Progress on a *Work in Progress*

CHRISTUS Health tackles workflow management and transcription challenges in a massive initiative designed for enterprise consistency.

By Robin Blair, Editor

The two keys to successful strategic planning are—here's a no-brainer—strategy and planning. But it's easier said than done, especially for a jumbo healthcare delivery system that includes more than 40 hospitals, inpatient and long-term care facilities, clinics and ancillary health services—and dozens of software applications.

That's CHRISTUS Health, a non-profit healthcare system headquartered in the Dallas area that serves more than 70 communities in Texas, Oklahoma, Louisiana, Utah, Missouri, Arkansas, Georgia and even Mexico. More than 25,000 employees work for CHRISTUS Health. When an enterprise the size of CHRISTUS Health takes steps to standardize anything, those steps are giant steps and they need to be backed by strategy and planning.

Long-term Vision

About two years ago, CHRISTUS Health embarked on an evaluation of speech recognition technology as a possible answer to several issues. One key issue was identifying a methodology to standardize the organization's approach to its enormous need for clinical documentation, including routing, quality, production and distribution of it. A second key issue was to equalize labor variations that existed among the enterprise's facilities spread through nine regions. Sometimes these variations necessitated the use of outsourcing services because of a shortage of transcriptionist talent at the facilities; other times, outsourcing was the customary way a facility addressed transcription needs. A third issue was efficiency, and the desire to maximize the enterprise's combination of available in-house labor, cost-effective outsourcing and increased selfmanagement of clinical documentation by the physicians who create it.

The long-term vision, according to Robert Jacobs, regional market information officer for CHRISTUS Health, was one of "being able to shuttle transcription needs across CHRISTUS Health facilities" based on resource availability and based on the smartest, fastest and most cost-effective use of resources. "Some of our needs centered, basically, around labor. If we have a transcriptionist available, we might use the internal resource. If we don't, we might outsource. But we might also examine which is the most financially sensible and productive method. In other cases, clinicians will get more involved in editing their own clinical documentation."

But labor alone wasn't the sole issue, says Jacobs, and neither was whether a physician employs traditional dictation, uses some features of a back-end speech recognition program or even creates, edits, corrects and signs off on his own documentation. The CHRISTUS Health enterprise is outcomes driven. Managers wanted high quality clinical documentation. They also wanted fast turnaround times, effective distribution of documentation, efficient use of transcriptionists and outsourced resources, consolidation of software applications across the nine regions and a value-laden price for everything.

Also, because CHRISTUS Health is transitioning to a systemwide use of electronic medical records (EMRs) and computerized physician order entry (CPOE) software in the future, any dictation solutions had to integrate with those programs.

Accommodating Physician Preferences

"Voice recognition technology has been out there awhile," says Jacobs, "but we didn't see a mature product, a product that demonstrated enough benefit for an organization the size of CHRISTUS to make the necessary accommodations, before now."

Like most integrated delivery networks (IDNs), CHRISTUS formed an evaluation committee composed of regional directors of health information management and radiology, physicians, radiologists and IT experts. At first, the committee focused on ASP-model solutions, since the enterprise was already comfortable with some outsourcing. But the ASP solutions explored provided mostly back-end functionality: Back-end voice recognition allows for the physician's audio file to run through the speech engines without disruption to physician, while allowing the transcriptionist to train the system on voice

recognition capabilities as a medical editor. The physician's dictation would produce an audio file and a text file, and both would be sent to a transcriptionist or medical editor. She would use both files to edit and correct the physician's notes, and then return the completed documentation for physician review and signature.

CHRISTUS wanted more flexibility, and also wanted to offer front-end speech recognition so a physician could dictate, view and text-edit his own medical report, sign it electronically and wrap up the documentation himself. In fact, senior management wanted to accommodate all physician preferences—from those who favored traditional dictation/transcription services, to those willing to dictate and let a speech engine turn their audio into text files, to those willing to train a speech engine, edit their own texts and embrace a one-and-done approach.

Evaluation committee members concluded that CHRISTUS needed not just a speech recognition solution, but instead a platform solution that would fit the whole enterprise. They required a single-vendor solution that could provide both front-end and back-end solutions. The chosen solution would work in every CHRISTUS region, eliminating the need for individual regions to buy individual applications or purchase pricey, duplicate services when appropriate resources were available within the enterprise.

This solution would offer dictation capture with appropriate routing to transcriptionists to edit texts and return files to physicians. It would offer front-end speech recognition for tech-savvy physicians. It would provide automated distribution of medical reports via fax, e-mail or browser and would integrate with existing systems at CHRISTUS. It would support home-based transcriptions via Internet connection as well as facility-based transcriptions, and would also offer outsourced services. It would integrate with the organization's future EMR and CPOE systems.

A Tall Order

Jacobs says recognition that the right solution for CHRISTUS Health was a platform solution immediately narrowed the vendor field to two. The organization chose MedQuist as its supplier for two primary reasons. The first was the maturity of the Philips speech engine as an enterprise solution. The second, says Jacobs, was that MedQuist "understood our corporation and our needs when they came to the table," and CHRISTUS Health wanted a supplier willing to evolve with them.

CHRISTUS Health purchased DocQment Enterprise Platform (DEP), an Internet-hosted package that provides dictation capture and routing, workflow management, outsourced services, front-end and back-end speech recognition technology, and document distribution at scalable levels for the enterprise.

CHRISTUS St. Michael Health System, where Jacobs works, is the pilot organization for CHRISTUS Health with DEP. The hospital rolled out the DEP solution in October 2005. "There are two pieces to this solution," says Jacobs, describing implementation of the document management platform to be followed by implementation of front-end speech recognition. "We need about 60 to 90 days worth of data to achieve proof of concept for each part. If the first piece with DEP goes as expected, we expect to roll it out to the rest of the enterprise."

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—Robert Jacobs
St. Michael Health System
CHRISTUS Health

Inherent in the analysis of St. Michael's success is the concept of units of measure, and CHRISTUS Health is keen on using units of measure for benchmarking. How many lines of dictation, how many minutes or seconds of transcriptionist time, cost per line and cost per transcriptionist were all candidates for benchmarking consideration. "It's about setting out from where we are today, and knowing where we need to be. For that we designed productivity benchmarks. If we achieve a certain level, then we know full implementation is feasible," says Jacobs.

The size and diversity of the IDN made it difficult to launch the pilot based on an apples-to-apples comparison. Because lines of transcription are counted differently across facilities, the organization decided to first analyze costs—and found that transcription across the nine regions fluctuated significantly. In terms of cost, management, skill level and the ambition to move forward with voice recognition, St. Michael's was allowed to become the pilot for this new technology.

The Engine Decides

DEP is online at St. Michael Health System for all physicians. They can dictate according to their preferences using the DEP. The system manages workflow of the audio files. Quality dictation routed to the speech recognition engine may be "transcribed" by the system itself, so a text file and copy of the voice file go to the transcriptionist for medical editing. Lesser quality audio files might be routed instead directly to a transcriptionist for typing.

About the time that the DEP pilot expands to the CHRISTUS enterprise, St. Michael Health System will launch another MedQuist-based pilot of the vendor's SpeechQ for Radiology. "With PACS and advanced technology, radiologists are more tech-savvy than other physicians may be," says Jacobs. He adds that all radiologists at the hospital are on board and will use front-end speech recognition functionality.

SpeechQ for Radiology was designed to provide workflow options that, like CHRISTUS Health, try to meet physicians where their needs are. It includes front-end speech recognition, back-end speech recognition and even functionality so physicians can adjust workflow on the fly. The physician can send a partially edited document directly to a medical text editor without losing any of the content changes he made.

The Philips speech engine was one of the factors that led CHRISTUS Health to choose MedQuist. Philips SpeechMagic was developed jointly by Philips Speech Processing and MedQuist to combine the speech recognition expertise of Philips with MedQuist's knowledge of clinical workflow documentation.

If the system recognizes a word incorrectly, the physician can edit the text and, in doing so, instructs the system on how to recognize the physician's spoken word. Each physician develops a customized vocabulary of words. When he uses a word outside his customized vocabulary, the system asks whether it should be added, which enlarges and improves the quality of the vocabulary. There is no need for the physician to dictate punctuation marks, and if he does, the system knows not to insert them twice. Also, radiologists can insert macros or strings of macros into the text using voice commands, a mouse or a keyboard.

Productivity and Beyond

Like its DEP predecessor, the SpeechQ for Radiology pilot will get its 60- to 90-day pilot before St. Michael undertakes a subsequent hospitalwide rollout. Unlike DEP, which can progress from the St. Michael's pilot to the entire CHRISTUS organization, implementation of a front-end speech recognition product will be a hospital-by-hospital initiative.

With DEP, Jacobs is looking for a 30 percent gain on the back-end speech recognition product, which he says is reasonable. With front-end speech recognition, more work is required for the engine to recognize 100 percent of a physician's spoken language, but at one level, the work is easier and the engine often approaches 100 percent recognition. "On a front-end product, dictator and document are one," says Jacobs. The engine receives more of a one-on-one learning experience and can boost itself to high recognition rates faster.

Also, MedQuist itself has related 30 percent or better productivity gains using its own DEP technology, so Jacobs is closely watching its use in CHRISTUS Health for similar gains. For evaluation of productivity gains from SpeechQ for Radiology, Jacobs says the first benchmark undoubtedly will be maintenance of the same performance levels. "For example, can radiologists still read 100 studies a day while using—and learning to use—the speech recognition technology?" he explains. After measuring for consistent productivity, the organization will evaluate any changes in turnaround times attached to finished documentation, and finally will look for an opportunity to decrease related labor costs.

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"My hope is that by the end of 2007, the successful pilot and implementation at CHRISTUS St. Michael will have been duplicated at all of the CHRISTUS regions," he says. He says CHRISTUS has a three-year strategic plan for speech recognition technology and transcription, but cautions that the first step is completion and evaluation of DEP. One step at a time wins the race, even for a jumbo enterprise like CHRISTUS Health.

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