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Definitions

- *“Telemedicine” is the use of medical information exchanged from one site to another via electronic communications to support*
 - Medical diagnosis*
 - Ongoing patient care*
 - Remote patient monitoring*
- *“Telehealth” encompasses a broader definition of remote healthcare that does not always involve clinical services*
 - Health-related distance learning*

Definitions

- *Telemedicine is not a new specialty*
- *Telemedicine is a tool to provide care when distance separates patients and providers.*

What role can telemedicine play?

- *Aging population*
- *Greater numbers of patients with chronic disease*
- *Greater numbers of uninsured*
- *Shortage of health professionals (>200,000 by 2020)*
- *Maldistribution of specialty care providers*
 - *Regions of Virginia report up to 26 specialty areas less than 75% of the state average*

Enhancing access



60% insured!

Telehealth applications

- *Videoconferencing for patient care*
- *Store and forward applications*
- *Telepharmacy*
- *Remote monitoring and home telehealth*
 - *m-Health*
- *Health information exchange*
- *Emergency preparedness/disease surveillance*
- *Distance learning*



Patients served: UVA program

- *>15,000 patient encounters*
- *>30,000 teleradiology readings*
- *Services in >30 different specialties*
 - *Emergency*
 - *Urgent*
 - *Single consults*
 - *Block scheduled clinics*
 - *Screenings with store forward technologies*
 - *New mobile digital mammography van*
 - *Retinopathy*

Partnerships to improve health

- *Academic-community hospital linkages*
- *Departments of Defense, Veterans Affairs*
- *Rural clinics (FQHCs, Veteran's clinics)*
- *Free clinics*
- *Health departments*
- *Correctional facilities*
- *School health*
- *Nursing homes*
- *Home telehealth*
- *Workplace*
- *Medical offices*
- *Retail clinics*





UVA specialty/subspecialty participants

Cardiology
Dermatology
Diabetes
Emergency Medicine
Endocrine
ENT
Gastroenterology
Genetics
Geriatrics
Gynecology
Hematology
Infectious Disease
Nephrology
Neurology
Neurosurgery
Ophthalmology
Orthopedics

Obesity
Oncology/Tumor boards
Pain management
Pediatric cardiology
Pediatric nephrology
Pediatric oncology
Plastic surgery
Psychiatry
Pulmonary medicine
Radiology
Rheumatology
Surgery
Thoracic/cardiac surgery
Toxicology/Poison control
Urology
Wound care



More than technology and numbers: Saving lives: Infant with Interrupted aortic arch

Dear Doctor

It is the right time during THANKS GIVING that we have to THANK YOU for saving DHEVA's life from the ravages of DiGeorge Syndrome. Any amount of thanks is not enough to express our gratitude, however this is the only way we can do it with a LITTLE card. GOD BLESS YOU ALWAYS.

Dheva Muthuramalingam



*More than technology and numbers:
Facilitating expert care*



Benefits of telehealth

Patients

- *Timely access to locally unavailable services*
- *Improved triage when transfer required*
- *Improved quality of care*
- *Reduced readmission for same diagnosis*
- *Improved chronic disease management*
- *Spared burden and cost of transportation when transfer unnecessary*

Benefits of telehealth

Health professionals

- *Access to consultative services*
- *Each consultation is inherently educational*
- *Access to continuing medical education*
- *Primary care oversight of patient care*
- *Reduces sense of isolation*

Benefits of telehealth

Rural communities

- *>85% of patients remain in local community*
- *Care in the community (lower cost) environment*
- *Enhanced healthcare/economic empowerment*

Society

- *Lower cost of care*
- *Improve outcomes*
- *“Green” technology*

Innovative → mainstream applications

- **Infant mortality – Virginia Productivity Investment Fund**
 - Arkansas Angels
 - Improve access to prenatal care
 - Reduce neonatal mortality, premature delivery (26% decrease)
- **Congenital heart disease**
- **Childhood asthma**
- **Childhood obesity**
- **School health and daycare applications**
 - Reduced ER visits, parental time away from work

Innovative → mainstream applications

- **Tele-ophthalmology**
 - Screening for diabetic retinopathy
 - Retinopathy of prematurity
 - ATA: standards
- **Tele-dermatology**
 - ATA standards
 - Store forward/live interactive
- **Tele-mental health**
 - Critical shortage of mental health providers



Innovative → mainstream applications

■ *Acute stroke*

- *Time is of the essence, TPA administered in < 3hrs*
- *Increased use from 4-23% in rural hospitals*
- *AHA/ASA consensus statement*

■ *Mobile digital mammography*

- *Increase access to screenings*
- *Early diagnosis*



■ *e-ICU[®]*

- *Hospital mortality and length of stay decreased 25%*

■ *Remote access to clinical trials and community based participatory research*

Chronic disease management

Remote monitoring and home telehealth

■ *Need*

- *Readmission rate within 90 days for Medicare beneficiaries > 30%*
- *MedPAC - \$7,200 dollars per readmission deemed preventable*

■ *Remote monitoring/home telehealth can reduce costs*

- *Congestive heart failure*
- *Diabetes*
- *Chronic obstructive pulmonary disease / asthma*

■ *VA care coordination/home telehealth*

- *19% reduction in hospital readmissions*
- *25% reduction in hospital days*



Role of the federal government Issues/solutions/challenges

- ***Funding of telehealth systems and projects***
- ***Reimbursement barriers***
 - *Medicare: very narrow coverage in non-MSA counties, only covers 21% of Medicare beneficiaries nationwide*
 - *Total expenditures over 5 years = \$2 million/year*
 - *Store and forward only for Alaska and Hawaii demo projects*
 - *Medicaid: no federal mandate yet Medicaid pays for transport*
 - *Other payers: VA, DoD*



Role of the federal government Issues/solutions/challenges

- ***Interagency mal-alignment of policies and definitions***
 - *Definition of rural (HRSA, USDA, FCC)*
 - *Conditions of participation standards for hospitals (CMS)*
 - *Credentialing and privileging at each site*
 - *Joint Commission (Telehealth standards, 2000/2004)*
 - *EMTALA*
- ***Licensure remains state determined other than DOD or VA***



Role of the federal government Issues/solutions/challenges

- *Telecommunications venue/costs (FCC, USDA, NTIA)*
 - *Universal service fund plays critical role*
 - *Rural healthcare program and pilot still underutilized*
 - *June 30 2009 :*
 - *Regular program \$61 million/yr; total \$249,483,000 since inception*
 - *Pilot program \$902,249 disbursed of >\$400,000,000 awarded*
 - *63% to Alaska*
 - *Recommendations:*
 - *Expansion of eligible entities, such as EMS*
 - *Cover Administrative costs*
 - *Cover all communications services*



Role of the federal government Issues/solutions/challenges

- *Fund research projects related to telehealth (NIH)*
- *Cost effectiveness and savings (ONC, AHRQ)*
- *Industry standards (NIST)*
 - *ATA Practice guidelines developed with specialty groups*
 - *Continua Health Alliance – vendors pledge interoperability*

Future of telehealth

- *Demonstration projects (ARRA)*
 - *Sustainability of federal investment*
- *Sound federal policies to facilitate sustainability*
- *Integration into mainstream medicine*
 - *Medicare*
 - *Medicaid*
 - *National health reform*
 - *Private pay*

Enhancing access

