

# House Aging and Long-Term Care Committee

Telehealth Remote Monitoring Presentation

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## Telemedicine Defined

- Telemedicine is the use of medical information exchanged from one site to another via electronic communications to improve patients' health status. Closely associated with telemedicine is the term "telehealth", which is often used to encompass a broader definition of remote healthcare that does not always involve clinical services. Videoconferencing, transmission of still images, e-health including patient portals, remote monitoring of vital signs, continuing medical education and nursing call centers are all considered part of telemedicine and telehealth.
- Telemedicine is not a separate medical specialty. Products and services related to telemedicine are often part of a larger investment by health care institutions in either information technology or the delivery of clinical care. Even in the reimbursement fee structure, there is usually no distinction made between services provided on site and those provided through telemedicine and often no separate coding required for billing of remote services.
- Telemedicine encompasses different types of programs and services provided for the patient. Each component involves different providers and consumers.



# Telemedicine Services

- **Specialist referral services** typically involves of a specialist assisting a general practitioner in rendering a diagnosis. This may involve a patient "seeing" a specialist over a live, remote consult or the transmission of diagnostic images and/or video along with patient data to a specialist for viewing later. Recent surveys have shown a rapid increase in the number of specialty and subspecialty areas that have successfully used telemedicine. Radiology continues to make the greatest use of telemedicine with thousands of images "read" by remote providers each year. Other major specialty areas include: dermatology, ophthalmology, mental health, cardiology in pathology. According to reports and studies, almost 50 different medical subspecialties have successfully used telemedicine.
- **Patient consultations** using telecommunications to provide medical data, which may include audio, still or live images, between a patient and a health professional for use in rendering a diagnosis and treatment plan. This might originate from a remote clinic to a physician's office using a direct transmission link or may include communicating over the Web.
- **Remote patient monitoring** uses devices to remotely collect and send data to a monitoring station for interpretation. Such "home telehealth" applications might include a specific vital sign, such as blood glucose or heart ECG or a variety of indicators for homebound patients. Such devices can be used to supplement the use of visiting nurses.
- **Medical education** provides continuing medical education credits for health professionals and special medical education seminars for targeted groups in remote locations.
- **Consumer medical and health information** includes the use of the Internet for consumers to obtain specialized health information and on-line discussion groups to provide peer-to-peer support.



# Kansas Medicaid LTC Services

## Nursing Facilities

<p>Medical Clinical Care</p>	<p>RN's ----- LPN's</p>
<p>ADL and Personal Care</p>	<p>CNA's ----- RA's ----- Other Staff</p>
<p>Social Needs</p>	<p>Activity Directors Social Workers</p>



# Kansas Medicaid LTC Services

Care Needs      Nursing Facilities      Home and Community Based Services

<p>Medical Clinical Care</p>	<p>RN's ----- LPN's</p>	<p>VOID</p>
<p>ADL and Personal Care</p>	<p>CNA's ----- RA's ----- Other Staff</p>	<p>Attendant Care Workers ----- Homemaker Staff</p>
<p>Social Needs</p>	<p>Activity directors/Social workers</p>	<p>Companion Services (added October 2008) (ended January 2010)</p>



In 2006, Windsor Place met with and proposed to KDOA Secretary Greenlee and her staff the application of home telehealth and remote monitoring for the purpose of managing chronic diseases more effectively in the home.

In Feb 2007, a KDOA grant funded our pilot project. On August 1, 2007, the pilot program was operational. Extremely promising results were realized during the pilot.



# 3 Benefits of Telehealth

- Access to care
- Quality improvement
- Efficiency and lower cost of care



# Four Key Elements to Telehealth

- Accurate physiological information
- Shared data with patient
- Data-driven coaching/patient education
- Optimized provider involvement

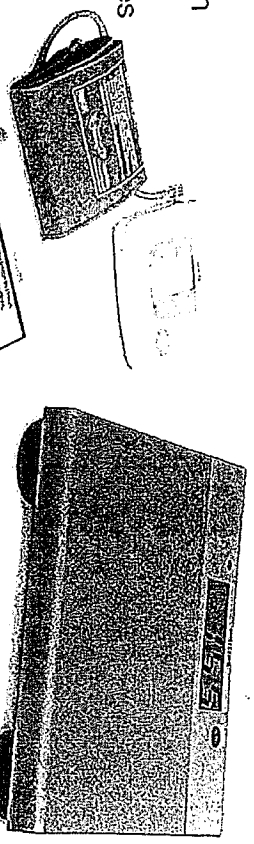




# Award-winning Measurement Technologies Accurate, Reliable, Unobtrusive and Easy to Use

## Blood Pressure & Pulse

Takes readings when patient slides cuff up the arm, then presses "Start" button.

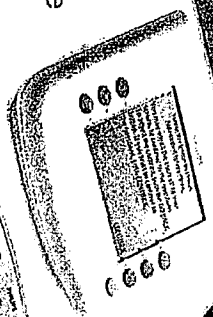


## Standard Scale

Low step, a wide, steady platform, a large digital display and voice announcement.

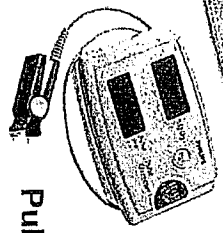
## TeleStation

Asks simple health questions. Responses are communicated to the clinical software.



## ECG/Rhythm strip

Simple wristbands with snap-on connectors.



## Pulse Oximeter

Spot checks oxygen saturation and pulse within seconds.



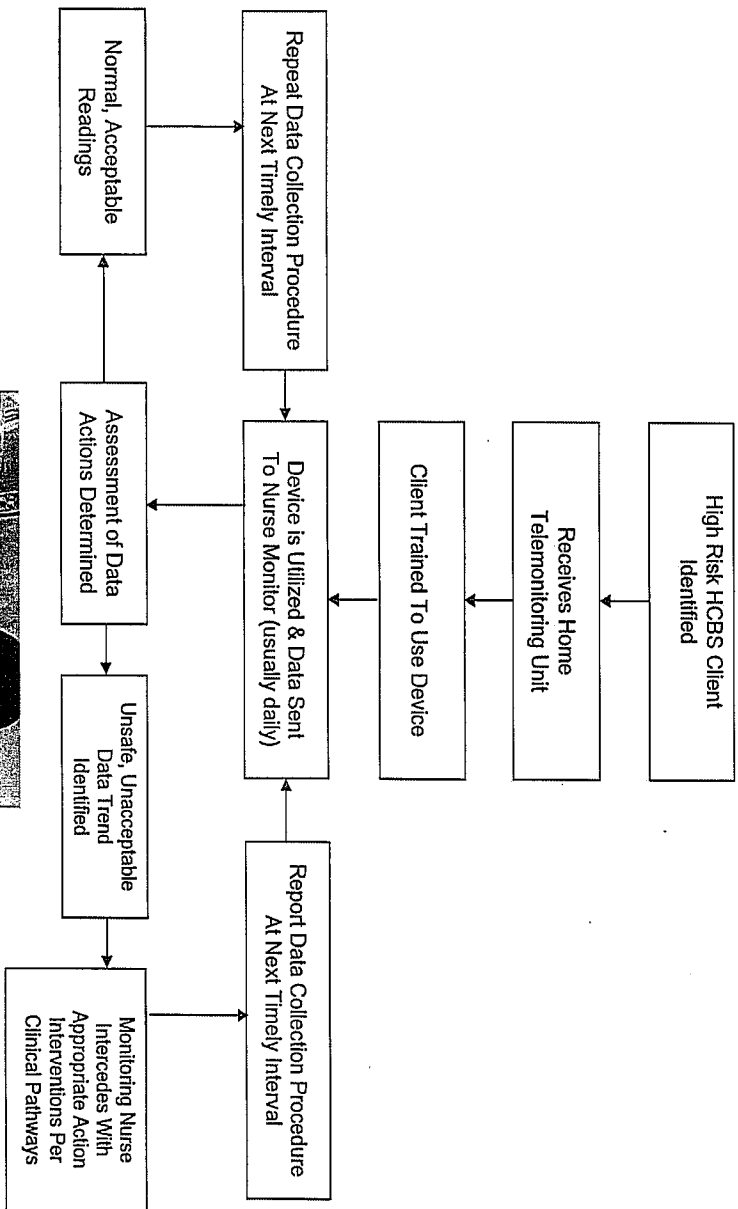
## Glucose meter connection

Bayer Ascensia Contour 7151B



# KDOA-HCBS PILOT PROJECT

## Monitoring Process For High Risk HCBS Clients



Client's begin  
Telehealth  
session

Session Data  
Transmission

Sent to  
Nurse's  
Computer

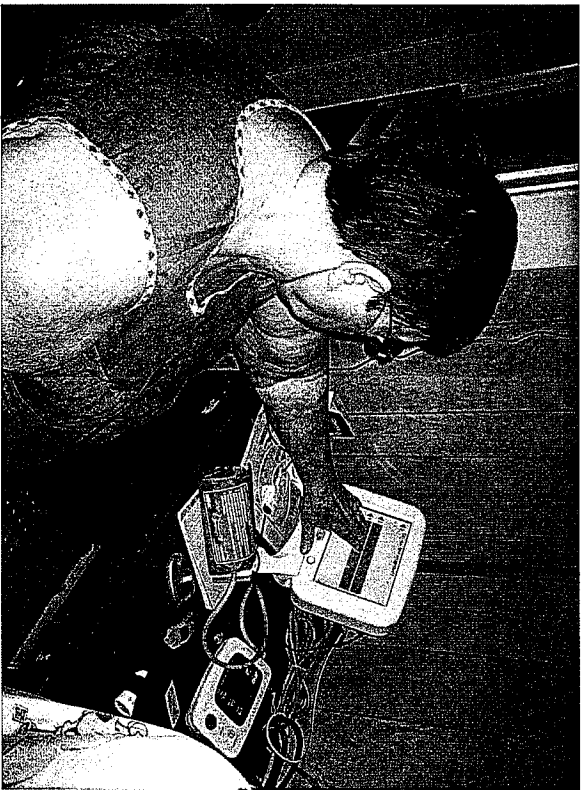
Data Reports  
Analyzed/Assessed

Communications  
Back to  
Client

Education  
Tips

Intervention  
Actions

Retake  
Measurements





### MARY'S DAY

Mary uses Telehealth equipment to measure her Weight, Blood Pressure, Pulse Oxygen and Blood Glucose readings. A typical day for Mary is as follows:

**07:30am** Mary wakes, walks into her dining room and sitting relaxed, places the **Blood Pressure** cuff on her arm and presses the START button on the B/P meter. Her B/P is automatically transferred to the TeleStation (main monitor).

**07:32** Mary places the **Pulse Oxygen** clip on her finger, presses start and the meter measures the oxygen in her blood. This is transferred to the TS.

**07:34** Mary checks her **Blood Sugar**. Once the measurement is taken, she will plug a cable from the TeleStation into the glucose meter. This transmits that reading to the TS.

**07:37** Next, Mary gets up to do her **Weight**. In about 10 seconds, this measurement will automatically go to the TS.

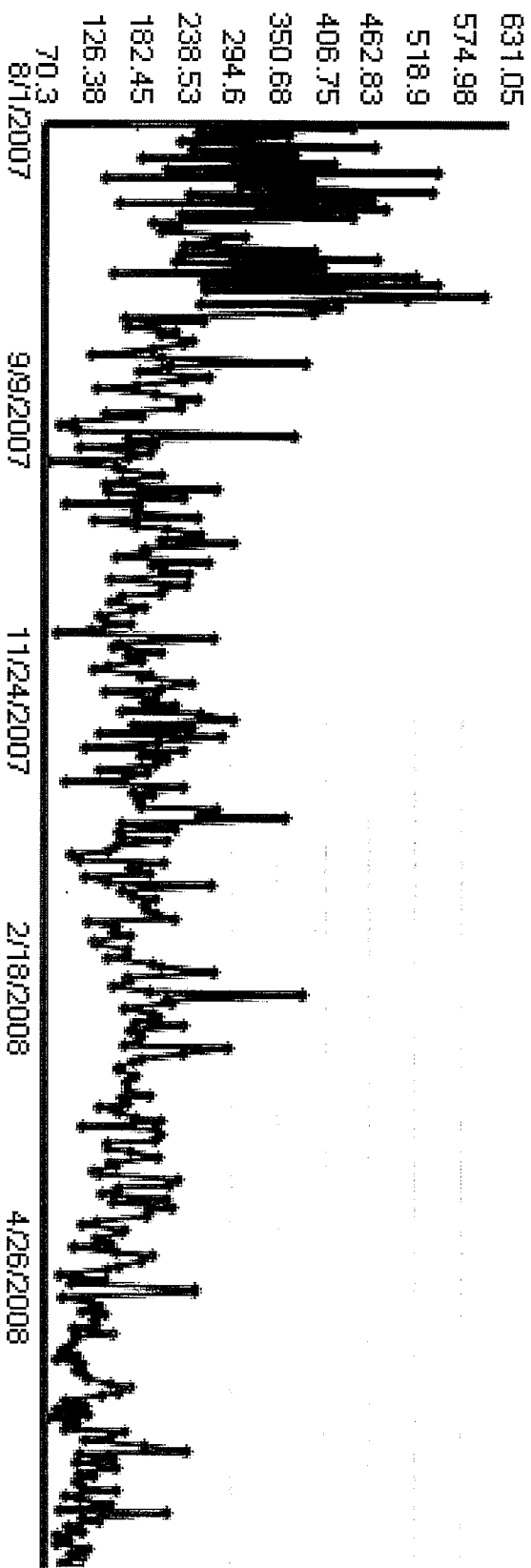
**07:40** Taking all these measurements in the comfort of her home, Mary has used about **10 minutes** of her day.

The **TeleStation will transmit** the readings it has received from each device via a **TOLL FREE** number and send them to a **secure, password protected website** so that the **TeleHealth nurse can see them**. This transfer happens about 15 – 20 min after the first measurement was taken, giving Mary ample time to do all measurements.

On occasion, Mary will have assessment questions, information or education, or a simple Birthday greeting. She will answer these in a matter of minutes and the TeleStation, as with the measurements, will transmit the answers to the secure website.



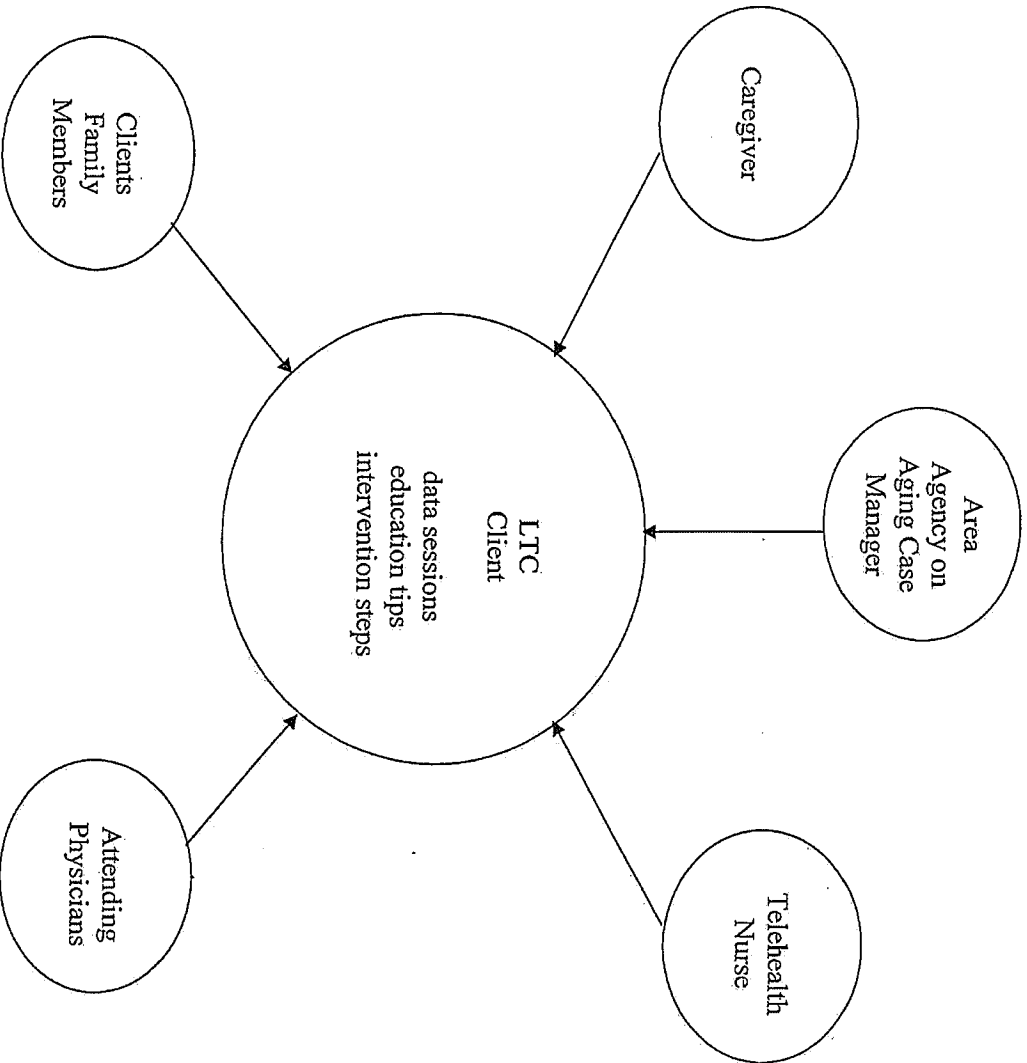
Measurement Chart



■ Blood Sugar



# Care Coordination and Integration Expansion



# Kansas Telehealth Participant Locations

Arma-3  
 Baxter Springs-2  
 Chanute-6  
 Cherryvale-2  
 Coffeyville-10  
 Columbus-1

Dearing-2  
 Desoto-1  
 Frontenac-3  
 Ft. Scott-3  
 Galena-5  
 Girard-1

Erie-2  
 Fall River-1  
 Lawrence-2  
 McLouth-1  
 Mulberry-2  
 Neodesha-3

Independence-5  
 Iola-1  
 Pittsburg-3  
 West Mineral-2  
 Topeka-1  
 Yates Center-1

Oswego-1  
 Parsons-1  
 Scammon-1  
 Olathe-2  
 Howard-1



# Excerpts from KUMC's Year 3 Telehealth Pilot Report

**Utilization and Costs** — By the end of the third year, all six original variables were statistically different between baseline and intervention periods across the three years (Table 1). These data mean that there is likely an effect of the telehealth intervention on the HCBS/FE study participants' use of health care services and the associated CMS costs.

Variable	Rate of Change	Significant Change?	p-value*
Hospital Visits	↓ by 38% per day	Yes	.0000
Hospital Days	↓ .028day/day or 10.23/year	Yes	.0014
Hospital Costs	↓ \$72/day or \$26,298/year	Yes	.0024
E.D. Visits	↓ by 67% per day	Yes	.0290
E.D. Costs	↓ \$21.10 per day**	Yes	.0300
Total Costs	↓ \$73/day or \$26,663/year	Yes	.0004

Table 1: Comparison of baseline and intervention mean rates of pilot variables.

\*Probability at the .05 level

\*\*For Year 3 participants only. Year 1 and 2 participants were not different from baseline.

## Participant Perceptions

HCBS/FE participants' perceptions of the intervention were positive during all three years of study.

## Discussion

- The results of this home telehealth pilot project demonstrated that home telehealth intervention reduced the rate of emergency department utilization, inpatient hospitalizations and the associated Medicare costs for HCBS/FE clients. The cost savings of a hospitalization alone (\$26,298 per patient annually) are substantial.
- In addition, the annual rate of nursing home placement during the three-year period was lower than the observed rate for all Kansas HCBS/FE clients. Patient perceptions of the intervention remained positive and stable over time.
- As with any pilot study, this pilot served its intended purpose of determining whether further study is warranted and what methodological issues should be revised. Specifically, this project yielded a number of positive findings that indicate the effectiveness of home telehealth for HCBS/FE clients and a number of lessons learned.



# Medicaid Cost Savings Opportunities Through Reduced NF Admissions

NF

HCBS

Approx 10,400 people are here  
approx cost \$3200 per month



seniors/funding source want to move  
this trend from NF to HCBS

Approx 6100 frail elders are here  
approx cost \$1150 per month

<p>medical/clinical needs</p>	<p>RN/LPN's provide care here</p>		<p>There is a void of care here. Telehealth would fill this need and allow seniors to stay in their homes longer.</p>
<p>Personal/ADL needs</p>	<p>CAN/RA's provide care here.</p>		<p>Attendant care and homemakers provide care here</p>
<p>Social Needs</p>	<p>Activity Directors/Social workers</p>		<p>Companion services added Oct 2008 but stopped Jan 2010</p>



# HCBS-FE Impacts

- During the three year pilot study, HCBS-FE telehealth pilot participants were admitted to nursing facilities 20.4% less than other persons in HCBS-FE waiver
- Of the telehealth participants who were admitted to the nursing facility, their average length of stay was only ten months, compared to two year average length of stay for other Medicaid nursing residents. A 58% reduction in length of stay.

# Potential HCBS-FE Medicaid LTC Savings

If 500 units on likely NF admissions, the 100 residents would be deferred.

Deferral Savings 100 X \$ 2,000/month X 12 Months = \$2,400,000

LOS Savings 400 X \$ 2,000/month X 12 Months X 58% = \$5,568,000

= \$7,968,000

Less: Telehealth cost for 500 units = \$1,100,000

Potential Net Medicaid Savings on 500 units = \$6,868,000

# Medicaid Cost Savings Opportunities Through Reduced HCBS-PD Hospitalizations

## Long Term Care

	NF	HCBS
medical/clinical needs	RN/LPN's provide care here.	There is a void of care here. Telehealth would fill this need and allow disabled persons to stay in their homes longer and out of the hospitals.
Personal/ADL needs	CNA/RA's provide care here.	Attendant care and homemakers provide care here.
Social Needs	Activity directors/Social workers	Companion services added Oct 2008

Cost savings opportunities 1372 PD consumers incurred \$24M in Medicaid hospital costs in FY 2008.  
 Projected FY2009 Medicaid hospital cost for PD consumers is \$28M.  
 If 500 consumers could be averted, savings could be \$10.2M annually or more.

# HCBS-PD Impacts

- In FY 2009, HCBS-PD consumers incurred \$28,000,000 in Medicaid hospital costs.
- During the three year home telehealth pilot, the results of this project demonstrated that home telehealth intervention significantly reduced the rate of emergency department utilization, inpatient hospitalizations and the associated Medicare costs for HCBS-FE clients. The cost saving of hospitalizations (\$26,298 per patient annually) are substantial.

# Potential HCBS-PD Medicaid Hospital Cost Savings

With 500 PD consumers with repeated histories of Medicaid hospitalizations, an average of 38% reduction could be made.

$$\text{\$20,000,000 X 38\%} = \text{\$7,600,000}$$

$$\text{Less cost of Telehealth} \quad \underline{\text{\$1,100,000}}$$

$$\text{Potential HCBS-PD Medicaid hospital cost savings} = \underline{\text{\$6,500,000}}$$

# Contact Information

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