

TELEHEALTH MEETS THE ECONOMIC & DEMOGRAPHIC SHIFTS OF THE 21ST CENTURY

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St. Cloud Civic Center

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Objectives

1. Review the basics of telehealth applications
2. Provide examples of current practices
3. Explain the ROI
4. Forecast future growth areas

What if . . . broadband was
a utility like telephone, gas
& electric?



“GE and Intel Working on
Remote Monitors to Provide
Home Health Care”

Steve Lohr, New York Times
April 3, 2009

- \$250 million together over next 5 years in R & D for remote telehome monitoring, diagnosing & consulting, Internet based.
- GE Quiet Care – motion sensors to monitor older patients and send alerts to signal health problems or emergencies.
- Demographics and P4P are pushing this.

“Patient data shifts to digital
records. MN hopes for piece
of federal payout”

Leslie B Suzukamo
Pioneer Press
March 3, 2009

By 2014 medical records must be electronic and interoperable to meet federal (& State) requirements or MC, MA penalties will occur.

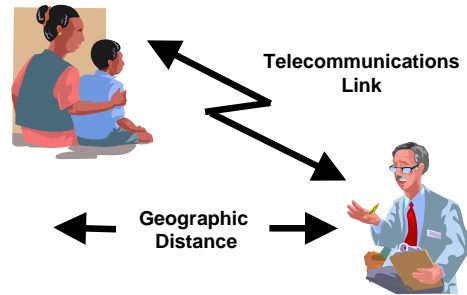
Savings in wasted procedures time.

Minnesota Submitted "shovel-ready" proposals for stimulus funding to assist MN in both areas EMR/interoperability and telehealth expansion.



II. BASICS OF TELEHEALTH

The Basics of Telehealth



The Terms

Telehealth: delivery of health-related services and information via telecommunications technologies

Telemedicine: use of ...telecommunications technologies to provide and support health care when distance separates the participants (IOM)

Home telehealth (home monitoring): telemedicine that provides clinical services to a patient in his or her place of residency

Live, interactive: Telehealth where the provider and patient are interacting in real time (e.g. videoconferencing)

Store-and-forward: Clinical information is obtained from the patient and transmitted to the provider for review at a later time.

eHealth: providing consumer medical and health information

Tele-Mental Health



Teleradiology



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2am

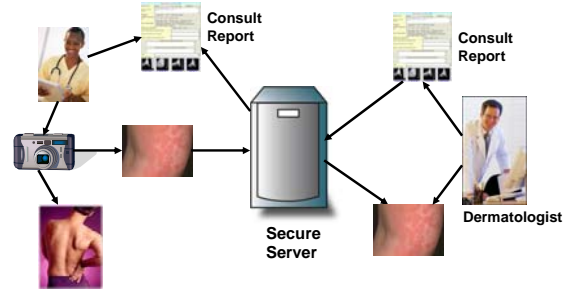
Electronic
image
transmission



24/7 radiology
Interpretation service
San Francisco

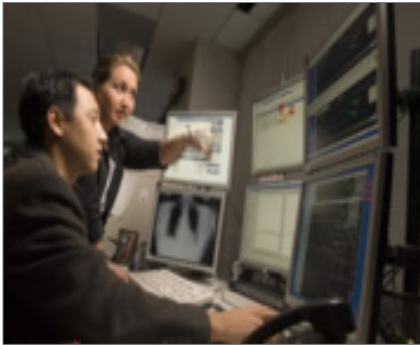
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Store & Forward Teledermatology



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eICU Workstation



Video Assessment



Image Acquisition



Remote Bedside Monitoring



Immediate Contact

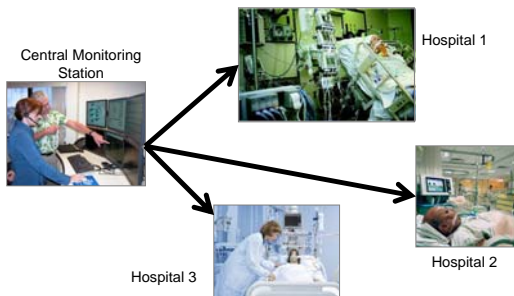


Smart Alerts

Alarm Time	Site	Bed Patient	HR Trend	Limit	O2 Trend	Creat O2
17:41	08/14/09-ICU	201 Douglas	[101] 124	107		Resp >10
17:38	08/14/09-ICU	5 O'Leary				
17:36	08/14/09-ICU	8 Seston			[90] 82	< 10
17:33	08/14/09-ICU	4 Soto K				
15:42	08/07/09-ICU	3 Raker S			[90] 88	
14:20	07/07/09-ICU	340 Crawford	51.84		[90] 81	

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eICU



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Home Telehealth



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Medicare Reimbursement



- Must be live, interactive services
- Patient must receive service in an eligible rural site – hospital, clinic, etc.
- Provider payment is the same as for an in-person visit
- A facility fees is paid to remote sites

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State-Level Coverage

- Medical Assistance (Medicaid)
 - duplicates and extends Medicare Coverage
 - Includes "store and forward" for dermatology
- Private Insurance Companies
 - All major companies in Minnesota provide reimbursement
 - Generally cover the same services as Medicare
 - Majority do not enforce the rural restriction on patient location

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Telemedicine Benefits

- Improved clinical outcomes
 - eICU may reduce patient death rates
 - Home telehealth reduces emergency room visits and hospitalizations.
- Otherwise, where telemedicine is appropriate, clinical outcomes are the same as for in-person care.
- Patients are very satisfied with the care delivered.

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Non-medical benefits

- Patient convenience and time-savings
- Employer reductions in lost work hours
- More efficient use of provider time
- Transport cost reductions
 - Example: Nursing home to hospital
 - Example: Corrections

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Telemedicine Telecommunications Requirements

- Ubiquitous connectivity
- Seamless connectivity
- High capacity
- Secure
- Reliable

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Electronic Health Records

- A secure, real-time, point-of-care, patient-centric information resource for clinicians.
- The EHR also supports the collection of data for uses other than direct clinical care, such as billing, quality management, outcomes reporting, resources planning and public health disease surveillance and reporting.



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The Federal Commitment



“To improve the quality of our health care while lowering its cost, we will make the immediate investments necessary to ensure that within five years, all of America’s medical records are computerized.”

President Obama

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Requirement for Interoperability

MN e-Health Initiative Recommendation

- Interoperability of Electronic Health Records in Minnesota means the ability of two or more electronic health record (EHR) systems or components of EHR systems to exchange information electronically, securely, accurately and verifiably, when and where needed;

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III. CURRENT PRACTICES



MN Telehealth Network

- Started in 1994
- U of MN coordinates services
- UMP specialists
- Other providers across MN
- 2009 over 40 hospitals/clinics



Telehealth Examples

- Telemental health
- Telepsychiatry
- Home telehealth
- Teledermatology
- Teleradiology
- Telepharmacy
- School health
- Patient Education
- Teledentistry
- Emergency consults
- Cardiology
- e-ICU care
- Long term care
- Telerehabilitation
- Corrections
- Staff Education



Telehealth growth is based on shortages and existing or potential referral patterns.

MN TELEHEATH NETWORK - 704 telemedicine consults 2008

	Derm	Ortho	Psych	Psychol	GI	Endo	Wound
Aitkin	59						
Bigfork			9				
Cass Lake	1		1				
Cook	48			27		6	
Hendricks	5						
Hibbing					50		
Itasca	31						
Littlefork			1	8		10	
Longville	1						
Mora			61				
Neelashing	4						
Northwood							19
Wadena	137	207	10				
Wheaton	9						
TOTALS	295	207	82	35	50	16	19



Teleradiology, telepharmacy and telehome monitoring statistics not included.



IV. RETURN ON INVESTMENT (ROI)



Research

MN Telehealth Network Research 1998 – Telehome monitoring n = 150

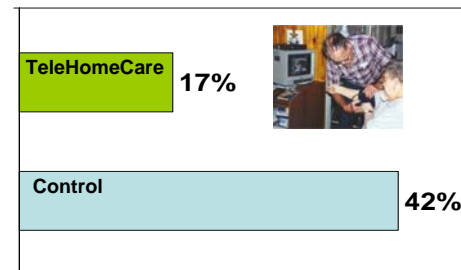


> Telehome monitoring CHF Example

– Daily recording of

- Weight
- Blood pressure
- Pulse
- Oxygen saturation
- Spirometry

Patient Outcomes: Admissions to a higher level of care



Cost to treat CHF in the hospital?

\$14,200



Congestive Heart Failure

- > Home monitoring equipment user
- > Weight gain over 2#
- > Red flag for nurse monitoring 30 pts, 2x daily
- > Patient contacted, Dr. contacted
- > Water pill dose increased for 2 days
- > Hospitalization & ER visit avoided



Telehome monitoring is a lifeline to keep people with fragile health at home longer.



- Chronic disease such as:
 - Heart disease, diabetes and high BP create 80% of health care expense in the US
 - Double the number of elderly by 2030
 - Systems need to go digital and into the home
 - Personal Care Technology & P4P



Real Results

- Avera McKennan
 - 50% reduction in mortality compared to predicted
- Hutchinson Area Health Care – First Six Months
 - 32% increase in ICU census (keeping more patients)
 - 8.5% increase in CMI (keeping sicker patients)



- **Cost of interactive video equipment**
 - **Under \$10,000**
- **Cost of homemonitoring equipment per patient**
 - **\$3,000**



Win-Win Situation for Rural and Urban Sites

- Facility Fee
- X-rays, scans
- Labs
- Rehab PT/OT
- Home Health Care
- Swing Beds
- Specialist fees paid same as face-to-face



Rural Revenue Example

Sandy is a 38 year old female who injured her left shoulder at work.
Initial Diagnosis: Rotator Cuff Sprain
Evaluation and treatment of diagnosis initiated by family doctor:

Charges were generated from:

- 01-06-06 – MRI
- Telemed Consult x 4
- PT Eval
- PT Therapy x 15
- Pre-op H&P
- EKG and labs
- 06-16-06 – Surgery with Orthopedist @ University of MN
- 06-27-06 – PT Eval
- 06-27-06 to 08-02-06 – PT Therapy x 5
- 07-12-06 to 08-01-06 – Telemed Consult x 2

Total Generated Revenue Ortho: \$3,576.00



MC Orthopedic Example

- Conservative Treatment for Medicare aged, knee pain and limited mobility
- Telemed visits weekly x 3
- Physical Therapy daily x 3 weeks
- CT Scan, x-rays
- Surgery → Swing Bed → Home Care → PT
- Post-op telemed visits x 3 weeks

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- **Avoided CHF hospitalizations at \$14,200 each**

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- **Maintaining CHF fragile elderly at home saves:**
 - LTC placement at \$4,500 month
 - Medical Assistance coverage statewide is at 2/3 of all LTC residents.

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Future Growth Areas

- Telehome – keeps patient at home longer, avoids LTC
- Smart Homes
- Jail health – avoids costly transports
- TeleDentistry – screening of worst cases (Head Start), prevention of decay
- TelePharmacy – economic development/small, rural towns

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Future Growth Areas

continued

- TeleWound Care – advance practice nurse provided
- Smart Rehab – monitoring clothes, balance stockings
- Biofeed back toys
- PHR

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QUESTIONS ?