Telesynergy®

LINKING UAB PHYSICIANS WITH UNDERSERVED POPULATIONS

A sophisticated videoconferencing system linking UAB radiation oncologists with underserved, minority, and low-income populations is designed to improve these patients’ access to clinical trials and the latest cancer therapies.

Located in the basement conference room of UAB’s Wallace Tumor Institute, the Telesynergy® system includes an Olympus microscope, patient exam camera, color video printer, radiology monitors, audio equipment, and peripheral devices that display high-resolution real-time or stored images from multiple medical modalities.

A 5-year, $3.6 million grant from the National Cancer Institute’s Cancer Disparities Research Partnerships Program (CDRP) brought the system to UAB, radiation oncologist Sharon Spencer, MD, says. “By linking larger cancer centers with institutions in rural and historically underserved areas, we hope to reduce cancer disparities in minorities and low-income populations, who often have high rates of disease and limited access to national research protocols.”

Through CDRP, UAB is partnering with the Singing River Hospital Regional Cancer Center in Pascagoula, Mississippi. Dr. Spencer and UAB Comprehensive Cancer Center colleagues are collaborating with Singing River radiation oncologist Raymond Wynn, MD, who is principal investigator for the CDRP grant, on protocols investigating metastatic brain tumors, prostate screening, intensity modulated radiation therapy for head and neck cancer, and unresectable lung cancer.

“With Telesynergy, we can examine patients at a distance, consult about treatment plans, screen for clinical trials, and determine whether patients are candidates for procedures such as gamma knife surgery,” she says. The Health Insurance Portability and Accountability Act compliant system transmits high-quality diagnostic radiologic and pathologic images and allows physicians to remotely manipulate biopsy specimens.

“This grant allows us to partner with nationally renowned experts,” Dr. Wynn says. “We can continue our goal of comprehensive care close to home because now, in many cases, our patients won’t have to leave the area to see a consulting physician or get a second opinion.”

Mona Fouad, MD, MPH, principal investigator on more than $40 million in federal grants aimed at improving health and preventing disease among minorities, and Edward Partridge, MD, principal investigator for the Deep South Network for Cancer Control, are consulting with UAB investigators working on the CDRP grant. “Drs. Fouad and Partridge have much experience with underserved populations and are successful in getting these traditionally hard-to-recruit groups to participate in prevention studies,” Dr. Spencer says. “They are advising our

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Dr. Sharon Spencer examines Telesynergy® images.
High-tech Pediatric Burn Care

TELEMEDICINE EXTENDS SPECIALIST EXPERTISE TO UNDERSERVED AREAS

The 42-inch flat-screen monitor hanging on the office wall of pediatric surgeon William Hardin, Jr., MD, gives him a live, high-definition view of Children’s Hospital burn and trauma rooms. Several of his colleagues’ offices and selected operating rooms at Children’s also are equipped with the videoconferencing system.

“These units are the start of what I hope will be a telemedical network used for evaluation of acute burns and follow-up care of pediatric burn patients,” Dr. Hardin says. “Telemedicine has many potential applications and benefits for pediatric burn patients; it could, for example, allow Children’s burn specialists to begin the complex treatment process as soon as a new burn patient is admitted to a remote Emergency Department (ED).

“Patients referred to us often have burns whose size and depth have been grossly underestimated. As a result, these patients are usually underresuscitated and may require rapid administration of fluids to correct the deficit,” he explains. “With telemedicine, we could look into an ED with real-time technology or receive digital images documenting the appearance of the burns, which would allow us to accurately estimate burn depth and the percentage of affected body surface area to determine appropriate initial fluid resuscitation.”

Has telemedical technology advanced enough to allow precise medical decision making for burn patients? That is one of the questions Dr. Hardin and colleagues are addressing. “Burns are a surface disease, and good digital or video images probably mirror what we see during in-person assessments,” he says. “The literature suggests we can make accurate estimates from a distance, but many issues must be addressed before we can put the system into widespread use.”

PREPARING FOR PRIME TIME

Dr. Hardin and colleagues are exploring telemedicine’s potential in a number of pilot studies. One investigation compares accuracy of evaluations of burn patients made by the referring hospital with an in-person assessment made in Children’s burn room and estimates made by physicians viewing video footage of burns.

“I think we’re going to find that telemedical evaluation of patients by burn specialists comes close to in-person assessments made in burn centers and that both are far superior to estimates from nonburn professionals who are often asked to perform initial evaluation and stabilization of pediatric burn patients,” he says.

Pediatric burn specialists at Children’s also are working with the Alabama Department of Public Health to purchase and investigate the efficacy of mobile telemedical carts equipped with computers and audio-visual capabilities. “We’re going to evaluate the carts for use in follow-up care,” Dr Hardin says. “Many of our patients must travel considerable distances for the after-care burns demand. We believe there are large hidden costs associated with follow-up care. In addition to travel expenses, for example, parents must often take time off work. Teleconsultations could provide a cost-effective alternative to clinic visits.”

This same technology could be used to extend services to the Black Belt and other underserved regions, says Dr. Hardin, who also expects telemedicine...
New Frozen Section Lab Speeds Surgical Pathology Consultations

University Hospital’s updated frozen section laboratory, located on the new hospital’s sixth floor between the fifth and seventh floor operating rooms (OR), evaluates about 4,000 specimens a year. That number will increase as the hospital’s volume grows, but the state-of-the-art lab is built to handle expansion, Director of the Division of Anatomic Pathology Gene P. Siegal, MD, PhD, says.

Pathologists were often cramped for space in the old lab, especially when surgical teams crowded in to consult about cases. The new lab easily accommodates staff and visiting surgeons, although high-tech audio-visual links to ORs make the trip to view specimens less essential than in the past. Surgeons can now examine high-resolution microscopic images of frozen sections on OR monitors and discuss surgical issues with pathologists without ever leaving their patients.

Small specimens from ORs, The Kirklin Clinic®, and other areas around the medical center are quickly transported to the frozen section lab through the pneumatic tube system; larger specimens are brought to the lab via a dedicated “sterile stairway” connecting the lab to ORs. The lab is equipped in duplicate with multiheaded microscopes and staining and cryostat areas and has several computer workstations so staff can be productive between cases. It is also designed to incorporate “telepathology” sessions that allow staff to view and evaluate specimens at any location with a high-tech videoconferencing system.

Pathologists’ assistant Scott Young follows Dr. Michael Klein’s guidance in the frozen section room (from left).

High-tech Pediatric Burn Care

continued from page 2

to play an important role in the aftermath of terrorist attacks or natural disasters.

“Experts estimate about 30% of individuals injured during a terrorist event or natural disaster will be burn patients and a significant number of the injured will be children,” he says. “Our ability to respond to these situations depends on efficient communication channels. The proposed telemedical network will help us rapidly prepare for a large number of patients or deploy needed personnel to a location that’s being inundated through some sort of disaster.”

“Telementoring” is yet another use for high-end videoconferencing, Dr. Hardin says. “This technology can be used for remotely assisting with pediatric surgery. My colleague, Dr. Keith Georgeson, has already used our equipment to telementor an operation in New York state.”

Many issues must be resolved before making the leap from telemedicine’s experimental phase to full-scale implementation. “Connecting multiple specialists to EDs around the country presents a number of technological challenges,” he says. “Much of this technology was initially developed by the Department of Defense, and they have worked out many logistical problems — we must now transfer some of those solutions from the military environment to the civilian health care sector.”

Health care organizations must also address licensure and reimbursement issues, but Dr. Hardin and colleagues hope to extend telemedical expertise to remote areas within a year. “Right now, we are focusing on gathering data that will tell us about the system’s technological limitations, cost-effectiveness, and benefit to patients and how we can best integrate telemedicine and our existing clinical services,” he says. “Our goal is to serve as a major burn center for children in the Southeast. High-level pediatric burn care, which requires specialized resources and the expertise of a large team of surgeons, therapists, and support personnel, is a scarce resource. My colleagues and I believe telemedicine can serve as a bridge to extend our services into underserved areas in Alabama and neighboring states.”

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UAB physicians: visit MSI, the password-protected Medical Staff intranet site, at https://horizon.hs.uab.edu.
a compatible system. “With this technology, championed by Associate Professor of Pathology Thomas Winokur, MD, UAB pathologists can work with medical colleagues in rural Alabama or anywhere around the world,” Dr. Siegal says.

“This is the most technologically advanced frozen section lab I’ve seen,” says Head of the Section of Surgical Pathology Michael J. Klein, MD, who joined UAB’s faculty in 2003 from Mount Sinai School of Medicine in New York where he was professor of pathology and orthopaedics and an attending pathologist at Mount Sinai Hospital.

“Extra work space and new technology that provides instantaneous communication with surgeons have increased the speed of intraoperative pathology consultations and improved patient care,” says Dr. Siegal, who credits histotechnologist Jan Pauls for her excellent work, noting she is the backbone of the lab, spending the majority of her working hours there processing specimens and assisting UAB scientists with research histology.

“The new lab, which is fantastic, is busier than ever — I’ve noticed a big increase in the last month or so — and new equipment really speeds up the process. Between cases, I enjoy doing research work and am available to help anyone at UAB with histology for small animal studies,” Pauls says, adding, “The new lab is an interesting and exciting place, but the best part of my job is working with the physicians and surgeons.”

The Lupus Foundation of America will hold its First Annual Celebrity Golf Tournament on July 13 at Oxmoor Valley Golf Course. Come and play with former NFL and NBA athletes and coaches. Cost is $150 for a single player and $400 for a foursome. A portion of each fee is tax deductible. For more information, call 934-8810.