

Tuning Up the Episode of Care

Care management tool aims to reduce costs while improving the patient experience

The baby boomer generation's push toward surgical interventions to maintain their quality of life, coupled with upward trends in obesity, are putting a lot of pressure on the healthcare community to meet the demand—and control costs. Hip replacements are expected to increase 174 percent to 572,000 through the year 2030. And knee replacements will rise even more—by 674 percent to 3.48 million—according to a study presented at the 73rd Annual Meeting of the American Academy of Orthopaedic Surgeons.

Gaining market share in these implant procedures allows hospitals to differentiate themselves, but the competitive market requires innovative approaches. Cost-reduction strategies are needed as device costs continue to rise, the number of orthopedists decrease and reimbursements decline to Medicare levels, according to InVivoLink (**HealthTrust Contract #500152**), a clinically integrated operating system that collects clinical, financial and operational data for orthopedic and spine procedures.

InVivoLink technologies deliver promising results in a number of measures that can significantly improve care for patients. In addition, they also help decision-makers control their costs. Using scanners, barcodes and touch screens, InVivoLink lets surgeons gather information on implant devices and patients before surgery, at the operating table and in recovery.

“InVivoLink enhances our ability to ensure care is the most consistent—from patients to doctors to caregivers,” says **Ravi Chari**, M.D., vice president, Clinical Services Group at HCA, which has spearheaded installation of the tool in 25 HCA hospitals.

“The more consistent or repeatable we can make a procedure, the more likely we can do it right every time,” Chari says. “As we embrace patient-centric care, we’re acknowledging each patient has unique needs. Ensuring that we address those needs, especially on the supply chain side, creates trust that we can do the right thing for the patient.”

InVivoLink's Web-based software and services elevate outcomes and drive cost efficiencies in the following ways:

Integrated Care

InVivoLink's care management platform connects all the different constituents across the episode of care. It streamlines the workflow of multiple disciplines, including the implant manufacturer/distributor, the patient and his or her family, clinicians educating the patient preoperatively, the surgeon and OR staff, and acute and post-acute therapists who help the patient through the postop process.

InVivoLink's “preference modeling” platform starts at the point of scheduling and allows surgeons to establish their implant preferences according to certain patient characteristics, such as age, fitness level and type of prosthesis. When a surgeon uses InVivoLink's individualized, automated booking tool to schedule a patient with

certain clinical factors, the tool brings up the implants the physician might want to use or has used before.

As Chari explains, “It's similar to Amazon in that, as it books my preferences, it prompts me by saying, ‘The last time you had a similar patient, you did this. Do you want to do that again?’ ”

These automated tools make the job of demand matching—examining the characteristics and clinical indicators of a patient to improve implant selection—easier and more precise. They also can be used to reduce costs by helping steer a provider away from an implant choice that overpowers the patient relative to his or her need, Chari explains.

It also automates preoperative procedures that were formerly manual in nature. For example, when an appointment is made, the system can send a notice to the implant device manager responsible for that case that says, “Dr. Collins has scheduled a bilateral knee procedure on August 5 for this patient. Here are the kits and instruments that are requested for that case.”

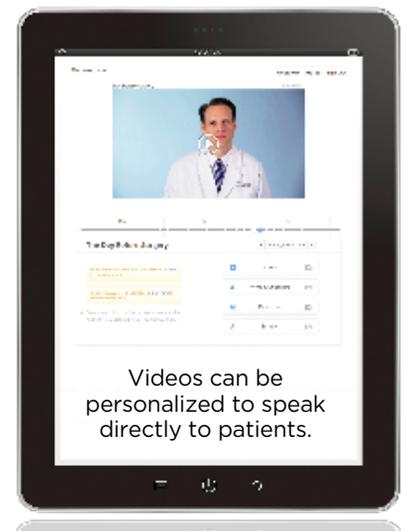
Individualized Patient Engagement

To help patients make more informed decisions about their care, discharge and recovery, InVivoLink uses patient education tools, including professional videos that feature a surgeon and his or her staff discussing the procedure, giving preoperative instructions and explaining postoperative pain management.

The system can send customized videos to patients after they've been scheduled, a couple of weeks before the procedure and a day before surgery to lower anxiety and reduce cancellation. Multiple videos are sent after the procedure to encourage patients to send feedback about the process and their progress with post-acute providers, such as home health and skilled nurses and inpatient and outpatient rehab.

“The videos can be personalized to speak directly to patients, whether they're hypertensive or diabetic or have other characteristics,” Chari says. “It decompresses the office staff so they are answering fewer of these types of questions.”

All of the information presented on InVivoLink's patient portal is individualized to the patient's profile, procedure type, surgeon, hospital and post-acute episode. Along the way, the system tracks



each patient's activities and collects patient-reported outcomes measures and other important patient experience metrics, such as online joint class participation.

Data Capture

Since joint and spine interventions are lifestyle modifications, their outcomes can't be tracked as you would track a patient's cancer-free survival, for example. However, follow-up and reporting can improve with a tool like InVivoLink, Chari says.

"We don't always know if we achieve desired outcomes regarding improved function and pain reduction," he says. "And we don't always realize if different components that were supposed to add value did their job or not. Giving us more objective performance feedback respective to pain, range of motion, stability, etc., can help surgeons understand the extent and quality of the intervention."

The tool captures outcomes in three stages:

1 Before surgery, providers can collect initial baseline information through health scores and survey responses from patients and clinicians using InVivoLink's online tool.

2 It can capture data intraoperatively. Through a touch-screen device in OR, the nurse can capture clinical, operational and implant utilization data related to that case. The data can be integrated into legacy systems to reduce duplicative data.

3 It also can survey patients and clinicians postoperatively to capture the patient's overall health and function scores and compare them to the pre-intervention period. It can track patients' performance at different recovery points (when they return to work, for instance) and measure any complications.

"We have always been able to track complications and mortality, but by using established quality-of-life scoring tools, we're now able to see functional status outcomes after the operation," Chari says.

"Did we achieve the range of motion, loss of pain, addition of ambulation? By collecting objective information that the patient or physical therapist provides after the intervention, surgeons can track their performance and the hospital can see outcomes data in ways they couldn't see before," Chari adds.

"If you're using this tool among a lot of different hospitals, you can get intelligence about how these implants perform longitudinally and which surgeons and post-acute providers provide the best outcomes," says **John Bass**, chief operations officer of InVivoLink. "This intelligence represents a real picture of the cost of procedures."

Surgeon-Created Registry

Surgeons can use InVivoLink to build their own personalized implant registry and research platform that seamlessly integrates all patient and clinician data. Surgeons can dictate the data they want to collect and the system captures it, starting with scheduling and continuing on to postop physical therapy results.

"It allows you to compare hip implant results across several different hospitals, and even drill down to specific categories, such as 'the impact of anterior approach hips and patient satisfaction,



both short and long term.' The evidence-based registry can provide data that is specific to patient, hospital and procedure," Bass says.

Such a registry can help a hospital system define and scale national best practices for preoperative planning, patient engagement, care coordination, sourcing and order processing.

Value Analysis

InVivoLink's analytics and data toolsets provide an easier way to conduct value analysis on orthopedic and other medical devices.

"It's not just about costs; it's the understanding of outcomes per dollar spent for medical devices," Bass says. "The dashboards look at outcomes as compared to costs so that we can assist surgeons in discerning appropriate utilization of specific technologies and techniques. Our platform has the data, transparency and trust to make this next generation of value analysis happen in a way that's important to payers and patients."

Real-time dashboards allow users to understand implant utilization, custom-bundled payments and reimbursement metrics.

"When you look at cost reductions, two areas where you can save money are on implant costs and post-acute utilization," Bass says. "Post-acute utilizations are especially important for those in bundled payment programs. For example, if you're sending 50 percent of patients to a skilled nursing facility, that represents a big opportunity to lower costs."

"InVivoLink also allows you to look at supply chain consumption in an intricate way, giving you insights you wouldn't otherwise have," Chari says. "You can change how you put together kits or measure if you have off-contract spend. And what if we found out performance outcomes were independent of the type of hip prosthesis used?"

What's Next

Although still in the early stage of implementation, "we've heard anecdotal positive feedback from patients and physicians offices that it's a hugely positive program," Chari says. "We're still refining our rollout in orthopedics, then we'll move into the spine space. Product-intensive categories like cardiology are the natural next space." ●

For more information, visit www.inviolink.com or the catalog on the HealthTrust member portal (HealthTrust Contract #500152).