

University Drives Healthcare Collaboration with Telepresence

Customer Case Study



Arizona Telemedicine Program relies on Cisco TelePresence to deliver healthcare and education services statewide.

EXECUTIVE SUMMARY

Customer Name: University of Arizona Health Sciences Center, Arizona Telemedicine Program

Industry: Healthcare

Location: Tucson, Arizona

Number of Employees: 16.25 (FTE)

Challenge:

- Provide equal access to medical care for state's rural communities, prison populations, and tribal nations
- Facilitate high-quality videoconferencing sessions between remote physicians and patients
- Reduce rising healthcare costs

Solution:

- Cisco TelePresence provides robust videoconferencing ecosystem for greater collaboration between hospital staff and physicians
- Supplement face-to-face medical education with interprofessional training through video

Results:

- Enabled real-time support networks and educational awareness for breast cancer survivors
- Expanded access to medical experts located throughout state
- Achieved high ROI, while positioning university as innovative leader in medical education and healthcare delivery

Challenge

In 1996, Arizona legislators were faced with inequitable delivery of medical care among the state's rural communities, its prison populations, and its numerous tribal nations. To address this issue, as well as concerns about rising healthcare costs, the state legislature approved funding to establish pilot projects demonstrating the efficacy of telemedicine in delivering better care to Arizona's medically underserved areas. As a result, the University of Arizona Health Sciences Center created the Arizona Telemedicine Program (ATP).

The vice president of medical affairs at the University of Arizona Health Sciences Center asked Chairman of Pathology Dr. Ronald S. Weinstein, a telemedicine pioneer and the inventor of robotic telepathology, to serve as director of the program. Dr. Weinstein is often referred to as the "father of telepathology" and is accustomed to dealing with complexity. However, the endeavor proved to be more complex than Dr. Weinstein or the Arizona State Legislature had originally anticipated. "At the time, there was essentially no broadband telecommunications infrastructure in rural Arizona, so we had to create our own utility," says Dr. Weinstein. "As a result, the university today owns and operates the entire network."

With the groundwork of the program in place, Dr. Weinstein was ready to address another critical component in any telemedicine program: video. After an intensive search for a videoconferencing technology partner, he eventually found what he was looking for in Oslo, Norway.

Solution

Dr. Weinstein recalls his personal visit to Oslo, in 1997, where he met with the president of TANDBERG. "The quality of TANDBERG's video equipment was impressive," he says. "I felt reassured that it would provide a rock-solid base that we could depend on. In my opinion, TANDBERG was best-of-breed in the



ATP's Telemedicine Specialties include:

- Cardiology
- Dermatology
- Genetics
- Hematology
- Infectious disease
- Movement disorders
- Nephrology
- Neurology
- Oncology
- Orthopedics
- Pain Management
- Pathology
- Psychiatry
- Pulmonary
- Radiology
- Rheumatology
- Urology

video equipment marketplace and was in it for the long haul.” Using TANDBERG videoconferencing equipment, the ATP began offering extensive videoconferencing of continuing education to all of its sites. The program also successfully created and operated a telemedicine training center for healthcare professionals throughout the state.

Then in 2010, Cisco announced its acquisition of TANDBERG. “We had come a long way with TANDBERG, but we took those key components and future strategic deployments into our interaction with Cisco,” says Dr. Weinstein. Today, the ATP uses a mixture of legacy TANDBERG equipment as well as Cisco TelePresence® systems to facilitate a broad range of use cases.

TelePresence has been deemed so effective, more than 100 telephysicians and telenurses have provided services over the network. And some physicians are even doing 100 percent of their case work remotely through video. This expansion of the service not only makes experts available to a wider community of clients, it helps the university and its clients reduce travel costs and operate more sustainably.

“Telemedicine has become a major academic driver for our university,” says Dr. Weinstein. “Our affiliates have received more than \$25 million in external funding, not including a large FCC grant.” Some of that funding includes grants to equip and staff the Institute for Advanced Telemedicine and Telehealth, known as T-Health, which is a state-of-the-art training facility located in downtown Phoenix. T-Health is a division of the Arizona Telemedicine Program.

With a mission to create next-generation innovations in healthcare delivery and education, especially those that leverage advances in medical informatics, wireless telecommunications, telemedicine/telehealth, simulation, and robotics, T-Health includes a video amphitheater that enables “in-the-room” assembly of offsite faculty members and students. In addition, an adjacent education building will have 41 video-enabled classrooms and three multimedia classrooms.

The telepresence component is so critical to the success of T-Health that Dr. Weinstein jokes, “We tell some people that the ‘T’ in ‘T-Health’ virtually stands for TelePresence.”

Results

Since its inception in 1996, the ATP has grown from 8 sites to 160 sites in 50 communities and 55 healthcare organizations. The organization has performed telemedicine consultations in over 60 distinct clinical specialties, including cardiology, dermatology, oncology, and radiology. “We have done over 1.2 million cases to date,” says Dr. Weinstein, citing two particularly compelling use cases in neonatal intensive care and support for breast cancer survivors.

Providing Greater Access to Neonatal Experts

When an ill or premature infant is born, it is critical for the baby to receive immediate attention from a pediatrician specializing in neonatal intensive care. To ensure 24-hour access to neonatal experts and expand its pool of pediatricians outside of Tucson, the ATP connects Yuma Regional Medical Center’s neonatal intensive care unit with a panel of pediatricians located throughout the state.

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Ronald S. Weinstein, M.D.
Director
Arizona Telemedicine Program

“We’ve been using telepresence for collaboration in the neonatal intensive care unit for more than five years with much success,” says Dr. Weinstein. “By expanding our pool of expertise outside of Yuma, we can ensure the appropriate care at all times, helping better serve our patients.”

Using TelePresence to Support Breast Cancer Survivors

According to Dr. Weinstein, medical support groups typically consist of roughly 20 people. However, in the case of the University of Arizona Health Sciences Center’s Breast Cancer Support Group, it was oftentimes difficult to get a support group in a rural community of that size. Because only a handful of breast cancer survivors may be present in Arizona’s smaller, rural communities, Dr. Ana Maria Lopez, the ATP medical director, decided to aggregate four to five rural groups simultaneously over Cisco® TelePresence.

Says Dr. Weinstein, “They use telepresence to discuss therapy options, diet, and also offer physical therapy and genetic counseling sessions. It’s actually quite moving when you step into a multisite videoconferencing session and see how positively the women react to the medium. Using Cisco TelePresence gives survivors a multisite, larger ‘virtual’ support group, than they would otherwise have with smaller, in-person sessions.”

The University of Arizona Cancer Center also offers its ¡Vida! Breast Cancer Educational Series to patients, their families, and primary care providers through simultaneous statewide telepresence sessions in both English and Spanish.

Higher ROI, Higher Visibility

The ATP has been providing education and delivering healthcare for more than 15 years now. And the return on investment (ROI) is impressive. According to Dr. Weinstein, “The ROI for the state of Arizona from the program is high. But that’s actually an underestimation because it doesn’t take into account the service fees and the amount the state allocates annually versus our aggregate funding base, including outside grants and membership fees.”

The service fees and membership fees are a result of the Application Service Provider (ASP) business model that ATP borrowed from the software industry and adapted to telemedicine. “It is an open-staffing model, so there are many sites of origin for providing service,” says Dr. Weinstein. “For example, most of the radiology is done here at our University Medical Center; on the other hand, subspecialty medical services such as dermatology, cardiology, and orthopedics are done by other membership organizations. There are 55 organizations paying ATP membership fees, many of which are service providers and service recipients.”

Dr. Weinstein hopes to continue to expand ATP membership and its range of services, including the use of telepresence to conduct interprofessional training at T-Health. “We look forward to growing a robust relationship with Cisco that will enable the future success of our program and our clients,” he says.

Next Steps

The ATP is currently in the process of upgrading the T-Health facilities with high-definition video capabilities, and it expects Cisco to play a major role in the project. “We are moving ahead with the installation of Cisco TelePresence in all of our video-enabled classrooms and amphitheatres,” says T-Health Director Mike Sotelo. “We believe that video will be a major enabler in medical education, and we expect to continue expanding our use of telepresence in the future.”

For More Information

- To find out more about Cisco TelePresence solutions, visit: www.cisco.com/go/telepresence.
- To learn more about Cisco solutions for the Healthcare industry, visit: www.cisco.com/go/healthcare.

Product List

- Cisco TelePresence System Quick Set C20
- Cisco TelePresence Codec C40
- Cisco TelePresence System EX90
- Cisco TelePresence MPS200
- Cisco TelePresence 1000 and 150 MXP
- Cisco TelePresence System Profile MXP 6000
- Cisco TelePresence System Integrator MXP 6000
- Cisco TelePresence Video Communication Server Expressway
- Cisco TelePresence Video Communication Server Control
- Cisco TelePresence Codian 4210 Bridges
- Cisco Gatekeeper
- Cisco Unified Border Element – Border Controller



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