Telehealth and Value in Primary Care

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Value of Telemedicine-Enhanced Care

Wakening from naptime, temp 104.

Age 6 mo., dropped off at childcare, 7:30 this morning.

Diagnosis: acute otitis media
Outcomes that Matter: Family Perspective

**Usual Care**
Child seen 4 hr later
First dose of medication 6 hr later

**Patient to Provider Telemedicine**
Child seen now
First pain medication now
First antibiotic 1-2 hr later
Cost to the Family and Community

**Usual Care**
- Office, Urgent Care or ED exam room space
- Personnel costs: nurses and med-techs
- Parent misses ½ day of work
- Transportation costs (ambulance)
- Parking cost
- Payment for ED visit: $650
- Medication costs
- Provider cost

**Patient to Provider Telemedicine**
- Little or no cost for patient exam room space
- Patient-end equipment and connectivity
- No incremental cost for provider space or equipment
- Personnel costs: med-tech (telemed assistant) and scheduler
- No transportation or parking cost
- Parent misses no work
- Payment for telemed visit: $75
- Medication costs (equal)
- Provider cost (equal or less)
Relative Value:
Family and Community Perspective

Telemedicine $\gg$ Usual Care

- Benefits
- Cost

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- Cost
Effectiveness:
Absence from Child Care Due to Illness

Net impact of telemed: 63% reduction
*Absence due to illness in mean days per week per 100 registered child-days.

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Effectiveness and Efficiency: Summary

- Reduction in absence from child care due to illness: 63%
- Visits completed > 14,000
- In child care, schools, center for special needs children, neighborhood/after-hours sites > 70 sites
- Completion rate: 97% (3% referred to higher level of care)
- Would otherwise have gone to ED, Urgent Care or office: 94%
- Allowed parent to stay at work/school: 93% (estimated time saved = 4.5hr/visit)
Effectiveness and Efficiency: Summary

• Continuity with Primary Care Medical Home: 83%

• Provider participation:
  – primary care practices = 10
  – providers > 70

• Local payer reimbursement:
  – City children covered ~ 90% (Medicaid managed care, Commercial)
  – Not yet paying: FFS Medicaid ~6%
  – Uninsured ~ 4%
Effectiveness and Efficiency: Potential

- Observed reduction in ED visits:
  - Fewer among children in regular city elementary schools and childcare - at least 22%
  - Fewer among special needs children attending a child development center - almost 50%

- Pediatric primary care office visits appropriate for telemedicine = 85%

- Pediatric emergency department visits appropriate for telemedicine = 40%
Newer Primary Care Models

Pediatric Acute-Illness Care
- Neighborhood/after-hours access - avoid ED

Pediatric Chronic Problem Care
- Asthma management – avoid school absence, ED, hospital
- ADHD management – avoid grade retention, school dropout

Pediatric Dentistry
- Dental screening – avoid extensive dental work, tooth loss

Geriatric Acute-Illness Care
- Senior Living Communities - avoid ED, hospital
- Home-based monitoring – detection deterioration early, avoid ED, hospital
Primary Care Applications

• Unlimited

• Health care is fundamentally a process of information acquisition, interpretation and exchange

• At some point in the care process for any problem, it is advantageous to patients to engage at a distance.
Barriers

- Deeply entrenched care process
- Human response to uncertainty
- Provider scarcity
- Fee-for-service financing
- Productivity measured as units of service
- Lack of relevant regulations
- Lack of established “best practices”
Value and the Continuums of Information Requirements and Capacity

**Level 1:** Telephone only

**Level 2:** Telemedicine light: Videoconference

**Level 3:** Info-Abundant Telemedicine

**Level 9:** Medical Center

Information required for diagnosis and management decisions: Scope and quality

Capacity to acquire and exchange information: Scope and quality

Avoidable cost

Avoidable risk

Value Zone

Abundant Requirements

Abundant Capacity

Spare
Facilitators

- Organize into Integrated Practice Units (IPUs)
- Measure and focus on outcomes that are most meaningful to patients
- Cost-based accounting
- Bundled payment for care cycles
- Enabling information technologies (the continuum)
- Care guidelines (“best practices”) and regulations enabling all the above
20,000 Foot Perspective

- Disruptive innovation – Clayton Christensen
- Creative destruction – Joseph Schumpeter

- “All costs are variable in the long run”