

ARIZONA  
TELEMEDICINE  
PROGRAM



# Arizona Telemedicine Program

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Arizona Telemedicine Program

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# Technology + Telecommunications = Telehealth/Telemedicine

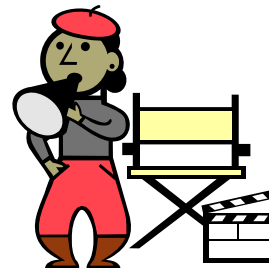


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## Communication Technology

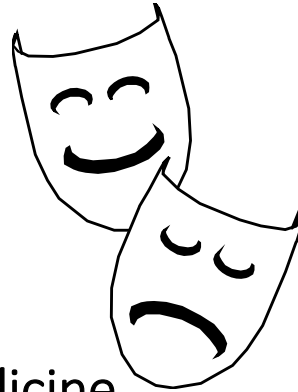
- Lights, Camera ACTION!
- Two way videoconferencing  
Using hardware/software
- Web cams using secure sites over the internet
- Other devices or programs which connect to your laptop or desktop @home or bedside




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# The Art of Telemedicine

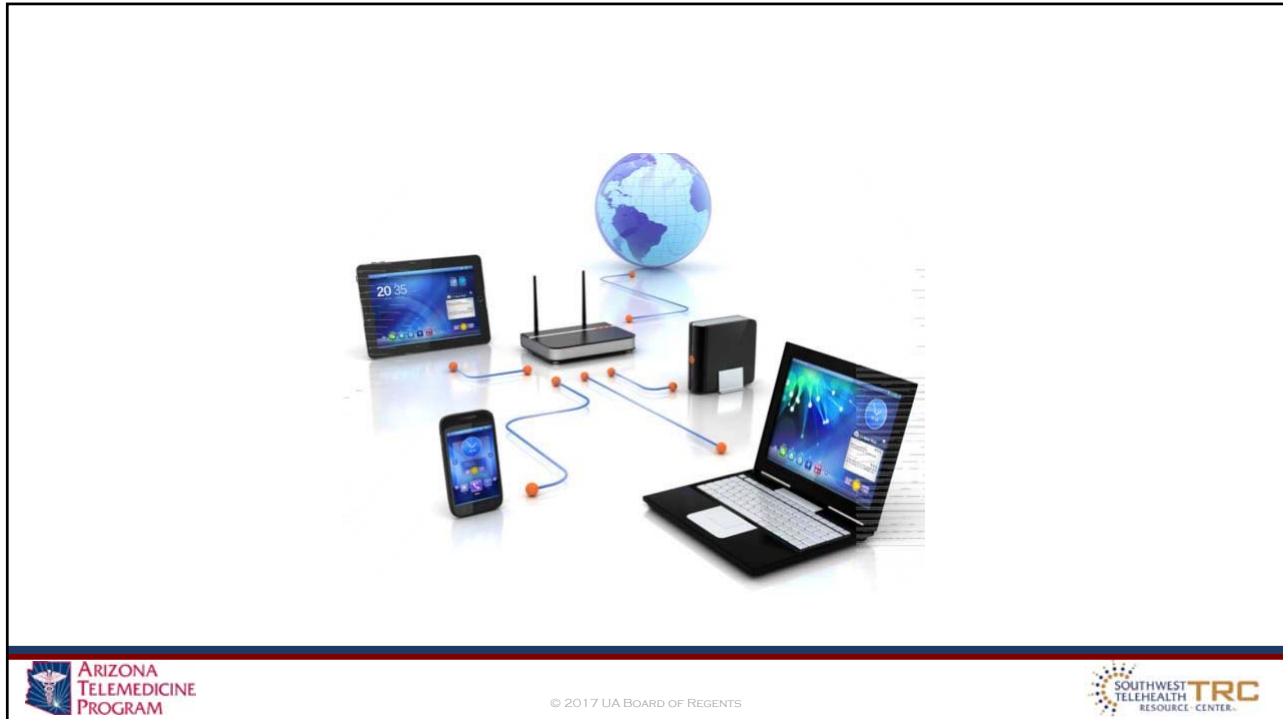


Telemedicine = 

## Elements of Production

- Sound
  - microphones
  - electronic stethoscope
- Lighting
  - color temperature
  - angle
- Space and geography of the room

- Same Elements of production whether you are in a state-of-the-art videoconferencing suite, using a videophone or a webcam @ your desktop!
- Background
- Lighting
- Audio
- Camera skills – be sure you are looking GOOD!



- **Bandwidth and managing your bandwidth**
- **Back-up plan**
- **Old/new technology combinations**
- **Data Access & Management**
- **Test in advance - and the day of – and repeat!**



## Best Practices

- **Technical Protocols**
- **Clinical Protocols**
- **Mock Patients**
- **Training**

## Cameras

- Angle
- Framing
- Lighting
- White balance
- Choosing the right one
- Focus on communication and  
NOT the technology





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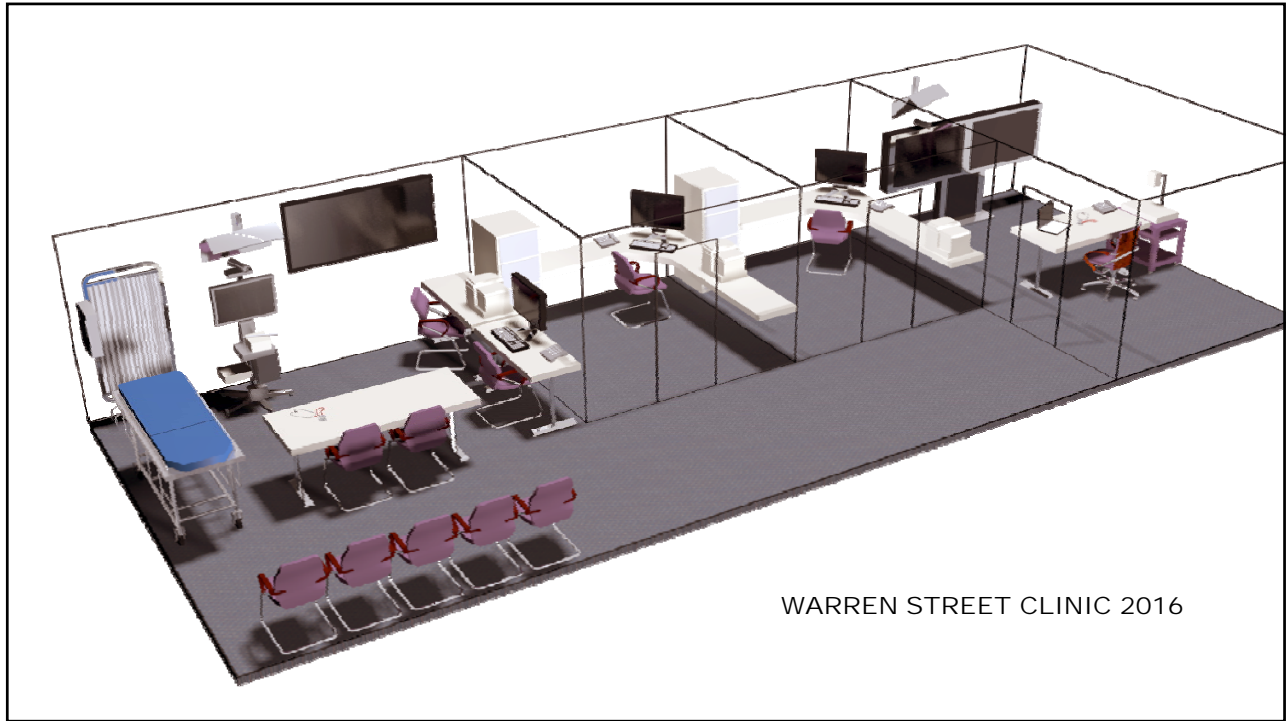


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SOUTHWEST  
TELEHEALTH  
RESOURCE CENTER TRC



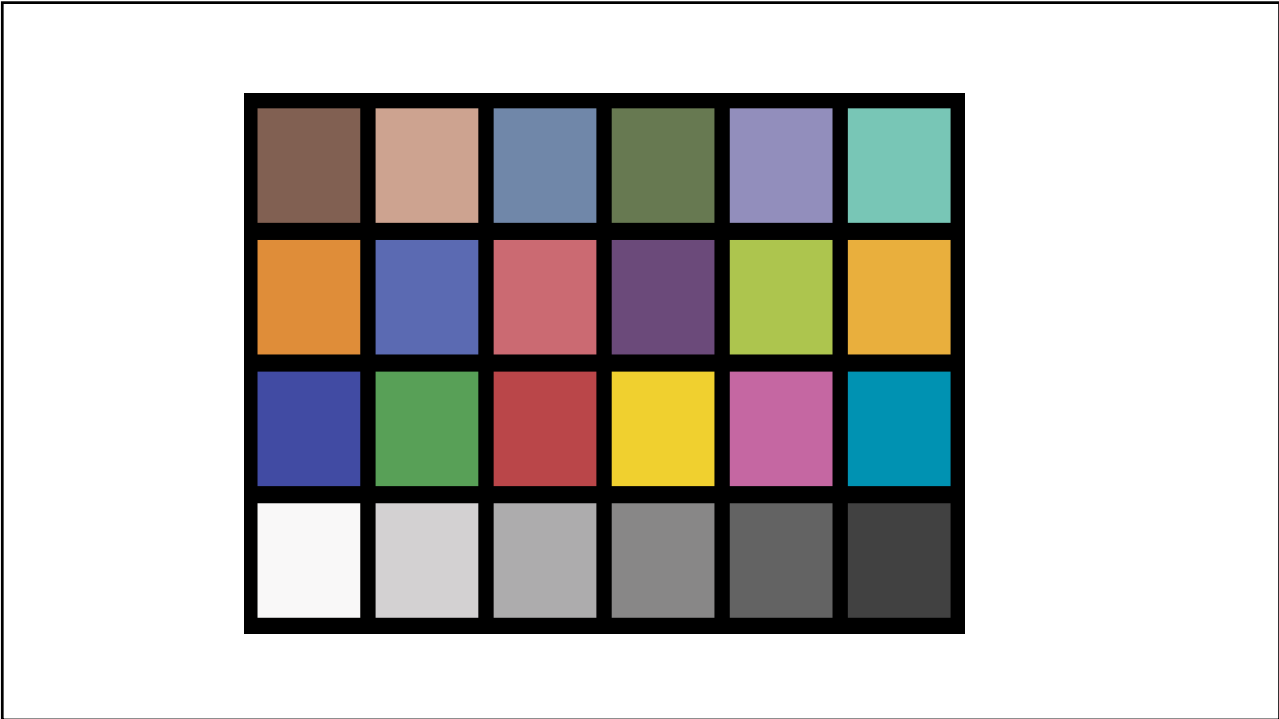


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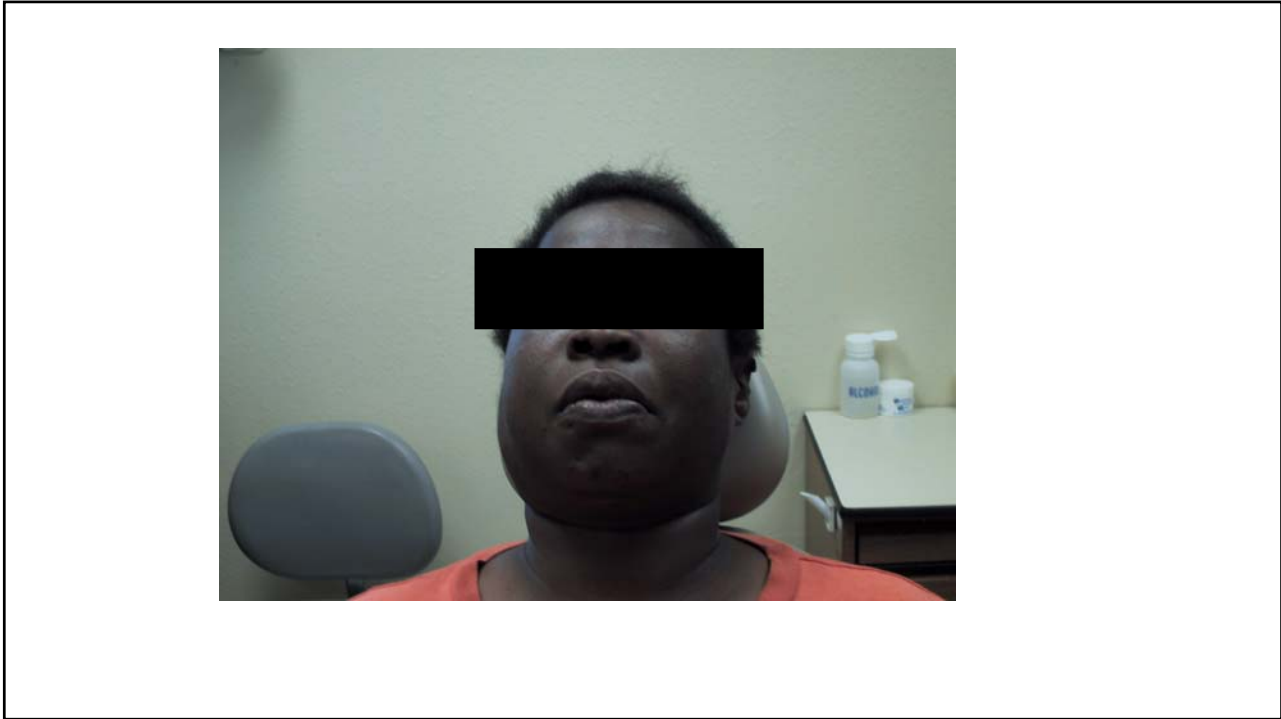


SOUTHWEST  
**TRC**  
TELEHEALTH  
RESOURCE CENTER™

telemedicine  
=  
medicine at a distance









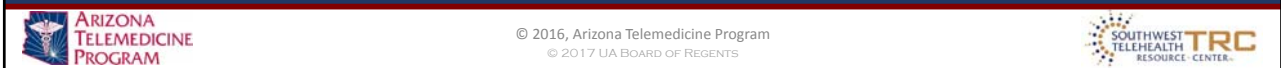








## Robots for Education



## Educational

- Diabetes education
- Students @ home with a connection to classmates and teachers
- Field trips to really cool places like Biosphere 2, City Zoo, Mars!
- Google Hang-Out



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## Clinical

- Boston Children's Hospital
- Pre and Post Surgery
- Stroke Networks
- Homehealth
  - Nurse specialists
  - Ostomy care
  - BMT patients
  - Medication compliance



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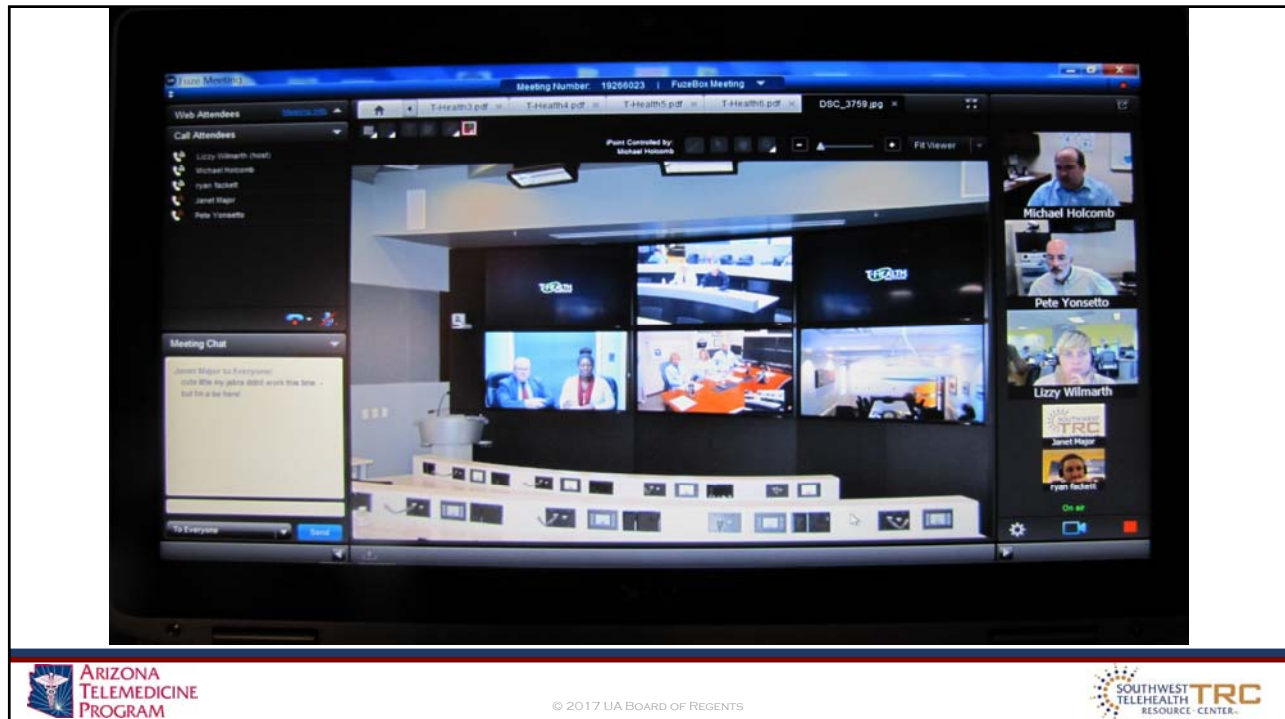




## HIPAA Health Insurance Portability And Accountability Act of 1996



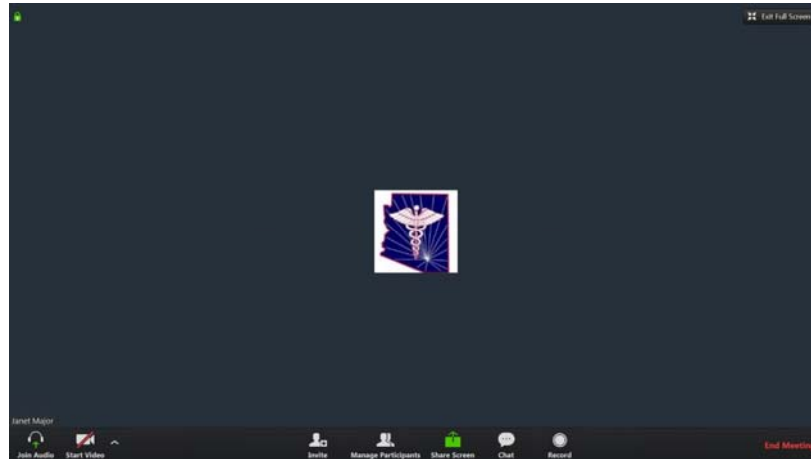
- Cisco WebEx
- Elluminate
- GoToMeeting
- Polycom RealPresence
- Windows LIVE
- Skype
- GOOGLE Hang-out
- Audioconferencing
- Combinations to create a team, produce a LIVE experience and for an added bonus: a great archived product for the future



# Laptops



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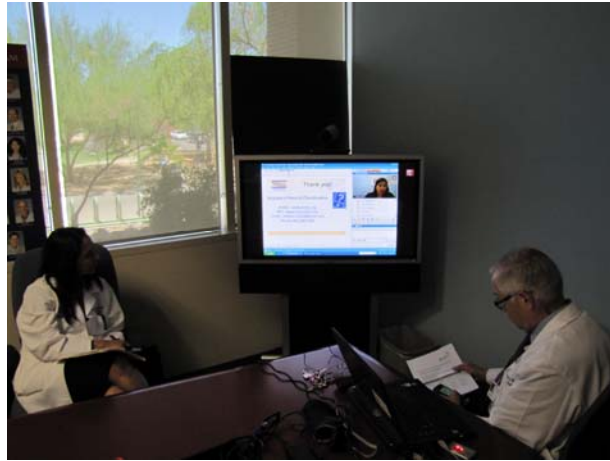


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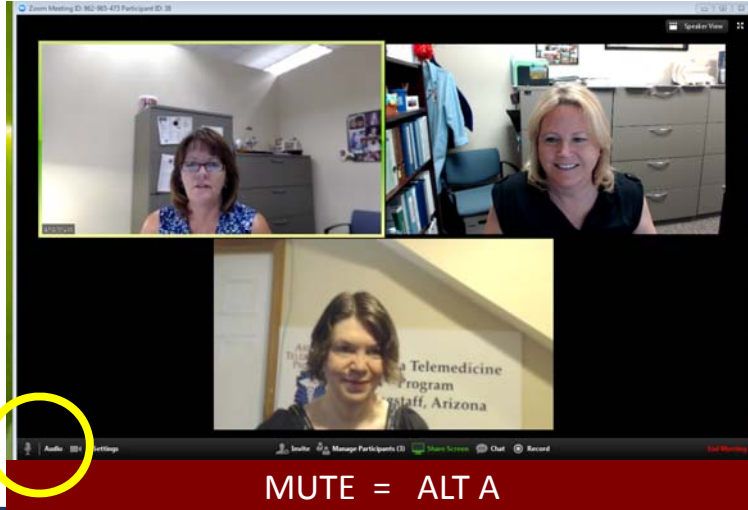
The screenshot displays a Cisco WebEx Training Center interface. The main window shows a map titled "ARIZONA TELEMEDICINE NETWORK" with various locations and service areas marked, including Phoenix, Flagstaff, and Tuba City. A sidebar on the right shows the "Participants" list with the "ARIZONA TELEMEDICINE PROGRAM" logo and a list of attendees. The bottom of the slide features the Arizona Telemedicine Program logo on the left, the text "© 2017 UA BOARD OF REGENTS" in the center, and the Southwest Telehealth Resource Center (TRC) logo on the right.

A photograph showing a man with a white beard and glasses sitting at a long table in a conference room. He is looking at two laptops on the table. The room has other people in the background and a presentation board on the right. The bottom of the slide features the Arizona Telemedicine Program logo on the left, the text "© 2017 UA BOARD OF REGENTS" in the center, and the Southwest Telehealth Resource Center (TRC) logo on the right.



- Mute your audio
- View
  - Speaker mode
  - Gallery mode
  - Full Screen

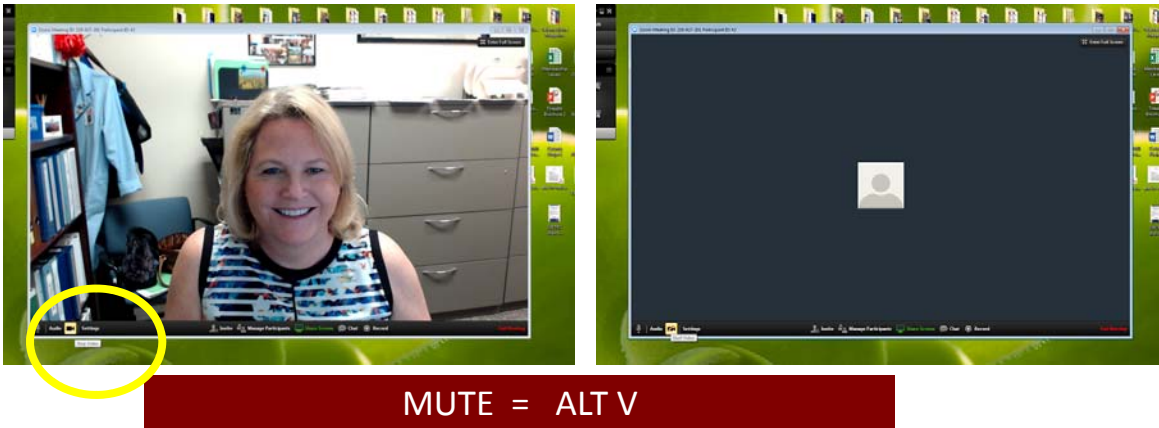
# Mute / unmute your microphones



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# Mute / unmute your video



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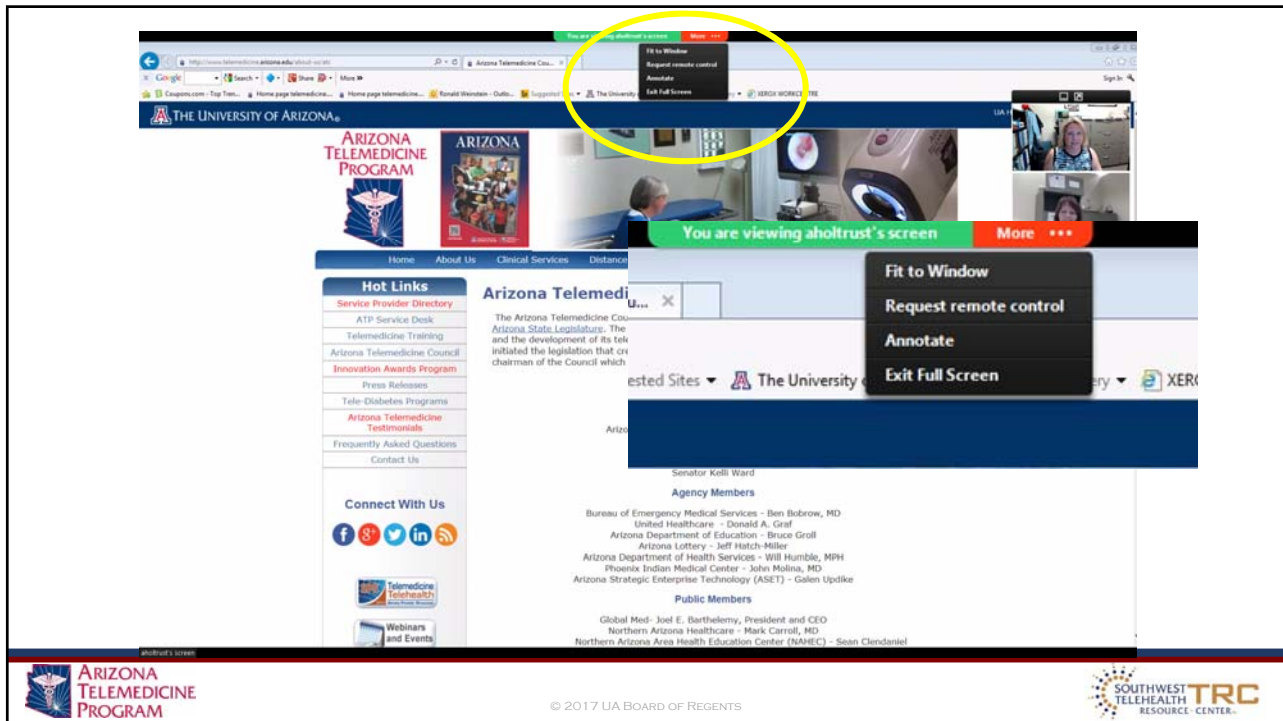




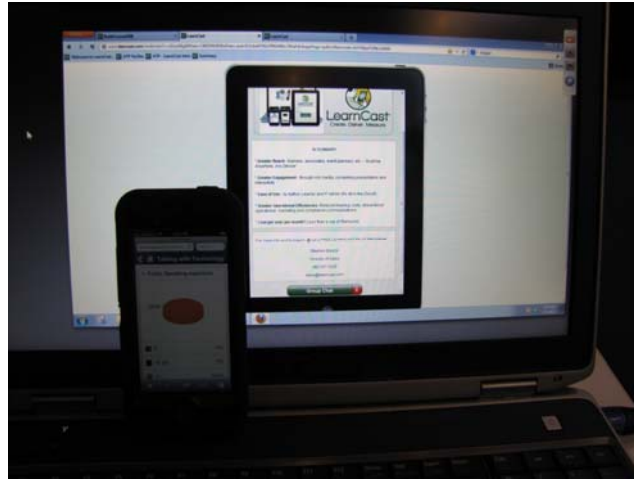
# Speaker View or Gallery View



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## IPads





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## IPads

### UA Nursing Professor Receives Telemedicine Grant to Study Tablet Use by Home Hospice Patients to Communicate with On-Call Nurses

Arizona Telemedicine Program Equipment Grant to provide technology for real-time visualization between the nurse and the patient and their caregiver.

It's the middle of the night. An elderly man in end-stage heart failure receiving at-home hospice awakes gasping for breath. His caregiver immediately phones the on-call nurse, but the drive could take her 30 minutes or more. The caregiver is too afraid to take action on her own, so she anxiously awaits the nurse. As the minutes tick by, the man becomes increasingly distressed and the caregiver grows more upset.

Shortness of breath (also known as dyspnea) is a common challenge faced by caregivers and patients in home hospice, and the leading cause of admissions to the emergency room for hospice patients.

Interested in shortening the time it takes to alleviate patient symptoms and caregiver anxiety, Kimberly Shea, PhD, RN, assistant professor at the [University of Arizona College of Nursing](#), conceived of using tablet technology with real-time visualization for patients and caregivers to communicate with on-call hospice nurses in urgent situations.

To support testing her idea, Dr. Shea recently was awarded a grant from the [Arizona Telemedicine Program](#) as part of its [Innovation Awards](#) for her project: "Real-Time Visualization for Reducing Symptom Severity in End-of-Life Care." The grant supports purchase of five iPad-minis with retina display.

"Previous studies evaluating tablet use in at-home hospice have been focused on overall quality of life and anxiety," said Dr. Shea, who has 15 years of experience as a home health hospice nurse. "What makes my study different is I'm evaluating tablet use in urgent situations. Patient and/or caregiver anxiety can often lead to unnecessary emergency room admissions."

Each tablet will be equipped with real-time meeting software that allows the on-call nurse to immediately visualize important factors, such as a patient's positioning (lying down, sitting up) or breathing patterns and medications available. Accordingly, more individualized guidance can be given to the caregiver for intervening appropriately prior to nurse arrival.



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## Teleconferencing Tips

- wear appropriate clothing and jewelry
- be aware of your body language
- use an agenda and facilitate introductions
- develop protocols for questions
- be familiar with the equipment
- test all equipment in advance



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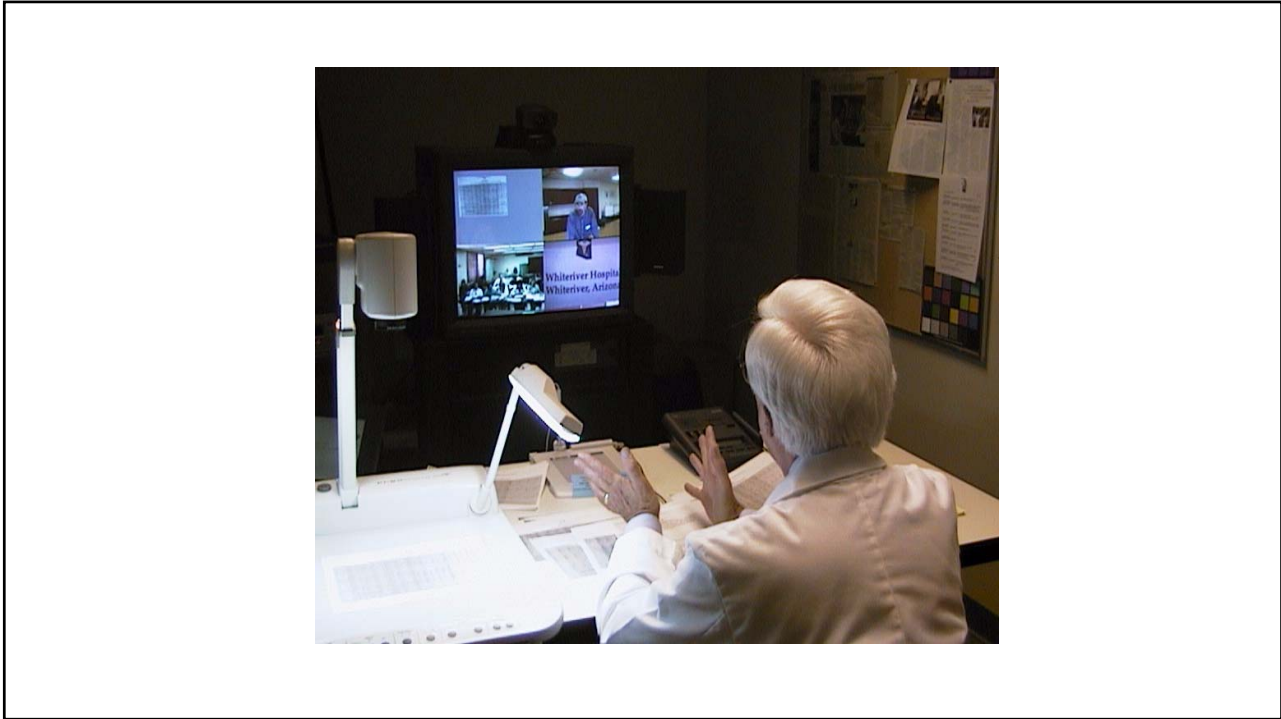


## Educational Materials

- send in advance whenever possible
- suggest powerpoint from a computer
- use 24 point font or greater
- use fonts like Arial or Times New Roman
- use a medium blue background with white or yellow font (high contrast)
- use a document camera for 3-D objects
- don't use red

## Be Interactive

- Journal Club
- Pass the Laserpointer
- EKG Bingo
- Team Competition
- Small Group Discussions
- Use photos, nametags or a namelist
- Use Multi-point and PIP options
- don't be just another talking head



### Native American Cardiology Program Distance Education “EKG Jeopardy”



Dr. Eric Brody - Tucson



Students – Phoenix Indian  
Medical Center

**Dr. Eric A. Brody received the 2005 Excellence in  
Teaching Award from the USDLA**



# EKG JEOPARDY



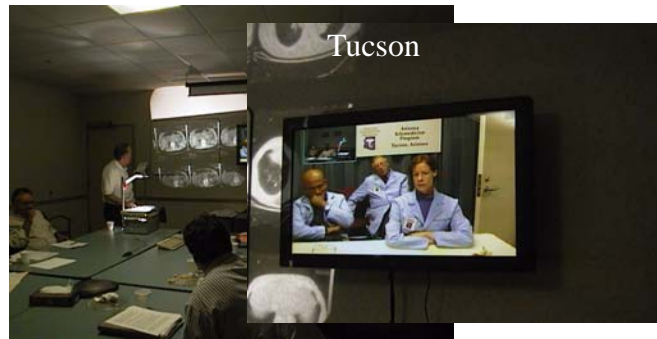
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# Interactive Tumor Board



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# Wound Management Workshop




Healthcare Professi



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**FREE All are welcome!**

**Clinical Care Grand Rounds**  
Sponsored for CME by the University of Arizona College of Medicine at the Arizona Health Sciences Center

**Affordable Care Act**

**David Parra**  
Associate State Director- Multicultural Outreach, AARP Arizona



**Tucson:** UA Medical Center, 1501 N. Campbell Ave. Room #3250  
UA Cancer Center North, 3838 N. Campbell Ave. Room #2104J  
RSVP: Bettina Hofacre 626-3265 bhofacre@uacc.arizona.edu

**Phoenix:** UA College of Medicine Phoenix - 600 E. Van Buren, Bldg 2  
RSVP: Chris Martin (602) 827-2113 cmartin@telemedicine.arizona.edu

**January 9, 2014 12 - 1p.m.**

**Learning Objectives**





1. Provide overview of health care in America
2. Review new consumer protections in the insurance market
3. Describe the new health insurance marketplace and the AHCCCS expansion
4. Review benefits for Medicare beneficiaries



**Target Audience:** Physician (CME), nursing personnel, social workers, behavioral mental health professionals (NSG CE), staff and all interested members of the community  
**Methodology:** Clinical Care Grand Round

To view online: <http://streaming.hiocom.arizona.edu/home?d=2014119> Technical help: 520.626.0167


Accreditation Statement: CME. The University of Arizona College of Medicine at the Arizona Health Sciences Center is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians. The University of Arizona College of Medicine at the Arizona Health Sciences Center designates this live activity for a max. of 1.0 AMA PRA Category 1 Credit™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.  
NSG CE: Provider approved by California Board of Registered Nursing: 888 Provider NO. CEP 10039, will provide 1.0 contact hour for this session. There is no fee associated with this CE and therefore no cancellation policy.  
Free CME/NSG/Continuing of Participation Available.  
Disclosure Statement: All faculty, CME Planning Committee Members and the CME office Review have disclosed that they have no financial relationships with commercial interests that would constitute a conflict of interest concerning this CME.

Series Director Ana Maria López, MD, MPH, FACP

**Bettina Hofacre**  
Research Specialist



biomedical COMMUNICATIONS




**Webcast.AHSC**

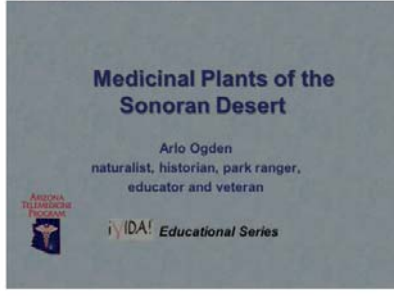
Archived Programs | Teleconference Calendar

**iVida! Breast Cancer TeleEducation Series - English**

WATCH





**Medicinal Plants of the Sonoran Desert**

Arlo Ogden  
naturalist, historian, park ranger,  
educator and veteran

ARIZONA TELEMEDICINE PROGRAM

iVIDA! Educational Series

WATCHING IN HD

WATCH IN SD

SHARE

Friday, March 28, 2014  
12:00 - 1:00 PM





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## iVida! Breast Cancer TeleEducation Series - Spanish

WATCH



### Las Plantas Medicinales del Desierto Sonorense

**Arlo Ogden**  
 Arlo Ogden, aficionado a la naturaleza,  
 historiador, guardia del parque, educador y veterano

**Interprete Bettina Hofacre**

iVIDA! Educational Series



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## VIDA Website

<http://www.telemedicine.arizona.edu/distance-education/vida>

**Hot Links**

- ATP Services Desk
- ATP Training
- Arizona Telemedicine Council
- Education Awards Program
- Press Releases
- Tele-Gabates Programs
- Frequently Asked Questions
- Contact Us

**Connect With Us**

[f](#) [t](#) [l](#) [in](#) [s](#)

**Workshops and Seminars**

- TRC
- THEALTH
- iVIDA!
- H-12 Education

### \* Vida Education Series

**iVida! Educational Series - Promoting Good Health**

The primary goal of this program is to facilitate access to health promotion information for a lay audience in Arizona with the specific objectives of developing, delivering and evaluating culturally and linguistically competent health education for patients, caregivers, family members by health educators/ promoters, providers and the public. The educational curriculum topics have been collaboratively developed with our established and ongoing "Community Partnership Group (CPG)" which includes clinical/support personnel and cancer survivors in Arizona communities of Douglas, Nogales, Safford, Tucson and Yuma. Each session is conducted as a virtual roundtable tele-conversation with clinical experts. All presentations are linguistically accessible in English and Spanish. The educational content is available via live videobroadcasting.  
<http://www.training.biosum.arizona.edu/training/>, and archived videobroadcasting.

**DOUGLAS:** Southeast Arizona Medical Center  
**NOGALES:** Mariposa Community Health Center  
**PAYSON:** Payson Regional Medical Center  
**PHOENIX:** UA College of Medicine Phoenix Biomedical Campus  
**POLACCA:** Hopi Health Care Center  
**SAN LUIS:** Regional Center for Border Health  
**SELLS:** Tohono O'odham Nation/Comm. Health  
**SOMERTON:** Regional Center for Border Health, Inc  
**TUCSON:** University of Arizona Cancer Center North  
 Arizona Health Sciences Center Library Room # 1150  
**TUBA CITY:** Tuba City Regional Health Care Center



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Think of yourself as a politician...assume that your microphone is always ON.



## microphones

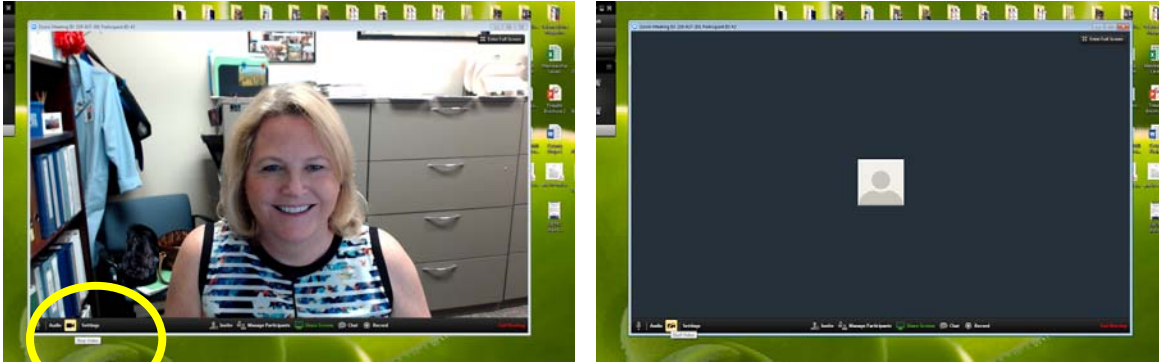
- Require the ability to easily to turn on/off
- Laptop mics and cameras can be adequate but you absolutely have to be able to control on/off quickly
- Echo cancellation is necessary for two-way communication
- Multi-Point events need testing and practice
- Just one open microphone can make or break the conversation or crash a good time!

## Mute / unmute your microphones



MUTE = ALT A

# Mute / unmute your video



MUTE = ALT V



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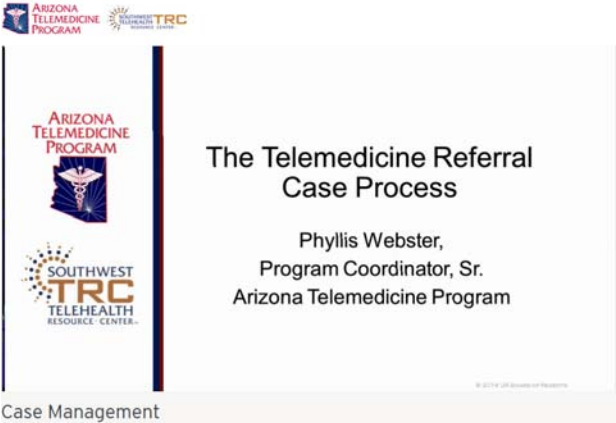


# Clinical Case Presentation



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Case Management

Go through the steps required to set up, carry out and complete a clinical telemedicine referral.

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SOUTHWEST TRC TELEHEALTH RESOURCE CENTER

To be a good telepresenter you must be a good communicator.

- verbally
- non-verbally

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SOUTHWEST TRC TELEHEALTH RESOURCE CENTER



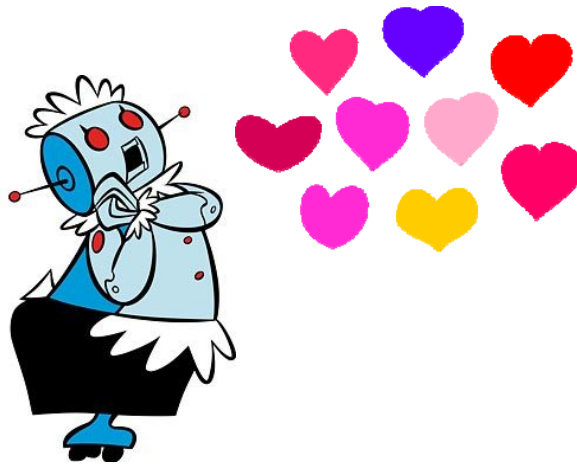


# Technology



- Makes the world a smaller place
- Keeps people in their communities

# Technology vs Humans





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