BRIGHTSPRING HEALTH SERVICES

Emerging Value-Based Outcomes Measures and the Home-Based Primary Care Model in IDD

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William Mills, M.D.



OVERVIEW

- Emerging value-based outcome measures in IDD
- 2. Home-based primary care
- 3. Can the provision of home-based primary care lead to an improvement in value-based outcomes in people with IDD?

Emerging Value-Based Outcomes Measures In IDD







BACKGROUND



- There has been increased usage of value-based outcome measures in many population health initiatives in the U.S.
- There is little research about which standards should be used for long term services and supports (LTSS) for people with intellectual and developmental disabilities (IDD).
- Hospitalization rate is an outcome measure that is being used as a reportable measure in many value-based payment models.
- Days spent at home is a person-centered outcome measure that can measure the time people with chronic and serious conditions spend in the community, and outside of hospitals and nursing homes.
- We sought to build an algorithm to determine the annual hospitalization rate and mean days spent at home by the population of people with IDD who are enrolled in community-based residential waiver programs, as value-based outcome measures for people with IDD.



Sayer C. "Time Spent at Home" – A Patient-Defined Outcome. New England Journal of Medicine Catalyst, April 26, 2016. https://catalyst.nejm.org/time-spentat-home-a-patient-defined-outcome/



- Between October 1, 2018 and September 30, 2019, our IDD residential waiver programs provided continuous personcentered support and medically-necessary services to a cohort of individuals living in community-based settings.
- Each individual's whereabouts each day was entered into a database (HCS Interactant[®], Wall Township, NJ), recording whether the individual was at home, in the community receiving supportive services from our organization, or in other settings (hospital, nursing home, or on other leave) that day.
- We performed a retrospective review of this internal census tracking and length of stay database.

- Total managed days was calculated as the days an individual we served was utilizing our services minus days that the individual was on therapeutic leave, or incarcerated.
- Hospitalization rate per 1,000 was calculated as (Admissions/(Managed Months/1,000)) x 12).
- Inpatient days per 1,000 per person served (the number of inpatient days that are used in a year for each thousand people served) was calculated as: inpatient days /managed client months) x 1000 clients x 12 months.
- Days spent at home was calculated as total managed days minus days spent in hospitals or nursing homes.

McCall N, Geonnotti K. Utilization Measures Worksheet. Mathematica Policy Research 2015.

Groff AC, Colla CH, Lee TH. Days Spent at Home – A Patient-Centered Goal and Outcome. N Engl J Med 2016; 375: 1610-12.

DEVELOPMENT OF DATA-RICH CLINICAL OUTCOMES DASHBOARDS

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TOP 10 PATIENTS BY HOSPITALIZATION EVENTS & ED (DRILL DOWN)







7

RESULTS





Mills WR. Days Spent At Home As An Outcome Measure For People With Intellectual And Developmental Disability American Association on Intellectual and Developmental Disabilities 2020 National Meeting (Presented virtually).



DATA

- Hospitalization rate and days spent at home may be emerging valuebased outcome measures in IDD
- Individuals in residential waiver programs were hospitalized at a rate of 240/1000 per year
- □ Individuals in residential waiver programs spent an average of 360 days at home per year
- U While most individuals were not hospitalized during the year, a subset had long lengths of stay, most of which were related to behavioral diagnoses refractory to routine outpatient treatment





ROAD MAP

FUTURE DIRECTIONS

- □ Studies of new models of support and care for people with IDD in which augmented outpatient behavioral health supports are available are needed.
- These studies should evaluate whether providing more intensive community-based medical and behavioral health resources may decrease hospitalization rate and inpatient days per 1,000.
- □ Studies of enablers of optimizing hospitalization rate and days spent at home
 - Access to care
 - □ Care management
 - Medication management
 - Care coordination
- □ Hosp. Rate, and days spent at home are simple metrics that may promote provisioning of appropriate resources for IDD waiver programs, as well as for managed care payers.





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Home-Based Primary Care



90% of the nation's \$3.8 trillion in annual health care expenditures are for people with chronic and mental health conditions.^{1,2}



Heart Disease and Stroke



Nothing kills more Americans than heart disease and stroke. More than 868,000 Americans die of heart disease or stroke every vear-that's one-third of all deaths. These diseases take an economic toll, as well, costing our health care system \$214 billion per year and causing \$138 billion in lost productivity on

Cancer



Each year in the United States, more than 1.7 million people are diagnosed with cancer, and almost 600,000 die from it, making it the second leading cause of death. The cost of cancer care continues to rise and is expected to reach almost \$174 billion by 2020."4

Diabetes



More than 34.2 million Americans have diabetes, and another 88 million adults in the United States have a condition called prediabetes, which puts them at risk for type 2 diabetes. Diabetes can cause serious complications, including heart disease, kidney failure, and blindness. In 2017, the total

estimated cost of diagnosed diabetes was \$327 billion in medical costs and lost productivity.⁵

Obesity



Obesity affects 19% of children and 42% of adults, putting people at risk for chronic diseases such as diabetes, heart disease, and some cancers. Over a guarter of all Americans 17 to 24 years are too heavy to join the military. Obesity costs the US health care system \$147 billion a year.⁶

Arthritis



Arthritis affects 54.4 million adults in the United States, which is about 1 in 4 adults. It is a leading cause of work disability in the United States, one of the most common chronic conditions, and a common cause of chronic pain. The total cost attributable to arthritis and related conditions was about \$304 billion in 2013. Of this amount, nearly \$140 billion was for medical costs and \$164 billion was for

indirect costs associated with lost earnings.7

Alzheimer's Disease



billion and \$500 billion annually.

Alzheimer's disease, a type of dementia, is an irreversible, progressive brain disease that affects about 5.7 million Americans. It is the sixth leading cause of death among all adults and the fifth leading cause for those aged 65 or older. In 2010, the costs of treating Alzheimer's disease were estimated to fall between \$159 billion and \$215 billion.⁸ By 2040, these costs are projected to jump to between \$379

CONCENTRATION CURVE OF HEALTHCARE EXPENDITURES, U.S. CIVILIAN, NONINSTITUTIONALIZED POPULATION, 2019





Source: Medical Expenditure Panel Survey



- <u>Frailty</u> -an aging-related syndrome of physiological decline, characterized by marked vulnerability to adverse health outcomes.
- <u>Frail elderly</u> age <u>> 65</u> and the presence of at least two conditions on a modified list of twelve specific claims-based diagnoses potentially indicative of frailty as proposed by Kim and Schneeweiss
- <u>Frail <65 Disabled</u> age < 65; qualified for Medicare due to permanent disability or ESRD

Indicator	Number of	% of beneficiaries	
	beneficiaries with	with indicator	
	indicator		
Abnormality of gait	272,654	10.5%	
Protein-calorie malnutrition	51,300	2.0%	
Adult failure to thrive	26,029	1.0%	
Cachexia	6,730	0.3%	
Debility	84,760	3.3%	
Difficulty in walking	201,979	7.7%	
Fall	112,413	4.3%	
Muscular wasting and disuse atrophy	42,649	1.6%	
Muscle weakness	263,343	10.1%	
Decubitus ulcer of skin	49,784	1.9%	
Senility without mention of psychosis	7,370	0.3%	
Durable Medical Equipment (DME) (cane, walker, bath equipment, and commode)	115,575	4.4%	



Healthcare

Contents lists available at ScienceDirect

journal homepage: www.elsevier.com/locate/hjdsi

Original research

Segmenting high-cost Medicare patients into potentially actionable cohorts Karen E. Joynt^{a,e}, Jose F. Figueroa^{a,d}, Nancy Beaulieu^b, Robert C. Wild^b, E. John Orav^e, Ashish K. Jha^{a,f,e}



[] 1 Very Fit – People who are robust, active, energetic and motivated. These people commonly exercise regularly. They are among the fittest for their age.

[] 2 Well – People who have no active disease symptoms but are less fit than category 1. Often, they exercise or are very active occasionally, e.g. seasonally.

[] 3 Managing Well – People whose medical problems are well controlled, but are not regularly active beyond routine walking.

[] 4 Vulnerable – While not dependent on others for daily help, often symptoms limit activities. A common complaint is being "slowed up", and/or being tired during the day.

[] 5 Mildly Frail – These people often have more evident slowing, and need help in high order IADLs (finances, transportation, heavy housework, medications). Typically, mild frailty progressively impairs shopping and walking outside alone, meal preparation and housework.

[] 6 Moderately Frail – People need help with all outside activities and with keeping house. Inside, they often have problems with stairs and need help with bathing and might need minimal assistance (cuing, standby) with dressing.

[] 7 Severely Frail – Completely dependent for personal care, from whatever cause (physical or cognitive). Even so, they seem stable and not at high risk of dying (within \sim 6 months).

[] 8 Very Severely Frail – Completely dependent, approaching the end of life. Typically, they could not recover even from a minor illness.

[] 9 **Terminally III** - Approaching the end of life. Applies to people with a life expectancy <6 months, who are not otherwise evidently frail. 14





Fig. 1. Segments were assigned in a waterfall fashion in the order shown, such that the groups are mutually exclusive. First, the under 65 population was assigned to a group (<65). Then, of remaining beneficiaries, those with more than two frailty indicators were assigned to a group ("frail elderly"). Then, based on the number of chronic conditions present, the remaining beneficiaries were divided into the four remaining groups shown.

Number of Frailty Indicators	Number of patients	% of beneficiaries
0	2,007,390	77.0%
1	277,827	10.7%
2	148,429	5.7%
3	86,909	3.3%
4	48,807	1.9%
5	23,077	0.9%
6	9,306	0.4%
7	3,187	0.1%
8	975	0.0%
9	237	0.0%
10	45	0.0%
11	3	0.0%
12	0	0.0%

PREVALENCE OF HIGH-COST STATUS WITHIN EACH SEGMENT AND TYPE OF SPENDING



Fig. 2. Prevalence of High-Cost Status Within Each Segment. ESRD=end-stage renal disease. High-cost status was defined as the top 10% of spending, so if the likelihood of being a high-cost patient was equivalent across segments, we would expect 10% of the patients in each group to receive this designation.



Fig. 3. Total and Type of Spending Across High-Cost Patients by Segments. The boxes atop each bar represent total spending in each group.





Boomershub

- "The stairs are getting so hard to climb."
- "Since my wife died, I just open a can of soup for dinner.
- "I've lived here 40 years. No other place will seem like home.
- "I've had more trouble getting around."
- "I've had a couple of falls not too bad though."



Over 15 million Americans receive health services in the home setting every year 2 million caregivers travel over 7 billion miles each year to provide care for patients in their homes

Care in the home brings proven cost savings

Promotes better patient outcomes

The latest therapies and medical technologies can be provided in the home

Home is a preferred setting for care











HOME BASED PRIMARY CARE BY THE NUMBERS





PRIMARY HBPC OUTCOME MEASURES: ALIGNING PATIENT, PRACTICE AND PAYER GOALS





HOME-BASED PRIMARY CARE DELIVERY MODEL







HOME-BASED PRIMARY CARE: LOWERING EMERGENCY DEPARTMENT COST



4‡‡ + a b | e a u O Search Home / hb/analytics Claims Data Co-Op Tool for Western Re... / 2018Q3 Aggregated Claims Data Tool / Risk-Adjusted Measure Snapshot 🏠 \leftarrow Undo \rightarrow Redo \leftarrow Revert \bigcirc Refresh \bigcirc Pause s Dashbo... Risk-Adjusted Summary Dash... Risk-Adjusted Benchmark Da... Risk-Adjusted Measure Snaps... Risk-Adjusted Trend Dashboard THE HEALTH Risk-Adjusted Measure Snapshot COLLABORATIVE Measure (English) 14 * Risk-Adjusted Variance from ALL PAYER Avg: ED Cost (\$PMPY) Decile Performance: All Region Measurement Period: 2018-09-30 ED Cost (\$PMPY) 91 to 100 * F Practice Organization County: Stark (AII) -Risk-Adjusted Map: ED Cost (\$PMPY) Measurement Period: 2018-09-30 County: Lake Practice Name (Unique) (All) ÷ County: Medina CPCID (AII) -County: Summit +_ Region Metropolitan 命 (Multiple values) -NonAcademic Center • CPC+ Track (AII) -_Oh/N.Ky CPC+ (All) Cleveland County Benchmark Commercial (AII) -Benchmark Medicare City (AII) -Northeast Practice Type Non-Metropolitan (AII) ÷ Micropolitan Academic Center County: Lorain County: Cuyahoga Mills MPs, LLC OpenStreetMap contributors -50.00% 0.00% Variance from 2018Q3 Oh/N.Ky CPC+ .. 2018 Per Capita Income (Source: Tableau) 31,900 to 36,800 44,800 to 194,0... 0 to 27,000 Level 27,000 to 31,900 36,800 to 44,800 Benchmark Practice





Home-Based Primary Care Delivers More Days Spent At Home For Complex Patients



Western Reserve Medical Group is enabling complex, frail populations to spend <u>98% of their days at home</u>, in the community – and outside hospitals and nursing homes



BrightSpring Study Abstract Published in Journal of the American Geriatrics Society

Chief Medical Officer Bill Mills, MD, and members of the Western Reserve Medical Group team (Janet Buccola, Lisa Lemin, Lynn Cappelli, Jamie Roosa, Kathy Lewis and Belinda Schraer) gained attention for their study "Variation in Hospitalization Rates Among Senior Living Communities Served by a Home-Based Primary Care Practice" in the April 2020 issue. CAN THE PROVISION OF HOME-BASED PRIMARY CARE LEAD TO AN IMPROVEMENT IN VALUE-BASED OUTCOMES IN PEOPLE WITH IDD?





IMPROVING CARE FOR INDIVIDUALS WITH IDD: CARE INTEGRATION MODEL

• <u>Primary Outcome Measures</u>

- Hospitalization Rate
- Days Spent at Home
- Total Cost of Care
- Advance Care Planning
- Readmission Rate
- Medication Adherence
- Satisfaction

Pharmacy Alternatives









IDD INTEGRATED CARE MODEL: CASE



Before home-based primary care

 Individual had four emergency room visits within two months due to hyperglycemia

With home-based primary care

- MD visited with patient and adjusted treatment plan, most recent Hb A1C 6.8% (down from 10.5% in 3 months). No emergency room or hospital visits in six months
- In the HBPC model, the physician or nurse practitioner has regular in-person contact, and focuses on communication, coordination and goal-directed, preemptive care
- Getting to know the living setting is important in helping an individual do well clinically

IS PROVISION OF HOME-BASED PRIMARY CARE TO INDIVIDUALS WITH IDD ASSOCIATED WITH A LOWER HOSPITALIZATION RATE THAN A TRADITIONAL PRIMARY CARE MODEL?

- The objective of this study was to determine if providing HBPC to individuals with IDD was associated with fewer hospitalizations than a control group receiving traditional primary care
- Individuals with IDD living in supported residential settings in Ohio were offered HBPC
- Individuals electing HBPC made up the intervention group, and those who did not opt for HBPC continued to receive traditional primary care services and made up the control group
- Hospitalizations were tracked in both groups
- The 757 study participants had IDD diagnoses and received residential support services throughout the study period
- Annualized hospitalization rate was determined in both groups and was compared using generalized estimating equations while controlling for patients' age and hospitalization rate in the year prior to the study











Original Study - Brief Report

Provision of Home-Based Primary Care to Individuals With Intellectual and/or Developmental Disability Is Associated With a Lower Hospitalization Rate Than a Traditional Primary Care Model

William R. Mills MD^{a,*}, Miranda M. Huffman MD^a, Jamie Roosa MA^a, Krystal Pitzen MA^a, Ronald Boyd BS^a, Belinda Schraer BS^a, Dmitri Poltavski PhD^b

^a BrightSpring Health Services, Louisville, KY, USA ^b University of North Dakota, Grand Forks, ND, USA

	Control, % (n)	HBPC-Receiving, % (n)	χ ² ,*	Two-Sided P
Sex				
Females	39.8 (219)	42.0 (87)	0.58	.62
Males	60.2 (331)	58.0 (120)		
Primary diagnosti category	с			
Mild ID	41.6 (229)	40.6 (84)	1.93	.59
Moderate ID	27.3 (150)	31.9 (66)		
Severe ID	12.9 (71)	10.6 (22)		
Profound ID	18.2 (100)	16.9 (35)		

Frequencies and χ^2 Test Comparisons Between the Control and HBPC Groups on Categorical Variables With Bootstrapping

*After adjusting for statistical bias via bootstrapping based on 1000 samples.

Parameter Estimates for Fixed Effects and Covariates in Generalized Estimating Equations Predicting Individual Hospitalization Rate

Parameter	β	SE	95% Wald CI	Odds Ratio	Wald χ^2	Р
Female	-0.25	0.20	-0.65, 0.15	0.78	1.53	.22
Control group	0.75	0.17	0.42, 1.08	2.12	20.71	<.010
Age	0.003	0.005	-0.07, 0.01	1.00	0.29	.59
Hospitalization rate for the year prior to study	0.03	0.03	-0.02, 0.08	1.03	1.17	.28

HOME-BASED PRIMARY CARE WAS ASSOCIATED WITH A LOWER HOSPITALIZATION RATE: DISCUSSION



- We found that individuals with IDD receiving HBPC were hospitalized less often than those not receiving HBPC
- Contributors to the HBPC group's lower hospitalization rate may have included:
 - availability of 24/7 medical triage for all HBPC patients
 - early recognition and management of new acute diseases and exacerbation of chronic conditions at frequent visits
 - a heightened focus on goal-directed care and advance care planning due the intrenchment of these facets in the group's care model
 - better management of the patient due to more intimate knowledge of the care setting in which the patient resides
- Expanding access to HBPC may be a worthwhile priority for organizations that support individuals with IDD







- Emerging value-based outcomes measures such as hospitalization rate and days spent at home are increasingly being used to describe quality and utilization in populations of people with IDD
- Home-based primary care is a time-tested model that is associated with high patient and family satisfaction, high quality, and reduced costs
- Home-based primary care is starting to be provided to individuals with IDD, and we are seeing lower hospitalization rates, decreases in 30-day readmission rates, and an increased number of days spent at home (and outside of hospitals)
- Organizations that provide care and support for people with IDD may find it beneficial to work to increase access to HBPC to help individuals

THANK YOU!

WILLIAM MILLS, M.D. SENIOR VICE PRESIDENT, MEDICAL AFFAIRS BRIGHTSPRING HEALTH SERVICES WILLIAM.MILLS@BRIGHTSPRINGHEALTH.COM

