



USC Keck School of Medicine Replaces Their Existing Speech Recognition System with Dictaphone PowerScribe® Speech Recognition to Facilitate Rapid Radiology Report Generation and Enhance Flow of Clinical Information to Physicians

The Keck School of Medicine of the University of Southern California, Los Angeles, is highly regarded for training tomorrow's leaders in patient care and biomedical research, while providing advanced healthcare to the people of Southern California. Keck has taken a significant step in utilizing technology to improve the productivity and efficiency with which patient information is documented and managed through the use of Dictaphone® PowerScribe® Speech Recognition from Nuance. Today, 42 radiologists, along with several residents and fellows use PowerScribe to self-edit 100% of all radiology reports generated at Keck's Healthcare Consultation Center II.

Progressive Technology Vision

Keck School of Medicine faculty members direct patient care at four partner hospitals and 15 affiliated hospitals, offering academic-level surgical and medical services to over 1 million patients annually. An intricate part of this community is the Keck Healthcare Consultation Center II (HCC II). The consultation center was designed to effectively support the Keck physicians by using cutting edge technology in order to facilitate easy access to clinical information across the community.

Dr. Rasu Shrestha, Informatics Director, with the support of Dr. Edward Grant, Chairman of Radiology, launched a progressive plan at HCC II. Dr. Shrestha indicated that the objective was to create a filmless environment and "become as digital as possible" by adopting sophisticated modalities, servers, and network infrastructure. Furthermore, Dr. Shrestha wanted to fully integrate their Siemens RIS with PACS and speech recognition. "Our aim was to create a model for the rest of the health sciences campus... To show the rest of the hospitals here that this can be done and this is how you can do it," said Dr. Shrestha. This initiative was soon underway as 42 radiologists, along with several residents and fellows, began rotating through the imaging center, generating 50,000 radiology exams annually.

Highlights

- 42 radiologists, along with several residents and fellows utilize PowerScribe
- 100% of reports generated via PowerScribe at HCC II are self-edited
- PowerScribe has been a vital component in establishing a filmless and digital environment
- Average radiology report turnaround time is now under 4 hours
- Reports are readily available for referring clinicians, facilitating enhanced quality of patient care



Rasu Shrestha, MD, Informatics Director

Seamlessly Replace Existing Speech Recognition System

This progressive technology vision became challenged due to integration issues between their Siemens RIS, PACS and existing speech recognition system, Agfa's TalkStation®. Dr. Shrestha and Dr. Grant recognized that a better speech recognition solution needed to be sought...Integration of systems was vital to achieving their technological goals. Seamless integration between their RIS, PACS and speech recognition system would enable radiologists to pull up images on the PACS and immediately begin dictating into the speech recognition system, facilitating rapid report generation with the images and corresponding report side-by-side. Upon radiologist sign-off, referring physicians could then immediately view the images and report in order to make informed patient care decisions.

Dictaphone PowerScribe, with its extensive list of RIS and PACS integration partners, was the logical choice for Keck. "We chose PowerScribe over a number of other vendors' speech recognition offerings," indicated Dr. Shrestha. "PowerScribe offered much better integration with our PACS and RIS systems, was fully web-based, and had a proven track record of successes in usability, and proven cost savings, evidenced at many facilities."

PowerScribe seamlessly replaced Agfa's TalkStation. "Overnight, actually, we went live with PowerScribe, so it was a very effortless procedure," noted Dr. Shrestha. "We were blown away by how well it was integrated with everything else."

"PowerScribe offered much better integration with our PACS and RIS systems, was fully web-based, and had a proven track record of successes in usability, and proven cost savings, evidenced at many facilities."

Anytime, Anywhere Access

"The majority of our Radiologists using PowerScribe practice at our Healthcare Consultation Center location. However, the PowerScribe system's web-based architecture allows them to easily access the PowerScribe system from any location," Shrestha indicated. Partly due to this easy system accessibility, average radiology report turnaround time is under 4 hours.

In addition to radiologists being able to utilize PowerScribe at any location, the PowerScribe reports and PACS images are now available for referring clinicians to view across the entire Keck community. Dr. Grant sees the ability to make clinical information immediately available shortly after being read by a radiologist, as having a significantly positive impact on the Keck community. "It makes radiology much more relevant to the referring clinicians, when they know that the report is going to be available within a matter of minutes, rather than having to call down to the radiologist to determine a result."

Dr. Shrestha concurs, "I think PowerScribe has been able to impact patient care in a big way here at USC...Since the images and reports are so readily available, they are also readily used by referring clinicians. That adds tremendous value to the referring clinicians and hence, to the patients. Now the patients benefit from the opinion of a physician and a specialist radiologist who's seen those disease processes or images countless numbers of times. This translates into a greater level of care that patients here at USC are now privy to."

"I think PowerScribe has been able to impact patient care in a big way here at USC..."

Small Changes for Radiologists, Big Benefits

Transitioning from an existing speech recognition system to PowerScribe was virtually seamless for radiologists. "The enrollment is very fast. You really can do it in 30 minutes," said Dr. Grant.



Edward G. Grant, MD, Professor, Department Chair of Radiology

Dr. Grant, along with many of his colleagues, was impressed with the improved recognition accuracy rate they were attaining with PowerScribe. "Clearly, there's a better recognition pattern with PowerScribe than we had with Talk," mentioned Dr. Grant. According to Dr. Shrestha, "PowerScribe seems to pick up the more difficult words instantaneously...It's sometimes very surprising." Dr. Shrestha also mentioned that accented physicians who had trouble with the former speech recognition system are seeing excellent recognition accuracy results with PowerScribe.

Challenge: Existing speech recognition system had recognition accuracy issues along with system integration issues which were impeding goal of becoming filmless and completely digital.

Strategy: Implement Dictaphone PowerScribe® Speech Recognition solution from Nuance, integrated with the facility's Siemens RIS and PACS, allowing physicians to view Radiology reports and images digitally via a Web interface.

Results: Enhanced flow of clinical information to physicians and throughout the hospital's multiple locations with annual transcription savings, reduced radiologist dictation time, and reduced report turnaround times. 100% utilization of self-editing capabilities by a large team of radiologists.

Many radiologists at Keck experienced even further increases in productivity by utilizing report templates or "Power Normals". With PowerScribe, users can save recognized text on the fly as a standard text block via a simple "drag and drop" procedure. Standard text is invoked through voice commands, while form fill-in capabilities are easily activated through simple microphone commands. The combination of free-form speech recognition and the added flexibility of standard text 'shortcuts' and 'templates' results in a significant reduction in dictation time. "The templates are very easy to edit, they're very easy to set up, and they really do save you brain power," noted Dr. Grant.

Exceptional Support

Dr. Grant and Dr. Shrestha raved about the exceptional continuous service and support they have experienced with Dictaphone. They both agree that their relationship with Dictaphone support staff is excellent. "We have a tremendous resource pool we can tap into in Dictaphone to resolve any problems," said Dr. Shrestha. "The support that we are receiving with PowerScribe is much better than what we received with Talk," noted Dr. Grant.

Goals Achieved

The ultimate goals of utilizing PowerScribe were to improve patient care and service to referring physicians through faster report production and universal availability of clinical information. PowerScribe has enabled HCC II to achieve these goals. "We knew that the right thing to do would be to leverage the advancements made in technology to provide this exemplary



“We knew that the right thing to do would be to leverage the advancements made in technology to provide this exemplary level of care to patients. We knew the ROI would be great to us and to the patients. PowerScribe was an integral portion of all of that.”

level of care to patients. We knew the ROI would be great to us and to the patients. PowerScribe was an integral portion of all of that,” said Dr. Shrestha.

Expanding Use of PowerScribe

Due to the dramatic results attained, PowerScribe will be expanding in the Keck community to the University Hospital and Norris Comprehensive Cancer Center. Implementation is already underway. Dr. Shrestha emphasized how excited he is about the future with PowerScribe by contrasting the vision of Nuance with Keck’s previous speech recognition vendor. “Dictaphone’s direction is clear; they’re here to perfect speech recognition. Agfa was out there to make their stamp on being a PACS leader.” Dr. Shrestha feels that the marriage of Dictaphone and Nuance is extremely advantageous to the future of PowerScribe. “Since Nuance owns the speech recognition engine, it’s the perfect combination really...Nuance has the core speech engine, and has continually enriched it in PowerScribe with added functionality,” said Shrestha.

In addition to PowerScribe implementation at two other hospitals, Dr. Shrestha indicated that, “There’s a greater plan to essentially have a high speed dedicated imaging network that’ll span the entire health science campus here at USC, where we’ll have not just PACS and RIS but also PowerScribe on this network. It’ll be a 10 gigabyte fiber connectivity network across all of the hospitals. We’re aiming to further leverage these advancements in technology to provide this heightened level of patient care not just at one imaging center, but across all hospitals at USC. We’ll then push PowerScribe to the entire greater Los Angeles County as well.”

For product information please visit Dictaphone Healthcare Solutions at www.nuance.com/dictaphone or call 888-350-4836.

© 2007 Nuance Communications, Inc. All rights reserved. Nuance, the Nuance logo, Dictaphone, the Dictaphone logo, PowerScribe, PowerMic, iChart, EXSpeech, Enterprise Workstation, and Enterprise Express are trademarks and/or registered trademarks of Nuance Communications, Inc., and/or its subsidiaries in the United States and/or other countries. All other trademarks are properties of their respective owners.

“Dictaphone’s direction is clear;
they’re here to perfect speech recognition.”

— Rasu Shrestha, MD, Informatics Director

The experience speaks for itself™