

UPMC
LIFE CHANGING MEDICINE

UPMC Senior Communities Aging Institute
of UPMC Senior Services and the University of Pittsburgh

**LOOKING AHEAD: USING TELEMEDICINE TO
REDUCE COSTS AND IMPROVE THE
QUALITY OF CARE IN POST-ACUTE AND
LONG-TERM CARE SETTING**

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Disclosure

- I am the Chief Medical and Innovation Officer for Curavi Health
- I do not own any equity interests in Curavi Health, nor do I have any options or other interests that are convertible into equity interests in Curavi Health

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Learning Objectives

1. Describe the frequency, cost, and consequences of potentially avoidable hospitalizations (PAHs) of nursing home (NH) residents.
2. Describe the evidence-base and use of telemedicine to reduce PAHs in the NH setting.
3. Describe the RAVEN CMS Innovation Award that uses telemedicine to reduce PAHs.

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Potentially Avoidable Hospitalizations (PAHs)

- CMS defines PAHs as hospitalizations that could have been avoided because the condition could have been prevented or treated outside of an inpatient hospital setting.
- Each year, approximately 25% of all long-stay and post-acute residents on a fee-for-service Medicare benefit in NHs are hospitalized, while over 20% are readmitted in 30-days following hospital discharge.
- NH residents are sent to the Emergency Department (ED) an average of nearly 2 times per year, and just over half of these visits do not result in hospitalization.

Medicare & Medicaid Research Review 2014;4.



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Most Common PAH Diagnoses

Six conditions are responsible for 80% of PAHs:

- Pneumonia (32.8%)
- UTI (14.2%)
- CHF (11.6%)
- Electrolyte disturbance/dehydration (10.3%)
- COPD / Asthma (6.5%)
- Skin Ulcers, cellulitis (4.9%)

<https://innovation.cms.gov/initiatives/rahnfr-phase-two/index.html>



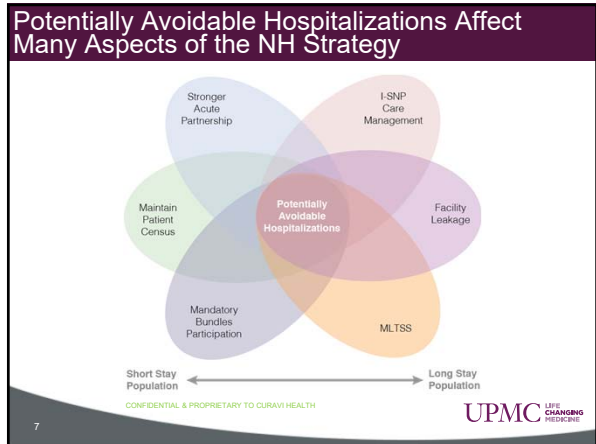
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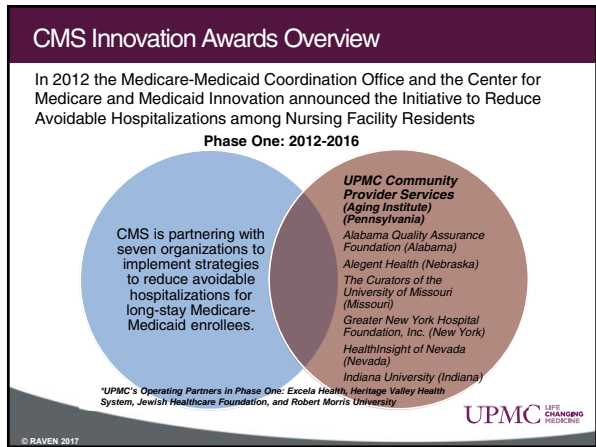
Impact of PAHs

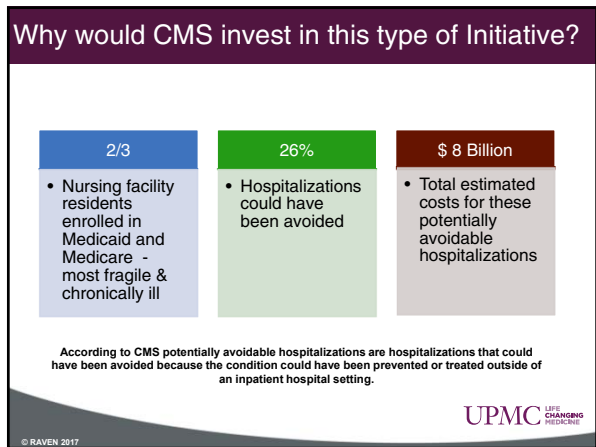
- Economic Impact - Have an avg. length of stay of 6.1 days and an estimated cost of \$8 billion (\$11,255/admission) to CMS (Centers for Medicare and Medicaid).
- Clinical Impact:
 - Death
 - Disability
 - Debility
 - Delirium
 - Discharged to higher level of care



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CMS Goals for the Initiative

Resident Population
Focus is on **long-stay (>100 days)**
Medicare-Medicaid residents

Improve beneficiary health outcomes	Reduce the number of and frequency of avoidable hospital admissions and readmissions
Provide better transition of care	Promote better care at lower costs while preserving access to beneficiary care and providers

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Phases of the Innovation Award

Phase 1 → **Phase 2**

- Phase 1: September 2012 through September 2016
- Phase 2: March 2016 through September 2020
 - Recruitment and Ramp-Up **March 2016 through October 2016**
 - Payment Model went live in Pennsylvania **November 2016**

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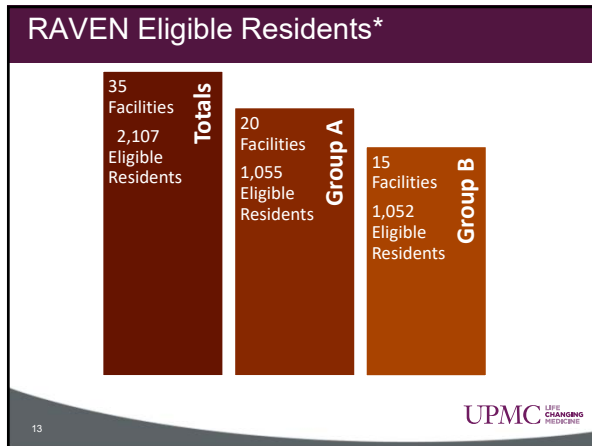
Why Implement a Payment Model?

The initial four years of the demonstration project (2012-2016) addressed preventing avoidable hospitalizations through various clinical quality models.	HOWEVER.... the initial demonstration did NOT address the existing payment policies that may be leading to avoidable hospitalizations.
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RAVEN





RAVEN Phase II Group A & B Facilities

Group A		Group B	
1	Creshtown Center	1	Ball Pavilion, Inc.
2	Fairview Care Ctr Bethlehem PA	2	Brighton Heights (Friendship Ridge)
3	Seamans Home	3	Corry Manor
4	Hampton Hall	4	Edison Manor Nursing and Rehab Center
5	Homeland Center	5	The Grove at Harmony (Evergreen)
6	Laurel Center	6	Shipperville Healthcare Center (Golden Living Center)
7	Luthi Center	7	Kane - Glen Hazel
8	Luxwood Nursing and Rehab Ctr	8	Kane - McKeesport
9	ManorCare Health Services-Pottstown	9	Kane - Ross
10	Morningside Home	10	Mountainview
11	Old Orchard Health Care Center	11	Oakwood Heights
12	Orchard Center	12	Squirrel Hill Center for Rehabilitation and Healing
13	Sanatoga Center	13	Sunnyview
14	Silver Stream Center	14	Sveden Valley Manor
15	Schuykill Center	15	Westmoreland Manor
16	Julia Pound Care Center (St. Andrew's Village)		
17	Wesley Village		
18	Westminster Village		
19	Windy Hill Village		
20	Woodland Rehabilitation and Nursing Center		

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Evaluation of Phase I

- Over the 3-year intervention period (2014–2016) in PA, there were statistically significant decreases associated with the Initiative in all types of Medicare expenditures.
- The ECCP intervention had largely consistent, but not always statistically significant, effects in reducing overall and PAHs and ED visits.
- For almost all utilization and expenditure measures, both the magnitudes and statistical significance of intervention effects peaked in 2014 and weakened considerably in 2015 and 2016.

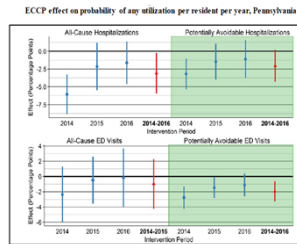
RTI Year 4 Report - <https://innovation.cms.gov/files/reports/rahhfr-finalvalrpt.pdf>

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Evaluation of Phase I: Clinical Outcomes

Reduced all cause hospitalizations*	12.6% reduction
Potentially avoidable hospitalizations	19.6% reduction
All-cause ED visit	5.0% reduction
Potentially avoidable ED visits*	28.2% reduction

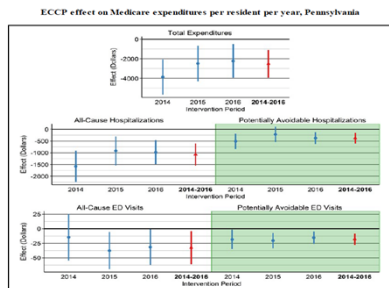


RTI Year 4 Report - <https://innovation.cms.gov/files/reports/rahhfr-finalvalrpt.pdf>
 *= Statistically significant

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Evaluation of Phase I: Economic Outcomes

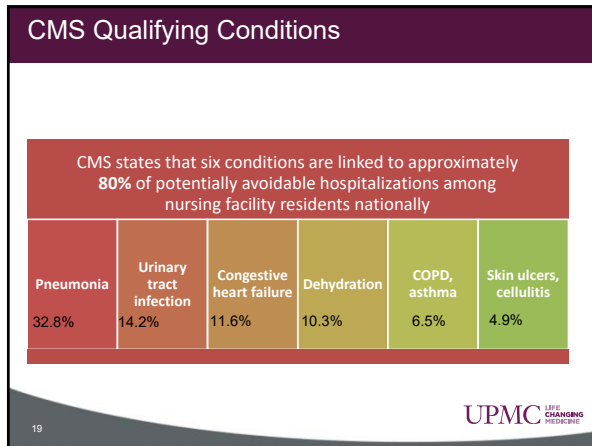


Estimated savings of \$2,513/resident/yr.*

RTI Year 4 Report - <https://innovation.cms.gov/files/reports/rahhfr-finalvalrpt.pdf>
 *= Statistically significant

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Phase Two - Payment Reform

Phase Two-Payment Reform has a **revenue** incentive for existing facilities and new participating facilities.

Facility Payment

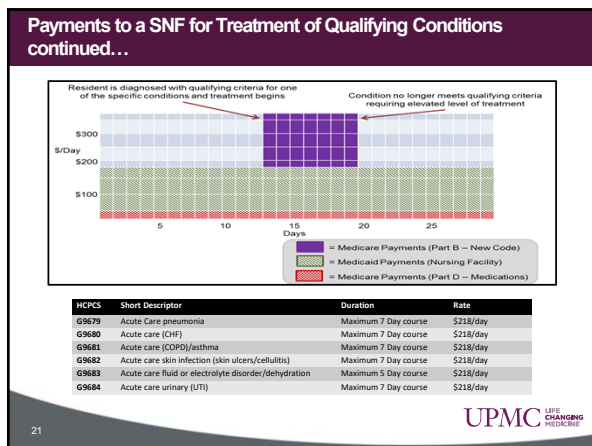
1. Payments to a SNF under Medicare Part B for the treatment of qualifying conditions *(for beneficiaries not on a covered Medicare Part A SNF stay).*

Practitioner Payments

1. Increased practitioner payments under Medicare Part B for the treatment of conditions onsite at the LTC facility.


2. Practitioner payments under Medicare Part B for care coordination and caregiver engagement for beneficiaries.

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Core Elements of Initiative

1. Facility-based Nurse Practitioners/Enhanced Care Nurses
2. INTERACT tools to reduce avoidable hospital admission
3. Individualized educational program/simulation
4. *Enhanced medication management, monitoring, and pharmacy engagement*
5. **Use of telemedicine to enable remote clinical assessment, and facilitate communication**



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Telemedicine 2.0: Raven Phase 2


- Facility payment:
 - Six conditions have qualifying criteria
 - MD, NP or PA must confirm qualifying diagnosis through in-person evaluation OR qualifying telemedicine assessment
 - Evaluation or assessment must occur by end of the 2nd day after acute change in condition
- Practitioner payment:
 - Can use telemedicine in accordance with current telemedicine rules
- CMS specifies the telemedicine software and hardware requirements

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What is Telemedicine?

- Telemedicine is defined as the use of telecommunication and information technologies in order to provide clinical healthcare at a distance.
- Types of telemedicine:
 1. Interactive services (synchronous)
 2. Store-and-forward (asynchronous)
 3. Remote monitoring (self-monitoring)
 4. mHealth (mobile devices)



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Evidence-Base for Telemedicine in NHs

- Edirippulige et al, conducted a systematic review which provides evidence for feasibility and stakeholder satisfaction in using telemedicine in NHs across clinical specialties
 - J Telem Telecare, 2013
- Grabowski et al., showed that an after-hours physician-based telemedicine program can reduce hospitalization by 9.7% and yield \$151K cost savings to Medicare/NH/yr.
 - Health Aff, 2014
- Hofmeyer et al., showed that NHs had on avg. 23 consults per/yr. and overall 69% of cases were not transferred.
 - JAMDA, 2016
- Handler et al. surveyed 435 physicians and nurse practitioners who had highly positive and strongly-held beliefs of the value of telemedicine for managing PAHs in the NH setting.
 - JAMDA, 2016

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Programs Designed to Reduce PAHs

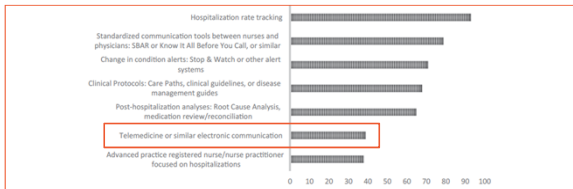


Fig. 1. Percentage of nursing facilities that introduced specific policies and procedures to reduce avoidable hospitalizations. Source: Authors' analysis of nursing facility data collected June to August 2015.

- 236 NHs from 7 states were surveyed and 40% of respondents implemented telemedicine

Daras, et al., J Am Med Dir Assoc 2017;18(10):442-44



Case Vignette

Stop and Watch Early Warning Tool



If you have identified a change while caring for or observing a resident, please **circle** the change and notify a nurse. Either give the nurse a copy of this tool or review it with her/him as soon as you can.

- S** Seems different than usual (Temperature 102°F)
- T** Talks or communicates less
- O** Overall needs more help (Generalized Weakness)
- P** Pain – new or worsening; Participated less in activities
- a** Ate less
- n** No bowel movement in 3 days; or diarrhea
- d** Drank less
- W** Weight change
- A** Agitated or nervous more than usual
- T** Tired, weak, confused, or drowsy
- C** Change in skin color or condition (Left forearm with warm reddened area 3" by 2 1/2")
- H** Help with walking, transferring, toileting more than usual

Traditional Telephonic Clinical Case

- Chris Bartos is an 86 yo female (new resident) transferred to Jane St NH following a recent hospitalization for a UTI with sepsis
- Resident has a PMHx of diabetes, hypertension, osteoarthritis, Alzheimer’s disease and malnutrition
- Resident has indicated FULL TREATMENT on her POLST form and would like antibiotics if life can be prolonged
- Family wants to send her out because they believe that the hospital can take care of sick patients better

UPMC LIFE CHANGING PROVIDER

Curavi Health Genesis

UPMC Owned NHs	CMS Innovation Award RAVEN	Curavi Health, Inc.
<ul style="list-style-type: none"> • 6 nursing homes (NHs) • Whole-house • Physician Providers from the UPMC Division of Geriatric Medicine 	<ul style="list-style-type: none"> • 17 NHs → 35 NHs • Long-stay residents only • Nurse Practitioners 	<ul style="list-style-type: none"> • Incorporated January, 2016 • Market launch October 2016 • Quick customer growth (45 homes under contract) • Whole house • Physician Providers
Feasibility (2012)	Scalability (2014)	Generalizability (2016)

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Acute Change in Condition NH Workflow

Managing Changes of Condition Using Curavi Telemedicine


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Resident-Centered Care



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CuraviCart™ - Curavi's solution

Cart Features

- Custom-made carts designed specifically for senior living communities.
- Custom-developed software that uses satellite originated technology ideal for low-bandwidth settings and based on our requirement specifications and workflows.
- Wi-Fi or Cellular
- Powered Cart and Monitor Height Adjustment
- Optimized Ergonomic Design

Telemedicine Cart Diagnostic Instrument Features:

- Pan-tilt-zoom (PTZ) camera AND examination camera
- Otoscope
- 12-lead EKG
- Bluetooth stethoscope
- Document Scanner



Cellular 5-8 dBI

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CuraviCart™ - Curavi's hardware solution

Telemedicine Cart Diagnostic Instrument Features:

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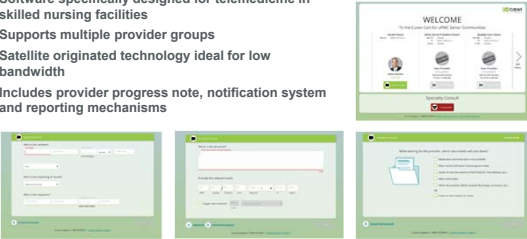
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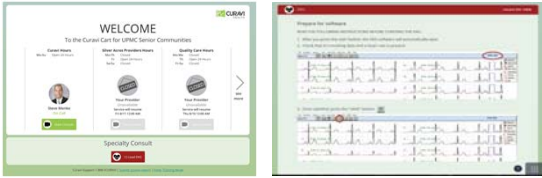
CuraviCare™ – Curavi’s software solution

- Software specifically designed for telemedicine in skilled nursing facilities
- Supports multiple provider groups
- Satellite originated technology ideal for low bandwidth
- Includes provider progress note, notification system and reporting mechanisms




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The CuraviCare™ EKG is fully integrated with our solution



- 12 lead EKG- Guaranteed 1 hour turnaround for read and interpretation from the Heart and Vascular Institute.
- This represents an example of a store and forward solution.
- Another example is tele-wound/dermatology and geriatric psychiatry consultations.

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CuraviEMR™



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CuraviMobile: telemedicine cart capabilities “on the go”

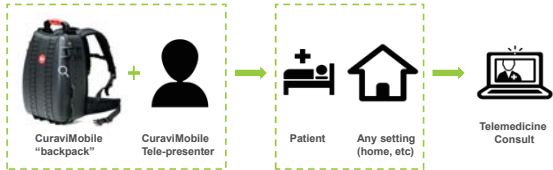



CuraviMobile “Backpack” offers:


- 2 digital scopes
- 4 high gain antenna
- Less than 20lbs
- 8- hour battery
- Connects to tablet through USB port
- Ferno connector for ambulance mount
- Redundant dual-modem connectivity
- Integrated speaker/mic

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CuraviMobile brings telemedicine to patients or residents in any setting



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Questions?
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