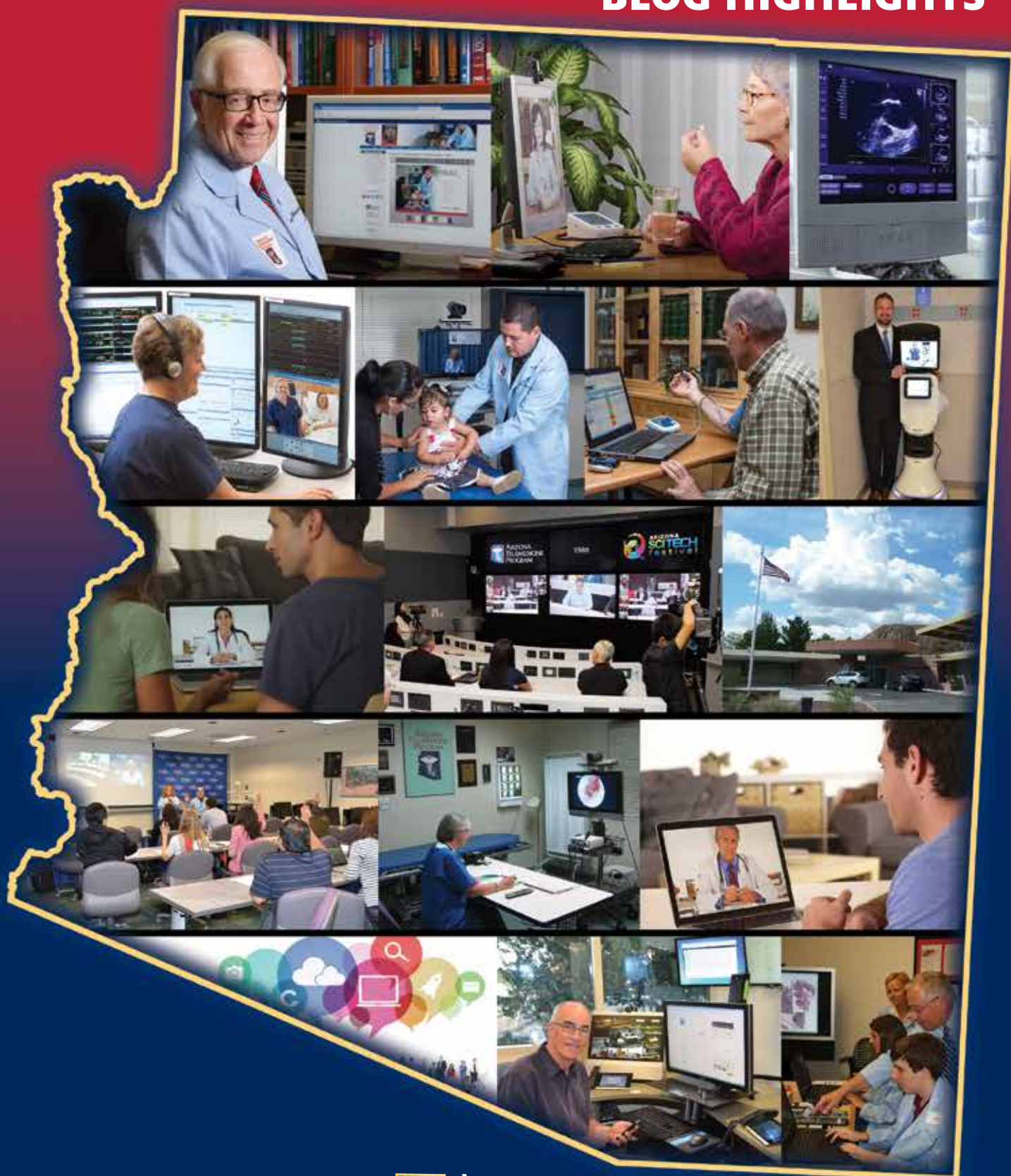


# ARIZONA *Telemedicine*

## BLOG HIGHLIGHTS

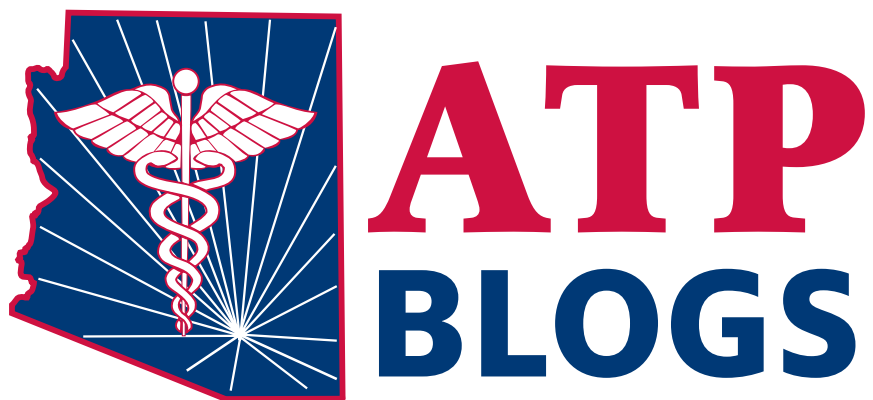


The University of Arizona  
Health Sciences



ARIZONA  
TELEMEDICINE  
PROGRAM





A publication of the Arizona Telemedicine Program





## Welcome

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During its spring 2013 quarterly meeting in Phoenix, the Arizona Telemedicine Council encouraged the Arizona Telemedicine Program to expand the scope of its social networking activities. After a six-month planning period, we decided to go “all in” because it makes perfect sense to leverage emerging telecommunications modalities to communicate with our clients, the patients and health care providers in Arizona. We ramped up by staffing our Social Media Office with very experienced editors and content writers and setting specific goals, which have been met. We’re proud of our Twitter, Facebook, LinkedIn, and Google+ information streams, all of which are accessible from the Arizona Telemedicine Program web page: [www.telemedicine.arizona.edu](http://www.telemedicine.arizona.edu).

One social media channel is different—that’s blogs. In recent years, blogs have become a favored media for journalism. You can read tweets on the fly—and get the gist of the stories. On the other hand, careful reading of blogs pays off. More often than not, professional writers crafted them for us. Just like any high quality newspaper article, a blog covers a topic in rich detail, and the story is self-contained. Read back-to-back, blogs coalesce into an e-magazine. Print out a series of tweets, and the list resembles the yellow pages. Print out a series of blogs, and you have a magazine.

This magazine contains 18 previously posted blogs, all still available online, and all about telemedicine.

Read them, savor them, enjoy them: they are a window into today’s marvelous telemedicine and telehealth world. Each blog tells a personal story and each blog has a take-home message you can take to the bank.

These blogs show how telemedicine is benefiting our great state, and the state of healthcare in general. They provide glimpses into the future of healthcare and telemedicine.

Enjoy!  
Ronald S. Weinstein, M.D.

*Ronald S. Weinstein, M.D.*

Founding Director

# ARIZONA

## *Telemedicine*

### FAVORITE BLOGS

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# Telemedicine advances are one of the “Top 10 health stories from Arizona in the past 125 years”

By Nancy Rowe on

**June 4, 2015**

**C**ongratulations to *The Arizona Republic* on its 125 years of publishing in Arizona. As part of its anniversary celebration, the newspaper compiled several historical Top 10 lists, including “Top 10 Health Stories from Arizona in the past 125 years,” by Ken Alltucker.

The list includes the 1918 flu pandemic, Arizona’s Medicaid launch, the state’s first heart-transplant surgery, formation of an early multi-hospital system (Samaritan Health, now Banner Health), hosting of a tuberculosis colony in the 1920s and 30s, producing and testing scorpion antivenom, pioneering brain surgery, making strides in genomic medicine research, the Affordable Care Act, and telemedicine advances.

Ronald S. Weinstein, MD, founding director of the Arizona Telemedicine Program (ATP), is pleased—but not surprised—that “Telemedicine Advances” made the Top 10 list. Arizona has been a national leader in telemedicine, starting with the establishment of the ATP at the University of Arizona in 1996 at the urging of then-Representative Robert “Bob” Burns, whom Dr. Weinstein refers to as “an amazing

public servant in our state.” Dr. Weinstein was personally involved, himself, with early multispecialty telemedicine cases at the Massachusetts General Hospital in Boston, in 1968, as a resident physician, and has been doing pioneering work in telemedicine ever since.

## **To name just a few Arizona telemedicine milestones...**

Since 1998, the ATP has met quarterly with the Arizona Telemedicine Council on Capitol Hill in Phoenix to present telemedicine activities and advances throughout the state. There has always been a lot to report, including the ATP’s same-day mammogram results for Native American women in Tuba City; the more than 150,000 telepsychiatry sessions between doctors and rural patients via the Northern Arizona Regional Behavioral Health Authority network; teleconsultations from University of Arizona specialists to doctors and patients in Nogales, Yuma, and Sells; Carondelet Health Network’s telecardiology and telestroke consultations to southern Arizona rural hospitals; and the million-plus teleradiology cases throughout the state.





Today, Arizona remains a hotbed of telemedicine activity. Along with the ATP, the Republic article mentions the Mayo Clinic telestroke program, where neurologists connect to emergency room doctors in rural Arizona to evaluate patients with stroke symptoms, and the Banner Health eICU program, which links its multiple intensive care units to tele-intensivists at a single site in Mesa. Both programs are featured in the ATP's Arizona Telemedicine Magazine, along with many other telemedicine success stories, including an Indian Health Service teleophthalmology program that screens for diabetic retinopathy, the leading cause of blindness in working-age adults; "Care Beyond Walls and Wires," a Northern Arizona Healthcare initiative that monitors congestive heart failure patients and helps them avoid hospital readmissions; teleconsultations by the Arizona Burn Center to determine whether a patient needs to be transported or can be treated locally; the ATP's ¡Vida! breast cancer support group and patient/provider tele-education program; and HIV/AIDS patient treatment throughout northern Arizona via the North Country Healthcare telemedicine program. Telemedicine programs in Arizona are growing by leaps and bounds, with many more successes and startups too numerous to list here.

Multiple medical specialty services such as those mentioned above are available to Arizona's rural hospitals and other organizations via telemedicine technology. The ATP's national Telemedicine & Telehealth Service Provider Directory lists 23 telemedicine service provider companies (22 of them based in Arizona) currently offering services such as telecardiology, teledermatology, telestroke,

and telepsychiatry to hospitals, clinics, schools, and other organizations in Arizona—and more companies that plan to bring services to Arizona in the near future.

#### **Telemedicine activities beyond medical services**

Arizona is home to global leaders as well as startups in telemedicine technology, including GlobalMed, which made the Deloitte Top 100 fastest growing tech companies list in 2012, and T-MedRobotics, which makes a remote-controlled echography system for areas without local sonography experts.

*Telemedicine saves lives, reduces costs and improves patient outcomes and satisfaction. Clearly, it's gone main-stage in Arizona.*

Our state is a national telemedicine expertise leader as well. ATP staff and other Arizona telemedicine leaders have published a wealth of books, chapters, and papers over the past 20 years, and have presented at hundreds of state and national meetings. The ATP boasts a President Emeritus (Dr. Weinstein), for being a "pioneer in telemedicine," and two past presidents (Elizabeth A. Krupinski, PhD, and Dr. Weinstein) of the American Telemedicine Association (ATA), along with several past and current chairs of ATA Special

Interest Groups. The ATP has been offering its Arizona Telemedicine Training Program—with two tracks, each offered three times per year—for 17 years. The training programs, offered simultaneously in ATP training facilities in Phoenix and Tucson, are linked by video conferencing, and are among the few telemedicine education courses accredited by the American Telemedicine Association. Dr. Weinstein notes that "many current, and future, telemedicine leaders have passed through our training program. At last count, over 1,000 individuals, from over a hundred organizations, have done their telemedicine training with us." The ATP also houses the Southwest Telehealth Resource Center, a federally funded assistance center serving the southwestern states. And groups such as the Northern Arizona Telemedicine Alliance have formed to share information and collaborate on projects.

With all these burgeoning telemedicine programs, companies, education, services, meetings, and expertise in Arizona, it's no surprise that telemedicine would make the Arizona Republic's "Top 10 List of the Most Important Health Stories in the State over the Past 125 Years." Telemedicine saves lives, reduces costs, and improves patient outcomes and satisfaction. Clearly, telemedicine has gone "main stage" in Arizona.

# Impact of Social Media in Healthcare and Telemedicine

By Yvonne Price on

**November 20, 2014**

## Social media and health care

Did you know that there are more than 75,000 health care professionals on Twitter? That 41 percent of consumers are using Facebook, Twitter, YouTube and online forums to select health care providers? Or that social media can help track the spread of fast-moving illnesses like influenza?

When you think of social media in health care, you might think it's all about marketing. But experts agree, it goes beyond that.

Farris Timimi, medical director for the Mayo Clinic Center for Social Media, said that social media in health care is a "moral obligation."

"Our patients are there. Our moral obligation is to meet them where they're at and give them the information they need so they can seek recovery," Timimi said. "This is not marketing; this is the right thing to do."

If it's the right thing to do for doctors, nurses and other health care providers, then it makes sense for telemedicine providers too. After all, telemedicine is all about the innovative use of communication technology to improve patient care.

## Consumers and Providers

Pretty much everyone agrees that patients and consumers were first to the table. They were using social media for health research, sharing and decisions before health care professionals finally arrived and joined the conversation.

With a reported one third of consumers looking to social media for medical information, it seems like a pretty good place for providers of all sorts to be

sharing that info. And now they are, in ever increasing numbers.

In March 2014, Creation Pinpoint published a video analysis of the growth of worldwide health care professionals on Twitter between 2006-2014. This very cool interactive video allows you zoom in on any place in the world and drag the timeline back and forth to see the growth explode before your eyes.

## Data, Data, Data

When it comes to analyzing the data to find out

exactly what health care professionals are doing on social media, it's not easy. In Greg Matthews' article, Physician use of Twitter: Examining the data, he points to a study by Dr. Katherine Chretien as the first of its kind to really dig into the meat of what physicians are actually doing and saying on Twitter.

Not surprisingly, there is no equivalent





study examining the use of social media in telemedicine, at least not to my knowledge. But there is talk.

In an article by Dr. Joseph Kim, he offers that social media is in fact a form of telemedicine – an informal and casual one that lacks reimbursement, but a form of it nonetheless.

### **Not Just for Connecting with Patients**

So what's going on with health care on social media beyond patient-provider connections and consumer use?

CEO of Creation Healthcare Daniel Ghinn said: "Public social media, including Twitter is changing the way that health care professionals are learning and collaborating professionally."

According to research by Creation

Pinpoint, health care professionals post to Twitter approximately 152,000 a day, and there have been 208 million tweets by them since 2006.

The research showed that health care professionals are not just talking to patients; they're talking to each other – networking, sharing research and resources. And in telemedicine, the scene is much the same.

### **Tracking Outbreaks**

Perhaps one of the most exciting impacts of social media on healthcare is a new way to track the spread of fast-moving illnesses like the flu. An article in The Business of Federal Technology puts it very succinctly, saying, "flu spreads fast, but tweets spread faster."

Given this unique condition where social media has become a voice about the wellness of populations, health organizations and federal agencies, such as the Centers for Disease Control and Prevention, are using predictive analytics of social media data to monitor and track possible disease outbreaks. It

seems to me that this use of social media is a direct example of Dr. Kim's notion that social media is a form of telemedicine.

### **Telemedicine and Social Media**

As the person who manages the Arizona Telemedicine Program's (ATP) social media channels, I can say quite authoritatively that telemedicine providers and related companies are actively participating on social media channels.

Not only is social media a great networking tool for telemedicine and an effective way of reaching consumers, it's a way to learn about what's working for providers and what's not. It's also probably the fastest way to find out about anything and everything happening with telemedicine around the world.

### **ATP Joins the Conversation**

Prior to September of 2013, ATP was not active on any social media. I joined the ATP team to kick-start the process. Today, we have a strong presence and have fostered valuable relationships on Twitter, Facebook, Google+ and LinkedIn.

Social media has allowed us to build relationships with national and international individuals and organizations. It has also strengthened our relationships with organizations that are a part of Arizona Telemedicine, such as Banner University Medical Center, Mayo Clinic Scottsdale, Banner Health and dozens of other health profession education entities.

In talking about a new study on social media in health care, Kelly Barnes, leader of the U.S. Health Industries Practice for PwC's Health Research Institute said, "Savvy adopters are viewing social media as a business strategy, not just a marketing tool."

That's my approach, and for good reason. Social media has the potential to impact an organization in so many ways, so why not implement it with all your organization's goals in mind, not just those related to marketing.

If you'd like to hear more on this topic, please join me for the webinar "Impact of Social Media in Healthcare" on December 10, 2014.

I'd love to hear how you're using social media as a consumer or provider of health services/ information. Please share your comments.





# Tele-Echocardiography: “The Right Thing to Do” for ICU Patients

By Jane Erickson on

June 18, 2015

In 2006, Banner Health made the decision to equip every one of their ICU beds with an eICU system that provides round-the-clock, “remote” care to critical care patients. Banner Telehealth’s eICU operations centers, located in Mesa, Ariz., Denver, Colo., Santa Monica, Calif., and Tel Aviv, Israel, has helped reduce patient mortality and shortened ICU stays.

In 2013, Banner took another step toward state-of-the-art intensive care, by implementing a tele-echocardiography system to relay patients’ echocardiographic images to the eICU in real time. This was achieved by training respiratory therapists to obtain the images and project them in real time to the tele-ICU physician via the tele-ICU Camera.

“At the bedside, point-of-care echocardiography is used as an extension of the physical exam. For us physicians working behind the camera, it’s like we can reach through the camera and examine the patient. We’re very excited about it,” says Nidhi Nikhanj, MD, assistant medical director of Banner Telehealth Services. “What we wanted to do was demonstrate that we can apply this powerful bedside tool in a tele-ICU platform.

## **Banner Health’s tele-echocardiography system**

“Banner’s addition of tele-echocardiography to its eICU service is an outstanding example of a successful telemedicine service implementation in an organization focused on being ‘best-of-breed’ with respect to its telemedicine innovations,” says Ronald S. Weinstein, MD, founding director of the Arizona Telemedicine Program. “The services Banner is providing are invaluable.”

The development of this tele-echocardiography initiative started as a small pilot at two Banner hospitals, but is now being used at nine hospitals across Arizona, Dr. Nikhanj says.

“We’re performing, on average, between 25 and 40 of these procedures per month,” he says. “It’s a very, very useful tool in assessing critically ill patients, particularly when you’re trying to answer the question ‘Why is this patient in shock?’

“This allows us to obtain a diagnosis more quickly, and initiate therapy in a more timely manner.”

Point-of-care echocardiography is becoming standard of care in modern ICUs across the country, because its utility has been well documented in the literature. While Banner has not yet generated publications on the efficacy of tele-echocardiography, Banner has anecdotal evidence to demonstrate its effectiveness.

“A few months ago, one of my colleagues was called because a patient was decompensating in the cardiac unit,” Dr. Nikhanj says. “My colleague was able to diagnose the patient as having cardiac tamponade. He contacted the cardiac surgeon on call to come in the middle of the night and take the patient for surgical drainage of the effusion. The patient did very well.”

Tele-echocardiography also was able to quickly identify signs consistent with a pulmonary embolism in another patient with cardiopulmonary compromise. That patient also had a good outcome, Dr. Nikhanj says.

“It’s too difficult at this point to say whether this is generating a cost-savings,” he says. “But this is simply the right thing to do.”

*“This is the right thing to do. We’ve always held fast to the belief that our tele-ICU providers are as capable of taking care of our patients as our bedside providers.”*

**Nidhi Nikhanj, MD**

*Assistant Medical Director of Banner Telehealth Services*





# Tuba City Embraces Telehealth for Diabetes Prevention and Care

By Dominika Heusinkveld  
on

**May 21, 2015**

In rural areas, telemedicine offers patients the opportunity to get specialty health services and physician consultations without the need for extensive travel. Rural telemedicine may be the great equalizer for rural populations, which typically experience reduced services and less favorable health outcomes compared to populations served by large medical centers.

Diabetes care is one area which needs improvement in rural Arizona. Patients frequently have to travel 1-2 hours one way in order to visit their healthcare providers. Generally, physicians like to see patients with diabetes at least four times per year. These patients also need to see a Nutritionist regularly, have eye and foot exams yearly, have blood sugar

screenings regularly, and must come in for medication refills. All of these trips place a huge burden on patients, due to both time and transportation expenses.

A new project at Tuba City Regional Healthcare Corporation (TCRHCC) is expanding our telehealth services to

include telenutrition and screening services for patients with diabetes, and hopes to also extend diabetes screening to far-flung communities on the Navajo Nation.

*Telemedicine may be the great equalizer for rural populations.*

The project, which will begin in the fall of 2015, will utilize a mobile telehealth van to conduct health screenings, telenutrition visits, blood sugar and blood pressure checks, as well as other health services. It was funded by a one-time grant from the Special Diabetes Program for Indians in 2014.



It is my hope that patients will be able to get some of their regular diabetes checkups and screenings done via telemedicine, so that patients can reduce their trips to the hospital and still meet the standards of care. Initially, patients will still need to visit with their physicians regularly, but the burdens of frequent screenings, eye and foot checks, and nutrition visits will be eased by providing these services at Chapter Houses.

#### **Challenges for Rural Telehealth**

Major challenges for rural telehealth programs include the lack of infrastructure such as paved roads, Wi-Fi signals, cell towers, and sparse populations. It can also take time for populations to get comfortable with a novel program and utilize services to their maximum benefit.

With our mobile telenutrition program, the biggest challenge thus far has been the difficulty in assuring a reliable signal to accommodate video conferencing even in remote communities. We have run tests and

simulations, but the ultimate test of signal strength will be when we drive the van out to the communities we intend to serve and attempt a stable video connection. A reliable and fast internet connection is a luxury that many on the Navajo Nation do not have yet. This lack of infrastructure has delayed the implementation of many worthy telehealth programs.

Another challenge has been accessibility of distant sites. Many of the communities we hope to serve are reached via dirt roads, and we needed to ensure that our new van would be able to handle a bumpy ride—despite its sensitive equipment. Again, the big test of our success will be when the van arrives, and can be road-tested.

These uncertainties with a major project always serve as a reminder of the difficulties of providing patients with the care they need despite the limitations in resources that are an unfortunate part of daily life in rural communities.

#### **Future Opportunities**

TCRHCC hopes to expand its telemedicine options in the coming years thanks to the improvement in facilities allowed by the grant. We have been offering telenutrition and telepsychiatry services to high schools in Tuba City, follow-up surgery and dermatology visits via telemedicine, and various educational opportunities for our medical staff. We are also establishing a telestroke program with the Mayo Clinic in Arizona.

Rural health providers and their patients would greatly benefit from telemedicine-based collaboration with larger health centers. A great model for this type of collaboration is the University of New Mexico's Project ECHO. A similar project, which included pulmonology, rheumatology and other specialist care, would be of great benefit to Northern Arizona's rural communities.



# Arizona Telemedicine Program and Arizona SciTech Forge Statewide STEM Connections

By Debbie Gubernick on

April 23, 2015

**T**he Arizona Telemedicine Program (ATP), a national leader in providing broadband telemedicine services, recently embraced a partnership with Arizona SciTech that has amplified STEM outreach efforts throughout the Grand Canyon State.

In February 2015, ATP collaborated with Arizona SciTech to produce the 2015 Arizona SciTech kickoff event, a virtual press conference. The event, itself a STEM tour de force, connected nine locations across the state, giving communities from Clarkdale to Safford the opportunity to highlight their upcoming STEM events.

With the participation of seven mayors, the teleconference made a powerful statement about the importance of STEM in Arizona.

When the teleconference was first proposed, Arizona SciTech Executive Director Jeremy Babendure wondered if it was feasible. But after discussions with ATP's Janet Major, Chris Martin, and Pete Yonsetto, he realized that ATP's expertise would position the event for success. As Major, ATP's Associate Director of Facilities, explained: "This stuff has to work. We would never schedule an event and not have tested with the site because it can't be, 'Gee, this stuff is great—when it works.'"

This is what we do for a living, so it has to work every time."

ATP's experience in overcoming the obstacles and barriers to successful teleconferencing were particularly useful when selecting each of the nine press conference sites. Major explained why finding and scheduling space is a critical challenge:

*Room scheduling is a big obstacle in the world of videoconferencing. To communicate at a distance requires technology, space, network, and technical support, all of which can be challenges especially in rural locations. But beyond governmental firewalls and trying*

*"Where do people go who don't have Internet in their home, or a computer? They go to the libraries. So we have to be able to provide access to resources there."*

*– Janet Major*





to share network connectivity and figuring out whether I am going to call you or you are going to call me, or are we going to have to meet someplace else, the connectivity piece is very complicated and it all comes down to what room you are in.

Communities often already possess the necessary resources for teleconferencing but lack the know-how to locate or utilize those resources. Public libraries can play a valuable role in providing access to connectivity, especially in cities like Sahuarita, Nogales, and Yuma.

As Major noted, "Part of that connectivity in the future for many people has to be using their libraries. Where do people go who don't have Internet in their home, or a computer? They go to the libraries. So we have to be able to provide access to resources there."

An important component of preparing for the press conference was ensuring that each location's equipment worked and that people were comfortable using it. Martin, Assistant Director of ATP's T-Health Institute, underscored the value of testing beforehand, saying it is important to make sure that each remote site is comfortable using their own equipment, and that each

site has a way to contact ATP so that if there are any technical difficulties, the problems can be resolved behind-the-scenes without interrupting the actual press conference. He added:

*I was a little worried just because there were a lot of sites that had equipment but it was either in a closet and they hadn't used it [recently], or this was their first time using it. So, I was a little nervous but it worked out well. I was very happy with the outcome of it.*

One of the most exciting results of the press conference is the possibility of future collaborations between ATP and Arizona SciTech. Yonsetto, ATP's Video Conferencing Administrator, described the fit between the two organizations:

*Our organization was perfect for the [Arizona] SciTech event in that we have a nice facility in T-Health for presenters, and we have the equipment to bring in many remote endpoints. Our program is largely focused on education, training, and clinical interaction with remote, hard-to-serve communities. Of course, we also have many urban members as well. The collaboration and technology presented [at the teleconference] was a good example of how you can bring communities together via video.*

Major presented her vision of next year's Arizona SciTech kickoff event, one that would combine ATP's teleconferencing mastery with Tucson's Key 2 Employment Symposium, an established event that highlights STEM careers:

*The thing that makes us a good partner for Arizona SciTech is that we have great friends in communities where there are existing science communities, but we also have great connections in places where we can help build science communities.*

*This could potentially be a statewide effort and a really big kickoff, if we can help Jeremy [Babendure] to get the kickoff onto the Governor's calendar so folks can schedule their facilities. What a great way to kick off AZSCITECH Festival 2016 by inviting mayors to their own STEM/STEAM communities! Next year, wouldn't it be great if Jeremy and our engineers built a videoconference to meet and greet with fifteen mayors?*

*Videoconferencing connectivity can build a virtual community during this event to infuse some great career possibilities—for instance, Careers in Copper—Live from Sahuarita. We could get someone to talk about agriculture careers from Yuma. I would love to see a couple of sites try to do theirs the same day—teach them in advance how to do it, spend time with them in advance, nurture the idea, help make that happen for other folks. If you want to do this in your hometown, this is what you need and these are the resources we can help you find.*

Major emphasized that the kind of collaborative effort that Arizona SciTech champions can deliver outstanding results: "I know we can really do great things as a team. That's the power of videoconferencing!"





# Telemedicine Helps Arizona Hospital Survive the Rural Hospital Closure Trend

By Jane Erikson on

**April 9, 2015**

**A**t a time when small rural hospitals are increasingly closing their doors, Bisbee's Copper Queen Community Hospital is bucking the trend.

One can point to a number of reasons why the 14-bed critical access hospital, 10 miles north of the Arizona-Mexico border, is able to maintain a healthy bottom line. One reason is Copper Queen's robust use of telemedicine.

It started with telestroke, in collaboration with the Mayo Clinic – Phoenix. Former Bisbee Mayor Jack Porter says Copper Queen's telestroke service enabled him to walk within a few hours of a paralyzing ischemic event. "I didn't have a stroke," Mr. Porter tells people. "I had a stroke of luck."

In a small town like Bisbee – population about 5,400 – word gets around. Marketing 101.

The benefits of telemedicine were obvious to Copper Queen CEO Jim

Dickson, and over the last few years the hospital has added telecardiology, teleneurology, teleconcussion, teleburn and telepediatrics, and Mr. Dickson is "now looking at teleorthopaedics."

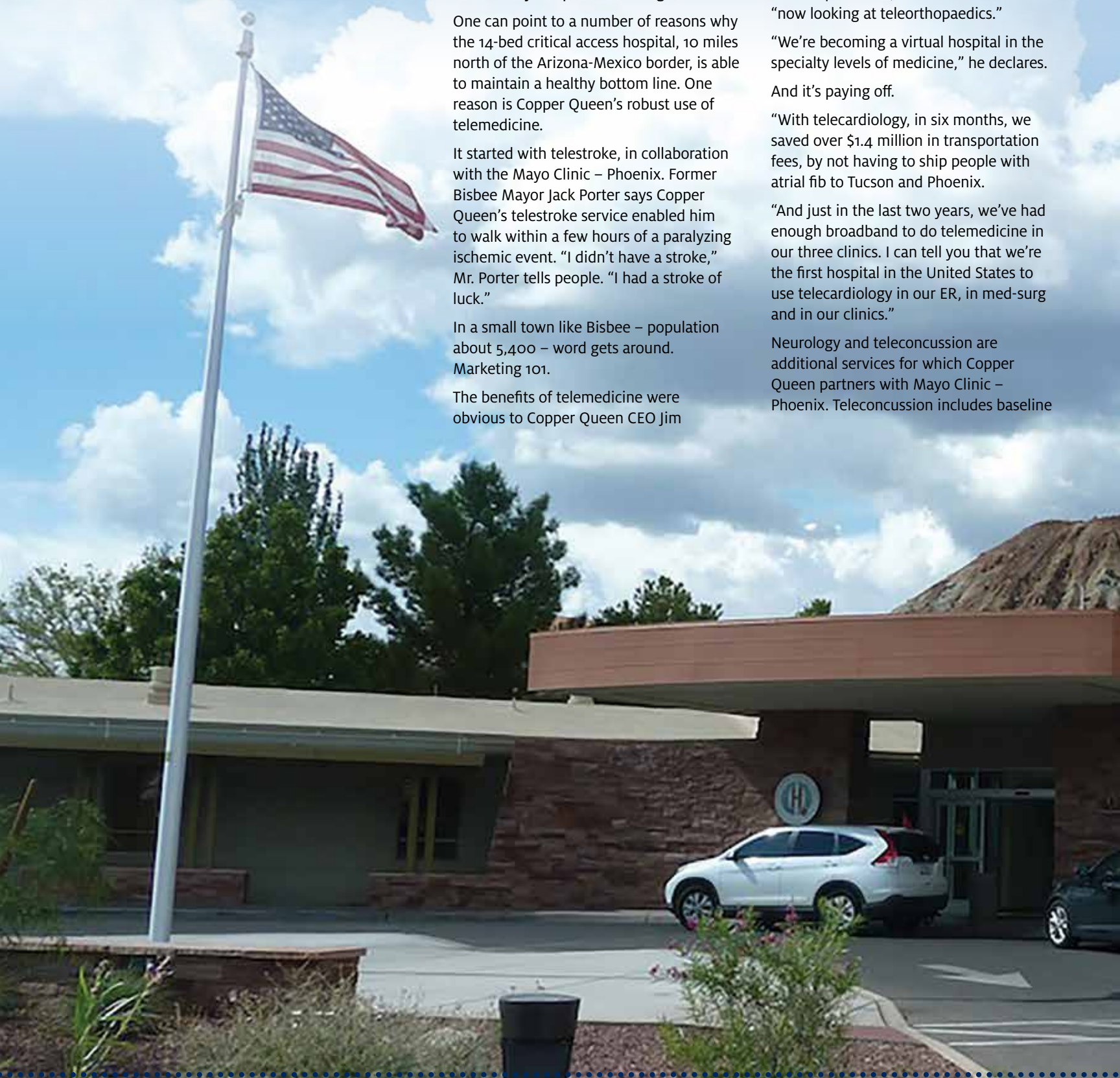
"We're becoming a virtual hospital in the specialty levels of medicine," he declares.

And it's paying off.

"With telecardiology, in six months, we saved over \$1.4 million in transportation fees, by not having to ship people with atrial fib to Tucson and Phoenix.

"And just in the last two years, we've had enough broadband to do telemedicine in our three clinics. I can tell you that we're the first hospital in the United States to use telecardiology in our ER, in med-surg and in our clinics."

Neurology and teleconcussion are additional services for which Copper Queen partners with Mayo Clinic – Phoenix. Teleconcussion includes baseline





studies of high school athletes, cheerleaders, and other contact sports players, so if a kid gets hit in the head, the new scan can be compared with the baseline to see if there's a concussion."

Copper Queen also is scoring well on patient satisfaction – it was a remarkable 90 percent among ER patients last year – and Mr. Dickson believes telemedicine is again part of the equation.

"We initially thought that a television would create a barrier, a not-so-caring environment," he says. "But it's not true. When the doctor comes on, the patient is just so happy to have a specialist like that in a small hospital.

What you have to do is develop your hospital's culture so that staff accept the addition of telemedicine to your delivery system." "What you have to do is develop your hospital's culture so that staff accept the addition of telemedicine to your delivery system."

Dan Derksen, MD, director of the Center for Rural Health in the University of Arizona's Mel and Enid Zuckerman College of Public Health, keeps a close eye on rural hospital

data. One striking example: the National Rural Health Association counted 48 rural hospital closures since 2010 – with 31 of those closures occurring over the last two years.

In Arizona, the 70-bed Hualapai Mountain Medical Center in Kingman closed in September 2011, but has been bought by Kingman Regional Medical Center for use as an acute rehabilitation unit. And Florence Community Healthcare, with 25 beds, closed in June 2012.

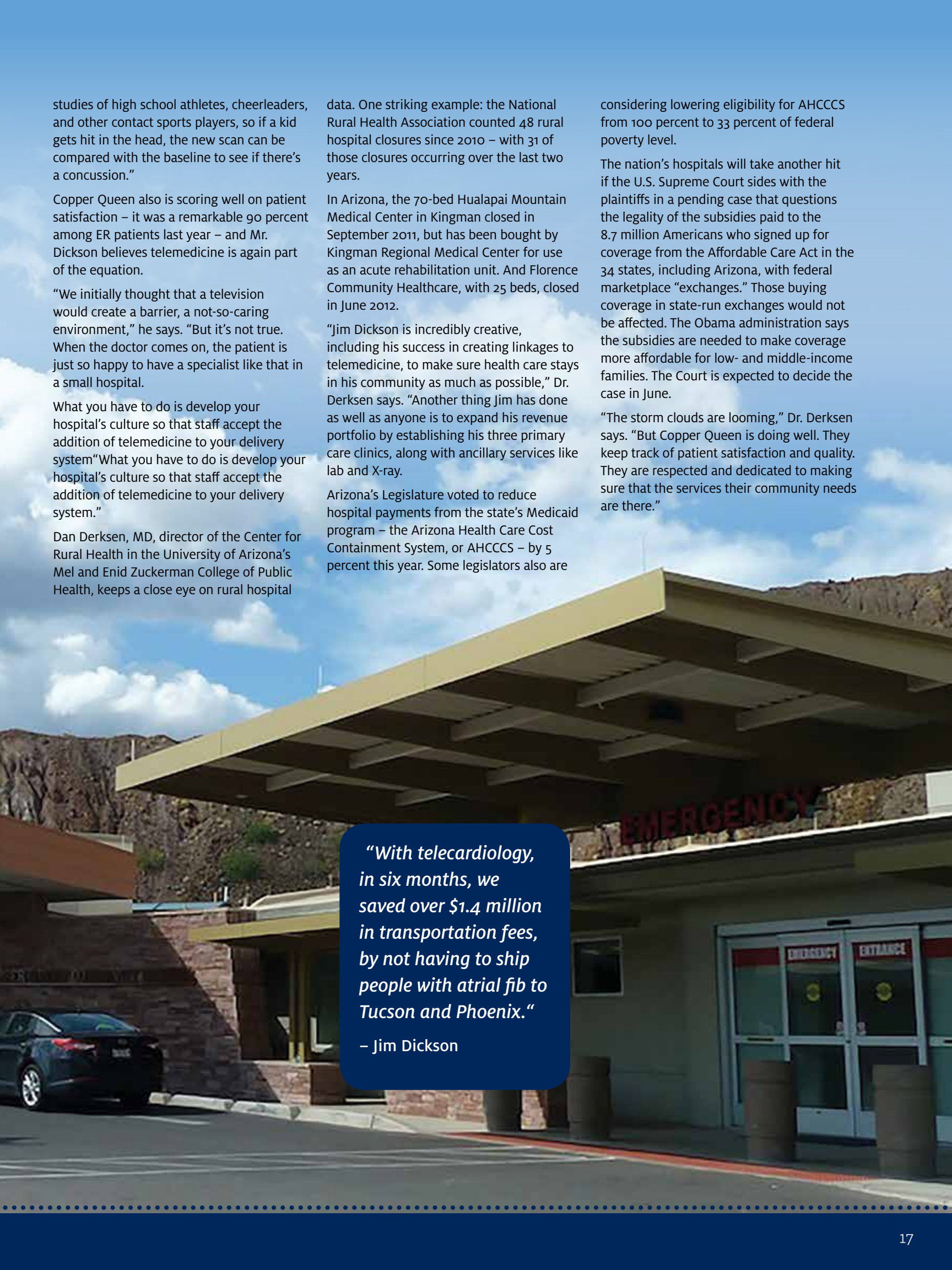
"Jim Dickson is incredibly creative, including his success in creating linkages to telemedicine, to make sure health care stays in his community as much as possible," Dr. Derksen says. "Another thing Jim has done as well as anyone is to expand his revenue portfolio by establishing his three primary care clinics, along with ancillary services like lab and X-ray.

Arizona's Legislature voted to reduce hospital payments from the state's Medicaid program – the Arizona Health Care Cost Containment System, or AHCCCS – by 5 percent this year. Some legislators also are

considering lowering eligibility for AHCCCS from 100 percent to 33 percent of federal poverty level.

The nation's hospitals will take another hit if the U.S. Supreme Court sides with the plaintiffs in a pending case that questions the legality of the subsidies paid to the 8.7 million Americans who signed up for coverage from the Affordable Care Act in the 34 states, including Arizona, with federal marketplace "exchanges." Those buying coverage in state-run exchanges would not be affected. The Obama administration says the subsidies are needed to make coverage more affordable for low- and middle-income families. The Court is expected to decide the case in June.

"The storm clouds are looming," Dr. Derksen says. "But Copper Queen is doing well. They keep track of patient satisfaction and quality. They are respected and dedicated to making sure that the services their community needs are there."



*"With telecardiology, in six months, we saved over \$1.4 million in transportation fees, by not having to ship people with atrial fib to Tucson and Phoenix."*

– Jim Dickson



# Telemedical Care: What Patients Think

By Nancy Rowe on

March 26, 2015

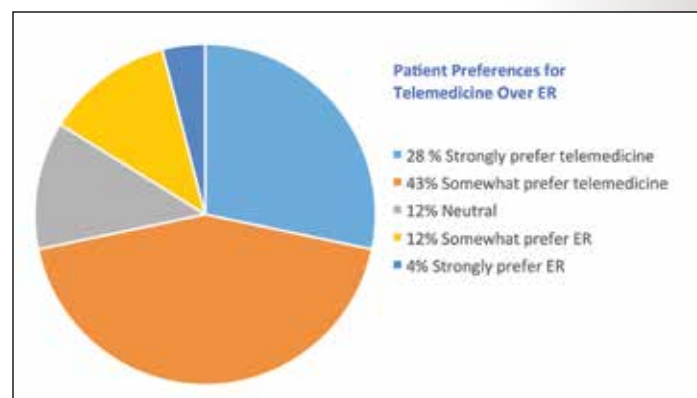
I was vacationing in a tiny, remote mountain town on the east coast last summer when I became ill. It was a Sunday evening and the local urgent care center didn't open until the next morning. I didn't want to wait 15 hours for urgent care, and I didn't want to be driven to the regional ER, where I might have to wait a long time to be seen—and might be exposed to something contagious while in the waiting room.

Luckily, I had recently heard about one of the companies that provides urgent care visits via telemedicine. So I took out my iPad, loaded the app, and called in.

I was able to choose from a list of doctors; I agreed to pay the fee (about what my urgent care copay would have been, and certainly less than an ER visit would have cost); I entered my credit card info; and within a few minutes I was talking to the doctor I chose—all from my bed! The doc called in a prescription to the pharmacy I selected and I was feeling fine very shortly.

## A Visit to the ER vs. Telemedicine

My experience jives with a recent survey conducted by medical technology reviewer Software Advice<sup>TM</sup>, which found that only 16 percent of patients would prefer to seek care for a minor ailment at an emergency room if they also had access to telemedical services. The survey also found that, among patients who have not used a telemedicine service, 75% express interest in using one in lieu of an in-person medical visit.



Kathleen Irwin, a market research associate at Software Advice, says that, as of January 2015, patients spend an average of 133 minutes in the ER. Take that two-plus hours and add in the transport time to and from, and compare it to the approximately 10 minutes my virtual doctor visit took from start to finish.

## Why Patients Choose Telemedicine

My experience is not unique: Patients in the survey who had used telemedicine, when asked to cite positive aspects of their most recent virtual appointment, cited “don’t have to travel” (21%), “comfort of home” (20%), “quick access to care” (11%), “shorter wait time” (10%), and “avoid waiting room” (8%) as among the top benefits. Interestingly, 21% also cited

“high quality of care” as one of the benefits they experienced.

When I used the telemedicine service, I wasn’t expecting particularly high quality medical advice, but I knew what was wrong with me and what prescription was needed, so I didn’t mind experimenting. My experience was so positive, though, that I used the same vendor again—this time from home—in order to avoid a long trip to, and a wait at, my local primary care doctor’s office.

The care I received in both virtual visits (and I was able to choose the same doctor both times, even from two different states) was at least on a par with, if not superior to, the medical care I have experienced in recent urgent care visits.



**The Insurance Hurdle**

Market researcher Irwin says the average telemedical visit costs between \$40 and \$50. My visits were in that range and I consider the convenience and prompt service well worth the price. I assumed that my insurance wouldn't pay for the visit, and, like me, more than half of the patients surveyed (56%) didn't know if their health insurance covers visits conducted using telemedicine.

Arizona's telemedicine parity law is "partial"—it covers only a few healthcare services and primary care, unfortunately, is not among them. We need to get telemedicine parity to the point where patients don't have to wonder if they're covered when they choose to see a doctor via telemedicine—because, according to the survey, studies suggest that the number of patients taking advantage of telemedicine will increase twentyfold over the five year

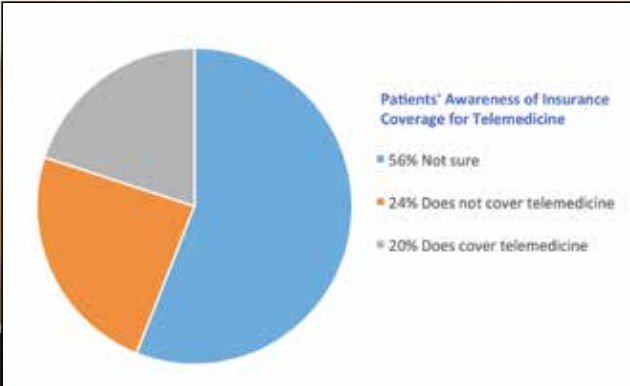
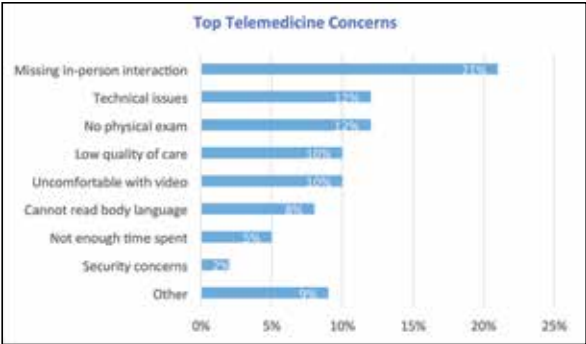
period from 2013 (350,000 users) to 2018 (7 million users).

**The Number One Concern**

Patients in the survey also were asked to cite their top concerns about their most recent telemedicine visit. The number-one concern was "missing in-person interaction" (21%) with many pointing out that the visit was "colder" or "less personal" than an ordinary, in-person visit.

I personally didn't feel that way, but that could be because I am very used to using videoconferencing to interact with others—and also, the provider I met with had a great "screen presence," making me feel right at home.

Check out the full "Patient Interest in Adopting Telemedicine" survey to read more and see all the results.



*A recent survey found that only 16 percent of patients would prefer to seek care for a minor ailment at an emergency room if they also had access to telemedical services.*

# Telemedicine Works—But What Happens When Patients Don't Think So?

By Nancy Rowe on

July 2, 2015

“Telemedicine doesn't work!” That's what I heard a few years ago from two angry friends who knew I worked in the field of telebehavioral health.

It turned out that the husband had had symptoms that led the ED staff at their local hospital to think he might be having a stroke. That hospital had a telestroke service, which was used to determine whether he had had an ischemic stroke and needed the clot-busting drug tPA to save his life.

The stroke doctor at the remote site found that my friend had not had a stroke and should not be given tPA. That diagnosis turned out to be correct.

This instance of telemedicine, in fact, worked perfectly. My friend was diagnosed correctly as not having had a stroke. To me, it was a shining example of a successful telestroke program.

## So why did my friends feel that telemedicine didn't work?

It turns out that they didn't understand that the telemedicine session had one goal: to determine whether he had had a stroke, and if so, was it an ischemic stroke caused by a blood clot—one that could be treated with tPA. My friends thought the goal of the emergency telestroke session was to diagnose whatever was causing the stroke-like symptoms.

To me, this signifies that the ED staff likely was not completely clear about what could and could not be expected from the telestroke session in terms of a diagnosis. It's possible that my friends, in their fear and panic, just didn't hear whatever they were told. In either case, the message didn't get through that a telestroke session is an urgent, life-or-death meeting to answer a single question—not an all-encompassing, full-body diagnostic series.

After several specialist visits and multiple diagnostic tests spanning more than a month, the cause of my friend's symptoms was finally discovered. It is of concern to me that my friends thought this discovery should have occurred in an emergency,

few-minutes-long, telemedicine meeting with a neurologist (especially when neurology turned out to have nothing to do with the cause of his symptoms).

It's also of concern to me that a telemedicine service that worked exactly as it was supposed to was perceived as a failure—especially by two highly educated professionals, one of whom is a clinician.

## How can we fix this?

Many states, including Arizona, require “informed consent” by the patient before the patient is treated via telemedicine. But obtaining informed consent, apparently, doesn't always mean the patient understands the goals and limits of a telemedicine session. Obtaining informed consent can be a good opportunity to provide patient education on what to expect and exactly what the session is for. Patients know that, for instance, a

successful telemedicine services, such as telestroke, are—and rightfully so. For stroke patients who need tPA, it literally is a life-saver. But if patients don't perceive the service as successful, we have a problem.

Perhaps in a situation such as my friend's, it would have helped to reiterate what the telestroke session's goal was after it was determined that his life was not in immediate danger and he was no longer in a panic.

I welcome input on how hospitals and other healthcare systems orient and educate their patients regarding telemedicine services, and whether follow-up surveys have found a negative perception of telemedicine even after it worked successfully.

*It's of concern to me that a telemedicine service that worked exactly as it was supposed to was perceived as a failure.*

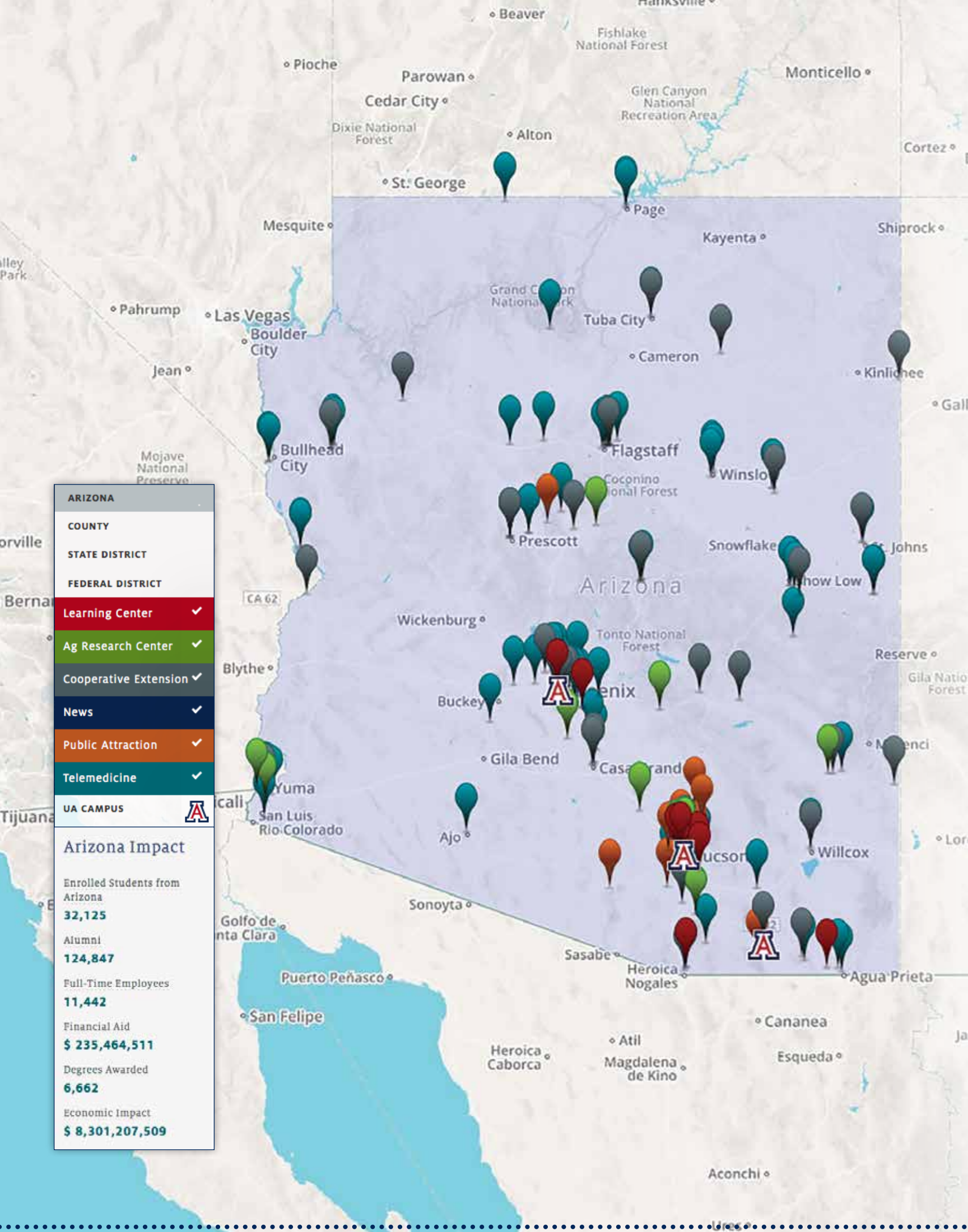
dermatologist is not likely to be able to diagnose high cholesterol—so why would they expect a neurologist to diagnose anything other than a neurological event? But regardless of whether informed consent is required, basic patient orientation seems to be called for.

In my friends' situation, perhaps a clear and basic script to help the ED clinicians explain to patients what to expect (and what not to) from the telemedicine session would have helped. And, in an ED setting where the patient is terrified for his life, perhaps some kind of interactivity needs to be built in to ensure the patient and/or his loved one understand the service.

A lot of attention has been given to how







ARIZONA

COUNTY

STATE DISTRICT

FEDERAL DISTRICT

Learning Center ✓


Ag Research Center ✓

Cooperative Extension ✓

News ✓

Public Attraction ✓

Telemedicine ✓

UA CAMPUS 

### Arizona Impact

Enrolled Students from Arizona

**32,125**

Alumni

**124,847**

Full-Time Employees

**11,442**

Financial Aid

**\$ 235,464,511**

Degrees Awarded

**6,662**

Economic Impact

**\$ 8,301,207,509**

## Arizona Telemedicine Council:

# Unique Structure, Extraordinary Impact

By Jane Erikson on

February 12, 2015

**The Arizona Telemedicine Program was established in 1996 with eight clinical sites around the state. Now, nearly 20 years later, the ATP has expanded to 160 sites.**

As the numbers imply, this is a program whose impact has far exceeded expectations. In fact, on a map recently published by the University of Arizona, showing sites around the state where the UA has a presence, the ATP far outnumbers other programs.

Ronald S. Weinstein, MD, co-founder and director of ATP, points directly to the visionary folks – legislators, physicians, agency officials, hospital and insurance executives and others – who have committed their time and talent to the Arizona Telemedicine Council (ATC).

“We are dependent on the Council for their community input,” says Dr. Weinstein, former head of pathology at the University of Arizona, where the ATP is based. “The Arizona Telemedicine Council members keep our program abreast of needs and opportunities outside the walls of the university. We appreciate the limitations of what we can see from within the University.

“Collectively, the Council members have a panoramic view of what’s happening in health care. With members from public and private sectors, from government and the community, and as leaders with expertise that we need, we find the Arizona Telemedicine Council invaluable. It’s our secret sauce for success.”

The Council was the idea of former state Representative Bob Burns, who is co-founder of the ATP and a member now of the Arizona Corporation Commission working jointly with Dr. Weinstein. After attending a meeting on the potential of telemedicine and visiting the country’s first telemedicine program, under the direction of Jay Sanders, MD, in Augusta, Georgia, Burns connected with the late John Lee, the Arizona Legislature’s university budget analyst.

They approached James Dalen, MD, then dean of the UA College of Medicine, and sold him on the idea of basing a telemedicine program at the UA. Dr. Weinstein agreed to serve as director.

“We wanted a means of monitoring the program,” Burns recalls. “There was no bill; Lee said we didn’t need one. So we set up this ad hoc council where people – telemedicine users and those who were just interested – could come and go. The council meets quarterly, and Dr. Weinstein gives us a progress report and says this is what the plans are, and then it’s open to advisory input from members of the council.

*“It’s a challenge to keep up with all the changes, but that’s the way it is with technology.”*

– Bob Burns

“I think it puts a level of positive pressure on the program, which we appreciate,” says Dr. Weinstein.

It was at a meeting two years ago that Alan Pitt, MD, a radiologist with Barrow Neurological Institute, suggested the ATP would benefit from a robust social media campaign. (One result is the blog you’re now reading.)

“This is just one example of how the Council has helped us develop our vision,” Dr. Weinstein says.

Bruce Groll, a finance director for the Arizona Department of Education, has been with the Arizona Telemedicine Program

and Council since the beginning; he was on John Lee’s staff in the Legislature.

According to Groll, “The Council has been very effective in terms of bringing together members of the medical community with people in state government with related health-care and education interests; with correctional facilities, representatives of tribal communities, and businesses such as UnitedHealthcare; and a great group of legislative folks who have helped enlighten our elected officials about the health-care needs of our state.”

As a result of the Council’s input, Burns says, “there have been several spin-offs from our original concept of providing medical services to rural communities. One of the big spin-offs is our continuing education component. Medical professionals tell me they really appreciate being able to take part in a continuing education program without having to leave their practice and drive to Tucson or Phoenix.”

Burns was the original chair of the ATC, and has attended all but two of its 71 – to date – quarterly meetings. “It’s an amazing record of civic leadership,” Dr. Weinstein says.

Says Burns, “I think it’s developed into a great program. I can’t believe not only the geographic expansion but all the technological things the program can do that it wasn’t able to do in the beginning. It’s a challenge to keep up with all the changes, but that’s the way it is with technology.

“We talked at the Council meeting in January about all the things a doctor can do with his cell phone. It’s mind-boggling.”





# Quick and Easy Continuing Education: **No Strings Attached**

By Tracy Skinner on

**February 3, 2015**

**Although requirements vary for each health profession, in order to maintain licensure, most require some sort of continuing education (CE) to demonstrate competency and insure quality of care.**

**H**ealth professionals typically need to take time away from work and personal obligations to obtain continuing education credits, which means meeting these requirements can be fraught with challenging barriers. This is especially true for those practicing medicine in rural communities where opportunities can be very limited. Finding the time to attend educational events is problematic and is compounded by adding more time and expense for traveling to such events, particularly in a rural setting where backup support can be inadequate.

Since the University of Arizona Medical Center (UAMC) is a teaching hospital, the Arizona Telemedicine Program is in an exceptionally unique position to support health professionals at telemedicine member sites achieve their objectives. The program provides a wide variety of educational opportunities via the content provided to students pursuing a career in health care.

## **Grand Rounds**

Since 1998, the Arizona Telemedicine Program has offered educational videoconferences via grand rounds in medicine, surgery, advances in aging, psychiatry, nursing, informatics, pediatrics and obstetrics and gynecology, most of which provide continuing medical education (CME) and/or CE credits. These weekly and monthly educational events attract participants from physicians and nurses to lay audiences, technicians and CEO's to name a few.

## **Clinical Care Events**

In addition to the grand rounds, we also offer our own Clinical Care Conference

Series, which is developed exclusively for the Arizona Telemedicine Program site participants. The conference series enables the telemedicine program to address imminent health concerns in the community.

***"Finding the time to attend education events is problematic . . . particularly in a rural setting where backup support can be inadequate."***

***– Tracy Skinner***

Topics are derived from an annual survey sent to the sites. Past topics have included:

Instructing general practitioners on how to do an orthopedic assessment

Valley fever

Working with patients with post traumatic stress disorder (PTSD)

Culturally appropriate care for Native Americans

Successfully identifying and referring patients for service dogs

The Clinical Care events also offer the opportunity for telemedicine site physicians to present on topics of interest in their communities. Additionally, we have the ability to access broadcasts sent out

over the UA satellite and then downlink those broadcasts to our telemedicine sites via our own network. This allows us to provide the latest updates in medicine from providers such as the Centers for Disease Control and Prevention, American Heart Association, and American Diabetes Association, to name a few.

## **Receiving Continuing Education Credits**

If your organization is a member of our network and you are interested in participating in a live interactive videoconference to receive your educational content, please visit our schedule online.

If you do not have access to a videoconference room, you can participate live via web streaming. Visit the streaming site at <http://streaming.biocom.arizona.edu/home/> and join the educational event a few minutes before the start time.

For more information, please feel free to contact me at [tskinner@telemedicine.arizona.edu](mailto:tskinner@telemedicine.arizona.edu) or 520-626-6103.



# Telemedicine Services: Now the Leading Edge

By Nancy Rowe on

January 15, 2015

## “What was the single most important development in telemedicine, telehealth and/or teleradiology in 2014?”

**T**hat question was just posed by a colleague in an email to several telemedicine industry leaders.

To me, the most important development was the burgeoning of the service provider market. Healthcare systems, hospitals, private practices, nursing homes and other entities are looking more and more to outside companies to provide medical services for their patients via telemedicine technology.

### Telemedicine Services and Providers

Telemedicine can provide needed services—such as stroke, cardiology, and burn specialists—to small communities, broaden the reach of healthcare systems by broadening their offerings, provide local backup coverage and after-hours access, and improve convenience for patients who no longer have to travel outside their communities for specialty care. It improves patient outcomes and provider bottom lines. And it's not only healthcare providers that are benefiting: Schools, employers, insurers, correctional facilities, and patients themselves are seeking services through telemedicine.

I count nearly 120 commercial providers of medical subspecialty and ancillary services via telemedicine technology who market their services to healthcare providers and other entities, and the field keeps growing. Nationwide, well-established, commercial firms are being joined by startups, academic programs and large, integrated healthcare systems that are marketing their services outside their own networks.

### Partnering with a Provider

Why partner? It can be a lot easier to partner with a company that will provide medical services via telemedicine technology than to start your own program. With a partner, you don't have to worry about physician recruitment and

retention and you often don't have to worry about installing and maintaining equipment, either.

Provider companies often will have the experience and expertise to walk you through forming the partnership and setting up the service—you don't have to reinvent the wheel to offer more comprehensive health services to your patients.

*It can be a lot easier to partner with a company that will provide medical services via telemedicine than to start your own program.*

### A Service Provider Directory

So how to sort through the 120 or so providers to find your perfect partner? The Arizona Telemedicine Program created a National Telemedicine and Telehealth Service Provider Directory to help healthcare systems, hospitals and other entities navigate the market.

The directory is focused specifically on service providers, so users don't have to wade through listings of platform and equipment vendors, telecommunications companies and consultants to find services. Service providers are asked to provide detailed information (incorporation date, number and type of practitioners, number of consults performed, recruitment practices, business models, etc.) to reduce the amount of preliminary research users have to do.

The directory, which was rolled out to

service providers in October, now has more than 35 entries and is still growing.

By the way, if you are a service provider company, you can list your company in the directory free of charge by entering your information into the Service Provider Survey.

### The Service Provider Showcase

Another way for healthcare systems and other entities to find their perfect partners: In October 2014, the ATP held the first annual Telemedicine and Telehealth Service Provider Showcase (SPS) aimed at helping healthcare systems and other entities find and partner with service providers.

Participant feedback was overwhelmingly positive. Look for the second annual SPS in fall 2015 in the Phoenix area.

### A New Tool for Patients

Meanwhile, patients themselves now have a new tool. The American Telemedicine Association (ATA) just launched an accreditation program for direct-to-consumer service providers.

Knowing a provider is ATA-accredited will be reassuring to patients, who realize that seeing a doctor via your tablet, from wherever you are, is a lot more convenient than waiting for an urgent care center to open and then driving and waiting in a room with cold and flu viruses flying.

In a December 2014 webinar, the ATA's Jonathan Linkous said online consultation services hit about 450,000 consumers this year. But what he said next really hit home: “More and more, the technology is not quite the leading edge of what telemedicine is—it's the services provided.”







8,000 Cases and 165 Consultants:

# The Story of Phyllis Webster, A Telemedicine Case Coordinator

By Jane Erikson on

January 1, 2015

## Graduate school or full-time job?

**T**hat was the question Phyllis Webster was pondering after getting her bachelor's degree in cultural and biological anthropology from the University of Arizona. In late 1996, she opted for full-time job, as a research specialist with the newly formed Arizona Telemedicine Program (ATP).

"I didn't really know anything at all about the practice of telemedicine, and in the beginning, it was a difficult concept to visualize," Phyllis recalls. "I had no background or interest in technology. It was the medical field environment and patient care aspects that were appealing to me."

Six months after joining ATP, Phyllis was appointed as one of two telemedicine case coordinators, working with ATP Medical Director Ana Maria López, MD, to facilitate multispecialty teleconsultations for ATP's eight charter sites in Arizona.

That was approximately 8,000 cases ago.

"Over the last 18 years, I have had the distinct pleasure of working with 165 consultants – most of whom were University of Arizona College of Medicine faculty – in 51 subspecialty areas," she says.

She recalls two cases that demonstrate "how broad and richly diverse these applications can be. And that translates to an increased number of patients that can be served."

In one case, the clinic office received an urgent request from a referring site neonatologist wanting a pediatric echocardiology evaluation on a baby that was in trouble.

"We were able to facilitate a consultation by one of our pediatric cardiologists within a very short period

of time," she recalls. "During the real-time echocardiogram, the baby was discovered to have complex cardiac abnormalities and a recommendation was made for immediate transfer to University of Arizona Medical Center. The referring neonatologist and our pediatric cardiologists were able to view and discuss the findings as they were revealed in the study, and everyone was on the same page from the get-go. Arrangements for transfer and admission were made in advance, which further enhanced efficiency."

*"It can be easy to get caught up in the technology, but it is simply a wonderful tool that enables us to communicate with, and provide care to, patients."*

*– Phyllis Webster*

The second case involved a woman who lived in a rural community and suffered from a severe and chronic skin condition. The patient was so self-conscious about her appearance that she rarely went out in public.

The woman agreed to a teledermatology consult via store-and-forward, high-resolution digital imaging, and follow-up visits via real-time, interactive videoconferencing. Following the

consulting dermatologist's treatment recommendations, the patient's condition improved steadily and markedly over the course of a few months, Phyllis says.

"She was no longer embarrassed to go out in public, began to engage in social activities and was extremely grateful for the help she received, which she experienced as life-changing."

Ask Phyllis what interests her most about telemedicine, and she will invariably say it's the patients – not the technology. "It can be easy to get caught up in the technology," she says, "but it is simply a wonderful tool that enables us to communicate with, and provide care to, patients."

Looking back on those 8,000 cases, she says, "It has truly been a unique and satisfying experience. I consider myself extremely fortunate."

"A wide range of telemedicine and telehealth practices – from telestroke and remote ICU patient monitoring to home health care – have now been integrated into the mainstream," she says.

"In 1996, when I would approach one of our consultants here about staffing a telemedicine referral, I was almost always met with a puzzled expression, requiring me to describe the entire process in detail. For the most part, that is no longer the case. Everyone knows what videoconferencing is now."

As for that graduate degree, Phyllis says she is currently "chipping away at a master's in biology."





# 2014 Telemedicine and Telehealth Service Provider Showcase ‘Very Valuable’ and ‘Really Well Done’

*By Jane Erikson on*

**November 4, 2014**

As CEO of GlobalMed, a world leader in telemedicine innovation operating in more than 35 countries, Joel Barthelemy goes to a lot of conferences. As in a lot.

He thinks the Telemedicine and Telehealth Service Provider Showcase, held Oct. 6 and 7 in Phoenix, may be the first one he's ever attended in its entirety.

"The information shared was some of the best I've ever encountered," Mr. Barthelemy said, after attending the conference. "There was little commercialism, and the information imparted to us was very valuable. The feedback I received from clinicians who were there was astounding. They truly felt this was a valuable use of their time."

The Telemedicine and Telehealth Service Provider Showcase (SPS) was hosted by the Arizona Telemedicine Program (ATP), the Southwest Telehealth Resource Center and the Four Corners Telehealth Consortium.

Ronald S. Weinstein, MD, the founding director of the Arizona Telemedicine Program, and the father of telepathology, said the idea for SPS resulted from "our interest in encouraging the service provider industry to proliferate."

"There are now a number of organizations that are forming independently within the telemedicine arena to address very specific domains," Dr. Weinstein said. "We decided to do this because we see the need for service providers all the time here in Arizona."

SPS, as the showcase is called, is thought to have been the first of its kind.

"We have not attended or heard about another meeting dedicated to the service provider community," said Elizabeth Krupinski, PhD, ATP associate director, director of the Southwest Telehealth Resource Center and co-chair of SPS. She also is a University of Arizona professor of medical imaging,

psychology and public health.

"For a first time meeting I think it was a resounding success – the speakers were insightful, they were touching, they were full of good advice," Dr. Krupinski said.

"Companies are forming now that are not technology companies. They are not selling the infrastructure to do telemedicine. What they are doing is bringing together those people who can actually provide the services, which is what drove telemedicine in the first place."

Deb LaMarche, associate director, Utah Telehealth Network, moderated two sessions on the first day of SPS.

"I thought it was a really exciting event," she said. "Most of us who were there have been in telehealth for a very long time, and it was fun to be at something so energizing, looking at new models of care."



*One of more than 20 presentations given during the 2014 Telemedicine and Telehealth Service Provider Showcase*

## Telemedicine and Telehealth Service Provider Showcase: Another ATP First

By Jane Erikson on  
August 7, 2014

A long-recognized leader in telemedicine innovation, the Arizona Telemedicine Program (ATP) is establishing another first.

ATP is joining forces with the Four Corners Telehealth Consortium and the Southwest Telehealth Resource Center to host the first-ever Telemedicine and Telehealth Service Provider Showcase, October 6th and 7th, at the Hyatt Regency in downtown Phoenix.

The Service Provider Showcase (SPS) will bring together companies that provide medical specialty services using telemedicine technology to hospitals, clinics, health-care systems, private practices and other providers that want to offer these services to their patients.

"It's time to create an environment in which service providers can gather with health-care providers and develop a shared agenda for the future." "Our industry has reached critical mass," said Ronald S. Weinstein, MD, director and co-founder of the ATP, president emeritus of the American Telemedicine Association (ATA), honorary co-chair of SPS and a pioneer in the telemedicine field. "It's time to create an environment in which service providers can gather with health-care providers and develop a shared agenda for the future."

SPS will feature about 30 exhibitors, and is expected to draw up to 300 attendees, including health-care administrators, government officials, policy experts, physicians, nurses, health plans and telemedicine and telehealth equipment vendors.

"We're doing this because we see the need for service providers all the time here in Arizona, and across the country," Dr. Weinstein said. "There are well-established services such as telestroke care, as one example, that have proven efficacy but don't have a workforce that's going to take on the challenge for the 4,000 hospitals that could use those services."

"And that's despite the data that show decreased mortality, decreased morbidity, decreased 30-day readmissions, all those parameters that have been shown to improve dramatically when these telemedicine and telehealth services are applied."

Jay Sanders, MD, president and CEO of The Global Telemedicine Group and ATA president emeritus, has been named honorary co-chair of SPS. Known as the "father of telemedicine," Dr. Sanders developed the first statewide telemedicine system and other telemedicine firsts.

"To have a conference focused on the comprehensive role and successful integration of specialty provider networks into the health-care delivery system enabled by telemedicine is a testament to the maturing of this knowledge transfer technology," Dr. Sanders said.

SPS co-chairs are Dale C. Alverson, MD, founder of the New Mexico Telehealth Alliance and past president of the ATA and Elizabeth A. Krupinski, PhD, ATP associate director for evaluation, Southwest Telehealth Resource Director and past president of the ATA.



*Drs. Dale Alverson and Elizabeth Krupinski interview Dr. Alan Pitt during a Lightning Round on day two of the SPS conference.*



*A service provider demonstrates telemedicine technology for an attendee.*









# Pete Yonsetto: Profile of a Telemedicine Video Conferencing Administrator

By Jane Erikson on

October 2, 2014

When Pete Yonsetto applied for an opening with the Arizona Telemedicine Program, he wasn't sure it was the right job for him.

But a college professor was adamant. "Apply!" she ordered. So he did. And he got the job.

Today – 14 years later – there is no doubt in Yonsetto's mind that the job is a perfect fit. Telemedicine is all about connections. And so is he.

"What I need in my life and my work is connecting with people, and being able to offer a service that is helpful to them. That's the really gratifying piece of this work," says Yonsetto, video conferencing administrator for the Arizona Telemedicine Program (ATP) network.

"he connects people and programs throughout the ATP network of 170 sites in 60 communities" His first role with ATP was in teleradiology, then telepsychiatry. Now he connects people and programs throughout the ATP network of 170 sites in 60 communities.

Yonsetto graduated from The University of Arizona in 1987 with a degree in management information systems. But when he was hired for the ATP job, he had no experience in remote networking, or the infrastructure it required.

But he learned. And as he points out, teleradiology was "a big telemedicine hit from the get go." Other early successes were telepathology and telepsychiatry.

Fourteen years ago, Yonsetto was one of three ATP staffers who were responsible for setting up equipment and communication lines at the UA base and at the rural clinics and

hospitals that chose to be part of the ATP network.

One of Yonsetto's earliest connections was with Lynn Bedoni, telemedicine coordinator for what is now Tuba City Regional Health Care, a hospital and outpatient care system that covers 6,000 square miles on the western side of the Navajo and Hopi reservations.

Yonsetto, who was born in Tucson and has lived most of his life here, was only slightly familiar with Arizona's Indian reservations when he joined ATP.

*He connects people  
and programs  
throughout the ATP  
network of 170 sites  
in 60 communities.*

"Now I consider Lynn and other Native Americans who I've worked with to be very good friends," Yonsetto says. "I have been able to learn about their culture and lifestyle, and that's been very enlightening to me. Lynn has shared with me places for hiking, and places where her grandparents have gone. If I ever want a special tour, or to go to a ceremony on the reservation, I would not hesitate to ask. They have given me an open invitation."

Before he joined ATP, Yonsetto had a lengthy history of working with people in need. His jobs included working with teens and young adults through Pima County's Job Training Partnership, and working as a manager

with the county public fiduciary, serving vulnerable adults who are disconnected from their families, live with serious mental or physical health issues, or both, and are not able to survive on their own.

"It was a great organization doing good things for people," Yonsetto says. "I knew then I just couldn't work at a job that wasn't about making things better for people."

For the past 14 years Yonsetto also has spent one night a week at Pima Community College, teaching citizenship classes to refugees and immigrants.

"The people are wonderful. Many of them have survived horrible pasts. They've never written in any language, not even their own. They have to learn to read and speak a new language, and it's just so wonderful to see their confidence grow as they learn."

With telemedicine, Yonsetto says, "I see sort of the same thing. I see a lot of our population as living in hardship, and through our complex technology we can really help people with disabilities and barriers to transportation and education."

Yonsetto is excited about the future of telemedicine.

"I feel very strongly about home-health care. I see it as our future, especially as our population ages, I think our technology will be vital. I think one day seeing your doctor is going to be as easy as flipping on your TV and turning to a certain channel. I would love to be a part of that evolution, to be in on all the new things that telemedicine can provide."



# **Major Medical Journal Discusses Telemedicine & ACA**

*By Jane Erikson on*

**June 5, 2014**





**D**espite the Affordable Care Act's rocky roll-out last October, more than 7 million Americans have signed on for health-care coverage through the Act as of March 31. Another 3 million have enrolled in state Medicaid plans, largely due to a provision of the Affordable Care Act (ACA) that subsidizes states' expansions of Medicaid eligibility.

A major concern accompanying implementation of the ACA is the demand these millions of newly insured will place on the nation's already inadequate physician supply.

But an article in the March 2014 issue of The American Journal of Medicine notes that advances in telemedicine, telehealth and mHealth (mobile health) services can help compensate for the physician shortage while meeting the ACA's goal for increased health-care efficiency.

"The shifts of the health-care industry into new directions to accommodate the goals of the Affordable Care Act initiative should expand the practice and provision of health care at a distance," states the article, authored by Ronald S. Weinstein, MD, and colleagues with the Arizona Telemedicine Program (ATP). Weinstein is co-founder and director of the ATP, which is based at the University of Arizona Health Sciences Center and has received funds from the Arizona Legislature since 1996.

The term "health care at a distance" refers to:

- Telemedicine, narrowly defined as clinical services provided by a physician
- Telehealth, which encompasses clinical services provided by nurses, pharmacists and other non-physicians
- mHealth services made possible by the proliferation of mobile communication devices, including smart phones, tablets and personal digital assistants, or PDAs

Weinstein and colleagues point to telemedicine's proven track record in four categories of health care delivery:

- "Gap service coverage," notably night-time teleradiology service to hospitals in rural communities

- Urgent services, including telestroke and teleburn programs that provide immediate diagnosis and treatment recommendations to physicians who are dealing with stroke and burn patients in remote areas
- Mandated services, including health care for prison inmates
- Video-enabled, multi-site group chart rounds, such as Extension for Community Healthcare Outcomes (ECHO) programs

Also driving the increased interest in telemedicine, telehealth and mHealth services is the increase in state laws requiring parity in third-party reimbursement for these services, now on the books in 19 states, including Arizona – where the state House and Senate both passed a parity bill in 2013, without a single "nay" vote.

*"The Affordable Care Act should expand the practice and provision of health care at a distance."*

– Ronald S. Weinstein, MD

In an accompanying editorial in the March 2014 American Journal of Medicine, Weinstein and colleagues Ana Maria Lopez, MD, MPH, medical director of the Arizona Telemedicine Program; and Elizabeth A. Krupinski, PhD, professor of radiology and director of the Southwest Telehealth Resource Center;

suggest that telestroke care will become "the next teleradiology" due to telestroke's proven ability to provide timely, life-saving care and reduce permanent disability and mortality in stroke patients.

"There are very exciting things going on in telemedicine, and more in the pipeline" "There are very exciting things going on in telemedicine, and more in the pipeline," Weinstein said following publication of the article and editorial. "Our health-care system is changing, and people are more interested than before in having access to health care. Telemedicine changes the way medicine is practiced in ways that are very appealing."

# Northern Arizona Telemedicine Programs Form Cooperative Alliance

By Nancy Rowe

May 9, 2014

**T**elemedicine is burgeoning in northern Arizona, thanks largely to three Flagstaff-based telemedicine programs. All three programs are not-for-profit, bringing services to medically underserved areas and populations throughout the five counties of northern Arizona. All three programs have won acclaim for their telemedicine programs. And all three have collaborative, innovative leaders.

## Meet the players

Northern Arizona Regional Behavioral Health Authority

Northern Arizona Regional Behavioral Health Authority (NARBHA), which contracts with the state to manage behavioral health services for the Medicaid population and those with serious mental illness in northern Arizona, started its telepsychiatry program in 1996 with funding from the same legislative grant that started the Arizona Telemedicine Program (ATP).

Since then, NARBHA's program has grown to include 90 endpoints. With 25 psychiatric providers throughout Arizona and the country, NARBHA's telemedicine network has accommodated more than 125,000 doctor-patient sessions since its inception. NARBHA offers free, online "Telepsychiatry Basics" learning modules to share its experiences and lessons learned.

## North Country Healthcare

North Country Healthcare (NCHC), a Federally Qualified Health Center, started its telemedicine program six years ago and now has 20 telemedicine endpoints across northern Arizona.

NCHC offers primary care, ophthalmology, diabetes care, radiology, pharmacy, HIV/AIDS care, and behavioral health services via telemedicine, as well as using the technology to train medical learners from AT Still University. NCHC also developed a Hepatitis C program where liver disease specialists from St. Joseph's Hospital and Medical Center videoconference as a

group with medical providers from NCHC clinics to review cases, monitor treatment and train the NCHC providers.

## Flagstaff Medical Center

Flagstaff Medical Center (FMC) has a three-and-a-half-year-old telemedicine program that is clinically based, with a focus on reservation work.

FMC has won two USDA Grants funding 14 telemedicine carts deployed at Indian Health services tribal and community hospitals throughout northern Arizona to provide telecardiology and other medical specialty services, including a cart at Supai, a Havasupai village at the bottom of the Grand Canyon.

FMC's "Care Beyond Walls and Wires™" is a successful home-monitoring program that is drastically reducing hospital readmission rates and improving the health of patients with chronic illnesses such as congestive heart failure.

## How we met

As NARBHA's telemedicine director, I enjoyed a long-standing, strong, mutually beneficial relationship with the ATP staff. Flagstaff is a small city, so as each new telemedicine program started, I met the program director and we began to communicate, collaborate, share information and support, and meet up at conferences.

NARBHA, NCHC and FMC are active members of the ATP and frequently present at Arizona Telemedicine Council and other statewide meetings. Greg Hales, NCHC telehealth system manager, worked closely with the ATP staff on vetting stethoscopes for telemedicine and setting up the NCHC network, while Gigi Sorenson, telehealth director for Northern Arizona Healthcare, FMC's parent organization, quickly joined me in the leadership of the American Telemedicine Association's Business and Finance Special Interest Group. Greg, Gigi and I all benefited from attending ATP telemedicine training courses in our early telemedicine careers.

I came to the ATP in January 2014 wanting to strengthen and formalize these collaborative relationships, so I proposed forming the Northern Arizona Telemedicine Alliance (NATA), with NARBHA, NCHC, FMC and the ATP as members. Everyone agreed, and the alliance had its kickoff meeting February 25 at NARBHA headquarters in Flagstaff.

NATA will meet quarterly, with meetings hosted round-robin by the Flagstaff NATA members. Our next quarterly meeting will be in June at FMC, with the IT theme of possible ways to leverage each other's networks for business continuity and disaster recovery.

NATA kickoff meeting: Jim Peterson, NARBHA IT infrastructure and telemedicine director; Jennifer Pierce, NARBHA telemedicine manager; Robert Kerr, ATP principal budget analyst; Lindsay Miller, NARBHA CIO / CBO, Ronald S. Weinstein, MD, ATP director; Nancy Rowe, ATP associate director for outreach; Gigi Sorenson, NAR telehealth director; Sean Clendaniel, NCHC's Northern Arizona Area Health Education Center director; Greg Hales, NCHC telehealth system manager; and Sara Gibson, MD, NARBHA telemedicine medical director (Behind the camera: Kris Erps, ATP associate director for administration)

NATA kickoff meeting: Jim Peterson, NARBHA IT infrastructure and telemedicine director; Jennifer Pierce, NARBHA telemedicine manager; Robert Kerr, ATP principal budget analyst; Lindsay Miller, NARBHA CIO / CBO, Ronald S. Weinstein, MD, ATP director; Nancy Rowe, ATP associate director for outreach; Gigi Sorenson, NAR telehealth director; Sean Clendaniel, NCHC's Northern Arizona Area Health Education Center director; Greg Hales, NCHC telehealth system manager; and Sara Gibson, MD, NARBHA telemedicine medical director (Behind the camera: Kris Erps, ATP associate director for administration)





### What we do

NATA creates a platform to easily share information, so we can look for synergy opportunities and ways to partner and collaborate to support and leverage each other's programs. Our goal is to improve healthcare and patient outcomes in northern Arizona through telemedicine and telehealth. For NATA, it's all about collaboration, not competition.

I think this is the beginning of a beautiful alliance!

# Inaugural Flagstaff ATP Telemedicine Training: Sellout Crowd and Great Reviews

By Nancy Rowe on

**April 4, 2014**

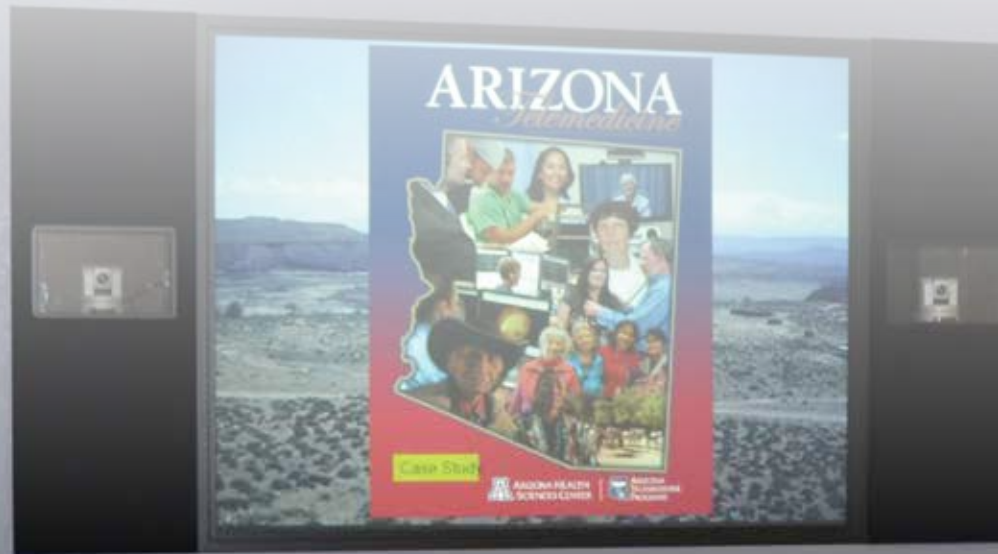
**T**he inaugural Northern Arizona presentation of the Arizona Telemedicine Program (ATP) and Southwest Telehealth Resource Center (SWTRC) telemedicine training conference was a resounding success, with a sellout crowd and nationally recognized speakers representing several high-profile Arizona telehealth programs. The ATP and SWTRC presented the full-day “Arizona Telemedicine Course: Applications, Infrastructure, Reimbursement” at Flagstaff Medical Center on Tuesday, April 1.

“I think it’s well rounded and I appreciate the opportunity to have this in northern Arizona,” said Cheri Wells, Director of Behavioral Health for Flagstaff-based Native Americans for Community Action, which started a telebehavioral health program about a month ago. “I’ve learned a lot about the big picture of telemedicine and its administration as well. I really appreciate learning about all the resources that are available online and through ATP.”

The conference provided an overview of telemedicine as well as an in-depth look at clinical applications. Designed for those who are new to telemedicine as well as those interested in expanding the scope

of their telemedicine services, it included discussions of:

- Telemedicine, telehealth, and mobile health applications – building a successful telemedicine program (Ronald S. Weinstein, MD, ATP Director)
- ¡Vida!, a video-based educational series for breast cancer patients and their healthcare teams (Ana Maria Lopez, MD, ATP Medical Director)
- Using videoconferencing to teach northern Arizona providers how to provide Hepatitis C care (Sean Clendaniel, MPH, Director of Education and Research, North Country HealthCare)
- Teleneurology and telestroke (Bart Demaerschalk, MD, FRCPC, Professor of Neurology and Director of the Mayo Clinic Telestroke and Teleneurology Program)





- How to evaluate telemedicine programs and where to find resources and guidelines (Elizabeth Krupinski, PhD, ATP Associate Director for Evaluation and SWTRC Director)
- Selecting telemedicine technology (Gigi Sorenson, RN, MSN, Director of Telehealth, Northern Arizona Healthcare & Janet Major, ATP Associate Director for Facilities)
- Business aspects of telemedicine (Donald Graf, Director of Telemedicine, UnitedHealthCareTM)
- Teleradiology and how to select a teleradiology vendor (Tim Hunter, MD, Professor, University of Arizona Department of Medical Imaging)
- Telecardiology and telediabetes outreach (Donna Zazworsky, RN, MS, CCM, FAAN, Vice President of Community Health and Continuum Care, Carondelet Health Network)
- Telespsychiatry (Sara Gibson, MD, Medical Director of Telemedicine, Northern Arizona Regional Behavioral Health Authority)
- Telemedicine best practices and tips for success panel (Sorenson; Weinstein; Lopez; Hunter; Krupinski; Sue Sisley, MD, ATP Associate Director, Interprofessional Education; Mike Holcomb; ATP Associate Director, IT; Nancy Rowe, ATP Associate Director, Outreach)

Attendee Lynn Bedonie, Telemedicine/School Health Specialist for Tuba City Regional Health Care Corporation, has been involved in telemedicine for more than 16 years. "We were one of the original charter sites for the Arizona Telemedicine Program," she said. "So I've been there from the beginning, from when we used modems to now—and everything in between." Bedonie came to the training to learn more about billing and teleneurology. "A lot of it was really informative, even though I've been to several of these," she said. "The information changes all the time."

The conference attracted 84 attendees from private and governmental healthcare systems and hospitals; community health centers and behavioral health clinics; tribal health departments and medical centers; and commercial telemedicine medical services providers. Participants included CEOs and other senior leadership; doctors, nurses, and other clinicians; IT directors and staff; administrators at all levels; and health educators, with experience ranging from clinicians just starting to think about using telemedicine in their private practices to hospital senior administrators who want to add sites and services to their already successful telemedicine programs.

Gigi Sorenson, Northern Arizona Healthcare Telehealth Director and one of the speakers, said, "I came hoping to learn more about other programs across the state and also to hear the needs of the state." She heads "Care Beyond Walls and Wires," which has improved patient health and reduced hospital readmission rates through home

monitoring systems. "I thought it was a very comprehensive program," she said, citing the opportunity for casual conversation and questions at the end of every presentation as the most helpful part of the conference. "I'm very happy that it was held in Flagstaff, and grateful for the opportunity to showcase all the work that's being done in northern Arizona."

Northern Arizona Healthcare was one of the co-sponsors of the conference, along with North Country HealthCare and Northern Arizona Regional Behavioral Health Authority. All three entities currently operate successful telehealth programs based in Flagstaff and, together with the ATP, they form the Northern Arizona Telemedicine Alliance, a partnership aimed at encouraging and enhancing telemedicine services in the northern part of the state. The SWTRC also was a sponsor. Director Elizabeth Krupinski, PhD, said, "The event was a huge success! Participants were eager to learn and the number and depth of the questions being asked was impressive. Telemedicine is clearly a core part of healthcare in Arizona and will continue to grow."

This marks the first time the training program has been offered onsite in northern Arizona, but not the last. "We will be offering this program in Flagstaff at least annually from now on," said ATP Director Ronald S. Weinstein, MD. "The response was overwhelming; people were wait-listed. We want to ensure that all those who are interested get a chance to attend this training." Sorenson agreed: "You could see by the participation in the auditorium that repeating this at least on an annual basis is well worth the time and effort."



# Home Runs in Telemedicine and Telehealth: The Season is Always Right!

By Ronald S. Weinstein on

December 5, 2013

A home run, or a “four-bagger” in entrepreneur-speak, in telemedicine or telehealth is: 1) a patient service which is equivalent to an in-person service in terms of effectiveness including patient and provider satisfaction; 2) is sustainable; 3) is cost effective; and 4) is a service that migrates into the mainstream of the US healthcare delivery system.

Telemedicine home runs have been a long time in coming.

## A Hospital, An Airport, and Telemedicine

As I can personally attest, telemedicine actually got off to fantastic start at the Massachusetts General Hospital (MGH), in 1968. None of its services achieved four-bagger status back then.

Historically, the MGH linked to the Logan International Airport over a private microwave linkage. Services included teleradiology, telecardiology, teledermatology, telepsychiatry, and television microscopy (the predecessor to modern “telepathology” which I invented, patented, and commercialized years later). For roughly 8 years, a team of visionary MGH doctors delivered high quality telemedicine services, at a distance, to air travelers in transit, at a walk-in Logan Airport healthcare clinic 2.7 miles from MGH, as the crow flies.

## Space Medicine On Earth

“The general public could link MGH-telemedicine and space medicine, in the same breath.” By the late 1960s, popular magazine’s featured articles describing remarkable MGH telemedicine success stories. Space medicine had caught the imaginations of millions of ordinary people. The general public could link MGH-telemedicine and space medicine, in the same breath. Telemedicine became earth-bound medicine’s counterpart to space medicine.

Of course, this was a human-interest bonanza for NASA. It made space medicine relevant to the average patient here on earth. NASA had won the billion-dollar bet on space medicine as a featured program for their first man-on-the moon landing enterprise back then.

## Hooked: Television Microscopy Diagnoses

I was a MGH pathology resident from 1965-1970, and got caught up in the space race to the moon. I followed the progress of the MGH telemedicine program in Boston newspapers, and then, had the luck of the draw for a resident.

*Telestroke programs are in the line-up for the next home run.*

By chance, in April 1968, I was having lunch in the MGH cafeteria with MGH staff pathologist, Dr. Robert “Bob” Scully. We were on the surgical pathology service together. He was going to view some MGH-Logan Airport “television” microscopy cases right after lunch. Bob took me along and we signed out a few cases together. We also became life-long friends.

Thus, by chance, I got to help diagnose some of the first “television” microscopy glass slide video images coming in to the MGH telemedicine suite, on the first floor of the MGH White Building, sent from the telemedicine-enabled MGH-Logan International Airport clinic.

“I still remember it vividly, as a transformative experience. I was immediately hooked on telemedicine.” I still remember it vividly, as a transformative experience. I was immediately hooked on telemedicine. Years later, I realized that

I had become an “accidental-outlier” for telemedicine, in the parlance of Malcolm Gladwell, in his description of the secrets for success for pioneers in innovations.

## The First Telemedicine Service Home Run

Back to the MGH in the late 1960s and early 1970s. The first telemedicine service home run was teleradiology, a component of the MGH-Logan Airport telemedicine program.

Teleradiology had been deployed in Canada, around 1959, and then adopted by the MGH program in 1968.

## Home run status was achieved decades later.

Today, teleradiology is quite ubiquitous, sustainable, cost effective, and is regarded by many to be mainstream medicine. Thus, a home run!

Teleradiology has been commercialized by dozens of companies. It’s heavily marketed and is benefitting millions of patients, every year. A home run and a done deal! But, not universally loved by hospital-based radiologists.

## Next In Line for a “Four-Bagger”

Telestroke programs are in the line-up for the next home run. Telestroke is still a work in progress, but it may emerge as a cornerstone for the telemedicine field.

What makes telestroke a “must have” service is that it is undeniably cost effective, prevents permanent injury to the brain or even death, and the logistics are manageable by call centers.

World-class healthcare organizations, such as the Mayo Clinic, are stepping up into the lead as regional, and potentially national, leaders in telestroke. There are reimbursement issues but the return on investment is potentially so high, society will figure out how to make it work.

Almost everyone loves a home run. Not everyone loves baseball!





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The ATP blog online publishes a new article every two weeks and features stories on a broad range of topics in telemedicine and telehealth.

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Please visit us online to stay connected and share your thoughts on the articles.

## About the Authors

Our articles are authored by telemedicine and telehealth providers, end-users, supporters and explorers.

Past authors have included individuals from our program and the University of Arizona, as well as local and national telemedicine programs, organizations and companies. We've heard from providers, CEOs and patients, all sharing their unique perspective on telemedicine and telehealth topics.

Online, we feature all of our authors in an "About the Author" section at the end of each article, so you'll always get to know a little about the person behind the voice of each article.

### Featured Authors



**Nancy Rowe** joined the Arizona Telemedicine Program in January 2014 as the Flagstaff-based associate director for outreach. She directed the telemedicine program at Northern Arizona Regional Behavioral Health Authority from 2001 through 2013 and is the past chair of the American Telemedicine Association Business and Finance Special Interest Group.



**Jane Erikson** joined the staff of the Arizona Telemedicine Program in April 2013. She was already familiar with the program, as she previously wrote about the program during her nearly 20 years of covering health care for the Arizona Daily Star in Tucson. Jane has lived in Arizona most of her life and is a graduate of the University of Arizona.



**Yvonne Price** completed her BS in journalism in California, where she produced multimedia communications for health organizations before going on to complete her MA in science and health communications at the University of Florida. She worked for a number of science and health organizations, including the United States Antarctic Program, before joining the team at the Arizona Telemedicine Program.



**Tracy Skinner** is the Distance Education and Training Coordinator for The Arizona Telemedicine Program. She oversees and coordinates the education and telemedicine training activities taking place throughout the network. She is also a telemedicine instructor presenting on education via a telemedicine network.

[telemedicine.arizona.edu/blog](http://telemedicine.arizona.edu/blog)



## Be a Guest Author on the ATP Blog

We're always looking for guest authors to share their experiences and perspectives related to telemedicine and telehealth.

### Who Can Contribute

We welcome guest posts from healthcare executives and professionals, community members, patients, faculty, students and anyone else who has a telemedicine or telehealth story to share.

### Why Contribute

Writing for the blog is an opportunity to share your story with a large national readership. In addition to being published online, all articles go out to more than 2300 email subscribers and all ATP's social media channels.

## How It Works

Contributing an article is easy. Guest authors submit their article as a Word document, and the editor handles all the final editing, layout and publishing. We can even find a great image to go with your article.

### Getting Started

Not to worry if you're new to writing an article for a blog. Our Guest Author Guidelines provide blogging tips and a style guide to get you started, and our blog editor will be happy to work with you through the entire process.

You can view the Guest Author Guidelines online at [telemedicine.arizona.edu/blog/guest-author-information](https://telemedicine.arizona.edu/blog/guest-author-information), or you can email the editor for a copy.

If you're ready to get started or have questions, please email: [editor@telemedicine.arizona.edu](mailto:editor@telemedicine.arizona.edu).

## Questions?

Contact Kristine Erps  
[kerps@telemedicine.arizona.edu](mailto:kerps@telemedicine.arizona.edu)



# ARIZONA *Telemedicine*



Map is not to scale and is not geographically accurate due to limited space

## Legend

- Regional Network Access Point
- Active ATP Member Site (see "Node Color Legend")
- ▲ Pending or Planned Site
- Active Circuit
- - - Pending or Planned Circuit
- DS1 (T1) Single or Multiple
- Other
- VPN
- Wireless

## Node Color Legend

- Arizona Telemedicine Program Site
- Corizon Health, Arizona State Prison Complex (ASPC)
- Arizona Burn Disaster Network
- Arizona Department of Health Services Children's Rehabilitative Services (CRS)
- Educational Site
- North Country Healthcare sites
- ☁ Affiliate Network with number of locations

## Arizona

Ajo  
Ash Fork  
Benson  
Bisbee  
Buckeye  
Bullhead City  
Cameron  
Casa Grande  
Cottonwood  
Douglas  
Flagstaff  
Florence  
Fredonia  
Ganado  
Goodyear  
Grand Canyon  
Holbrook  
Kingman  
Lake Havasu City  
Littlefield  
Mesa  
Morenci  
Nogales  
Page  
Parker  
Patagonia  
Payson  
Peach Springs  
Phoenix  
Pinetop-Lakeside  
Polacca  
Prescott  
Prescott Valley  
Sacaton  
Safford  
San Carlos  
San Luis  
Scottsdale  
Second Mesa  
Seligman  
Sells  
Show Low  
Snowflake  
Somerton  
Springerville  
St. Johns  
Supai  
Tempe  
Tonalea  
Tuba City  
Tucson  
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## Nevada

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Salt Lake City