



Southern California Teaching Hospitals Have It All Together

Creating a Filmless, Paperless Imaging Enterprise

Why Fujifilm?



"Synapse is a remarkably user-friendly system," said Dr. Mogel. "Everyone has embraced the technologies, even the most senior faculty who previously swore by film-based systems. No one misses the old 'sneakernet.'"

Greg Mogel, MD
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Los Angeles, Calif: Los Angeles County Hospital (LAC), one of the largest acute care hospitals in America, has been the primary facility of the University of Southern California (USC) Keck School of Medicine since 1885. Currently budgeted to staff 745 of its 1,395 beds, the hospital trains approximately 1,500 medical professionals per year, including more than 870 medical residents in nearly all medical specialties and 160 students of nursing and other health professions. One of the busiest public hospitals in the western United States, LAC+USC Medical Center manages almost 39,000 inpatient discharges, 150,000 emergency department visits, and 1 million ambulatory care visits each year. LAC also receives almost one third of the trauma cases in the region.

Approximately 45 USC radiologists provide imaging services' support for LAC+USC and 3 other healthcare facilities: USC University Hospital, a private, 293-bed research and teaching hospital staffed by the faculty of the renowned Keck School of Medicine of USC; USC/Norris Comprehensive Cancer Center, designated by the National Cancer Institute (NCI) as a leader in cancer treatment, research, prevention and education; and the state-of-the-art, 5-story Healthcare Consultation Center II (HCC II) that serves as the central practice site for most USC specialists and subspecialists. The Outpatient Imaging Center in the HCC II provides both cutting-edge diagnostic technology and the expertise of USC academic specialist radiologists essential for optimal treatment of patients at the 3 USC-affiliated hospitals as well as the outpatient center.

Integrating Disparate Systems Through Synapse®

Integrating the imaging needs of these disparate healthcare providers presented a challenge for both the radiology and information technology departments of each facility. Although LAC had been using a FUJIFILM Synapse® PACS on a limited basis for 5 or 6 years, it had no RIS, and the infrastructure of the aging hospital was outdated. University Hospital and the Norris Cancer Center, which are both owned and operated by Tenet Healthcare Corporation, had chosen, but not yet installed, the GE Medical Systems Application Service Provider (ASP) solution as their PACS, whereas the Outpatient Imaging Center in the HCC had fully installed a Siemens PACS just 1 year prior.

Greg Mogel, MD, Assistant Professor of Radiology and Biomedical Engineering at the University of Southern California and Medical Director of Imaging for USC University Hospital, said the radiology staff at the HCC II Imaging Center soon realized that the Siemens PACS did not adequately serve their needs. Conversely, because they also provided consultation at the county hospital, the radiologists were aware that the LAC FUJIFILM Synapse PACS was able to handle the demands of a large and busy public hospital, even with a limited installation. The county administrators had plans to expand the use of Synapse to all of the imaging departments at LAC. After careful consideration, administrators for both of the Tenet hospitals and the HCC II Imaging Center decided to install the FUJIFILM Synapse solution in their facilities as well.

"Synapse is a remarkably flexible system, and our radiologists showed a strong preference for the user interface," explained Dr. Mogel. "Because it utilizes the Digital Imaging and Communications in Medicine (DICOM) standard, Synapse is able to interface with a large number of modalities. This means that even images created by our pathology, ophthalmology, and dermatology departments can be housed within the PACS." Dr. Mogel further commented, "Although each site uses a different RIS, Synapse (through its Data Source Consolidation feature) enables data from each





Southern California *(continued)*

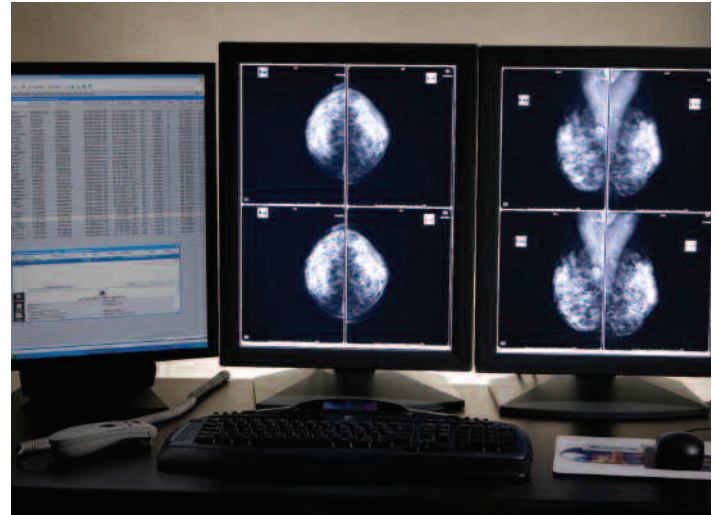
site to be brought together into a single database while keeping each site's data separate and secure." The HCC II uses Siemens' RIS, and University and Norris Hospitals use the Cerner RadNet® RIS, while the LAC currently has no RIS. Radiology and cardiology turnaround times average 4 hours and, for emergencies, 1 hour.

"Synapse's partnership with Vitrea® ensures seamless advanced visualization capabilities," said Dr. Mogel. "Synapse allows us to integrate the Powerscribe® system for speech recognition, and Commonview™ enables a physician to review and compare a current exam versus relevant priors, regardless of where the study was performed—a big plus for the USC medical enterprise." Synapse utilizes existing system capacities (including bandwidth) to help manage costs, control risks, and effectively utilize existing infrastructure.

Synapse employs a familiar Windows®/Internet Explorer interface, so it is easy to use and readily accepted by physicians. The user interface is identical for both referring physicians and radiologists, whether they are viewing Synapse on a laptop from home, in the classroom, or on a multiple-monitor diagnostic reading station at one of the hospitals.

One of the Top 25 Connected Healthcare Facilities in the United States

In addition to providing patient care and conducting clinical research, USC is also committed to studying and advancing IT systems. Recently named one of the Top 25 Connected Healthcare Facilities in the United States by Health Imaging & IT Magazine, and one of the Top 20 Wired Campuses in the United States (#8) by PC Magazine and the Princeton Review, the campus has 652 publicly available wireless access points. Each department offers a room with high-tech, video-conferencing capability with up to 4 webcams, multiple microphones, a monitoring room with one-way glass, and IP-streaming capability so students can watch recorded broadcasts of live lectures, and 280 classrooms outfitted with multiple webcams and microphones. A new video-conferencing system runs in every library meeting room, employing a TV-like remote control that allows users to punch in a room number, connect to another



USC campus across town—the medical college, for instance—and hold meetings in high-res using a 37-inch widescreen display. Likewise, the outpatient imaging center is filmless and paperless, and the rest of the Health Sciences Campus is rapidly moving in that direction.

Despite having one of the world's fastest supercomputers on site, most of the technology at USC is geared to usability and one-touch access. Because Synapse was built on integrated Web technology, all images and data are accessible anywhere on the USC campus and wherever Web access is available. As a major medical teaching institution, USC is uniquely positioned to train healthcare practitioners using cutting-edge digital technologies. In addition, both the academic and Health Sciences campuses serve as models for studying large-scale informatics systems. The Image Processing and Informatics (IPI) Lab, headed by Dr. Brent Liu, is an integral part of the radiology department, and its research into Fault Tolerance and other aspects of true Enterprise-wide PACS will only serve to deepen the cooperative relationship that has been established between Fujifilm and USC Health Sciences Campus.

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*-Greg Mogel, MD
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and Biomedical Engineering
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Facility Facts:

3 Hospitals:

**USC University Hospital
Norris Comprehensive Cancer Center
Los Angeles County Hospital**

Outpatient services: Healthcare Consultation Center II

Over 500 referring physicians

**One radiology group, USC Radiology Associates,
with 45 radiologists**

1,200,000+ exams per year

80,000+ electronic radiology reports viewed each month

PACS Facts:

500+ Synapse users

**Integrated to Synapse: CVIS, HIS, Nuclear Medicine,
Oncology, Ophthalmology, Orthopedics, Radiation Therapy,
RIS, Surgery, Teleradiology, Vascular**

RIS: Siemens Novius; Cerner Millennium

**HIS: Cerner (University Hospital/Norris Cancer Center),
Affinity (LAC)**

Dictation: Nuance PowerScribe® Voice Recognition

3D Imaging: Vital Imaging Vitrea®

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