ISSUE BRIEF
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Risks for Nursing Home Placement and Medicaid Entry Among Older Medicare Beneficiaries with Physical or Cognitive Impairment

Amber Willink, Karen Davis, and Cathy Schoen

ABSTRACT

Issue: More than half of individuals who age into Medicare will experience physical and/or cognitive impairment (PCI) at some point that hinders independent living and requires long-term services and supports. As a result of Medicare's limits on covered services, Medicare beneficiaries with PCI experience financial burdens and reduced ability to live independently. **Goal:** Describe the characteristics and health spending of Medicare beneficiaries with PCI and estimate the likelihood of Medicaid entry and long-term nursing home placement. **Methods:** The Health and Retirement Study 1998–2012 is used to estimate long-term nursing home placement, as well as Medicaid entry. The Medicare Current Beneficiary Survey 2012 provides information on health care spending and utilization. **Key findings and conclusions:** Almost two-thirds of community-dwelling Medicare beneficiaries with PCI have three or more chronic conditions. More than one-third of those with PCI have incomes less than 200 percent of the federal poverty level but are not covered by Medicaid; almost half spend 10 percent or more of their incomes out-of-pocket on health care. Nineteen percent of individuals with PCI and high out-of-pocket costs entered Medicaid over 14 years, compared to 10 percent without PCI and low out-of-pocket costs.

BACKGROUND

As life expectancy increases, the quality of those additional years can vary tremendously from person to person. More than half of people who live to age 65 will experience physical and/or cognitive impairment (PCI) at some point during the rest of their lives that would hinder independent living and require long-term services and supports.[1] Physical and cognitive impairment in older adults can affect their ability to perform self-care tasks—also known as "activities of daily living" or ADLs—like eating, bathing, and dressing, requiring them to seek help from family members, friends, personal caregivers, residential care services, or nursing homes. Paid caregiving arrangements can be very expensive, often beyond the financial means of the average older American. A semiprivate room in a nursing home costs more than $80,000 per year.[2] Medicare covers home health and skilled nursing facility services for a period of time following acute hospitalization, but does not cover personal care assistance or long-term nursing facility services.

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For individuals with low incomes, Medicaid provides a safety-net health insurance program. Ten million people are dually eligible for Medicare and Medicaid. For these people, Medicaid supplements Medicare coverage by paying deductibles and coinsurance, as well as the Part B premium. Medicaid also covers long-term nursing home stays, and in most states, at least some home- and community-based services. Many people "spend down" their own resources to qualify for Medicaid;[3] as these costs shift to Medicaid, this results in significant state and federal expenditures. State and federal governments are concerned about burgeoning Medicaid costs and are looking to better understand how to provide greater-value care to dually eligible beneficiaries and to understand and address the causes for increased entry and dependency on the Medicaid program.[4]

This issue brief uses data from the nationally representative Health and Retirement Study (HRS) from 1998–2012 to describe the needs of individuals with PCI, as well as their likelihood for home placement and Medicaid entry. We also use the 2012 Medicare Current Beneficiary Survey to describe out-of-pocket costs for Medicare beneficiaries and total annual Medicare spending. (See How This Study Was Conducted.)

STUDY FINDINGS

Characteristics of Medicare Beneficiaries with Physical and/or Cognitive Impairment

In 2012, approximately 33 percent of adults age 65 or older had PCI. Of these, 87 percent lived in the community and 13 percent in nursing homes. Serious physical impairment is defined as having difficulty with two or more activities of daily living, such as eating, bathing, dressing, transferring in and out of bed, toileting, and walking across a room.[5] Cognitive impairment is often measured by a diagnosis of Alzheimer's or related dementia. Where possible in this brief, older adults with mild cognitive impairment are also included. The Health and Retirement Study (HRS) elicits the degree of cognitive impairment with a series of questions, including those that test immediate and delayed recall and mental function (e.g., backward counting tests) that have been validated for distinguishing mild cognitive impairment and dementia among older adults.[6]

Medicare beneficiaries with PCI are more often older, African American, or Hispanic compared to those without PCI (Exhibit 1). They are also more likely to be single or living alone compared to those who do not have PCI. Older adults with PCI also are at higher risk for chronic conditions: almost two-thirds of community-dwelling Medicare beneficiaries with PCI have three or more chronic conditions; 96 percent have at least one chronic condition.

Individuals with PCI tend to be relatively high users of medical care. Of those living in the community, 39 percent had a hospitalization in the previous two years. Among nursing home residents, 61 percent reported having a hospital stay within the previous two years. The substantial health needs among those with PCI highlights the need for better integration between health and long-term services and supports.

Exhibit 1

Sample Characteristics of Older Medicare Beneficiaries in the Health and Retirement Study, 2012

	No PCI	PCI*	Nursing home residents	Total
Population	67%	28%	5%	100%
Age				
65–74	60%	38%	10%	52%
75–84	31%	37%	33%	33%
85+	9%	25%	57%	15%
Gender				
Male	43%	43%	28%	42%
Female	57%	57%	72%	58%
Race				
White	91%	79%	84%	87%
African American	6%	15%	13%	9%
Other	3%	6%	3%	4%
Ethnicity				
Non-Hispanic	95%	89%	93%	93%
Hispanic	5%	11%	7%	7%
Marital status				
Married/Partnered	64%	48%	20%	59%
Separated/Divorced	11%	12%	12%	12%
Widowed	21%	35%	64%	25%
Never married	4%	4%	4%	4%
Living arrangement				
With others	71%	66%	20%	70%
Alone	27%	35%	80%	30%
PCI*				
No severe impairment	100%	0%	9%	70%
Serious physical impairment only	0%	20%	63%	6%
Mild cognitive impairment	0%	61%	17%	19%
Dementia	0%	19%	11%	6%
Number of chronic conditions				
None	7%	4%	2%	6%
1 to 2	47%	33%	21%	43%
3 to 5	44%	57%	65%	48%
6 or more	2%	7%	12%	3%
Percentage with hospitalization in previous two years	28%	39%	61%	32%

* PCI includes those with two or more ADLs and/or cognitive impairment. Individuals who are in the mild cognitive impairment category or the dementia category also may have limitations in ADLs, but those in the serious physical impairment category do not have cognitive impairment.
Note: The Population row should be added across; all other data should be added in columns, but the column percentages may not add up to 100 percent because of rounding.
Data: Analysis of the Health and Retirement Study, 2012, by the Roger C. Lipitz Center for Integrated Health Care, Johns Hopkins Bloomberg School of Public Health.

Impairment and Risk of Nursing Home Placement

Our analysis of community-dwelling, older Medicare beneficiaries over a 14-year period (1998–2012) showed that there are several characteristics that predict nursing home placement. Exhibit 2 shows three important findings revealed in this analysis. First, living alone is a major risk for nursing home placement. Individuals who lived alone in 1998 were at 48 percent greater hazard for long-term nursing home placement. Second, specific chronic conditions, such as diabetes, stroke, and psychiatric conditions, were predictive of placement in a nursing home although the number of chronic conditions was not. Finally, the analysis highlighted the important role of mild cognitive impairment, which is substantially underdiagnosed by health care providers and overlooked by policymakers.[7] Almost one of five older Medicare beneficiaries had mild cognitive impairment (Exhibit 1). Of this group, 22 percent had a long-term nursing home stay over the 14-year period.

Exhibit 2

Entry into Long-Term Nursing Home Placement Over 14 Years

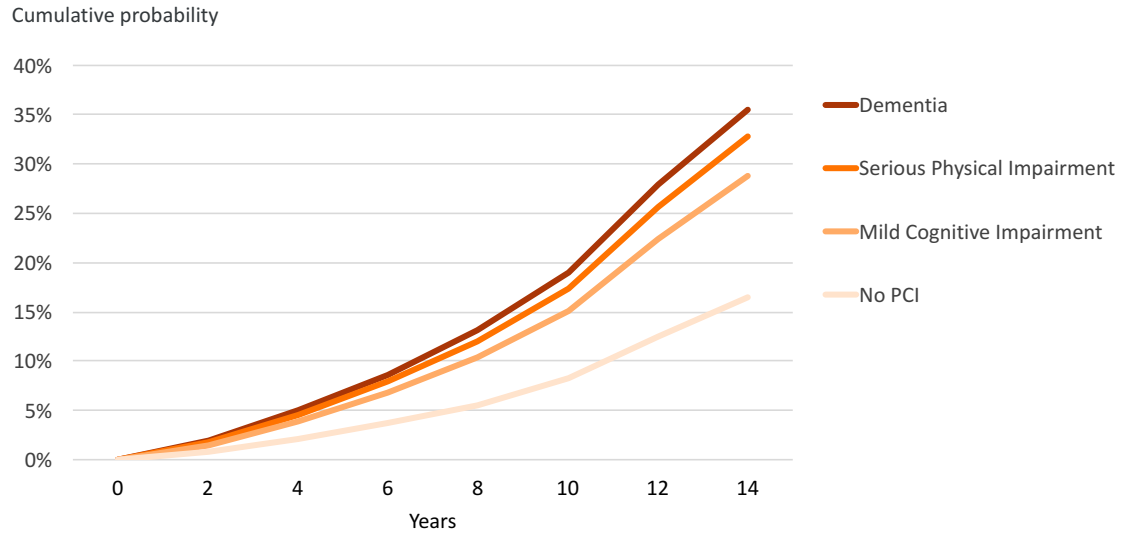
Characteristics	Hazard ratio	P-value	95% confidence interval
Age	1.24	<0.001	(1.09-1.41)
Gender (ref: male)	1.49	<0.001	(1.28-1.74)
Marital status (ref: married)	0.91	0.36	(0.73-1.12)
Lives alone (ref: no)	1.48	<0.001	(1.22-1.8)
Race (ref: white)			
Black	0.68	<0.001	(0.54-0.85)
Other	0.77	0.19	(0.53-1.14)
Ethnicity (ref: non-Hispanic)	0.61	<0.001	(0.46-0.82)
Federal poverty level in 1998 (ref: 400%+)			
<100%	1.15	0.32	(0.87-1.51)
100%–149%	1.19	0.17	(0.93-1.52)
150%–199%	1.15	0.19	(0.93-1.41)
200%–399%	1.34	<0.001	(1.15-1.55)
Home ownership (ref: renting)	0.66	<0.001	(0.57-0.77)
Health insurance in 1998 (ref: Medicare)			
Employer-sponsored	1.03	0.66	(0.9-1.18)
Medigap	0.86	0.09	(0.73-1.02)
Medicaid coverage (ref: no)	0.89	0.39	(0.67-1.17)
Long-term care insurance in 1998 (ref: no)	1.10	0.45	(0.85-1.43)
Serious physical and/or cognitive impairment (ref: no)			
Physical impairment	2.22	<0.001	(1.65-2.98)
Mild cognitive impairment	1.90	<0.001	(1.6-2.25)
Dementia	2.45	<0.001	(1.94-3.09)
Number of chronic conditions (ref: none)			
1 to 2	1.02	0.82	(0.85-1.23)
3 or more	0.95	0.63	(0.77-1.18)
Depression (ref: no)	1.16	0.07	(0.99-1.37)
Diabetes (ref: no)	1.58	<0.001	(1.33-1.87)
Psychiatric, emotional, or nervous problems (ref: no)	1.56	<0.001	(1.29-1.89)
Stroke (ref: no)	1.40	<0.001	(1.14-1.71)
Hospital stay in previous two years (ref: no)	1.12	0.07	(0.99-1.26)

Data: Analysis of the Health and Retirement Study, 1998–2012, by the Roger C. Lipitz Center for Integrated Health Care, Johns Hopkins Bloomberg School of Public Health.

The cumulative probability of nursing home placement for those with PCI at baseline is double that of those without PCI initially. Over the 14-year period, those with dementia had a 36 percent probability of a long-term nursing home stay, those who needed assistance with two or more ADL had a 33 percent probability, and those with mild cognitive impairment had a 28 percent probability, compared to just 16 percent probability for those with no PCI (Exhibit 3).

Exhibit 3

Adjusted Cumulative Probability of Being Placed in a Nursing Home Over the 14-Year Follow-Up Period, by Baseline PCI Status

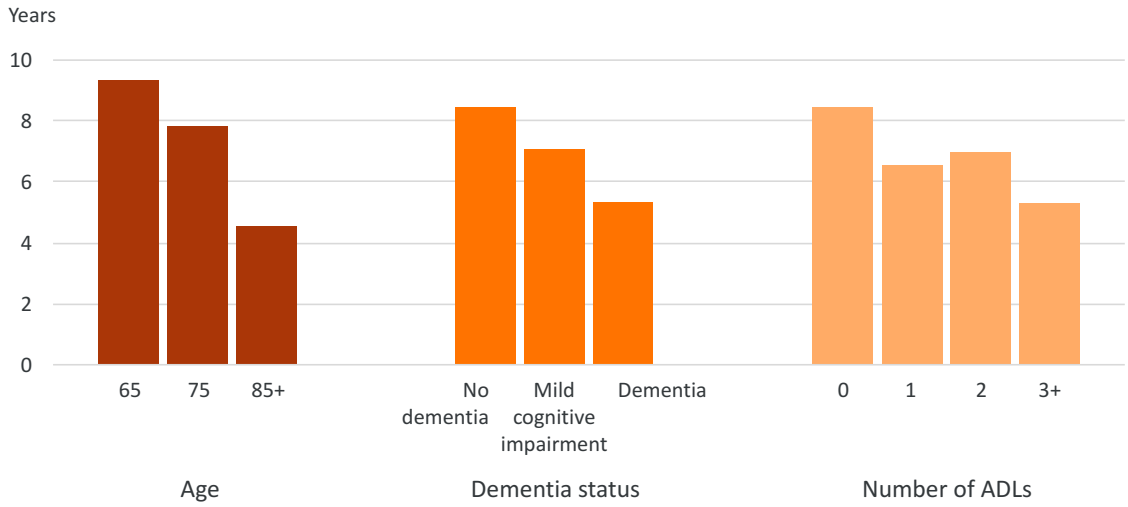


Data: Analysis of the Health and Retirement Study, 1998–2012, by the Roger C. Lipitz Center for Integrated Health Care, Johns Hopkins Bloomberg School of Public Health.

Not only are individuals with PCI at higher risk of nursing home placement compared to those without PCI, their trajectory into nursing homes is much faster. Exhibit 4 shows the average time to nursing home placement (for those who had a long-term nursing home stay) by varying characteristics at baseline. For those with dementia, the average time to nursing home placement was just over five years. For individuals needing assistance with two or more ADLs at baseline, the average time to nursing home placement was approximately six years. Among those with mild cognitive impairment, the average time to nursing home placement was seven years. The time frame for evaluating innovative models of care is usually significantly shorter than this. The effectiveness of proposed models of care may not be fully realized if they stop following participants before the majority are truly at risk of entering a nursing home.

Exhibit 4

Average Time to Long-Term Nursing Home Placement Among Medicare Beneficiaries Who Had a Nursing Home Placement from 1998 to 2012



Data: Analysis of the Health and Retirement Study, 1998–2012, by the Roger C. Lipitz Center for Integrated Health Care, Johns Hopkins Bloomberg School of Public Health.

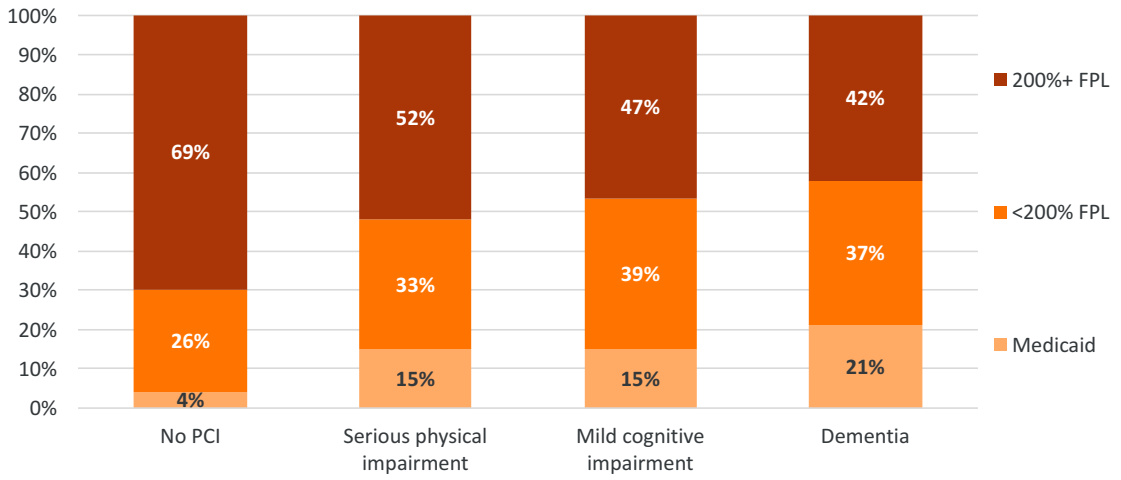
Adults with PCI Often Have Low Incomes and Lack Resources to Pay for Help on Their Own

Individuals with PCI are disproportionately concentrated in the lower income categories—about half or more have incomes below 200 percent of the federal poverty level (Exhibit 5). In 2012, the income equivalent of 200 percent of poverty was $22,340 in a one-person household or $30,260 in a two-person household.[8]

Exhibit 5 also highlights that 33 percent of individuals with serious physical impairment, 39 percent of individuals with mild cognitive impairment, and 37 percent of individuals with dementia have incomes below 200 percent of poverty but are not covered by Medicaid. The high costs of long-term services and supports are out of reach for many older Medicare beneficiaries, resulting in either individuals going without needed supports and services, or spending down their savings to qualify for Medicaid.[9]

Exhibit 5

Income Group Distribution Relative to Federal Poverty Level for Older, Community-Dwelling Medicare Beneficiaries in 2012, by PCI Status



Data: Analysis of the Health and Retirement Study, 2012, by the Roger C. Lipitz Center for Integrated Health Care, Johns Hopkins Bloomberg School of Public Health.

Spending and Out-of-Pocket Costs

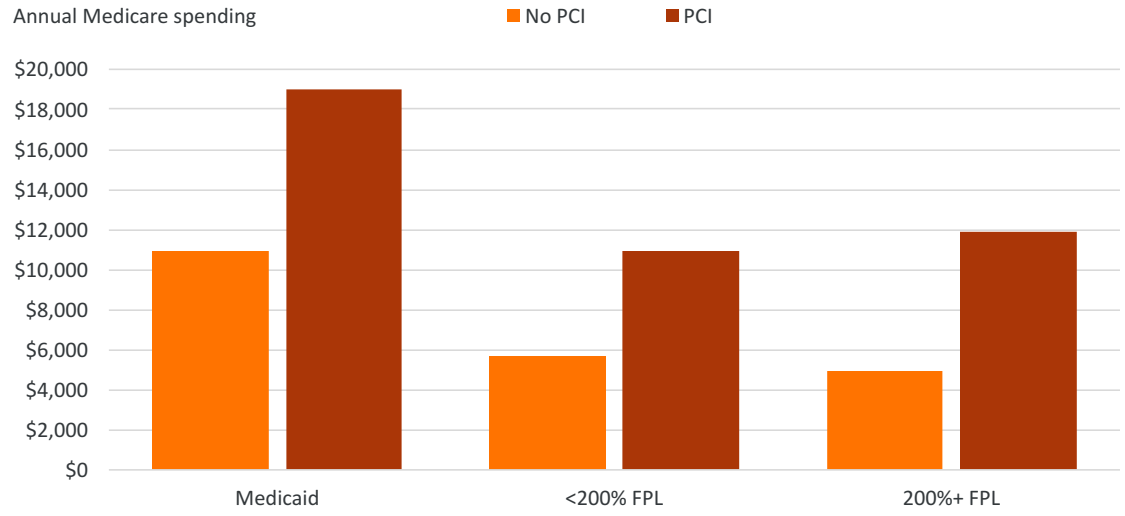
In 2013, national spending on long-term services and supports reached $310 billion, of which Medicaid covered 51 percent.[10] Nursing home care costs accounted for $85.4 billion (54%) of total Medicaid spending on long-term services and supports in 2013.[11]

Medicare incurs substantial expenses for those with PCI (Exhibit 6). Total annual Medicare spending per person for community-dwelling individuals with PCI was more than two times higher than those without PCI ($14,080 vs. $6,044) (data not shown). This relationship was consistent across all income groups, however the dollar values of spending were much higher among individuals dually eligible for Medicare and Medicaid ($19,011 PCI vs. $10,957 non-PCI).

Individuals with PCI also have high out-of-pocket spending,[12] defined as spending more than 10 percent of one's income on health care costs (Exhibit 7).[13] Forty-six percent of individuals with PCI with incomes below 200 percent of poverty and not covered by Medicaid have high out-of-pocket spending, compared to 41 percent of those dually eligible and to 27 percent of those with incomes at or above 200 percent of poverty. This may indicate that people with PCI are going without necessary services or at high risk of spending down to Medicaid.

Exhibit 6

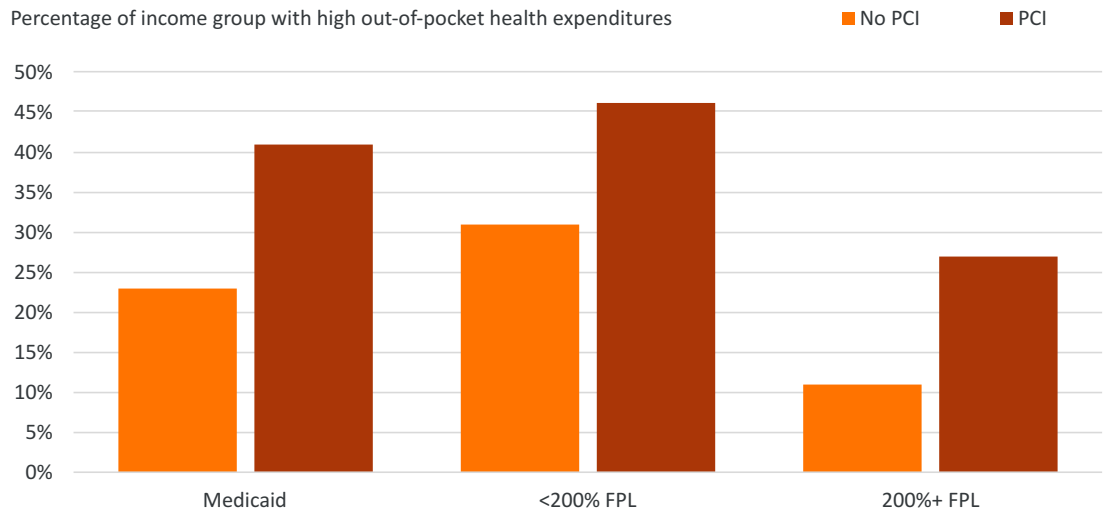
Mean Annual Medicare Spending for Medicare Beneficiaries With and Without PCI, by Income, 2016



Data: Analysis of the Medicare Current Beneficiary Survey, Cost and Use File, 2012, inflated to 2016, by the Roger C. Lipitz Center for Integrated Health Care, Johns Hopkins Bloomberg School of Public Health.

Exhibit 7

High Out-of-Pocket Spending for Medicare Beneficiaries With and Without PCI, by Income, 2016



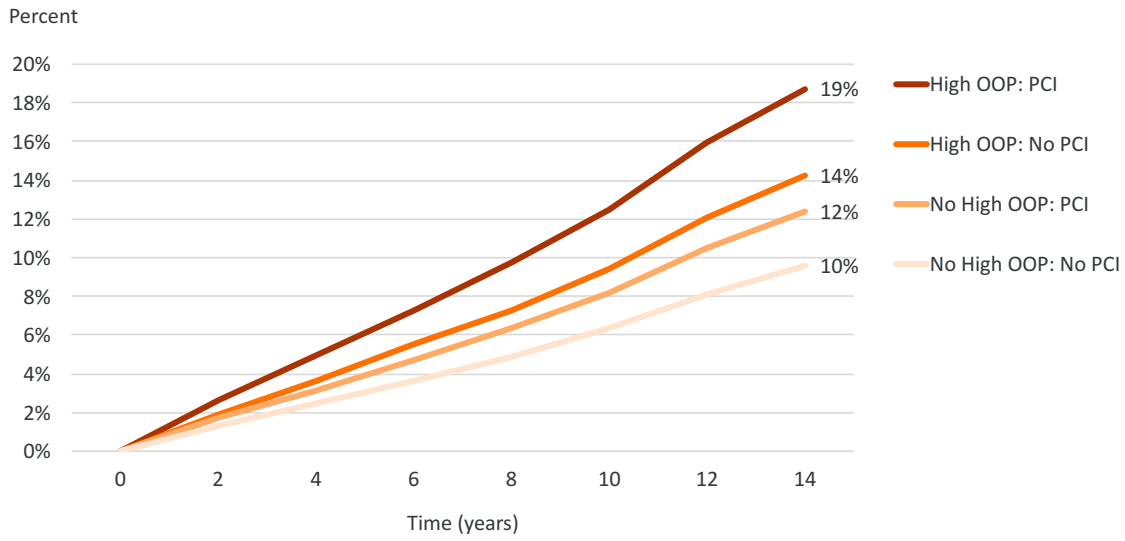
Data: Analysis of the Medicare Current Beneficiary Survey, Cost and Use File, 2012, inflated to 2016, by the Roger C. Lipitz Center for Integrated Health Care, Johns Hopkins Bloomberg School of Public Health.

Risk for Medicaid Entry

Individuals with PCI are at a much higher risk of entering Medicaid than are those who do not have PCI.[14] Nineteen percent of people with PCI and high out-of-pocket costs entered into Medicaid over the 14-year observation period, compared to 10 percent of those without PCI and low out-of-pocket costs (Exhibit 8).

Exhibit 8

Entry into Medicaid over Time by PCI and High Out-of-Pocket Spending Among Medicare Beneficiaries Age 65 and Older in 1998



Data: Analysis of the Health and Retirement Study, 1998–2012, by the Roger C. Lipitz Center for Integrated Health Care, Johns Hopkins Bloomberg School of Public Health.

While the relationship remains consistent across income groups, the risk for Medicaid entry increases dramatically for people with lower incomes (Exhibit 9). Among people with incomes between 100 percent and 149 percent of poverty and not covered by Medicaid at the beginning of the study with high out-of-pocket spending and PCI, 35 percent became covered by Medicaid, compared to 19 percent who did not have high spending or PCI. These out-of-pocket costs do not include money spent on premiums but instead represent cost-sharing for Medicare-covered services and services not covered by Medicare, such as dental, vision, hearing, and long-term services and supports.

Exhibit 9

Entry into Medicaid by Poverty Level

Ever high out-of-pocket spending and ever developed PCI	Federal poverty level in 1998				
	<100%	100%–149%	150%–199%	200%–399%	400%+
Not high OOP: no PCI	29%	19%	14%	12%	7%
Not high OOP: PCI	36%	24%	18%	15%	9%
High OOP: no PCI	41%	27%	20%	17%	11%
High OOP: PCI	51%	35%	26%	23%	14%

Data: Analysis of the Health and Retirement Study, 1998–2012, by the Roger C. Lipitz Center for Integrated Health Care, Johns Hopkins Bloomberg School of Public Health.

CONCLUSION

This analysis finds that:

- A third of older adults have PCI in a given year; more than half of adults who age into Medicare will experience PCI over the remainder of their lifetimes. While the majority of older adults with PCI live in the community, they are at high risk for costly, long-term nursing home placement.
- Individuals with PCI often have multiple chronic conditions, resulting in high Medicare expenses and out-of-pocket spending. Those with high out-of-pocket spending as a proportion of income as well as PCI were at greater risk for spending down their resources and entering into Medicaid over a 14-year period, compared to those with PCI but without high out-of-pocket spending.
- The risk for Medicaid entry was greater for those at lower income levels at the beginning of the 14-year period. However, 14 percent of the highest-income group at baseline with high out-of-pocket spending and PCI entered Medicaid by the end of the follow-up period.

Improving financing for home and community-based care would help many beneficiaries with PCI continue to live independently and support families in helping them obtain the care they prefer. Our current health care system, which covers costly institutional services but not social support in the home, distorts the way Americans receive care as they age and die.[15] After people with serious impairment become impoverished and qualify for Medicaid, they are covered for long-term nursing facility care. However, personal care services at home that might have prevented them from needing to turn to Medicaid or enter a nursing home are not covered by Medicare.

Intervening early to prevent nursing home placement and Medicaid enrollment may produce offsetting savings in Medicare and Medicaid. An accompanying brief describes two innovative approaches to providing long-term services and support benefits: a voluntary, supplemental benefit for home and community-based services for Medicare beneficiaries; and an expansion of the Medicaid Community First Choice program for people with incomes up to 200 percent of poverty.[16] Both options show promise of maintaining independent living longer and avoiding costly long-term institutionalization and exhaustion of resources that result in Medicaid enrollment.

HOW THIS STUDY WAS CONDUCTED

This study uses both the Health and Retirement Study (HRS), 1998–2012, and the Medicare Current Beneficiary Survey, Cost and Use File, 2012. The HRS is a publicly available, nationally representative, longitudinal survey of Americans age 51 years and older. Our work examines over 10,000 older adults age 65 years and older, surveyed in 1998, and interviews them every two years over a 14-year period until 2012. With this longitudinal data, we explore entry into long-term nursing home placement, defined as spending 100 or more nights in a nursing home, as well as entry into Medicaid using self-reported Medicaid status. The Medicare Current Beneficiary Survey, Cost and Use File from 2012 is a nationally representative study of the Medicare population and provides information both from administrative claims and survey questions. The 2012 study interviews over 11,000 Medicare beneficiaries and is a rich source of information on health care spending and utilization.

NOTES

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[2] *Genworth Cost of Care Survey* (Genworth Financial, Inc., 2016).

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[4] Congressional Budget Office, *Dual-Eligible Beneficiaries of Medicare and Medicaid: Characteristics, Health Care Spending, and Evolving Policies* (CBO, June 3, 2013).

[5] S. Katz, A. B. Ford, R. W. Moskowitz et al., "Studies of Illness in the Aged," *Journal of the American Medical Association,* Sept. 21, 1963 185(12):914–19; and S. Chien, N. Campbell, C. Chan et al., *RAND HRS Data Documentation, Version O* (RAND, Oct. 2015).

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[8] Assistant Secretary for Planning and Evaluation, "2012 HHS Poverty Guidelines, Federal Poverty Measure" (ASPE, Dec. 1, 2012).

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[11] Ibid.

[12] A. S. Kelley, K. McGarry, R. Gorges et al., "The Burden of Health Care Costs for Patients with Dementia in the Last 5 Years of Life," *Annals of Internal Medicine,* Nov. 17, 2015 163(10):729–36.

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[15] A. Gawande, *Being Mortal: Medicine and What Matters in the End* (Henry Holt & Co., 2014).

[16] A. Willink, K. Davis, and C. Schoen, *Improving Benefits and Integrating Care for Older Medicare Beneficiaries with Physical or Cognitive Impairment* (The Commonwealth Fund, Oct. 2016).

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