

Telemedicine brings doctors, patients together across any distance

April 22 2010, By Brandon Bailey

Working at the health center on Cisco Systems' sprawling San Jose campus, Dr. Seema Sangwan examines dozens of Cisco employees a week -- sometimes as they sit in a room nearly 3,000 miles away.

The busy internist sees patients at Cisco's North Carolina campus without leaving California, using a high-end videoconferencing system that Cisco developed for [health care](#) use. Standing next to the patient, a nurse uses a high-resolution camera, electronic stethoscope and other devices to send the doctor close-up images and data, including heart rate and temperature, in real time.

"It's amazing," she said recently. "It really does feel almost like I'm sitting in the same room with them."

Cisco didn't just develop the technology for internal use. After conducting trials in San Jose, Scotland and France, the company recently announced that its HealthPresence video system and related technology are being used in new "telemedicine" programs offered by medical groups in Southern California and the Southwest.

Those programs are part of Cisco's push to compete with other major tech companies, including Intel, IBM and General Electric, in the growing market for health care products and services. They're also part of Cisco's broader strategy to promote and participate in wider use of digital video across numerous segments of daily life -- which can only increase demand for Cisco's core business of selling the [networking](#)

[equipment](#) that carries those digital signals around the globe.

Cisco CEO John Chambers recently described telemedicine as a "vehicle for transforming health care on a global scale." While the idea isn't new, industry experts say the concept of offering medical services to patients in remote areas, by using the Internet and other [telecommunications networks](#), is gaining wider adoption as major health care providers and insurers increasingly seek ways to serve more people at lower costs.

"Telemedicine is going to be everywhere. The only question is when," said Dr. Jim Woodburn, an executive with UnitedHealthcare, the insurance company that is working with local health care providers to deploy Cisco's technology in rural Colorado and New Mexico.

Several other companies, including Hewlett-Packard, Polycom and Teliris, sell high-resolution, commercial-quality videoconferencing systems, including some designed specifically for health care. But analysts say Cisco in particular is using its size and clout to accelerate adoption by medical providers and insurance companies.

"Cisco has the sales and marketing engine to really drive this forward," said Ira Weinstein, who studies videoconferencing and related technology for Wainhouse Research.

Industry officials say that video systems can help fill a growing shortfall in the number of medical students choosing to become primary care doctors. One study by the Frost & Sullivan research firm estimated the market for telemedicine products and services in North America would grow from \$900 million in 2007 to \$6.1 billion in 2012.

One obvious use for video technology is delivering medical services to remote or rural areas, where patients would otherwise have to drive hours to see a specialist or even a primary care doctor. But experts say it

can also be useful in big cities where, for example, a major hospital may have several satellite clinics but isn't able to staff them with every medical specialty.

In Southern California, the Molina Healthcare group is one of three medical groups serving lower-income families that are starting to use HealthPresence systems in a program partly sponsored by Cisco and the state of California.

Initially, Molina plans to let health educators at its Long Beach headquarters use the equipment to teach patients at outlying clinics about living with diabetes and other conditions. Molina's Dr. Michael Siegel said the next phase will involve dermatologists, but he believes the system ultimately will be useful for other specialties, including psychiatry.

Cisco's HealthPresence was developed by its Internet Business Solutions Group, a unit that focuses on creating technology for specific industries such as health care, energy or financial services. The system uses some elements of the high-resolution TelePresence videoconferencing systems that Cisco sells to corporations and hotel chains, along with specialized software and hardware -- such as a digital probe that a nurse can use to transmit images from inside a patient's ears, nose or throat.

Compared with lower-cost video systems from smaller companies like Polycom and Tandberg, some analysts describe Cisco's HealthPresence as a "Cadillac" product. Cisco would not disclose the selling price -- a spokeswoman said it depends on the configurations and features a customer needs -- but it has sold corporate TelePresence systems at prices from \$34,000 to \$340,000.

Cisco, however, is acquiring Tandberg in a deal that analysts say will let Cisco offer a wider range of products and prices.

Experts say there are still obstacles to broader use of video to deliver health care, including medical licensing rules and regulations that in some cases restrict insurance or Medicare reimbursement for such services.

But studies show most patients become comfortable with video exams quickly, said Dr. Javeed Siddiqui, a telemedicine expert at the University of California-Davis Health System.

"I was pleasantly surprised," said Shashi Kiran, a Cisco employee who participated in an early San Jose trial by getting a checkup from a doctor in Los Angeles. "It was really no difficult from visiting your doctor in person."

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HOW IT WORKS:

- A high-resolution hand-held camera can be focused on specific limbs or areas the doctor wants to examine closely.
- A vital signs monitor collects digital readings of the patient's pulse, temperature and blood pressure, which are transmitted to the doctor.
- A telephonic stethoscope and headphones lets the doctor and patient both listen to the patient's heart and lungs.
- Software allows the doctor and nurse to record and print patient information or prescriptions.

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