Low completion and disparities in advance care planning activities among older Medicare beneficiaries

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To the Editor

Advance care planning (ACP) is an iterative process that includes discussions about preferences for end-of-life care, completion of advanced directives (AD), and designation of a surrogate decision maker in a durable power of attorney for healthcare (DPOA).[1,2] Engagement in ACP has increased over time.[3] However, the rising tide of ACP may not have lifted all boats equally. Minorities, those with lower levels of educational attainment and the poor may not have benefited from rising rates of ACP to the same extent as white, highly educated, affluent individuals. Rates of ACP by older Latinos in particular are unknown. Further, we do not know if ACP uptake is greater among those in worse health and with a poorer prognosis.

Methods

We used data from the National Health and Aging Trends Study (NHATS), a longitudinal cohort study using a nationally-representative sample of community-dwelling Medicare beneficiaries age 65 and older (2011 round 1 response rate 71%; 2012 round 2 response rate 86%).[4] This cross-sectional analysis used a random one-third sample (n=2,015) who responded to a supplemental module on ACP fielded in 2012. This study was considered exempt by the Institutional Review Board of the University of California, San Francisco.

Outcome variables included three self-reported elements of ACP: (1) discussing with any individual the medical treatment desired if seriously ill in the future (EOL discussion); (2) having legal arrangements for a proxy to make decisions about medical care (DPOA); or (3) having written instructions about medical treatment desired (AD) (exact wording at nhatsdata.org). Predictor characteristics included self-reported age, gender, race/ethnicity, education, income, self-rated health, number of chronic conditions, disability in activities of daily living (ADLs), and dementia.

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We investigated the strength and magnitude of the relationship between sociodemographic and health characteristics of older adults and engagement in ACP using logistic regression analysis and predicted probabilities calculations, adjusted for age, gender, and race/ethnicity. An exploratory analysis stratified Latinos by interview language. Analytic weights were used to account for complex sampling strategy. Hosmer–Lemeshow tests suggested multivariable models had adequate goodness of fit.

Results

Of 2,015 participants, 60% reported having an EOL discussion, 50% a DPOA, and 52% an AD; 27% reported no ACP elements, and 38% reported all three ACP elements (Table 1).

Predicted prevalence of each element of ACP differed by up to 35% between patient characteristic subgroups and was lower for two or more ACP elements among adults age 65–74, men, African Americans, Latinos, those with lower levels of educational attainment, and lower annual income (Table 2). Older Spanish-speaking Latinos had the lowest prevalence of ACP of any group examined: 19% reporting EOL discussion, 20% DPOA, and 17% AD.

We found little to no increase in prevalence of ACP among older adults with multimorbidity or ADL disability (Table 2). Older adults with dementia had significantly lower prevalence of EOL discussions (54%) and ADs (46%) compared to those with no dementia (62% and 54%, respectively).

Discussion

Our findings suggest that in 2012, over a quarter of older Medicare beneficiaries had not engaged in ACP. Those who were Latino, African American, poorly educated, or low income were at highest risk. Counter to expectation that people likely to have more interaction with medical providers would have higher prevalence of ACP, we found that those with dementia and more ADL disability either had similar or lower prevalence of ACP engagement.

In 2016, CMS began reimbursing physicians for engaging Medicare beneficiaries in ACP. While reimbursement is a critical step forward, effective, targeted approaches are needed to ensure increased completion of ACP among all older adults. Innovative ACP communication strategies are being developed both for minority populations and populations of older adults with multimorbidity and dementia.[5] In the future, clinicians should use these tailored tools when discussing ACP with these particularly vulnerable groups.

Acknowledgments

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Table 1

Characteristics of Participants

Sociodemographic characteristics	Percent[1]
N = 2015	
Age	
65–74	48.7
75–84	36.6
85+	14.6
Gender	
Female	55.7
Male	44.3
Race/ethnicity	
White	80.7
Black/African American	8.5
Hispanic/Latino	6.8
English-speaking	50.9
Spanish-speaking	49.1
Other	3.9
Education	
HS diploma or less	51.4
Greater than HS	48.6
Annual Income[2]	
<$25,000	41.2
$25,000+	58.8
Health-related characteristics	
Self-rated health	
Excellent or Very good	45.4
Good	31.3
Fair or Poor	23.3
Dementia[3]	
None	80.0
Possible or probable dementia	20.0
Number of chronic medical conditions[4]	
None	53.4
1–2	35.1
More than 2	11.4

Sociodemographic characteristics	N = 2015 Percent[1]
Needs help with # ADLs[5]	
0	82.0
1 or 2	10.5
3+	7.5
Sample characteristics	
Respondent	
Sample	94.2
Proxy	5.8
Engagement in ACP	
EOL discussion	60.2
Durable Power of Attorney	49.7
Advance Directive	52.4
No elements	27.3
All three elements	37.5

[1] Weighted to adjust for complex survey design

[2] Self-reported total annual income includes sources such as social security, supplemental social security, Veterans Administration, pension plan, earned income, retirement account withdrawals, or interest or dividend from mutual funds, socks, bonds, bank accounts, or CDs. For individuals who answered "don't know" (24%) or "refused" (18%) we substituted an imputed value using the first of five income imputations provided by NHATS (see Technical Paper #3 available at nhatsdata.org).

[3] Dementia was defined using the NHATS algorithm, which relies on a combination of information about self- or proxy-reported physician-diagnosed dementia, completion of the AD8 dementia screening questionnaire by proxies, or cognitive testing of the sample person; round 2 incorporates round 1 results. Participants were categorized as having no cognitive impairment as compared to having possible dementia or probable dementia. This broad NHATS dementia algorithm has a sensitivity of 85.7% and specificity of 61.6% (see Technical Paper #5).

[4] Chronic conditions for which respondents reported receiving a physician's diagnosis included: heart attack, heart disease, high blood pressure, arthritis, osteoporosis, diabetes, lung disease, stroke, cancer, or broken or fractured hip.

[5] ADLs: reported self-care or mobility limitations for eating, dressing, bathing, toileting, getting out of bed, getting around inside, getting outside; corresponding to activities of daily living (ADLs).

Table 2

Association between sociodemographic variables, health variables, and predicted prevalence of Advance Care Planning

	EOL Discussion		Durable Power of Attorney		Advance Directive	
	Predicted prevalence[1] (% [95% CI])	P values[2]	Predicted prevalence (% [95% CI])	P values	Predicted prevalence (% [95% CI])	P values
Sociodemographic characteristics						
Age						
65–74	61.8 (56.8–66.8)	–	42.5 (38.7–46.4)	–	45.4 (40.4–50.3)	–
75–84	59.1 (54.8–63.3)	0.388	51.9 (47.4–56.4)	<0.001	55.6 (51.0–60.2)	0.002
85+	59.5 (54.5–64.5)	0.479	66.6 (61.6–71.5)	<0.001	65.3 (60.4–70.3)	<0.001
Gender						
Female	63.9 (60.0–67.9)	–	51.3 (47.7–54.8)	–	54.2 (50.0–58.4)	–
Male	56.0 (52.3–59.6)	0.001	47.4 (42.9–51.9)	0.180	49.5 (45.3–53.7)	0.055
Race/ethnicity						
White	65.6 (62.2–69.0)	–	54.2 (51.1–57.3)	–	58.6 (54.9–62.2)	–
Black/African American	39.1 (34.2–43.9)	<0.001	31.3 (26.1–36.5)	<0.001	26.0 (21.1–30.8)	<0.001
Hispanic/Latino	29.7 (20.2–39.3)	<0.001	27.1 (17.4–36.7)	<0.001	23.0 (14.7–31.2)	<0.001
Other	50.6 (36.3–65.1)	0.048	38.2 (21.1–55.4)	0.095	35.6 (21.3–50.0)	0.005
Education						
HS diploma or less	52.0 (47.9–56.1)	–	40.5 (36.4–44.6)	–	42.2 (38.1–46.2)	–
Greater than HS	69.4 (65.5–73.3)	<0.001	56.2 (55.2–63.1)	<0.001	62.6 (58.3–66.7)	<0.001
Annual Income						
<$25,000	52.4 (47.7–57.1)	–	42.1 (37.9–46.3)	–	41.8 (37.3–46.2)	–
$25,000+	66.1 (62.6–69.5)	0.002	54.8 (51.2–58.4)	0.003	59.4 (55.2–63.5)	0.026
Health-related characteristics						
Self-rated health						
Excellent or Very good	64.5 (60.8–68.2)	–	53.1 (49.0–57.3)	–	57.0 (52.4–61.5)	–
Good	55.8 (50.0–61.6)	0.007	46.8 (41.7–51.9)	0.055	48.5 (43.1–53.8)	0.008
Fair or Poor	58.8 (53.7–64.0)	0.056	46.2 (41.3–51.2)	0.038	47.5 (41.5–53.5)	0.011

	EOL Discussion		Durable Power of Attorney		Advance Directive	
	Predicted prevalence[1] (% [95% CI])	P values[2]	Predicted prevalence (% [95% CI])	P values	Predicted prevalence (% [95% CI])	P values
Presence of dementia						
None	62.1 (58.6–65.6)	–	50.0 (46.6–53.4)	–	53.5 (39.6–57.5)	–
Possible or probable dementia	53.9 (47.9–59.8)	0.013	47.8 (41.1–54.5)	0.593	46.4 (40.2–52.5)	0.048
Number of chronic medical conditions						
None	58.8 (54.6–63.1)	–	46.4 (41.8–50.9)	–	48.8 (44.5–53.2)	–
1–2	63.3 (59.1–67.6)	0.111	54.6 (49.7–59.5)	0.026	56.1 (51.0–61.1)	0.024
More than 2	59.3 (52.1–66.5)	0.910	49.0 (41.4–56.7)	0.549	55.2 (47.0–63.4)	0.133
Needs help with # ADLs						
0	60.2 (56.6–63.8)	–	48.7 (45.4–52.0)	–	51.8 (47.9–55.7)	–
1 or 2	61.8 (53.6–69.9)	0.725	49.1 (42.4–52.0)	0.932	52.4 (44.7–60.0)	0.889
3+	62.1 (53.8–70.4)	0.664	59.7 (50.4–69.0)	0.039	55.1 (45.7–64.5)	0.524

[1] Predicted prevalence values are the predicted probabilities calculated using the post-estimation margins command following multivariable logistic regression analysis where each type of ACP is a function of the predictor variable adjusted for age, gender, and race/ethnicity. In the case of age, gender, or race/ethnicity, each predictor is adjusted for the other two variables.

[2] Compares results for the specific subgroup to the reference group on the basis of the multivariable logistic model; the reference group is the first specified subgroup for each independent variable.