The Use of Telemedicine In Pediatric Care

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What is Telemedicine?

- Interactive health care over distance using telecommunications technology
  - Live-interactive (synchronous)
  - Store-and-forward (asynchronous)
  - Remote patient monitoring (RPM)
Telemedicine

Regionalization improves efficiency and quality

Telemedicine allows our expertise to be everywhere
Clinical Applications

- Outpatient specialty consultations
- Interpretation of procedures-studies (ophthalmology)
- Inpatient and ICU specialty consultations
- Live operative and procedural consultations
- EMS: Scene, transport, ED consultations
- Home Health (CHF, DM, CRF, etc.)
- Other uses:
  - Continuing education
  - Video-interpreting
  - Day-care centers
  - Palliative Care
  - International
  - Chronic care facilities
  - Connecting families
  - Hospice
### Examples of Telemedicine Services

- Allergy
- Audiology
- Burn
- Cardiology
- Child Development
- Dermatology
- Endocrinology
- Gastroenterology
- Genetics
- Hematology
- Hepatology (Hepatitis A-E)
- HIV/AIDS
- Infectious Diseases
- Nephrology
- Neurology
- Neurosurgery
- Nutrition
- OB/GYN
- Occupational Medicine

- Oncology
- Ophthalmology
- Orthopaedic Surgery
- Orthopaedics
- Otolaryngology
- Pain Management
- Palliative Care
- Pediatric Cardiology
- Pediatric Critical Care
- Pediatric Dermatology
- Pediatric Endocrinology
- Pediatric Gastroenterology
- Pediatric Genetics
- Pediatric Hematology/Oncology
- Pediatric Nephrology
- Pediatric Neurology
- Pediatric Obesity

- Pediatric Otolaryngology (adolescents)
- Pediatric PM&R
- Pediatric Psychology (adolescents)
- Pediatric Rheumatology
- Pediatric Sexual Abuse QA
- Pediatric Urology
- Plastic Surgery
- Podiatry
- Psychiatry
- Psychology
- Pulmonary
- Rheumatology
- Surgery
- Surgical Oncology
- Transplant
- Urology
Outpatient Telemedicine

- Patient centered
- Increased quality
- Educational
  - Increased capacity
  - Reduced referrals
- Increased efficiency
- Can reduce costs
  - Fewer tertiary resources
  - Fewer tests
  - Fewer transfers
Emergency and Inpatient Telemedicine

- Community & Rural EDs
  - 23 EDs for sick children
  - 24/7 MD & Tech support
  - Tele-stroke
- Community & Rural Inpatient Wards
  - Subspecialists
- Community & Rural L&Ds, ICUs
  - Neonatology + 5 subspecialty groups
Telemedicine in the ED
Telemedicine in the ED
Parent Satisfaction

Remote Provider Survey

Quality of Care
Implicit Review; Multivariable Analysis; Adjusted for age, PRISA, time

Medication Errors
Pharmacy Review; Multivariable Analysis; Adjusted for age, PRISA, time

Cost Savings & Effectiveness

- The mean cost for a telemedicine consultation:
  - $2,096/child/Rural ED/year
- 31% lower transfer rate among similarly ill children receiving telemedicine compared to telephone consults
- Telemedicine consultations cost-saving
- Assuming 10 seriously ill children/year receiving telemedicine results in cost-savings of $38,366/year
- For every dollar invested in the telemedicine program, society saved twelve dollars
Tele-Nursery/NICU
Tele-Nursery/NICU
Other Pediatric Services

• Tele-audiology
• Tele-cardiology
• Tele-SART
• Tele-interpreting
• “Family-Link”
• School telehealth
Conclusions & Thank You

- Telemedicine can address disparities in access
- Access improves satisfaction, safety & quality
- Access can result in significant cost savings

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