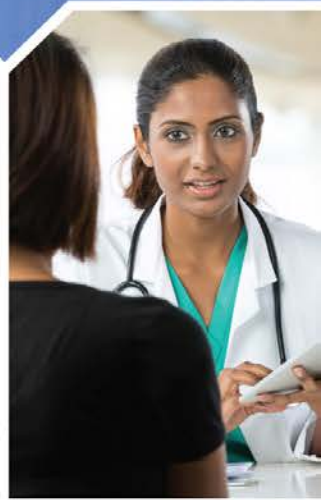




**UCDAVIS
HEALTH**



Telehealth and Connected Health: Re-framing oncology service models

Jana Katz-Bell
January 2018

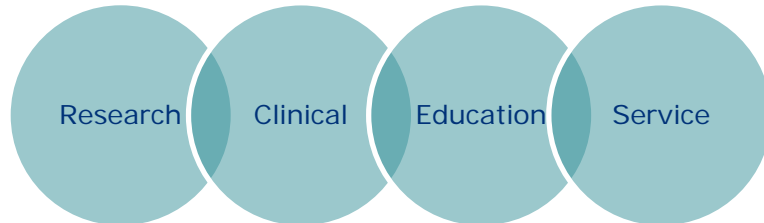
Disclosures

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



Center for Health and Technology



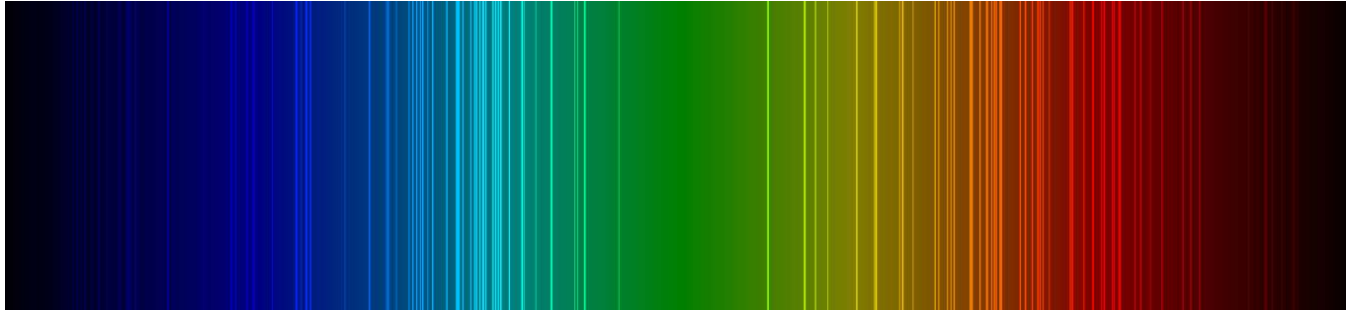
What's in a name??

Digital health/Connected health/eHealth/mHealth/telehealth

eConsult

Virtual Visits

eICU



Store &
Forward

Support for
people with
serious illness

Specialty
Consultations

Tele-robotics

The plan for this session

A stroll through common use cases in telehealth discussing the potential value statements and a quick overview of program planning tactics

Inpatient and Outpatient Consultation

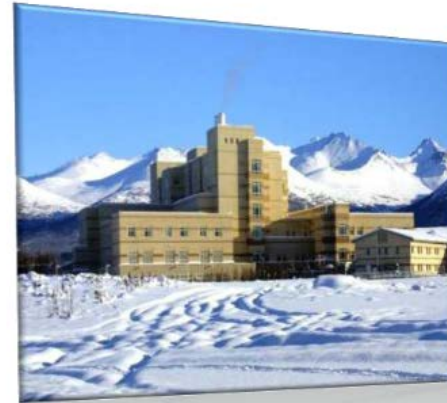
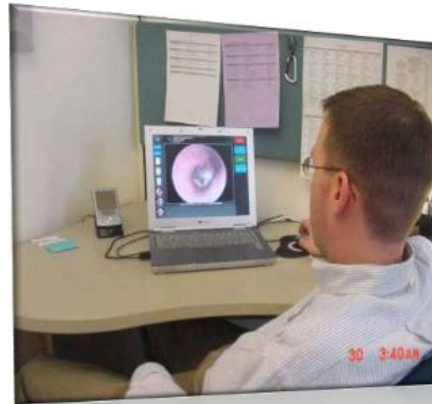
Alaska Federal Health Care Access

Case originated...



Alaska Federal Health Care Access

...Case received.



Synchronous Telemedicine, often scheduled



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

Meyer et al. Lancet Neurol. 2008

- 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

Hyperspace - appblid - FAMILY GENERAL PRACTICE ACC - JODI FAC-PHY UCNDYGAARD

E-Consult

Home Patient Lists Schedule In Basket Patient Station Chart Encounter Telephone Call CRC My Reports Calculator CPM Print Secure Log Out

APPBLD

In Basket Close X

New Msg Patient Msg Refresh Edit Pools Settings Search Attach Out Display Properties Reply Forward Mark As


E-Consult (4) E-Consult 4 unread, 5 total Sort & Filter AutoAdvance Home Refresh

QuickActions Done E-Consult Take Place Order QuickNote Complete Rvw

Status	Sent Date	Sent Time	From
Read	10/28/2014	8:51 AM	Ryan Fac-Phy Ucdpeck,...
	Department FP/GB		Patient: Xtestfconsult, Hedi
New	10/28/2014	8:06 AM	Jodi Fac-Phy Ucdryga...
	Department FP/GB		Patient: Xtestfconsult, Frances
New	10/28/2014	8:05 AM	Jodi Fac-Phy Ucdryga...
	Department FP/GB		Patient: Xtestfconsult, Ellen
New	10/28/2014	8:04 AM	Jodi Fac-Phy Ucdryga...
	Department FP/GB		Patient: Xtestfconsult, Dina
New	10/28/2014	8:02 AM	Jodi Fac-Phy Ucdryga...
	Department FP/GB		Patient: Xtestfconsult, Cora

Views: Message Visit Summary Results Recent Vitals / Common Labs More

Message

Ryan Fac-Phy Ucdpeck, MD  to Jodi Fac-Phy Ucdnygaard, MD 10/28/2014 8:51 AM

Attached Progress Notes

Thank you for referring Mrs X, 41 yo female with incidentally noted pulmonary nodule. I note that she is a non-smoker and does not have any ongoing sx's of shortness of breath, cough, chest pain, weight loss or night sweats. She is not on any inhalers and does not appear to have any chronic respiratory conditions such as asthma or COPD. I also see from the medical record that she lived in Ohio while attending college. Her nodule is very discrete and solid measuring <4 mm. The next best course of action is to assess her risk of these nodules representing an early form of neoplasm. 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

[Gould MK, Donington J, Lynch WR, et al. Evaluation of individuals with pulmonary nodules: when is it lung cancer? Diagnosis and management of lung cancer, 3rd ed: American College of Chest Physicians evidence-based clinical practice guidelines. Chest 2013; 143:e93S](#)

My In Basket

My Out Basket

Los Angeles Safety-Net Program eConsult System Was Rapidly Adopted And Decreased Wait Times to See Specialists.

- Barnett, et al. Health Affairs. March 2017

Median time to an electronic response from a specialist was 1 day and 25% of consultations were resolved without a specialist visit.

Remote Monitoring

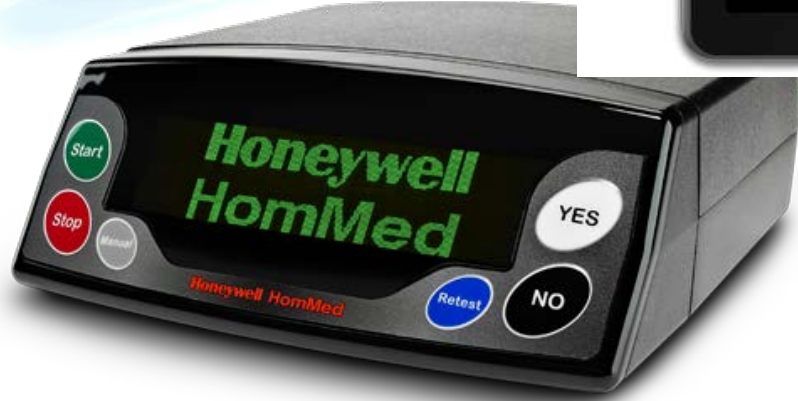
Traditionally we have used the same process of care for managing chronic disease as we have used for acute illnesses



The VA's telehealth program:

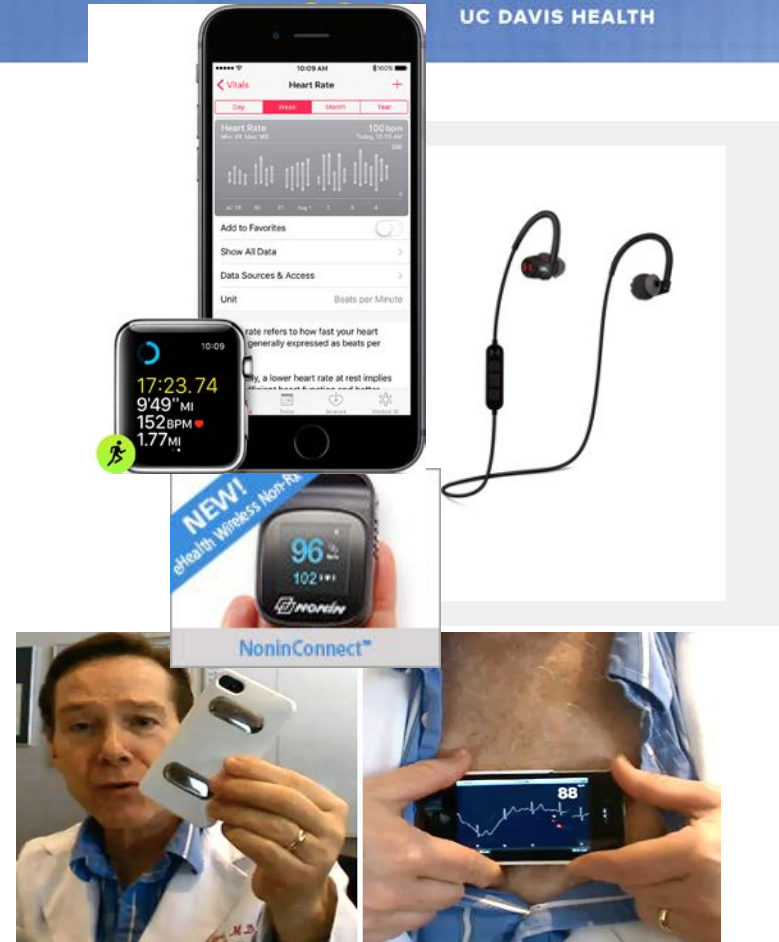
- 59% reductions in bed days of care
- 35% reduction in hospital admissions
- 84-95% patient satisfaction rates
- saved an estimated \$2,000/person/y

...since 2005



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



ECHO and Learning Communities



Expanded Access to Clinical Trials

- 1,803 patients recruited from 1999 to 2006
- Median Follow-Up: 47.8 months
- March 2008: 137 first DFS events, 42 deaths
 - 30 locoregional relapse events
 - 70 distant relapse events
 - Including 40 bone metastasis events
 - 16 contralateral breast cancer events
 - 19 new non-breast primaries
- Overall: 4-year DFS: 92.4%; 4-year OS: 97.7%



Care coordination and navigation

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?

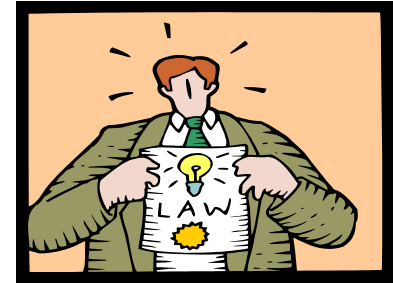
How do our organizations respond to the **dynamic health policy environment** and increasing **expectations of consumers**?

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

DEFINITION

49 states and the **District of Columbia** have a definition for telehealth, telemedicine, or both

LOCATION

a few states have required a certain amount of distance between the provider and patient

In North Carolina, originating and distant site must be of a sufficient distance apart

In South Dakota, an originating site and a distant site cannot be in the same community

MEDICAID REIMBURSEMENT

48 states & DC reimburse for live video through Medicaid

21 states reimburse for remote patient monitoring

1 offers reimbursement through their Department of Aging Services

15 states reimburse for store and forward

states rarely view email/phone/fax as acceptable forms of service delivery

32 states reimburse for a transmission/facility fee

CONSENT

30 states include some sort of informed consent

ONLINE PRESCRIBING

Internet/online questionnaires are not adequate; states may require a physical exam prior to a prescription

PRIVATE PAYER LAWS

36 states and the **District of Columbia** have active laws

CROSS STATE LICENSURE

9 states issue special licenses or certificates for telehealth

Thank you!!!