

THE COMPUTERWORLD HONORS PROGRAM

CASE STUDY

LOCATION:
*New York City, New York,
United States*

YEAR:
2006

STATUS:
Laureate

CATEGORY:
Medicine

NOMINATING COMPANY:
Cisco

ORGANIZATION:

South Manhattan Healthcare Network (SMHN)

PROJECT NAME:

TEMIS

Summary

The South Manhattan Healthcare Network (SMHN), part of the New York City Health & Hospital's Corporation, has created an innovative and dramatically improved approach to language translation and interpretation for health and human services. The program, called Team/Technology Enhanced Medical Interpreting System (TEMIS), enables patients with limited English proficiency (LEP) to communicate directly with English-speaking health care providers in near real-time. Many of the program's interpreters, who operate from a remote location, are blind or visually handicapped. They are recruited and trained in collaboration with the New York State Commission for the Blind and Visually Handicapped. TEMIS provides quality-controlled, remote, yet simultaneous medical interpretation in Spanish, Cantonese, Mandarin, Fukinese and Bengali, with, Haitian Creole and French about to be added. Currently, the system is accessible to: Gouverneur Healthcare Services 210-bed long term nursing facility and outpatient clinics; Bellevue Hospital Center's emergency services department, ambulatory care clinics, and a number of inpatient and procedure areas. It will be expanding to serve Kings County Hospital Center within a few months.

Introductory Overview

The need for improved interpreting services in health care settings is being driven by the rapid increase in limited English proficiency populations in the U.S. and by federal guidelines issued in 2000 requiring the provision of such services by healthcare providers. New York City has always been the melting pot of the nation. 35 percent of New York City's residents are immigrants and nearly half of all New York City residents five years old and older speak a language other than English at home, according to the U.S. Census (2003).

To address this level of ethnic and cultural diversity, a system called Team/Technology Enhanced Medical Interpreting System (TEMIS), was created and implemented by the South Manhattan Healthcare Network (SMHN). SMHN is part of New York City's Health and Hospitals (HHC) Corporation; New York City's public hospital system that handles nearly one million health emergencies each year. Patients make about five million visits to its outpatient and community-based clinics every year, and the hospitals provide inpatient care for approximately 216,000



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patients. TEMIS was developed originally at the SMHN's Gouverneur Healthcare Services. Due to the large percentage of non-English speaking patients that the network serves, it was later expanded to Bellevue Hospital Center, HHC's leading acute care facility.

Bellevue Hospital Center is a reflection of the City's immigrant community. Each year, Bellevue admits about 26,500 inpatients, records 515,000 ambulatory care and ambulatory surgery visits and 80,000 emergency department visits. Bellevue is a 9-1-1 receiving hospital in the nationally-designated categories of cardiac, neurological, toxicologic, neonatal, and psychiatric emergencies. Bellevue's Level I Trauma Center handles some 500 cases annually. In 2003, LEP patients required interpretation services in more than 35,000 clinical encounters.

Gouverneur and its several satellite clinics have a long tradition of serving the immigrant population on the Lower East Side of Manhattan. Gouverneur's clinics are a primary resource for health services in the Asian American communities, with about 86,000 of its 275,000 annual ambulatory visits made by Asian patients. Through its 210-bed nursing facility, Gouverneur also offers long term care to a population with significant Chinese and Hispanic representation. The facility is committed to offering primary and preventive care for its patients in a manner that is culturally and linguistically appropriate.

Using remote simultaneous translation equipment, based on wireless, IP-based technology, patients who do not speak English are provided with a wireless IP phone and headset when they arrive at the hospital or clinic. The health care provider attending to that patient also uses a phone and headset that can hook onto a belt, enhancing flexibility and mobility.

The health care provider enters a code to indicate the language required and a highly trained medical interpreter, located at a remote site, provides simultaneous interpretation to both the provider and the patient through the wireless headsets. Interpretation is conducted in real time, which means that instead of waiting for the speaker to finish, the interpreter translates the words as they are being spoken with only a few seconds delay. While the interpreter is able to hear both the provider and the patient, the provider and patient are only able to hear the interpreter. This method of interpretation has been shown to be more efficient and accurate than when the interpretation is paraphrased after-the-fact. It has demonstrated the ability to preserve the natural tone and voice inflection of the speaker, which helps to increase the patient's comfort level and establish a rapport between doctor and patient.

Few medical facilities around the nation have matched the level of success TEMIS has achieved at providing language access for all of its services. While several different sources of interpretation are used at Bellevue and Gouverneur, including a volunteer Interpreter Service, and the Language Line (a commercial, for-profit service), the most highly regarded option is TEMIS, an innovative remote simultaneous interpretation system that holds promise for language access in medical facilities nationwide.

Benefits

Simultaneous Interpretation

While other methods for interpreting in medical settings either rely on an interpreter physically present in the examination room, or use consecutive interpretation via phones, the simultaneous interpretation provided by TEMIS enable patients and providers to hear each other's words as they are spoken, rather than delayed and paraphrased as with traditional interpretation.



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Improved Relationship

By removing the interpreter from the room, TEMIS allows the provider and patient to communicate directly, without any “cultural brokering” by the interpreter and encourages a direct relationship between the health provider and the patient. “With so much of medical care being about a relationship, we think that’s going to prove to be really important,” says Dr. William Bateman, organizer and director of TEMIS.

Flexibility and Mobility

Wireless phone technology also facilitates mobility, allowing the patient and the provider to move around the room or on the examination table throughout the physical examination, without breaking the doctor/patient communication link.

Increased Productivity

TEMIS can save time for the provider, the patient, and the interpreter. Compared to traditional consecutive interpretation, simultaneous interpretation can cut the encounter time by as much as 50 percent. Moreover, with TEMIS, patients and providers can begin their conversation within minutes of entering the room, rather than waiting for an interpreter to travel to their location. In addition, effective communication prevents misdiagnoses, unnecessary but costly tests and treatments, and potential malpractice suits.

Enhanced Privacy

Wireless phones and headsets also decrease the loss of privacy that can occur when conversations take place over speakerphone systems.

Cost Effective

Advocates point out that language services should be a budgeting priority for any health care facility. An Office of Management and Budget report estimates the overall costs of interpreter services for the U.S. health care system to add only around \$4.04 more per encounter, or a 0.5% increase in premiums.

The Importance of Technology

The technology platform that connects wireless phones in the clinical areas to remote interpreter workstations is provided by Voice over Internet Protocol (VoIP) communications over a Wide Area Network (WAN).

VoIP defines a way to carry voice traffic over an IP network including the digitization and packetization of the voice streams. IP telephony utilizes the VoIP standards to create a telephony system where higher level features such as advanced call routing, voice mail, contact centers, etc., can be utilized.

The TEMIS project utilizes a combination of advanced technologies to innovate a unique interpretation experience. This system relies upon the digitalization of voice traffic (Voice over IP), a slightly customized version of Cisco’s Call Manager application in addition to a mixture of Symbol Technologies and Cisco’s wireless LAN technology and wireless VoIP phones. All of this technology combined creates a user-friendly interpretation experience that has been welcomed by caregivers and patients alike.

The TEMIS platform was designed by SimulMed, Inc., a company founded by William Wood and Dr. Count Gibson to advance the application of remote simultaneous interpreting in medi-



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cal settings. The implementation of the TEMIS platform in the SMHN involved the Business Development Office, the IS Departments of Gouverneur Hospital and Bellevue Hospital, and the central office of the New York City Health & Hospitals Corporation, along with several technology vendors, including Cisco Systems, Inc., Verizon, Symbol Technologies, and IP Blue Technology Solutions.

The Business Development office of the SMHN served as the coordinating force for this wide array of technology players. At the time when the wireless digital application was tested, it was the first VoIP application to be implemented by Verizon and Cisco in New York. All the collaborators worked in a supportive and cooperative manner to test the many parameters that had to function effectively in order to achieve the high quality voice transmission required for simultaneous interpretation. A high level of commitment was evident in the senior management of all the companies and from the several HHC IT departments involved.

“The fact that we could implement TEMIS with technology that was an advance on the state-of-the-art required an extraordinary level of cooperation and creativity, and provided us with the platform needed to fully realize our vision. By employing Voice over Internet Protocol, it also positions it to be a system that can serve the world.” William B. Bateman, M.D., Director of Business Development, South Manhattan Healthcare Network

Originality

TEMIS is exceptional not only because it has established a significant, qualitative advance in medical interpreting services, but also because it has created new employment for blind and visually handicapped individuals. The program has gained national recognition and acclaim and is positioned for distribution on both a local and national basis.

More than 25% of the TEMIS interpreters are blind or visually handicapped. They were recruited and trained in collaboration with the New York State Commission for the Blind and Visually Handicapped (CBVH) who are fundamental supporters of this program. The CBVH has provided funding for on-the-job training for interpreters and for assistive technology to facilitate their use of computer systems and the safe and supportive structuring of their work environment. The interpreters are recruited, screened, trained, quality controlled, and continuously improved by language coaches using methods developed by the Center for Immigrant Health, a group that has an established record of providing leadership to medical interpreting on a local, regional, and national basis.

TEMIS' interpreters preserve the tense, register, and tone of the original message, encouraging a therapeutic alliance between the patient and the health care provider, rather than between the patient and the interpreter.

Success

In a survey conducted by Innovations Application, 98 percent of patients preferred TEMIS to other interpretation systems they had used. Providers who use TEMIS report substantial benefits as compared to other language services. For example, one general internist surveyed was able to identify 51 cases in a three-month period where using TEMIS resulted in clinically significant improvement in her care of patients, allowing her to change or add a diagnosis or counsel her patient more effectively.



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TEMIS demonstrated the ability to increase the efficiency and quality of communication between doctors and patients, giving health care providers the enhanced ability to diagnose and treat illnesses. In fact, physicians, patients, and administrators were so satisfied with TEMIS, that the SMHN embraced TEMIS as a potentially superior solution for its medical interpreting needs.

As an innovation in medical interpreting, the TEMIS program has received numerous accolades from government officials, the health care industry, and the press, including the Office of Civil Rights of Region 2 and New York City's Commissioner of Immigrant Affairs; NBC evening news in January 2004; and the Circuits section of the New York Times, Trustee Magazine (AHA), and Newsday.

TEMIS also received the New York State Governor's Award recognizing organizations that have developed programs leading to the employment of qualified people with disabilities and was a semifinalist for the 2001 Innovations in American Government Awards Competition of the Ford Foundation, the John F. Kennedy School of Government, Harvard University, and the Council for Excellence in Government.

While TEMIS may not satisfy the entire demand for interpretation services, meaning that volunteer trained interpreters and commercial telephonic interpretation services may still be required, users believe that TEMIS is qualitatively superior.

Even without a legal mandate, providing comprehensive language services is critical for health equity and access to all those who need it and is cost-effective for health care providers. The highly successful remote interpretation program prompted New York's City Council to include \$1 million (USD) in expense dollars and \$890,000 in capital in its FY06 Adopted Budget to expand TEMIS capacity and implement it at Kings County Hospital Center in Brooklyn

Difficulty

Among the most difficult obstacles to overcome in the early days of designing TEMIS was the search for funding for the proposed project. The support eventually came via the Community Health Care Conversion Demonstration Program, or Community Health Partnership/Medicaid Transition Waiver (CHP) funding. Subsequently it was necessary to demonstrate practical functionality in order to build community and political support for City Council funding. This has begun to move the program toward the service volume level that will lead to efficiencies of scale making it competitive in cost with other alternatives. Initially, the technology to implement the program was very new to all the parties, and a great deal of time and effort was devoted to mapping out the steps to make it work. This work also paid off for additional applications of VoIP services in the hospital settings in the years following the TEMIS start-up, and all involved built expertise in the required systems areas.

It took several years during the mid-1990's to identify a funding source and get approval to start the pilot project. Approaches by Gouverneur's Medical Director and Executive Director to technology companies for seed money were not successful. The public hospital system did not have the resources to support the pilot until the CHP funding stream became available. At that point, the SMHN's and HHC's leadership took the courageous step of allocating part of these grant dollars for the TEMIS project.