A new model for segmenting populations in the blind spot between claims data: A review of brand new research

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Reimbursement shifting from volume to value

Highest risk & profit margin

Alternative payment models (Bundles, ACO, et al)

FFS* linked to quality (readmission penalties, MIPS, et al)

Lowest risk & profit margin

Medicare FFS not tied to quality

<table>
<thead>
<tr>
<th>Year</th>
<th>2011</th>
<th>2014</th>
<th>2016</th>
<th>2018</th>
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<tbody>
<tr>
<td>%</td>
<td>68%</td>
<td>~20%</td>
<td>30%</td>
<td>50%</td>
</tr>
<tr>
<td></td>
<td>&gt;60%</td>
<td>55%</td>
<td>55%</td>
<td>40%</td>
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* FFS = Fee for service
Merit-based incentive payment system (MIPS)

- Care Quality: PQRS measures (30%)
- EHR Use: Meaningful Use Measures (25%)
- Resource Use: Cost Measures (30%)
- Clinical Process Improvement: Care coordination, patient satisfaction, access measures (15%)

Medicare Access and CHIP Reauthorization Act of 2015 (MACRA).
Changes in Medicare leading the shift
A readmission can more than double the episode cost.

Chart 6: Cost of a 30-day Fixed-length Episode with and without a Readmission, 2007-2009

247: Percutaneous cardiovascular procedure with drug-eluting stent w/MCC
470: Major joint replacement or reattachment of lower extremity w/o MCC
481: Hip & femur procedures except major joint w/CC
192: Chronic obstructive pulmonary disease w/o CC/MCC
194: Simple pneumonia & pleurisy w/CC
291: Heart failure & shock w/MCC

Example of alternative reimbursement: Bundles

Understanding the distribution of costs will help identify where to look for savings opportunities.

**Chart 1:** Percent of Spending by Episode Type, 30-day Fixed-length Episodes, 2007-2009

- **Major Joint (MS-DRG 470):**
  - Readmission: 3.0%
  - PAC: 11.9%
  - Physician: 50.9%
  - Index: 43.8%

- **Heart Failure and Shock (MS-DRG 291):**
  - Readmission: 1.5%
  - PAC: 16.9%
  - Physician: 17.2%
  - Index: 6.3%

- Other: 16.9%
Nurse-driven care transition models not financially sustainable

Cost of care transitions program needs to be $\leq 200$
Guided Care

$1,732 per consumer per year

Geriatric Resources for Assessment and Care of Elders (GRACE)

$1,432 per consumer per year

Transitional Care Model (Naylor Model)

$982 per consumer per year
Care Transitions Intervention (Coleman Model)

$196+ per consumer per year

Health Coach is a Nurse

Care coordination
Care management
Med rec
Red flags education
f/u appointments

For 800 patients per month, need *32 nurses ($45-70k/yr)

*Interview with Dr. Eric Coleman: http://www.modernhealthcare.com/article/20100816
Health Coach

- Care Coordination
- Med rec
- Red flags education
- f/u appointments

Nurse Care Coordinator

- Care management
**Health Coach**

- Same community
- Same education level
- Same language
- Same cultural background

**Nurse Care Coordinator**

- Care Coordination
  - Med rec
  - Red flags education
  - f/u appointments
- Care management
  - Communication with physicians
  - Triage
  - Sick vs Not Sick
  - Education of coach
For 800 patients per month, need 20 health coaches ($30k/yr) + 1 nurse*

*Admin staff is an essential component of a successful program
Consumer engagement is a top problem

- Without engagement, can’t deliver interventions
  - Without interventions, can’t prevent acute care spending
  - Without engagement, can’t enroll members
  - Without enrolling members, can’t get paid
HCBS can reach patients where Medical and Managed Care can’t.

- Time spent as a Patient
- Time spent as a Person

### Medical Services
- Health
- Disease
- Treatment
- Care Management
- Facilities & Clinic

### Home & Community Based Services
- Choice
- Function
- Thriving
- Care Coordination
- Home & Community

Adapted from O’Malley T. ONC Webinar. 2014.
Of 1,000 physicians surveyed:

- 85% say unmet social needs directly leading to worse health
- 85% say social needs as important to address as medical conditions
- 80% not confident in their ability to address social needs
Blind-spot between claims and EHR data

PREDICT hospitalization risk in blind spot between doctor visits

- Frontline staff surveys power Care at Hand predictive model
- Doctor visits inform sporadic claims-based predictive models
LTSS workforce key to its financial sustainability

Non-medical workers spend more time with the patient and cost less than doctors.
Evidence-based risk score reducing hospitalizations

Evidence-based smart surveys identify EARLY medical and psychosocial warning signs

**Existing frontline staff** help with ADLs, education or care coordination in-person or over the phone

**Smart surveys** with adaptive questions completed in 3 minutes on mobile device or desktop

**Evidence based algorithms** assign risk score and trigger about 1 alert for every 5 surveys

**Nurse triages** alert before problems get more serious
mHealth Transitions Model ®

- Patient enrolled while still in hospital
  - Coach completes discharge survey
- High risk - 24 hr visit
- Moderate risk - 48 hr visit
- Algoritms determine timing of next visits
  - Survey + 3 pillars and/or ADLs
- Nurse coordinator receives text/email alert
  - Triages to VNA, PCP, or other community resources
- Nurse coordinator reviews dashboards
  - Proactive population health management
Least expensive, most consumer-centered way to keep people out of the hospital

↓39.6%¹
30-day readmissions

257%¹
ROI from prevented readmissions

$9,056²
Reduction in Medicare A spending per beneficiary per year

Prediction hospitalizations up to
120 days³

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1. AHRQ. Service Delivery Innovation: Community-Based Health Coaches and Care Coordinators Reduce Readmissions Using Information Technology To Identify and Support At-Risk Medicare Patients After Discharge. Rockville, MD. 2014.
Study design

5,224 surveys performed using technology (2,027 unique patients)

1,202 alerts generated by the technology in response to submitted surveys

32 alerts that did not have any response from nurse care manager

106 alerts could not be reconciled between administrative data and Care at Hand data

1,064 alerts had response from nurse care manager

242 care management episodes followed by subsequent readmission within 30 days of hospital discharge

822 care management episodes with no subsequent readmission within 30 days of hospital discharge

277 episodes had a readmission more than 30 days after the hospital discharge (average 141 days after prior survey)

19 episodes had a subsequent readmission for an observation stay within 30 days of hospital discharge

159 episodes were the last touch point in the transition program (average 26 days post-discharge)
Findings

• Non-medical workers + technology: Patients with elevated risk score have 12% higher odds of getting admitted

• Non-medical workers + nurse supervision + technology: Patients with elevated risk score have 25% higher odds of getting admitted
Findings

Findings

Readmission Rate in Each Risk Category for the Intervention-based Risk Score from Structured Data Capture with 95 Percent Confidence Intervals

Readmission risk factors that traditional PAC may not address

- Intrinsic & Extrinsic Care Coordination (21%)
- Intrinsic & Extrinsic Environmental (2%)
- Extrinsic Care Coordination (12%)
- Other (3%)
- Intrinsic (62%)
<table>
<thead>
<tr>
<th>Intrinsic</th>
<th>Extrinsic</th>
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<tbody>
<tr>
<td>Worsening medical or surgical condition (i.e., chest pain, shortness of breath, etc)</td>
<td>Management of a specific condition</td>
</tr>
<tr>
<td>Worsening mental or behavioral health problem (i.e., depression, noncompliance, etc)</td>
<td>Setting up PCP or specialist appointment</td>
</tr>
<tr>
<td>Functional decline (i.e., needs help with more ADLs, worsening frailty, etc)</td>
<td>Coordination issue remained unresolved (Loop not closed)</td>
</tr>
<tr>
<td></td>
<td>Skilled home care assessment, referral, or service</td>
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<tr>
<td></td>
<td>Non-skilled home care assessment, referral, or service</td>
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<tr>
<td></td>
<td>Behavioral health assessment, referral, or service</td>
</tr>
<tr>
<td></td>
<td>Home safety assessment</td>
</tr>
<tr>
<td></td>
<td>Other home and community services based assessment, referral, or service</td>
</tr>
<tr>
<td></td>
<td>Medications ordered and filled</td>
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<tr>
<td></td>
<td>Medication reconciliation</td>
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<td></td>
<td>Ongoing medication management in the home (filling syringes, applying creams, etc)</td>
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<tr>
<td></td>
<td>Durable medical equipment (DME) ordered and filled</td>
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<tr>
<td></td>
<td>Inadequate family or community support to help with function</td>
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<tr>
<td></td>
<td>Patient or family education or health literacy</td>
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<td></td>
<td>Financial insecurity (i.e., can’t afford basic necessities)</td>
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<td></td>
<td>Food insecurity (i.e., lack of access to high quality nutrition)</td>
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<td>Housing insecurity (i.e., risk of homelessness)</td>
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<tr>
<td></td>
<td>Housing quality (i.e., bug or rodent infestations, elevator out, no heat, appliance not working, etc)</td>
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<tr>
<td></td>
<td>Violence or abuse</td>
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<tr>
<td></td>
<td>Transportation (i.e., can’t get to appointments, etc)</td>
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<td></td>
<td>Legal</td>
</tr>
</tbody>
</table>
Findings

Boston Blizzards 2015: Juno et al

EMERGING PROBLEM: Projected snowfall next 72 hrs

72-HOUR SNOWFALL FORECAST

Snowfall accumulation impeding services
Time to First Visit Performance

Days until first visit

- Home
- SNF
- Acute Rehab
- Assisted Living Facility
- Weekend discharges

Discharge date

Notes

© Care At Hand Inc.
Time to First Visit Performance

Discharge date

- Home
- SNF
- Acute Rehab
- Assisted Living Facility
- Weekend discharges

- PDSA 1
- PDSA 2

Notes:

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Washington Wild Fires 2015
Washington Wild Fires 2015

55 High-risk patients Identified

- Focus on respiratory illness (COPD), inhaler use, O2 requirement
- 23 received interventions
- Many could not be reached
- Public health authorities notified
West Baltimore 2015
Get Well Program: The Coordinating Center

The readmission data presented here are calculated using raw, unadjusted Medicare claims for the specified periods of time. They do not indicate impact or take trends or other initiatives into consideration. These metrics are provided by CMS for performance monitoring purposes only and while they inform evaluative results, they do not constitute the entirety of the program evaluation.
GET WELL
West Baltimore Readmission Reduction Collaborative
30-Day Intervention

3,119 participants
May 2014-April 2015

3,434,049 Rehospitalizations Avoided
$1,185,220 Intervention Costs
189.7% Return on Investment

Cost and Savings
It’s not about tech…

…it’s about the community and aging in place
Thank you!

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Current quality measures fail to capture CBO impact on outcomes

- HEDIS
- HOS
- CAHPS
- Managed care measures
Previous quality measures reinforce hospital-centric paradigm

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CareCoordination: NQF-Endorsed® Maintenance Standards Under Review

Click the measure numbers to read more about the measure on QPS.

<table>
<thead>
<tr>
<th>Measure Number</th>
<th>Title</th>
<th>Description</th>
<th>Measure Steward</th>
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</thead>
<tbody>
<tr>
<td>0291</td>
<td>Administrative Communication</td>
<td>Percentage of patients transferred to another healthcare facility whose medical record documentation indicated that administrative information was communicated to the receiving facility within prior to departure.</td>
<td>University of Minnesota Rural Health Research Center</td>
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<tr>
<td>0292</td>
<td>Vital Signs</td>
<td>Percentage of patients transferred to another HEALTHCARE FACILITY whose medical record documentation indicated that the entire vital signs record was communicated to the receiving FACILITY within 60 minutes of departure</td>
<td>University of Minnesota Rural Health Research Center</td>
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<td>0293</td>
<td>Medication Information</td>
<td>Percentage of patients transferred to another HEALTHCARE FACILITY whose medical record documentation indicated that medication information was communicated to the receiving FACILITY within 60 minutes of departure</td>
<td>University of Minnesota Rural Health Research Center</td>
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<tr>
<td>0294</td>
<td>Patient Information</td>
<td>Percentage of patients transferred to another HEALTHCARE FACILITY whose medical record documentation indicated that patient information was communicated to the receiving FACILITY within 60 minutes of departure</td>
<td>University of Minnesota Rural Health Research Center</td>
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<tr>
<td>Measure Number</td>
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<td>Description</td>
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<tr>
<td>0295</td>
<td>Physician Information</td>
<td>Percentage of patients transferred to another HEALTHCARE FACILITY whose medical record documentation indicated that physician information was communicated to the receiving FACILITY within 60 minutes of departure</td>
<td>University of Minnesota Rural Health Research Center</td>
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<td>0296</td>
<td>Nursing Information</td>
<td>Percentage of patients transferred to another HEALTHCARE FACILITY whose medical record documentation indicated that nursing information was communicated to the receiving FACILITY within 60 minutes of departure</td>
<td>University of Minnesota Rural Health Research Center</td>
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<tr>
<td>0297</td>
<td>Procedures and Tests</td>
<td>Percentage of patients transferred to another healthcare facility whose medical record documentation indicated that procedure and test information was communicated to the receiving FACILITY within 60 minutes of departure</td>
<td>University of Minnesota Rural Health Research Center</td>
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<tr>
<td>0487</td>
<td>EHR with EDI prescribing used in encounters where a prescribing event occurred</td>
<td>Of all patient encounters within the past month that used an electronic health record (EHR) with electronic data interchange (EDI) where a prescribing event occurred, how many used EDI for the prescribing event.</td>
<td>City of New York Department of Health and Mental Hygiene</td>
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<td>0495</td>
<td>Median Time from ED Arrival to ED Departure for Admitted ED Patients</td>
<td>Median time from emergency department arrival to time of departure from the emergency room for patients admitted to the facility from the emergency department.</td>
<td>Centers for Medicare and Medicaid Services</td>
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<tr>
<td>0496</td>
<td>Median Time from ED Arrival to ED Departure for Discharged ED Patients</td>
<td>Median time from emergency department arrival to time of departure from the emergency room for patients discharged from the emergency department.</td>
<td>Centers for Medicare and Medicaid Services</td>
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<tr>
<td>0497</td>
<td>Admit Decision Time to ED Departure Time for Admitted Patients</td>
<td>Median time from admit decision time to time of departure from the emergency department for emergency department patients admitted to inpatient status</td>
<td>Centers for Medicare and Medicaid Services</td>
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<tr>
<td>Committee Domains</td>
<td>Domains Most Frequently Cited in the Literature</td>
<td>Domains Often Cited in the Literature</td>
<td></td>
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<tr>
<td>[WORKFORCE/PROVIDERS]</td>
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<tr>
<td>Workforce: trained, culturally competent, adequate, supported</td>
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<tr>
<td>[CONSUMER VOICE]</td>
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<tr>
<td>Participant engagement in the design, implementation, evaluation of the program</td>
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<tr>
<td>[CHOICE AND CONTROL]</td>
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<tr>
<td>Choice, person-driven, focused on achieving individual goals, consumer directed, control, dignity of risk</td>
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<td>X</td>
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<td>[HUMAN AND LEGAL RIGHTS]</td>
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<tr>
<td>Privacy, dignity, respect, freedom/independence, Legal rights</td>
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<tr>
<td>[SYSTEM PERFORMANCE]</td>
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<tr>
<td>Efficient, well-aligned, well-allocated, integrated, data integrity</td>
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</table>
# NQF HCBS Measurement Domains

<table>
<thead>
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<td>Consumer and Caregiver Experience</td>
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<td>Access to Supports and Services</td>
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<td>Community Integration/Inclusion</td>
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<td>Person Centeredness</td>
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<td>Service/Care Coordination</td>
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<td>Quality of Life</td>
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<td>Safety, Security, and Order</td>
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<td>Functional Status</td>
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<td>Performance</td>
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<td>Healthcare/Service Utilization</td>
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<tr>
<td>Provider Capacity and Capabilities</td>
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<tr>
<td>Support for Caregivers</td>
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<tr>
<td>Respect/Dignity</td>
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<tr>
<td>Quality of Care</td>
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<tr>
<td>Meaningful Activity</td>
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</table>

**[FULL COMMUNITY INCLUSION]** Community engagement, inclusion (to the same degree as people not receiving HCBS), participation; employment and productivity, having fun; social connectedness

**[CAREGIVER SUPPORT]** Family Caregivers are supported

**[EFFECTIVENESS/QUALITY OF SERVICES]** Effectiveness of services/quality of care

**SERVICE DELIVERY** Services are accessible, appropriate, sufficient, dependable, timely

**EQUITY** Equitable system/fairness and distribution of services that eliminate health disparities

**HEALTH AND WELL-BEING** Well-being: physical/emotional health, safety from the part of the consumer, freedom from abuse or exploitation, neglect
NQF HCBS Measurement Framework

- **Policy/System**: Consumer Voice, System Performance
- **Services/Providers**: Workforce/Providers, Service Delivery
- **Quality Measurement**: Full Community Inclusion, Caregiver Support, Effectiveness/Quality of Services
- **Individual**: Health and Well-Being

Improved Consumer Outcomes for Individuals Using HCBS
Standardizing LTSS Plan