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Trends in Older Adults' Knowledge of Medicare Advantage Benefits, 2010 to 2016

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Abstract

BACKGROUND/OBJECTIVES: The Medicare Advantage (MA) program insures a rapidly growing proportion of older adults, and may be more appealing due to lower cost sharing. However, the extent to which older adults are informed of their plan benefits and how plan knowledge has changed over time is unclear. We evaluated temporal trends and characteristics associated with not knowing MA coverage for dental, vision, and nursing home (NH) services.

DESIGN: Longitudinal cohort study.

SETTING: Medicare Current Beneficiary Survey (MCBS), 2010 to 2016.

PARTICIPANTS: Adults aged 65 years or older enrolled in MA plans and not in Medicaid.

MEASUREMENTS: Insurance knowledge was determined from separate items asking if individuals had coverage through their MA plan for dental, vision, and NH care. Responses were dichotomized between responding yes/no and not knowing. Demographic, clinical, and functional characteristics were assessed from the MCBS.

RESULTS: The proportion of older adults in MA who did not know if their plan covered NH care increased from 38.0% in 2010 to 45.5% in 2016. However, proportions of not knowing dental benefits decreased from 6.4% in 2010 to 3.4% in 2016 and not knowing vision benefits decreased from 8.2% in 2010 to 5.9% in 2016. We found significant associations of race, education, income, region, and disability with knowledge of MA benefits.

CONCLUSIONS: As enrollment in MA plans has grown, older adults in MA plans increasingly report that they know their plan's vision and dental benefits, although they decreasingly know about NH care. Older adults from racial and ethnic minority groups, with lower levels of education and income and who reside in certain regions or have functional disability, are less likely to know their plan benefits. This may imply decreasing preparedness for future long-term care needs.

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SUPPORTING INFORMATION

Additional Supporting Information may be found in the online version of this article.

Keywords

Medicare; health insurance; geriatrics; health services research

INTRODUCTION

From 2010 to 2016, enrollment in Medicare Advantage (MA) increased from 25% to 31% of Medicare beneficiaries.¹ One reason why older adults choose MA plans is their reduced cost sharing.² Although MA plans vary, average monthly premiums were \$44/month in 2010 and \$37/month in 2016,³ compared with \$122/month to \$390/month that year for Part B premiums.⁴ In addition, most MA plans offer coverage for services not covered under traditional Medicare. In 2019, 67% of MA enrollees had access to a dental benefit and 78% of MA enrollees had access to a vision benefit.³

Nursing home (NH) care is less frequently used than vision or dental care benefits, but is substantially more costly and coverage varies among MA plans. Although long-term NH care is not covered by either MA or traditional Medicare, some MA plans offer expanded benefits, such as paying for a skilled nursing facility (SNF) without requiring a preceding 2-overnight hospital stay. Although traditional Medicare does not require copayments for the first 20 days of post-acute care in an NH, MA plans may require cost sharing starting on day 1 of the post-acute stay, which can range from \$25/day to \$150/day.⁵ For this high-cost benefit, MA plan out-of-pocket caps become important: caps vary by plan to a maximum of \$6,700.¹ In 2010, 10% of Medicare beneficiaries who stayed in an SNF spent over \$6,700 out of pocket.⁶

Little is known about whether the plan benefit knowledge of older adults choosing MA plans has changed as MA enrollment has grown. Prior work studying knowledge of traditional Medicare demonstrated significant knowledge gaps, especially among women, those older than 75 years, those from racial minority groups, those with low income, and those with low education levels.^{7,8} Research into the Medicare Part D drug benefit found that knowledge gaps continued years after the start of the program.⁹ In addition, studies of Medicare plan options have demonstrated that as the number of plans rise above a threshold, knowledge accuracy plateaus and older adults are less likely to choose the most financially advantageous plan.^{10,11} This raises the potential that even as MA has grown, knowledge gaps have persisted.

Gaps in Medicare benefit knowledge may impact the quality of care that older adults receive, both immediately and in the long-term. Older adults with cognitive impairment are less likely to choose MA plans that are more financially advantageous for them.¹¹ Low knowledge about higher-cost but less-frequently used services, such as NH care, may impact patient choices and care in future years. For example, restrictive MA networks may adversely impact older adults, specifically those requiring post-acute care services.^{12–14} However, only high-income MA enrollees choose plans with wider networks.² It is unclear if this is because plans with wider networks have high costs, making them unaffordable to low-income beneficiaries, or if high-income older adults have greater knowledge of the impact of MA plan choices. Similarly, MA plan choice is more influenced by plan market share than

either cost or quality, indicating that brand familiarity may play more of a role than plan knowledge.¹⁵ If an individual inadvertently chooses a plan that does not meet his/her needs, there are many limitations around his/her ability to switch MA plans or switch to traditional Medicare.

We aim to assess how MA plan knowledge gaps have changed and which Medicare enrollees are at the greatest risk of knowledge gaps to assess potential negative impacts and target interventions to improve knowledge.

METHODS

We used data from the Medicare Current Beneficiary Survey (MCBS), a continuous, nationally representative survey of the Medicare population. The MCBS was implemented in 1991 to serve as a primary source of information for monitoring changes in Medicare, estimating healthcare expenditures, and assessing beneficiary health and well-being.¹⁷ It samples from a 5% subsample of the total Medicare population, and provides survey weights so that national estimates can be made. Response rates range from 72% to 78% for initial interviews, to 99% for 12th interviews.¹⁸ Participants in the MCBS are interviewed up to three times per year for 4 consecutive years. After 4 years, a panel is retired and a new panel added in the fall to replenish the overall sample, with the exception of 2014, where the cohorts continued but survey data were not released. MCBS surveys approximately 14,500 individuals annually.

Study Sample

Our cohort included MCBS respondents from 2010 to 2016 enrolled in MA and aged 65 years or older at the time of survey. We excluded those dually enrolled in Medicaid, as they have different coverage options, and missing data for all three measures of MA knowledge. In addition, we excluded residents of Puerto Rico, because the MA environment in this territory is substantially different.¹⁹

Measures

Primary outcome measure was gap in knowledge of MA benefits. MCBS respondents were separately asked if their plan covers dental, eye examinations, and NH care. Response options included: yes, no, and I do not know. Responses of yes or no were categorized as reporting knowledge of the benefit, whereas responses of “I don’t know” were categorized as a gap in knowledge of the benefit. In 2016, MCBS did not distinguish not knowing from not responding, and therefore we considered an individual to not know his/her coverage for a specific benefit if he/she did not respond to that question but did respond to questions about knowledge of other benefits.

Additional measures included survey year, age, race, sex, education, income, and region. Due to variations in the survey language over time, race was categorized as white versus other, with other including African American, Asian, and other races. The number of impaired activities of daily living (ADLs), defined as difficulty bathing or showering, dressing, eating, transferring to/from a chair, walking, or toileting without help, was asked on the fall MCBS interview as well as during entry to a nursing facility. Additional clinical

characteristics included worsening health over the last year, fair or poor self-reported health (compared with excellent, very good, or good), and having a diagnosis of cancer, heart disease, lung disease, dementia, or stroke. Only 996 observations (5.8% of the sample) had any missing data.

Analysis

We calculated overall rates and rates by survey year for knowledge gaps regarding dental, vision, and NH MA benefits. Using a logistic regression model, we assessed for a temporal trend by measuring the association between year (as a continuous variable) and benefit knowledge. To assess characteristics associated with knowledge gaps, we tested three separate logistic regression models, with the following outcomes: knowledge gap for dental, knowledge gap for vision, and knowledge gap for NH benefits, including the stated demographic and function variables. This multivariable analysis did not include the 996 observations with missing data for one or more covariates. Because each MCBS respondent is surveyed multiple times over 4 years, we adjusted for clustering at the level of the individual. To ascertain if multiple observations per individual were skewing temporal trends, we conducted a sensitivity analysis limiting the cohort to the first observation of each individual. All analyses were adjusted using survey weights to account for complex survey design and sampling approach.

RESULTS

We identified 17,229 observations of 9,454 MCBS respondents enrolled in MA from 2010 to 2016 (Supplementary Figure S1 provides details). Over half (62.1%) the sample were individuals younger than 75 years, whereas 8.5% were aged 85 years or older; 55.5% were female; 78.2% were non-Hispanic white; 83.3% had a high school education or greater; and 31.5% had an income of less than \$25,000/year (Table 1). The sample varied by health characteristics. Although 85.1% had no impaired ADLs, 7.4% had two or more impaired ADLs; 16.4% reported their health worsened over the past year, and 15.7% described themselves in fair or poor health; and rates of self-reported comorbidities ranged from 3.8% for dementia to 32.8% for cancer.

Figure 1 demonstrates the trends in service knowledge gaps over time. Knowledge gaps in NH coverage were relatively stable from 2010 to 2011 (ranging from 37.3–38.0% reporting no knowledge of NH benefits), then increased and plateaued from 2012 to 2016 (to 45.5% in 2015 and 2016). In contrast, knowledge gaps for both dental and vision benefits fell over the same time period, with 8.2% and 6.5% reporting a gap in knowledge about vision and dental benefits, respectively, in 2010 and 5.9% and 3.4% reporting a gap in knowledge about vision and dental benefits, respectively, in 2016. There was a significant linear trend in knowledge gaps for all services ($P < .05$): increasing knowledge gaps for NH care and decreasing knowledge gaps for dental and vision care. As demonstrated in Supplementary Figure S2, when the cohort was limited to the first observation of each individual, the same temporal trends persisted and were statistically significant ($P < .05$).

The characteristics associated with a knowledge gap were similar across NH, dental, and vision benefits (Table 2). Knowledge gaps in all three domains were significantly ($P < .05$)

associated with having an income of less than \$25,000 (odds ratio (OR) = 1.17 (95% confidence interval (CI) = 1.05–1.29) for NH; OR = 1.59 (95% CI = 1.28–1.96) for dental; OR = 1.30 (95% CI = 1.08–1.57) for vision). Knowledge gaps in NH and dental benefits were associated with low education, other versus white race, and residing in the Northeast compared with the Midwest and West. Hispanic Medicare enrollees were more likely to report a knowledge gap in dental benefits than non-Hispanic white enrollees, and respondents with impaired ADLs were more likely to report a knowledge gap in dental and vision benefits than those without ADL impairments.

DISCUSSION

We demonstrate that a high proportion of MA enrollees lack information about NH coverage and that this knowledge gap increased from 2010 to 2016. Knowledge gaps regarding dental and vision care benefits were lower and fell during the same time frame. In addition, those with low incomes, with low education, living in certain regions, and with functional disability were more likely to report not knowing information about their benefits. This is worrisome given these populations may be more vulnerable to the financial sequelae of insurance knowledge gaps.

These results must be contextualized in light of the significant expansion of MA. As MA plans are more frequently used, beneficiaries do appear to be more knowledgeable about the coverage of frequently used services (i.e., vision and dental), which is important as they are opting into this coverage and choosing a specific plan. However, it is concerning that knowledge gaps around NH care have increased over this time, given that this is a more infrequent but financially higher-stakes benefit.

Although our data are not able to fully assess the potential impacts of these knowledge gaps, they indicate some potentially problematic decision-making. For example, the out-of-pocket costs of dental care are prohibitive for low-income adults not on Medicaid. The average Medicare beneficiary spends \$329/year on out-of-pocket dental costs, and 7% spend greater than \$1,500/year.²⁰ However, we found that individuals with a household income of less than \$15,000/year were more likely to not know their MA plan's dental coverage compared with those with incomes greater than \$50,000/year. It is possible that this is rational decision-making: if low-income older adults can only afford the premiums for one plan, differences in benefit coverage do not matter. More user-friendly plan finders could assist older adults with making decisions,¹⁶ but first we must know the specific Medicare plan components that older adults need information about.

Although we were able to both measure rates of knowledge gaps and characterize those reporting knowledge gaps, we were unable to assess whether an individual's plan actually did cover dental or vision services. This is particularly complex in NH care, where short-term post-acute care may be paid for (although coverage parameters vary by MA plan), but long-term care will not be paid for. However, it is still useful to note which MA enrollees express no knowledge of services, regardless of accuracy. In addition, because enrollees in traditional Medicare were not surveyed as to their benefit knowledge, it is unclear how MA

knowledge gaps compare. However, knowledge gaps in MA are particularly important to study because individuals are opting in to MA and thus are specifically electing a plan.

As MA grows, we must continue to assess enrollee knowledge and measure the repercussions of knowledge gaps. High costs of health care may push individuals to MA, given lower levels of cost sharing, especially those from vulnerable groups, such as low-income, low-education, and racial and ethnic minority groups. However, if these individuals are also accepting plans without knowledge of their coverage of higher-cost services, they may be unable to obtain desired care in times of crisis. Researchers and federal regulators must closely monitor the experience and quality of care of vulnerable older adults within MA to ensure that short-term financial affordability is not exchanged for insurance that does not meet enrollee needs.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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REFERENCES

1. Jacobson G, Damico A, Neuman T, Gold M. Medicare Advantage 2017 spotlight: enrollment market update. 2017. <https://www.kff.org/medicare/issue-brief/medicare-advantage-2017-spotlight-enrollment-market-update/>. Accessed June 12, 2020.
2. Jacobs PD, Buntin MB. Determinants of Medicare plan choices: are beneficiaries more influenced by premiums or benefits? *Am J Manag Care*. 2015; 21(7):498–504. [PubMed: 26247740]
3. Henry J. Medicare Advantage: 2019 factsheet. Kaiser Family Foundation; 2019. <https://www.kff.org/medicare/fact-sheet/medicare-advantage/>. Accessed June 12, 2020.
4. CMS.gov. 2016 Medicare Parts A & B premiums and deductibles announced. <https://www.cms.gov/newsroom/press-releases/2016-medicare-parts-b-premiums-and-deductibles-announced>. Accessed June 12, 2020.
5. Keohane LM, Grebla RC, Rahman M, Mukamel DB, Lee Y, Mor V, Trivedi A. First-dollar cost-sharing for skilled nursing facility care in Medicare advantage plans. *BMC Health Serv Res* 2017;17(1):1–8. doi:10.1186/s12913-017-2558-8. [PubMed: 28049468]
6. Noel-Miller C. Medicare beneficiaries' out-of-pocket spending for health care. 2012. http://www.aarp.org/content/dam/aarp/research/public_policy_institute/health/medicare-beneficiaries-out-of-pocket-spending-AARP-ppi-health.pdf. Accessed June 12, 2020.
7. Greenwald LM, McCormack LA, Uhrig JD, West N. Measures and predictors of Medicare knowledge: a review of the literature. *Health Care Financ Rev*. 2006;27(4):1–12.
8. Uhrig JD, Bann CM, McCormack LA, Rudolph N. Beneficiary knowledge of original Medicare and Medicare managed care. *Med Care*. 2006;44(11): 1020–1029. 10.1097/01.mlr.0000228019.47200.f2 [PubMed: 17063134]
9. Polinski JM, Bhandari A, Saya UY, Schneeweiss S, Shrank WH. Medicare beneficiaries' knowledge of and choices regarding part D, 2005 to the present. *J Am Geriatr Soc*. 2010;58(5):950–966. 10.1111/j.1532-5415.2010.02812.x [PubMed: 20406313]

10. Mittler JN, Landon BE, Zaslavsky AM, Cleary PD. Market characteristics and awareness of managed care options among elderly beneficiaries enrolled in traditional Medicare. *Medicare Medicaid Res Rev.* 2011;1(3):1–17. 10.5600/mmrr.001.03.a03
11. McWilliams JM, Afendulis CC, McGuire TG, Landon BE. Complex Medicare advantage choices may overwhelm seniors—especially those with impaired decision making. *Health Aff (Millwood).* 2011;30(9):1786–1794. 10.1377/hlthaff.2011.0132 [PubMed: 21852301]
12. Reid RO, Deb P, Howell BL, Shrank WH. Association between Medicare advantage plan star ratings and enrollment. *JAMA.* 2013;309(3):267–274. <http://files.kff.org/attachment/What-Do-We-Know-About-Health-Care-Access-and-Quality-in-Medicare-Advantage> [PubMed: 23321765]
13. Gadbois EA, Tyler DA, Shield RR, et al. Medicare advantage control of postacute costs: perspectives from stakeholders. *Am J Manag Care.* 2018;24 (12):1–7.
14. Rahman M, Keohane L, Trivedi AN, Mor V. High-cost patients had substantial rates of leaving Medicare advantage and joining traditional Medicare. *Health Aff.* 2015;34(10):1675–1681. 10.1377/hlthaff.2015.0272
15. Reid RO, Deb P, Howell BL, Conway PH, Shrank WH. The roles of cost and quality information in Medicare advantage plan enrollment decisions: an observational study. *J Gen Intern Med.* 2016;31(2):234–241. 10.1007/s11606-015-3467-3. [PubMed: 26282952]
16. Martino SC, Kanouse DE, Miranda DJ, Elliott MN. Can a more user-friendly Medicare plan finder improve consumers' selection of Medicare plans? *Health Serv Res.* 2017;52(5):1749–1771. 10.1111/1475-6773.12582 [PubMed: 27714799]
17. Adler GS. A profile of the Medicare current beneficiary survey. *Health Care Financ Rev.* 1994;15(4):153–163. [PubMed: 10138483]
18. Czajka JL, Beyler A. Declining response rates in federal surveys: trends and implications (background paper). Washington, DC: Mathematica Policy Research; 2016. <https://econpapers.repec.org/paper/mprrmpres/a714f76e878f4a74a6ad9f15d83738a5.html>. Accessed June 12, 2020.
19. Colon HM, Sanchez-Cesareo M. Disparities in health care in Puerto Rico compared with the United States. *JAMA Intern Med.* 2016;176(8):7875. 10.1001/jamainternmed.2016
20. Willink A, Schoen C, Davis K. Dental care and Medicare beneficiaries: access gaps, cost burdens, and policy options. *Health Aff.* 2016;35(12):2241–2248. 10.1377/hlthaff.2016.0829

Figure 1.

Rates of not knowing Medicare Advantage coverage for nursing home, dental, and vision benefits, 2010 to 2016. Blue squares indicate nursing home coverage; red circles, dental coverage; and green diamonds, vision coverage. Data source: Medicare Current Beneficiary Survey (MCBS), 2010 to 2016. Error bars represent 95% confidence intervals. Individuals with Medicaid insurance and residing in Puerto Rico were excluded. All proportions are adjusted to account for survey design and sampling approach, and clustering of observations at the individual level due to repeated observations. *Note:* Results from the MCBS were not reported in 2014. The *P* value for a linear trend of not knowing coverage over time was $<.001$ for all types of coverage.

Table 1.

Characteristics of the Sample Population (N = 9,454)

Age, y	
<75	62.1
75–84	29.4
85	8.5
Female	55.5
Race	
Non-Hispanic, white	78.2
Non-Hispanic, black	7.6
Hispanic	8.6
Other	5.7
High school education or greater	83.3
Household income <\$25,000	31.5
Region	
Northeast	19.7
Midwest	24.2
South	30.8
West	25.4
No. of impaired ADLs	
0	85.1
1	7.6
2	7.4
Worsening health over last year	16.4
Fair/poor health	15.7
Cancer	32.8
Heart disease	14.1
Lung disease	15.7
Dementia	3.8
Stroke	8.7

Note: Data are given as percentages. Data source: Medicare Current Beneficiary Survey, 2010 to 2016. Individuals with Medicaid insurance and residing in Puerto Rico were excluded. All proportions are adjusted to account for survey design and sampling approach.

Abbreviation: ADL, activity of daily living (requiring help for bathing, dressing, eating, toileting, or transferring in and out of chairs).

Table 2. Characteristics Associated with Not Knowing NH, Vision, and/or Dental Benefits in Medicare Advantage

Characteristic	OR (95% CI)		
	NH knowledge gap	Dental knowledge gap	Vision knowledge gap
Age, y			
<75	Reference	Reference	Reference
75–84	0.94 (0.85–1.04)	0.86 (0.69–1.08)	0.84 (0.69–1.01)
85	0.84 (0.72–0.97)	1.11 (0.80–1.54)	0.97 (0.74–1.28)
Female	1.03 (0.93–1.14)*	1.00 (0.79–1.26)	1.13 (0.93–1.38)
Race			
Non-Hispanic, white	Reference	Reference	Reference
Non-Hispanic, black	1.13 (0.94–1.36)	1.25 (0.87–1.81)	0.96 (0.68–1.34)
Hispanic	1.13 (0.93–1.36)	1.59 (1.09–2.33)**	0.91 (0.64–1.30)
Other	1.30 (1.02–1.64)*	1.46 (0.93–2.29)*	1.16 (0.79–1.70)
High school education or greater	0.86 (0.76–0.98)*	0.56 (0.43–0.72)**	0.82 (0.65–1.04)
Household income <\$25,000	1.17 (1.05–1.29)**	1.59 (1.28–1.96)**	1.30 (1.08–1.57)**
Region			
Northeast	Reference	Reference	Reference
Midwest	0.81 (0.69–0.94)**	0.56 (0.40–0.80)**	1.13 (0.85–1.48)
South	0.93 (0.80–1.07)	0.94 (0.70–1.27)	1.20 (0.92–1.58)
West	0.75 (0.64–0.87)**	0.53 (0.36–0.76)**	0.80 (0.59–1.10)
No. of impaired ADLs			
0	Reference	Reference	Reference
1	1.03 (0.89–1.19)	1.50 (1.06–2.13)*	1.10 (0.86–1.42)
2	0.92 (0.79–1.08)	1.35 (0.97–1.87)	1.32 (1.01–1.73)*
Worsening health over last year	0.98 (0.88–1.09)	0.91 (0.72–1.16)	1.04 (0.85–1.29)
Fair/poor health	1.02 (0.90–1.15)	1.03 (0.80–1.34)	0.87 (0.69–1.10)
Cancer	0.98 (0.89–1.09)	0.95 (0.75–1.19)	0.86 (0.71–1.05)
Heart disease	0.85 (0.75–0.98)*	0.93 (0.69–1.25)	1.25 (0.98–1.59)

Characteristic	OR (95% CI)		
	NH knowledge gap	Dental knowledge gap	Vision knowledge gap
Lung disease	1.08 (0.95–1.23)	1.37 (1.06–1.77)	1.17 (0.93–1.46)
Dementia	0.97 (0.78–1.19)	1.37 (0.95–1.99)	0.90 (0.63–1.28)
Stroke	0.96 (0.81–1.13)	0.95 (0.65–1.38)	0.73 (0.54–0.99) [*]
Year ^a	1.06 (1.04–1.09) ^{**}	0.91 (0.87–0.96) ^{**}	0.95 (0.91–0.99) ^{**}

Note: Data source: Medicare Current Beneficiary Survey, 2010 to 2016. Individuals with Medicaid insurance and residing in Puerto Rico were excluded. All proportions are adjusted to account for survey design and sampling approach, and clustering of observations at the individual level due to repeated observations.

Abbreviations: ADL, activity of daily living (requiring help for bathing, dressing, eating, toileting, or transferring in and out of chairs); CI, confidence interval; NH, nursing home; OR, odds ratio.

^aYear is measured as a continuous variable to assess temporal trends.

^b_{*} $P < .05$ _{**} $P < .01$