the United States to address this, and we hope that sometime soon we'll see it in our organization."

Future Goals

Going forward, Banner would like to expand the program to include Medicaid or dual-eligible patients. Dahl's vision is that the health system will eventually develop and sustain a "virtual" hospital so that, for example, instead of being sent to a hospital observation unit, patients can be monitored for adverse events in their homes. "Telehealth provides an amazing opportunity to change the way health care is delivered in the United States," says Dahl. "Consumers are ready for this change, and health care organizations are starting to catch up to those expectations."

Contact: Deborah Dahl
Vice President, Patient Care Innovation
Telephone: 602-747-7162
Email: deb.dahl@bannerhealth.com

Enhancing Care in Rural Communities with Four Telehealth Programs:
Intermountain Healthcare – Salt Lake City, Utah

(Adapted from Telehealth Enhances Care in Rural Communities by Tara Larkin in Hospitals & Health Networks, January 2016; updated with data from July 2017)

Overview

At Intermountain Healthcare, a nonprofit system based in Salt Lake City, the telehealth program was developed to address formidable challenges: an aging population and an increasing number of high-need patients, a projected shortage of caregivers, reforms to the payment system and requests from rural hospitals for clinical expertise and support that allow patients to remain in their communities when appropriate.

Intermountain's first telehealth initiative began over three years ago in 12 of Intermountain's hospitals in Utah and southern Idaho, where the health system installed telehealth technology in 260 beds in 19 ICUs. Over 67,000 patients in hospitals that range from large urban facilities to smaller rural ones have been connected to a team of 22 intensivists and 20 critical care nurses at Intermountain's Critical Care Support Center in Midvale, Utah. These critical care specialists work directly with bedside medical teams to determine the appropriate course of action for each patient, offer real-time clinical decision support, ensure best practices and consistency of care, and provide a safety net for patients and bedside staff. The integrated telehealth platform also makes it possible for the patient to have a simultaneous consultation with an entire team of specialists from diverse locations.

Intermountain's integrated approach has enabled the system to implement services quickly and broadly. Intermountain built and installed a common technology platform in more than 1,000 patient rooms — a number that continues to grow and includes all intensive care units, emergency departments and neonatal intensive care units. The platform connects 500 caregivers throughout the system and enables specialists to be available on a timely basis, no matter where the patient is. More importantly, this approach aligns with the needs of clinical programs, allowing Intermountain to bring new programs and caregivers online quickly and seamlessly.

Intermountain has now launched over 35 telehealth initiatives in Utah, Idaho, Wyoming, Nevada, and Montana. One of the system-wide initiatives focuses on newborn intensive care: eighteen rural hospitals, including two non-Intermountain facilities, now have access to Intermountain neonatologists through telehealth. Another major initiative focuses on stroke diagnosis in 21 emergency departments underscores the importance of speedy access to specialists. Telehealth makes a neurologist rapidly available to assess the situation, respond and deliver the required care; over 1,000 patients have benefited from the telestroke program so far. Another system-wide initiative addresses behavioral health, specifically crisis care support, in 11 EDs. This program makes a social worker available hours faster than would normally be the case for patients in rural facilities. Over 1,000 patients have been treated through the behavioral health program.

Impact

Telehealth critical care services have benefited patients in all of the connected hospitals, but smaller rural hospitals have seen remarkable benefits. Overall,

the program has resulted in a 33 percent lower risk-of-mortality rate, a reduced length of stay for hospital patients, and higher retention of patients in their communities.

Over 600 consultations have taken place so far via the neonatal telehealth program, and at least 50 babies who would have been transferred to a larger facility have been able to remain in their communities, realizing a cost savings of over $1 million.

Lessons Learned

As a result of these first four initiatives, Intermountain has the benefit of having key institutional assets in place:

- Substantive strategy driven by clinical program goals that focus on improving quality of care and reducing costs;

- Support at all levels of the organization;

- Willingness to make financial investments; and

- Established infrastructure to support telehealth.

Vital to putting those assets in place was support from executive leaders as well as respected, innovative clinicians who drove the change in care processes. Intermountain also relied on a strong governance model to prioritize and operationalize initiatives. For every high-priority telehealth opportunity, Intermountain develops a business case that helps leaders to understand the costs, benefits and operational requirements. If the business case is strong and aligns with Intermountain's population health and patient engagement strategy, it is recommended for approval and/or pilot testing.

Future Goals

The success realized in the existing programs and the technology implemented throughout the Intermountain system has enabled the system to quickly bring other programs online, including a pediatric trauma service that uses the existing platform to connect with all the EDs, including a hospital in Montana. Five new pediatric programs have recently been launched, and fifteen additional pediatric specialty programs are being planned. The telehealth initiatives have been so well received by hospital staff that clinical leaders and front-line staff members have made more than 50 additional requests for telehealth services.

Contact: Tara Larkin
Operations Director, Telehealth Services, Intermountain Healthcare
Telephone: 801-442-4540
Email: Tara.Larkin@imail.org

Photo Credit: Mercy Virtual

Overview

Mercy, the fifth largest Catholic health care system in the U.S., includes 44 acute care and specialty hospitals and more than 700 physician practices and outpatient facilities in Arkansas, Kansas, Missouri and Oklahoma. Mercy also provides primary care, behavioral health, child advocacy and domestic violence services to low-income residents in Arkansas, Louisiana, Mississippi and Texas. Mercy began investing in virtual care in 2006. The $300 million, decade-long journey culminated with board approval for a 125,000-square-foot, four-story virtual care center. Today, operating around the clock and staffed by more than 600 co-workers, the facility serves as a hub for Mercy's virtual care program. In addition to a teleICU program, which is the largest single-hub electronic ICU in the nation, the center houses programs including telestroke, telesepsis, telehospitalist, eSitter and Engagement@Home, a program that supports chronically ill patients in their homes. Additionally, care management solutions such as Nurse on Call, pharmacotherapy and utilization management are located within the facility. The center is also designed to be a training venue for new staff and a research incubator for new care models.

Mercy's telehealth initiatives grew out of necessity. Its teleICU program was created to improve the outcomes of patients in Mercy's intensive care units. The health system found that by having dedicated intensivists and other specialists available via two-way audio and video technology and supported by advanced analytics, patients spent less time in the ICU. Today, the program serves 30 hospitals in seven states.

Like other health care providers, Mercy is confronted with current challenges – an increasing number of older patients with more chronic conditions and a decreasing number of physicians, nurses and other caregivers. Out of such necessity comes innovation or, as the leaders at Mercy say, the virtual care center. Randy Moore, M.D., president, Mercy Virtual, sees the virtual care center as a way for Mercy to fulfill its mission of compassionate care and exceptional service. The way that health care is currently delivered and the role that hospitals play must change to meet consumer demand for value-based care and the Triple Aim, Moore says.

Impact

- Patient-centered care. The virtual care center improves the patient experience by taking care to the patient, instead of the patient going to the care. It enhances patient access and convenience, and the health system is able to offer patients the right care when they need it, Moore says.

- Lower overall costs. Costs are reduced by providing the right level of care at the right time. Patients receive fewer resource-intensive interventions and have better outcomes. Additionally, physicians and specialists do not have to travel to remote locations to treat patients, which saves time, frustration and travel costs.

- Earlier interventions. Mercy's telehealth program enables timely monitoring, diagnosis and treatment, preempting the need for dramatic interventions and reducing patient length of stay and mortality rates. For example, most patients with heart failure have
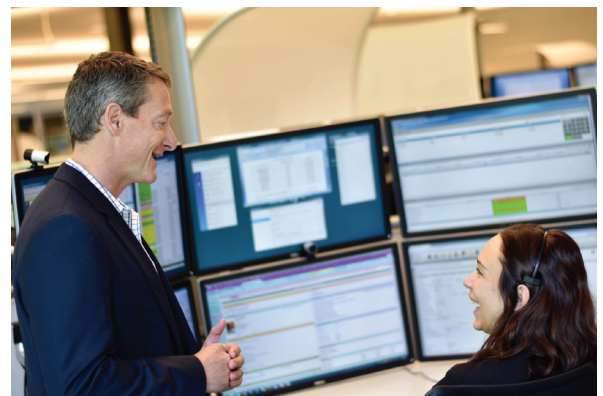

Photo Credit: Mercy Virtual

Photo Credit: Mercy Virtual

symptoms for hours or days before they appear at the hospital. The earlier an intervention, the better the patient's outcome. Proactive monitoring of these patients will flag any condition deterioration so issues can be addressed rather than result in a major downturn. Such monitoring can prevent a five-day hospitalization, Moore says. In five years, heart failure will be a totally ambulatory condition because of this technology, he predicts.

• Solution to recruitment and retention. According to Moore, recruiting physicians to rural locations is nearly impossible, especially for intensivists and pulmonary specialists. The virtual care center allows physicians to reside in metropolitan or less remote locations, increase their patient base and have access to cutting-edge technology. Nurses, especially newly trained nurses, are able to connect with more experienced nurses, sharpening their skills. Furthermore, since the telehealth programs are staffed by multidisciplinary teams, each member of the team has something to contribute – neither more nor less important than other team members – which can lead to increased respect and increased retention rates.

Contact: Nancy Corbett
Executive Director, Media Relations and Social Media, Mercy Integrated Marketing
Telephone: 405-752-3793
Email: nancy.corbett@mercy.net

The Ochsner TeleStroke "Hub and Spoke" Program: A "Spoke" Perspective: St. James Parish Hospital – Lutcher, La.

Overview

St. James Parish Hospital is a 25-bed critical access hospital in Louisiana offering a growing range of inpatient and outpatient services to the southeast river parishes. In 2010, hospital leaders conducted a community needs assessment, which showed that the rate of death caused by stroke was much higher than the state (76.9/100,000 population versus 54.9/100,000 for Louisiana). St. James Parish ranked 15th of 64 parishes in the state for high stroke mortality rates. In addition, it ranked second-highest for prevalence rates and third-highest for mortality in the region.

> " Before the program started, nearly all patients presenting with stroke symptoms were transferred for further evaluation. Now, more than 60 percent stay at St. James, allowing patients to remain close to home and their loved ones during treatment. "

Based on these findings, St. James leaders set a goal to provide more services for stroke treatment. In mid-2011, the partnership between St. James Parish and Ochsner Health System began. A Centers for Disease Control and Prevention grant program provided hardware and start-up funding for rural hospitals to gain access to a stroke specialist at all times.

Through Ochsner Health System's TeleStroke program, ED physicians in rural and urban hospitals have the ability to consult immediately with Ochsner vascular neurologists 24 hours a day, 7 days a week, 365 days a year using telemedicine equipment to determine the best treatment options for stroke patients. Ochsner Medical Center was the first hospital in Louisiana to use telehealth to treat stroke and has become one of the fastest growing networks in the country, with 34 active spoke hospitals across Louisiana and Mississippi. With Ochsner Medical Center functioning as the "hub" in New Orleans, the program links specially trained vascular neurologists to "spoke" hospitals 24/7 for collaborative care. Via Ochsner CareConnect 360, Ochsner stroke neurologists are present virtually at 34 hospitals. Through secure wireless data and video communication, Ochsner's stroke team partners with on-site clinicians to evaluate, diagnose and direct care for patients, as well as to ensure that timely thrombolytic therapy is administered when appropriate.

Typically, only three percent of qualified stroke patients received the clot-dissolving medicine tissue Plasminogen Activator (tPA) mainly because their "window" would close before a determination for eligibility could be made by a specially trained vascular neurologist. Through Ochsner's TeleStroke program, St. James Parish clinicians have (1) reduced the time needed to make that determination (by the neurologist); (2) increased the percentage of patients receiving tPA; and (3) reduced the morbidity rate associated with stroke.

The program allows rural physicians to collaborate with vascular neurologists at a tertiary hospital in developing the best treatment plan for acute stroke patients. The vascular neurologist is provided with the patient's critical assessment findings; he/she conducts a remote physical assessment and makes recommendations for interventions and treatment plans. Patients are treated close to home, if possible. If a transfer is necessary, it happens more quickly and the vascular neurologist already has the patient's assessment findings.

St. James Parish leaders implemented the TeleStroke program in mid-2011, employing a 12-week timeline that included hardware acquisition and installation, development of outcome measures, scheduling of
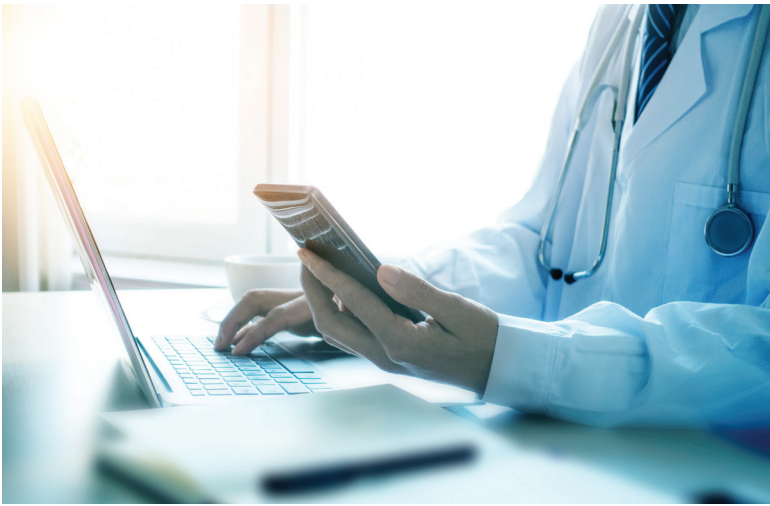
neurologist coverage, staff training, and community marketing.

Impact

The number of stroke consultations has increased from six in the second half of 2011 to 42 in 2015 and 37 in 2016. The percentage of patients evaluated with TeleStroke that eventually required a transfer to a higher level of care has lowered over time. Before the program started, nearly all patients presenting with stroke symptoms were transferred for further evaluation. Now, more than half stay at St. James, allowing patients to remain close to home and their loved ones during treatment. In 2016, the percentage of patients receiving tPA was 11 percent of consults, far exceeding the typical 3 percent and greatly reducing the debilitating effects of stroke. For example, a recent patient arrived in a non-verbal state with total left-side paralysis – and was talking and responding to commands before being transferred.

Lessons Learned

At the start of the initiative, ED physicians were hesitant about calling for TeleStroke consults, believing that they needed to be sure that a consult was warranted. The average time from patient arrival to calling for a consult averaged more than 50 minutes. As the ED physicians gained familiarity with the program and the consulting physicians, the average time to consult has declined. In addition, successful treatment hinges on a quick response from all staff, including ancillary support. St. James leaders started "Dr. Brain," which is their version of a brain attack response team. A "Dr. Brain" code is basically a scaled-down version of a cardiac-respiratory collapse, code blue-style rapid response team for suspected strokes. The team's goal is to work up these cases quickly using a clinical protocol. In the first four months of 2016, the "door-to-call" time was reduced to an average of 33 minutes.

Future Goals

In January 2015, St. James Parish and Ochsner implemented a TeleCardiology service for inpatient consults and patient follow-up. The long-term partnership allows more local patients to be cared for at home, 24/7 cardiology coverage for inpatients and ED consultations, seamless transfer options, access to a national leader in cardiac care, outpatient cardiology clinics Monday through Friday, and quicker turnaround times on cardiology diagnostic tests.

Contact: MaryEllen Pratt
Chief Executive Officer
Telephone: 225-869-5512
Email: mpratt@sjph.org

Overview

According to state data, heroin and fentanyl killed 1,468 Maryland residents in the first nine months of 2016. This was a 62 percent increase from the same period in 2015. Although Maryland's epidemic began in urban areas like Baltimore, the recent increase in opioid use is disproportionately centered in rural areas. Residential programs like Wells House @ Gale Recovery in Hagerstown were developed to provide recovery and prevention services in rural parts of the state.

> " At the three-month mark, more than 60 percent of patients were still in treatment, which is consistent with other outpatient programs... "
>
> – Eric Weintraub, M.D., Division Head, Alcohol & Drug Abuse; University of Maryland School of Medicine

Buprenorphine, which is used in medication-assisted opioid addiction treatment, requires that prescribers hold a specific certification. Wells House lost its only prescribing physician to retirement in 2015. Unfortunately, the nationwide shortage of physicians holding the certification is felt more acutely in rural areas, while less than 25 percent of counties in remote areas have such providers, says Eric Weintraub, M.D., who heads UMMC's alcohol and drug abuse division. Thus, Wells House found itself at a crossroads.

Fortunately, addiction psychiatrists at the University of Maryland Medical Center (UMMC) in Baltimore learned of the vacancy and implemented an innovative telehealth program to reach the underserved area in which Wells House operates. The initiative launched in August 2015 with two psychiatrists who can prescribe buprenorphine and recently expanded to include a third.

Patients enter the telehealth program through an initial virtual meeting with one of the UMMC psychiatrists, who conduct full patient evaluations including drug and alcohol, medical and psychiatric histories. Using information obtained through this meeting and the intake notes from onsite counselors, the physician then provides a differential diagnosis and a treatment plan for the patient.

"After the plan is implemented, we continue to meet with the patient weekly. Depending on how the patient is doing or if we've changed a medication dosage, it might move to every two weeks," says Weintraub. "The intervals between each meeting depend on the needs and stability of the individual." The entire telehealth treatment program typically spans four to six months, but patients can continue to meet with the UMMC psychiatrists on an outpatient basis.

Patients at Wells House conduct their virtual visits in a small, private room with a flat-screen television. The costs incurred to set up the telehealth program include the price of the television and the electronic conference call software, which amounts to approximately $1,000. As part of the treatment program, the cost of physician services is paid for by Wells House. However, recent legislation has changed so to allow the state to cover medication-assisted treatment, which decreases costs for Wells House.

Impact

In the more than 18 months since Wells House began working with UMMC psychiatrists, about 250 patients have used the telehealth program. Although the program is still relatively new, Weintraub believes they have achieved success based on the two primary outcomes used to measure medication-assisted treatment for

> ## "We want to demonstrate how telemedicine can play a critical role in medication-assisted treatment for opioid addiction so that it becomes a fundamental part of physician practice."
>
> – Eric Weintraub, M.D.

opioid addiction: decreased use of the opioids and retention in treatment. "At the three-month mark, more than 60 percent of patients were still in treatment, which is consistent with other outpatient programs," Weintraub says. "Of those people remaining in treatment, less than 5 percent showed positive toxicology for relapse. We're pleased that our patients are doing so well."

Lessons Learned

Developing a strong relationship with the onsite treatment team has been important to the UMMC psychiatrists. "For most programs we participate in, we're the team leaders, rather than the consultants," says Weintraub. "To fulfill our new role, we have had to align our approaches and the way we communicate." Thus, the UMMC psychiatrists visit Wells House quarterly to meet in person with staff. Throughout the duration of the program, they have worked together with the Wells House team to adjust communication processes for intake notes and pharmacy services.

Future Goals

Given that the Maryland's opioid problem became so dire that Gov. Larry Hogan declared a state of emergency in March 2017, innovative solutions are a must. To that end, UMMC has recently expanded its approach by launching a similar program in Garrett County, Md., with the county health department. In addition to rural areas, Weintraub envisions that skilled nursing facilities in all areas could benefit from telehealth since most of those facilities lack the staff or ability to provide substance abuse treatment for their residents.

In addition to its roster of experienced addiction psychiatrists, UMMC has become a hub of expertise through its partnership with Wells House. "With 91 people across the country dying every day because of opioid overdosing, we need to do more to address this epidemic," says Weintraub. "We want to demonstrate how telemedicine can play a critical role in medication-assisted treatment for opioid addiction so that it becomes a fundamental part of physician practice."

Contact: Eric Weintraub, M.D.
Associate Professor of Psychiatry, Division Head, Alcohol & Drug Abuse; University of Maryland School of Medicine
Telephone: 443-465-6201
Email: eweintra@som.umaryland.edu

Overview

To reach the many rural and underserved communities in Mississippi, the University of Mississippi Medical Center (UMMC) created its Center for Telehealth in 2003. Initially, the Center provided specialized care and other public health services. But as Mississippi's rate of Type 2 diabetes became the highest in the nation, UMMC was compelled to address the growing chronic care crisis.

In early 2014, UMMC initiated its Diabetes Telehealth Network pilot program. Supported by a public-private partnership, the pilot targeted patients in the Mississippi Delta region, one of the most impoverished areas in the country. Pilot participants were treated remotely through the use of tablet computers provided at no cost and other tools. Patients took and reported their own vital signs daily. If patients failed to check in or their vitals landed outside of an acceptable range, a health practitioner would contact them in near real-time.

In addition, the Center created educational content based on the American Diabetes Association guidelines and evidence-based practice. "When patients are given sheets of information during discharge, they often don't look at the information again," says Michael Adcock, executive director of the Center. "The Diabetes Telehealth Network gave us a way to monitor progress on improving health while providing smaller doses of education to patients during their daily 10-minute sessions. We felt confident that this would help empower and engage patients."

Impact

The Diabetes Telehealth Network has succeeded in achieving its goals of improving clinical outcomes and care coordination for managing diabetes, increasing access to care, and bringing health care resources into patients' homes. After the first 100 patients completed six months in the pilot, the Center analyzed the data they had collected to that point. The results were stunning. "We had hoped that on average the patients who had completed the pilot could reduce their A1C levels by 1.0 [percentage point]," says Adcock. "We were blown away when we discovered that the average A1C level had dropped by 1.7 [percentage points] in just six months."

Remarkably, 96 percent of those first 100 patients took their medications as directed, and 83 percent kept their scheduled telehealth appointments. Not a single patient was hospitalized or admitted to the ED during that time, and nine cases of diabetic retinopathy that may have otherwise gone undiagnosed were identified. Many Diabetes Telehealth Network participants said they avoided foods high in sugar because they knew practitioners would detect their dietary choices when they submitted their vital signs.

> " If 20 percent of Medicaid patients with diabetes in Mississippi enrolled in this program and achieved similar results, the state would save $189 million. "
>
> – Michael Adcock, Executive Director, Center for Telehealth; University of Mississippi Medical Center

The data from the first 100 patients also showed that participants "saved" 9,500 miles they would have spent driving to specialists in Jackson, Miss., or even across state lines. Furthermore, $339,000 in true health care costs was saved, as measured through Medicaid.

"Medicaid extrapolated our data and told us that if 20 percent of Medicaid patients with diabetes in Mississippi enrolled in this program and achieved similar results, the state would save $189 million," says Adcock. "As our pilot demonstrated, telehealth has a tremendous impact on managing chronic disease as well as on controlling costs."

> " Patients, providers, and payers all benefit. It's rare that something like this happens, and since it has, the profession needs to maximize the spread of programs like this. "
>
> – Michael Adcock

Lessons Learned

During the pilot program, the Center learned several important lessons regarding their selected technology that required significant upgrades. Pilot participants in the Diabetes Telehealth Network used a large tablet to connect to providers and report their vital signs. But now, all program participants receive a mini iPad, which is easier for patients to transport and use. The technology is also now Bluetooth-enabled so that patients are not required to plug anything into their devices. And finally, the Center ensures that the technology kits given to patients run on cellular technology in order to eliminate the need for patients to have Wi-Fi access in their homes.

Future Goals

The success of the Diabetes Telehealth Network prompted the Center to use the same model to bring care to patients with chronic obstructive pulmonary disease, hypertension, kidney disease and other conditions that require chronic disease management. Services being replicated from the Diabetes Telehealth Network include scheduled live video health sessions and coaching on diet, exercise, and adherence to medications. Paving the way for enhanced use of the network's model was the passage of a 2014 law by the Mississippi Legislature that requires insurance companies and Medicaid to reimburse for both remote patient monitoring and store-and-forward telemedicine.

The Center also wants to focus on educating providers across the state to understand what the telehealth program is and how it impacts their practice. "There is no 'playbook' for this model of care," says Adcock. "But we do know that without provider engagement, the concept won't take hold." Although the clinical content for the program is not difficult to identify, refining the referral process, working with Medicaid and insurance companies, and informing legislators on the benefits of telehealth programs like the Center requires a great deal of effort and patience.

"Our telehealth program has been the first true win-win I have encountered in my nearly 20 years of working in the health care field," says Adcock. "Patients, providers, and payers all benefit. It's rare that something like this happens, and since it has, the profession needs to maximize the spread of programs like this."

Contact: Michael Adcock
Administrator, Center for Telehealth
Telephone: 601-815-2053
Email: madcock@umc.edu

American Hospital Association®

Chicago Office:
155 N. Wacker Drive
Chicago, IL 60606
312.422.3000

Washington Office:
800 10th Street, NW
Two CityCenter, Suite 400
Washington, DC 20001
202.638.1100

www.aha.org/telehealth