Interpreters Connect Patients with Doctors Over Automated IP Network

A large and growing segment of American society is not fluent or comfortable with English as a primary language. This situation is particularly acute in California, where census data shows that 40 percent of residents speak a language other than English in the home. Language barriers are of particular concern in healthcare, where life-and-death decisions are made and medical regimes are agreed upon by discussions between healthcare professionals and patients. Language barriers compromise patients' understanding of their disease and their treatment advice, increase the risk of complications, and make it harder for doctors to understand symptoms. Without proper interpreters, patients can misunderstand instructions and take the wrong prescription doses, fail to follow through with proper home treatment, or worse.

EXECUTIVE SUMMARY

HEALTH CARE INTERPRETER NETWORK

- Hospital translation service
- Northern California
- Currently covers 6 hospitals

BUSINESS CHALLENGE

- 40 percent of California residents speak a language other than English. Language barriers can affect life-and-death decisions and medical regimes agreed upon by discussions between healthcare professionals and patients.

NETWORK SOLUTION

- An integrated solution of voice, video, and data communications offered over public and private networks that incorporates the Cisco Unified Contact Center along with Cisco IPC, unified communications, security, and networking products plus partner technologies to provide voice, video, application, and call center services.

BUSINESS RESULTS

- Patient satisfaction and quality of care have greatly improved, as has medical staff productivity. The system has also delivered cost savings to hospitals with reduced cost-per-minute charges for language interpreters.

The challenge taken up by the healthcare community was to develop a high-quality, highly reliable, always-available system of interpretive services for hospitals

covering languages most frequently spoken outside of English. The response: the Health Care Interpreter Network (HCIN) of Northern California. Using Cisco® products and technology from other providers, it enables healthcare organizations to eliminate time, distance, and language as barriers to effective communication between clinicians and their patients.

The HCIN was designed by a consulting team working with the Health Access Foundation and San Joaquin General Hospital. This program team contracted with Cisco partner Quest™ to create the world's first call center based on video and voice over IP (VVoIP), offering hospital staff rapid access to trained interpreters among all participating providers. Responses to a call for an interpreter average 22 seconds, and no response takes longer than 3 minutes. The service is available 24 hours a day.

"Good health care requires good communication between the patient and the health care provider, and this technology proves that we can cost-effectively provide such access to good care for all Californians, regardless of what language they speak," says Anthony Wright, executive director of the statewide consumer advocacy coalition Health Access. "With an innovative technology solution, health insurers and providers will no longer have an excuse to rely on children or random passers-by for interpreters, or to not have these essential services provided."

The Challenge of Language in Health Care

The HCIN is a system of shared remote interpreter services operated by Northern California public hospitals. Using a VVoIP call center to create access to trained interpreter services, participating providers use interpreters at their own hospitals or at colleague hospitals through videoconferencing and other telecommunications technologies. Participating hospitals in the HCIN currently are San Joaquin General Hospital, Contra Costa Health Services (Contra Costa Regional Medical Center and Concord Health Center), San Mateo Medical Center, Rancho Los Amigos National Rehabilitation Center, and Riverside County Regional Medical Center.

The HCIN was built through a collaborative process hosted at San Joaquin General Hospital near Stockton in San Joaquin County, with project management by Health Access Foundation. Funding support has come from the U.S. Department of Commerce Technology Opportunities Program, the California HealthCare Foundation, the California Consumer Protection Foundation, and Kaiser Permanente's Northern California Community Benefits Program. The project team that designed the HCIN system went on to form Paras and Associates, which is managing the HCIN and will disseminate these technology solutions within the healthcare industry.

"We wanted to help hospitals do the right thing and provide skilled interpreters in every patient encounter," says Melinda Paras, president and CEO of Paras and Associates. "Our challenge was to make the interpreters almost instantly available at every bedside or exam room in the hospital, with a video and audio quality similar to in-person interpretation, in a system that was cost-effective to the hospitals. We are very pleased that systems like the HCIN can now offer a true resolution to this intractable problem." The first VVoIP call center was operational at San Joaquin General Hospital in August 2005, a three-hospital system sharing interpretation services began in February 2006, and the HCIN moved from pilot to ongoing operation in August 2006. Two months later, all seven current members were online.

The HCIN is an application of the Cisco Collaborative Care Solution and a part of the Cisco Clinical Connection Suite. It is an integrated solution of voice, video, and data communications offered over public and private networks to provide a multimedia service between healthcare providers and patients. The HCIN incorporates Cisco Unified Contact Center along with Cisco IPC, unified communications, security, and networking products plus partner technologies to provide voice, video, application, and call center services.

The HCIN runs on a Cisco Medical-Grade Network, an infrastructure created for healthcare organizations to meet their business and patient-care goals. With the HCIN's on-demand video consultations spread over a network from a hub, staff time is saved as manual interpreter searches are eliminated. High quality is assured because the interpreters are selected for their facility with language and trained to understand medical terms, issues, and concepts.

> **"In my career this is one of the single best steps we have taken to improve the quality of our patient services."**
> **—Nancy Steiger, CEO of San Mateo Medical Center**

Dr. William Walker, director of Contra Costa County Health Services, says he was skeptical of making his group dependent on new technology, but the pilot program in summer 2006 allayed his fears with a virtually glitch-free performance. He finds the quality of the video to be on par with typical television images.

How It Works

The hub of the HCIN is servers and software operating the VVoIP call center to direct the language requested by the caller to the proper interpreter. For example, calls are routed by originating hospital, so that their own interpreters can handle calls within the requesting hospital first. The calls can also be categorized by special skills requested such as male or female interpreters, specialized mental health training, or other expertise.

Interpreters at each hospital work from multiple locations using video units that can receive video and audio telephone calls. Interpreters log in to the system to receive call requests. Each interpreter is categorized by language and any other specifically requested skill.

Throughout the hospital system, providers and staff use videoconferencing technology or existing telephone systems to make calls for interpretation. If all interpreters for a language are unavailable, calls are routed automatically to an audio-only commercial interpretation service. Providers can access an interpreter using this system in a few minutes, compared to manual searches that can sometimes take more than an hour.

“When I first heard about the HCIN, I thought it sounded like a good idea,” says Nancy Steiger, CEO of San Mateo Medical Center. “But I underestimated the impact this technology could have.”

Results

Using the HCIN, 300 to 400 hospital staff members at participating hospitals now have quick and easy access to language interpreter services. The network currently routes approximately 3500 videoconference and phone calls per month, and interpreters within the participating hospitals respond to 1500 of these calls in Cambodian, Hindi, Hmong, Spanish, Mandarin, and Tongan.

Not only has patient satisfaction and quality of care greatly improved, but the HCIN has also improved medical staff productivity and boosted the capacity of the interpreter program at all participating hospitals. Another benefit is more effective communications that in turn delivers cost savings to hospitals due to the reduced cost-per-minute charges for language interpreters compared to traditional commercial services.

Additional services the HCIN offers include the ability to designate high priority for a call, so that an emergency call can jump to the top of the queue. All requests for interpretive language services on the HCIN are answered in less than 3 minutes, with an average connection time of 22 seconds.

By sharing language interpretation services, HCIN participants can improve both patient experience and staff productivity. These results are particularly important to public hospitals, as they demonstrate their commitment to innovative improvements in patient safety and prudent stewardship of taxpayer dollars. “New laws on language access are going into effect,” says Martin Martinez of the California Pan-Ethnic Health Network, “and HCIN offers a way for healthcare organizations to meet their obligations under the law to provide equal access.” Cindy Ehnes, director of the state’s Department of Managed Healthcare, says that it hasn’t been viable for healthcare organizations to supply one interpreter for each patient. “Our hope has been that technology would help us better address this pressing need, and the HCIN looks like it can do just that.”

Technology Used

Two Cisco software products, Cisco Unified Contact Center Express and Cisco Unified CallManager, power the HCIN call center with automated call distribution functions and skills-based routing of calls. The call center is hosted by Quest Technology Management at a secure network operating center in Sacramento. Quest has also provided consulting services dealing with

Multiprotocol Label Switching (MPLS) networking, customer segmentation through firewalling, and Cisco IP voice and video integration. Quest also monitors the platform 24 hours a day to help ensure that the HCIN maintains a stable and reliable experience. The hospitals are connected to this server and to each other in a private, secure high-speed data connection.

PRODUCT LIST

Hospital

- Cisco Medical-Grade Network
- Cisco Unified CallManager
- Cisco IPCC Express
- Tandberg videoconferencing devices
- Polycom wireless conference phones

HCIN Call Center

- Multiprotocol Label Switching (MPLS)
- Cisco videophones

For videoconferencing, interpreters use Cisco videophones and clinical staff members are equipped with videoconferencing devices by Tandberg Corporation. Telephone connections use the existing hospital phone systems. Where needed, enhanced phone sets such as Polycom wireless conference phones and other devices are used so that interpretation can be available in virtually every area where hospital clinical staff interacts with patients.

Indications of Success

HCIN has been well received. Before HCIN, 49 percent of patients reported in surveys that they were unable to receive interpretive services when needed and 42 percent of hospital staff said that difficulties getting an interpreter posed a serious problem in the provision of care. And 79 percent of physicians said patients lacked an understanding of medications, preventive care, and self-care instructions due to a language barrier.

Since implementation, fewer than 20 percent of providers reported that they perceive confusion over procedures as the result of a language barrier. Every staff member surveyed found that HCIN was convenient, simplified patient communications, and improved the quality of patient care for those whom English is not a primary language. There are plans to expand the service to other languages, including American Sign.

Learn More

The HCIN is just one of many products and initiatives powered by Cisco. For more information about the HCIN or Cisco Healthcare in general, please contact your Cisco representative or visit us online at www.cisco.com/go/healthcare

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