

Case study validates teleconcussion

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A program at Mayo Clinic using telemedicine technology is showing promise for patients with concussions in rural Arizona. A case study published in the December 2012 issue of Telemedicine and e-Health validates "teleconcussion" as a useful means to assess concussed patients.

In the [case study](#), doctors at Mayo Clinic in Arizona conducted a live audio-video evaluation of a 15-year-old soccer player in Show Low, Ariz., who received a [concussion](#) during a game. The teleconcussion evaluation, believed to be the first in the state to use telemedicine for concussions, supports the use of this technology to bring concussion expertise to rural locations. Similar telestroke, teleneurology, and teleepilepsy programs have been operating at Mayo Clinic in Arizona for several years.

More than one-third of rural Arizona lacks access to the kind of neurological expertise found in [metropolitan areas](#). Mayo Clinic's program aims to address this [disparity](#) by providing support through these programs. With telemedicine technology, use of a specialized remote controlled [camera system](#) allows the patient in the rural setting to be "seen" by the neurology specialist—in [real time](#). The Mayo Clinic neurologist, whose face appears on the screen of the monitor, consults with physicians at the rural sites and evaluates the patient via Internet-based computers.

"When a community doesn't have ready access to providers trained in the recognition and management of concussion, concussed athletes

sometimes go unrecognized or returned to play prematurely potentially subjecting them to more serious injuries," says Bert Vargas, M.D., neurologist and assistant professor of Neurology at Mayo Clinic in Arizona. "Teleconcussion can help triage patients and help identify which people are in need of additional workup or management. In the case of sport-related concussions, this technology can provide rural physicians with assistance in [making decisions](#) about when athletes can safely return to play."

Dr. Vargas says that this technology is welcome news for doctors in rural areas, especially in light of the concussion law in Arizona. SB 1521, which was signed into law in 2011, mandates evaluation and clearance athletes with concussions by trained health care providers.

"Despite the current culture of increased awareness and recognition of concussions, concussed athletes go unrecognized - even at the professional level," Dr. Vargas adds. "Many professional sports organizations have voiced the need for neurologists to be on the sideline to make rapid authoritative decisions regarding return to play for athletes suspected of having a [concussion](#). Teleconcussion may eventually be a way to address the logistical issues associated with having a neurologist on the sideline of every professional and collegiate level sporting event."

Philip Johnson, M.D., is the medical director and chair of emergency medicine at Summit Healthcare in Show Low which is a member of the Mayo Clinic telestroke network. Dr. Johnson participated in the teleconcussion evaluation of the patient in Show Low.

"This is a lifesaving thing," Dr. Johnson says. "To use this technology to reach out across the state to deal with concussions fulfills a great need. In our emergency room, I see one to three patients with concussions each week and I send the patients out with instructions to follow up with their [doctors](#) and without a neurologist in our little area here that follow-up

doesn't always happen as it should.

Mayo Clinic in Arizona first used telemedicine technology with the stroke telemedicine program in 2007, when statistics revealed that 40 percent of residents in Arizona did not live in an area where stroke specialists are more readily available. Mayo Clinic was the first medical center in Arizona to do pioneering clinical research to study telemedicine as a means of serving patients with stroke in nonurban settings, and today serves as the "hub" in a network of 10 "spoke" centers, all but one in Arizona. Since the stroke program began, more than 1,000 emergency consultations for stroke between Mayo stroke neurologists and physicians at the spoke centers have taken place.

"Teleconclusion fulfills a need in our state's rural communities and is a very natural expansion of the Mayo Clinic Telemedicine Network," Dr. Vargas says.

Provided by Mayo Clinic

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