TELEMEDICINE IN THE GREAT PLAINS AREA VIDEO CONNECTIVITY THROUGHOUT IHS AND WHAT THE FUTURE HOLDS

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DYNAMICS OF THE GPA

- Over 20 physical locations
  - Some Federal
  - Some Tribal
- Not all IHS eligible patients live near an IHS facility
- IHS services are heavily used by Medicaid eligible patients
- State of SD wants to implement 100% FMAP by partnering with IHS to utilize telehealth and tele-specialty clinics
  - Provides for full cost recovery in Federal funds
  - Reduces the financial impact to the state Medicaid budget.

THE AREA-WIDE CONTRACT

- A team of staff throughout the agency worked to develop a statement of work
- Contract was competed on the open market
- Key requirements of the contract
  - Emergency Room assistance from Board Certified ER providers
  - Specialty visits for referrals and behavioral health
- Technical requirements to work through
  - Credential as part of the IHS medical team (by proxy)
  - Chart in the IHS EHR
  - Operate all services via encrypted transmission
  - Scalability to cover the entire area
  - Comply with IHS Security and on-boarding requirements

TELE-EMERGENCY IN THE GPA VIA AVERA

- Board Certified Physicians at the Avera eHelm

- Avera call center directly connected to IHS and other Avera customers

- Avera physician guides the attending physician at the remote IHS hospital

- If transfer is needed, the Avera staff coordinate the transfer to the nearest facility (not necessarily Avera) while IHS staff continue to attend to the patient

**Not image of avera, but it looks similar (stock Cisco image from the internet)
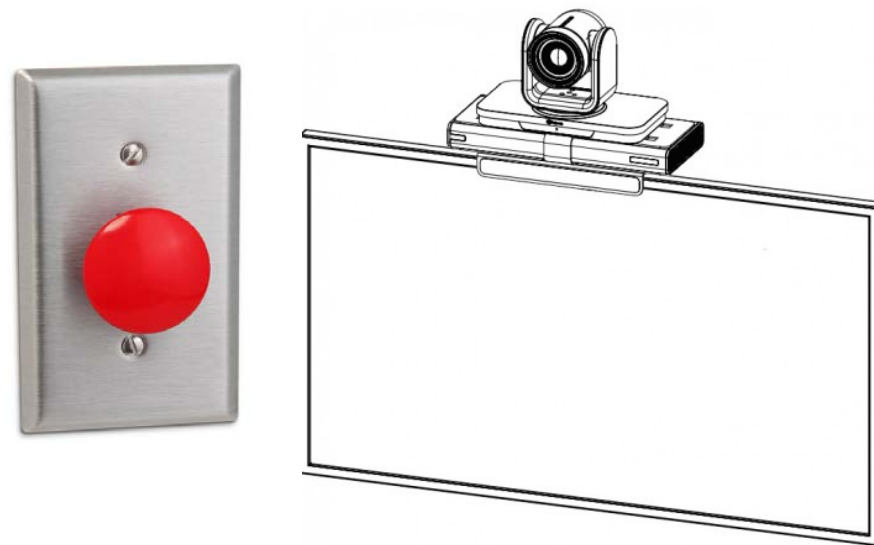
BENEFITS OF E-EMERGENCY

- Hard to recruit Board Certified ER Physicians to remote areas

- Coordinating transfers takes nursing and clerical staff away, sometimes for extended periods of time

- Transfers are costly
    - The fees to fly patients out are very expensive
    - Ambulance transfer is not always an option and is still quite costly and sometimes there is not enough time
    - We cannot bill for patient transfers
    - Takes patients/families away from their communities

- Having a second opinion helps to support the attending physician, and may even result in keeping the patient at home with their families

TELE-SPECIALTY SERVICES

- Avera offers more than 35 medical specialties
- GPA has started with just a few
  - Behavioral health
  - Cardiology
  - Nephrology
  - Wound care
  - *This list is not all inclusive
- These are charged on a per/visit cost
- Picture displayed to the right is from a room in Rosebud
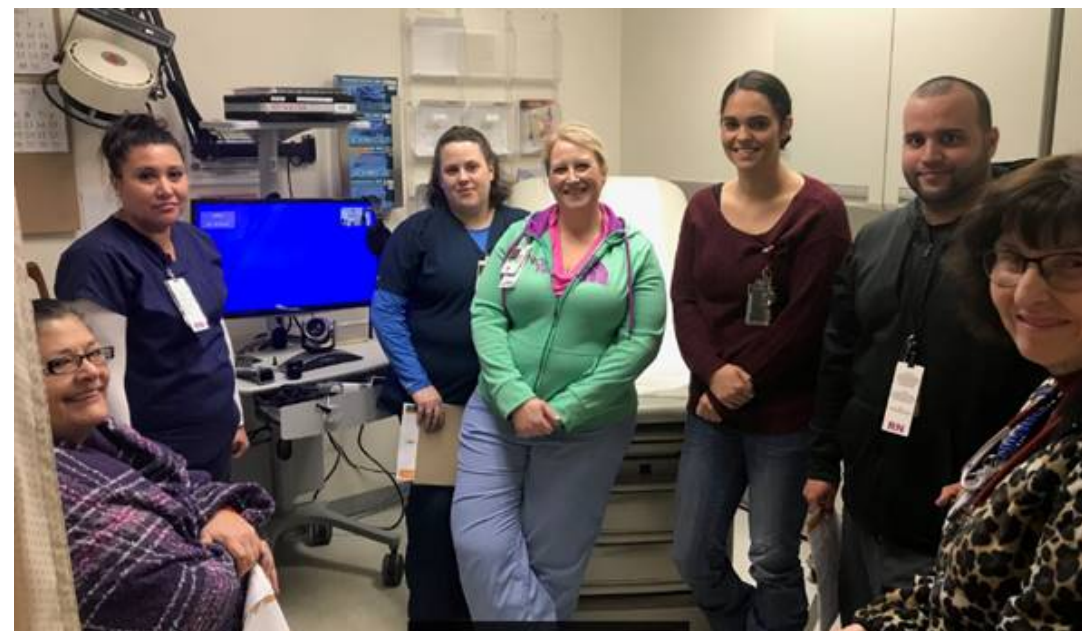
BENEFITS OF SPECIALTY CLINIC

- Bring the services to the patients where they live

- Travel expenses are saved

- Services IHS does not have staffed can be brought to the patients that need them, without having to hire full-time specialists

CONTRACT IMPLEMENTATION

- Medical Staff worked with Avera to define process flows

- Credentialing staff researched and implemented them by proxy credentialing process

- IT staff worked to install secure connectivity and equipment

- On-going support for providers, nursing staff, and connectivity

- Medical staff and IT working as one team

TWO PROJECTS = COMBINED POSITIVE OUTCOMES

Aside from the Telemedicine Services contract, GPA was also in need of an agency-wide infrastructure refresh

- GPA has hosted the national video communications network since 2008, Polycom video conferencing

- Hardware was in great need of refresh

- Additional capabilities were needed for the future of telemedicine; much more than just video codec to video codec needs to be available to meet the needs for telemedicine

OLD CAPABILITIES VS NEW CAPABILITIES

The Old Polycom infrastructure

- ISDN to ISDN calls
- H.323 calls
- Codec to Codec only
- Point to Point video calls
- Multi-Point video calls
- Encrypted from codec to codec
- Audio conferencing

The new Cisco Infrastructure

- ISDN to ISDN calls
- H.323 calls
- Codec to Codec only
- Point to Point video calls
- Multi-Point video calls
- Encrypted from codec to codec
- Audio conferencing

<u>Plus</u>

- Device agnostic connectivity
  - WebRTC
  - Mobile devices
  - Codecs
  - VoIP phones
  - Codecs
  - Network integration
- Self-Service Scheduling *easy enough for support staff to schedule without a video administrator having to attend each call
  - Person to Person
  - One-touch scheduling
  - Room Resource scheduling

DEFINITIONS OF COMMUNICATION PROTOCOLS

- ISDN (Integrated Digital Services Network) these are done over telephone lines and most telephone companies are moving away from them to Ethernet circuits. This protocol doesn't scale to effectively do High Def Calls

- H.323 is a binary-based standard that supports rich-media communications over IP networks. H.323 initially focused on video conferencing, but now includes audio and video conferencing.

- SIP (Session Initiation Protocol) is used in Voice over IP (VoIP) communication and it allows users within the VoIP network to make voice and video calls across the network at little to no charge. The calls travel across the network or internet. It supports rich-media communications, as well as data transfer.

- WebRTC (Web Real-Time Communication) is how web browsers and computer apps and mobile apps work inside web pages and apps to allow direct peer-to-peer communication.

BENEFITS OF INFRASTRUCTURE UPGRADE

- Hardware and licensing costs up front = telecommunications cost savings
  - Calls travel across the WAN instead of over telephone lines
  - Prior technology used ISDN calling at rates up to 16 cents per minute/connection
    - Example 5 video units connected for 60 minutes at $0.16/minute each would be $48 for that call
- Interoperability
  - You don't need an expensive codec to make a video call anymore
  - Webcams
  - Video phones
  - Mobile devices (CMA, Jabber, etc.)
  - **Note quality of camera/unit does affect the video quality
- Self-service
  - No more operators having to schedule multi-point calls
  - It's as easy as sending a outlook calendar invite
- Connect to the outside world in a secure environment
  - WebRTC and the Cisco Meeting App (CMA) or a Chrome Browser can connect to an encrypted call over the web

TYPES OF DEVICES THAT CAN CONNECT TO OUR NEW INFRASTRUCTURE

WHAT CAN WE DO WITH ALL OF THIS TECHNOLOGY

- Integrate Cisco Video Codecs with the Cisco VoIP Call Manager
  - *Some features work with Polycom devices
  - Allows for Pre-scheduling of devices (room resources) for one-touch connect
    - Perfect for users, providers, and leaders to enter a room and press the big green connect button
  - The Cisco devices can be used as conference phones, projectors, video conferencing and screen sharing all in 1 unit.
- Contract with any company to do provide telemedicine
- Provide our own telemedicine services within the agency
- Provide our own telemedicine services within our own areas
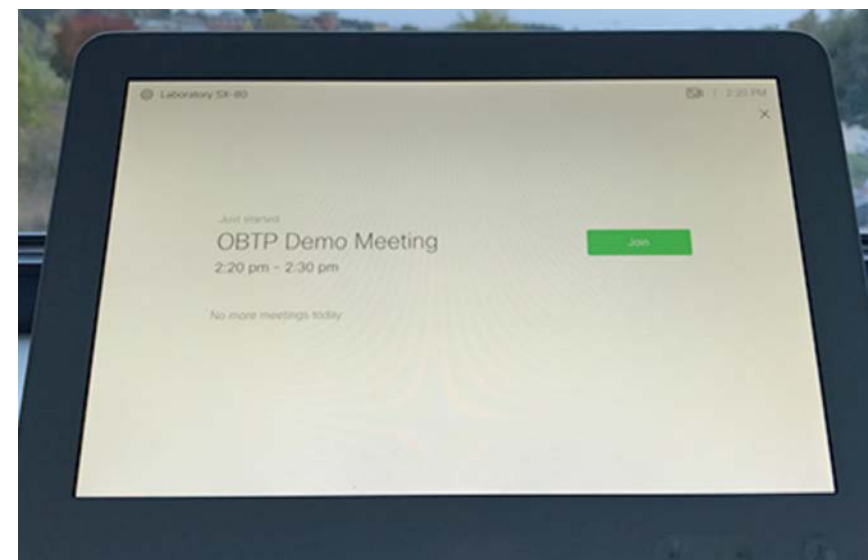
GPA TELEMEDICINE TO ITS OWN SERVICE UNITS

- GPA has a limited dietician staff

- Service Units are working to take rotational call at each hospital

- The Cisco video phone provides the ability for the dietician to have that required consult within 24 hours of admission

- No outside vendor/company needed

  - Each dietician has a phone

  - A call hunt group is created so that the phone number rings on each phone that is signed into the hunt group (when they are on call)

  - Calls are made on the VoIP network, no long distance or data charges for them

WE'VE ONLY BEGUN TO TAP INTO THE CAPABILITIES

- WebRTC will allow for encrypted connections both inside and outside of the network without an expensive codec

- We are currently live (inside the IHS network) with CMA

- Outside of the network a Chrome browser can be used

- Plans to use CMA (controlled environment) outside the network are slated for this fall

- Endless possibilities… HQ to Area, Area to Area, Service Unit to Service Unit and any outside company

WEBRTC DEMONSTRATION

TECHNOLOGY IS NEARLY LIMITLESS
BUT ONLY AS GOOD AS THE PROCEDURES SURROUNDING IT

- We are moving into an era where if you can imagine it, it can likely be done.

- Important for technology teams to understand how to apply technology in the medical setting

- The clinical practice/need must be defined, then the technology is aligned

QUESTIONS?

The GPA Team working on the national video program:

- Acting Chief Information Officer (CIO) – Brenda Kleinknecht

- Information Systems Security Officer (ISSO) – Brad Flom

- Information Systems Coordinator (ISC) – Charles Merrill

- Voice and Video Team:

  - Brett Hillman

  - David Janssen

  - Marian Redlin-Reit

  - *Lyle Benally will be working with us out of the tele-behavioral health center of excellence in Albuquerque