



House call 2.0: Telemedicine brings doctors into home



Doctors are always looking for the next technological marvel to help them treat patients more effectively, whether it's robots that can find cancer cells or medical records on iPhones.

In the midst of this transformation, scientists at UC Irvine are developing a way to create a modern version of the house call.

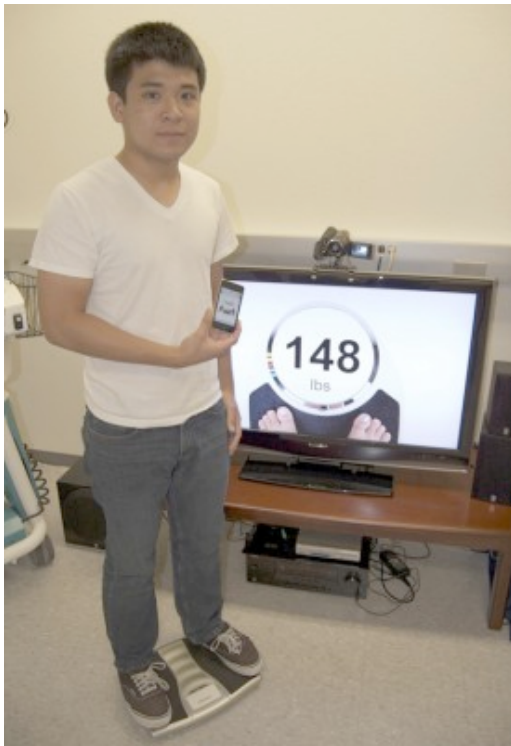
It just might be the system that keeps you from having to drag your sneezing, aching body through rush hour traffic for a quick consultation. Or it might allow specialists to treat patients in rural areas they never could reach before.

Researchers at UCI's California Institute for Telecommunications and Information Technology ([Calit2](#)) are working on a software package that would allow doctors to monitor and conference with patients remotely. It's called Telios.

It "allows a physician to come into your home without actually coming into your home," said coprincipal investigator Mark Bachman.

[Telios](#), or Telepresence Interactive Operating System, relies on simple-to-use, web-based technology that many patients will already be familiar with; it's similar to the chat option in Facebook or how webcams are used in Skype.

Doctors could speak to patients by videoconference while simultaneously monitoring weight scales, exercise bicycles, dermoscopes, blood pressure



monitors and stethoscopes. This equipment could be wired or integrated wirelessly.

Capable of running on computer screens, smart phones and televisions, the program unites hardware devices through a Web browser. The icons are reminiscent of those found on a Mac and can be easily accessed with a mouse or remote control.

The ability to pick and choose which devices to integrate “allows people to build custom interfaces,” Calit2 staff member Hector Parra said. “We try to make it as lego-like as possible.”

Calit2 is currently testing the software for use in senior homes, medical clinics, hospital rooms and prisons. However, potential uses for the program do not end at mere checkups or diagnoses. It also has potential for broader health and wellness applications.

“You could have your personal trainer live in Minnesota,” said Bachman. “Your yoga instructor could be in Florida. They don’t have to be in the same physical location.”

The simple user interface also makes Telios an appealing preventive health tool. Individuals can easily monitor their blood pressure, weight, heart rate and the level and duration of an activity.

“People who constantly monitor their vitals tend to be healthier,” said Parra. A sense of accountability and the knowledge that the collected data could be sent to a health professional might encourage people to take better care of themselves now, he said.



But telemedicine with this new technology will face the same legal challenges that telemedicine has faced for the past 30 years. The Health Insurance Portability and Accountability Act ([HIPAA](#)) has security and privacy requirements that limit video consultation.

Still, health care reformers laud preventative health solutions such as Telios, and its clear benefits may help it overcome these hurdles. “There’s nothing wrong with taking your own blood pressure,” says Parra. “The technology is ready. If we put the technology out there and people like it and start using it, then people can force legislation.”

While the project may be well-suited to preventative health, the primary purpose is to bring the doctor into the home. Simply put, Parra says, “We don’t want grandma to have to leave the house.”