Children’s Hospital Colorado Telehealth

Improving Specialty Care Access & Integration through Telehealth, eConsult and ECHO: Rational Healthcare for the 21st Century

Definitions

- **Telemedicine**: patient care using telecom technology
- **Telehealth**: health care using telecom technology; includes patient care, health education, etc.
- **ECHO** – Extension for Community Health Outcomes
- **eConsult**: patient specific e-enabled encounter – no payment mechanism
- **Originating Site**: patient location
- **Distant Site**: provider location
- **Store-and-forward (asynchronous)**: non-real-time data transfer such as remote interpretation of a photo
- **Synchronous**: real-time data transfer such as a video conference
The Medico-Legal Environment

- In-person standard of care = telehealth standard of care
- Most laws & regulations enacted at the state level
- CMS guidance exists but state Medicaid policies often go farther
- CO, WY, MT & NM are telehealth-friendly; NE catching up
- HIPAA violation fines are real & expensive
- Malpractice coverage needs to cover telemedicine at the patient’s location (this is a problem in KS)
- Few lawsuits: this is good, but little legal precedent
- Policies & regulations in effect at both Anschutz & the patient’s location apply to telemedicine encounters

Compliance

- All licensing, privileging and medical practice laws/requirements are based on the location of the patient at the time of the encounter!
- Credentialing by proxy available since 2011 (not currently using it but probably will in future)
- Specific payer requirements for successful billing
- Informed consent
- HIPAA & HITECH
  - .telehealthoutpt, .telehealthdcxfer, .telehealthgeneric
- Telemedicine departments in Epic
- Telehealth menu in Charge Capture
- Generally, time-based coding with a modifier
The Financial Environment

- Colorado Medicaid & commercial payers have to pay for telehealth on-parity with in-person care, but...
  - Federal plans (Medicare & Tricare), self-funded plans, and plans originating outside CO are exempt
  - Other states have different rules
  - They typically only cover live-video encounters
  - CO Medicaid allows home-based visits as of Nov, 2016
- Most pts have coverage but every plan is unique. We expect pts to verify coverage (like for in-person care).
- Our billing success rate comparable to in-person care, but we target services likely to be reimbursed & CU Medicine has successfully appealed denials.

ECHO Act

Asks the Secretary of Health and Human Services to study the impact on:

- **Conditions**: Mental and substance use disorders, chronic diseases and conditions, prenatal and maternal health, pediatric care, pain management, and palliative care
- **Workforce**: Health care workforce issues, such as specialty care shortages and primary care workforce recruitment, retention, and support for lifelong learning
- **Public Health**: Implementation of public health programs, including those related to disease prevention, infectious disease outbreaks, and public health surveillance
- **Rural and underserved**: Delivery of health care services in rural areas, frontier areas, health professional shortage areas, and medically underserved areas, and to medically underserved populations and Native Americans
The Report Must Include:

• Analysis of:
  i. The use and integration of such models by health care providers
  ii. Impact on health care provider retention, including in health professional shortage areas
  iii. Impact on the quality of, and access to, care for patients
  iv. Barriers faced by health care providers in adopting such models
  v. Impact on the ability of local health care providers and specialists to practice to the full extent of their education, training, and licensure; including the effects on wait times for specialty care
  vi. Efficient and effective practices, including potential cost effectiveness

• A list of such models funded by the Secretary in the prior 5 years
• Recommendations to reduce barriers for using and integrating such models
• Opportunities for increased adoption of such models into programs of HHS
• Recommendations regarding the role of such models in continuing medical education and lifelong learning

Integrated Telehealth Delivery
Patient-centered services aimed at less disruptive healthcare

Day 1
Care Conference with referring MD
Urgent/Emrgent Care (Neurotrauma/NOCPsyh)
Integrated Community Care Coordination

Day 0
Visitvation (BabyChat)
Intra-hospital Specialty Consults
Transfer/Decision-making

Day 1
Resolving concerns
Intra-hospital Care
Rx Reconciliations
Condition management
Discharge Planning
MyChart Patient Engagement

Day 30
ECHO
POC provides advice and guidance to PCP
Weares
Home monitoring
Patient symptom management
Re-admit Prevention
Care Coordination
Extended hours -Remote F/u
Portals
Engaging PT in self-management

Day 60, 90...
PCMH-based care
ECHO - MD CASE & Chronic disease management
Clinical Decision Support
Community MD learn best practice and at top of licensure
MO/IN CME
Referral tracking
Peer-Learning Network
### Rational Healthcare Delivery Spectrum

<table>
<thead>
<tr>
<th>Relationship</th>
<th>IN PERSON CARE</th>
<th>TELEMEDICINE</th>
<th>eCONSULT</th>
<th>ECHO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specialist - Patient</td>
<td>Specialist - Patient</td>
<td>Specialist - PCP</td>
<td>Specialist Team – PCP Cohort</td>
<td></td>
</tr>
<tr>
<td>Cost</td>
<td>$$$</td>
<td>$$</td>
<td>$$</td>
<td>$</td>
</tr>
<tr>
<td>Frequency</td>
<td>1-2 times per year</td>
<td>1-2 times per year</td>
<td>as needed</td>
<td>as needed</td>
</tr>
<tr>
<td>Platform</td>
<td>In-Person</td>
<td>Video-Conference</td>
<td>Web-based Software</td>
<td>Video-Conference</td>
</tr>
<tr>
<td>Location</td>
<td>Hospital or Clinic</td>
<td>Primary Care, School or Home</td>
<td>Anywhere</td>
<td>Anywhere</td>
</tr>
<tr>
<td>Convenience</td>
<td>★★★★</td>
<td>★★★</td>
<td>★★★★</td>
<td>★★★★</td>
</tr>
<tr>
<td>Population Health Connection</td>
<td>★★</td>
<td>★★★★★</td>
<td>★★★★</td>
<td>★★★★</td>
</tr>
<tr>
<td>Force Multiplier</td>
<td>★★★★</td>
<td>★★★★</td>
<td>★★★★</td>
<td>★★★★</td>
</tr>
</tbody>
</table>

### Child Health Programs Using Telehealth 2016

- ADOLESCENT MEDICINE
- ALLERGY
- BARBARA DAVIS CENTER
- CoYoT1
- CARDIOLOGY
- CCBD – CANCER SURVIVOR
- CHILD PROTECTION TEAM
- ENDOCRINOLOGY
- FETAL CARE
- GASTROENTEROLOGY
- HEMOPHILIA THROMBOSIS CTR
- INFECTIOUS DISEASES - CHIP
- LIFESTYLE MEDICINE
- GENETICS/ METABOLIC
- NEONATOLOGY
- NEUROLOGY
- NEUROSURGERY
- NUTRITION
- PAIN PSYCHOLOGY (ANESTHESIOLOGY)
- PSYCHIATRY
- PULMONOLOGY
- REHAB - NEURO PSYCH
- SIE CENTER
- SPEECH/LEARNING SERVICES
- TRANSPLANT PSYCHOLOGY
- UROLOGY
ECHO Programs 2016

• **Clinical**
  - Pediatric Epilepsy
  - Developmental Behavioral
  - Complex Care Pediatrics
  - Hepatitis C
  - Child Abuse and Neglect
  - HIV
  - Neurology
  - Depression and Anxiety
  - Nursing Practice Support
  - TB Management
  - Cancer Survivorship

• **Population Health**
  - Patient Navigation
  - Pharmacy Integration in PCMH
  - Obesity Prevention and Nutrition
  - Quality Improvement for Local Public Health
  - Food Safety
  - Tobacco Control
  - Natural Gas Oil Exploration

• **Research and Grants**
  - AHRQ MA Opioid Training RCT
  - PCORI Palliative Care RCT -app

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The Clinical Utility of Telemedicine in Pediatric Mental Health Emergencies in the ED/UC Setting

John F. “Fred” Thomas PhD
**Results: Transfer Rate**

- Near 50% decrease in need for patient transfer with telemedicine

![Transfer Rate Diagram]

**Results: Length of Stay**

- 29% of telemedicine patients had a length of stay of less than 4 hours compared to 11.6% who received traditional care
  - 29% vs 11.6%, p < .0001
- 75% of telemedicine patient had a length of stay of less than 8 hours
- 52% of traditional care patients had a length of stay of over 8 hours

<table>
<thead>
<tr>
<th>Total Length of Stay (Hours)</th>
<th>Telemedicine Mean (SD) N = 232</th>
<th>Traditional Mean (SD) N = 268</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 4</td>
<td>67 (28.9%)</td>
<td>31 (11.6%)</td>
</tr>
<tr>
<td>4.1 - 8</td>
<td>107 (46.1%)</td>
<td>98 (36.7%)</td>
</tr>
<tr>
<td>8.1 - 12</td>
<td>37 (16.0%)</td>
<td>51 (19.1%)</td>
</tr>
<tr>
<td>12.1 - 20</td>
<td>11  (4.7%)</td>
<td>62 (23.2%)</td>
</tr>
<tr>
<td>20 (+)</td>
<td>10  (4.3%)</td>
<td>25 (9.4%)</td>
</tr>
</tbody>
</table>
**Results:** Patient & Provider Satisfaction
- Over 98% of patients, parents and providers were very to extremely satisfied with the tele-behavioral health program

![Satisfaction Chart]

**Results:** Economic Efficiency
- Median charges for the two groups were significantly different ($3,493 vs. $8,611, p<.001)

![Median Charges Chart]
CoYoT1 Clinic: Diabetes Care from Your Sofa – Increasing access through use of web-based video conferencing (Colorado Young Adults with Type 1 Diabetes)

• Cari Berget, John F. Thomas, Kaitie Ketchum, Cindy Cain, Jennifer K. Raymond
• *Authors have Nothing to Disclose

University of Colorado Anschutz Medical Campus
Barbara Davis Center for Childhood Diabetes
TELEMEDICINE for Subspecialty Care in Rural Colorado

- Thomas, et al. (2016)

Subspecialty care in rural Colorado

- Started telemedicine May 2012
- Current sites:
  - Casper, Cheyenne, Jackson Hole, WY
  - Billings, MT
  - Durango, CO, Grand Junction, CO, Rifle, CO, Glenwood Springs, CO, Montrose, CO, etc.
- This study covers the Durango site, 2015
- All existing CHCO/PPSW subspecialty patients eligible for study
- Study participants complete a questionnaire regarding:
  - Their experience with telemedicine
  - Demographics: age, zip code, # visits, type of visits
Table 2. Estimated Patient Travel Costs and Cost Differences for Telemedicine-enabled service. CHCO=Children’s Hospital Colorado. PPSW=Pediatric Partners of the Southwest.

<table>
<thead>
<tr>
<th>Cost/Time Details</th>
<th>Data details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average travel time (RT) for in person visit to CHCO</td>
<td>430 minutes</td>
</tr>
<tr>
<td>Round trip Miles for in person visit to CHCO prior to telemedicine availability</td>
<td></td>
</tr>
<tr>
<td>Less than 20</td>
<td>146.27, SD 47.23, range: 242-681</td>
</tr>
<tr>
<td>Greater than 20 and less than 100</td>
<td>120 (100%)</td>
</tr>
<tr>
<td>Greater than 100 and less than 200</td>
<td>14 (11.6%)</td>
</tr>
<tr>
<td>Greater than 200 and less than 1,200</td>
<td>14 (11.6%)</td>
</tr>
<tr>
<td>Average travel time (RT) for in person visit to PPSW in Durango</td>
<td>70 minutes</td>
</tr>
<tr>
<td>Average Miles for care via telemedicine PPSW</td>
<td>31, SD 46.92, range: 1 – 424</td>
</tr>
<tr>
<td>Round trip Miles to/from telemedicine enabled appointment in Durango at PPSW</td>
<td></td>
</tr>
<tr>
<td>Less than 20</td>
<td>45 (37.2%)</td>
</tr>
<tr>
<td>Greater than 20 and less than 100</td>
<td>14 (44.6%)</td>
</tr>
<tr>
<td>Greater than 100 and less than 200</td>
<td>14 (11.6%)</td>
</tr>
<tr>
<td>Greater than 200 and less than 1,200</td>
<td>8 (9.6%)</td>
</tr>
<tr>
<td>Average time lost from work/school for traditional, in person clinic visit at CHCO</td>
<td>1.68 days</td>
</tr>
<tr>
<td>Average travel time (RT) for telemedicine appointment</td>
<td>0.08 days</td>
</tr>
<tr>
<td>Average family cost per person visit to Children’s Colorado (wages, general travel expenses: mileage, hotel, food)</td>
<td>$170.00</td>
</tr>
<tr>
<td>Total savings attributable to families for trips saved through telemedicine</td>
<td>$94,555.26</td>
</tr>
<tr>
<td>Total time savings gained by families through telemedicine</td>
<td>270 days</td>
</tr>
<tr>
<td>Total miles saved</td>
<td>109,237</td>
</tr>
</tbody>
</table>
Online Resources

- Center for Connected Health Policy [http://cchpca.org](http://cchpca.org)
- ECHO Colorado [https://echocolorado.org/](https://echocolorado.org/)
- Center for Telehealth and eHealth Law [http://ctel.org](http://ctel.org)
- Telehealth Resource Centers [http://www.telehealthresourcecenter.org](http://www.telehealthresourcecenter.org)
Questions?

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