Introduction to (Sleep) Telemedicine

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Objectives

- Describe the basics of telemedicine clinical service
- Understand the use of telemedicine technologies
- Learn the general telemedicine policy

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AMA Encourages Telemedicine Training for Medical Students, Residents

For immediate release: Jun 15, 2016

New policy builds upon the AMA's efforts to create the medical school of the future

Interchangeable?

Telehealth

- Broader term encompassing all health services using telecommunications technology
- Collection of means or methods for enhancing health care, public health, and health education delivery and support using telecommunications technology

1. Video-conferencing platform for medical education

2. Public health app that alerts the public of a disease outbreak

Telemedicine

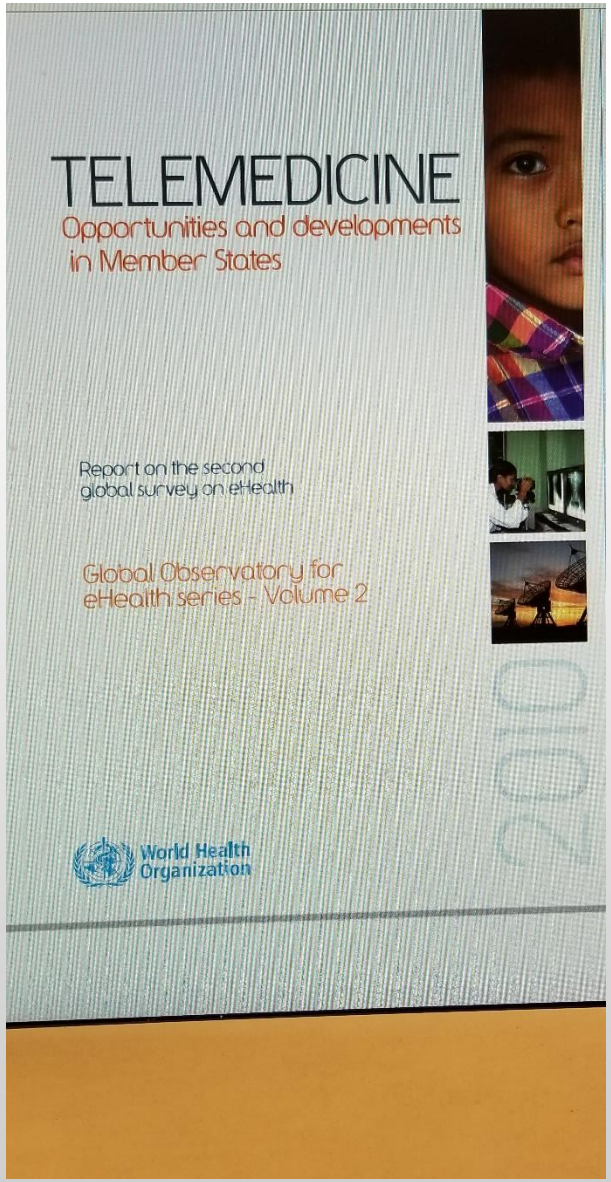
- Subset of Telehealth
- Specific to clinical services
- Practice of health care delivery, diagnosis, consultation, and treatment and the transfer of medical data through interactive audio, video, and data communications that occur in the physical presence of the patient

TELEMEDICINE

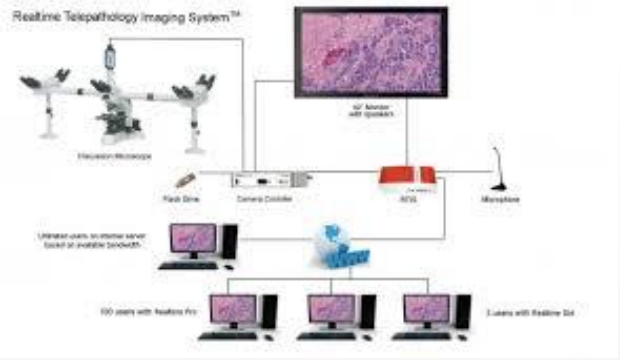
- “healing at a distance”
- World Health Organization: “The delivery of health care services, where distance is a critical factor, by all health care professionals using information and communication technologies for the exchange of valid information for diagnosis, treatment and prevention of disease and injuries, research and evaluation, and for the continuing education of health care providers, all in the interests of advancing the health of individuals and their communities.”

World Health Organization
Global Observatory for eHealth

- Potential of Information systems and communication technologies) to provide accessible, cost-effective, high-quality health care services
- To review the benefits that ICTs can bring to health care and patients' well being
- 2009 survey: reviewed 4 fields
  - Teleradiology
  - Teledermatology
  - Telepathology
  - Telepsychology



Telemedicine



Traditional modalities of Telehealth

1. Real-Time (Live)
2. Store-and-Forward
3. Remote Patient Monitoring

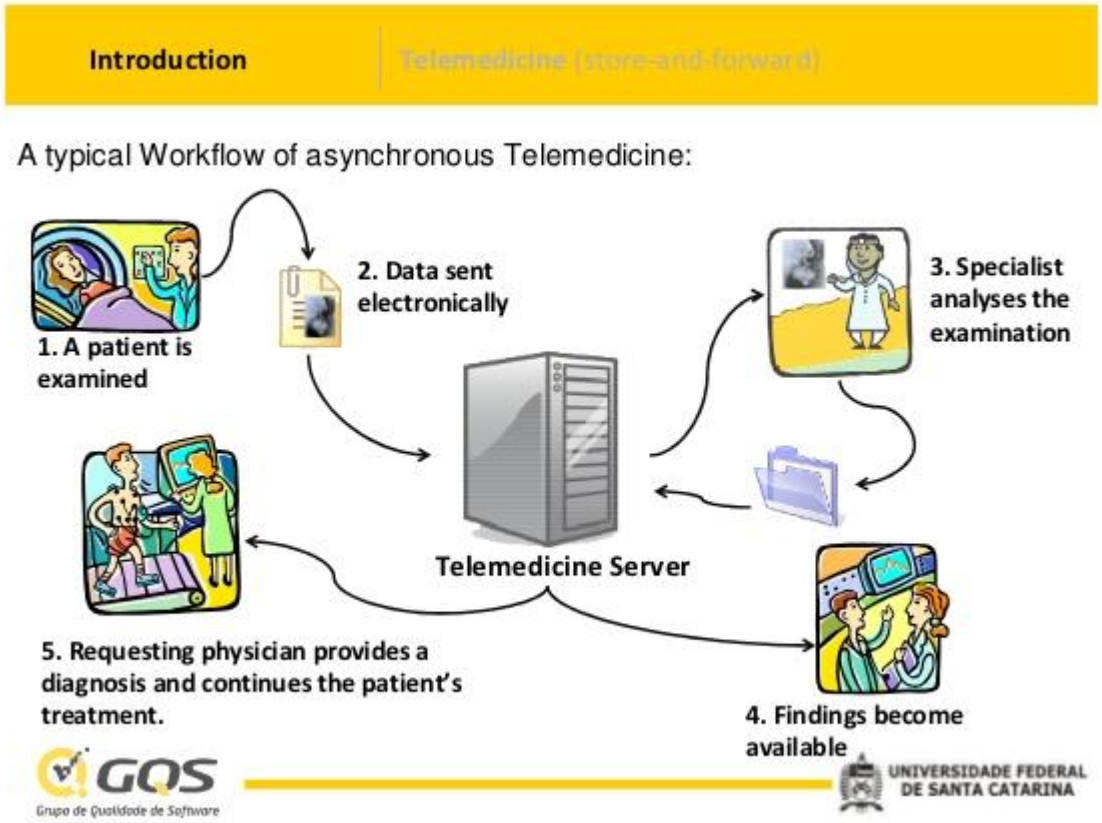
REAL TIME TELEMEDICINE

Telemedicine Model	Center to Home (C2H)	Center to Center (C2C)
Advantages 	• Implementation costs lower • Ease of patient access • Patients familiar with own technology	• More similar to live office visit • Utilization of personnel and diagnostic tools • Reliable and higher-quality technology
Disadvantages 	• Privacy more difficult to control • No tools or personnel available • Variable signal quality/reliability	• Remote site agreement required • Higher equipment and personnel costs • Less convenient to patients

Store-and-Forward

STORE AND FORWARD

- Store-and-forward telemedicine involves acquiring medical data like medical images, biosignals etc and then transmitting this data to a doctor or medical specialist at a convenient time offline
- It does not require the presence of both parties at the same time



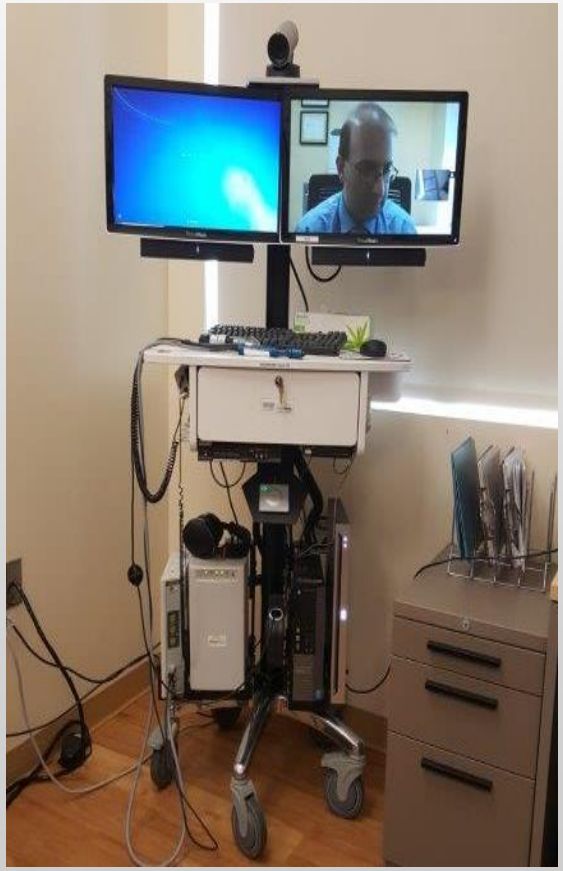
- Digital images, video, audio, clinical data are captured and stored in a Telemedicine server
- Transmitted securely to a provider for later study or analysis
- Asynchronous Telemedicine

Remote Patient Monitoring (RPM)

- Patient uses a system that feeds data from sensors and monitoring equipment to an external monitoring center
- Used in chronic conditions: CHF, COPD, DM, Asthma, HTN or post-op monitoring

PLATFORM	DESCRIPTION
Telestroke	Remote eval, dx & tx recommendations are transmitted to emergency medicine doctors at other sites using advanced telecommunications technologies
Teleradiology	Images & associated data are transmitted between locations for the purpose of primary interpretation or consultation and clinical review
Tele-ICU	Networks of audiovisual communication and computer systems are linked with critical care physicians and nurses to ICUs in other, often remote hospitals
Telemental Health	Mental health & substance abuse services are provided from a distance
Telepathology	Practice of pathology is performed at a remote location by means of video cameras, monitors, and a remote controlled microscope.
Cybersurgery	Surgeons use surgical techniques with a telecommunication conduit connected to a robotic instrument to operate on a remote patient
Remote Monitoring	Patients are subject to continuous or frequent periodic monitoring via advanced communication technologies
Telepharmacy	Pharmaceutical care for patients (or supervision to technicians) is provided at a distance using advanced telecommunications technology
Consultations	Remote consults are conducted with remote specialists, primary care providers, counselors, social workers and other health care professionals

Telemedicine Equipment

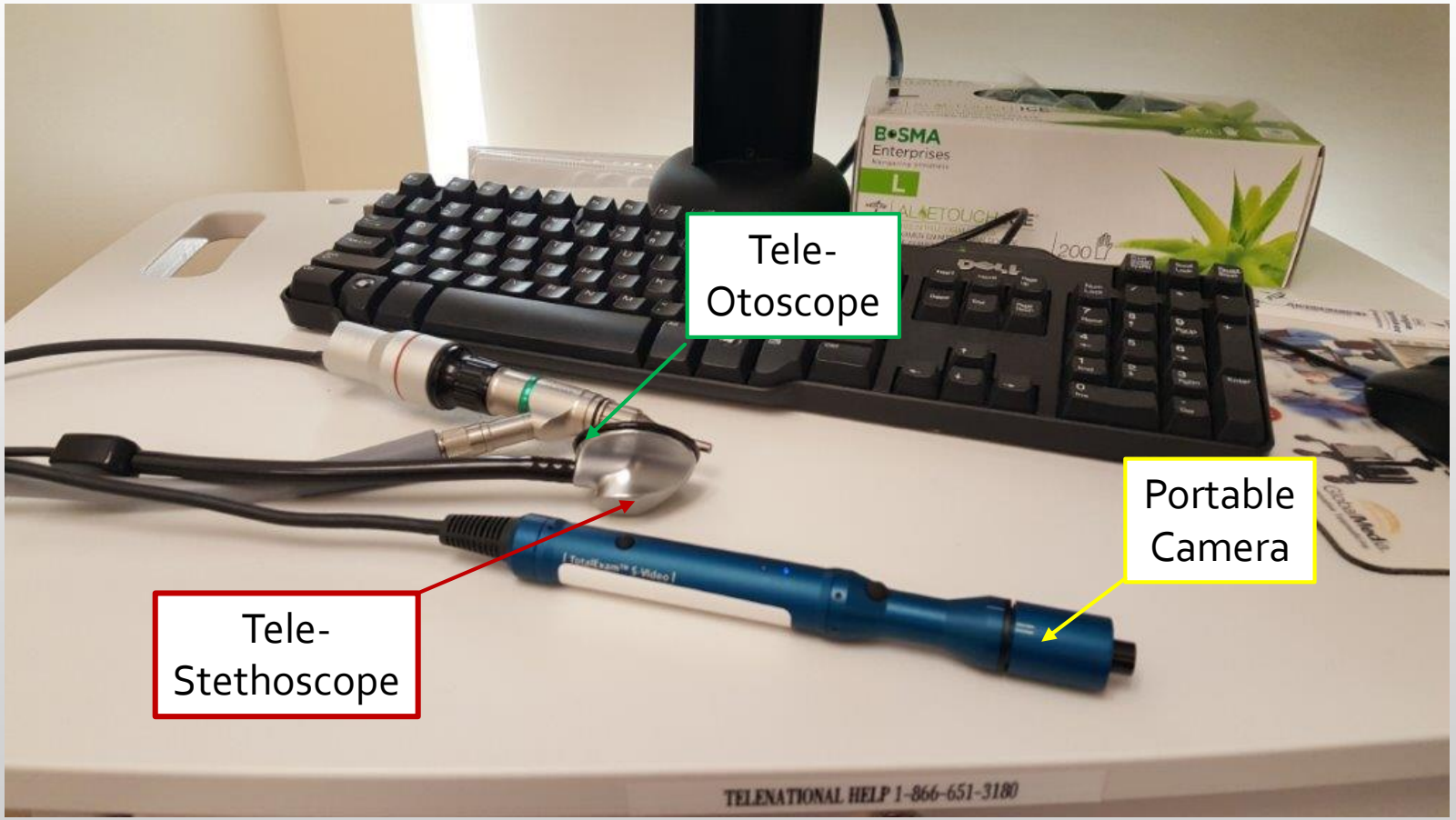


Telemedicine Equipment

VA Sleep Telemed Clinic

VA CBOC Telemed Clinic

Telemedicine Equipment



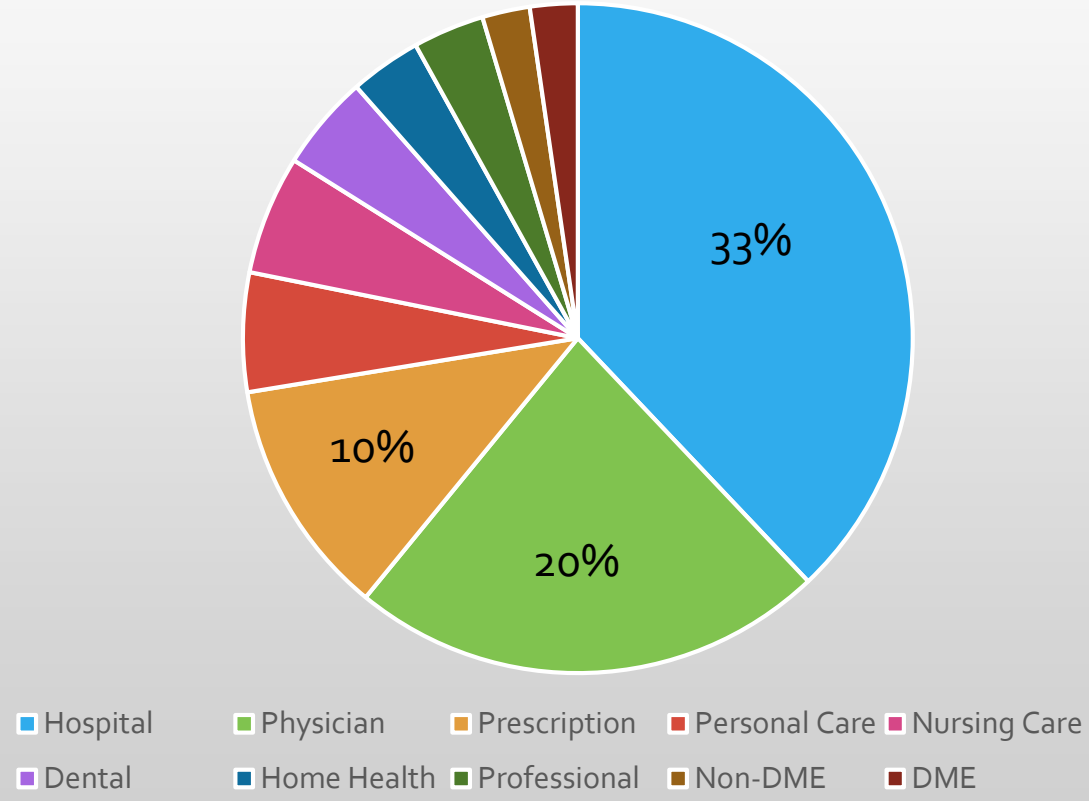
Telehealth → Mainstream Medicine

Why Telemedicine?

- Geographical barrier – provide specialty care to rural areas
- Convenient access – minimize travel for both patient and provider
- Expands clinic outreach programs
- Improve efficiency
- Improve care coordination from inpatient to outpatient to home health
- Cost-effective – potential to cut healthcare spending by reducing problems like non-adherence to therapy, unnecessary ED visits and making typical doctor visits more efficient

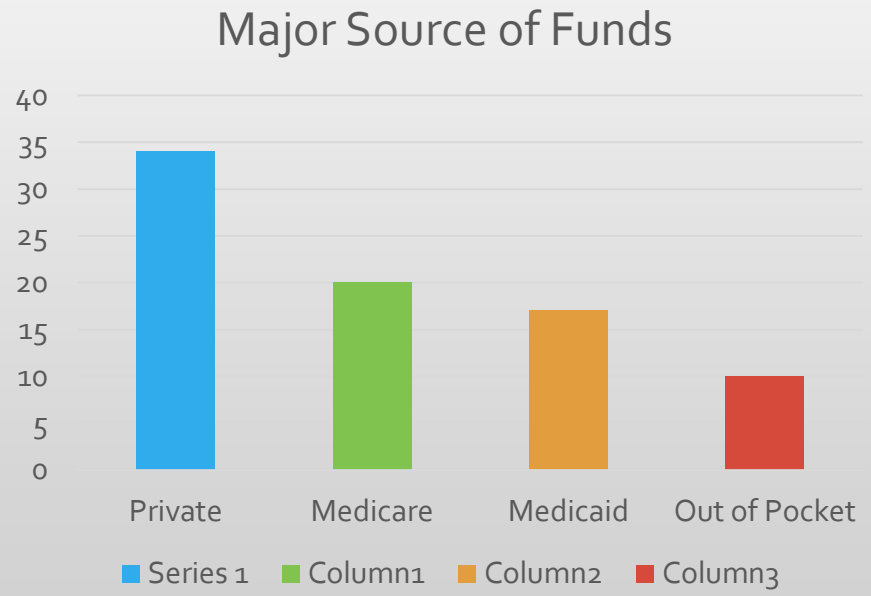
National Health Expenditures 2017 Highlights

Health Spending



US health care spending ↑ 3.9% → $3.5 trillion

or $10,739 per person



https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData

Why Telemedicine

- NTT Data: Survey of US patients
  - 74%– open to using Telemedicine services
  - 67% - telemedicine somewhat increased their satisfaction with medical care
  - 76% - care more about access than in-person interaction with doctors
  - 16% - go to ER for minor conditions if they can use telemedicine

Benefits of Telemedicine

- North CarolinaTelepsychiatry Network:
  - LOS in ED ↓ from 48 hours to 22.5 hours
  - % of patients returning to ED within 30 days ↓ from 20% to 8%
  - # of involuntary commitments to local hospitals or state psychiatric hospitals ↓ by 33%
  - 88% satisfaction among patients

North Carolina Center for Policy Research. *Evaluating the Use of Telepsychiatry for Rural Mental Health Services.* March 31, 2014. Accessed December 15, 2014. http://www.nccppr.org/drupal/content/news/2014/03/31/4348/evaluating-the-use-of telepsychiatryfor-rural-mental-health-services

- VHA telemedicine for post cardiac arrest resulted in a 51% reduction in hospital readmissions for heart failure and 44% for other illness

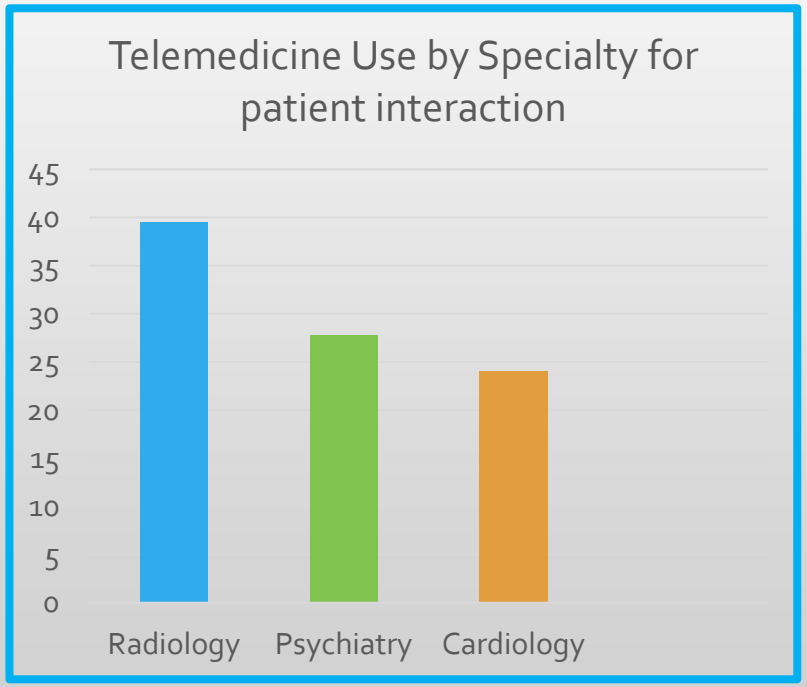
"Telehealth Services in the United States Department of Veterans Affairs, Adam Darkins,2014 http://c.ymcdn.com/sites/www.hisa.org.au/resource/resmgr/telehealth2014/Adam-Darkins.pdf

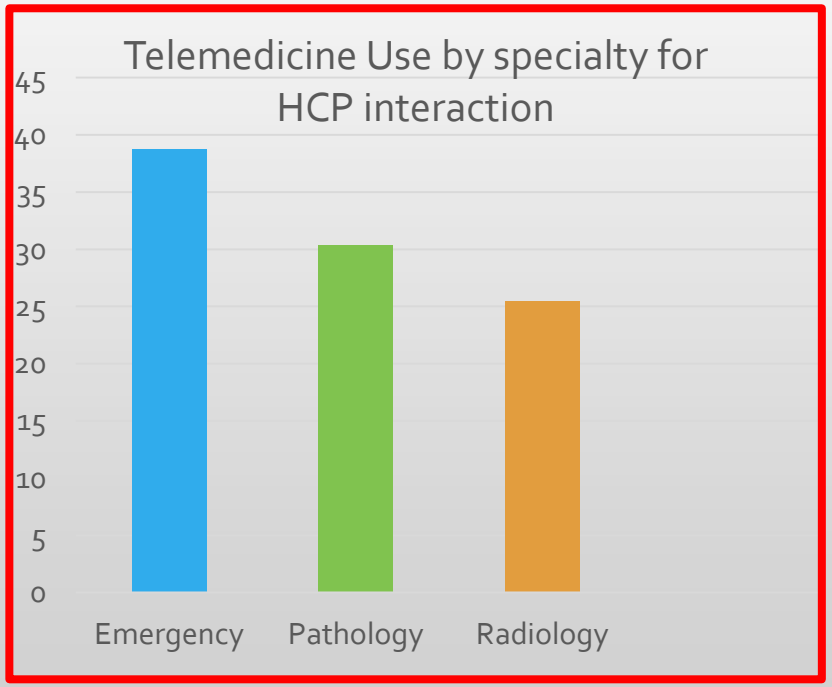
Telemedicine Use by Physicians

Overall Use of Telemedicine:

15% - patient interaction

11% - interactions with health care professionals





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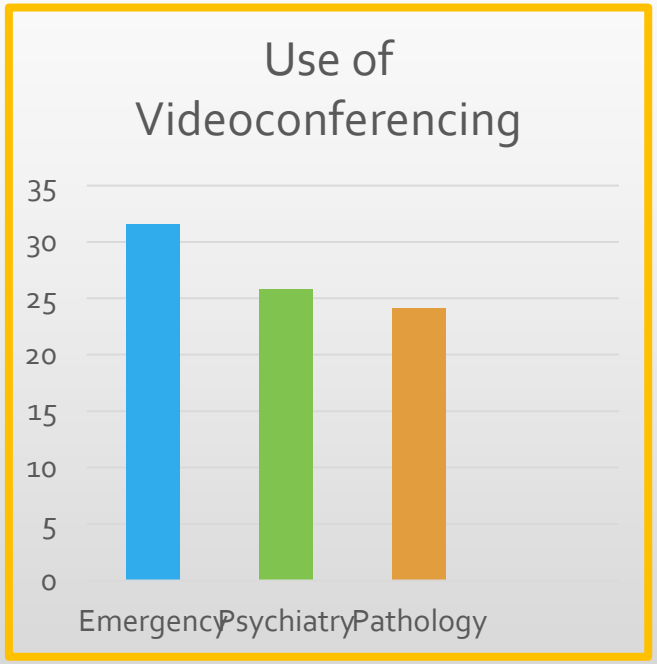
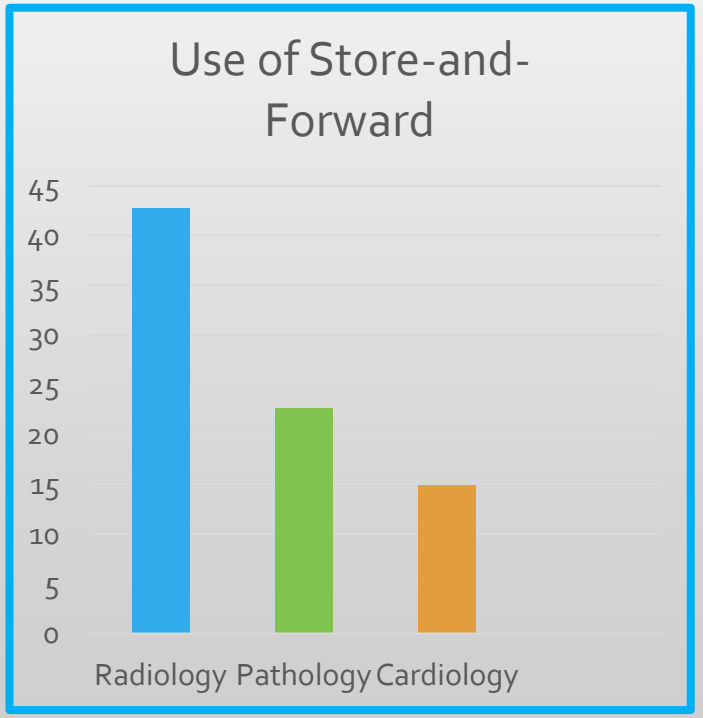
Telemedicine Use by Physicians

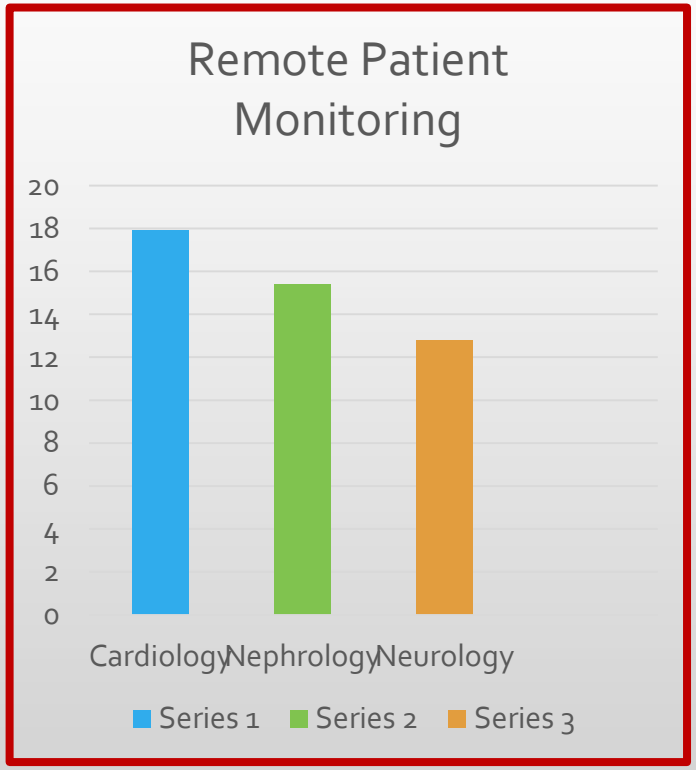
Videoconferencing – 12.6%



Store-and-Forward – 9.4%



Remote Patient Monitoring – 7.3%



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Telemedicine and Medicare

- Defining Originating and Distant Sites

  Patient must be in a rural Health Professional Shortage Area (HPSA)
- Facility Fee – Originating Site
- Telehealth services

  Live Telemedicine

  HI and AK – Store-and-Forward Telemedicine (federal telemed programs)
- Billing and payment

  Specific CPT and HCPCS Code – eligible for telemedicine

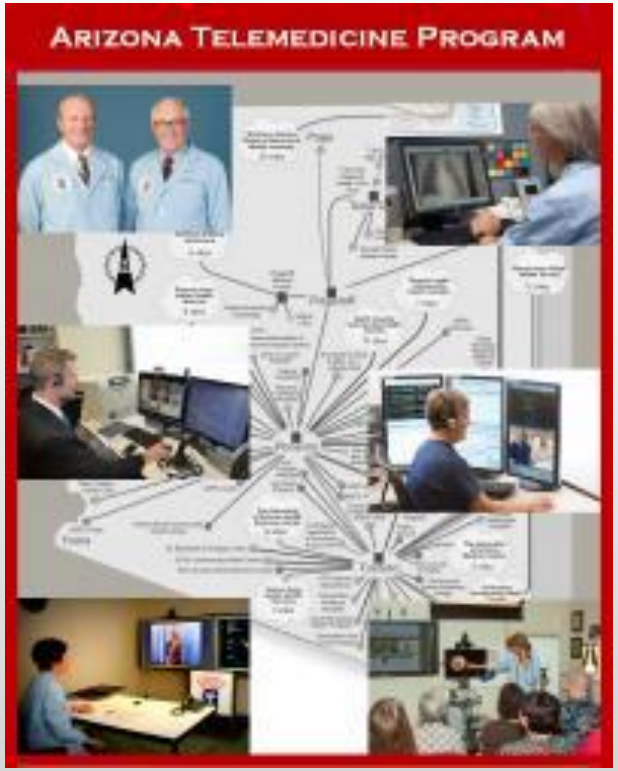
  Use a GT and GQ modifier

Telemedicine and Medicaid

- State law on telemedicine practice
- Overview:
  - Only 3 states (AK, MN, MS) cover 3 types of telemedicine
  - 46 states cover live video
  - 9 states cover store-and-forward telemedicine
  - 14 states cover remote patient monitoring
  - 24 states (plus DC) do not have restrictions on patient location
  - 25 states recognize the home as an eligible originating site
- Arizona guide to reimbursement for telehealth services

  http://www.securetelehealth.com/medicaid-reimbursement/51.html

Arizona Health Care Cost Containment System



Arizona has a partial **telemedicine** parity law. The law requires reimbursement through private payers, but only for certain health services delivered to patients in rural areas of **Arizona**. The law specifically defines a "rural" area as a region or city located in a county of less than nine hundred thousand people

AZ STATE LAW REGULATIONS	AHCCCS
Live video Reimbursement	
HCSO allowed but not mandated	Will reimburse for medically necessary
Store-and-Forward Reimbursement	
Excluded	Will reimburse
Remote Patient Monitoring Reimbursement	
No reference found	Home health listed as reimbursable
Consent	
Provider must obtain & document oral and written consent before delivery of services. Oral consent should be documented in medical records	No reference
Location	
Private payers required to provide coverage in rural region for originating site	Eligible hub or spoke sites for Indian Health services or tribal providers

AZ STATE LAW REGULATIONS	AHCCCS
Site transmission Fee	
No reference found	A facility fee is not a covered service
Miscellaneous	
AZ explicitly prohibits the use of telemedicine to provide an abortion.	There is reimbursement for non-emergency transportation to and from the telemedicine originating site

Are You Comfortable with Technology

- If yes, proceed to explore Telemedicine
- If no, explore your reasons and consider being coached

Do Patients Need Improved Access and/or Is There Remote Patient Need?

- If yes, proceed to explore Telemedicine
- If no, you might want to identify a potential market

Are Referring Providers and/or Patients Adaptable to Telemedicine Visits?

If yes, proceed to explore telemedicine

If no, identify barriers and explore if/how these need to be addressed.

Begin developing a Telemedicine Plan

- Center to Center (C2C) vs Center to Home (C2H)
- Provide Workflow

Telemedicine Clinical Guidelines

- When to use telemedicine
- When to prescribe
- Patient Informed Consent
- Setting up right space for telemedicine
- Contingency plan for emergencies

When to use telemedicine

- Certain conditions are good fit for telemedicine
  - Allergies, Asthma, Chronic Bronchitis
  - Mild infections: UTI, URI, Conjunctivitis
  - Diabetes, HTN, Chronic Renal Disease
  - Mental Illness/Behavioral Health
  - Prevention and Wellness
- Not appropriate for medical emergency
- Should not be used for any condition where an in-person exam is required due to severe symptoms

When to use prescribe

- For live video telemedicine sessions
  - Physical or mental health status examination can be conducted during a real-time telemedicine encounter
  - This establishes a provider-patient relationship
- Acceptable for telephone consultations as long as the provider has a pre-existing relationship with the patient

Patient informed consent

- Need to explain to patients how telemedicine works prior to first session
- Good practice to obtain patient informed consent to use telemedicine
  - Some states require this
- Verbal patient consent can be stated

Setting up right space for telemedicine

- Dedicated space for telemedicine
- Video-conferencing device
- Privacy can be maintained
- Safe environment
- Proper lighting
- Position camera at eye-level

Contingency plan for emergencies

- Establish a plan for emergencies and communicate it to the patient
- Obtain a cell phone number for patient and telehealth staff in the originating site
- List of emergency phone numbers should be in plain sight

VA TELEHEALTH

Welcome to revamp

Remote Veteran Apnea Management Platform

VA Health VETERAN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N Arizona
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Grand Canyon
Kingman
Bullhead City
Williams
Flagstaff
Lake Havasu City
Prescott
Holbrook
Payson
CALIFORNIA
ARIZONA
Parker
Show Low
34°
HUB
Phoenix
Mesa
Tempe
Casa Grande
Safford
Yuma
Ajo
Tucson
0 50 100 mi
0 50 100 km
32°
Sierra Vista
Tombstone
116°
114°
112°
MEXICO
110°
108°

SPOKE

Remote Veterans Apnea Management Platform (REVAMP)

What is REVAMP?

Remote Veteran Apnea Management Platform (REVAMP) is a personalized, interactive web platform and mobile app that enables Veterans to be evaluated for obstructive sleep apnea (OSA) without traveling to a VA sleep center. REVAMP is designed to improve access to care, reduce patient wait times, and equip Veterans to receive care at their home or preferred place of care.

Ask Your Health Care Team If You Are A Good Candidate For REVAMP

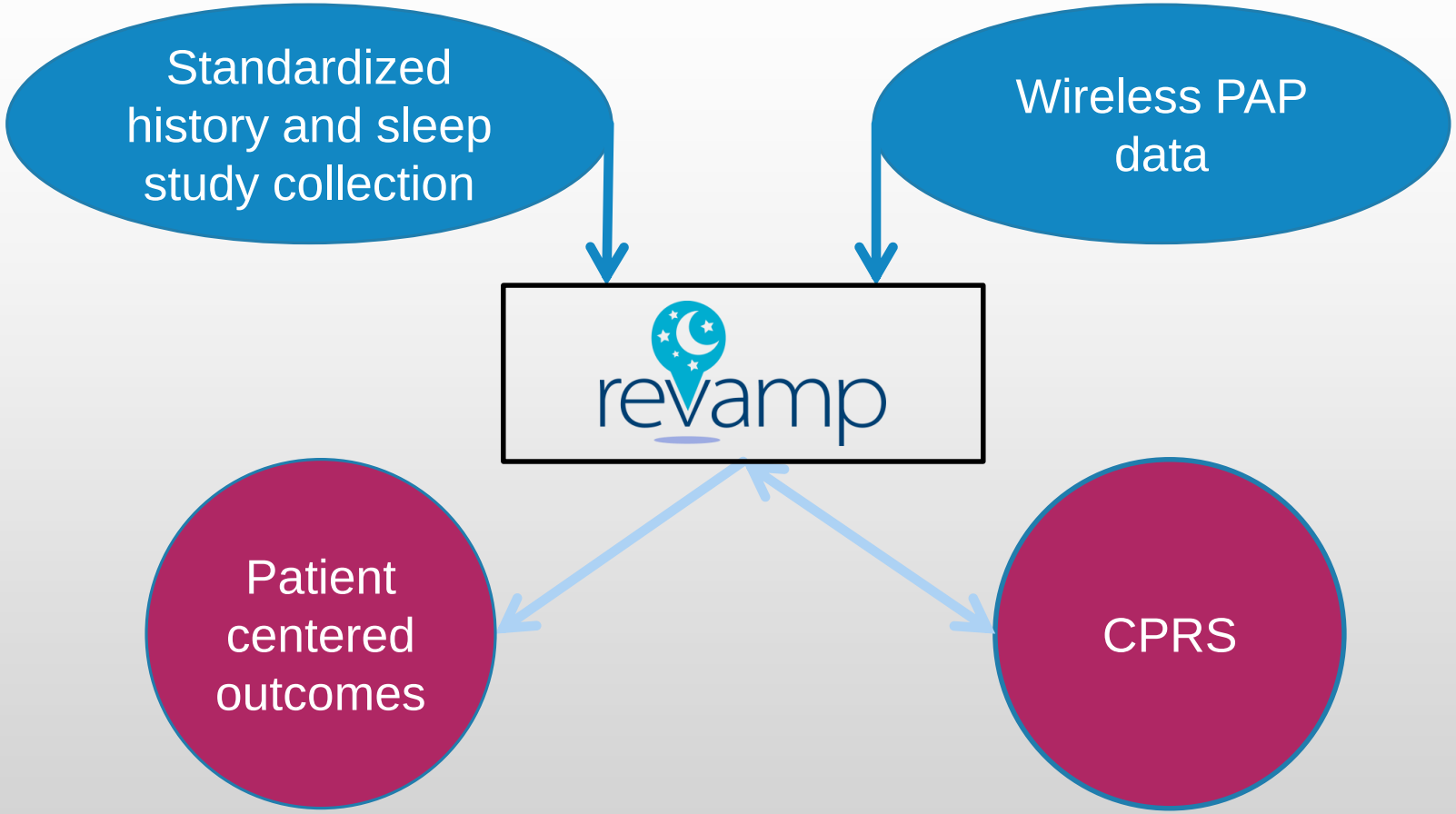
How Can I Start Using REVAMP?

1. Talk to your health care team to determine if REVAMP is right for you.
2. Obtain a Secure ID such as a DS Logon Premium Account to use the REVAMP app.
3. Access the REVAMP App for Veterans on the VA App Store.
4. Take the Patient Initial Evaluation.
5. Manage and monitor your treatment results.
6. Discuss your results with your VA Provider.

Need More Information or Have Questions?

- Visit https://mobile.va.gov/app/revamp-veterans for more information
- Contact your local VA sleep center
- Website: http://help.vamobile.us
- Email: help@vamobile.us
- Call the VA Mobile Help Desk at 844-4VA- MOBILE (844-482-6624). Monday - Friday, 8:00 a.m. - 8:00 p.m. (EST)

REVAMP connects the sleep telemedicine network



REVAMP allows Veterans with OSA to be evaluated and treated **without traveling to a VA sleep center.** REVAMP collects medical information from Veterans with OSA, shares this information with both the Veteran and the clinician, and exports it to a database and CPRS.

Phoenix VA Sleep Medicine and CPAP Section