

Telemedicine: An Introduction



Thao Bui, MA
Senior Coordinator
KU Center for Telemedicine & Telehealth
Clinical Psychology Doctoral Candidate
University of Kansas
tbui2@kumc.edu



Objectives

- To describe telemedicine
- To describe the range of telemental health applications in Kansas across different urban and rural settings
- To describe the advantages and challenges of telemedicine



Telemedicine is...

...the use of medical information exchanged from one site to another via electronic communications to improve patients' health status.



Telemedicine Services

•**Specialist referral services:** specialist assisting a general practitioner in rendering a diagnosis.

- A patient may see a specialist over videoconferencing
- Transmission of diagnostic images/video with patient data to a specialist
- radiology, dermatology, ophthalmology, mental health, cardiology, pathology

•**Patient consultations:** telecommunications to provide medical data (audio, still or live images) between a patient and a health professional for diagnosis and treatment

•**Remote patient monitoring:** devices collect and send data to a monitoring station for interpretation ("home telehealth" applications)

•**Medical education:** continuing medical education credits and special medical education remotely

•**Consumer medical and health information:** consumer use of the internet to obtain specialized health information and on-line discussion groups

www.americantelemed.org



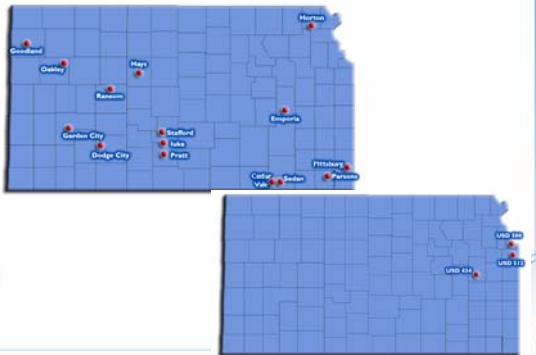
KUCTT Telemedicine Background



- Began in 1991 with a single connection to a community in western Kansas
- The Kansas telehealth network has grown to more than 70 sites across the state
- Over 28,000 clinical consultations have been conducted across 30 specialties
- KUCTT is one of the most active outpatient telemedicine programs in the world



KUCTT Sites



Telemental health rationale

- Access concerns:
 - Insurance barriers
 - Shortages with all mental health specialists
 - Inequities to access,
 - Travel costs and logistics
- Many treatment advances (new medications, empirically supported psychotherapy) BUT... specialists cluster in urban settings and academic centers
- Expensive peripherals not necessary



KS Dept of Health and Environment Mental Health HPSAs as of March 2008



Individual Telemental Health Clinics

- Approximately 1,000 telemental health consults/year
 - 300-500 school-based consults/year
- Psychiatry: child psychiatrists and fellows, both academic and community psychiatrists
 - Schools
 - Community Mental Health Center
 - Urban Daycare
 - Many other sites
- Psychology: psychologists, grad students, post docs
 - Schools
 - Area Health Education Centers
 - Rural health clinics
 - Many other sites
- Other—health psychology/prevention topics

Team-based Telemental Health Clinics

- TeleHelp Youth Depression Clinic:
 - Child psychiatry and child psychology in schools
 - School-based telemedicine services
 - School training in youth depression
 - Connected Kansas Kids resources
- Autism Spectrum Disorder:
 - Center for Child Health and Development team
 - Developmental pediatrician and child psychologist
 - Diagnostic clinic only
 - Recommendations given, referred to community resources



Advantages of Telemental Health

- Convenience! Convenience! Convenience!
- Collaboration among child, school, family, and providers
- Adolescents: previous experience with mode of communicating
- Specific anxiety disorders: may be less anxiety-provoking, greater sense of self-efficacy
- Decreased self-consciousness: more open and honest disclosure when provider is not in the same room
- Communication: patients ask more questions, doctors spend more time explaining and ensuring mutual understanding
- Confidentiality: seeing provider outside of small community



Starting a Telemedicine Service, Adapted from Myers, Cain, et al. 2008

- Evaluate the need
- Plan for sustainability over time
- Consider the model of care:
 - Direct service
 - Evaluation, treatment, both
 - Team based or individual clinic
 - Consultative only



Starting a Telemedicine Service, Continued

- Who will you serve? inclusion and exclusion criteria
- Buy-in
 - Practice
 - Personnel at all levels—administrative, clinical, support staff, billing, etc.
 - Community



Personnel Considerations

- Local side:
 - CHAMPIONS ARE KEY
 - Share “vision” or just an extra duty without support?
- Distant side:
 - What providers will meet your needs? Availability? Reimbursement?
- Technology support with healthcare understanding



Technology Considerations

- What technology meets both needs and budget constraints?
 - Equipment
 - Peripherals
 - digital/electronic stethoscope, otoscope, dermascope
 - Connectivity
- Secure, available space



Costs and Funding

- Equipment Costs
 - Have transitioned from room videoconferencing unit with PC/cart (\$8000) to smaller desktop units (from \$180+) when possible
 - Transition from ISDN to IP, utilize state network (KAN-ED); costs range from \$60 to \$800/month with IP
- Provider time—grant, contractual, billing
- Management costs—KUCTT & distant sites
- State funding
- Federal funding—e.g., Office for the Advancement of Telehealth (OAT)
- Foundation funding



Protocols

- Clear outline of process
 - Who will introduce the patient to the technology?
 - Contacting and scheduling with the provider and for the rooms
- Assents and consents
- Scheduled reviews to improve process and quality
- For best and worst case appointments
 - Safety concerns
 - Technology back-up plans
 - Interim care planning



Evolving toward reimbursement

- Research related to cost-benefit
 - The more you do over time, the more cost effective
- Reimbursement
 - Some insurance companies cover and some don't
 - Each patient should check with their individual insurance policies
 - Same Current Procedural Terminology (CPT) codes with "GT" modifier
- Reimbursement does not necessarily increase utilization (Spaulding & Timmerberg, 2008)



Evidence

- Research in toddlerhood and progressing
 - Whitten et al (2007)
 - Hersch et al (2006)
 - Myers, Cain, et al. (2008)
 - ATA telemental health guidelines (2009)
- KUCTT specific —

Feasibility suggestive but not definitive

- Satisfaction
- Diagnostic efficacy
- Child depression treatment
- Communication
- Guideline adherence
- Cost studies
- Organizational




Is telemedicine all about the *technology*?

- Technology not inherently good or bad
 - how professionals use it to their advantage
 - tool in the professional relationship
 - person driven rather than technology driven
- It is the extended reach of the technology **INCLUDING** new benefits and challenges



FUTURE

- Creative use of technology to meet the gaps in service provider availability with the ever expanding needs among underserved families
 - Technology and medical home
- New populations utilizing telehealth—ALS example
- New technologies such as home telehealth
- Integration clinic, continuing education, and training utilizing technologies




Additional Resources

KU Center for Telemedicine and Telehealth:

<http://www2.kumc.edu/telemedicine/>

American Telemedicine Association:

<http://www.americantelemed.org>

Midwest Alliance for Telehealth and
Technology Resources (MATTER):
<http://www.cteonline.org/TRC.html>



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Sponsored by KU Center for Telemedicine & Telehealth, Kansas and Midwest Alliance for Telehealth & Technology Resources.

For further details click the links below

http://www2.kumc.edu/telemedicine/HIT/HIT_Intro.htm

The logo for the KU Medical Center, featuring the letters 'KU' in a large, bold font above the words 'MEDICAL CENTER' in a smaller font, with 'The University of Kansas' written in a very small font below.
