At what price innovation? Health care reform heightens biz challenge of justifying new procedures, technologies

The Journal Record
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Feb. 1, 2011

TULSA – Ed McKay stopped in surprise as he saw ABC News reporting on blood test advances for detecting breast, prostate and colorectal cancer cells.

“Isn’t that the test we’ve been using two years now?” asked McKay, director of imaging and laboratories at Tulsa’s Cancer Treatment Centers of America Southwestern Regional Medical Center.

The Tulsa hospital actually joined in as the circulating tumor cell test entered its second generation, said Tulsa Medical Laboratory liaison Virginia D. Burdine. With appropriate patients, CTCA will continue to use the test as Johnson and Johnson subsidiary Veridex enters its third generation. McKay said it’s just one of several different cutting-edge cancer tests and procedures CTCA alone employs in Oklahoma, a reflection of the challenges providers face in balancing costs while keeping pace with industry innovations.

“The real key is determining what is going to be useful,” said Burdine, with that decision hinging on each patient’s current status. “If it’s not going to impact a patient’s treatment significantly, it’s probably not worth the cost of attempting this test.”

The same challenges confront proven advances in this era of health care inflation and reform. Both St. John Medical Center and Tulsa Spine and Specialty Hospital invested more than $1 million over the last year to acquire the latest da Vinci surgical robot by Intuitive Surgical Inc.

Touted for its smaller incisions, reduced blood loss and more limited infection risks, all of which can lead to dramatically faster recovery rates and lower hospital stays, the multiple-armed device first offered in 1999 has proven more effective than traditional surgical methods in a growing number of complicated applications. But that tally still represents a minority of cases in most areas, giving hospitals and surgeons the difficult decision of cost-justifying an expensive piece of equipment – one that extends the surgical time and requires by some estimates more than $1,000 of replacement parts in every usage – when Medicare and insurers usually promise to pay no more than for a traditional procedure.

“It is probably these things, these wonderful technologies, that have caused the cost curve in the United States to grow so rapidly, more rapidly than any country on Earth,” said F. Daniel Duffy, dean of the University of Oklahoma College of Medicine School of Community Medicine in Tulsa. “So if part of health care reform is to actually make health care more affordable and not eat up the entire GDP, in time there will have to be some change in that.”

This isn't a new problem. For decades doctors and hospitals have struggled to get a return on investment for medical advances, whether easily recognizable successes like magnetic resonance imaging or still-developing drug breakthroughs. It presents a nasty catch-22 scenario, since basic economics requires widespread use to drive down costs, and research and development expenditures must be recouped through application.

"When I was a student, if you had chest pain we gave you a little bottle of nitroglycerin and told you not to exert yourself," St. John surgeon Lynn Frame said as he completed his 19th surgical procedure with the da Vinci. "Now you get CABG (coronary bypass artery graft) procedures and bypass procedures, you get stints. Used to be if you had a bad hip, we gave you aspirin and told you to sit in your rocking chair. Now we have all these hip replacements.

"It's just amazing," Frame said. "It's expensive, no doubt about it. But everybody wants it. Nobody wants to be the one to sit in a wheelchair and let their hip hurt."

The promise and quandary

By pressing for higher-quality care at a lower price, in many cases the latest round of Washington's health care reform has elevated this bottom-line challenge – ironically, one Washington largely created.

"We've been on probably a 30-year golden age of medicine where we have had enormous amounts of money put into research and innovation to develop a lot of these new techniques," said Duffy. "That's come from federal tax dollars, largely, funding through the National Institute of Health. And there have been many, many innovations that have come through that tax funding. There have been a number of innovations particularly through the pharmaceutical companies that have funded new drugs, and then there are new technologies like you were referencing, the da Vinci robotic techniques for doing surgery.

"So all of these innovations over the past 30 years, as they've come out they've commanded a price that has been stable or ever increasing," he said. "So new drugs that come out on the market cost a great deal to recoup the investment that has gone into them."

The circulating tumor cell test demonstrates both the promise and cost quandary. Tapping the latest advances for identifying genetic markers under a technology launched a decade ago, the Veridex blood test may find a single cancer cell from more than a million healthy ones. That helps CTCA physicians prescribe, track and modify treatments for individual patients, at a cost of $600 per test.

"In the grand scheme of laboratory tests, it is really not that much anymore," Burdine said of the fee, noting most diagnostic tests may run $100 or more.

The real expense comes from the $200,000 instrument needed to run the blood diagnosis, Burdine said. Since it requires a certain volume to cover its costs, all of the CTCA hospitals run their patient tests through a single laboratory with the device in Illinois. For Tulsa physicians and patients, that requires a four-day turnaround time to receive results.

While that purchase price may pale against the $1.5 million St. John paid for its second da Vinci – the medical center acquired its first model six years ago, trading it in for the multi-user SI model now employed – hospital executives still weigh such acquisitions against their proven or potential effectiveness, often limited usage applications and potential volume, all balanced against hundreds of other such rising technology options in other fields.

“Maybe 10 or 20 percent were never as good as they were touted in the first place,” said Burdine, looking back at innovations she’s witnessed in her career. She quickly cautioned that she has no scientific data to back up that ballpark guess. “But I would guess only 10 percent of medical knowledge presented at national meetings ever really carries over long term as being the gold standard.”

Such so-called gold standards also may quickly prove obsolete under the relentless march of technology, further complicating any chance of getting a return on the investment.

“We as health care workers never forget that technology needs to advance, that we need to be diligent in pursuing those pieces that will benefit not only in patient outcomes but in operational procedures,” said St. John Medical Center Director of Surgical Services John Pat Wright. “We have to be diligent in every aspect of our daily activities.”

Competitive demands

CTCA may not tout its aggressive testing and use of such new tests, the specialty hospital has the advantage of being cancer-focused, with the resources of a national chain. That gives it the potential to investigate more options in its field than a general-purpose hospital may have.

“They are usually the first on the bus, or one of the first two or three on the bus,” said Burdine.

But that point raises another argument in the reform debate. Two decades ago some entrepreneurs looked upon specialty hospitals as the future in health care, perceiving them as bringing a real business focus to an underfunded, utility-like industry driven by public service goals. Now many analysts blame the specialized hospital movement for draining quality patients and revenue from mainstream providers, to the point where President Obama’s health care initiative put a moratorium on their expansion.

Pointing to the da Vinci, Tulsa Spine and Specialty Hospital Chief Executive Terry Woodbeck defended his facility’s effectiveness at meeting reform goals, illustrated by the hospital’s market leadership in federal patient satisfaction surveys and its 40-percent Medicare patient load.

“One of our driving passions was to prove that good medicine was cheaper medicine in the long run if it’s really good medicine in the beginning,” said Dr. Steve Gaede, president of the board at Tulsa Spine.

He said such cost debates over new technology lay at the heart of their hospital’s creation a decade ago.

“Purchasing a da Vinci was part of that vision that we really could do it, do it well and do it in a businesswise manner,” he said.

To some degree Tulsa Spine also faced competitive demands, since three other hospitals in the market already used da Vinci’s, St. John advancing to the front of the list as the first in the state with multiuser capabilities. That heightened the ROI quandaries in what, for Tulsa Spine, turned into a $1.7 million outlay.

“Believe me, we had a long debate,” said Gaede. “We had a lot of people who wondered whether this was a wise move or not. But at the end, the board voted pretty resoundingly to go forward with this and take the risk.”

Getting a bottom-line return on the investment requires that the da Vinci see repeated use. That’s a challenge in itself, since surgeons must finish long, detailed training and practice to gain certification.

With six surgeons completely certified or being proctored, Woodbeck said Tulsa Spine has matched the 50-procedure average charted by other da Vinci owners around the country. The west Tulsa hospital is targeting 74 to 80 procedures a quarter, the equivalent of five days of operations.

“There has been more demand than we expected,” said Gaede. “We’re meeting our pro forma quite nicely and probably in excess.”

That would allow Tulsa Spine to break even on this investment after two years – six months ahead of expectations, said Woodbeck.

“The demand comes from both sides, patients who demand it from providers and providers/physicians demand it as way to increase ability to take care of patients,” said Gaede.

St. John has enjoyed similar results. With 12 physicians trained in gynecology, oncology and urology services on the da Vinci, the hospital’s volume has risen more than 25 percent from last year’s older-generation model.

At that rate, Wright projects St. John could pay off its investment in three years, a full year ahead of schedule.

“An institution of this size could do well with three robots,” she said. “I look for this institution as we expand to have more than one robot, particularly if cardiac surgery takes on and they begin to expand their approaches.”

Like Tulsa Spine, Wright sees the hospital’s reduced costs from lowered blood loss, medications used and infection risk, plus faster healing time and reduced hospital days, countering the da Vinci’s longer surgical time and the higher equipment cost. But Frame wasn’t so certain.

“There is that,” he said of the incremental savings, “but you’ve got to shave off a lot of savings to pay for this machine.

“This costs a lot more than a regular hysterectomy, but it’s better, so the question’s are the insurance companies or the people willing to pay more for this?” Frame asked while working the da Vinci in a hysterectomy surgery Friday. “I would suspect that if we had true Obamacare this would not be paid for. You can just have an open hysterectomy, which is two or three days in the hospital and a whole bunch more pain. They’re not concerned about patient comfort, convenience of going back to work quicker, things like that.”

Adapting to reform

Of course, during all this pay-down time the rate of innovation continues, and California manufacturer Intuitive Surgical will surely release one or more upgrades to the da Vinci or its software. Company technician Damon Talburt has already seen the evidence, having adapted to quite a few significant improvements during his 18 months employed by the firm, witnessing more than 400 customer procedures.

That raises another specter of such bottom-line debates. By not keeping pace with innovation, providers run the risk of limiting patient options and a community’s overall health. From the Sooner State’s consistently poor health rankings over the last decades, Duffy fears that’s happening in Oklahoma.

“I think the focus on the economics of health care over the past 20 years has distracted the medical providers from assuring they’re, first, at the top of their game, and second, have an economically secure environment,” he said. “I don’t have a lot of data to support that, but just looking around that what seems to be going on.”

Because of the cost challenges, Duffy expects the next wave of innovations to focus on delivering improved care at a lower price. He expects that to start with diagnoses and other applications taking place outside the doctor’s office.

“You can make a diagnosis of strep throat with a single test that’s a swab in the throat,” he noted. “Quite frankly, a person could do that at home and, if positive, we could have a set of policies that permitted that person to get the penicillin or the antibiotics as needed.

“The cost doesn’t have to go up when the innovations occur, when the technology improves, and that’s something we haven’t understood how to handle in medicine,” he said. “It’s been quite frankly a unique situation in our economy.”

All of that points to perhaps the most complicated aspect of all. From Duffy to Wright, McKay to Frame, just about everyone stressed that the ultimate challenge in all of health care reform remains keeping the true bottom-line focus.

“The point is, this is the new technology, this is cutting-edge, this is better for the patient,” said Woodbeck. “We will do what’s right for the patient.”