

Delivering Robotic-Assisted Technologies in Spine Fusion Surgery

By Charles H. Clark, M.D., Carter Harsh, M.D., and Thomas Wilson, M.D., at Neurosurgical Associates P.C.

Spinal fusion technology that is being used worldwide for spinal procedures is now accessible for patients in Birmingham, Alabama. St. Vincent's Birmingham is the first hospital in the state to adopt the pioneering robotic-guidance technology of Mazor Robotics Renaissance System. By enhancing the neurosurgeon's capabilities, the system allows for improved patient care by reducing post-operative pain as well as providing a shorter recovery time after the patient leaves the hospital.

Many spinal procedures involve the attachment of screws and other implants to the spine. Spine surgery has little room for error, as the vertebrae are surrounded by nerves, major blood vessels, and other vital structures. The innovative robotic-guidance technology's software allows surgeons to pre-plan a patient's spine surgery virtually, using a 3D simulation of the spinal anatomy based upon the patient's most recent CT scan. The planning assists with accuracy independent of anatomical challenges and field-of-view. During the planning phase, the trajectory of the screw as well as the size and length are determined. The placement of the screws can be reviewed with animation allowing adjustments in .1mm increments to ensure accurate placement of each screw while considering the anatomy of each individual patient in depth. This makes for a more precise surgical plan and eventually achieves a smoother operation.

Once the surgical blueprint is created using this platform, the file is brought to the OR at the time of surgery. After the patient is anesthetized and positioned, the Mazor technology matches, in real time, the neurosurgeon's pre-operative 3D plan with two intra-operative x-rays of the patient's spine - thereby identifying each segment of the spine. During the surgical procedure, the technology guides the robotic arm into the correct position to assist the surgeon in pinpointing the precise location to place his instruments to ensure even greater accuracy and safer placement of percutaneous screws (minimally invasive) and other hardware into the spine.



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Open surgical techniques are beneficial and necessary for many conditions; however, in some cases minimally invasive surgery (MIS) can be utilized to safely obtain a similar result. MIS uses smaller incisions which usually result in less damage to surrounding healthy tissue, less post-operative pain and faster recovery. In many situations, MIS requires an increase in the use of intraoperative x-rays in order to compensate for a surgeon's inability to directly visualize the spine. In some cases, this lack of visualization could decrease the surgeon's accuracy when compared to open surgery. In addition the increased radiation exposure during surgery is a concern for the patient as well as the health care team, as previous studies have shown an increased rate of cancer among spine surgeons, compared to the general population¹.

Robotic-guided surgery allows the surgeon to perform MIS in a very precise fashion while minimizing the need for radiation during the surgical procedure. Robotic-guidance technology guides the surgeon's tools during MIS to ensure accuracy while decreasing tissue trauma, resulting in less bleeding, smaller scars, less pain and faster recovery.

The clinical evidence speaks for itself: Compared to freehand surgery, in 112 cases, robotic-guided surgery significantly:

- Improved implant accuracy by 70% *continued on page 2*

continued from page 1

- Reduced X-ray dosage by 56%
- Reduced complication rates by 48%
- Reduced re-operations 46%
- Reduced average length of stay 27%²

Neurosurgeons at St. Vincent's Birmingham plan to use robotic-guidance technology for a wide range of spinal procedures including biopsies, revision spinal procedures, removal of spinal hardware, thoracic and lumbar spinal fusions, among others.

Using advanced robotic-guidance technology puts St. Vincent's Birmingham and its neurosurgeons on the forefront

of spinal surgery. This technology will allow both traditional and minimally invasive spine surgeries to be performed more effectively and efficiently while assisting in ultimately returning the patient's quality of life.

References

¹ Singer. Occupational Radiation Exposure to the Surgeon. *Am Acad Ortho Surg* 2005; 13:69-76.

² Kantelhardt SR, Martinez R, Baerwinkel S, Burger R, Giese A, Rohde V. Perioperative Course and Accuracy of Screw Positioning in Conventional, Open Robotic-Guided and Percutaneous Robotic-Guided, Pedicle Screw Placement. *Eur Spine J.* 2011; 20(6):860-868.

Introducing Project Access

The Jefferson County Medical Society, in conjunction with a coalition of community groups in the area, is making plans to launch Project Access in the Jefferson County Area by the end of the year. Project Access is a physician driven, community-wide effort designed to link uninsured indigent patients to appropriate and necessary specialty and ancillary diagnostic, pharmacy and care coordination services for urgent medical conditions. While Project Access is new and innovative in Alabama, it has a twenty-year track record and has been implemented in approximately 50 areas in the United States. Even though these programs vary in some ways, at their core the mission is the same – to provide access to healthcare for low-income, uninsured patients.

The focus of Project Access in Jefferson County is specialty care provided by volunteer physicians. Due to the large

number of community health clinics, most of these patients have access to primary care—the difficulty arises when a patient needs the care of a specialist physician. However, if any primary care physician wants to volunteer to see patients through Project Access, your services are more than welcome! You can volunteer at one of the community charity clinics or you can see the patients in your own office. We are working with the hospital systems and other service providers in the county to secure ancillary services and hospitalizations free or at significantly lower costs. Project Access will be housed in the JCMS building, but will have its own staff who have experience in care coordination. We have approximately fifteen community organizations who are working on the program.

The benefit to specialists who volunteer *continued on page 3*

Dispensary of Hope

Are the sample closets at your office full or overflowing? Do you have samples of medications you do not recommend to your patients or samples approaching their expiration date? Do you have to worry about how to dispose of expired samples? There is a simple solution to those problems that costs you nothing and can benefit many people. The Dispensary of Hope (DOH), a 501(c)(3) group based in Nashville, recovers surplus medications from manufacturers, distributors and physicians and redistributes them to the uninsured. They estimate that almost \$10 billion in medications—including \$2.2 billion in samples alone—go to waste each year while millions of patients go without the medicine they need. DOH currently has at least three access sites here in town that distribute medications that have been donated to the program.

There currently are over a thousand physician practices across the country that participate in the "Fill the Box Fill the Need" campaign. Despite the large number of practices in our area, there are only about six which contribute to the Dispensary of Hope (DOH) program at this time. Participating is easy—you register for the program and DOH sends a Hope Box™ to your office. You simply add your samples to the box and when it is ready, seal it, apply the provided pre-paid shipping label and ship it via UPS. DOH will inventory the contents, send you an itemized receipt (to trace your disposition of the samples) and send another Hope Box™ to your office.

To register or for more information on the program, visit the DOH website at: www.dispensaryofhope.org. Once the Project Access program is launched here in Birmingham (described in the Project Access article above), DOH will be a source of medications for patients enrolled in Project Access.

through the program is that the patients will be screened for eligibility by Project Access staff and will have an established primary care provider before being referred to the specialist. Project Access staff will provide care navigation services to help make sure patients keep appointments, have necessary tests before arriving at the specialist's office, adhere to the treatment plan, etc. Physicians, many of who are currently caring for indigent patients, will not have to invest as much staff time in care navigation for these patients and in trying to figure out how to get necessary labs or other tests performed. Specialists will not have to provide ongoing primary care services for these patients. Primary care physicians who provide charity care will benefit because they or their staff members will not have to spend significant amounts of time calling around town to try to find a specialist to see a patient. Physicians have the opportunity to coordinate their charity care through one office and the value of those donated services is tracked for the physician. Chattanooga implemented Project Access in April 2004. Since then \$142 million in free health care has been provided--in addition to the care provided by partner primary care clinics. They have more than 900 physician volunteers, three hospital systems and two specialty hospitals that participate and have screened more than 15,000 people for program eligibility. (Hamilton County, where Chattanooga is located, has a population roughly half the size of Jefferson County).

What do we want at this time? This program simply cannot function without physician volunteers. We are discussing

the program with area hospitals and ancillary providers and we are also exploring funding options. We need to show these entities that the physician community, many of whom are already caring for this patient population, are willing to provide charity care through Project Access. If you are willing to participate in the program, you can volunteer to be added to the database by completing the Physician commitment form at: www.jcmsalabama.org. You have the ability to designate how many patients you are willing to see in a year and you will not be approached by Project Access to see additional patients during that time. We hope to be able to kick off the program by the fourth quarter this year so you would not begin seeing any patients until late in the year. Your replies will let us know how many physicians we can count on!

We also need physician leaders to serve as Project Access champions—to educate your colleagues about the program, help recruit volunteers and to serve on the Project Access workgroups that have been established. Those workgroups include Hospital Care Coordination, Medical Care Coordination, Marketing and Outreach, Physician Recruitment, Pharmacy Assistance and Program Evaluation. We would like to have each of the workgroups chaired by a Jefferson County physician.

If you need additional information about the program or have suggestions as we launch this new program, please contact our Executive Director, Martha Wise, at mwise@jcmsalabama.org or 933-8601.

Upcoming Events

- | | |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| May 16 | Executive Committee Meeting – 5:30 p.m.
Board of Directors Meeting – 6:30 p.m. |
| May 17 | The Wayne Finley 811 Breakfast Meeting – Craig J. Hoesley, M.D., will speak on “Update of Medical Education and UASOM Programs” at 8:30 a.m. in the JCMS Board Room |
| May 22 | Annual JCMS Barons Event – Birmingham Barons will play the Montgomery Biscuits at 3:00 p.m. at the Regions Field. |
| June 20 | Foundation Trust Meeting – 5:00 p.m.
Executive Committee Meeting – 5:30 p.m. |
| July 18 | Executive Committee Meeting – 5:30 p.m. |

Contact Juanita Pruitt at 933-8601 or jpruitt@jcmsalabama.org for more information regarding any of the above events.



CDC's Response to **Zika**

US Zika Pregnancy Registry

What Pregnant Women Need to Know



The CDC has created a U.S. Zika Pregnancy Registry. For more information, please go to their website at <http://www.cdc.gov/zika/hc-providers/registry.html>. The website also contains fact sheets for obstetric and pediatric providers as well as pregnant women.

New Office Building Opportunity: LIBERTY PARK

Building site is the first site in Liberty Park from I-459 and is on the Cahaba River. Part of the renowned office park The Urban Center. Up to +/- 36,000 sf in 1 to up to 3 – 2 story buildings of +/- 12,000 sf each (+/- 6,000 sf per floor). Customize your building and interior layout to suit your needs. Developer is ultimately flexible: sell or lease a building pad, sell or lease an entire building, possible joint venture, or lease a floor in one of the buildings.

Please call or email for more information. Sorrell Chew – Hydinger Stewart and Chew Commercial Properties, LLC. 205-380-3329 or sorrell@hsccommercial.com

The YMCA is registering now for their Blood Pressure Self-Monitoring Program



**FOR YOUTH DEVELOPMENT®
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Participants will work with trained Healthy Heart Ambassadors for the duration of the four-month program. During this time, participants will be encouraged to:

- Self-measure their blood pressure at least two times per month
- Attend two personalized consultations per month
- Attend monthly nutrition education seminars

Participants will record their blood pressure readings using an easy-to-use, self-selected tracking tool. The Y will provide options for participants who need a home blood pressure monitor.

PROGRAM GOALS

- Reduction in blood pressure
- Better blood pressure management
- Increased awareness of triggers that elevate blood pressure
- Enhanced knowledge to develop healthier eating habits.

TO QUALIFY, PARTICIPANTS WILL:

- Be at least 18 years old
- Be diagnosed with high blood pressure
- Not have experienced a recent cardiac event
- Not have atrial fibrillation or other arrhythmias

REGISTERING NOW FOR NEW SESSIONS!

Cost \$15 YMCA Members | \$30 General Public
Available at Alabaster, Downtown, Northeast, Shades Valley, and Western Area locations.

For more information about the program, contact Keesha Nelson at knelson@ymcabham.org To learn more online, please go to www.jcmsalabama.org



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Annual *Barons* Event

Sunday, May 22, 2016

Regions Field

Game time: 3:00 pm

Birmingham Barons **VS.** **Montgomery Biscuits**

Meal will be served at 3:00 p.m.

Covered Patio Seating

No Charge to Attend for JCMS Members & Immediate Family*
RSVP by emailing Martha at mwise@jcmsalabama.org
or call 933-8601

Deadline to RSVP is Thursday, May 5 at 3:00 p.m.**

Sponsored by Alliance Collection Service, Inc.

*Immediate family includes those family members who are residing in your household. Ticket packages can be purchased for additional guests

**If your plans change and you will not be able to attend, please cancel by May 5 at 3:00 p.m. We have to guarantee our final number at that time, and are charged based on that number. If your reservation is not cancelled in a timely manner and we cannot use your tickets for another member, you will be charged.

For more information about the Regions Field, please visit their website: barons.com



JCMS Welcomes the Following New Members

Matthew Brian Albright, M.D.	Ophthalmology	Daniel K. McDonald, M.D.	Family Medicine
Leland N. Allen, III, M.D.	Infectious Diseases	Darby H. McElderry, M.D.	Pediatrics
David Jospeh Askenazi, M.D.	Pediatrics	Kathryn P. McKinney, M.D.	Obstetrics/Gynecology
Mark Stanley Baker, M.D.	Anesthesiology	Amitkumar N. Mehta, M.D.	Hematology/Oncology
Siddharth Bansal, M.D.	Internal Medicine	Michael S. Menowsky II, M.D.	Anesthesiology
Walter C. Bell, M.D.	Pathology	Jose Ramon Mestre, M.D.	Pediatrics
Timothy G. Beukelman, M.D.	Pediatrics	Mohammed A. Mohiuddin, M.D.	Anesthesiology
Erin G. Bhatia, M.D.	Pediatrics	Dodd Franklin Mullican, M.D.	Anesthesiology
Smita Bhatia, M.D.	Pediatrics	Shannon M. Murphy, M.D.	Pediatrics
Allen Wayne Bryan, Jr., M.D.	Pathology	Sridaran Narayanan, M.D.	Pediatrics
Amy Myers CaJacob, M.D.	Allergy & Asthma	P. Hrudaya Nath, M.D.	Radiology
Brian Edward Campbell, M.D.	Anesthesiology	Juhan Paiste, M.D.	Anesthesiology
Herbert Chen, M.D.	Surgery	Susan J. Phillips, M.D.	Family Medicine
Mitchell B. Cohen, M.D.	Pediatric Gastroenterology	Benjamin Plaisance, M.D.	Cardiology
Monica T. Cramer, D.O.	Pediatrics (Nephrology)	Evan Jerome Raff, M.D.	Internal Medicine
Stuart L. Cramer, D.O.	Pediatrics	Sujan Ravi, M.D.	Internal Medicine
Mollie R. DeShazo, M.D.	Medical Oncology	Leslie Ann Rhodes, M.D.	Pediatrics
Candice Clark Dye, M.D.	Pediatrics	Michelle Robbin, M.D.	Radiology
Sahar A. Fathallah-Shaykh, M.D.	Pediatrics	Erik D. Roberson, M.D.	Neurology
Daniel I. Feig, M.D.	Pediatrics	Joanne Rossman, M.D.	Medical Oncology
David Patrick Galloway, M.D.	Pediatric Gastroenterology	Gary S. Roubin, M.D.	Cardiology
Angel Alberto Gomez, M.D.	Radiology	Christopher Rowley, M.D.	Cardiology
Emily Goulet, M.D.	Reproductive Endocrinology	Robert Mitchell Savage, M.D.	Anesthesiology
Benjamin J. Greene, M.D.	Otolaryngology	Monjri Manhar Shah, M.D.	Gynecologic Oncology
Christopher J. Greene, M.D.	Emergency Medicine	Angela Shapshak, M.D.	Emergency Medicine
Toby Ira Gropen, M.D.	Neurology	Marvin L. Simons, Jr., M.D.	Anesthesiology
Himanshu Gupta, M.D.	Cardiology	Mr. Benjamin F. Smood	Medical Student
Hilary Laura Haines, M.D.	Pediatrics	Anisa Ssengoba-Ubogu, M.D.	Family Medicine
Wynton Hoover, M.D.	Pediatrics (Pulmonary)	Mr. Chandler Scott Stisher	Medical Student
Christopher M. Huff, M.D.	Cardiology	Michael A. Taylor, M.D.	Pediatrics
Brian B. Hughley, M.D.	Otolaryngology	Darin D. Tessier, M.D.	Orthopedics
Carrie B. Huner, M.D.	Family Medicine	Alan T. Tita, M.D.	Obstetrics/Gynecology
Kevin Meers Kennedy, M.D.	Anesthesiology	Jennifer K. Wagner, M.D.	Orthopedics
Matthew A. Kutny, M.D.	Pediatrics	Henry Wang, M.D.	Emergency Medicine
Morissa J. Ladinsky, M.D.	Pediatrics	Frederick H. Weber, Jr., M.D.	Gastroenterology
Edward M. Levy, M.D.	Internal Medicine	Allison Graves Wilkin, M.D.	Internal Medicine
Tiffany J. Lewis, M.D.	Internal Medicine	Lawrence A. Williams, M.D.	Pathology
Lauren Linken, M.D.	Family Medicine	Min Xie, M.D.	Internal Medicine
David Javier Lozano, M.D.	Pediatrics	Jessica Zarzour, M.D.	Radiology
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Grady E. Maddox, M.D.	Orthopaedics	Gretchen N. Zsebik, M.D.	Obstetrics/Gynecology
Jonathan McConathy, M.D., Ph.D.	Radiology		

IN MEMORIAM

THE JCMS WANTS TO ACKNOWLEDGE THE RECENT PASSING
OF THE FOLLOWING JCMS MEMBERS:

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