POLICY AND OPERATIONAL STANDARDS

KTHN009 – TECHNOLOGY AND NETWORK POLICY

Telehealth providers shall comply with the technology standards and network protocols established by the Telehealth Board when utilizing the Kentucky TeleHealth Network

BOARD REVIEW AND APROVAL – MARCH 25, 2014

The Kentucky Telehealth Network (KTHN) is a fully interactive video conferencing network focused on the delivery of direct patient encounters as well as administrative and educational programming for the benefit of all Kentuckians.

When the original KTHN legislation was passed in the 2000 legislative session, the original, eastern Kentucky-centric telemedicine network was expanded throughout the state to be a resource for all Kentuckians. KTHN is a decentralized network of networks designed to offer maximum flexibility for individual participating healthcare facilities, but also insure interoperability by standardizing on the H.323 international standard IP protocol for videoconferencing. If this network is to fulfill the original legislative intent, each network site must be able to participate in any network activity and this will require strict adherence to the H.323 protocol. While non-compliance with the H.323 standards may work within a sub-network, those sites, technically isolated from all other KTHN sites cannot serve the greater mission of KTHN to serve ALL Kentuckians.

The following policies have been established by the Telehealth Board for the Kentucky Telehealth Network:

- **Distributed Network Model**

    Every KTHN member site is responsible for the purchase, maintenance and operation of their technology, including videoconference devices, network infrastructure such as gateways, gatekeepers, video firewalls, bridges and medical peripheral devices. KTHN Telehealth Training Centers are available to support the development, deployment and operational work of the KTHN partners in any way possible to promote the widespread use of telehealth technology across the Commonwealth. Standardization on the H.323 international standard IP protocol will insure that all sites can interconnect with all other sites. Any KTHN member facility that utilizes technology outside the H.323 standard must deploy gatekeeper technology that converts those sites to H.323 compatible so the legislative intent of a statewide telehealth network is upheld.

- **Network Infrastructure**

    The decision regarding network infrastructure is left to the healthcare facility, but should allow at least 384Kbps of uncontested synchronous bandwidth for videoconferencing. Connections should be synchronous, allowing for this speed connection in both directions. Some connectivity, especially low cost offerings from the communication providers may have differences in

"upstream" and "downstream" connectivity speeds (asynchronous). Usually this is manifest in a slower connection from the endpoint to the public Internet and a much higher speed connection from the Internet, back to the endpoint. Great care must be taken to insure that both "upstream" and "downstream" connections have at least 384K uncontested bandwidth including all other data streams that may be running concurrently. It is not necessary that videoconferencing have its own dedicated circuit, but may share network resources within an organization, but it is critical to have sufficient bandwidth to insure appropriate quality of the videoconference transmission.

- **Utilization of Statewide 7-digit Network Dialing Plan**
  A. Video conferencing systems, including healthcare facilities, K-12 schools, higher education, and state government utilize the statewide 7-digit dialing plan. This plan allows any videoconference system or network infrastructure device, such as a videoconference bridge, to be assigned a simple 7-digit number for easy connectivity. The 7-digit network dialing plan is intended to simulate traditional telephone connectivity. It is believed that if videoconferencing is as easy as dialing a telephone, it will be much more broadly utilized.
  B. A publically accessible gatekeeper maintains the network dialing plan. Healthcare facilities "neighbor" their gatekeepers to the public gatekeeper to facilitate the statewide dialing plan.
  C. New sites that wish to participate should contact the University of Kentucky and are assigned a block of numbers to assign to devices in their network and to schedule the coordination of "neighboring" local gatekeepers to the public gatekeeper.

- **Endpoint Equipment**
  Endpoint equipment consists of a video CODEC (Coder/Decoder), audio/video input devices, specialized medical peripherals and audio/video output devices. Although the Telehealth Board has not standardized on specific manufacturers, the devices listed below are highly recommended.

  A. Video CODEC (Coder/Decoder)
     KTHN's CODEC infrastructure is primarily comprised of Polycom, Tandberg and Cisco devices. These are the most popular CODEC's and have proven to be reliable and cost effective. Other brands, specifically Lifesize, have shown some interoperability problems. Devices other than Polycom, Tandberg and Cisco should be thoroughly tested for interoperability.

  B. Video Input Devices
     Includes medical peripheral devices, such as ENT scopes, handheld cameras to increase the flexibility of the technology, document cameras, PACS systems, any device that captures and outputs radiological studies, computer outputs and any other device that sends a video image to the videoconference CODEC.

C. Video Output Devices

Includes the monitors that display the videoconference images

D. Audio Input Devices

Typically microphones, but could be anything that sends an audio signal across the videoconference device. Some stethoscopes run through the audio band of the videoconference device.

E. Audio Output Devices

Traditionally this is a speaker, often integrated into the monitor, but it could include a stethoscope that receives the audio signal through the videoconference system.

F. Stethoscope

There is no standard for tele-stethoscopy and so KTHN will not mandate any technology but allow the participants to select the best solution for their application and this may require both ends of the encounter to purchase the same equipment. It is suggested that KTHN member sites contact the Telehealth Training Centers to see what stethoscope technology other sites are using and to offer them input on any research that your organization may have done into this technology.

G. Emerging Technology

KTHN believes it is in the best interest of patients' overall well-being to receive care via proven technology. While KTHN encourages innovation, it is believed that standardization of interoperability and processes to provide needed care are essential for the patients we all serve and to protect the quality of services delivered.