In the video, two men move purposefully down a sidewalk. Wearing stern looking faces and Google Glass – Google’s revolutionary, high-tech interactive computer glasses – the duo look cyborg-esque as they walk away from the School of Nursing building.

The video then cuts to a patient examination room where Duke University School of Nursing Assistant Professor Ryan J. Shaw, PhD, RN—wearing the distinctive looking eyewear with a small camera lens embedded above the right eye—asks viewers to “imagine being able to view, capture, and send health information with the swipe of a finger or a voice command.”

To Shaw and other health professionals at Duke and around the country, Google Glass has opened a new frontier in health care delivery in the form of wearable, interactive technology.

“It’s exciting to explore what the possibilities are for helping to deliver better and more efficient care with this,” Shaw says.

He is in the second phase of a study called The Google Glass Project, in which he and other Duke providers are examining possible uses for Glass. The informational video that he produced with fellow Google Glass Project partner Mohammad Shahsahebi, MD, MBA, describes three possible scenarios in which Glass might be a useful tool in the patient care arena.

The first staged demonstration shows scenarios of two doctors assessing the wound of a patient and taking a photo and video to be placed in the patient’s electronic medical record (EMR).

“OK, Glass, take a picture,” the female provider says, followed by, “Send to patient record 4678 Smith.”

The male provider instructs Glass to “Start recording,” and Glass begins recording video while the wound is examined further with the doctor’s commentary.

The second demonstration shows a nurse recording a patient education encounter on how to care for a rash. With a swipe of a finger along the side of the glasses, the video is sent to the patient’s e-mail to review whenever needed.

The third mock scenario shows a paramedic encountering a woman who is struggling to breathe. With Google Glass, the paramedic is able to connect to the hospital Emergency Department and show the patient in real time while sending information and receiving instructions.

While cell phone technology currently offers the same connection capabilities, it is the potential for hands-free interactions through voice commands that makes Google Glass appealing for health care providers, advocates say.
Battery, located behind the ear

Touchpad covers the CPU and GPS

Camera, still and video

Microphone

Glass prism, image is projected from the left
“There is still a long way to go to make this truly useful,” Shaw says. “It’s kind of like the Wild West, and we want to be involved early.”

Shaw has teamed up with several Duke primary care providers and enlisted the help of an advanced computer science class at Duke to develop a software platform for Glass around medication management.

“We charged them with creating an app for us to be able to put patient and medication information into a database and be able to retrieve it with different types of interfaces, such as voice and vision command,” Shaw says. “Ultimately, future development work would allow us to swipe prescriptions over to a patient’s pharmacy.”

For Duke sophomore Basil Chaballout, a pre-med and computer science major working on the team with Shaw, Google Glass represents everything he hopes to do in his career, which is help marry technology with health care.

“This really excites me,” he says. “It’s a sign of the times where technology and health care are merging. That’s why I’m pursuing computer science.”

Duke senior computer science major Vincent Wang says, “The intersection of technology and other fields is real and is happening everywhere. Google Glass will be very beneficial to health care, I’m sure.”

Google Glass is not without controversy, however. Since Glass was released last year, a growing number of businesses such as restaurants, bars, and health clubs have banned the devices over concerns about customer privacy.

“I can understand the privacy issues,” Shaw says. “When recording video, people might not know they are being recorded. It will be a long time before these are widely accepted.”

In fact, he adds, “Right now, I’m not comfortable wearing them in downtown Durham.”

And in the medical realm there are legal and security concerns around linking the devices to patient health records. The Duke University Health System currently does not allow Google Glass to connect to its EMR database called Maestro Care, or to its WiFi signal. Shaw says the health system is working to address those concerns.

But Glass also can be tethered to a cell phone’s cell signal, which Shaw is doing for his study.

“We have to remember that Google Glass itself is a prototype, so there are still a lot of technical and engineering barriers to overcome,” Shaw says. “But it’s a very promising technology.”