

# Google Fiber Powers Caregiver App

In Kansas City, Kan., the university medical center is preparing to use the Google Fiber network to transform the delivery of health care.

By Joan Engebretson / *Broadband Communities*

**W**hen Google decided to build a gigabit network in Kansas City, Kan., the University of Kansas Medical Center – located in Kansas City – saw the ultra-high-speed network as a great way to further the medical center’s mission.

Academic medical centers such as the one at the University of Kansas “are focused not only on patient care but also on education and, in our case, community engagement,” says Steve Fennel, director of telecommunications outreach for the medical center. Fennel’s position was created after Google made its decision. Fennel was tasked with coordinating efforts to determine how the Google network could be used to support innovative health care applications and with implementing those applications.

Beginning in the fall of 2013, the university medical center will implement a trial of technology, leveraging Google Fiber, that ultimately may help family caregivers help those who suffer from dementia. The initial trial will use healthy subjects and is intended to test the application rather than the effectiveness of such a program. The aim is to make sure the equipment works effectively before using it as part of the caregiving process for dementia patients.

If the technical trial succeeds, the medical center hopes to follow up with a clinical study that uses the technology to support caregivers of actual dementia patients. In the clinical study, high-definition video cameras will be installed in the homes of dementia patients and connected via Google Fiber to specialists at the hospital. This will “allow caregivers to capture different periods of disruptive behavior where dementia is displayed and upload them to a clinical team,” explains Fennel.

After reviewing the videos sent by caregivers, the clinical team will provide analysis and feedback to the caregivers about what factors might have triggered the behavior and what a caregiver might do to avoid future occurrences. In addition, the specialists will advise caregivers about how they can calm patients in such situations.

The trial will build on an earlier pilot that used videoconferencing software installed on a laptop computer. That approach was deemed impractical, in part, because caregivers had no control over the timing of automatic updates of the operating system, which interfered with

caregivers’ ability to share video with the clinical specialists. This time around, “One of the components being developed is a middle piece that would allow [a caregiver] to select a [health care] provider for consultation and alert the provider that ‘I have video I would like reviewed,’” according to Fennel.

The technical specialists working on the project have nearly finished determining the equipment and software that will be required in homes. Development efforts included creating a mobile phone app that will be used to trigger video cameras to record.

“What we’re doing now is working with a partner in developing ... the provider platform and in developing the middle piece,” says Fennel.

The caregiver dementia application is possible only with a high-bandwidth fiber network such as Google Fiber, according to Fennel. The high-definition video that is so crucial to the system requires a connection that can be relied on to consistently provide low latency and jitter, he explains.

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The caregiver application is one of three that a team at the University of Kansas rated as the highest priority after considering numerous ideas suggested by a wide range of stakeholders. To date, only the caregiver application has received funding, but Fennel is hopeful that the other two top-priority projects – also video-based – will be funded as well.

One of those projects aims to connect high-school nurses with health care specialists at the hospital to help the nurses in diagnosing and caring for students.

The other project would enable health care specialists to use video to consult with parents of children at risk of autism or mental health issues. Currently those specialists make in-home visits, and they spend a considerable amount of their time traveling from one home to another. Those specialists could work with twice as many families if travel could be eliminated, Fennel says. ❖

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