



Clinical Update

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“Doctor” da Vinci Joins Surgical Team

The \$1 million surgical robot at University Hospital offers patients a more rapid recovery – and offers surgeons an intuitive sense of control.

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Cancer Patients Breathe Easier with PDT

Photodynamic Therapy brings almost immediate relief to cancer patients with obstructed airways.

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More Activity, Higher Acuity in ED

In 2003, the University Hospital ED treated a record number of patients and saw an increase in the complexity of cases.

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SUNY UPSTATE MEDICAL UNIVERSITY
Syracuse, New York & University Hospital



Intuitive Surgical Robot Offers Best of Both Worlds

A2 MD Direct: 800-544-1605 *(University Hospital's Physician-To-Physician Service)*



A surgical robot that integrates the best features of minimally invasive and open surgery is now operating at University Hospital. The da Vinci Surgical System® was added this year to the hospital's arsenal of advanced surgical technology, at a cost of more than \$1 million.

The investment made sense to University Hospital because it offers clear advantages to patients.

"The da Vinci system reduces the size of the surgical incision, the length of stay, postoperative pain and risk of infection," reports Charles Lutz MD, the first University Hospital surgeon to operate with the new system. "For the patient, it means a faster, more comfortable return to normal activity."

For the surgeon, the da Vinci system retains – and even enhances – the advantages of open surgery, including direct 3-D visualization, full range of motion and an intuitive sense of control.

Dr. Lutz, who is fellowship trained in cardiac surgery and has completed special training with the da Vinci system, is most impressed by the robot's dexterity and precision. "This device does things the surgeon's hands cannot physically do," he explains.

"It makes the right and left hand ambidextrous. It eliminates any tremor. It scales back delicate hand movements to an even more precise level. It allows us to perform more complex procedures through pencil-sized incisions.

"And it never gets tired," adds Dr. Lutz.



The da Vinci Surgical System:

The da Vinci Team:

From left, Patricia Kuntz RN, patient service manager; Stephen Vaughn CCP, perfusionist; Charles Lutz MD, cardio-thoracic surgeon; and David Downey PA-C, physician assistant.

The robotic system also allows the surgeon to operate with natural hand-eye coordination while seated at a console five feet from the patient. The instrument's movements at the patient mimic the surgeon's hand movements at the console. When the surgeon turns the controls clockwise, the robot's instruments turn clockwise. Standard laparoscopic surgery is counter-intuitive, with the surgeon working from a mirror image of the operating field.

Initially available for mitral valve repair, mammary artery harvesting and coronary artery bypass, the da Vinci system will eventually be used for gastric bypass surgery, prostatectomy and various pediatric procedures performed by University Hospital surgeons.

University Hospital's da Vinci system is one of only 210 available in the United States, Europe and Japan. It was the first surgical robot system to be judged safe and effective by the US Food and Drug Administration.

How It Works

- A** The surgeon, who works at a console several feet from the patient, views the high-resolution, 3-D surgical field on the console screen.
- B** With hands and wrists naturally positioned, the surgeon manipulates instrument controls positioned below the display screen.
- C** InSite® vision software seamlessly transmits the surgeon's hand, wrist and finger movements to the ultra-sensitive EndoWrist® instruments positioned inside the robotic arms.
- D** Through 1-cm ports, the instruments immediately execute the commands. Each instrument has a specific mission – such as clamping, suturing or severing – and is designed with seven degrees of motion to mimic the surgeon's dexterity.
- E** At the patient's side, the surgical team prepares the ports, installs and changes instruments and supervises the robotic arms.
- F** The InSite Vision System – also visible on the surgeon's display – enhances, refines and optimizes 3-D images of the operative field.



Photodynamic Therapy Opens Airways



Keeping patients as comfortable as possible is a cornerstone of any cancer treatment plan.

An important new palliative therapy, which opens the airways of patients with obstructing lung cancer, is now offered at University Hospital by thoracic surgeons Leslie Kohman MD, director of the Thoracic Oncology Program and Elisabeth Dexter MD who did the first case in Central New York. Other physicians in the divisions of Pulmonary Medicine and Gastroenterology also have access to this technology for treatment of their patients.

Photodynamic Therapy, also known as PDT, offers appropriate patients almost immediate improvement in breathing (and swallowing in the case of obstructing esophageal cancer). The new outpatient procedure employs the photoreactive drug Photofrin® and a \$75,000 Diomed 630 PDT laser. The

drug and the laser work in tandem to target and destroy cancer cells while minimizing harm to surrounding healthy tissue.

“PDT is a relatively benign procedure, and it produces good results from a functional standpoint,” reports Dr. Kohman, who along with Dr. Dexter has completed advanced training in PDT. “It is generally well-tolerated and can be repeated if necessary.”

The PDT procedure begins with the injection of Photofrin intravenously. The photoreactive drug selectively accumulates and lingers in tumor tissue. After two days, the photosensitized cancer cells are exposed to laser light, which is encased in flexible fiber-optic strands and passed through an endoscope.

The treated cells absorb the non-thermal laser light and produce a highly reactive form of oxygen that destroys the tumor. The laser treatment may be repeated two days later, if indicated.

Quality Time

Philip Lloyd of Eaton, pictured fishing with his grandson, Tyler, experienced dramatic improvement in his breathing after Photodynamic Therapy administered by Dr. Elisabeth Dexter at University Hospital. “The treatment was not uncomfortable in any way whatsoever,” reports Lloyd, whose lung cancer treatment plan also includes chemotherapy and radiation therapy.



for Cancer Patients

Eradication of the tumor results in rapid improvement in the patient's breathing, and in the case of esophageal cancer, rapid improvement in swallowing. The primary side effect is photo-sensitivity: the patient must avoid sunlight or strong indoor light for several weeks after the treatment.

The procedure is FDA-approved to relieve obstruction in advanced cases of lung cancer with endotracheal or endobronchial obstruction. It is also indicated in certain early cases of endobronchial tumor, particularly carcinoma in situ, and for the treatment of Barrett's esophagus. The procedure also shows promise in the treatment of oral and head and neck malignancies, and breast, colorectal and gynecological cancers.

In Central New York, PDT is available exclusively at University Hospital in Syracuse. With the addition of PDT, University Hospital now offers a complete spectrum of treatments for malignant airway or esophageal obstruction, including stents, YAG laser, brachytherapy, cryotherapy, argon beam coagulation and mechanical debridement.

In recognition of its comprehensive cancer services, University Hospital is accredited by the American College of Surgeons' Commission on Cancer. Only one in four cancer centers nationally achieve this elite designation.

PDT Advantages

- Almost immediate improvement in breathing and swallowing
- Minimally invasive, outpatient procedure
- Minimal if any damage to surrounding, normal tissue
- Minimal or no scarring
- Does not inhibit other cancer therapies, such as chemotherapy or radiation therapy
- Side effects generally limited to photosensitivity for 30 days after treatment

“PDT is a relatively benign procedure, and it produces good results from a functional standpoint,” reports Dr. Kohman.





Activity and Acuity On the Rise In University Hospital Emergency Department

The University Hospital Emergency Department treated close to 48,000 patients in 2003 – a record number – and saw a significant rise in the complexity of its cases. The increased activity and acuity can largely be attributed to two trends, according to John McCabe MD, chair of the Department of Emergency Medicine.



“On the one hand, more routine medical problems are now treated by primary care physicians and non-hospital locations such as urgent care centers,” he explains. “But as the region’s only level 1 trauma center and academic medical center, we are seeing increasingly complicated cases. Other local emergency departments have withdrawn from trauma care, and many community hospitals no longer offer specialty coverage. Their patients now come here.”

Also influencing Emergency Department volume – locally and nationwide – is a trend toward shorter hospital stays. “Patients are discharged

sooner but sometimes end up back in the ED,” says Dr. McCabe.

Lower Level of Diversion

Despite the increased demands, University Hospital’s Emergency Department had to divert patients less often than in previous years. “We were on diversion less than we used to be but more than we wanted to be,” reports Dr. McCabe.

University Hospital’s Emergency Department is staffed by 17 full-time clinical faculty and 28 residents. In addition, the department offers two EMS fellowships, focused on the pre-

hospital phase of emergency medicine, as well as a fellowship in pediatric medicine. “With the addition of The Central New York Children’s Hospital at University Hospital, we anticipate a need for more space and more pediatric emergency medicine specialists in our Pediatric Emergency Department,” says Dr. McCabe.

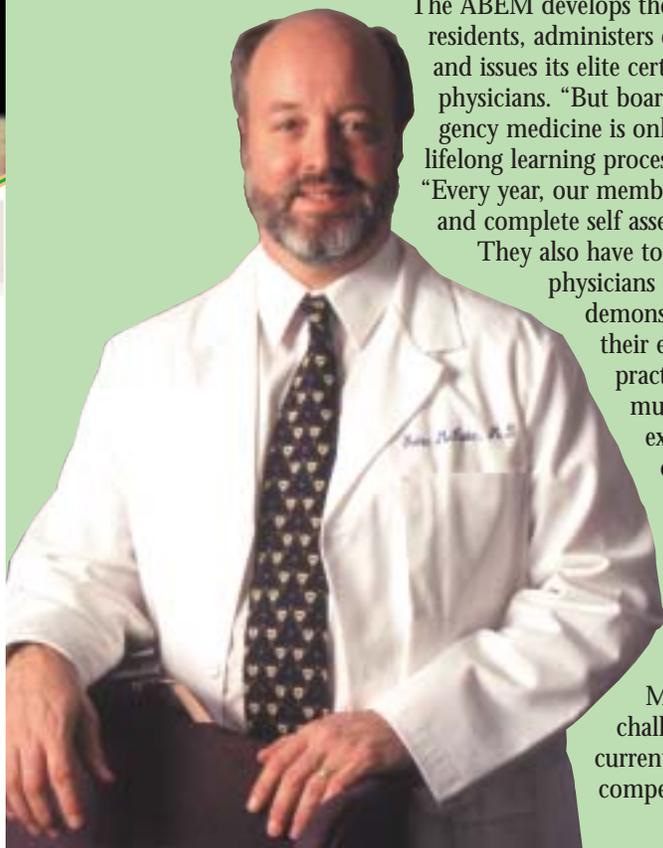
“By simply announcing that we will be building a children’s hospital, we increased our pediatric volume by about 11 percent in 2003, to more than 18,300 patients,” reports Richard Cantor MD, director of University Hospital’s dedicated Pediatric Emergency Department since 1981.



Setting the Standard In Emergency Medicine

SUNY Upstate Chair Heads National Board

At 25 years old, the American Board of Emergency Medicine (ABEM) is an upstart in the world of medical specialty certification. (Only medical genetics is of more recent vintage.) But when it comes to setting – and maintaining – high standards for its members, the ABEM is well ahead of the curve. “We take very seriously our mandate to establish lifelong standards for our members,” says SUNY Upstate’s John McCabe MD, who assumed the presidency of the ABEM in July 2004. Dr. McCabe also serves on the Executive Committee of the American Board of Medical Specialties, which oversees boards of all 24 medical specialties.



The ABEM develops the training standards for residents, administers oral and written exams and issues its elite certification to qualified physicians. “But board certification in emergency medicine is only the first step in a lifelong learning process,” notes Dr. McCabe. “Every year, our members must read articles and complete self assessments on the computer.

They also have to prove that they are physicians in good standing and demonstrate improvement in their emergency department practice. Every 10 years, they must take a comprehensive exam to demonstrate continued proficiency in the broad topics that encompass the practice of emergency medicine.

“Our initial challenge is to board certify our members,” says Dr. McCabe, “but our biggest challenge is to keep them current and to maintain their competencies.”



Raising the Bar

The urgency of working on the front lines of medicine compels University Hospital’s Emergency Department to continually improve the quality and efficiency of its care. Initiatives currently most recently introduced include:

- acquisition of a dedicated CT scanner
- introduction of an Internal Medicine Hospitalist Program, with internal medicine specialists assigned exclusively to University Hospital patients
- reinstatement of fellowship in pediatric emergency medicine
- utilization of a Transfer Center to facilitate transfers from other emergency departments
- autofaxing Emergency Department records to primary care physicians