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THIRD QUARTER 2017
VOLUME 12 | NUMBER 3

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FLOSEAL Matrix contains Thrombin made from human plasma. It may carry a risk of transmitting infectious agents, e.g., viruses, and theoretically, the Creutzfeldt-Jakob disease (CJD) agent.

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Reference: 1. Nasso G, Piancone F, Bonifazi R, et al. Prospective, randomized clinical trial of the FloSeal matrix sealant in cardiac surgery. *Ann Thorac Surg*. 2009;88:1520-1526.

HTU Conference Booth #615, 617 and 619

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ON THE COVER:
Richard Yonker

Photography by Derrick Tribbey

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HealthTrust is committed to strengthening provider performance and clinical excellence through an aligned membership model, and the delivery of total spend management advisory solutions that leverage our operator experience, scale and innovation. Headquartered in Nashville, Tennessee, HealthTrust (www.healthtrustpg.com) serves approximately 1,600 acute care facilities and members in more than 26,000 other locations, including ambulatory surgery centers, physician practices, long-term care and alternate care sites.

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Navigating With inSight

IMPROVING OPERATIONAL PERFORMANCE AND FINANCIAL HEALTH

In the Q4 2016 edition, we announced a reformation of our total spend management solutions as inSight Advisory within the expanding portfolio of service offerings managed by HealthTrust. This included the addition of clinical integration capabilities and HealthTrust Workforce Solutions (formerly doing business as Parallon Workforce Solutions).

Showcasing the breadth of HealthTrust's industry-differentiating capabilities became the focus of our 2017 advertising campaign—"Navigating With inSight"—as well as the theme of this year's HealthTrust University (HTU) Conference. We are excited to host many of you in Las Vegas at a new location for us—Mandalay Bay—for this annual education and networking event. I am grateful for the continued support of our supplier community, enabling us to make HTU a best-in-class industry conference.

The Importance of Big Data

Amid the ongoing transition to value-based healthcare, helping you find your competitive edge to succeed in delivering quality patient care most effectively and efficiently is the reason for the continued evolution of and addition to HealthTrust's service offerings outside of group purchasing. Providers who succeed will be those that understand the role of big data in taking the right next step or risk. Effective data management and governance as well as guidance in utilizing big data to make actionable decisions is addressed by **Ed Hickey** and **Dona Kambeyanda** in this issue (*see page 42*) and in sessions at HTU (*see sidebar on page 66*). In the CMO Perspective on page 6, learn more about the foundation of a new clinical data system HealthTrust is building to unify disparate data sources and cultivate knowledge across the enterprise.

A use case from the analytics work HealthTrust has done with RJWBarnabas Health will take HTU attendees through the process of developing a sustainable data governance program. Presenters will explore components of data governance, including master data management; value analysis best practices to reduce costs and promote better supply management; and the relationship between data integrity, operations analysis and reporting.

Tools to Improve Operational Performance

Through our inSight Advisory teams we help many of you optimize the results you achieve in supply chain management, clinical performance, and labor management and productivity. I'm excited about the new performance and maturity assessment tools that our solutions team has developed over the past year. These tools will assist healthcare providers in understanding their current practices, capabilities and results as well as comparing them to those of other industry-leading health systems. This will guide the acceleration of related efforts for those members developing mature capabilities to improve operational performance and financial health. We look forward to launching the performance and maturity assessment tools at HTU, and sharing how they can be used to identify and seize opportunities to improve performance in key areas. We are also developing more self-service analytics and physician profiling capabilities.

I invite you to learn how HealthTrust's inSight advisors and consultants work with members and clients in a unique and collaborative way to quickly achieve meaningful and sustainable results to improve operational and financial performance. Anyone considering engaging external resources in the effort can benefit from a conversation. For those of you attending HTU, a number of sessions at the event will highlight inSight Advisory solutions, and staff will be available in the HealthTrust booth during the vendor fair to answer your questions. Others are invited to contact the SVP of inSight Advisory Solutions **David Osborn** to start the discussion. (Reach him at david.osborn@healthtrustpg.com.)

Continued on page 66

in·sight
(iń sīt)

1. A piece of information (evidence)
2. The act or result of understanding the inner nature of things or of seeing intuitively
3. An introspection
4. The power of acute observation and deduction, penetration, discernment, perception
5. An understanding of cause and effect, based on identification of relationships and behaviors within a model, context or scenario

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*Sexton, D., Anderson, D., et al (2017). Enhanced terminal room disinfection and acquisition and infection caused by multidrug-resistant organisms and Clostridium difficile (the Benefits of Enhanced Terminal Room Disinfection study): a cluster-randomised, multicentre, crossover study. The Lancet. 389(10071), 805-814.

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Leading the Transition to Value-based Healthcare

Data will be the currency of healthcare's future—whether it be to better personalize treatment and improve care transitions, recruit and retain nurses, modify spending habits or incentivize behavioral change. And that is precisely why HealthTrust will be building a new clinical data system to unify disparate data sources and cultivate knowledge across the enterprise. It rests on a sound foundation—the Medicare Provider and Analysis Review (aka MedPAR), case mix and all-payer claims data sources of Clinical Data Solutions (CDS).

Today, CDS blends clinical and financial patient outcomes with physician engagement to redesign care that is more efficient and effective. The new system will incorporate patient-specific products and patient-reported outcomes collected by our registry platform InVivoLink, allowing for a more robust product evaluation process. It will also support the consumption of other "big data" sources (e.g., from devices and the FDA's adverse event database) to equip member organizations with clinically relevant, actionable insights.

A subset of HealthTrust member facilities will serve as pilot sites for expanded data capture. A clinically driven product categorization schema will be incrementally developed and serve as a backbone for comparative effectiveness research.

In the near term, HealthTrust members and clients can expect more self-service analytics and the means to profile physicians. With added clinical encounter data, HealthTrust will also be able to quickly target recall notices to affected facilities in lieu of blanket notifications. The next step will be to fold in data normally sent to specialty-specific registries and apply advanced analytics to make objective, statistically sound associations between product utilization and patient outcomes. From a contracting standpoint, we'll have a better understanding of what drives utilization of certain devices and products—change in patient population, perhaps, or a more experienced medical staff.

Reports and analysis will be available to subscribing HealthTrust members, and super users will have access to an "opportunity lab" where they can auto-generate reports and creatively query, extract and intelligently leverage all the warehoused information. The reimagined clinical data system will open doors to collaboration between HealthTrust and our members and advisory boards, so that we are nimbly and inclusively generating useful information in real time.

Our next-generation clinical data system, collaborative efforts like the recent Perioperative Pain Management Collaboration Summit (*see page 20*), and educational activities such as the orthopedic cadaver lab course for executives (*see page 58*) are all examples of how HealthTrust is working to support our members in their evolution toward a clinically integrated supply chain. Combining our best-in-class pricing with the ability to see beyond price to utilization and quality—and even long-term outcomes associated with the products we contract for and hospitals systems buy every day—will have the HealthTrust member network recognized as leaders in value-based care delivery.

Michael Schlosser, M.D., FAANS, MBA
Chief Medical Officer, HealthTrust

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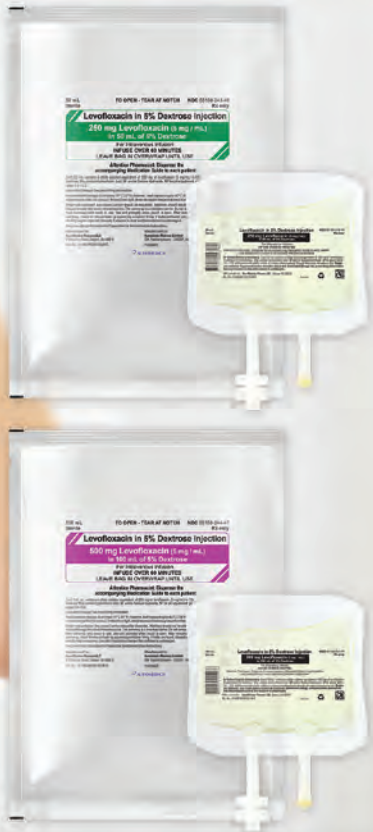

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Evaluating Emerging Technologies

New regulations, smarter data capture and rapidly emerging technologies such as 3D printing and robotics have introduced new complexities and challenges to hospital purchasing decisions. Using these new technologies, manufacturers are introducing a wide range of innovations, including orthopedic devices that can be personalized to a patient's anatomy and customized imaging that delivers more precise surgical mapping.

With the demands of value-based payment models, lower fee-for-service reimbursement and rising healthcare consumerism, physicians are looking for ways to make more informed medical decisions, improve outcomes with better-targeted therapies and reduce negative side effects. Medical device sales representatives are touting these as benefits of the new personalized devices, but they often don't have the data to support their claims.

Not only do personalized medical devices typically cost more than non-personalized ones, but they also tend to require more extensive preoperative planning, including expensive imaging tests. Their use may cause procedural costs to rise without any discernible value-add to the patient. In evaluating these new technologies, how does a facility weigh the benefits against the increased cost? Here are some guidelines:

ESTABLISH A FORMAL VETTING SYSTEM

Although hospitals bear the cost for cutting-edge medical devices, it is still surprisingly common for purchasing decisions to be influenced by physician requests. Unfortunately, these requests are often based on factors unrelated to either cost or patient outcomes. Given skyrocketing supply costs, it's no longer feasible to purchase medical devices based on the physician's familiarity with the manufacturer or perceived ease of use.

One way to ensure proper vetting of new technology is to create a rigorous, formal evaluation process. While some facilities have value analysis committees that include both clinical and supply chain members, many have no formal vetting process at all. Others have surgical committees where physicians and service line leaders meet regularly to review information from manufacturers and identify clinically significant devices that are potentially worth a higher price.

"If a surgeon comes to the supply chain and requests a device that's not on contract, the most important question to ask is which features warrant an upcharge," explains **Lane Conger**, assistant vice president of account management at InVivoLink. "Is it going to decrease OR time? Improve patient outcomes? Is it really worth the increased price if the implant hasn't been proven?"

The evaluation process should also consider how many units of the device the facility uses. Personalized devices often have a shortened expiration because the patient's anatomy may change in the time leading up to surgery. It wouldn't be cost-effective to personalize every device.

"Even when using personalized devices, there is a risk of waste," explains **Brent Ford**, clinical director of inSight Advisory–Medical Device Management. "If surgeons discover abnormalities during a procedure, they would be forced to switch back to a standard implant."

Another consideration is the cost of introducing a new device into the organization. "When evaluating these new technologies, providers need to consider the in-service training requirements—not just for physicians, but for staff as well," Ford says. "New devices may demand new skills and surgical tools."

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SEEK OUT SUPPORTING DATA

Suppliers often market their personalized medical devices with the promise, but not the proof, that their products make surgeries faster and easier, and improve patient outcomes. While the FDA's application process for most medical devices does not require clinical data, hospital committees should ask medical device reps for the information or seek the advice of a consultancy such as inSight Advisory that can help review the literature.

Patient-reported outcomes are typically tracked before surgery and several times postoperatively. But for most of these products, longitudinal data on patients' health condition and implant performance don't yet exist. Even when it does, all clinical evidence is not created equal. Rather, it can be rated on a scale between I (high-quality randomized trial) and V (expert opinion). The higher the level a clinical study is rated, typically the less reliable it is.

"It's fair to say that to date there is minimal evidence for better outcomes with most of these products," Conger says. "We recommend that hospitals not accept any evidence that's above Level III (well-designed, controlled trials without randomization). A premium price shouldn't be charged for a device without the outcomes backing performance claims."

PRIORITIZE PATIENT BENEFITS

Before catering to physician preferences, initiate a conversation with them about the impact their choices will have on patient satisfaction and clinical outcomes. "First, ask physicians how they're vetting the device," Conger says. "Have they just read marketing materials, or have they gone out to observe the product in an actual surgery? Have they reviewed the data, literature and clinical trial evidence?"

Value analysis committees should require proof that newer, more expensive devices are cost-effective and better for patients.

"Some of the new personalized technology could lead to significantly better outcomes," says **Chris Stewart**, assistant vice president, inSight Advisory–Medical Device Management. "However, hospitals need to weigh whether the added expense actually benefits patients. In some cases, companies are charging a premium for a customized product that may not be adding any real value."

THE FUTURE OF PERSONALIZED DEVICES

The introduction of personalized medical devices is a relatively recent occurrence, and currently there is little evidence to suggest they contribute to better clinical outcomes. Most of the products now available for orthopedic, spine and cranial surgery can help surgeons conduct better preoperative planning and potentially shorten operating times. As data are collected on device longevity and performance, physicians and hospitals will begin to know where to place their bets.

In the meantime, personalized medical devices are being developed for other surgeries, and 3D printing, smart biomaterials, intelligent diagnostics and biosensors will be impacting every surgical specialty. ●

For more information on how to evaluate emerging technologies, look for a newly published executive summary on personalized medical devices at www.healthtrustpg.com/trending-topics, or email hpgsvc@healthtrustpg.com or sales@invivolink.com.

How HealthTrust Can Help

InVivoLink, part of HealthTrust's suite of inSight Advisory Solutions, is a resource for tracking outcomes and costs across the care continuum. Its proprietary technology collects data, linking patient outcomes to the cost and types of implants used in orthopedic and spine procedures. Providers can thereby extend their view of care episodes longitudinally and continuously improve conversations between administrators and surgeons.

HealthTrust's inSight Advisory–Medical Device Management team provides new technology reviews and sourcing strategies for physician-preference items that are cost-effective, as well as supported by clinical evidence, best practices and guidelines for appropriate use.

The team draws on the expertise of more than 150 physician advisors across 25 medical specialties. These advisors help evaluate cutting-edge technology by reviewing and grading clinical studies, gathering data, and providing an unbiased analysis of product advantages and disadvantages. The team shares insights with physicians and decision-makers at the hospital level, enabling them to reduce unwarranted clinical variation while making the best-value technology available in their operating rooms and physicians' offices.

HealthTrust's size and purchasing power ensure a better price for partners on personalized medical devices that have value in shortening surgical procedures, helping physicians better accommodate patient needs and potentially improving clinical outcomes.

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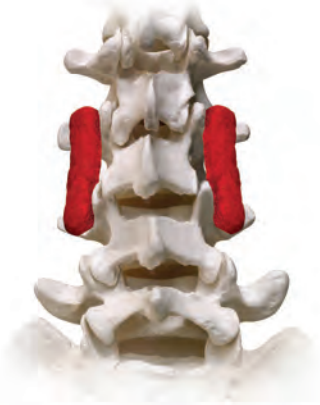

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Optimizing Pharmacy Inventory Through Automation

Health systems carry expensive pharmaceutical inventory. That's a given. What's not certain is how that inventory is being managed. Investing in a more efficient inventory management system can increase patient safety, lower inventory carrying costs, improve medication delivery times, and create higher nurse and patient satisfaction. By automating the distribution functions of the pharmacy department, HealthTrust members have been able to free up resources to focus on clinical pharmacy initiatives.

More Efficiency, Less Waste

Up until February 2017, the pharmacy inventory at Amarillo, Texas-based BSA Health System was managed manually, says **Travis Lawler**, PharmD, director of pharmacy. Now that BSA—owned by Nashville, Tennessee-based Ardent Health Services—has purchased both an inventory management system and two carousels to store medications, inventory is scanned in and out from one central location.

"We are already much more efficient and have increased productivity," Lawler says.

Thomas Chickerella, system vice president of supply chain and pharmacy at Ardent Health Services, agrees. He has been heavily involved in the process of helping BSA get the inventory system up and running.

"The biggest improvement we've seen thus far is in the time our techs are spending on replenishing the medication storage carousels," Chickerella says. "We used to have replenishments four times a day, which took an average of two hours each time. Now we're able to do that just twice a day and it takes about 30 minutes."

Though the facility is still in its optimization period with the new automated system, Lawler and Chickerella are confident more benefits will soon follow, including the potential for a pharmacist to move out of a technical/logistic role and into more of a clinical role.

"When pharmacists can review how medications are working and talk more with patients, it's better for the patient and ultimately saves the health system money," Lawler says.

Other advantages have been a tighter-managed inventory and less waste due to medications expiring. "We were spending more money on inventory than we needed to," Lawler says. Instead of maintaining a week's inventory at a time, the new goal is three days' worth.

"And now we have the capability of running a daily report and seeing what is going to expire in the next 30 days," Lawler adds. "We can easily move that inventory to a location where we will use it."

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Faster Access to Meds—and Information

Beyond its cost-cutting features, BSA's inventory management system was implemented to improve nurse satisfaction. With the previous manual model, nurses had to wait for pharmacists to check medications, then wait for a technician to deliver them to the hospital floors.

"With the machines, the medications are already there waiting for the order," Lawler explains. The nurses now have a central place to pick up the medications and waiting time has been slashed.

Inventory management used to involve a physical count every six months; now it can be checked at any moment with the press of a key. "Not knowing a current inventory count made it difficult to decide how much to order," Chickerella says. "Now that we know what we have, we only order when we need to. As a result, we're seeing about a 25 percent reduction in our physical inventory of drugs."

Inventory management used to involve a physical count every six months; now it can be checked at any moment with the press of a key.

Chickerella says BSA is the first in a line of Ardent hospitals to implement the inventory management system. "It was a tough startup for the pharmacy team to get used to completely new processes," he acknowledges, "but now the work area is very organized, clean and quiet. It's just a better place to be."

Centralization and Consistency

At HCA's TriStar Division in Nashville, Tennessee, inventory management has two parts. The first is remote pharmacy services, which entails a team of pharmacists who work from home reviewing pharmacy orders, freeing up facility pharmacists to take on other duties. "They have been able to expand their clinical programs, become more decentralized, spend more time on nursing units and with physicians, and now they're seeing patients," says **William Waters**, PharmD, director of consolidated pharmacy services.

The second part of the system is the pharmacy distribution service, where medications are stored in a central warehouse

Continued on page 18

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and delivered every morning to the facilities' automated dispensing cabinets according to the automatic inventory reports received. Waters says being able to maintain a consistent drug formulary is one of the top benefits of the division having its own distribution center.

"When we first started, between all the facilities, we had about 7,000 different items," he says. "It didn't make sense to have that many items in one center, especially when so many were duplicates." Over the years, they've been able to consolidate that number down to 1,200.

HCA's West Florida Division also has its own distribution center and utilizes automated dispensing machines, but its most recent upgrade has been to a handheld software system that links with the warehouse. The mobile system has made it easier to scan medications in and out, notes **Joe Hoffmann**, PharmD, division director of pharmacy operations. The scanning system lets the distribution center know what needs to be replenished or reordered, as well as the total value of the inventory on any given day.

"We can see the inventory in play," Hoffmann says. "Is it moving? If it's not, we reduce it almost to the point of ordering certain items on demand. That has reduced costs considerably."

Similar to the TriStar division, formulary management has become a key asset for the West Florida division. "We discovered that we had 16 buyers at each facility buying 16 different ways," Hoffmann says. By reducing drug shortages and increasing compliance with contracted medication purchases, the distribution center has saved the system both money and time.

"If there's a contract change and all the facilities roll into that new contract simultaneously, we can manage those purchasing needs," Hoffmann says. "When it comes to potential shortages, we try to stock a cushion between us and the facilities so that when we start running out, we let them know what the substitution will be so they don't have to scramble." ●

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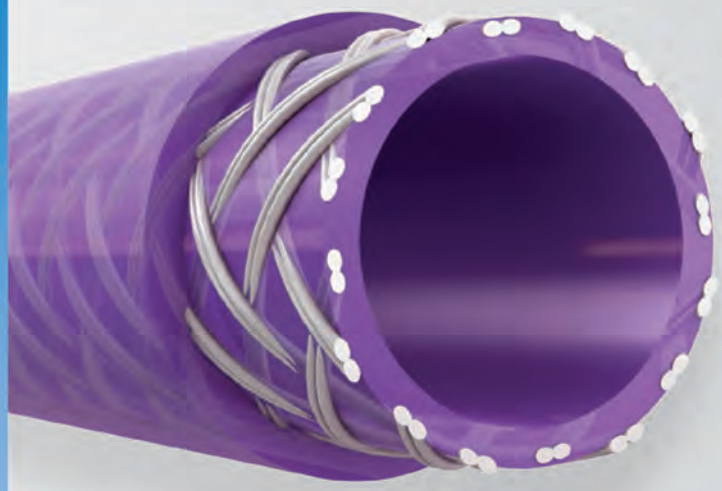

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Pain Points

HealthTrust Hosts Collaboration Summit to Discuss Strategies for Addressing the Opioid Crisis

HealthTrust recently convened members from five healthcare systems (*see sidebar on page 22*) to discuss the growing opioid epidemic and its tragic repercussions.

Held in Nashville, Tennessee, in mid-April, the HealthTrust Perioperative Pain Management Collaboration Summit "gave participants the opportunity to discuss the latest research on opioid addiction and share insights on pain management," says summit co-organizer and HealthTrust Chief Medical Officer **Michael Schlosser**, M.D. "Attendees also worked on developing action plans for implementing an effective perioperative pain management program—one that relies less on narcotics and more on changing perceptions of pain."

"Our goal was to give these members some momentum and the start of a plan to take home to continue this important discussion," says the event's other organizer **David Osborn**, Ph.D., senior vice president of inSight Advisory Solutions for HealthTrust.

Healthcare's Role

Opioids are a class of drugs that include the potent synthetic drug fentanyl, which is legal but often sold on the black market; the illegal street drug heroin; and prescription drugs such as oxycodone and morphine. All are addictive.

The Centers for Disease Control and Prevention (CDC) calls the U.S. opioid crisis "an unprecedented epidemic." And, the statistics are dire:

- The rate of overdose deaths involving opioids has quadrupled since 1999
- Drug overdoses now kill more people in the United States than car crashes
- More than six out of every 10 drug overdose deaths can be traced back to an opioid
- An average of 78 people die every day from an opioid-related overdose

A key point raised at the summit was the healthcare system's role in the opioid crisis. In recent years, there's been a dramatic surge in medical prescriptions for opioids. According to the CDC, more than 240 million prescriptions were written for opioids in 2014 alone—enough to provide every American adult with their own bottle.

Many of the people who received those prescriptions are what experts now call "opioid naive" or "narcotic naive"—that is, they had never been exposed to an opioid before undergoing a procedure and receiving a narcotic painkiller. Yet, in many cases, they're still taking the drug months after surgery—even if it was a relatively minor procedure.

What if the healthcare system could turn around these statistics?

Taking a Proactive Approach

Summit participants discussed ways that the healthcare industry could lead the way in addressing the opioid epidemic, as well as change its approaches to pain management in general.

"We hope physicians, clinicians and pharmacy leaders can help fix the problem," says **Anthony Spann**, PharmD, pharmacy clinical coordinator at HCA Northside

Continued on page 22

Where to Go From Here

Ready to get started on developing a perioperative pain management program? Here are some suggestions from the recent HealthTrust Perioperative Pain Management Collaboration Summit to help in planning:

1. Raise awareness. Education about the risks of narcotic addiction is critical. Patients need to understand the side effects (beyond possible opioid dependency) of any painkiller they're prescribed, and clinicians need to be talking about narcotics with them in physician offices and at the bedside. Surgeons could offer preop classes for patients so they know what to expect in the way of pain management and recovery timeline prior to their procedure.

2. Collaborate across the care continuum. Communication across departments is necessary since the original prescribing physician isn't the only one patients might visit in search of pain relief. Surgeons, in particular, must be aware of the opioid dependency problem and work to minimize it by collaborating with primary care physicians and emergency department colleagues—sources patients often seek for refills on narcotics.

3. Measure what matters. Quantifying success may be challenging, but summit participants proposed metrics to assess the effectiveness of a pain management program, including lower narcotic usage per DRG (diagnosis-related group) and per unit, positive changes in prescribing patterns, reduced post-surgical complications and fewer readmissions.

4. Start with small wins. Providers can jump-start their efforts by focusing on what can be accomplished in the short term, such as awareness of the opioid problem across their healthcare system. They might also draft an elevator speech for clinical leads, create compelling patient stories, develop a preoperative patient education handout, or suggest questions clinicians can ask to help identify active and recovering addicts.

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Continued from page 20

Hospital in St. Petersburg, Florida, who participated in the summit and is presenting on the topic at the HealthTrust University (HTU) Conference. "That's a driving force for meetings like this."

According to Osborn, many HealthTrust members have already begun taking a more proactive role in developing an effective response. For example, a multidisciplinary team at HCA's West Florida Division has developed a set of multimodal pain management protocols.

Summitt attendee and HTU presenter **Leslie Masem**, PharmD, explains that her team's protocols were based on the "Management of Postoperative Pain: A Clinical Practice Guideline" published in the February 2016 issue of *The Journal of Pain*. The protocols acknowledge that opioids are appropriate in some circumstances and in some amounts. But they also affirm the benefits of a multimodal pain management approach that can include other medications, behavioral modifications, distraction therapy, and heat and cold therapy. A healthcare team considers the individual patient's history and situation to establish the appropriate multimodal solution.

"Ultimately, we want to see these protocols create better patient satisfaction and safer care for our patients," Masem says.

Changing Perceptions About Pain

Until recently, the standard way to approach postoperative pain was to try to get rid of it altogether. Opioid painkillers are effective at achieving that goal, but have had unintended consequences: Patients begin to expect and depend on that level of pain relief.

Physicians are not intentionally harming their patients, says **Marcus Dortch**, PharmD, HealthTrust's senior director for clinical pharmacy services. "They are attempting to keep them comfortable. We have set up the expectation that after surgery they should have no pain whatsoever. That's a false assumption."

It's time for those beliefs to change, experts say, but it will take multiple strategies, including education about pain management targeted not just to patients, but also to physicians, nurses and other healthcare professionals.

"The change in mindset is huge," says **Lynn Tarkington**, RN, assistant vice president of physician and clinical services at HealthTrust. "It's not going to happen overnight. You have to set the stage so that people understand the scope of the problem."

Summit participants discussed pain management protocols that include dedicated education for the following key groups:

• PATIENTS, who will have to be educated to think about pain in a new way—that it is a normal part of the healing process and can help foster recovery as opposed to opioids, which can hinder improvement. Patient education should start prior to surgery, perhaps via a preoperative evaluation clinic.

• PHYSICIANS, who will have to rethink the way they prescribe pain medication to patients postoperatively. They'll need to work toward a multimodal approach, rather than defaulting to a lengthy course of an opioid painkiller with refills. These physicians, whether surgeons or those working in emergency medicine and primary care, must be the leaders in delivering a consistent and compelling message. They will also need to work with pharmacists and others across the care continuum.

• CLINICIANS, who will have to help patients understand the goal is to help them manage their pain without creating long-term problems. Nurses need to be frank about the risks of dependency and addiction, while providing patients with information to support them through the recovery process. They also need to tell patients how the prolonged use of narcotics can cause potential complications or side effects, such as immune system suppression and disruption of hormone levels.

"A change in culture is required as all caregivers become educated on how to temper unrealistic pain relief expectations and proactively identify active and recovering addicts," Schlosser adds. "Training should include suggestions on appropriate probing questions to ask of patients prior to surgery."

• THE C-SUITE, whose support and buy-in to start a perioperative pain management program is vital. Many healthcare executives are likely unaware of the scope of the problem—or what can be done about it.

"You've got to get senior leadership to devote resources, personnel and time to start this kind of a program," Tarkington says. Such an approach is appropriate, Osborn echoes, because pain management is such a critical safety issue—one that can also have financial consequences for hospitals. ●

Summit Participants

The following HealthTrust members sent teams of physicians, pharmacists, nurses and healthcare executives to the summit:

- **Community Health Systems** — Franklin, Tennessee
- **HCA's TriStar Division** — Nashville, Tennessee
- **LifePoint Health** — Brentwood, Tennessee
- **Scripps Health** — San Diego, California
- **Tenet Healthcare** — Dallas, Texas
- And, PharmDs Anthony Spann & Leslie Masem (**HCA's Northside Hospital**) who are presenting on the topic at HTU

The Case for E-prescribing

Surgeons are often blamed for being unwitting enablers of an oversupply of prescription opiates. Atul Gawande, M.D., MPH, of the Harvard School of Public Health, argues that one way to curb overdoses and abuse is for research agencies to gather data to help surgeons guide their opioid supply decisions.

He also suggests allowing surgeons to prescribe opioids electronically, rather than requiring patients to have a written prescription. In an article in the April 2017 issue of *Annals of Surgery*, Gawande argues that electronic prescribing would make it much easier for surgeons to write smaller prescriptions for 50 to 80 percent of their patients, knowing they could remotely order an additional supply if necessary. This would be opposed to the more common scenario: Surgeons overprescribing to meet the needs of the 99 percent in order to avoid stranding a patient in pain.

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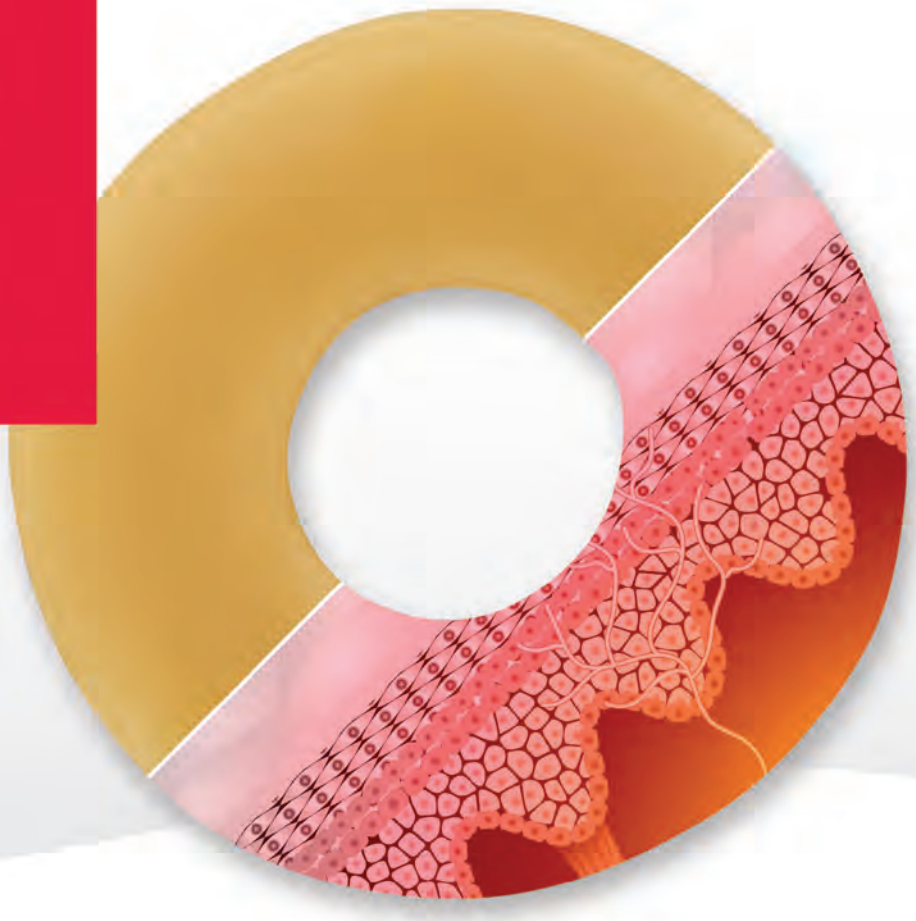

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Delivering Actionable Insights

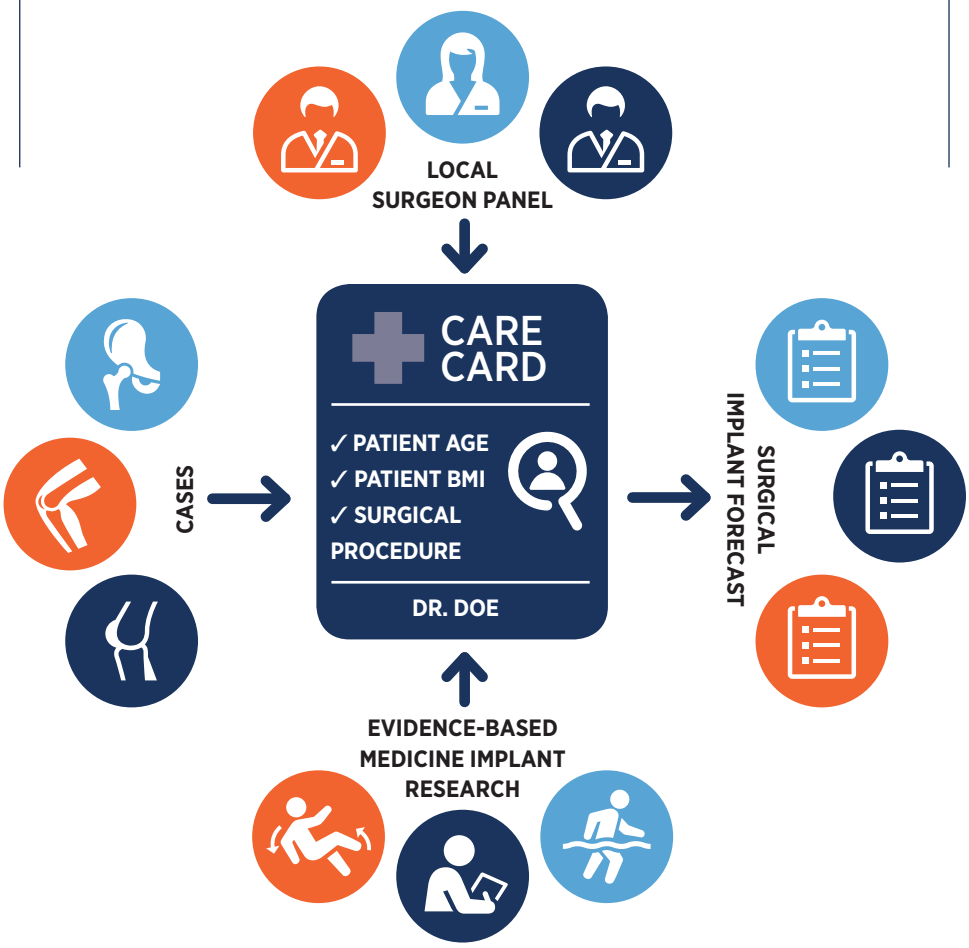
Pragmatic Data Approaches With InVivoLink and Clinical Data Solutions

By 2030, it is estimated that nearly 3.5 million total knee replacement surgeries and 572,000 total hip replacement surgeries will have been performed. Overall, total knee and total hip revisions are projected to grow by 673 percent and 174 percent, respectively, between 2005 and 2030. Revision surgeries and complications from primary total joint replacements (TJRs) are expected to experience similar growth.

Both bundled payment models and private payer reimbursement contracts are pressuring hospital margins, even as facilities are competing for volume with growing numbers of ambulatory surgery centers.

Now more than ever, comprehensive strategies to understand and proactively address the intertwined factors of care planning, cost management and patient outcomes are needed to help TJR, cardiac and other service lines thrive. And at the heart of those strategies are data that can be collected, analyzed and acted upon to improve outcomes, decrease costs and enhance collaboration across episodes of care.

Today's digital environment is noisy and full of data from many sources. Weed out the static with these solutions that can lead to real, positive change.



InVivoLink's care cards give physicians a way to predetermine and automate implant selection for specific patient groups. Data from patient cases, a local surgeon panel and evidence-based implant research feed into a care card, which is specific to a procedure type and patient age range and BMI. Care cards form the basis of a hospital's surgical implant forecast.

InVivoLink: Solving the Answers Shortage

Good information is the foundation for good decisions. Electronic health records are supposed to be a data goldmine, but unfortunately their retrospective reporting design is often too stale to drive action. Reducing costs, improving outcomes and engaging the care team across the continuum of care require a complete, longitudinal view of TJR episodes, which hospitals can see only by collecting relevant pre-, intra- and postoperative data. Typically, a patient-reported outcomes (PROs) survey is given preoperatively (for a baseline score) and postoperatively (to gauge progress).

InVivoLink, HealthTrust's registry platform, not only offers a PRO capture service of this nature, but it also intraoperatively tracks data in real time. This includes the collection of information on procedures and implants, as well as physicians' chart notes. Without InVivoLink, hospitals typically are only able to capture scores via paper surveys, and the data sits unused other than to satisfy a regulatory mandate.

The Next Generation of Demand Matching

The practice of "demand matching" implants to patients based on their characteristics, such as age and expected activity, is a decades-old concept, but it is regaining popularity as an effective implant treatment planning tool.

Most surgeons informally do some level of demand matching already, in terms of

Continued on page 26

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Continued from page 24

choosing implants on a case-by-case basis. But the continued, sometimes imperceptible, influence of suppliers on those decisions remains problematic. Data from the Australian National Joint Replacement Registry indicate that plenty of "mature" implants have a failure rate of under 5 percent after 10 years, even as the pricey new models with no track record remain physician favorites.

The authorization of co-management agreements with surgeons under CMS bundled payment models has brought the concept of demand matching back to the forefront. Co-management agreements are being used to enhance physician alignment around demand matching with incentives that might include a more relaxed call schedule, OR upgrades or a dedicated surgical scrub team.

A well-designed demand matching protocol enables collaboration between physicians and service line leaders. An agreed-upon plan of care that considers physician preferences, clinical evidence research and implant cost variance, as well as benchmarked clinical outcomes of the implanting surgeons, can prompt improvement on both the cost and quality front.

InVivoLink adds efficiency to the demand matching process with a unique offering: "care cards" that expand on the definition of a case. They serve as a report card on the entire episode of care, including all patient outcomes, surgical notes and emailed communications. Care cards are specific to a procedure type, and patient body mass index and age range. (*See previous page for a graphic example.*)

Based on cost and evidence-based medicine, hospital administrators work closely with surgeons to prioritize the implants they want to use. This implant list will eventually become the care cards that are specific to each surgeon. The complete "deck" of care cards can be used to bring transparency to the contracted cost of implants and physician practice patterns that don't align with the evidence-based recommendations.

Surgeons report in advance the implants they will be using for certain types of patients, so hospitals can calculate what they'll be spending on implants. Then, as cases actually move through the OR, they can observe and record deviations from that forecast. Capturing this intraoperative data leaves an audit trail that points to individual surgeons and gives them a chance to explain discrepancies. The process isn't punitive; rather, it opens a clinically focused dialogue between surgeons and administrators.

PROVIDERS NEED A STRATEGIC APPROACH TO ORGANIZING, UNDERSTANDING, PRIORITIZING AND ACTING ON THE INFORMATION.

InVivoLink's system generates reports on how well actual implant utilization aligns with the care cards. Collecting data on why the designated implants are or are not used, and tracking the associated patient outcomes, allow for continuous improvement in ways that are good for both patients and hospitals.

InVivoLink manages implant tracking, patient engagement and PRO reporting. The platform is evolving into an end-to-end care collaboration solution that extends TJR episodes longitudinally and continuously improves conversations between administrators and surgeons. For more information, contact ***Lane Conger****, assistant vice president, account management for InVivoLink at lconger@invivolink.com.*

Clinical Data Solutions: Improving Patient Outcomes Through Actionable Information

In the face of complex challenges—such as mandated alternative payment models that hold hospitals financially responsible for patient care costs through 90 days post-discharge—hospitals must have an in-depth understanding of the current state of the care they provide. To that end, hospitals can tap into many available data sources, including professional registries, financial and administrative records, and claims databases, such as Medical Provider and Analysis Review files. The challenge for facilities is how to take these disparate data sources and align them to identify opportunities to improve quality, and then engage physician stakeholders in improvement efforts. Providers need more than raw data—they need a strategic approach to organizing, understanding, prioritizing and acting on the information.

Clinical Data Solutions (CDS) provides that strategic approach to data analytics. The insights it can give on each hospital's unique challenges come from more than 20 years' experience navigating physicians and clinicians through the data and providing a clear vision on how to improve patient care and reduce cost.

The data is not the end product—it's the beginning of CDS' services. Clinical consultants provide one-on-one support to the service line leaders of facilities. Data is the backbone of their evidence-based solutions, which include order sets, protocols, pathways and tools to assist facilities in mitigating the risk of adverse events or complications.

CDS also has a group of physician advisors who provide guidance, vet the evidence-based tools and assist with the CDS research agenda that includes presentations at scientific meetings and submitting manuscripts to peer-reviewed scientific journals. The most recent presentations addressed the 90-day cost and frequency of readmissions for acute myocardial infarction (AMI). (*See page 28 for CDS research on key conditions driving 90-day cost of care for AMI.*)

One 350-bed hospital was able to improve its cardiac care delivery and outpace national mortality averages using CDS expertise, resulting in 28 more saved lives than the average hospital. It was also able to achieve faster door-to-balloon times, and lower readmissions and renal failure complications. ●

For more information on how CDS can assist in improving patient outcomes, contact HealthTrust's Vice President of Clinical Consulting and Analytics ***April Simon****, RN, MSN, at april.simon@healthtrustpg.com.*

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Acute Myocardial Infarction 90-Day Bundle: Cost, Readmission and Survival Trends

Clinical Data Solutions (CDS) turns data into information that can be used for action to improve patient outcomes. At the American College of Cardiology Annual Scientific Meeting in March 2017, CDS presented research identifying key conditions that drive 90-day cost of care to prepare hospitals for the new acute myocardial infarction (AMI) bundles.

AMI SURVIVAL TRENDS

While AMI continues to be a leading killer of Americans, more people are surviving their initial hospitalization than ever before.

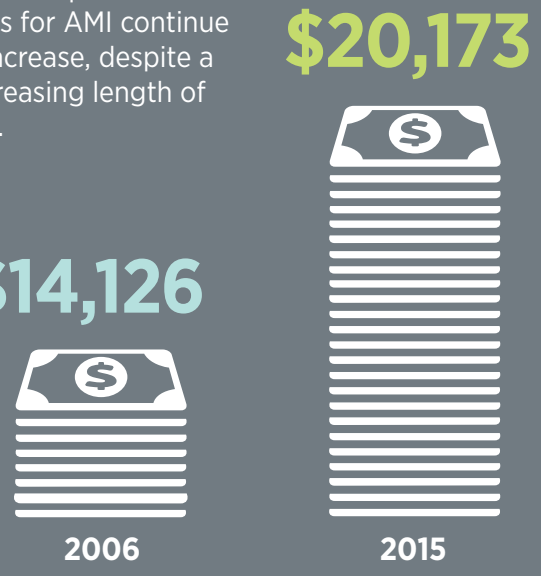
In 2015 | Volume **333,244** | Survival rate **93.7%**

In 2009 | Volume **345,580** | Survival rate **92.4%**

In 2003 | Volume **398,000** | Survival rate **89.7%**

HOSPITALIZATION COST TRENDS FOR AMI PATIENTS

Initial hospitalization costs for AMI continue to increase, despite a decreasing length of stay.



TOP REASONS FOR AMI 90-DAY READMISSIONS

More than 28 percent of all of these patients will have an additional hospitalization within the first 90 days of discharge.

1. Heart Failure/Pulmonary Edema
2. Cardiac Surgery
3. Sepsis
4. COPD/Pneumonia
5. Angina or chest pain

90-DAY MEDICARE COST PER CONDITION

Patient comorbidities not only make them "sicker"; they make them costlier to treat. The five most expensive comorbidities and their corresponding incremental cost are listed below.

Dialysis-dependent	+ $12,794
AIDS	+ $9,481
Cardiac arrest, POA	+ $6,368
Cardiogenic shock, POA	+ $4,789
Heart failure	+ $4,715

View additional details on these trends by visiting the "Trending Data" page within the "Physicians Advisors" section of the HealthTrust member portal.

For more information on how CDS helps improve clinical outcomes, contact HealthTrust's Vice President of Clinical Consulting and Analytics ***April Simon****, RN, MSN, at april.simon@healthtrustpg.com.*

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Strategizing for Medication Compliance

How Pharmacy Leaders Can Better Prepare for the Track and Trace Law

Whether located in a clinic, hospital or standalone facility, every pharmacy leader has a different set of daily activities. All are challenged to remain compliant with the Drug Supply Chain Security Act (DSCSA), also known as the Track and Trace Law. Enacted on Nov. 27, 2013, the law was created to secure medication integrity and track product verification electronically through the entire U.S. supply chain. The Track and Trace Law's specific requirements and timelines are being phased in over a 10-year period.

Nicolle Rychlick, director of clinical integration at HealthTrust, says that reviewing and understanding state and federal legislation is a vital first step to remaining compliant. "State laws are just as varied and nuanced as pharmacy operations," she says. She recommends using the FDA and pharmacy association websites that offer checklists and guidelines to help leaders evaluate their plans. (*See sidebar below.*)

Knowing those deadlines and timelines is crucial. "Consider your operational objectives and start planning now," Rychlick says. "For example, you'll want to build a business case for capital budget approvals, such as for new software systems, which might be necessary for compliance."

Rychlick helps HealthTrust members communicate best practices with one another. "Knowledge sharing is key in pharmacy," she says, "particularly strategies and policies that have been successful elsewhere. We discuss the pros and cons of software systems that members have either used or are currently reviewing. When members contact us with a question, we reach out to the rest of the membership for answers and try to connect them."

HealthTrust has established a pharmacy operations committee led by facility-level experts to help members understand and work toward compliance with the Track and Trace Law. Members can confidently employ the supplier identification and contracting strategies discussed knowing that they have undergone stringent review, Rychlick says.

John Cicero, R.Ph., MBA, HealthTrust's director of pharmacy services, inSight Advisory–Supply Chain, says that members have access to an internal team of subject matter experts who work closely with suppliers and stay current by monitoring industry newsletters, changes to the Federal Register and updates to the FDA's DSCSA webpage. These resources provide the latest information on supply chain security, program compliance and important timelines.

Educational resources for pharmacy leaders are available through HealthTrust's member portal, which also provides contract pricing and weekly news bulletins that highlight pharmaceutical contract changes and announcements.

Understanding the Track and Trace Law is a shared responsibility, according to Cicero. To that end, "HealthTrust and the major pharmaceutical suppliers provide excellent training and compliance education, including policy templates—typically at no charge," he says. "It's also important for members to request that their pharmaceutical suppliers keep them updated on any DSCSA changes or additional requirements."

To remain compliant, a team led by **Michael J. Bonck**, R.Ph., pharmacy manager at CHI Franciscan Health's St. Joseph Medical Center in Tacoma, Washington, adheres to regional policies and procedures, and relies on supplier partners to electronically track a breadth of information about drug purchases.

"For every product we've purchased, our wholesaler has all the 3T information, which stands for transaction history, transaction information and transaction statement," Bonck explains. "The supplier stores this information in a database that we can access to query our product

Continued on page 33

THE 411 ON DSCSA

For the latest information on the Drug Supply Chain Security Act, visit these online sites:

- **HealthTrust member portal, pharmacy section**
- **U.S. Food & Drug Administration (www.fda.gov) and type in "DSCSA" in the search box**
- **American Society of Health-System Pharmacists (www.ashp.org/pharmacy-practice/pharmacy-topics/drug-supply-chain)**

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Indications and Usage

NUWIQ is a Recombinant Antihemophilic Factor [blood coagulation factor VIII (Factor VIII)] indicated in adults and children with Hemophilia A for on-demand treatment and control of bleeding episodes, perioperative management of bleeding, and for routine prophylaxis to reduce the frequency of bleeding episodes. NUWIQ is not indicated for the treatment of von Willebrand Disease.

Important Safety Information

NUWIQ is contraindicated in patients who have manifested life-threatening hypersensitivity reactions, including anaphylaxis, to the product or its components. The most frequently occurring adverse reactions (>0.5%) in clinical trials were paresthesia, headache, injection site inflammation, injection site pain, non-neutralizing anti-Factor VIII antibody formation, back pain, vertigo, and dry mouth. Development of Factor VIII neutralizing antibodies (inhibitors) may occur.

Please see accompanying Brief Summary of Prescribing Information for Additional Important Information.

References: 1. Sandberg H, et al. Thromb Res 2012; 130:808-817. **2.** Casademunt E, et al.. Eur J Haematol 2012; 89:165-176. **3.** Kannicht C, et al. Thromb Res 2013; 131:78-88. **4.** Valentino LA, et al. Haemophilia 2014; 20:1-9.

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HIGHLIGHTS OF PRESCRIBING INFORMATION

These highlights do not include all the information needed to use NUWIQ safely and effectively. See full prescribing information for NUWIQ.

NUWIQ®, Antihemophilic Factor (Recombinant) Lyophilized Powder for Solution for Intravenous Injection
Initial U.S. Approval: 2015

INDICATIONS AND USAGE

NUWIQ is a recombinant antihemophilic factor [blood coagulation factor VIII (Factor VIII)] indicated in adults and children with Hemophilia A for:

- On-demand treatment and control of bleeding episodes
- Perioperative management of bleeding
- Routine prophylaxis to reduce the frequency of bleeding episodes

NUWIQ is not indicated for the treatment of von Willebrand Disease.

DOSAGE AND ADMINISTRATION

For intravenous use after reconstitution

- Each vial of NUWIQ is labeled with the actual amount of Factor VIII potency in international units (IU).
- Determine dose using the following formula for adolescents and adults:

  Required IU = body weight (kg) x desired Factor VIII rise (%) (IU/dL) x 0.5 (IU/kg per IU/dL)

- Dosing for routine prophylaxis:

Subjects	Dose (IU/kg)	Frequency of infusions
Adolescents [12-17 yrs] and adults	30-40	Every other day
Children [2-11 yrs]	30-50	Every other day or three times per week

- Frequency and duration of therapy depends on severity of the FVIII deficiency, location and extent of bleeding, and patient's clinical condition.

DOSAGE FORMS AND STRENGTHS

NUWIQ is available as a white sterile, non-pyrogenic, lyophilized powder for reconstitution in single-use vials containing nominally 250, 500, 1000 or 2000 IU Factor VIII potency.

CONTRAINDICATIONS

NUWIQ is contraindicated in patients who have manifested life-threatening hypersensitivity reactions, including anaphylaxis, to the product or its components.

WARNINGS AND PRECAUTIONS

- Hypersensitivity reactions, including anaphylaxis, are possible. Should symptoms occur, discontinue NUWIQ and administer appropriate treatment.
- Development of Factor VIII neutralizing antibodies (inhibitors) may occur. If expected plasma Factor VIII activity levels are not attained, or if bleeding is not controlled with an appropriate dose, perform an assay that measures Factor VIII inhibitor concentration.
- Monitor all patients for Factor VIII activity and development of Factor VIII inhibitor antibodies.

ADVERSE REACTIONS

The most frequently occurring adverse reactions (>0.5%) in clinical trials were paresthesia, headache, injection site inflammation, injection site pain, non-neutralizing anti-Factor VIII antibody formation, back pain, vertigo, and dry mouth.

USE IN SPECIFIC POPULATIONS

Pediatric Use: Lower recovery, shorter half life and faster clearance in children aged 2 - ≤12 years. Higher doses and/or a more frequent dosing schedule for prophylactic treatment should be considered in pediatric patients aged 2 to 5 years.

PATIENT COUNSELING INFORMATION

Advise patients to read the FDA-approved patient labeling (Patient Information and Instructions for Use).

Because hypersensitivity reactions are possible with NUWIQ , inform patients of the early signs of hypersensitivity reactions, including hives, generalized urticaria, tightness of the chest, wheezing, hypotension, and anaphylaxis. Advise patients to stop the injection if any of these symptoms arise and contact their physician, and seek prompt emergency treatment.

Advise patients to contact their physician or treatment center for further treatment and/or assessment if they experience a lack of clinical response to Factor VIII replacement therapy, as this may be a manifestation of an inhibitor.

Advise patients to consult with their healthcare provider prior to traveling. While traveling, patients should be advised to bring an adequate supply of NUWIQ based on their current treatment regimen.

To report SUSPECTED ADVERSE REACTIONS, contact Octapharma USA Inc. at 1-866-766-4860 or FDA at 1-800-FDA-1088 or www.fda.gov/medwatch.

Revised September 2015

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Continued from page 30

purchases. We collect 3T information that comes from the manufacturer for any direct-purchased products and store the data on a shared drive that is accessible by company and date."

Bonck recommends that pharmacy leaders personally inspect their pharmacy operations, explaining that "periodic self-audits ensure that you're maintaining appropriate records that meet the intent of the guidelines." A regular self-audit makes it easier to "retrieve important information in a timely fashion, if queried by the FDA," he adds.

Key milestones in November 2019 and November 2020, respectively, will require that supply chain partners engage only in transactions involving products encoded with a unique product identifier (marked by serial numbers) and be able to verify product legitimacy, Cicero says. By November 2023, dispensers of pharmaceuticals must participate in electronic, package-level traceability.

The law's current timelines are:

November 2017: Manufacturers must begin placing a unique product identifier (2D data matrix barcode, NDC, serial number, lot number and expiration date) on nonexempt prescription drug packages. Pharmacy leaders should, if they have not already done so, confirm that the institution's scanners—especially barcode scanners that are used at the patient bedside for drug administration—have the ability to read a 2D data matrix barcode. Recently, a manufacturer changed to a 2D barcode on its saline flushes and some health systems had to update or reprogram their scanners on short notice.

November 2018: A unique product identifier will be required on nonexempt, repackaged prescription drugs, which the DSCSA defines as medicines that are repackaged and available for further sale (to include change in ownership).

November 2019: Wholesalers can trade only products with unique product identifiers (serial numbers).

November 2020: Dispensers can only purchase or trade products with unique product identifiers. This means all companies in the U.S. pharmaceutical distribution system, including pharmacies, must participate in an electronic traceability system that uses the unique product identifier (serial numbers) to help detect and remove illegitimate drugs.

November 2023: Dispensers must participate in electronic, package-level traceability, exchanging transaction data in an interoperable manner—including product identifiers on individual packages. ●

Electric Avenues:

New Pathways in Electrophysiology

Over the last few decades, the field of electrophysiology (EP) has evolved from one primarily dedicated to clinical research to one specializing in the identification and treatment of a wide variety of electrical malfunctions. Electrophysiology studies (EPSs), mapping and cardiac ablation are often done outside of a cardiac catheterization lab with their own dedicated equipment. As more studies are published in support of using these innovative therapies, supply chain leaders will want to pay closer attention to this growing field.

What's New in EPS

An EPS is a test that observes and measures the electrical impulses of the heart. It uses programmed stimulation to initiate abnormal heart rhythms, determine the origin of the arrhythmias and assess the risk of sudden cardiac arrest.

During an EPS, specialized electrode catheters send signals to the heart and record electrical activity at various intracardiac sites. Intracardiac electrograms are then recorded to measure the conduction system and activate electrical stimuli to differentiate rhythm types. Mapping procedures simultaneously acquire data from multiple electrodes and track the catheters inside the heart to visualize their location. Mapping systems take that data and create a 3D map of the cardiac chamber, visualizing arrhythmia sites for interventional procedures to focus on. Standard fluoroscopy, CT, MRI and ultrasound images can be integrated into the map.

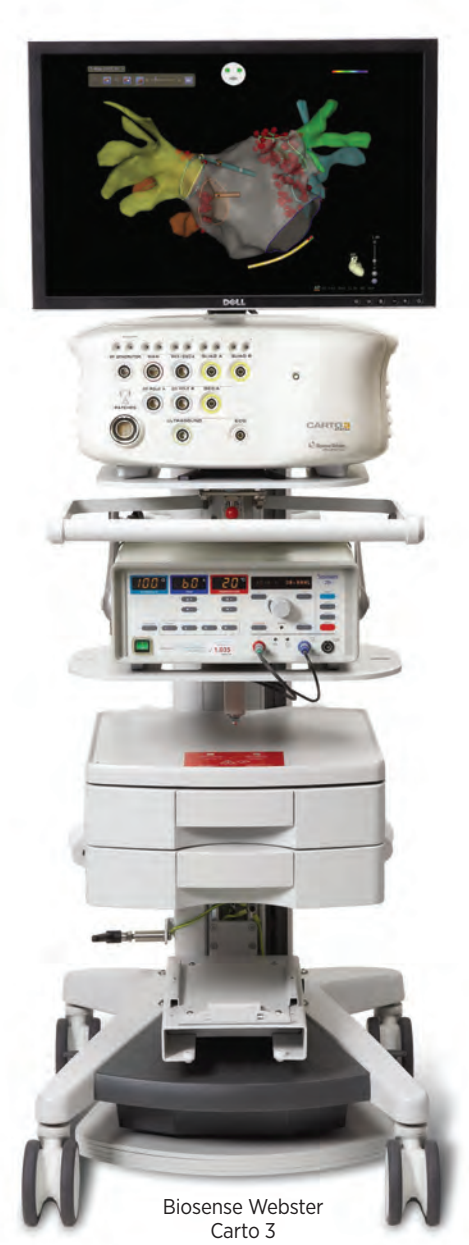
MAPPING SYSTEMS TAKE DATA AND CREATE A 3D MAP OF THE CARDIAC CHAMBER, VISUALIZING ARRHYTHMIA SITES FOR INTERVENTIONAL PROCEDURES TO FOCUS ON.

Diagnostic and mapping systems, as well as the associated catheters, are approved through the FDA 510(k) and premarket approval programs. Here are some of the most notable approvals in the EPS space:

Abbott EnSite Precision cardiac mapping system

- **Abbott EnSite Precision cardiac mapping system:** Designed for catheter navigation and mapping procedures. The open-architecture platform combines impedance and magnetics for improved automation and improved detail in maps and workflow. It uses the Advisor FL Circular Mapping Catheter, Sensor Enabled, and the FlexAbility ablation catheter, Sensor Enabled, for ablation procedures.

- **Boston Scientific (BSCI) Rhythmia:** Uses a high-resolution, basket-shaped mapping catheter to quickly map the heart. The system works well with complex cases of paroxysmal atrial fibrillation, atrial flutter and left-side arrhythmias versus routine atrial fibrillation. There is no irrigated catheter for ablation.



Biosense Webster Carto 3

- **Biosense Webster (BWI) Carto 3:** A closed-architecture, 3-D platform system fully integrated for mapping and ablation procedures, as well as ultrasound imaging.

What's New in Ablation

Cardiac ablation is the interventional procedure that scars or destroys, by

Continued on page 36

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1. Rosen M, Bauer JJ, Harmaty M, *et al.* Multicenter, prospective, longitudinal study of the recurrence, surgical site infection, and quality of life after contaminated ventral hernia repair using biosynthetic absorbable mesh: the COBRA Study. *Annals of Surgery.* 2017;265(1):205-211.
2. W. L. Gore & Associates, Inc. *Clinical Performance with Staple Line Reinforcement. Scientific Literature Analysis (n = 4689 patients).* Flagstaff, AZ: W. L. Gore & Associates, Inc; 2013. AP6010-EN3.

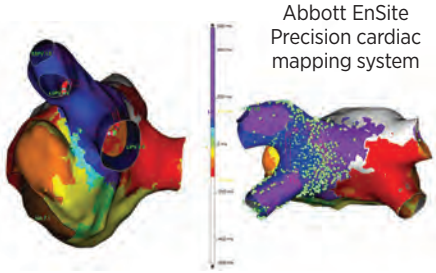
Products listed may not be available in all markets.

Continued from page 34

means of a percutaneous transcatheter technique, the tissue in the heart where an arrhythmia occurs. Radiofrequency (RF) and cryoablation are the most widely used methodologies; other treatments include ultrasound, microwave and laser ablation. Ablation systems generally include a generator, cables and catheters, and should interface with EP monitoring and mapping systems.

RF ablation is proven to be effective and safe for the treatment of multiple arrhythmias. Irrigated RF energy ablation systems use an irrigation pump to infuse saline in a closed- or open-irrigated tip catheter. Cryoablation systems consist of a cryocatheter, a refrigeration console with nitrous oxide, and a coaxial tube for nitrous delivery. Cryoenergy can be delivered at a single site (catheter-based) or over a large tissue area (balloon device).

The type of ablation therapy chosen depends on operator preference, patient size and ablation target. Cooled RF technologies are generally employed where deep and/or transmural lesions are required, such as ventricular tachycardia ablation. Irrigated RF or cryoballoon ablation therapies are commonly used for atrial fibrillation ablation, and are dependent on operator preference.



Abbott EnSite Precision cardiac mapping system

HealthTrust's Take

HealthTrust had preliminary discussions with its electrophysiology physician advisors about EP equipment, catheters and methods in early 2017. The advisors note that most physicians are comfortable with RF systems having the smoothest workflow and with which they've had the most experience. The Abbott and BWI systems are comparable in functionality and ability, and both suppliers support clinical or technical staff in virtually all procedures. The advisors say that supplier support—e.g., troubleshooting and keeping them apprised of technology advances—is critical to smooth workflow and improved outcomes for ablation patients. Cryoablation is performed exclusively in some labs and not at all in others, since there is a high level of variability in physician preference for this technology. ●

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GRX-41103 May 2017

THE BUDGETARY IMPACTS OF TECHNOLOGY ADOPTION

5 Best Practices for Wiser Decision-making and Smarter Spending

A few years ago, TriStar Centennial Medical Center in Nashville, Tennessee, began investing in limb preservation technology to better treat patients with vascular diseases who were at risk of amputation. The system includes new X-ray, catheter and ultrasound equipment to allow minimally invasive surgeries that remove blockages and restore blood flow to arteries.

While the technology was costly, vascular surgeons pushed for it because they viewed it as a way to help many in their local community. Peripheral vascular diseases that often lead to amputation disproportionately affect minorities and older adults, says **Michael Stabile**, M.D., MBA, chief of staff at HCA's TriStar Centennial Medical Center. By showing a commitment to those populations, the facility drew the attention of like-minded professionals. They saw firsthand the ripple effect of smart technology spending, Stabile says.

"When other surgeons saw we were serious about limb preservation, we were able to attract more physicians in various specialties, including wound care and podiatry—allowing us to structure a complete service line around a cutting-edge technology," Stabile says. "Just like top high school athletes want to go to the colleges with the best training rooms and stadiums, high-end medical talent wants to go to top facilities that have the best resources.

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"With a new technology that cuts across several subspecialties, you increase your chances of success and reinforce collaboration across the hospital," he continues. "To use HCA founder Thomas Frist Sr.'s analogy, 'smart people beget smart people.' "

In addition to expanding patient care services and boosting physician recruitment efforts, new technologies can improve workflows, enhance clinical outcomes and cut costs at healthcare organizations. Despite the advantages, departments that could benefit from such innovative healthcare tools have historically had a difficult time justifying the capital investment.

Capital funding continues to be a challenge, acknowledges **Jeffery Woodyard**, vice president of capital equipment services at HealthTrust. However, the current focus on value-based care requires continued improvement in the areas of patient care and satisfaction, and technology is often key in helping accomplish those goals. To ensure that they're allocating their budgets appropriately, supply chain leaders must quantify the benefits of new technologies—both clinically and economically—while confirming that the technology "matches the facility's strategic direction and mission," Woodyard says.

Facilities can better manage the budgetary impacts of technology by adopting the following five best practices:

1. Take a financial pulse.

Before presenting a new technology for capital funding, supply chain leaders need to understand the current financial environment of their facilities as well as that of their local community.

"The public perception of advanced medical technologies has been a love-hate relationship that goes back decades, and like a pendulum, swings both ways depending on how we look at it or present it to the public," says **Felix Lee**, M.D., medical director of cardiovascular services at HCA's Good Samaritan Hospital in San Jose, California, and HealthTrust's cardiovascular service line medical director. "During economic boons, advanced technologies and pharmaceuticals are praised for faster diagnoses, improving the quality of care delivery, maintaining better health status and ultimately saving more lives."

In those periods, high-dollar items such as hemodialysis, cutting-edge diagnostic imaging systems, organ transplantation and personalized medicine-based genetic testing are "all the rage," Lee says. However, in lean years when hospitals are focused on cutting costs, "these very same advanced technologies and pharmaceuticals are vilified as the predominant factor for the continuing exponential escalation of medical costs, which makes this once-revered approach to healthcare delivery unsustainable," he continues.

Before asking for a hefty capital investment for a cutting-edge technology, hospital department leaders must understand the current views of C-suite decision-makers. "In some extreme cases, the fear is that when shortsighted and desperate cost-cutting strategies rule the day, it may obscure any ability to pursue strategies that may require upfront spending or investment in new technologies to achieve greater long-term savings," Lee adds. "That's when a persuasive presentation, creative alternatives or a long wait may be in order."

2. Differentiate between new and replacement technology.

Most facilities tend to create budgets based on routine capital and construction needs, lumping new and replacement technology into the same area, says **David Heider**, director of capital equipment services at HealthTrust. He suggests that facilities instead split routine funding into two buckets—one for new capital and the other for replacement capital.

"The latter addresses normal replacement needs, while the former allows the facility and administration to address the most recent needs, either as incremental growth with additional units or as a new service line or technology," Heider explains. "New capital funding

also allows the facility to focus on technology and benefits as well as the impact on and alignment to strategic direction."

While new technology can also have an impact on demand for replacement technology, that tends to happen gradually, Heider says. In the process of quantifying the benefits of a proposed new technology, it's important to assess its possible influence on the need to replace existing technology.

3. Grasp the full cost of technology adoption.

Budgeting for a new technology always requires knowing more than the sticker price. "Most technology requires an experienced staff to maintain and manage it, and training to equip the staff to use it effectively, as well as space to put it in," Stabile says.

Before implementing new technology, hospital leaders must understand the full spectrum of associated costs. Start by listing the issues the technology is addressing and the improvements it will be enabling. "Those include quantifiable patient benefits such as decreased length of stay, quicker recovery time or minimal invasiveness," Woodyard says.

"Does it replace current technology with more effective, less expensive technology?" he continues. "Department leaders need to understand the direct and indirect costs of the technology in addition to what the reimbursement will be for the procedures it will enable."

4. Engage physician leaders in decision-making.

Facilities need to engage physicians in making choices about healthcare delivery, including technology adoption. Decisions about new technology won't go over well if they're made by hospital administrators and insurers in a silo, then mandated to clinicians, Lee says. "The most critical piece of the process is physician engagement with recommendations resulting from evidence-based data," he says.

Acute care delivery and long-term follow-up involve more complicated and layered decision-making than can be accounted for based on analytics focused on profit, loss and return on investment. New technology's economic impact can't be boiled down to purchase price, overall care plan implementation or professional fees, Lee says.

"Medical decisions are complex, multifactorial interactions that involve patient demands, physician counseling, professional guidelines, reimbursement systems, societal expectations and legal considerations," he says. "New technologies do, on average, improve the quality of health outcomes. But whether they do so in the short term, which most benefits hospitals and insurers, or over the longer term, which primarily benefits patients, is best understood by physicians who are tasked with co-managing disease entities with patients."

5. Collaborate with leaders who have shown commitment to the hospital's core mission.

The most successful hospitals are those where clinical and administrative staff are aligned with common goals and understand each other, Stabile says. "It's impossible for administrators to have a handle on all the new technology coming out; they are dependent on their medical staff to vet and bring new technologies to them," he says. "In turn, the medical staff has the responsibility to introduce the technologies that will best serve the hospital's mission."

To make sure that happens, Stabile recommends that hospital administrators choose medical leaders who demonstrate they have the best interests of patients and the institution at heart rather than simply what benefits their own medical practice.

"Your process for purchasing technology should be a collaboration involving many people; you don't want a new service line revolving around one person," he says. And physician leaders who are recommending technology investments need to take into account how those products will fit into the hospital's overall strategy and how they will be financed.

"Moving forward, the C-suite will need to know more science, and medical leaders will need to understand more business fundamentals, such as how to put together a pro forma or develop a budget," Stabile says.

The healthcare environment—with supply chain and clinical decision-making becoming more integrated and unified—is primed for greater collaboration, particularly when it comes to evaluating big-ticket devices and systems. Traditionally, the economic incentives for cost-based hospital reimbursements and fee-for-service physician reimbursements were isolated from each other. That practice "insulated physicians from the actual costs of care and promoted the use of exciting new technologies with marginal benefits for no other reason than novelty," Lee says.

Today, however, alternative methods of reimbursement such as bundled payments are changing the financial landscape for physicians. "Establishing physician incentives and penalties," Lee explains, "is making us all much more cost conscious." **S**

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3 WAYS TO IMPROVE YOUR DATA MANAGEMENT PROCESSES

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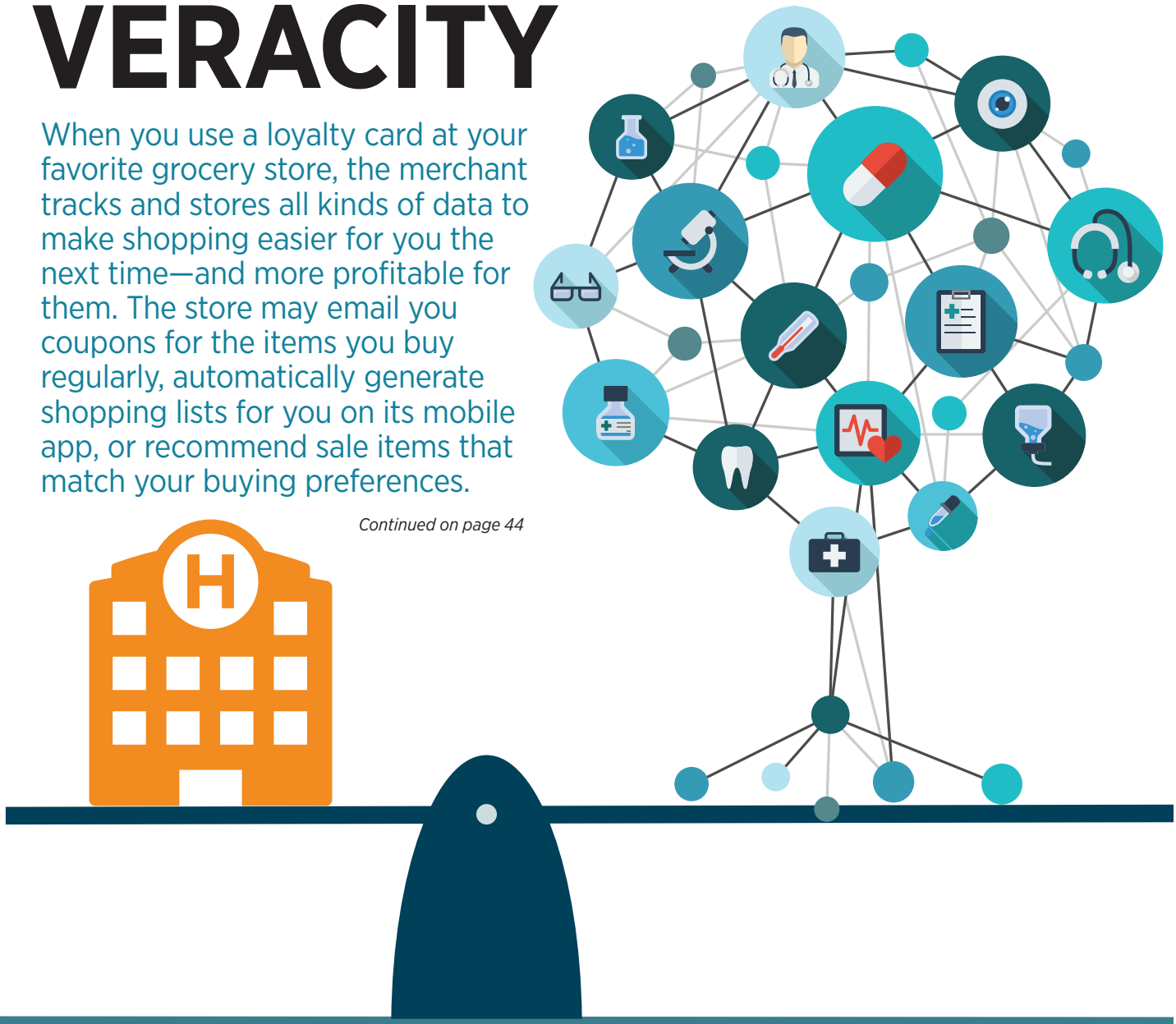

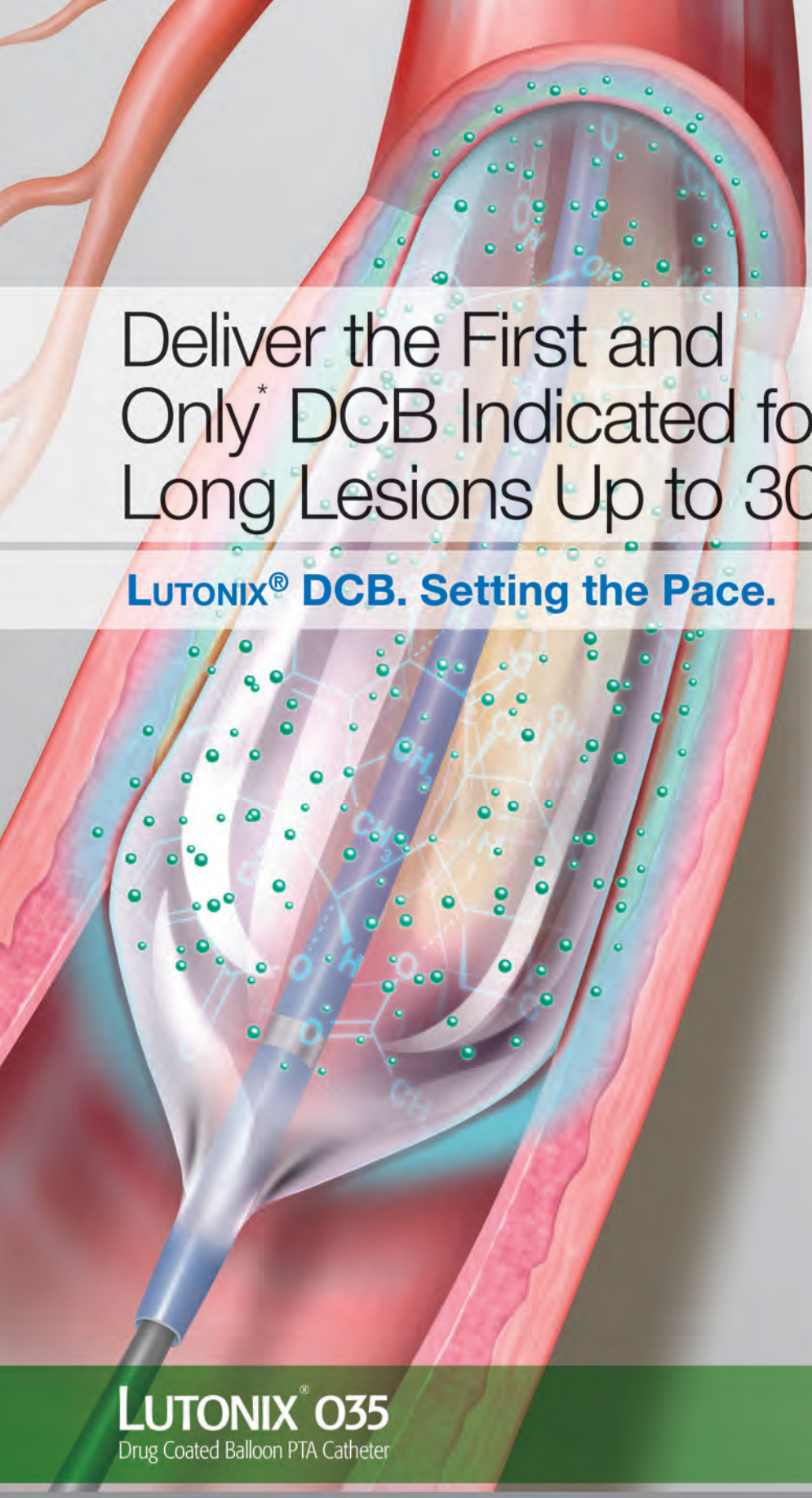

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Continued from page 42

That personalized shopping experience is evidence of how the retail industry has harnessed the power of data as a strategic asset. The financial services, marketing, manufacturing, transportation and political sectors have also incorporated data management into their operating models.

Although the healthcare industry has been slower to leverage advanced analytics and big data technologies, data management and governance are becoming increasingly important for their demonstrated potential to improve care, save lives and lower costs. Facilities are boosting their ability to support a wide range of healthcare functions by effectively managing and utilizing these huge quantities of data commonly known as "big data." (*See sidebar.*)

"Data management is critical for improving traditional analytics in healthcare," says **Ed Hickey**, assistant vice president of clinical data and analytics (aka data scientist) at HealthTrust. "Leveraging new data sources can substantially enhance medical research, improve clinical and financial risk projections, reveal opportunities to boost operational efficiency, and support clinical decisions related to a patient's disease state and acuity level." It can also help with disease surveillance and in developing population health strategies.

However, Hickey acknowledges that a tremendous amount of data in the healthcare industry is privacy-related; therefore, "it's imperative to ensure foundational components are in place before using advanced analytics approaches," he says.

Fully exploiting data and analytics requires three mutually supportive capabilities. First, healthcare organizations must be able to identify, combine and manage multiple sources of data. Second, they need the capability to build advanced analytics models for predicting and optimizing outcomes. Third, and most critical, leadership must possess the vision to transform the organization so that the data and models actually yield better decisions. Two important features underpin those competencies: a clear strategy for how to use data and analytics to compete, and the deployment of the right technology architecture and capabilities.

Hickey suggests the following ways hospitals can move toward managing and capitalizing on their data:

1 **Change a limiting mindset.** Hospital personnel may already think of data as useful in some isolated areas, such as the pharmacy department's ability to track drug allergies for specific patients. But to use data most effectively, staff and leaders across the facility must realize that the data in their system can be reorganized and utilized for decision-making in a wide variety of areas to bolster value-based care.

"It requires a changing mindset to effectively leverage the volume, velocity and veracity of data that organizations have available today," Hickey says. "Management and quality are at the core of ensuring this data can be fully harvested to yield the greatest value and applicability."

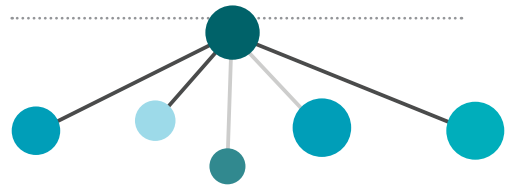
For instance, big data that is reliable and integrated throughout the healthcare system could be used to help make strategic decisions for clinical care, purchasing and administrative plans. Imagine if all the supply chain and clinical data associated with implant surgeries performed at your hospital—including the type and cost of implants, as well as patient demographics, existing comorbidities and any surgical complications—was easily accessible. With all that data in a consistent and usable format, supply chain leadership, physicians and hospital administrators could formulate strategies to implement best practices that span the entire spectrum of patient care.

2 **Ensure data quality.** If facilities want physicians and other leaders to rely on the available data for strategic decision-making, they must ensure that it's reliable.

"If people aren't able to trust the data, they won't use it," Hickey says. "There must be an ongoing effort to ensure data integrity. Subject matter experts must be constantly

Continued on page 46

> "LEVERAGING NEW DATA SOURCES CAN SUBSTANTIALLY ENHANCE MEDICAL RESEARCH, IMPROVE CLINICAL AND FINANCIAL RISK PROJECTIONS, REVEAL OPPORTUNITIES TO BOOST OPERATIONAL EFFICIENCY, AND SUPPORT CLINICAL DECISIONS RELATED TO A PATIENT'S DISEASE STATE AND ACUITY LEVEL."
>
> **Ed Hickey**, assistant vice president of clinical data and analytics at HealthTrust



What Exactly Makes Up Big Data?

Big data was born from mandatory requirements reshaping healthcare, as well as the realization among forward-thinking leaders that discovering associations and understanding patterns and trends within data could improve care and reduce costs. But managing that data can be overwhelming, especially considering the volume and diversity of data types, as outlined in the 2014 article, "Big Data and Analytics in Healthcare: Promise and Potential" published in the *Health Information Science and Systems* journal. Though it is rare for a health system's data or IT managers to collect all of the following, here are some of big data's sources:

- Clinical data from computerized physician order entry and clinical decision support systems, such as physician's notes and prescriptions, medical imaging, laboratory, pharmacy, insurance, and other administrative data
- Patient data in electronic medical records
- Machine-generated or sensor data, such as from monitoring vital signs
- Social media posts, including Facebook and Twitter feeds, blogs and web pages
- Emergency care data, newsfeeds and articles in medical journals

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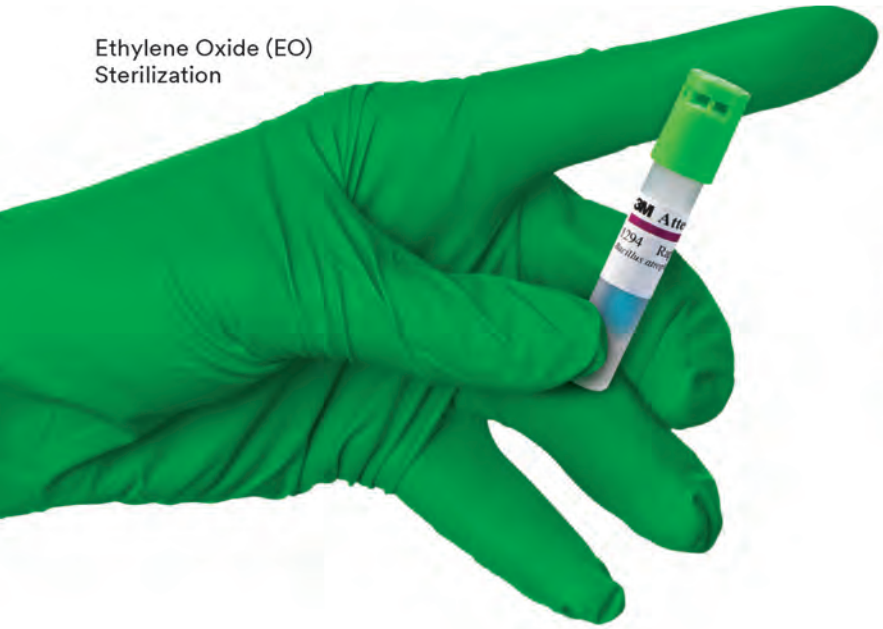

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Continued from page 44

looking to see if the data is doing what it needs to do and watching variations to see if they are appropriate."

Consistency is one of the greatest challenges of managing master data—and inconsistent data may be construed as unreliable. This is especially true in the supply chain because data is harvested in different ways and managed in multiple systems—sometimes inconsistently by different teams, says **Dona Kambeyanda**, assistant vice president of business solutions at HealthTrust.

Supply chain master files containing duplicate records, inconsistent descriptions and/or missing and inaccurate records have far-reaching consequences, as **Patricia Corazao**, Ph.D., HealthTrust manager of business solutions, explains. "Purchase orders and pricing may not be consistent, and duplicated records can interfere with the quality of reporting and procurement," she says. "Partial records can also waste personnel's time, particularly when they check into their system to look up or order an item and nothing is complete or consolidated.

"Inaccurate and incomplete records in the master files will have an adverse impact on downstream systems, such as purchase order item pricing discrepancies, poor analytics, clinical errors and inaccurate patient billing," Corazao continues.

To help clients maintain data integrity in their item and vendor master files, Kambeyanda's team has been providing item and vendor master data services. The service provides a cleansed file to the client that includes identifying duplicate or incomplete records, as well as identifying discontinued items and conversion to contract opportunities. HealthTrust can also augment an item master with over 12 attributes, one of which is a unique identification number (UIN). The UIN provides the key to HealthTrust daily data downloads containing contract pricing updates. By incorporating the UIN with the item master, members are able to proactively deter purchase order pricing errors.

"The integration of item data can help members in decision support and expediting large IT consolidation projects," Kambeyanda says. "And standardizing item descriptions can improve purchasing functions so that staffers can order the right items from the right suppliers and at the right price."

3 Expand your data team. Managing and reorganizing data was once considered the responsibility of the IT staff, but today's challenging healthcare environment requires a more collaborative approach. Rather than waiting for IT to produce reports to be reviewed and analyzed by decision-makers, increasing numbers of healthcare facilities are discovering ways to make data discovery and utilization available for employees on a self-service basis.

For instance, Providence Health, a not-for-profit health system in the Pacific Northwest, built Vantage, an enterprise-wide operational analytics platform. Within the first year of use, the platform grew to 24,000 users, including clinicians and patients. The tool draws from hospital system data to offer users the opportunity to access 40 different interactive, visual reports that are standardized across financial, operational, supply chain and clinical functions. Not only can physicians access the reports to see which patients need a colorectal screening, for instance, but patients can also proactively view their own health reports to see what preventive screenings are recommended for them. After the first year, the health system saw more than 100 percent improvement in cancer screening metrics. **S**

For more information on how HealthTrust can help you leverage your data, contact dona.kambeyanda@healthtrustpg.com.

EHR Adoption Drives Data Management

By 2020, 95 percent of providers are expected to have adopted electronic health record (EHR) technology, resulting in a 48 percent increase in the amount of data collected annually.

"As additional workflows and processes are computerized, the power of healthcare improvement resides in the collected data," says **Phil Sobol**, vice president at Parallon Technology Solutions. "The starting point for this data is in clinicians utilizing EHR systems. This new data will be used to engage with patients in real time, drive better outcomes for them and hopefully bring down the cost of care."

By accessing the wealth of information available in the EHR, the care team can make more precise diagnoses and treatment regimens and better understand the patient's acuity—which impacts staffing needs and helps determine appropriate patient discharge plans—to influence and minimize readmission rates, says **Charles Bell**, D.O., chief medical officer at Parallon Technology Solutions.

To improve data management processes so that staff can make decisions about patient care, staffing needs and potential savings, Bell and Sobol suggest these best practices:

1. Standardize. Providers need to use standard documentation templates as well as structured problem lists.

2. Reconcile. To generate appropriate data that can be used in encounters with different providers, medication and problem lists must be reconciled.

3. Document consistently. Everyone on the care team needs to document appropriately in the EHR so as to generate discrete data that can be mined by the system. (Discrete data is information that can be categorized into a classification. It is based on counts, and only a finite number of values is possible.) Consistently capturing data in a standard way makes it relevant for decision-making.

4. Keep moving forward. Data management is not a one-time project. It requires governance and the adoption of standards and best practices to ensure information remains standardized and, therefore, meaningful.

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PAST THE TIPPING POINT

HOW RAPID ADVANCEMENTS IN TELEHEALTH ARE TRANSFORMING THE DELIVERY OF CARE

When a stroke occurs, minutes matter. At Cypress Fairbanks Medical Center, located in a northwest suburb of Houston, Texas, the need for faster stroke care used to mean transferring patients to larger facilities that have more advanced equipment and around-the-clock specialist coverage. But for the past 10 years, many stroke patients have stayed put thanks to a telehealth platform that allows the suburban hospital to provide 24/7 emergency stroke care.

When a patient presents with stroke symptoms, whether in the emergency department or elsewhere in the hospital, the attending physician initiates a consult with the telemedicine platform. Within minutes, one of the hospital's three mobile telehealth carts is rolled into the patient's room and a board-certified, fellowship-trained neurologist conducts a virtual consultation. "The element of time is a crucial aspect in the assessment and care of stroke patients," says **Doreen Gonzales**, MSN, RN-BC, manager of the offsite emergency departments at Cypress Fairbanks Medical Center. "Telehealth provides the accessibility that plays a major role in preventing further brain damage and improving the quality of life."

Studies show that the use of telestroke technology, particularly to reach patients in underserved areas, improves care and leads to similar outcomes as if the stroke specialist was physically in the same room as the patient.

A 2013 Thomas Jefferson University Hospital study of its telestroke program, which it uses at 28 community hospitals in the Philadelphia, Pennsylvania, region, found multiple improvements at the end of the 18-month study period. Eighty percent of the hospitals participating reported an increase in the use of the drug tPA for acute ischemic stroke—the mean increase was 55 percent. And, the percentage of patients transferred from community hospitals to specialized stroke centers dropped, from 44 percent to 19 percent.

The Advisory Board defines telehealth—aka telemedicine—as the "interactive, electronic exchange of information for the purpose of diagnosis, intervention or ongoing care management between a patient and/or healthcare providers situated remotely."

In general, there are three modes of telehealth delivery:

> **Real-time (synchronous),** using audiovisual telecommunication technologies to enable virtual consultations

ISTOCK

B BUSCO, GETTY IMAGES

THE LATEST IN TELEHEALTH RESEARCH

The Center for Connected Health Policy maintains research catalogues, updated annually, which give brief insights from the latest peer-reviewed, published studies related to telehealth. Categories include patient satisfaction, cost effectiveness, telestroke, teledermatology and remote patient monitoring. Access these guides at www.cchpca.org/research-catalogues.

> **Store and forward** (asynchronous), when data such as X-rays are digitally captured and transmitted for evaluation by other providers

> **Remote patient monitoring** (synchronous or asynchronous), employing connected devices to collect and transmit personal health data from an individual in one location to a provider elsewhere

Based on the success of the telestroke program, Cypress Fairbanks Medical Center started using its telehealth platform for non-stroke neurology consultations in 2013. Soon it will be utilizing the platform to connect patients with pediatric and neonatal specialists.

"As the population of Houston continues to grow and migrate outward, technology's role in healthcare is going to become paramount," says **Naman Mahajan**, the hospital's chief operating officer. "Telehealth has the opportunity to provide community-based facilities like ours the needed care of medical subspecialists once accessible only to patients at academic medical centers."

Other telehealth program goals include improving patient convenience, increasing patient engagement and satisfaction, enhancing patient outcomes and reducing their out-of-pocket costs. Employers are likewise utilizing telehealth as a way to curb the cost of healthcare and employee absenteeism.

BALANCING HIGH-TECH AND HUMAN TOUCH IN TELEHEALTH

WITH INCREASING FREQUENCY, people want to maintain personalized experiences with their healthcare providers, while simultaneously taking advantage of advances in telehealth. How can providers and hospitals strike the right balance between high-tech and human touch with telehealth solutions?

The key, says **Christopher Northam**, HCA's vice president of telehealth, is to not view telehealth as a tech solution, but rather as a clinical one. The technology serves as an enabler, allowing providers to deliver care at the same standard as an in-person encounter.

"At HCA, we have embraced telehealth as an integrated clinical capability, which allows our providers to deliver the right clinical expertise to patients regardless of where they happen to be, in a timely manner," he says. "By using technology in the most effective and clinically appropriate ways, our telehealth programs serve an ever-increasing role in our enterprise-wide pursuit to continuously improve patient care."

The top four telehealth concerns in The Advisory Board's 2014 Market Innovation Center Consumer Choice Survey had to do with quality, efficacy and security: Will this work? Is it secure? Will it be a good experience?

In other words, consumers want their healthcare to be delivered without a hitch—whether in-person or virtually. It's one of the reasons Cypress Fairbanks Medical Center in Houston has opted to hardwire its telestroke platform, even though it was developed as a wireless system.

"In the event of a weak connection or a distortion of an audio and/or visual feed, it is possible that the telehealth physician will not be able to provide the most accurate diagnosis for the patient," says **Naman Mahajan**, COO at Cypress Fairbanks Medical Center. "This affects the delivery of good patient care."

When selecting a patient-facing telehealth service, look for these features to create a more personal, albeit virtual, connection with patients: multiple access points, including mobile and web; simple user interface; picture or video upload capabilities; and access to customer service personnel for assistance and troubleshooting.

"It comes down to our patients understanding that whether the provider is physically or virtually at the bedside," Northam says, "he or she is able to make the most educated, patient-specific decisions regarding their treatment." ●

In June 2016, the Agency for Healthcare Research and Quality (AHRQ) published a telehealth evidence map, drawn from 58 systematic telehealth reviews, and found that a large volume of research supports the use of telehealth for remote patient monitoring, communication and counseling for patients with chronic conditions, as well as psychotherapy as part of behavioral health. Many studies have found that these telehealth applications improve outcomes—including mortality, quality of life and hospital admission rates.

Evidence supporting other applications for telehealth is less extensive. In its report, AHRQ warned that more studies are needed to support the use of telehealth for consultations and applications in pediatrics, prenatal care, the intensive care unit and dermatology. It also concluded that more original research is needed to understand the cost implications of telehealth under value-based payment models.

This lack of conclusive evidence isn't stopping healthcare organizations from adopting telehealth in new and innovative ways. In the 2017 U.S. Telemedicine Benchmark Survey by Reach Health, a telehealth software company, slightly more than half of the 436 hospital and IDN respondents named telehealth as a high, if not top, priority.

> "WE HAVE SEEN SIGNIFICANT IMPROVEMENTS [IN TELEHEALTH PARITY] ... STATE LEGISLATORS AND REGULATORY BODIES CONTINUE TO MAKE MEANINGFUL PROGRESS IN THEIR EFFORTS TO ALIGN AND MEET PATIENTS' NEEDS."
>
> — **Christopher Northam**, VP of telehealth, HCA

A SEAMLESS PATIENT EXPERIENCE

In 2015, Mercy in Chesterfield, Missouri, opened its Virtual Care Center. The 125,000-square foot, four-story building houses Mercy Virtual, the command center of the health system's telehealth operations that include the nation's largest electronic ICU, a telestroke program, virtual hospitalists and continuous remote patient care of between 3,500 to 5,000 inpatients, while annually providing virtual care to more than 300,000 outpatients. Dubbed "the hospital without beds," Mercy Virtual boasts more than 650 full-time employees, but no patient has ever received care within its walls.

Randy Moore, M.D., president of Mercy Virtual, says there's a clear benefit to centralizing telehealth operations into one command center, even across service lines.

"The primary value of the central group is to combine the ability to integrate the entire continuum of care, utilizing disruptive innovation to progressively transform our model to support a seamless, frictionless patient experience," he says.

Demand for Mercy Virtual's services is expected to grow exponentially, with its workforce expanding to a projected 2,000 employees over the next four to five years.

A 2016 survey by Avizia, another telehealth provider, and *Modern Healthcare* found that 63 percent of providers use telehealth in some form. Hospitals and health systems lead the pack (72 percent), followed by physician groups and clinics (52 percent) and other organizations, such as ambulatory centers and long-term care facilities (36 percent). The most common service lines using telehealth are stroke (44 percent), behavioral health (39 percent) and primary care (22 percent). Additionally, the survey found that 95 percent of healthcare organizations engaged in telehealth have a full-time program director or manager dedicated to the effort.

FINE-TUNING THE SERVICE

HCA has been utilizing telehealth in earnest for more than a decade. The organization has a physical presence in 20 states, but

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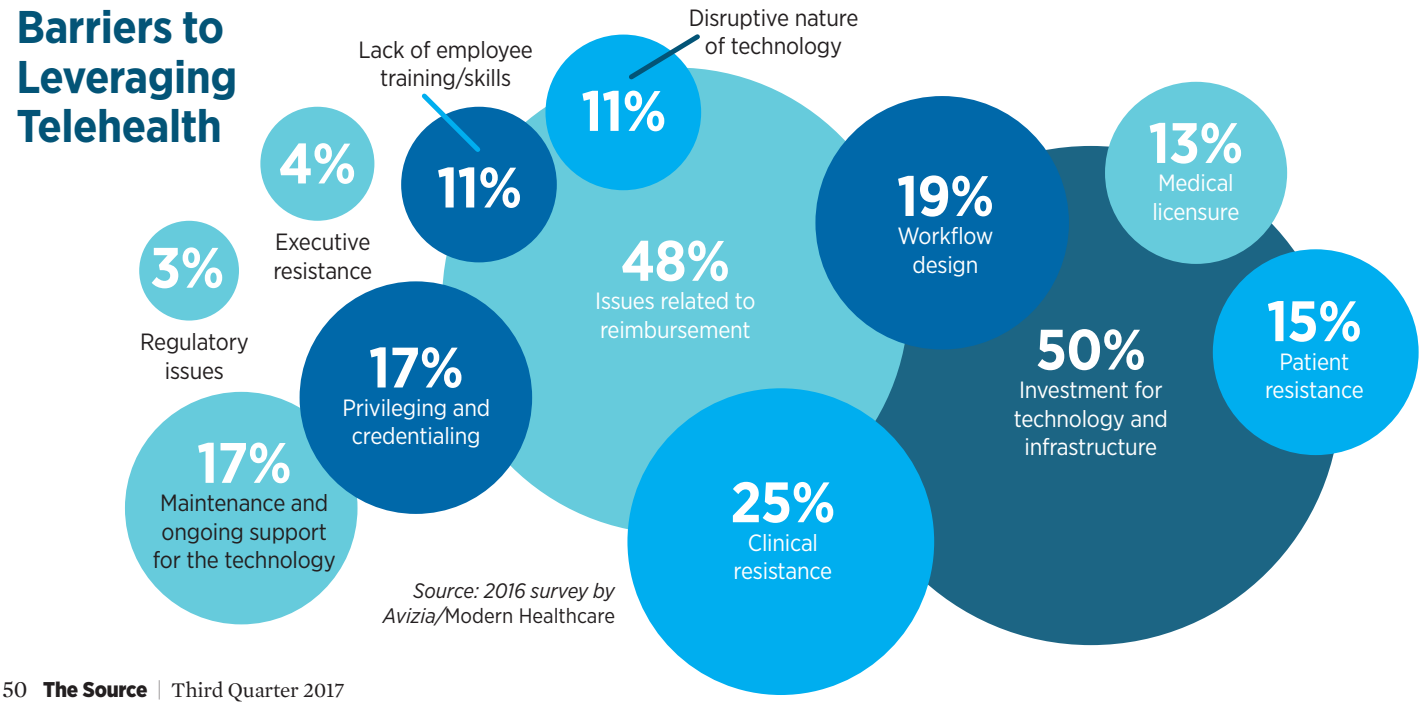

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PAST THE TIPPING POINT

Continued from page 50

through its telehealth offerings, it reaches patients in nearly 300 sites across 30 states.

Over the past 24 months, HCA's telehealth operations have grown by nearly 90 percent. Telehealth became an enterprise service line within HCA three years ago, which allowed HCA to begin truly scaling and integrating on a national level.

"In order for HCA to develop a national strategy, our telehealth programs across the enterprise had to reach a tipping point of volume and integration into their clinical workflows," says **Christopher Northam**, vice president of telehealth for HCA. "Over the past couple of years, we have standardized our telehealth operations to include most aspects of clinical and technical education and support across the company."

The cornerstones of HCA's telehealth offerings are teleneurology and telebehavioral health. "Telehealth allows us to provide high-quality, timely access to our patients wherever they may be," Northam says.

The organization also offers emergent and non-emergent telehealth services in multiple other service areas, including pediatrics and critical care. "We continue to develop our multi-year service expansion strategy, which includes remote monitoring of discharged patients as they return home or to skilled nursing facilities. We see this as a critical step in our evolution of patient care aided by the use of telehealth," Northam says.

"We'll be providing our patients with ongoing personalized support so they can get back to their daily routine while more effectively staying in contact with their care team to ensure the best possible outcomes," he continues.

A 20-year telehealth veteran, Northam cautions against viewing telehealth as a panacea. "For each service offering, we first must determine if telehealth can effectively meet four requirements for our patient populations—improve quality, increase access, optimize coverage and control costs—for our patient populations," he says.

Continued on page 54

STEVE DEBENPORT, GETTY IMAGES

ANYTIME, ANYWHERE

BY UTILIZING TELEHEALTH technology, KentuckyOne Health is making care more convenient and accessible for patients—where and when they need it.

In 2013, Louisville, Kentucky-based KentuckyOne, part of Catholic Health Initiatives, became one of the first health systems in the country to launch a virtual 24/7 urgent care service. For the past four years, Anywhere Care has used the Carena telehealth platform to connect patients located anywhere in the state of Kentucky with board-certified physicians and nurse practitioners who can diagnose and treat a variety of common conditions, such as colds, flu, rashes and bladder infections. Patients can access the service via the web or a smartphone app, and each visit costs just $35, whether or not the patient has insurance.

Since launch, KentuckyOne has provided 1,231 virtual urgent care visits. The current monthly volume is around 130 such visits. The majority of them still occur by phone—patients register on the platform and a provider calls them back—but every month video visits are increasing as a total percentage of visits, says **Kathy Love**, division director of strategy and business development for KentuckyOne.

Meanwhile, average patient wait time for the virtual urgent care service is 11 minutes, with 95 percent of visits occurring within 30 minutes. Usage by females is double that of males.

One of the goals of the service is to capture a population of people who don't have a primary care provider (PCP), which now represent more than half of Anywhere Care users.

"After the virtual visit, we give these patients a path to follow to create a relationship with a PCP at KentuckyOne," Love says. "We always provide them with referrals, and if follow-up is required, we try to make sure they have the opportunity to do that with a KentuckyOne provider in their community."

There were some challenges getting buy-in from patients who already had a PCP.

"We found that those people were actually more hesitant to use the service," Love says. "We struggled with how to make it an extension of their PCP's office. Now many practices utilize Anywhere Care as an after-hours call service, offering better coordination between offices and virtual care."

The virtual care service isn't KentuckyOne's only foray into telehealth. The service line also includes provider-to-provider connection for telestroke assessment, emergency department-based psychiatric assessments, and genetic counseling and prenatal care for high-risk pregnancies.

KentuckyOne recently received a grant to launch a scheduling and documentation platform for telehealth visits. Patients can schedule time with a certain provider, and the platform, which is integrated with the health system's electronic health record, manages the video feed and documentation of the visit.

Up next is incorporating telehealth in its bundled payment strategy.

"Rolling out Anywhere Care helped us cut our teeth on providing telehealth services," Love says. "We've built the expertise and infrastructure and know how to handle the physical connection and documentation of the visit. Now we plan to apply what we know to more complex situations, like connecting our specialty providers to patients we are managing in bundles. We think we can interact with these patients more efficiently, effectively and frequently through telehealth than having them come in for traditional in-person visits." ●

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Continued from page 52

Last year, HCA linked its telehealth operations and electronic health records system, enabling the enterprise to not only improve the continuity of care, but also study telehealth encounters to ensure they continue to meet the high bar of clinical quality.

CHALLENGES WITH TELEHEALTH ADOPTION

The usual challenges and barriers of any new hospital initiative apply to telehealth adoption. According to the Avizia/*Modern Healthcare* survey, some of the biggest obstacles include investment and technology infrastructure (50 percent), clinical resistance (25 percent) and even patient resistance (15 percent). (*See graphic on page 50.*)

Reimbursement challenges and regulatory burdens have also been identified as major barriers, particularly those with facilities in multiple states. The Affordable Care Act extended some telehealth services to Medicare beneficiaries, but Medicaid and private-payer telehealth parity rules are administered by state governments, which hold conflicting views on the value of telehealth.

From a telehealth reimbursement and licensing requirement standpoint, advances are happening more frequently. For the latest updates, check: www.cchpca.org/state-laws-and-reimbursement-policies.

"We have seen significant improvements over the past two to three years," Northam says. "State legislators and regulatory bodies continue to make meaningful progress in their efforts to align and meet patients' needs, thereby making telehealth easier to integrate in our overall healthcare delivery."

THE FUTURE OF TELEHEALTH

These improvements are just in time for the next frontier of telehealth, which may include telesurgery—surgery performed by a physician considerably distant from the patient using sophisticated medical robotics and multimedia image communication. Researchers at Florida Hospital's Nicholson Center in Celebration, Florida, have been testing the viability of telesurgery and have concluded that it is technically possible in the United States now that higher-speed network connections have helped resolve issues of time delay.

Led by **Roger Smith**, Ph.D., researchers at the Nicholson Center first determined the amount of latency surgeons could tolerate.

"We found that surgeons generally could not detect latency levels below 250 milliseconds," Smith explained in a 2016 interview with *Robotics Tomorrow*. "Above this level, they could feel or see the latency, but were able to successfully compensate for it up to about 400 or 500 milliseconds. Above 500 milliseconds, most surgeons could not adjust their behavior to complete the procedure successfully and safely."

In a second experiment, researchers measured the average latency level at various distances—within four hospital campuses in the Orlando metro area (5 milliseconds) and as far away as Fort Worth, Texas, and Denver, Colorado (30–150 milliseconds).

"When the iPhone was first introduced, we had no idea all the things we could use it for," Northam says, "and now, it's such an integral part of our daily lives. It's the same with telehealth. As it becomes more ubiquitous, people are finding new and effective ways to utilize it. Eventually, we believe the term 'telehealth' will fall away, and these practices will become a natural part of the care we deliver to our patients every day." **S**

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BRIDGE BUILDERS

HealthTrust cadaver labs cultivate understanding between physicians and supply chain leaders

Richard Yonker has never been to medical school, but for two days in April, he traded his suit and tie for a surgeon's gown and goggles. Yonker, the vice president of supply chain at Tenet Healthcare in Dallas, Texas, took a deep breath, and began sawing into the tibia of a human cadaver's leg.

With orthopedic surgeons as their guides, Yonker and about 20 other HealthTrust members were guided through the steps of surgical joint replacement on a cadaver. The doctors explained the saws, scalpels, mallets and other tools before handing them to the executives, helping them install knee and shoulder implants.

DERRICK TRIBBEY

HealthTrust's cadaver lab program provides an innovative way to bridge communication between supply chain executives and physicians. The immersive experience provides a rare opportunity for supply chain professionals to use surgical tools that are on contract or might be added to the portfolio in the future.

"It's like walking a mile in somebody else's shoes," Yonker says. "I got to take a peek into that world, and it was fascinating. It has added to my appreciation for what surgeons deal with every day and how they use these tools. They are true craftsmen."

Last year, HealthTrust sponsored its first cadaver lab in Chicago when Yonker and other supply chain executives had the opportunity to "perform" components of spine surgery under the guidance of practicing neurosurgeons who are part of HealthTrust's Physician Advisors Program. "I learned just how much strength and precision these surgeries require," Yonker says.

LEARNING THE NUANCES

HealthTrust's second cadaver lab was held in April at the American Academy of Orthopedic Surgeons Learning Center in a Chicago suburb. Orthopedic surgeons walked attendees through a conventional shoulder replacement, a reverse shoulder replacement, a total knee replacement and an anterior cruciate ligament reconstruction. The surgeons also gave presentations to the executives on their respective specialties and opened up the floor for discussion.


Michael Schlosser, M.D.

Michael Schlosser, M.D., chief medical officer of HealthTrust, began the cadaver lab program to assist supply chain executives in making more informed decisions on clinically sensitive products. The focus of this year's session was based on feedback from attendees of the first cadaver lab, and reflects the growth in knee and shoulder procedures among baby boomers, including the shift toward value-based models to pay for them.

"The lab gave executives a deeper understanding of how implants are used and the nuances between different systems that drive physician preference," Schlosser says.

The program helps alleviate some of the natural tension between supply chain executives, who manage costs and push for standardized equipment, and physicians, who often have strong preferences for a particular brand or model.

For Yonker, the cadaver lab experience has deepened his appreciation not only for the skill of surgeons, but also what makes them partial to one alternative over another. "I have to put myself in their place," he says, "even when it comes to an item such as a surgical gown. Is it hot? Does it breathe enough? You want physicians to be comfortable in the operating room, surrounded by the equipment they need and staff they fully trust."

Yonker adds, "I have come to appreciate just how mentally and physically taxing their job must be every single day."

SEEING A BIGGER PICTURE

Attendees agreed that the featured orthopedic procedures were more complex than they imagined and gave them insights into the rigors of a surgeon's job.


Bob Beyer

Bob Beyer, vice president of supply chain services at Hospital Sisters Health System in Springfield, Illinois, wasn't sure he could afford to take a few days out of his busy schedule to attend the cadaver lab. But after trying his own hand at mock surgery, "I was thrilled that I went," he says.

As with Yonker, the hands-on training helped him understand why physicians favor certain products. "We sometimes don't see the whole picture," Beyer says. Surgeons explained that in most cases expensive biologics are not needed, but when they are using implants or products they are not familiar with, they often use them as recommended by the supplier.

He also discovered why physicians might resist standardization efforts. The surgeon who walked him through a shoulder replacement noted that the procedure was taking longer than normal because he was not accustomed to the particular brand of implant he was using.

The experience opened Beyer's eyes to the difficulty surgeons have converting to a new implant. It's analogous to driving the same car every day and then suddenly switching to a new one, he says. "You can still drive, but you don't know where the windshield wipers are or how the brakes will handle. It messes with you a little bit."

Beyer says stepping into an operating room simulation also provided him with greater insight into when a physician-preferred item is critical versus nice to have.


William Kellar

William Kellar, HCA's TriStar Division supply chain chief executive officer, expects his participation in the cadaver lab will lead to better communication with physicians. "I think it sends a strong message to surgeons that I am willing to learn more about their world and what they go through," he says. "I'm not just sitting behind a desk or moving boxes from point A to point B. I have to manage inventory, but also consider the clinical agenda."

Gregory Brown, M.D., HealthTrust's orthopedic service line medical director, worked as one of the surgical instructors at the cadaver lab. He says enhanced communication can lead to improved patient safety.


Gregory Brown, M.D.

"The more educated someone's team is and the better they understand each other, the better the communication will be," Brown says. "Anything you can do to avoid miscommunication is going to pay off somewhere down the road, reducing the risk of adverse events."

The price of an implant can't be the only consideration, Brown says. The higher cost of a particular product may be offset in the long run by the manufacturer's support when it comes to set-up in the operating room.

FOSTERING A GIVE-AND-TAKE ATMOSPHERE

While physicians shared their perspective with hospital executives during "surgery," supply chain leaders had plenty of opportunities to voice their needs outside of the OR simulation environment.

Schlosser says learning about the equipment in this firsthand way puts supply chain leaders on a more level playing field with physicians during product discussions. Doctors sometimes use medical jargon to "create a barrier" and take the upper hand.

"I think the participating executives have a newfound appreciation of the complexity of the equipment and the implants," Schlosser says. "They hopefully also won't feel as lost when physicians delve into clinical details about the demonstrated surgeries."

Familiarity with the equipment can also assist in negotiations with manufacturers, Yonker says. "Suppliers will sometimes say, 'How would you know this? You're a supply chain guy.' Participating in the cadaver labs has helped me to better understand things like bone cement and implant-related components. The more I can 'talk' their lingo, the more it helps tilt the balance in my favor."

> "The more educated someone's team is and the better they understand each other, the better the communication will be. Anything you can do to avoid miscommunication is going to pay off somewhere down the road and potentially lead to safer outcomes."
>
> **Gregory Brown**, M.D., HealthTrust's orthopedic service line medical director

The back-and-forth dialogue between supply chain leaders and surgeons further shed light on how the two parties might collaborate to reduce health system costs.

"We often feel like physicians are resistant to change," Beyer says. "That's not necessarily true."

In the seminar and discussion part of the meeting, Beyer learned that some surgeons would help the hospital more willingly in exchange for having more experienced nurses and surgical teams.

Yonker, a two-time lab attendee, plans to be back in scrubs at future HealthTrust cadaver labs. "I am a huge advocate of this program," he says. "I'd encourage any supply chain executive to attend."

In fact, all three of the supply chain leaders interviewed say they would highly recommend this type of learning to their peers. ●

Orthopedic surgeons walked cadaver lab attendees through a conventional shoulder replacement, a reverse shoulder replacement, a total knee replacement and an anterior cruciate ligament reconstruction.

PHYSICIAN Q&A: *Gregory A. Brown, M.D., Ph.D.*

Solving Problems With Strategic Data Analysis

Gregory A. Brown, M.D., Ph.D., talks about the power of data analysis to detect problems and practice variances in orthopedics, and its potential to develop and test solutions that will improve patient outcomes.

What initially sparked your interest in orthopedics?

After taking a biomedical engineering course my senior year at Iowa State, I realized just how interesting a machine the body is. When I went to graduate school in engineering at MIT, I chose to write my doctoral thesis on knee biomechanics. That prompted my desire to attend Harvard Medical School and become an orthopedic surgeon.

The first seven years of my practice, I was a faculty member at the University of Minnesota, but all of my clinical duties were at a Level 1 trauma center in St. Paul, Minnesota. I was principally the shoulder surgeon at the hospital, but they didn't have anyone doing hip and knee replacements, so I started doing those, too.

During that same period, I also provided orthopedic care in a small town in west-central Minnesota called Willmar. It was a nice community to start my medical practice because a lot of people needed care, and there weren't a lot of orthopedic surgeons around. I got a lot more experience there than I ever would have in a metropolitan hospital.

How did you expand beyond performing joint replacement surgeries to spearheading quality improvement projects focused on improving outcomes of those procedures?

When I moved to Park Nicollet Health Services, they had 20 physicians performing elective surgery, but none focused on orthopedic trauma. So I shifted the majority of my practice to trauma and joint replacements.

I also got involved with the organization's Toyota Lean quality improvement training. After that, I completed the Advanced Training Program for quality improvement in healthcare at Intermountain Healthcare in Salt Lake City. That 20-day course helped me as Park Nicollet's associate chief of surgery for outcomes. I worked with all the surgical subspecialties on projects focused largely on patient-reported outcomes.

What about these projects do you enjoy the most?

Even back in graduate school, I was happy to trade my engineering equations for biostatistics equations because I love the analysis. I enjoy analyzing data sets, finding problems and then developing solutions to improve outcomes for patients. There might be a complication we need to remedy, or a decision we need to make about which treatment to give a particular patient. Our efforts all rely on data and evidence-based medicine.

I love getting a group of surgeons together to develop a protocol, then review the impact on their outcomes. The fact that I'm also a surgeon gives me the credibility to foster that kind of collaboration.

In the future, I would like to combine evidence-based medicine with clinical data analytics from HealthTrust's hospitals to develop best practices for joint replacements, anterior cruciate ligament reconstructions, shoulder rotator cuff repair surgery, hip fracture treatment and other areas of orthopedics.

Data can certainly help you develop best practices and test protocols, but what are some of the common frustration points with the data analysis process?

In most healthcare environments, the data is real-world, which means some is missing and some is inaccurate. When you pull reports out of an electronic health record (EHR) or a data warehouse, you have to clean the data.

I experienced this firsthand in my quality improvement work at Intermountain Healthcare. I examined blood clot prevention—a project that won an award from the Orthopaedic Research and Education Foundation. When billing coders saw a patient was tested for a blood clot, they would code it as a blood clot, even if one wasn't found because the facility expended the same amount of resources either way.

To calculate how many people actually tested positive for a blood clot, my assistant and I had to manually look through 1,800 charts. We verified all the true and false positives and negatives to make sure the data was correct. I learned the hardest part is getting a data set to the point where

Gregory A. Brown, M.D., Ph.D., is the physician champion for bundled payments for Catholic Health Initiatives (CHI) Franciscan Health. He is a board-certified orthopedic surgeon specializing in knee joint reconstruction and sports medicine at St. Joseph Medical Center in Tacoma, Washington. Brown has conducted research on hip and knee replacements, winning awards from the American Association of Hip and Knee Surgeons in 2008 and the Orthopaedic Research and Education Foundation/Current Concepts in Joint Replacement in 2014. He is the former associate chief of surgery for outcomes for Park Nicollet Health Services in St. Louis Park, Minnesota. Brown assists HealthTrust in designing the clinical strategy, developing the clinical content and leading physician engagement efforts for the orthopedic service line.

you can believe the numbers enough to analyze it.

What are some of your ideas on shaping an organization's clinical strategy and making systematic improvements?

One of the best ways to move forward in medicine is to develop a protocol and have a group of physicians follow it. If you have 20 surgeons doing 20 different things, it's unlikely you're ever going to find or fix a problem. But if we are all following the same steps, then we can see what's working and what's not. Then we can modify the protocol to take into account what we've learned, and move forward with the updated guidelines. If and when we find another problem, we'd revise it again.

It's an ongoing, iterative process called PDCA, which stands for plan-do-check-act. PDCA is a repetitive, four-stage model for continuous improvement used in business process management. It was popularized by Dr. W. Edwards Deming, an American engineer, statistician and management consultant. He's often considered the father of modern quality control. With this process, you plan what you're going to do before you do it, and then check and act on the data. The model can be implemented in the supply chain industry to improve the quality and effectiveness of any process.

Are there aspects of medicine that can sometimes make it hard to follow the PDCA process?

Clinical practice doesn't offer the benefit of a laboratory setting where you can control all the variables except one to see how that affects the outcome. With a group of patients who get knee replacements, some of them have diabetes, some smoke, some have heart trouble, some have all of the above. You might see a problem but not know the cause. You try to find the causal link so you can figure out what to improve and trigger a better outcome.

In medicine, we rely on randomized controlled trials. To find out if one treatment is better than another, we randomly assign people to one of two treatment groups. In that way, variables we can't control for—such as diabetes, heart disease, weight and gender—get equally distributed in both groups. That should effectively negate whatever affect those factors could have on patient outcomes.

After analyzing thousands of patient-reported outcomes, what have you found patients care about the most?

The healthcare community uses the term "outcome" loosely; we don't really have a good definition. Insurance companies tend to focus on how much a procedure is costing them to treat. They don't look at data for the same reasons physicians do.

In 2009, I started a company that collects and analyzes patient questionnaires. After undergoing a joint replacement procedure, patients record their joint function, activity level and health-related quality of life. Those are the outcomes that matter most to them.

Can you give an example of a process you have helped change as a result of data analysis?

For a few decades the American College of Chest Physicians (ACCP) has issued a series of guidelines for blood clot prevention, which has been a controversial topic within the orthopedics field. ACCP recommends the injectable drug Lovenox and the pill Warfarin, but not aspirin, which is what a lot of orthopedic surgeons use. The government implemented these guidelines as part of the Surgical Care Improvement Project, or SCIP, and started dinging the quality score of physicians who prescribed aspirin.

I know that ACCP-affiliated internists are concerned about blood clots traveling to patients' lungs, which makes sense. However, because they don't handle surgeries, they're less concerned than orthopedic surgeons about surgical incisions bleeding and causing wound problems.

So while at Intermountain Healthcare, I chose to test a venus thromboembolism prophylaxis protocol. In layman's terms: analyze the use of aspirin vs. the other ACCP-recommended drugs. I first did a meta-analysis that showed the studies cited by the ACCP guidelines didn't support its recommendations. In fact, it showed that the bleeding rates for Warfarin and Lovenox were four to six times that of aspirin, and aspirin didn't have a higher rate of blood clots moving to the lungs. In other words, we proved the ACCP guidelines were potentially doing more harm than good.

Based on an analysis of 1,800 hip and knee replacements at Park Nicollet from 2005–2007, readmission and re-operation rates for patients given Warfarin or Lovenox were three times higher than in patients who were given aspirin.

The economics of healthcare is such that big pharmaceutical companies have the capital to run a number of randomized, controlled studies showing one drug is better than all of these other drugs. Because no one owns the patent on aspirin, there is no benefit seen in testing it.

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What were the results of testing the protocol? What did you learn from this experience?

After discussing the risk factors with my 20 partners at Park Nicollet, we tested the protocol for three years. Because of Lovenox's cost—$1,000 for a week of injections—we eliminated it from use and concentrated on aspirin, an inexpensive treatment, and Warfarin, a Medicare-reimbursable therapy.

At one year, we had 91 percent surgeon compliance with the protocol. The second year, we had 92 percent compliance, and after the third year, we were at 94 percent compliance. In terms of patient outcomes, we reduced blood clots by 50 percent while lowering readmissions by 65 percent at the end of three years compared to the year prior to starting the protocol. It was a win-win.

The process taught me to look at data with eyes wide open. It put me on a crusade to expose the ways data can be hidden so that the whole truth isn't reported.

What are some of your goals as HealthTrust's orthopedic service line medical director?

My goal in this role is to help hospitals improve clinical outcomes, and do so at a lower cost. This can be accomplished, in part, by fostering collaboration between supply chain executives and surgeons within HealthTrust member facilities.

To that end, I've been a part of HealthTrust's orthopedic education series designed to show supply chain executives how the most common orthopedic surgeries are performed. Most recently, I joined orthopedic surgeons and fellow HealthTrust physician advisors **Craig Morrison**, M.D., **Daniel Moynihan**, M.D. and **Matthew Willis**, M.D., in guiding supply chain executives through a hands-on experience in an orthopedic cadaver lab. Participants learned about the role of technology and implants as well as some of the sources of variation. (*See page 58 for more details on the latest cadaver lab.*)

I'm also interested in talking more about evidence-based demand matching with the HealthTrust membership. Manufacturers make claims about their devices and implants that aren't always backed up with a lot of evidence. What we're doing with demand matching is evaluating the evidence and outcomes for implants based on the demographic characteristics of patients. Patients who are 75 years old and need a new hip don't require the latest and greatest implant designed for athletes. An older, reliable and less expensive model will get them back on their feet. ●

***Gregory Brown**, M.D., Ph.D., and HealthTrust's **Todd DeVree** will be presenting "Joint Replacement Bundled Payments Toolkit: Evidence-based Demand Matching" at the 2017 HealthTrust University Conference in Las Vegas, Nevada. Visit the Trending Topics section of the HealthTrust public website to view Brown, DeVree and co-authors' recent blog post: "Demand-matching Orthopedic Implants to Patients: Opportunities and Obstacles."*

Healthcare in an Online World

5 Best Practices for Reputation Management

There's a widely known saying in the business world: A reputation can take decades to build and only minutes to destroy. As the healthcare industry continues to be more and more consumer-driven, the same could be said about the reputation of hospitals and health systems. With the massive adoption of social media platforms, blogs and physician review websites, and the rise of always-on communication, it doesn't take long for news—both good and bad—to spread.

"We live in an instant, online world," explains **David Osborn**, senior vice president of inSight Advisory Solutions at HealthTrust. "Patients can share their perceptions, observations and opinions about a hospital before they even get home."

These reviews can make or break an organization's online reputation. Internet review sites, such as Yelp, Healthgrades and Angie's List, are growing in popularity, with current and potential patients using them to evaluate physicians, medical practices and hospitals. A Gartner affiliate recently found that 84 percent of patients use online surveys to evaluate physicians, and 77 percent of those patients go to online reviews first when looking for a new healthcare provider.

"What people read or hear about your facility, whether it is positive or negative, will greatly influence their decision," says **Aileen Katcher**, owner of Katcher Strategic Communications in Nashville, Tennessee.

HOLISTIC VIEW OF THE PATIENT EXPERIENCE

The experience providers create for patients is more important than anything else, Osborn says, and making it positive starts with a healthcare system providing superior care. Patient satisfaction surveys repeatedly show that the attitudes and manners of healthcare employees, plus the amenities provided at the hospital, are just as important as the actual medical care they receive.

"It's easy for providers to get defensive when patients say something online about their parking troubles when the surgeon just did a great job repairing their hip," Osborn says. "But they need to remember the patient experience involves more than the clinical outcome achieved."

Hospitals that provide an excellent patient experience across the board—from the food they serve patients to the temperature they keep waiting areas and the type of lighting they use in hallways—will help to build a positive reputation. They are likely to be spoken highly of by patients and family members.

MANAGING YOUR ONLINE REPUTATION

Consumers regularly use the internet and social media sites to research their health conditions, symptoms and medications, as well as medical practices and healthcare facilities. That's why it's important to maintain a strong online presence and positive reputation. Osborn and Katcher advise hospital leaders to heed these five rules for online reputation management:

1 Tell your story. Hospitals obviously play a significant role in the communities they serve, and their employees consistently go above and beyond what is required to provide better health outcomes for the people who walk through the doors. Share those stories online, Osborn advises. Tweet when a physician or nurse wins an award, or simply share the interesting and positive things happening inside your walls.

"People want to see patient and hospital employee success stories, new technologies or exciting news about your facility," Katcher says.

For example, in early May 2017, Nashville, Tennessee-based HCA shared a video on Facebook thanking the 81,000 nurses in its health system during Nurse Appreciation Week. The video was shared by Facebook users 320 times and received more than 19,000 views, propelling HCA hospitals

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into the lives of potentially hundreds of thousands of people. It's the type of storytelling that instantly draws people in.

2 Remember the internet is forever. What goes on the internet stays on the internet. That's why it's important to keep tabs on everything said about you online, Katcher says. She recommends working with a brand management company such as Binary Fountain or Reputation.com to monitor what is said about your hospital and employees on social media and review websites. It's also helpful to set up Google Alerts for your hospital name and use a social media management tool such as Hootsuite Analytics or TweetDeck to measure the impact of your social channels.

Remember that most consumer rating websites will not remove reviews, even if the hospital is portrayed negatively. In some cases, when a review is defamatory or libelous, you'll succeed in getting it deleted—unfortunately, most likely only after it has already been seen by site visitors.

3 Always take action. A negative comment or review is inevitable. But it's possible to turn an unfavorable comment into a positive situation. A challenging or discouraging comment should be taken seriously and viewed as an opportunity to make a change.

"Some people might look at a 96 percent patient satisfaction rating and be pleased," Katcher says. "And, that score certainly helps your reputation because a lot of satisfied patients are likely recommending you to other people. But that also means 4 percent of people were not happy with the service or care they received, and those patients and their concerns need to be addressed," Katcher says.

If a patient writes a harsh review online, don't react immediately. Instead, take a deep breath and follow these approaches:

> Respond on the same channel. If a person tweets a complaint, respond with a tweet. If it's shared on Facebook, respond on Facebook.

> Be genuine. People can tell when you aren't being authentic or sincere, Osborn says.

> Don't be sarcastic or defensive. "Don't deny there was a problem or blame patients," Osborn says. "It will only make the situation worse." Rather than telling patients they are wrong, ask questions about their complaint and show you take their concerns seriously.

> Respect patient privacy. You can't disclose details about patients, even if they are posting about their experience on the internet. Be careful with the language you use and facts you choose to discuss.

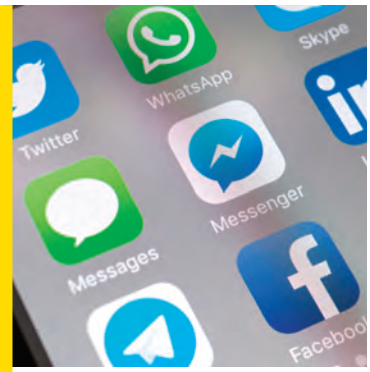
> Invite private meetings. Encourage people to call the hospital (and provide an actual person's name and number) or meet personally with them. This shows that the hospital is willing to give one-on-one time to customers who have concerns.

4 Leverage employees. Your employees are your best assets, Katcher says. Their passion for their profession make them the ideal candidates for communicating the hospital's mission statement to others.

However, employees can also do the most damage online. "People tend to pay more attention to comments and opinions of people who are 'insiders,'" Osborn says. "If employees are not treated well or don't love their job, it will be reflected in how they talk about their work online. If your facility doesn't have a good internal reputation and work culture, the external reputation won't be good, either."

Hospitals need to provide training about what's allowed and what's not allowed to be shared, Osborn says.

5 Highlight positivity. Be sure to recognize and respond to positive comments and praise, Osborn says. If patients have a good experience and share about it on social media or a review website, be quick to respond and say "thank you" for sharing about their experience. People use social media to interact and engage with other people and companies, and they will appreciate knowing their review or comment has been seen. ●



GET SOCIAL

Twitter, Facebook, YouTube and other social media channels are a great way to connect with current and potential patients. And millennials are not the only ones using them; baby boomers are also actively engaged. To effectively use social media, **David Osborn**, senior vice president of inSight Advisory Solutions at HealthTrust, offers these tips:

1. Keep it simple.
Don't use clinical or scientific language. Maintain around a sixth-grade reading level when writing online.

2. Keep it light.
The hospital is already a frightening place to many people. Organizations that come across online as being cold, clinical and sterile places aren't going to make people feel comfortable.

3. Keep it interesting.
Your social media channels don't need to be rehashes of dry and boring press releases. Instead, provide education, health coaching, exciting news about the hospital and input on trending health topics.

Navigating With inSight

Continued from page 4

Lend Your Voice to the Discussion

HTU will also be the place where we'll debut our new mobile app, HealthTrust Advisor. The app is designed to provide a platform for members to contribute their expertise and knowledge to the product selection and contracting process. The member-focused environment will encourage collaboration with colleagues and peers to share feedback on products and services used to deliver quality patient care.

Ed Jones
President/CEO, HealthTrust

Related HTU Sessions

MONDAY, JULY 17

2:30 – 3:30 p.m.
- *Tech Lab Information Session: inSight Analytics—A Unique View Into Your Spend & Purchasing Patterns* with Jennifer Holt, Nathan Woods

3:45 – 4:45 p.m.
- *Tech Lab Information Session: Solving the Answers Shortage—Actionable Insights Using Pragmatic Data Approaches* with Lane Conger, Paul Cummings, April Simon

TUESDAY, JULY 18

10:30 – 11:30 a.m.
- *RWJBarnabas Health: A Use Case in Building a Foundation to Support Data Quality & Analytics* with Jennifer Sturgeon, Bob Taylor
- *Information Session: Transform Your Supply Chain Into a Strategic Asset With inSight Advisory* with Tom Griffin

1:15 – 2:15 p.m.
- *Information Session: Moving Toward Analytical Capability, Disruptive Innovation & Value Delivery* with Ed Hickey

2:30 – 3:30 p.m.
- *Information Session: Bundled Payment Solutions From inSight Advisory* with Todd DeVree, April Simon
- *Information Session: inSight Advisory Solutions—Collaborating With Member Organizations to Improve Performance & Financial Health* with David Osborn
- *Information Session: Partnership for Success: An Innovative Approach to Managing Your Medical Devices With inSight Advisory* with Brent Ford, Anne Preston, Chris Stewart

4:00 – 4:30 p.m.
- *Information Session: HealthTrust Master Data Services* with Dona Kambeyanda

2017 HealthTrust Member Awards

The 2017 HealthTrust Member Recognition Award winners have shown outstanding performance, leadership and service in many significant ways this past year. They have instituted successful saving initiatives, made vital operational improvements, advocated for underserved patients, created an innovative program to put pharmacists on the front lines of patient care and improved clinical programs through collaborative pharmaceutical initiatives.

In the categories of Outstanding Member, Clinical Excellence, Operational Excellence, Pharmacy Excellence and Social Stewardship–Community Outreach, the members spotlighted on these pages will be honored in July during the 2017 HealthTrust University Conference in Las Vegas, Nevada.

Outstanding Member Award

RCCH HealthCare Partners—Brentwood, Tennessee

Rob Jay, executive vice president, operations
Brian Hitchcock, vice president, material resource operations
Steven Boyett, manager, material resource operations

Making Their Commitment Stronger

Two HealthTrust members merge to create myriad opportunities for synergy and savings

When Regional Care and Capella Healthcare merged in 2016 to form RCCH HealthCare Partners, each entity brought with it a history of dedicated membership in HealthTrust. After joining forces, HealthTrust was identified as an integral partner in helping drive synergies—and savings—for the new organization.

In the first year alone, RCCH HealthCare Partners identified a savings target of $4.5 million in supply chain costs, derived largely from the standardization of key GPO contract categories across the 17-facility IDN. At the end of Q3 2016—just months after the merger—RCCH HealthCare Partners was at 89 percent compliance in the identified categories. And at the one-year mark, total savings exceeded the annualized targeted amount.

In addition to GPO savings, the transition team, led by **Rob Jay**, identified other areas of opportunity, including medical devices, purchased services and pharmacy optimization.

Working with HealthTrust's inSight Advisory team, RCCH HealthCare Partners expects standardization of four medical device categories—cardiovascular, hip and knee, spine and biologics, and shoulder—will save $1.9 million annually. The Pharmacy Optimization Team, meanwhile, has identified $2.6 million in additional savings.

To successfully implement these alignment and savings initiatives, the transition team had to overcome many barriers and challenges, including redefining clinical contracting strategies for the whole organization.


Rob Jay


Brian Hitchcock


Steven Boyett

"The new organization has different layers of stakeholder-aligned interests, and bringing those entities together was critical in our launch," says **Brian Hitchcock**, who directs the efforts of material resource initiatives across the organization and is also a member of HealthTrust's inSight Analytics Board. "We are committed to engaging our clinical stakeholders from the onset of all related contracting initiatives and involve our clinical resources team to facilitate those activities," he says. "Explaining the initiatives behind strategic sourcing is essential to the continued success of our programs."

"In addition, our absorption of different information systems required more hands-on support to ensure data integrity," adds **Steven Boyett**, who is responsible for reporting on spend analytics and contract compliance.

To ensure the momentum on these savings initiatives continues, the supply chain team holds monthly calls and communicates key contract launches with operational- and facility-level leaders. The team also developed and actively manages a monthly contract utilization summary through inSight Analytics to hold facilities accountable.

"HealthTrust was able to identify the quick wins and helped us collaborate with our physicians and clinical leaders to achieve the initial savings," Jay says. "These early wins have established the processes and mindset of the entire organization on how we can identify and realize additional savings as we move forward. We will continue to look to HealthTrust as our partner in that effort."

Clinical Excellence Award

Transitions of Care Team, Hackensack University Medical Center—Hackensack, New Jersey

Nilesh Desai, administrator, pharmacy and clinical operations
Jewell Thomas, supervisor, Transitions of Care
Dianne Aroh, executive vice president, chief clinical and patient care officer


Nilesh Desai


Jewell Thomas


Dianne Aroh

Pharmacy on the Front Lines

Fewer errors and increased satisfaction when pharmacists are part of the patient care process

In November 2013, **Nilesh Desai**, R.Ph., MBA, began a pilot study in the medical-surgical unit of Hackensack University Medical Center. The goal of the study was to show what happens when pharmacists, instead of nurses, handle the medication reconciliation process that takes place upon admission and again at discharge. By the following November, Desai had enough data to make a strong business case and pitch an idea to his leadership team, including Dianne Aroh, MSRN, to create a Transitions of Care program that places pharmacists on the front lines of patient care.

In addition to conducting the medication reconciliation process, the eight full-time pharmacists on the Transitions of Care team attend multidisciplinary rounds, participate actively in discharge planning, collaborate with physicians regarding medication therapy, and extensively counsel patients and their caregivers.

Right now, the team is involved in the medication management of about one-third of inpatients at the hospital, concentrated in medical-surgical, cardiology and bariatric units, as well as patients with diabetes. Desai expects that number to increase as the program grows.

"My vision is to have a pharmacist in charge of the medication management of every single patient," Desai says. "We'll

get there eventually. By being involved on the front lines, pharmacists are in the right place to help reduce costly and dangerous medication-related errors, while providing a superior level of counseling to patients and their caregivers."

In one case, a Transitions of Care pharmacist caught a potentially harmful medication error: A patient was transferred from a rehabilitation facility, where his daily dose of synthroid was entered in the medical record as 125 mcg, instead of 12.5 mcg. During the medication reconciliation process, the pharmacist immediately recognized this as a potential error and corrected it.

Studies have shown that fewer errors occur when a pharmacist completes patients' medication reconciliation. A small study from 2008 found that pharmacists discovered 19 percent more medication discrepancies than physicians did, while a 2013 study found that pharmacist-led reconciliations in an emergency department reduced discrepancies by 33 percent. Other studies have found that, compared to nurses, pharmacists document more medications, including over-the-counter and herbal supplements, and are more likely to call patients' outpatient pharmacies.

Since the start of the program, the medical center's HCAHPS scores regarding communication about medicine have improved overall. For example, in the interventional cardiology unit, HCAHPS scores jumped from 50 percent in 2015 to 69 percent the following year.

Jewell Thomas, PharmD, supervisor of the program, says they're currently looking at how the program may have impacted readmissions during the same time frame.

Including pharmacists on the rounds not only prepares the patient for discharge, but also helps the pharmacist develop strong rapport with nurses and physicians.

"Our pharmacists are often sought out for their professional opinion and frequently provide drug information support when needed," Thomas says.

But as with any change, there were some challenges, including provider pushback. "When pharmacists started fervently clarifying orders and collecting patient and medication histories, it was a change in culture," she says. "But once clinicians understood what our purpose was and that the information collected was accurate, they embraced the change."

As medication management becomes more complex, Desai expects more organizations will prioritize the pharmacist's role on the front lines of patient care: "We are trained for this, so why not take the leadership and own it?" ●

Operational Excellence Award

RWJBarnabas Health, West Orange, New Jersey

John Doll, corporate chief financial officer and executive sponsor
Bob Taylor, senior vice president, supply chain
Paula Strollo, vice president, centralized services
Mary Twomey, vice president, value analysis
John Tomochek, vice president, data and analytics
Tracy Burrell-Hancock, vice president, facility operations
Rich Hill, vice president, supply chain integration
Phil Maneri, vice president, sourcing and contracting

John Doll

Bob Taylor

Paula Strollo

Surpassed Savings

Following a merger, RWJBarnabas Health leverages multiple HealthTrust resources to exceed its savings goal

When Barnabas Health joined HealthTrust in June 2015, the New Jersey-based health system signed on to save $30 million over the next two years. The health system met the goal just 17 months into its membership—and identified an additional $59 million in savings opportunities after merging with the Robert Wood Johnson Health System in March of 2016 to become RWJBarnabas Health, the largest IDN in New Jersey.

In 2016, the new 11-hospital system identified 234 supply chain initiatives to achieve its savings target. Some of the biggest savings came from pharmacy ($3.4 million), reprocessing services ($2 million), endomechanical products ($1.75 million) and medical-surgical supplies ($1.27 million).

To facilitate the smooth implementation of these savings initiatives and a variety of supply chain process improvements, RWJBarnabas Health took advantage of HealthTrust's leadership


Mary Twomey


John Tomochek


Tracy Burrell-Hancock


Rich Hill


Phil Maneri

staffing program, which places HealthTrust personnel in supply chain leadership positions at RWJBarnabas Health. These proven leaders in centralized services, value analysis, data and analytics, facility operations, supply chain integration, sourcing, contracting, and other areas have helped knit together the various facets of the supply chain to build an operation that is simultaneously robust, dynamic and streamlined.

"This unique staffing solution allows RWJBarnabas Health to leverage the wealth of knowledge, experience and resources that HealthTrust offers," says **Paula Strollo**, who serves as team leader. "Our plenipotentiary roles allow us to make decisions and perform as any other member of the leadership team at RWJBarnabas. We are advocates, focused and committed to the success of RWJBarnabas."

Some of the best practices and process improvements now in place include facility-wide comprehensive value analysis and supply chain leadership programs.

RWJBarnabas Health is also centralizing the purchasing function, consolidating four disparate purchasing systems into a single system and standardizing to a single medical-surgical distributor. Contracting and sourcing have been centralized. A complete data cleanse and standardization project has facilitated a new tracking and documentation process to provide consistent analysis and reporting and improved ability to calculate savings opportunities.

Gita Wasan Patel Pharmacy Excellence Award

Ardent Health Services—Nashville, Tennessee

Tom Chickerella, vice president of supply chain, Ardent Health Services
Travis Lawler, director of pharmacy, BSA Health System
Amber Elliott, clinical manager, BSA Health System
Luke Barnett, clinical manager, BSA Health System
Roland Plude, director of materials management, BSA Health System
Kara Fortune, director of pharmacy, Ardent Health Services

A Collaborative Effort

Cutting costs and improving clinical programs through pharmaceutical initiatives

In late 2013, the pharmacy department at Amarillo, Texas-based BSA Health System, an affiliate of Ardent Health Services, paused to review its structure. After a thorough analysis, it discovered out-of-control operating costs that were limiting the potential of its clinical programs.

"We realized that we could move members of our team out of operational roles to grow a robust clinical program," says **Travis Lawler**, director of pharmacy at BSA Health System.

So over the course of three years, Lawler and his team—including **Amber Elliott, Luke Barnett, Karen Lemley, Chad Simpson** and **Brandon McKee**—worked together with the support of **Tom Chickerella** and **Roland Plude** to implement initiatives to divert resources to its clinical services.

Since early 2014, BSA has implemented nine new pharmacy initiatives and hired five new clinical pharmacists. Among the initiatives are creation of a pain team that has seen a 50 percent reduction in postoperative opioid use among patients in an Enhanced Recovery After Surgery program, and an antimicrobial stewardship program that has achieved a 24 percent reduction in antimicrobial spend.

Other accomplishments include an emergency room pharmacists initiative, a penicillin skin allergy testing program, a new PGY-1 pharmacy practice residency and the installation of a perpetual inventory management system. The department's combined initiatives have decreased total pharmacy expense by 8 percent and increased total pharmacy revenue by 3 percent. Medication


Tom Chickerella


Travis Lawler


Amber Elliott


Luke Barnett


Roland Plude


Kara Fortune

spend has also been reduced by 20 percent, saving BSA's facilities more than $2.5 million.

Additionally, the pharmacy initiatives have contributed to improved patient outcomes and increased patient satisfaction. BSA Health System saw its HCAHPS score in the "Communicates About Meds" category rise after providing more than 8,500 patients with extensive and specific medication education by a pharmacist.

The positive results of these programs continue to pave the way for further advancement of clinical pharmacy practice across the BSA Health System.

"Seeing this kind of success is very motivating for both our experienced and new pharmacy team members," Lawler says. "It has been a true collaboration. Every member of the pharmacy team has played a role in developing and implementing these programs."

And it couldn't have happened at all without the backing of BSA leadership, he says.

"Their leadership and support was the ignition for our improvements," Lawler says.

Lawler and his team also leaned on HealthTrust to help them navigate implementation challenges.

"HealthTrust's entire pharmacy consulting team, which included Kara Fortune, has been a tremendous asset to us," he says. "Over the past several months, they have become integral members of our team." ●

Marissa Wilson

Social Stewardship Award—Community Outreach

Marissa Wilson, patient assistance coordinator, CHI Memorial Hospital—Chattanooga, Tennessee

Advocating for the Underserved

Drug replacement program assists patients with more than just medication costs

As an uninsured patient, paying for expensive medications and navigating assistance programs can be overwhelming. But thanks to **Marissa Wilson** and her leadership with the drug replacement program at CHI Memorial Hospital, the underserved and uninsured communities of Chattanooga are getting the assistance they need.

The program started as a way to replace high-priced medications with more affordable options for uninsured and low-income patients. But since its creation in 2007, Wilson has adopted a more holistic approach to assisting patients. She advocates on their behalf and helps them access social services, including insurance, Social Security, disability, low-income subsidies and disease-specific foundation assistance.

"Every patient's situation is different," Wilson says. "While one program might work for one patient, another may not be eligible for the same program. It sometimes takes navigating various options to find what helps remove an individual's barrier to care."

Wilson's management of the program accounts for $400,000 in savings annually. Since 2007, the program has saved the hospital more than $3 million by "recovering" medications from manufacturer assistance programs, usually at negotiated or contracted prices.

In addition to her work with the drug replacement program, Wilson was also instrumental in bringing the Dispensary of Hope program to Memorial Hospital. Through this partnership, which collects and distributes pharmaceuticals to charitable clinics and pharmacies for low-income, uninsured patients, Wilson has helped dispense more than $250,000 in free medication.

Wilson is involved in at least seven other patient assistance organizations in Chattanooga. In 2012, she helped develop *Bridging the Pharmacy Gap: Medication Resource Guide and Tips for Navigating Pharmacy Resources* for the Southeast Tennessee Area Agency on Aging and Disability. Updated annually, the publication is a guide to prescription assistance programs and other resources for underinsured and uninsured patients in the region.

Based on the best practices she developed at CHI Memorial Hospital, Wilson has created training on medication assistance basics that she regularly provides to clinicians in her community and throughout the United States. ●

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FRESENIUS KABI

QUIDEL

Tote Bags
QUIDEL

TRONEX® HEALTHCARE

Power Breaks
TRONEX INTERNATIONAL

NORTHFIELD

Mobile App
NORTHFIELD MEDICAL

KONICA MINOLTA

Escalator
KONICA MINOLTA

KERMA medical products

Breakfast — Tuesday
KERMA MEDICAL PRODUCTS

Mectra Labs Inc
Manufacturers of Medical Devices

Wristbands
MECTRA LABS

aramark

Chair Drop
ARAMARK

sysmex

Breakfast — Wednesday
SYSMEX AMERICA

debmed

Hand Sanitizers
DEBMED

adcommTV

Room Drop
ADCOMMTV

Baxter

Room Drop
BAXTER HEALTHCARE

cheetah medical

Room Drop
CHEETAH MEDICAL

Censis

Room Drop
CENSIS TECHNOLOGIES

EDM paperfreedm

Room Drop
EDM GROUP

TRINITY STERILE
A Minority Business Enterprise

Room Drop
TRINITY STERILE

MEDLINE

Water Stations
MEDLINE INDUSTRIES

UreSil

Pens
URESIL

HealthTrust Members Recognized for Environmental Excellence

Congratulations to the HealthTrust member health systems and facilities listed below that were recognized during the CleanMed conference in May with Environmental Excellence Awards from Practice Greenhealth. The annual awards honor outstanding sustainability achievements within the healthcare sector. For more information on the Environmental Excellence awards and a complete list of winners visit practicegreenhealth.org/awards/2017winners.

Top 25
facility honors went to two Healthtrust members:
Boston Medical Center
and
HackensackUMC of Hackensack Meridian Health

Boston Medical Center
Top 25 Environmental Excellence
Circle of Excellence Award for Energy
Greening the OR Recognition

Catholic Health Initiatives
Partner for Change
CHI TriHealth Bethesda North
CHI TriHealth Good Samaritan

HackensackUMC of Hackensack Meridian Health
Top 25 Environmental Excellence
Greening the OR Recognition
Circle of Excellence Awards for Leadership, Sustainable Food, Safer Chemicals and Environmentally Preferable Purchasing

HCA
Facility-level awards include:
Emerald Award
Specialty Hospital Jacksonville

Partner for Change
Alaska Regional Hospital
Lee's Summit Medical Center
Parkland Medical Center
St. Mark's Hospital

Partner Recognition
Centerpoint Medical Center

Making Medicine Mercury Free
Specialty Hospital Jacksonville
Palms of Pasadena

Greening the OR Recognition
Parkland Medical Center

Hospital Sisters Health System (HSHS)—*System for Change*
Facility-level awards include:
Partner for Change
HSHS Sacred Heart Hospital
HSHS St. Anthony's Memorial Hospital
HSHS St. Elizabeth's Hospital
HSHS St. Francis Hospital
HSHS St. John's Hospital
HSHS St. Joseph's Hospital Breese
HSHS St. Joseph's Hospital Chippewa Falls
HSHS St. Joseph's Hospital Highland
HSHS St. Mary's Hospital
HSHS St. Mary's Hospital Medical Center of Green Bay
HSHS St. Nicholas Hospital

Emerald Award
HSHS St. Vincent's Hospital

Greening the OR Recognition
HSHS St. Anthony's Memorial Hospital
HSHS St. Elizabeth's Hospital
HSHS St. John's Hospital
HSHS St. Mary's Hospital Medical Center of Green Bay
HSHS St. Nicholas Hospital
HSHS St. Vincent's Hospital

Trinity Health
Making Medicine Mercury Free
Mount St. Mary's Hospital

GHX Names Ardent Most Improved Provider

In April, Global Healthcare Exchange (GHX) recognized Nashville, Tennessee-based Ardent Health Services as the "Most Improved Provider" at the 2017 GHX Healthcare Supply Chain Summit in National Harbor, Maryland. The awards, which have been presented to provider and supplier organizations for 17 years, recognize leaders and visionaries that are leveraging supply chain automation to remove waste, cut costs and improve patient care.

The "Most Improved Provider" award honors the healthcare provider that has made the most impressive year-over-year growth in use of GHX solutions in driving efficiencies and savings within its organization. Ardent Health Services, a member of HealthTrust, was awarded because of its unique strategic approach to supply chain improvements, adding 258 non-integrated GHX trading partners through MetaTrade, as well as its outstanding metrics. **Tom Chickerella** and **Samantha Swanson** accepted the award on behalf of Ardent. ●

Looking Forward to Innovation

HealthTrust will host its third annual Innovation Summit Oct. 5–6, 2017 at the Sawgrass Marriott Resort in Ponte Vedra Beach, Florida. The summit enhances HealthTrust's clinical and operational vetting process for new technology and innovations from the supplier community. Although the application acceptance period has closed, the 2017 product selection process had 266 submissions vying for 70 available positions.

Attendees include HealthTrust clinical advisory board members directly involved in identifying and selecting technology for use in member healthcare systems. "Suppliers value the feedback of these clinical experts as they assess which showcased innovations truly deliver clinical or operational improvements—a key litmus test for products added to the HealthTrust contract portfolio," says **Mark Dumond**, assistant vice president of physician services for HealthTrust.

HealthTrust is looking for products that represent significant technological advancement and either:

> Meaningfully improve clinical outcomes or patient care (e.g., documented reduction in procedure time, lengths of stay, readmissions and infection rates)

> Streamline work processes and/or the economics of facility operations (e.g., decrease supply expense or resource utilization)

The Innovation Summit features currently contracted and non-contracted suppliers with new technology directly related to patient care, information technology, care delivery or coordination, or supply chain management.

Approximately 75 HealthTrust physician advisors—board-certified in interventional cardiology, electrophysiology, orthopedics, neurosurgery, cardiovascular surgery and other specialties—will also attend the summit, which is being held in conjunction with the HealthTrust Physician Advisors National Meeting.

Planned highlights of the summit include a keynote address on healthcare innovations and "Shark Tank"-style presentations by selected suppliers to a panel of clinicians, operators and venture capitalists. ●

FDA Approves Expanded Indication for Sapien 3 THV

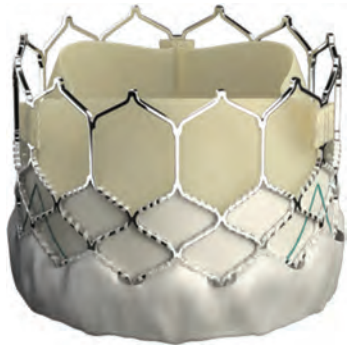
HealthTrust's physician services team regularly reviews all U.S. Food and Drug Administration (FDA) 510(k) approvals and premarket approvals related to physician preference products and those used in a diagnostic setting.

In early June, the FDA approved an expanded indication for the Edwards Sapien 3 Transcatheter Heart Valve (THV) for patients with symptomatic heart disease due to failure of a previously placed bioprosthetic aortic or mitral valve whose risk of death or severe complications from repeat surgery is high or greater.

It's the first time a regulatory agency has approved a THV as a valve-in-valve treatment. Valve-in-valve procedures offer an alternative to repeat surgery, since the replacement valve is inserted inside the failing surgical bioprosthetic valve through a patient's blood vessel or a small cut in a patient's chest.

"This new approval offers U.S. patients a less-invasive treatment option," says **Bram Zuckerman**, M.D., director of the division of cardiovascular devices at the FDA's Center for Devices and Radiological Health.

A bioprosthetic aortic or mitral valve may fail over time due to stenosis, when the valve narrows and causes the heart to work harder to pump blood; regurgitation, when the valve does not close completely and blood leaks backwards; or a combination of both. Treatment would normally require repeat open heart surgery, which causes a high or greater risk of complications for certain patients.



Edwards Sapien 3 Transcatheter Heart Valve

The FDA originally approved the Sapien 3 THV for transcatheter aortic valve replacement (TAVR) as an alternative option to surgical aortic valve replacement for patients with native aortic stenosis whose risk for death or severe complications from surgery is high or greater. In 2016, the FDA expanded the approved TAVR indication for Sapien 3 THV to include patients who are at intermediate surgical risk for death or complications.

The FDA evaluated data from the Transcatheter Valve Therapy Registry, which collects clinical data on the safety and effectiveness of transcatheter valve replacement procedures performed in a real-world setting. ●

Visit the Physician Services page on the HealthTrust member portal for more FDA approvals and clinical evidence reviews.

Announcing the 2018 HealthTrust University Conference

CALL FOR PRESENTATIONS

Would You Like to Speak at Next Year's Event?

Submissions to be considered for the 2018 HealthTrust University Conference will be accepted Sept. 12 – Dec. 12, 2017, only at **www.conferenceabstracts.com/healthtrust2018.htm**.

Those selected to present will be notified in early 2018. Don't delay ... start formulating your program idea today!

Interested presenters (members, suppliers, industry subject matter experts) should visit **www.conferenceabstracts.com/healthtrust2018.htm** for more details and to submit your proposal for consideration.

SAVE THE DATE:
JULY 23 – 25, 2018
GAYLORD OPRYLAND, NASHVILLE

The Source

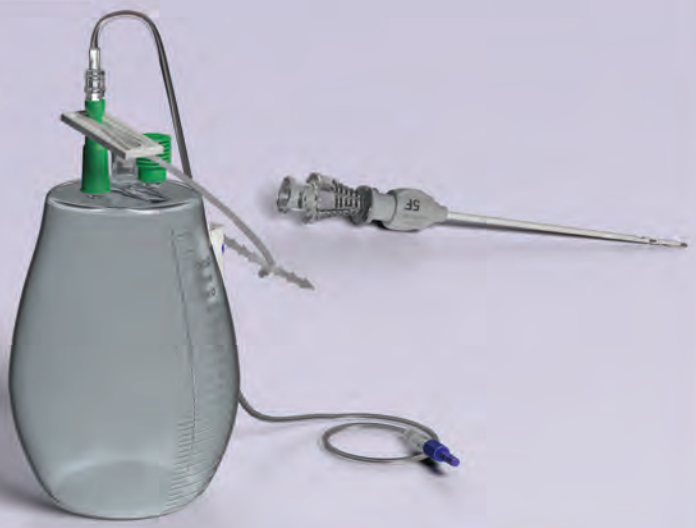
Find an archive of past issues of HealthTrust's award-winning member magazine at **healthtrustsource.com**, or bookmark Trending Topics (**healthtrustpg.com/trending-topics**) for fast access to magazine stories as well as thought leadership related to industry topics, clinical best practices and healthcare supply chain.

Symphony™ Centesis Kit

Symphony is a rapid deployment, high volume, high flow-rate 5 French centesis kit that includes the most commonly used components for these procedures. Included in each kit is:

- 1,000 ml evacuated suction bottle with sterile drain line
- Sterile packaged 5F x 10 cm centesis catheter with echogenic needle and porous plug
- Sterile packaged fenestrated drape, 60cc syringe, patient label, 22G needle, scalpel and syringe cap

Symphony MAX 6 French centesis kit is also available.



Evolution® Evacuated Suction Bottle

The Evolution line of evacuated suction bottles was borne from necessity as an alternative to glass bottles and backorders.

- Available in 1,000 ml with or without sterile drain line.
- Consistently draws 1,000 ml or more every time.
- Does not contain natural rubber latex.

Evolution, Symphony and Symphony MAX are now available to all HealthTrust members.

Please Visit us at the HTC Conference Booth #1018

UreSil®

Customer Service Tel: 800.538.7374 Fax: 847.982.0106 Email: sales@uresil.com

HealthTrust Contract # 6462

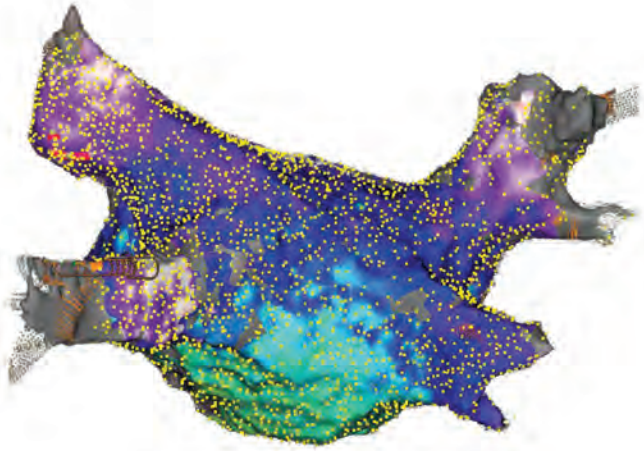
ST. JUDE MEDICAL IS NOW ABBOTT

AUTOMATED. FLEXIBLE. PRECISE.

Map the Most Complex Cases[1,2]

The EnSite Precision™ cardiac mapping system answers your need for innovations to effectively diagnose a wide range of arrhythmias with next-generation technology.[1,2] The EnSite Precision™ system is designed to:

- Transform Procedures with **Intuitive Automation**[1,2]
- Expand Procedural Options Using **Superior Flexibility**[1,2*]
- Effectively Manage Patients through **Greater Precision**[3**]



Impedance-Field Flexibility[1,2*]

Magnetic-Field Precision[3**]

- Green points are impedance data points.
- Orange points are magnetic data points.

VISIT BOOTH #423 AT THE HEALTHTRUST CONFERENCE.

HealthTrust Contract #4456

*The open-platform feature of the EnSite Precision™ cardiac mapping system allows for use of almost any catheter, thus offering superior flexibility as compared to the CARTO™ system by Biosense Webster, which limits use to Biosense Webster™ catheters only.

**Greater precision based on improvement in accuracy of impedance model with magnetic field scaling applied via robot testing vs. EnSite™ Velocity™ software v4.0.2.

1. Ptaszek, L., Moon, B., Sacher, F., Jais, P., Mahapatra, S., & Mansour, M. (2015). A novel tool for mapping multiple rhythms from a single mapping procedure. Poster abstract P849. *Europace*, *17*(Suppl 3), iii115.
2. Ptaszek, L., Moon, B., Mahapatra, S., & Mansour, M. (2015, Nov). *Rapid high density automated electroanatomical mapping using multiple catheter types*. Poster presentation P097. APHRS Scientific Sessions, November 21, 2015, Melbourne.
3. St. Jude Medical. Data on File. Report 90237452.

SJM-ENS-0517-0123 | Item approved for U.S. use only.

Rx Only

Brief Summary: The EnSite Precision™ Cardiac Mapping System is a suggested diagnostic tool in patients for whom electrophysiology studies have been indicated. The EnSite™ Precision System interfaces to either the MediGuide™ Guided Medical Positioning System or the EnSite Precision

Module to combine and display magnetic processed patient positioning and orientation mapping information. When used with the EnSite™ Array™ Catheter, the EnSite Precision™ Cardiac Mapping System is intended to be used in the right atrium of patients with complex arrhythmias that may be difficult to identify using conventional mapping systems alone.

Prior to using these devices, please review the Instructions for Use for a complete listing of indications, contraindications, warnings, precautions, potential adverse events and directions for use.

CARTO and Biosense Webster are trademarks of Biosense Webster, Inc.

ST. JUDE MEDICAL