

Telehealth Program

**...and the conversion to
software-based telehealth**





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(no disclosures)

Outline

- Intro to the Tennessee Primary Care Association (TPCA) and its Telehealth Program
- Overview of our conversion from a hardware-based telehealth system to a cloud-based system
- Q & A

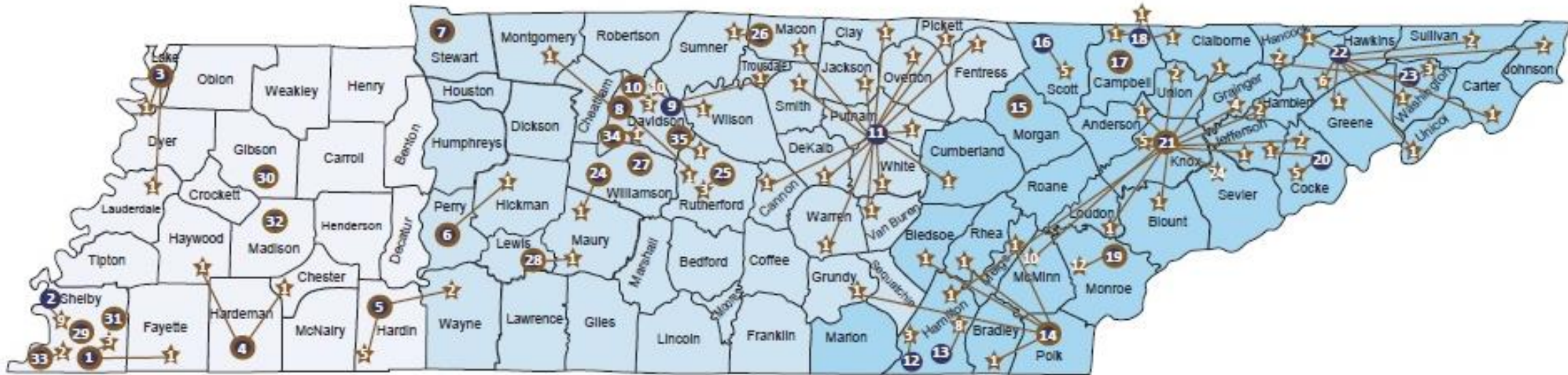


The Tennessee Primary Care Association (TPCA) improves access to primary health care through leadership, advocacy and support as the voice of Community Health Centers in Tennessee.

We specifically work with FQHC's (Federally Qualified Health Centers) that seek to improve access for the medically underserved.

Connecting Communities Who Care

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35 Organizations / Over 200 Health Delivery Sites

Connecting Communities Who Care

TPCA's Telehealth Program

Two basic modalities:

1. Rural patients connecting with urban Specialists:

Psychiatry

Endocrinology

Dermatology

Gastroenterology

Neurology

Infectious Disease

Gastroenterology

Ped. Cardiology

Nutrition

Psychology

Plus Medical Interpretation (27 Languages)!

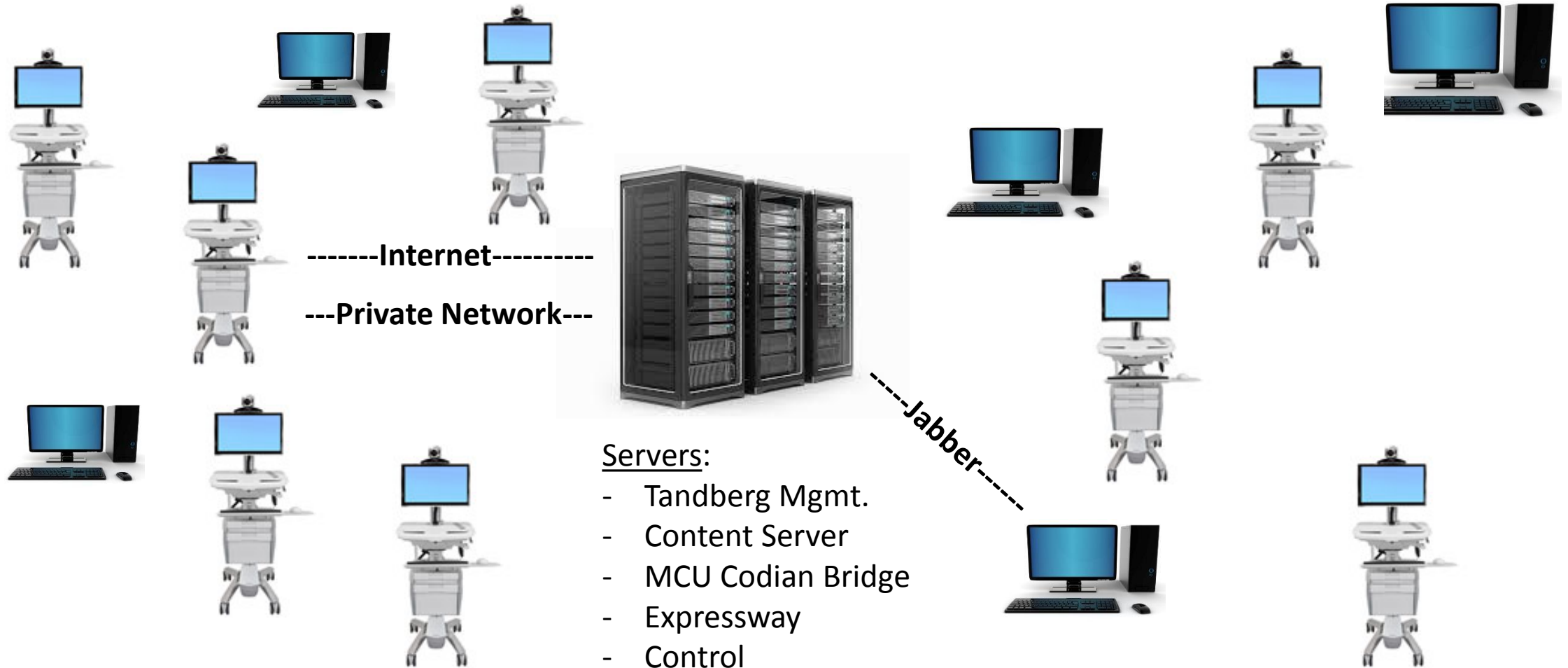
TPCA's Telehealth Program

2. “Silo” Systems: organizations that utilize telehealth internally or through specialized contracts.

Examples:

- One organization provides psychiatric evaluations to area Emergency Departments
- Another organization provides counseling to its various remote offices

Hardware Mix



Servers:

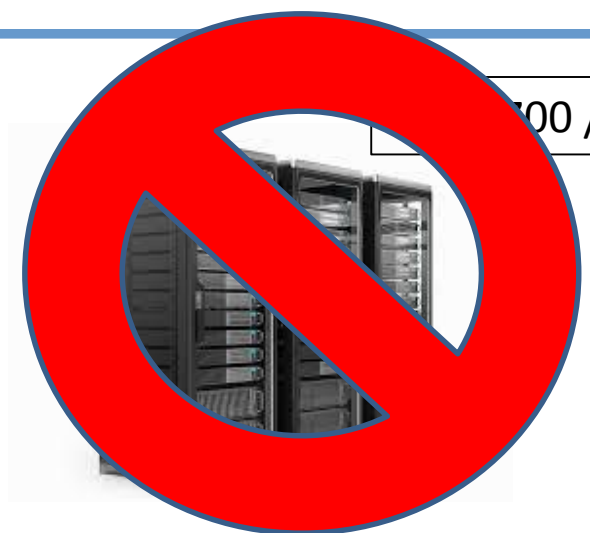
- Tandberg Mgmt.
- Content Server
- MCU Codian Bridge
- Expressway
- Control

Typical Hardware Costs

- Telehealth Carts (provided by a grant)
- Personal Computers (typically provided by the end user)
- Data Center (5 servers, plus other equipment/cabling)
 - Approx. \$300,000 when purchased some 10 years ago (grant)
- Data Center – ongoing costs (per year):

– Maintenance contracts w/ Cisco	\$ 27,500
– Server rack rental	\$ 5,400
– AT&T data lines, 10 mb each	<u>\$ 4,800</u>
TOTAL (per year):	\$ 37,700

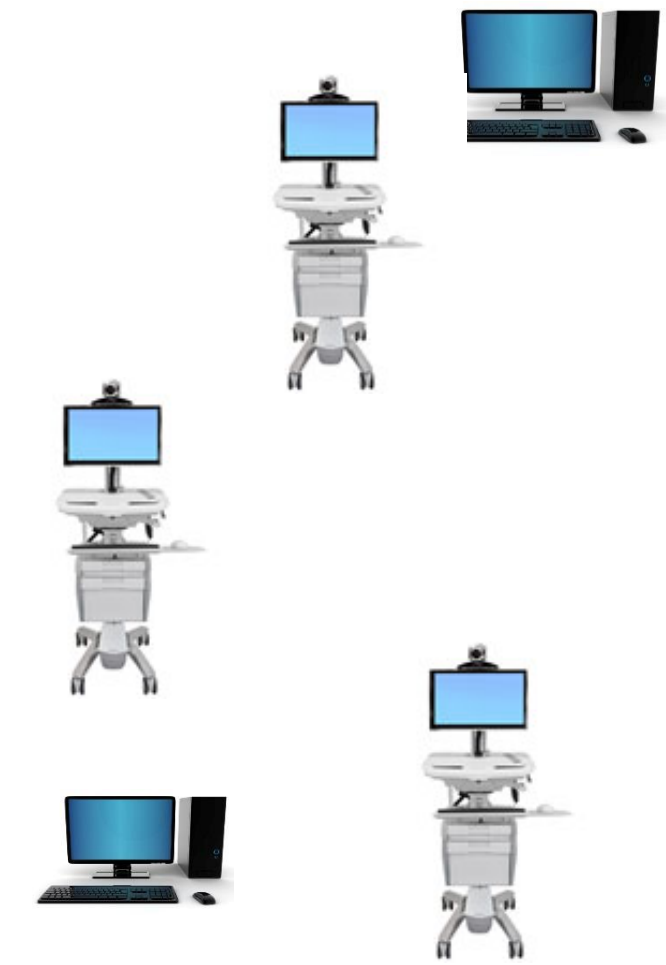
Cost Comparison



\$7,000 /yr.



\$ 5,700 /yr.



Advantages



- Easier to use, both front and back end
- High quality A/V on a variety of devices
- Interoperability (H.323, PC, Apple, & Android)
- Easily used for ad-hoc meetings
- One-touch recording
- ...at 15% of the cost!

Cloud-based service



Choosing a Cloud-based Provider

- There are MANY to choose from!
(Neither TPCA nor the SCTRRC officially endorses any particular product)
- What IS important is to create a matrix/list of what's important to your organization and evaluate each videoconferencing provider on those criteria.
- This is the matrix we used...

Cloud-Based Videoconferencing Provider Matrix

PROVIDERS:	Encryption	H.323, SIP	BYOD	Easy to use	H.323/SIP quality	Pricing	Notes
Company A	AES-128	YES	yes	very easy	initial glitches, but very good	Named-Host Plan: \$99/mo./user, 10 Pack Min.: \$999/mo. - can be static (always ON) rooms; no extra fees for SIP/H.323	Kept freezing up in the DEMO. This was resolved in later tests, but Sara and I didn't like it as much as "Company B" in our tests. Also, they don't offer a month to month contract.
Company B	AES-128	YES	yes	very easy	excellent, occasional glitches	Various plans - the Healthcare Plan requires a min. of 25 Business Plan "hosts" (rooms) @ \$14.99 each. Further, they charge for H.323/SIP connections at \$49/connection/mo.	DEMO was very good, except not being able to add H.323 connections, but this was resolved later. Sara & I liked this company in our tests better than Company A: better resolution on content sharing and easier to use.
Company C	AES-128	YES	yes	very easy	excellent	Enterprise plan costs \$49/room/mo. for 25 or more rooms. H.323/SIP included. Also features "month-to-month" contracting rather than yearly.	DEMO was very good, comparable to Company B in quality and ease of use. Uses the ----- engine and their logo displays - a downside. No recording available, and screen sharing involves a Google store download.
Company D	AES-256	NO	yes	easy	N/A	\$199/mo./room	This one works more like Skype than the other Vendors in that they have a personal call list on one side of the interface. Highly recommended, but the lack of H.323/SIP was a deal-breaker.

Comparison of Hardware- and Cloud-based Videoconferencing Systems

	Hardware-based VCS	Cloud-based VCS
Quality	Both audio and video are the highest quality available. Not only are hi-def components used, but endpoints & servers are of the same brand and video standard (H.323/SIP)	<p>Webcams: No PTZ on video, user needs to be within 3-5 feet of included microphone. 80-90% of quality.</p> <p>USB PTZ Cameras: Comparable to Tandberg cameras, 90% of quality.</p>
Reliability	The codecs on the endpoints of these systems are ONLY designed to do audio/video processing, as are the servers they connect to. Therefore, they rarely have any issues at all - practically 100% up time.	Cloud-based servers are very reliable, BUT you connect to them from a PC, tablet or other device. Therefore, PC type issues of freezing up, power loss, windows updates, etc. can cause problems. Still, in our tests, these connections are quite good 90-95% of the time.
Features	The TMS, Codian MCU, Expressway and Control all provide a great many features, many of which we don't currently use. It is questionable how significant these extra features are in the day-to-day operation of the Network. PC-based sharing (presentations, etc.) require a laptop/PC be connected to a cart (clunky).	Easier-to-use features, but far fewer than the hardware-based option. Still, the features we use the most are all present, plus you get easy-to-use content sharing by any participant.

	Hardware-based VCS	Cloud-based VCS
Recording	The Content Server is used here to make recordings. It records in standard formats. Because it is a remote server, though, one has to use Dropbox or a similar service to transfer the recordings off the server. Also, it's somewhat clunky to use.	Recording is easily turned ON and OFF. Standard video formats are used, and the resulting video file is stored on one's local computer. Easy to use. Some services charge for this and/or have limits on how long one can record at a time.
Cost	Expensive, both to buy AND to maintain. And, as noted below, you'll need at least a part-time IT person to run these components.	Zoom starts at \$10/mo. per "meeting room". H.323/SIP service is \$50/endpoint/mo. Other services are more expensive, but most are far cheaper than a Hardware-based system.
Complexity	Complicated to use, especially in the setup phase. An experienced IT and/or Videoconferencing expert is needed to setup and even maintain these servers. But even more simple things, like opening a virtual room on the Bridge, requires some training.	Easy to use. A minimum of web-based features to learn. No prior IT knowledge required. Lots of free support.
Interoperability	Designed to work primarily with standards-based systems like H.323 & SIP. Jabber accounts (SIP) allow PC-based connections, but the Jabber software has to be loaded onto the PC first.	Designed to work with most devices/standards. (With some services, H.323/SIP connections cost extra.) Easily works with PC's, MAC's, tablets, smart phones, etc.
Content Sharing	To share PC-based content, a PC/laptop must be first integrated into the endpoint (cart) – NOT convenient.	The "host" can share content with just a few clicks and can pass this ability to others in the conference. Easy to use.

Final Pros & Cons: Cloud-based Telehealth

PROS:

- Easier to use, both front and back end
- High quality A/V on a variety of devices
- Interoperability (H.323, PC, Apple, & Android)
- Easily used for ad-hoc meetings
- Easy Content Sharing
- One-touch Recording
- **...at 15% of the cost!**

CONS:

- Slightly less audio/video quality
- Slightly less security (by definition – servers are off-site), but still HIPAA compliant
- Have to maintain Operating Systems (Windows, etc.) on devices

Questions?

For further information, please contact

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