Telehealth Overview: Implications for Cancer Care

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Disclosures

UC Davis has no financial interest in any of the technology companies featured in this presentation.

Inclusion of technology in pictures is offered as an example, not a vendor endorsement.
What is “UC Davis Health”

- Single hospital academic health system
  - School of Medicine
  - Betty Irene Moore School of Nursing
  - Practice Management Board
  - UC Davis Medical Center and Primary Care Network

Research  Clinical  Education  Service
History of telehealth at UC Davis

- 1992: Tele-fetal monitoring
- 1996 - 2005: Video telemedicine implemented with three sites and three specialties. Steady growth outpatient and inpatient services
- 2005-2015: Emphasis on statewide efforts
- 2015- now: Refining our telehealth strategies to fit today’s demand and prepare for the future
Outpatient and Inpatient Telehealth Services

**Pediatric Specialties**
- Behavior & Development
- Cardiology
- Critical Care
- Dermatology – Store & Forward
- Emergency Medicine
- Endocrinology
- Gastroenterology
- Genomic Medicine
- General Pediatrics
- Hematology/Oncology
- Infectious Disease
- Nephrology
- Neonatology
- Neurology
- Neuromuscular Disease Medicine
- Otolaryngology (cleft & craniofacial)
- Psychiatry
- Psychology – Medical Health & Behavior
- Psychology – Mental Health & Evaluations
- Pulmonary
- Urology

**Adult Specialties**
- Cardiology
- Dermatology – Store & Forward
- Emergency Medicine
- Endocrinology
- Genomic Medicine
- Hepatology (Hepatitis)
- Infectious Disease
- Nephrology
- Neurology
- Neuromuscular Disease Medicine
- Neurosurgery
- Nutrition
- Ophthalmology – Store & Forward
- Orthopaedics
- Otolaryngology
- Perinatology
- Psychiatry
- Pulmonary and Critical Care (Inpatient)
- Rheumatology
- Thoracic Surgery
- Trauma
- Urology
What’s in a name??
Digital health/Connected health/eHealth/mHealth/telehealth
Why do organizations pursue different telehealth modalities
  Market
  Mission
  Revenue
  Population health management
  Brand
  Access
  Quality

What is the value proposition related to the telehealth service?

How do our organizations respond to the dynamic health policy environment and increasing expectations of consumers?
The plan for this session

A stroll through the most common use cases in Telehealth discussing the potential value statements and a quick overview of program planning tactics
Inpatient and Outpatient Consultation
Alaska Federal Health Care Access
Case originated...
Alaska Federal Health Care Access

...Case received.
Synchronous Telemedicine, often scheduled
Asynchronous Telemedicine
Most commonly reimbursed telehealth service

Medicare Claims for Telehealth

$13.9M
2014 Medicare reimbursements under its Part B telehealth benefit

108,000
Billed services to Medicare alone in 2012

55+
Specialties represented in Medicare Claims

604%
Growth

$17.6 M
• Clinical Consultations

Psychiatry

• Diagnosis agreement high between face-to-face and telepsychiatry assessment for ED psychiatry patients
  Seidel et al. 2014;

• Psychiatric consultation and short-term follow-up can be as effective when delivered by telepsychiatry as when provided face to face.
  O'Reilly et al. J. Psychiatr Serv. 2007
Inpatient Critical Care: consultative model

UC Davis PICU

- Mortality and length of stay outcomes were equivalent to PICU benchmarks
Tele-stroke
• Efficacy of site-independent telemedicine in the trial: a STRokEDOC randomized, blinded, prospective trial


• A review of the evidence for the use of telemedicine within stroke systems of care: a scientific statement from the American Heart Association/American Stroke Association.
eICU
• High cost / high opportunity care setting
• Goal is to increase timeliness of care and access to specialists
• Monitoring systems that track patient status, send alarms when status changes and permits full audio-visual communications
5-year study examined the impact of an tele-ICU on 118,990 patients across 56 ICUs

Conclusion: “ICU telemedicine interventions, specifically interventions that increase early intensivist case involvement, improve adherence to ICU best practices, reduce response times to alarms, and encourage the use of performance data, were associated with lower mortality and LOS.”
eConsults
A structured electronic message exchange designed to triage consultations and to increase partnership between primary care providers and specialists
Thank you for referring Mrs. X, a 41-year-old female with incidentally noted pulmonary nodule. I note that she is a non-smoker and does not have any ongoing signs of shortness of breath, cough, chest pain, weight loss or night sweats. She is not on any medications and does not appear to have any chronic respiratory conditions such as asthma or COPD. I also note from the medical record that she lived in Ohio while attending college. Her nodule is very discrete and solid measuring 4.4 mm. The next best course of action is to assess her risk of these nodules representing an early form of malignancy. Overall, your patient is at low risk for lung cancer in the future. She is young, a non-smoker, has normal appearing lung parenchyma on the CT scan and she spent time in an area where granuloma formation would not be uncommon. The size of her nodule is less than 4 mm and purely based on the size her risk of malignancy is <1%. This combined with her low clinical risk leads me to recommend the following:

- No further testing is required, no surveillance imaging is recommended.

Thank you for this interesting eConsult
Los Angeles Safety-Net Program eConsult System Was Rapidly Adopted And Decreased Wait Times to See Specialists.

Median time to an electronic response from a specialist was 1 day and 25% of consultations were resolved without a specialist visit.
Remote Monitoring
In an ideal situation, complete information about patients with chronic disease, including physiologic information, would be captured in a database and available to health care providers.
Traditionally we have used the same process of care for managing chronic disease as we have used for acute illnesses.
The VA's telehealth program:
• 59% reductions in bed days of care
• 35% reduction in hospital admissions
• 84-95% patient satisfaction rates
• saved an estimated $2,000/person/y

...since 2005

A. Darkins, 2013
Convergence of sensors, clothing and jewelry

- pulse oximetry, blood pressure, heart rate, glucose monitoring, etc
- Fashion addresses the stigmata of care
- Self-management and patient-centered care
Direct to Consumer
• Patient-requested consultation (email or video) for urgent clinical encounter
• May or may not be reimbursed or sponsored by payers
• Large growth marketing sparking significant debate
• Market demand driven by expectations of convenience and accessibility
• Newer emergence of other convenient care options: lactation support, behavioral health, health coaching
Asynchronous Consultations
(aka “store and forward” telehealth)
ECHO and Learning Communities
Clinical Trials
Program Planning

- Identifying exactly what “problem” you are trying to solve
- Knowing who will be interested and also who will be disrupted with this idea
- Going through the regulatory and legal checklist
- Considering all the “human” factors
- Understanding the business incentives
Laws, Regulations and Policies

- Reimbursement/financial models
- Licensure
- Accreditation
- Professional liability
- Informed consent
- HIPAA/privacy & security
- Safe discharge practices
- Inducement of referrals and self-referrals
- Internet prescribing
Policy and Regulatory Resources

- Center for Connected Health Policy
  - http://www.cchpca.org/

- American Telemedicine Association
  - www.americantelemed.org

- Center for Telemedicine and eHealth Law
  - http://ctel.org/

- Centers for Medicare and Medicaid Services
  - www.cms.gov/

- National Telehealth Resource Centers (Technical Assistance)
  - www.telehealthresourcecenter.org/
### State Telehealth Laws and Medicaid Program Policies

<table>
<thead>
<tr>
<th>DEFINITION</th>
<th>MEDICAID REIMBURSEMENT</th>
<th>LOCATION</th>
<th>CONSENT</th>
<th>ONLINE PRESCRIBING</th>
<th>PRIVATE PAYER LAWS</th>
<th>CROSS STATE LICENSURE</th>
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<tbody>
<tr>
<td>48 states and the District of Columbia have a definition for telehealth, telemedicine, or both</td>
<td>47 states reimburse for live video through Medicaid</td>
<td>a few states have required a certain amount of distance between the provider and patient</td>
<td>29 states include some sort of informed consent</td>
<td>Internet online questionnaires are not adequate; states may require a physical exam prior to a prescription</td>
<td>28 states and the District of Columbia have active laws</td>
<td>8 states issue special licenses or certificates for telehealth</td>
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<td>16 states reimburse for remote patient monitoring</td>
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<td>9 states reimburse for store and forward</td>
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<td>In Idaho, Medicaid patients must be located in a rural or underserved area for eligibility</td>
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<td>In South Dakota, an originating site and a distant site cannot be in the same community</td>
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**Source:** Center for Connected Health Policy, [www.cchpca.org](http://www.cchpca.org)
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