Technical Assistance for Health Information Technology and Health Information Exchange in Medicaid and SCHIP

Welcome to the AHRQ Medicaid-SCHIP TA Webinar -

Remote Disease Monitoring: Challenges and Opportunities for Medicaid/SCHIP Agencies

Wednesday, November 19, 2008 2:30 - 4:00 p.m. Eastern

Presented by:

Lee R. Goldberg - MD, MPH, Associate Professor of Medicine, Heart Failure/Transplant Program, University of Pennsylvania

Thomas Kline - D.O. Medical Director, Iowa Foundation for Medical Care

Moderated by:

David Lawton - Health Alert Network Coordinator, Community Health Planning and Protection, Nebraska Department of Health and Human Services

* Please note all participants were placed on mute as they joined the session.

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Overview

- **Welcome** - David Lawton - Health Alert Network Coordinator, Community Health Planning and Protection, Nebraska Department of Health and Human Services
- **Before We Begin** - David Lawton
- **Introduction** - David Lawton
- **Presentations**
  - *Remote Disease Monitoring: Background and Lingering Questions*
    - Presented by Lee R. Goldberg - MD, MPH, Associate Professor of Medicine, Heart Failure/Transplant Program, University of Pennsylvania
  - *Iowa Medicaid/ICCC CHF Population DM Program*
    - Presented by Thomas Kline - D.O. Medical Director, Iowa Foundation for Medical Care
- **Question and Answer** - David Lawton
- **Closing Remarks** - David Lawton

Before we begin…

- Please note all participants were muted as they joined the Webinar.
- If you wish to be un-muted, choose the “raise hand” option to notify the host.
- If you have a question during the presentation, please send your question to ***all panelists*** through the chat. At the end of the presentations, there will be a question and answer period.
- Please e-mail Nicole Buchholz at nbuchholz@rti.org if you would like a copy of today’s presentation slides.
- We are currently in the process of posting all of the TA Webinar presentation slides to the project website: http://healthit.ahrq.gov/Medicaid-SCHIP

Listserv Registration

- Please register for the listserv to receive announcements about program updates and upcoming TA Webinars.
- To register go to http://healthit.ahrq.gov/Medicaid-SCHIP
- Click on “Medicaid-SCHIP Fast Facts” on the left-hand side of the screen
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    In the body of the message type: **sub Medicaid-SCHIP-HIT** and **your full name**. For example: sub Medicaid-SCHIP-HIT John Doe.
    You will receive a message asking you to confirm your intent to sign up.

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Remote Disease Monitoring: Background and Lingering Questions

Presented by:

Lee R. Goldberg - MD, MPH, Associate Professor of Medicine, Heart Failure/Transplant Program, University of Pennsylvania

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Remote Monitoring

- Any system designed to collect physiologic or behavioral data from a subject to be delivered to clinicians to be used to improve the “outcomes” of the subject
- Typically involves “two-way” communication between the subject and the clinician (not just automated reminder calls, etc.)

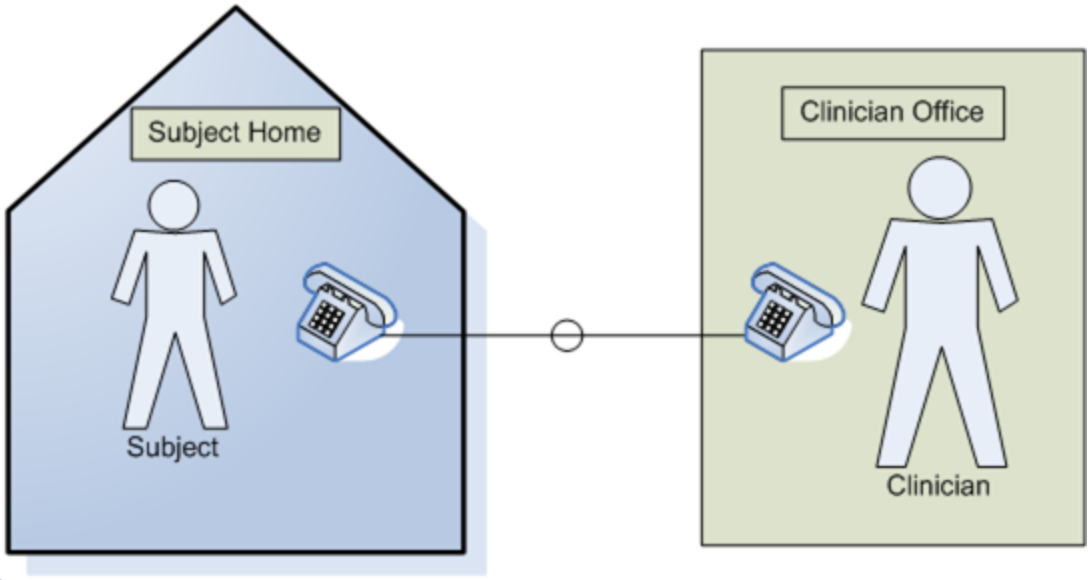
Examples

- Glucometers
- Peak flow meters
- Scales
- Medication compliance devices
- Symptom questionnaires
- Video “virtual visits” (wound care, etc.)

Several Technology Models (Hardware)

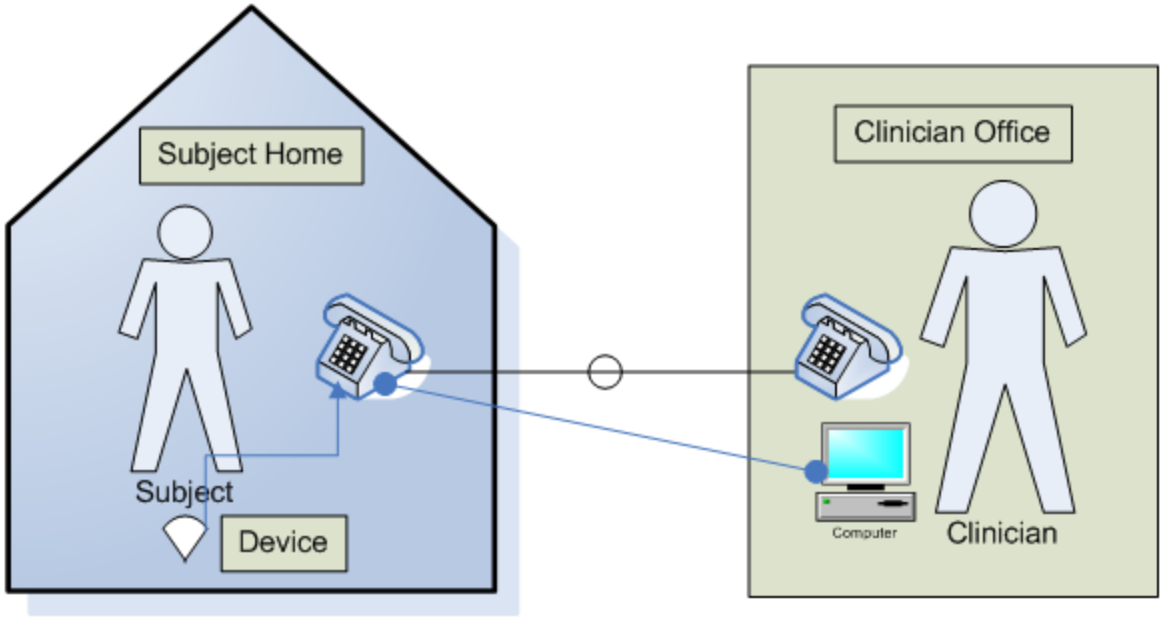
- Telephone Only
- Device (scale, glucometer, etc) connected to phone line
- Data transmission directly to clinician
- Data transmission to triage computer then to clinician
- Data transmission to third-party vendor or clinician for validation then to clinician
- Implantable sensors with “active” or “passive” data transmission
- ?Integrate into EMR

Telephone Only



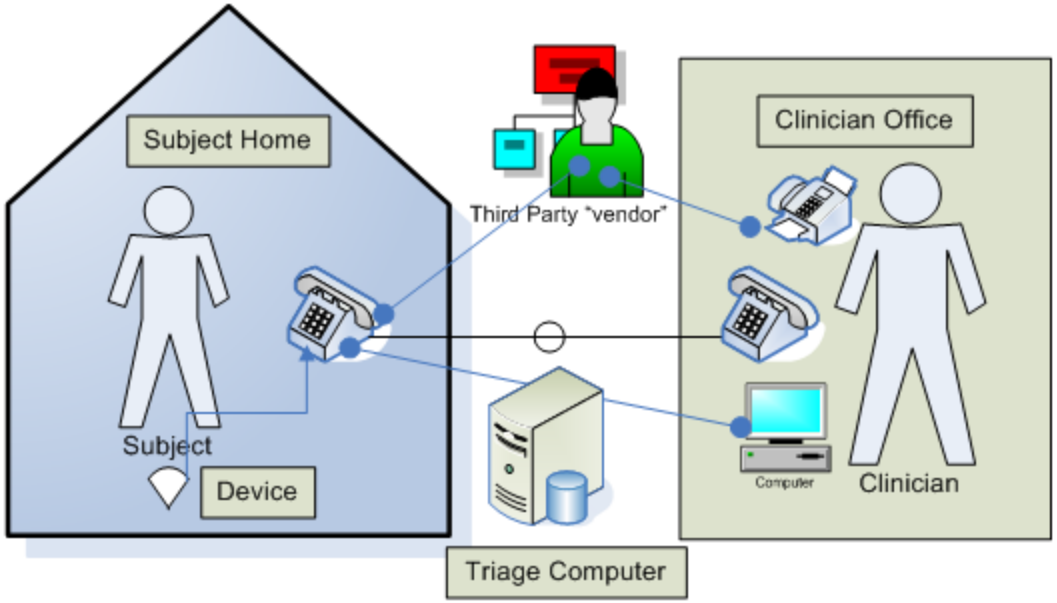
- Subject calls clinician when symptomatic
- Subject calls clinician when self-monitoring indicates a “problem”
- Clinician calls subject - by protocol

Device Directly to Clinician



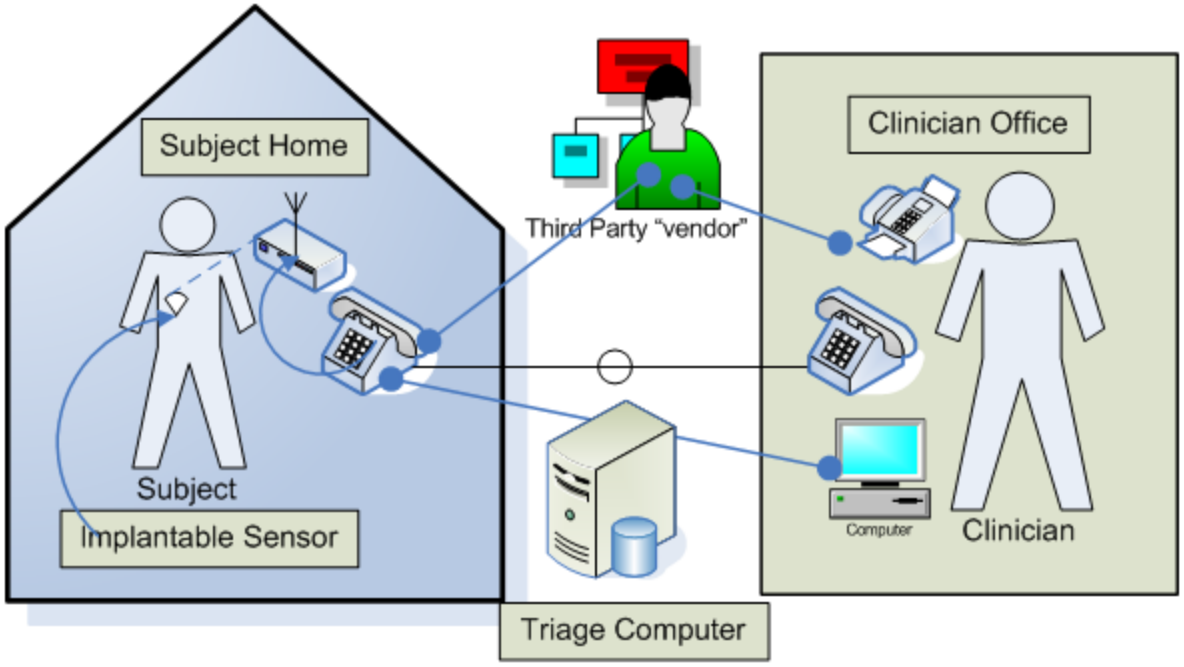
- Device in subject's home transmits "raw" data over phone line
- Clinician reviews information on computer (or fax)
- Clinician and subject communicate by phone

Device to “Filter” then Clinician



- Device in subject’s home transmits “raw” data over phone line
- Data “validated” by third-party vendor or “triaged” by computer
- Filtered data transmitted to clinician
- Clinician communicates to subject via telephone

Implantable Devices



- Implantable device - wireless or active "interrogation"
- Data sent to server for triage vs. third party vs. directly to clinician

What Is “Improved Outcome”?

- Perspective - who is interested?
  - Patient
  - Provider
  - Payer
  - Health Care Institutions
  - Society

  } Competing Interests
- Cost (only reduction in costs or effectiveness? Total vs. Hospital?)
- “Quality of Life”
- Improved adherence to “Evidence Based Medicine”
- Safety - improved or not worsened?
- System performance - Does the technology perform as designed or intended?
- Improved survival

An Example: Heart Failure - A Good Target for Disease Management

- Common chronic disease
- High costs - direct and indirect
- Decreased quality of life
- High mortality
- Extensive research to guide therapy
  - Appropriate therapies extend life and improve symptoms
- Therapies are “challenging” to use and implement in this high-risk population
- Technology available to monitor

Factors for Successful Implementation of a Telemedicine System for Heart Failure

- Prompt consistent response to received subject data to provide rapid feedback
- Clinical algorithms that include “action plans” that avert negative consequences in response to an “alert” situation
- Subject trust of the system and its clinicians
- Reliable, easy-to-use technology
- Notification to clinicians of missed data collection

Barriers to Successful Implementation of Telemedicine Interventions

- **Reimbursement** for supervision of telemedicine and disease management systems
- **Trained clinicians** to manage the data and the disease
- Mechanisms to consistently and reliably review subject data and alerts
- Development of appropriate algorithms to respond to subject data in a manner that improves patient outcomes
- Medical-legal liability for data collected
- Professional licensure across state lines
- **Lack of evidence** for types and frequency of subject data collected and impact
- Clinicians' fear of being replaced by technology
- Physician/clinician acceptance

Lingering Questions

- Type of technology - Intensity
  - Is simple better? - scale versus implantable monitor
  - Is there too much data? - can we “hurt” people by responding too quickly?
- Dose of technology
  - Daily monitoring necessary?
- Duration of intervention
  - How long to continue?
  - Withdrawal effect or do patients “learn”?

In the “Perfect World”

- Chronic diseases would be managed by “daily” monitoring that would allow both clinician intervention and subject self-management, leading to improved “quality” and “outcomes”
- The “savings” could be used for other purposes within the Health Care System, like prevention

Prior Studies

- Hypothesis: We hypothesize that patients with disease X who are treated with home monitoring technology Y will have an improvement in outcome Z.
- Little focus on the mechanism of changes in outcomes - what specifically is driving the outcomes (good or bad)

Assumptions

- Monitoring can impact outcomes and self-management
- The impact is positive (does not increase cost or cause harm)
- Clinicians want or need to know the data
- Clinicians can identify when and how to respond from a potentially large volume of data
- The data are “actionable”
- The data are “reliable”
- “Systems” are in place that can quickly and easily incorporate all the data into the patient record

The Reality

- Many studies have shown improvements in a variety of outcomes from utilization to quality of life to improved survival
- These improvements have been difficult to duplicate outside the confines of a single center or research project - “Implementation of Innovations”
- Some studies have shown increased costs/utilization (?improved access) or no impact at all
- The individual centers involved combined with risk (and access to care) of the population studied seems to drive the outcome
- Managing the data and incorporating it into clinical practice is a significant challenge

What Could Be Going On? Outside of the Technology….

- Improved access to care in general
- Improved adherence to Guideline Based Care
- Improved self-management
- Identification of other barriers to care - financial, psycho-social, comorbid illness
- Novelty of the technology
- Device acts as a “reminder”
- Regular human contact….

Need to collect data about these factors during a study to get at “mechanism”

Implementation: Vendor Issues

- Technology “up-time”
  - Many technical issues with IVR
  - Many technical issues with servers, phone lines, etc.
- Troubleshooting with subjects and providers
  - Support for installation
  - Support for problems
- Equipment issues
  - Defective
  - Batteries - who covers the cost?
- Availability of vendor or other support on off hours

General Vendor Considerations

- Privacy - HIPAA issues
- Service guarantee
  - System monitoring - continuous?
- Approved equipment (FDA/FCC)
- Support hours
- Interface issues to clinician (and subject)
  - Fax
  - Web
  - E-mail
  - Pager (text messaging)
- Integration
  - ?EMR interface

Home IT Implementation Issues

Variables	Safety Issues	Options
Device installation	Dependent on patient	Shipment of device directly to patient with patient installing Shipment of device to patient then visiting nurse installing Delivery and installation by health provider Shipment of device to patient then technology (home security) service set up support
Transmission of patient data	Assurance of encryption Limitation of access	Ability to validate company's software and encryption standards Ability to transmit data using cellular technology Method of delivery to the healthcare provider (electronically, facsimile, etc.)
Storage and archiving of patient data	Access to patient data	Pass code protected access Fingerprint access
Assurance of HIPAA compliance	Confidential data exposure	Patient data on the Internet Patient data to insurers Patient data to vendor employees or business partners

Home IT Implementation Issues

Variables	Safety Issues	Options
Distribution of equipment as per Good Manufacturing Practice (GMP)	Contaminated equipment Faulty devices Faulty electrical wiring	Equipment cleaned Equipment tested Documentation of all procedures
Leasing vs. purchasing of devices	Changes in hardware or software Cleaning policies Response for equipment malfunction Company support hours Level of expertise	Company support and hours 24 hour on-call Notification of changes; time frame, manner of notification Technical support Clinical support Response time to call
Concerns reported by a patient to company technical staff	What does the technical staff tell the patient, who do they inform?	Proper training of staff Policies and procedures for troubleshooting and referring clinical issues to clinicians

Farberow B, Hatton V, Leenknecht C, Goldberg LR, Hornung CA, Reyes B. Caveat Emptor: The Need for Evidence, Regulation and Certification of Home Telehealth Systems for the Management of Chronic Conditions, AJMQ 23(3): 208-14, May-June 2008.

Implementation: Overcoming Provider Resistance

- Providers (practices) concerns
  - Too much time to review data/alerts
  - Coverage during day and on nights/weekends/holidays - “critical labs”
  - Medical-legal concerns about responsibility for data - where and how to document
  - Educate to respond (not just file)
  - Educate to respond appropriately
    - Comfort with adjusting medications over the phone
    - Use of extra visits/ER when appropriate only
    - “Learning curve” observed with most clinicians

Implementation: Subjects

- Phone line (land line)
  - Not cellular only
  - Not Voice over Internet (VOIP)
  - In the home? (or access daily nearby?)
- Ability to install equipment
- Ability to hear and see well enough to use the equipment
- Ability to stand on the scale or operate equipment (glucometer, etc.)
- Language/cultural barriers
- Stable “home” environment

Conclusions

- Several challenges to home monitoring
  - Provider
  - Vendor
  - Subject
  - Data management
  - Payers
- Studies need to be performed to understand what drives changes in outcomes as opposed to focusing on a specific technology or program
- Studies need to be performed on “best practice” for data management with standardized HIPAA-compliant interfaces with alerts
- Desperate need for vendor regulation, standardization, and/or certification so that we know what we are testing (and what the subjects are getting)

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Iowa Medicaid/ ICCC CHF Population DM Program

Presented by:

Thomas Kline - D.O. Medical Director, Iowa Foundation for Medical Care

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Iowa Medicaid Enterprise (IME)

- Transition to Management of Health Care
  - Pay Claims
  - Manage Care
- Chronic Disease Management Strategy
- Adopt Center for Health Care Strategies (CHCS) Guidelines

Center for Health Care Strategies (CHCS) Guidelines

- Center for Health Care Strategies (CHCS)
  - Identify Target Population
  - Use Guidelines and Measures
  - Information Technology
  - Care Management
  - Financing and Incentives
  - Active Member Role

IME Continued

- Develop Partnerships
  - Iowa Medicaid Enterprise
  - Iowa Chronic Care Consortium
  - University of Iowa, Health Policy Research Program
  - Des Moines University
  - Iowa Foundation for Medical Care
  - Magellan Health Services
  - Pharos Innovation Tele-Assurance™ Technology

Goals for Program

- Improve Access to Effective Healthcare for Iowans in Both Urban and Rural Setting
- Maximize the Efficient Utilization of State Resources
- Reduce the Cost of Caring for Chronically Ill Iowans
- Improve the Health of Iowa Medicaid Members

Target Population - Congestive Heart Failure (CHF)

- Chronic Progressive Disease
- CHF Ranked in Our Top Five DRGs
- Admissions, Readmissions, and Emergency Room Visits Avoidable
- Adapts Well to Our Strategy
- Screen for Depression

Member Selection

- Data Sets - Johns Hopkins
- Inclusion and Exclusion Criteria
- Stratification
- Member Selection

Enrollment

- Comprehensive Outreach
- Written and Telephonic Information
- Engagement Difficult
- High Degree of Support and Care Coordination
- Pharos Help
- Challenge of Opt-Out Option

Clinical Model

- Unique Identification Methodology
- Member Participation
- Variances
  - Clinical
  - No-Call
- Tele-Assurance™ Interactive Voice Response System
- Coordination of Care
- Self-Management Education

Measurement

- Reviewed by University of Iowa Health Policy Research Center
- Reviewed and Evaluated by Disease Management Purchasing Consortium
- Minnesota Living with Heart Failure Questionnaire

Measurement Results

- 24% Reduction in Hospital Admits
- 22% Increase for Matched Cohort
- 22% Decrease in Total Bed Days
- 33% Increase for Matched Cohort
- $3 Million Reduction in Healthcare Service Utilization
- $2 Million Increase for Matched Cohort
- More Than a Two-fold Increase in Nurse Care Manager Case Load Due to Program Efficiencies
- Approximately 300 Members Secondary for Depression with 62 Identified with Clinical Depression

Member Satisfaction

- Greater Than 50% Return (123 of 236)
- 65% Were Highly Satisfied or Very Satisfied
- 73% Were Confident or Mostly Confident in Self-Management
- Anecdotal Stories

Next Steps

- Continuing with CHF Program
- Enrolling Diabetics
- Identifying Asthmatics
- Considering Maternal Health

Lessons Learned

- Challenging Member Population
- Collaboration Has a Lot of Benefits
- Technology Has Many Benefits
- Self-Management Education Works
- You Can Impact a Member's Health

Comments and Recommendations for Future Sessions

- Please send your comments and recommendations for future sessions to the project's e-mail address:

Medicaid-SCHIP-HIT@ahrq.hhs.gov

Project Information

Please send comments and recommendations to:
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