Necessity is the Mother of Invention:

Utilizing Technology to Provide High Quality Healthcare to Rural Areas of the Upper Midwest

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Objectives

• Review challenges to provision of healthcare in rural and frontier areas
• Share some unique projects and programs in response to rural needs
• Learn about how one rural hospital utilizes technology to provide emergency care & support providers
Frontier Counties of the United States, 2010

Source: U.S. Census Bureau, 2010 Revisiting Data (Public Law 94-171) Summary File.
Note: Alaska and Hawaii not shown to scale.
Elderly Population

Percent Age 65 Years and Older by County
- 20.0% - 43.4%
- 13.0% - 19.9%
- 10.0% - 12.9%
- 3.5% - 9.9%

United States = 13.0%

Note: Alaska and Hawaii not shown to scale.
Medically Underserved Areas and Medically Underserved Populations Designated Areas
Health Professional Shortage Areas (HPSA) - Primary Health

HPSA Clinician Priority Scores

Source: Health Resources and Services Administration - HRSA, Bureau of Health Professionals; January 4, 2013.

Note: Alaska and Hawaii not shown to scale

HPSA Scores are developed for use by the National Health Service Corps in determining priorities for assignment of clinicians.

Scores range from 1 to 25.

Higher scores equal greater priority.
The Helmsley Trust has committed over $183 million via 167 grants to communities and non-profit organizations throughout the Upper Midwest to promote access to quality, affordable health care.
Strategic Focus Areas of the Rural Healthcare Program

- Cancer Detection & Care
- Senior Care via Technology Innovation
- Cardiac Care
- Workforce Preparedness & Development
- Health Delivery via Technology
Cancer Detection and Care

• Accessible and convenient cancer detection and treatment options. Investment over $72 Million
  – Digital Mammography; 73 sites
  – Brachytherapy; 1 site
  – Linear Accelerators; 7 sites
  – Intra Operative Electron Radiation Therapy (IOERT); 1 location
  – Personalized Cancer Technology
Impact of Cancer Screening and Care

Over $36.8 Million invested in cancer treatment

Over $35.3 Million invested in mammography screening
Challenges to Serving Our Growing Rural Elderly Population

- Upper Midwest, like the rest of the country has a dramatically increasing aging population of people over 65
- Median cost for nursing home care is now $81,030 per year and climbing
- Upper Midwest will not have enough providers and caretakers
- How can we keep seniors in their home longer, saving $ for seniors and payers
Good Samaritan Society
LivingWell@Home
Investment $8.1 Million

• A research study to test the efficacy of LivingWell@Home technologies on:
  • Healthcare Costs
  • Health Service Utilization
  • Health Outcomes
  • Quality of Life
  • Client Satisfaction

Equipment includes: Home Sensors, telehealth equipment and personal emergency response
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RURAL HEALTHCARE PROGRAM

1. Data Manager
   The Data Manager receives wireless signals from an array of sensors that detect sleep patterns, motion, impacts, bathing and toileting, among others. The data can be transmitted via a phone line or wired/wireless broadband.

2. Secure Hosting Center
   Data is analyzed 24/7 on a private, secure server. Wellness trends are reported and alerts can be issued for potential emergent conditions.

3. Authorized Caregivers
   Caregivers can easily access the password-protected wellness reports from any computer with Internet access. Caregivers can also receive alerts via alternate methods including pager, e-mail, text message, and personal emergency response system (PERS).

4. User-Friendly Reports
   User-friendly reports are designed to proactively identify emergent wellness conditions and improve care delivery efficiency.
Study by University of Minnesota, School of Public Health

- 1600 seniors participated in the study
- 800 with technology / 800 without
- First results expected Dec 2013
- Presentations to CMS and other payers ongoing
Other Innovative Senior Care

• Project Impact (depression & anxiety in Elderly), Dr. Jurgen Unutzer, University of Washington, pilots in Wyoming & Montana

• Many for-profit businesses and products
  – Home medical equipment, home monitors, fall detectors, medication dispensers, home telehealth….and more
  – Challenge: what happens to the data? / Who is on the other end? / How does it really help?
Cardiac Care
Partnership with American Heart Association

Mission: Lifeline

- Places ECG’s in every ambulance statewide
- Provide training to EMS providers
- Transmits ECG to receiving hospitals
- Expedite transportation to PCI Lab if needed
- 540 ECG’s in 4 states
- Investment of $23 Million
Robotic Controlled Catheterization Lab

• Partnership with Sanford Health
• Sioux Falls and Aberdeen, SD
• Only 8 in United States
• Investment $2.3 Million
Robotic Controlled Catheterization Lab

- Improve rural access and quality while working towards performing urgent PCI procedures remotely.
- Learn about use and strategic value of Robotic Cath procedures, while planning for future remote option.
- To increase staff safety; provide superior patient precision; and improve hospital economics.
Other Innovative Cardiac Programs

• Many telecardiology programs (not emergent care) for access to cardiologists
• Home telehealth monitoring of heart disease or post-operative patients
• Canada: virtual cardiac rehab
• Veterans Administration Services
Meeting Rural Training Challenges

• Majority of rural EMS providers are volunteers
• Have to leave jobs and family to travel for training
• Rural medical providers must leave busy practice behind and find coverage of Emergency call
Simulation In Motion
Investment $6,564,832
2 states
Brings state of the art training for hospital personnel and first responders to their hospitals and communities

Mobile training vehicles / laboratories equipped with medical training simulators and equipment

Teams train with jointly developed curriculum and cases

Partnership with state Departments of Health, learning institutions, and health systems
GOALS

To Enhance -

✓ Quality of care for trauma patients
✓ Training of pre-hospital and hospital personnel

To Strengthen -

✓ Relationships and transitions between pre-hospital and hospital personnel to assure consistency of care

First Training Program of It’s Kind World-Wide
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RURAL HEALTHCARE PROGRAM

SIM
Simulation In Motion

A Partnership for Emergency Patient Care
Other Innovative Training Programs

- Patient Simulator labs at hospitals & universities
- Vail Medical, Colorado (bus)
- Pennsylvania Mobile Training
Other Ideas & Innovative Training & Education Projects

• Project ECHO, University of New Mexico
• “Prairie Futures” rural nurse training program, Hamilton Foundation, central South Dakota
• Home Grown Nursing Program, Good Sam: using online & video classes and rural regional clinical rotations
Meeting the Workforce Challenges

Health Delivery via Technology Partnership with Avera eCare™ Services

- eEmergency, 75 hospitals in 6 states
- ePharmacy, 46 hospitals in 6 states
- eICU® CARE, 33 hospitals & 127 beds

eICU® CARE is a registered trademark of VISICU, Inc.
Rural Pharmacy Inpatient Needs

• Not enough pharmacists
• Part time, retail pharmacist serving hospital for limited hours
• Retiring pharmacists & closure of small town retail pharmacies
• Necessity (and lack) of first dose review to meet CMS regulations
ePharmacy

- 46 hospitals live
- 6 states
Benefits of ePharmacy

- Over 79,790 patients impacted
- 13,610 serious safety events avoided
- 1,010,000+ orders reviewed
- Hospitals are now meeting CMS requirements for 24-hour, first dose review by a pharmacist
- Hospitals and payers saving money on avoided safety events and re-hospitalizations
Other Innovative Ideas, Projects & Providers - Pharmacy

• Altru, Grand Forks, several telemedicine services
• Catholic Health Initiatives (CHI) telepharmacy
• University of Nebraska Medical Center, Omaha (UNMC)
• Cardinal Health, Pharmacy Solutions
• Mercy, Des Moines, IA
Avera eICU® CARE

- 33 hospitals
- 127 beds
- 6 states

eICU® is a registered trademark of VISICU, Inc.
eICU® CARE Benefits

• Over 48,885 patients monitored (since 2004)
• 886 lives saved (patients who were predicted to die based on APACHE scoring system, who lived)
• Increase of admission revenue at remote hospital
• Improved use of evidence-based medicine
Other telehealth Intensive/Critical Care Providers

• TeleHospitalist, OHSU, Portland, Oregon
• eICU (Visicu) “Safe Harbor,” Mercy, St. Louis
• St. Alphonsus, Idaho
• Telehospitalist, Essentia, Duluth, MN
eEmergency

• 75 hospitals live
• 6 states

Nurse and patient in remote emergency room

Emergency physician in hub
Benefits of eEmergency

- Over 5,657 patients impacted – currently exceeding 200 patients per month
- 10,511 transfers arranged
- 973 unnecessary transfers avoided
- Estimated cost savings of $7.79M from avoided transfers
- Increase of admission revenue at remote hospitals
- Influence recruitment of physicians
- In 805 (27%) of patient encounters, the eEmergency physician was available before the local physician
Impact Study of eCare

• Research by RUPRI, University of Iowa

• Independent assessment of eCare

• Discover impact through medical and economic outcomes of eCare on Critical Access Hospitals
About Appleton Area Health Services

• 15 bed Critical Access Hospital
• Medical Clinic
• 53-bed skilled nursing facility
• 31 senior living apartments
• 50 miles from tertiary facility
Appleton, MN Demographics

- Extremely rural, 9 person per sq. mile
- 22.1% are 65 years or older, compared to the state average of 12.9%
- Health Professional Shortage Area: score of 6
Providers at Appleton

Two physicians, one nurse practitioner
Emergency Needs at Appleton

- Emergency Department Coverage
- Physicians and NP practice alone
- No immediate access to specialists
- Time delay when provider is off site
- Infrequent need to use certain skills
eEmergency Solutions at Appleton

• Ease of use: Push of the button
• Immediate access to Board Certified emergency physician and experienced RN
• Diagnostics and care can begin prior to arrival of local provider
Emergency Solutions at Appleton

- Nursing support, documentation
- Call in more local staff
- Transfer support
- Physician to physician support
- Access to other specialists as needed
- Questions & training
eEmergency Solutions at Appleton

• What our staff are saying…
• How its impacting our patient care
• Case
Questions & Contact Information

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