Expanding Pediatric Care with Telemedicine

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Disclosures

I have no financial relationships or conflicts of interest to disclose
Goals of this presentation...

- We are all members of the choir....
- Share opportunities from our Pediatric Telehealth Program...
UC Davis Telemedicine

- >40,000 Total
- >6,000 Pediatric
- >85 sites/year (of 125 sites)

Pediatric Telehealth recognized as “Strategic Priority”
Applications in Pediatrics

- Outpatient consultations
- Inpatient & ICU consultations
- ED-Trauma consultations
- Procedure-Study interpretation (Echo, EEG)
- Home monitoring (DM, Asthma, CHF)
- International medicine
- Chronic care facilities
- Palliative care & Hospice
- School & daycare centers
UC Davis Pediatric Telemedicine

18 Clinical Services
- Cardiology (Inpatient)
- Cardiology (Outpatient)
- Critical Care
- Dermatology - Store and Forward
- Emergency Medicine
- Endocrinology
- Gastroenterology
- Genomic Medicine
- Hematology/Oncology
- Infectious Disease
- Nephrology
- Neurology
- Neuromuscular Disease Medicine
- Otolaryngology Cleft and Craniofacial
- Psychology - Medical Health and Behavior
- Psychiatry - Mental Health and Evaluations
- Pulmonary

Additional Services
- Behavior pediatrics (PCIT)
- Tele-audiology (audiologists)
- Cleft lip/palate – lactation
- PM&R – PT/OT/SLP
- Family Link and Tele-Baby
Outpatient Telemedicine

- Patient & Provider centered
  - 4 Rooms - 3 Staff in clinic
  - All use referral guidelines

- Outreach Team
  - Contracted vs FFS
  - Implementation team

- Opportunities
  - Referral process
Inpatient Telemedicine

- Inpatient wards
  - Seven pediatric subspecialty groups

- Newborn Nurseries and NICU
  - PEANUT: Pediatric Emergency Assistance to Newborns Using Telemedicine
  - Six pediatric subspecialty groups

- Variety of Contracted Rates
PEANUT: Nursery - NICU
NICU Telemedicine
Pediatric Tele-Emergency

- Began in 2000
- 28 sites (24 are “active”)
- Integrated into existing process flows
- >400 consults to date
- Our docs WANT TO USE IT
Impact of Telemedicine Consultations

- Quality of Care
- Medication Errors


Impact of Telemedicine Consultations

- More appropriate admission versus discharge
  - 10-20% fewer transports using telemedicine
  - Reduced Observed to Expected Admission Ratios

- Lower costs of care
  - cost reduction of $4,662 per child/ED/year


Economic evaluation of pediatric telemedicine consultations to rural emergency departments, Med Decis Making. 2015
Importance of Receiving Care in Local Community

- RNs - RTs
- Parents
- Referring Physicians

Extremely Important
Important
Important - Not Important
Not Important

Percent
UC Davis Pediatric Telemedicine Program

Additional Services

- Behavior pediatrics (PCIT-MIND)
- Tele-audiology (audiologists)
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Parent Child Interaction Therapy

- 34 of 58 counties in CA
- 6 States in USA
- 4 Countries outside USA
- 50% of training done over telemedicine
Tele-Audiology Services

- Northern California:
  - 2012: ~20% LTFU
  - 2014: 0% LTFU

- Appointments:
  - External exam; Video otoscopy; Immittance; Tympanometry; Middle ear muscle reflexes; DPOAEs; ABR; and ASSR
Case Conferences

- Outpatient medical teams (cancer)
- Inpatient medical teams (cardiology)
- Primary Care Network – Mental Health
School Based Telehealth

- Telehealth Assistants at the school or child care center
- >40 Sites
  - Primary care offices
  - Child care centers
  - Elementary schools
  - Group homes
- >14,000 visits
Matched Controls Telemed Children

Annual visits per 100 children

23% fewer ED visits
Remote Patient Monitoring

- 25% of population = 75% of costs
- Children with special healthcare needs
  - Cyanotic CHD, DM, Asthma
  - Home ventilation
  - Palliative care
Telehealth: The Good...

POLICY STATEMENT

Organizational Principles to Guide and Define the Child Health Care System and/or Improve the Health of all Children

The Use of Telemedicine to Address Access and Physician Workforce Shortages

COMMITTEE ON PEDIATRIC WORKFORCE
Revenue for the Children’s Hospital

- Pre-Post Children’s Hospital Analysis:
  - Hospital-Physician payments: 16 hospitals (2003-10)
- 2,029 children transferred
  - 143 pre-telemedicine/year
  - 285 post-telemedicine/year
- Mean hospital revenue: $2.4 million to $4.0 million/yr
- Mean professional revenue: $313,977 to $688,443/yr
- Following telemedicine
  - Hospital revenue increased $101,744/year
  - Professional billing revenue increased $23,404/year
Barriers to Realizing Benefits

- Regulations
  - Hospital credentials-privileging
- Busy physicians-nurses
- Engaging the physicians
- Engaging the consumers
Barriers to Realizing Benefits

- Aligning investments with savings
  - Volume Based → Value Based
  - Who is saving the money?
  - Funding the equipment, telecommunications, personnel
Direct to Consumer Telemedicine
## It’s all about cost savings...

<table>
<thead>
<tr>
<th>Insurance Provider</th>
<th>Online Doctor Consultation Vendor</th>
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<tbody>
<tr>
<td>UnitedHealthcare</td>
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<td>Live Health (AmWell Platform)</td>
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$6 Billion annual savings if telehealth fully implemented

Towers & Watson

Insurance Provider:
- UnitedHealthcare
- Anthem
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- Medical Mutual

Online Doctor Consultation Vendor:
- Dr. On Demand & AmWell
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UC Davis Children’s Hospital
Is this “good” care?

- Medical Home
- Physician patient relationship
- Access to medical record
- Limited physical exam
- No diagnostic testing
- Quality & Safety
- Most records not delivered to PCP
Is this “fair” care?

- Addressing disparities?
  - Privately insured, employer based plans
  - Significant co-pay
- Equal payment to PCPs
- Increased utilization?
Is this “quality” care?

- Data is limited...
- UTI Symptoms
  - N=99 eVisits
  - N=2,855 PCP
- eVisit Cost: $74
- Office Cost: $93
Is this "quality" care?

- CalPERs data

  - Avoiding antibiotics for acute bronchitis
    - 28% in person versus 17% of eVisits (p<0.01)
  - Avoiding imaging for low back pain
    - 79% in person versus 88% of eVisits (NS)
  - Testing for uncomplicated acute pharyngitis
    - 50% in person versus 3% of eVisits (p<0.01)
What I Hope Was Helpful...

- Opportunities to improve existing models
- Not just for physicians
- Often a great business model
- Barriers remain
- DTC - Consumers demanding it
- Threats to the medical home
THANK YOU

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