The New Network Podcast

Networked Healthcare: Extending the Boundaries for Telemedicine, Collaboration and Patient Monitoring

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This is Southwest Township near Johannesburg, South Africa, otherwise known as Soweto. It's a loud, chaotic place with throngs of people walking to destinations in town and street vendors selling their wares on every corner. A million people live here—and make no mistake; many of them live well below the poverty line. And while there are beautiful homes in Soweto, far more common are the huts that seem to cover every square meter of available land, cobbled together from flattened oilcan, sheets of corrugated metal, and cardboard. A 100-square-foot structure may be home to as many as 10 people.

But I'm not here today to talk to you about poverty in Soweto. I'm here to talk about the extraordinary impact that telecommunications has had on the world. I'm standing outside of Mabeleni Center, a small medical clinic in the heart of Soweto. It's an unimposing cinderblock building with a somewhat disturbing hand-painted sign on the wall that reads, "Pap smears and circumcisions performed while you wait." Fifteen minutes ago I was inside this clinic, watching surgeons remove the gall bladder of a woman who came in that morning suffering from severe abdominal pain. She was assessed by a local clinician who admitted her for treatment.

But the interesting part of this story isn't the diagnosis. The interesting part is that the surgeon who performed the procedure was in a hospital in the eastern United States, 8,000 miles away. Using a robotic device that gave the surgeon stereoscopic vision, he was able to excise the gall bladder with extreme precision. Local healthcare personnel in Soweto took care to ensure a sterile field, to change instruments on the robotic surgical unit when asked, and to close the tiny puncture wounds required to perform the procedure with nothing more than a few stitches. The woman went home later that afternoon.

This is modern healthcare at its most innovative, and it happens thanks to the combination of skilled healthcare professionals and reliable high-speed telecommunications networks, such as those delivered by service providers including Time Warner Cable Business Class. But we don't have to go all the way to South Africa to see the impact that telecom networks are having on healthcare delivery. We can see amazing examples right here in the United States. Telemedicine has been talked about for a very long time, but it's only in the last couple of years that we've seen it mature and flourish, providing access to sophisticated healthcare services for hundreds of thousands of people who either live too far from a clinic for a visit to be feasible, or whose condition makes it difficult for them to travel.

Thanks to high-speed networks and high-quality imaging equipment, the model of healthcare delivery flips on its head. Instead of the patient traveling to the doctor, the doctor travels, via the network, to the patient. The technology allows healthcare to be delivered in a variety of ways, including video consultations, remote viewing of diagnostic images, conversations among a group of healthcare specialists who can consult on a particularly vexing case, the integration of lab results into the conversation, and access to pharmaceutical delivery systems. Virtual exam rooms make it possible for a patient to be examined and diagnosed by a specialist, even if the specialist is down the hall, across the campus, or on the other side of the world.

But network-based healthcare is much more than global healthcare delivery. In medical schools all over the world, students are learning the intricacies of medical care; thanks to a combination of streaming video, distance learning, and virtual classroom environments that simulate a real-world hospital or clinic before the students ever start their clinical duties. And thanks to high-speed networks such as those delivered by Time Warner Cable Business Class, mission-critical healthcare information can be delivered to conflict zones or areas that are suffering from epidemiological emergencies so that treatment can be performed faster and much more effectively. And by combining those capabilities with cloud-based services, sophisticated analytics can be performed on raw healthcare data to determine trends and prevent the spread of infectious disease.

Now another important area where networking technologies serve healthcare well is behind the scenes. High-speed networks and optical ring technologies guarantee networks, and therefore access to information, survivability, and route diversity. Emergency preparedness benefits as well. The touch point between healthcare and technology shines rather brightly here. And because these networks are typically overlaid with highly secure protocols to maintain the confidentiality of the information carried over them, the medical records are safe. Furthermore, these networks make it possible to bring life to the national Health Insurance Portability and Accountability Act, or HIPA.

Now some network-based healthcare services are actually delivered passively. For example, small wireless monitoring devices can be worn by a patient throughout the day; and while they are unobtrusive, they collect a tremendous amount of information about the patient, such as their heart rate, their respiration, oxygen levels, whether they're taking their medications as prescribed, blood pressure, and so on. In the event of an emergency, these devices can transmit information to the closest emergency responder over both fixed and wireless networks, resulting in far more efficient and effective dispatch operations. Furthermore, because they're connected to the healthcare provider in real time or near real time, patients are more proactive and tend to be actively involved in their own care.

Finally, network services even contribute to the comfort of hospitalized patients. Local Wi-Fi and entertainment content are delivered via high-bandwidth fixed networks, allowing the patient to stay in touch with their friends, their family, their life, and the world.

The examples that I've described here are real and impactful, and the advantages of networked healthcare are absolutely extraordinary. They include better patient care, especially in the case of chronic disease treatment, shorter wait times to see a caregiver, faster access to specialists for rural patients, a stronger sense of integration among multidisciplinary teams, better training, and ultimately, happier and more satisfied patients.

All of these services, including those delivered wirelessly; rely on access to a high-bandwidth, in-place network that connects the patient to the healthcare provider. This is important—healthcare delivered on the patient's terms, not the doctor's. Now that is a major shift indeed.

For Time Warner Cable Business Class, I'm Steve Shepard. Thank you for listening.