RESEARCH ARTICLE

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Trends in the use of advance care planning and cognitive assessment and care planning service visits: moving toward a palliative-informed approach for ambulatory care of community-dwelling persons with dementia and their caregivers

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Abstract

INTRODUCTION: Both the advance care planning (ACP) visit and cognitive assessment and care planning service (CAACPS) visit offer palliative-oriented care for persons with Alzheimer's disease and related dementias (ADRD); however, the rate of ACP visits remains low, and little has been reported regarding CAACPS visits. Furthermore, few reports describe use of either visit among Medicare Advantage (MA) beneficiaries. This study describes provision of ACP and CAACPS visits to community-dwelling older adult MA beneficiaries with ADRD.

METHODS: Using deidentified Optum Clinformatics Data Mart claims data, we evaluated ambulatory care visits for community-dwelling older adult MA beneficiaries with ADRD for the years 2018 to 2019.

RESULTS: For 2018 and 2019, 3.5% and 5.4% received ACP visits, and 0.4% and 0.5% received CAACPS visits, similar to use reported elsewhere.

DISCUSSION: Few MA beneficiaries with ADRD received ACP or CAACPS visits, and the delivery of CAACPs visits is similar to that reported for non-MA beneficiaries.

KEYWORDS
Alzheimer's disease, ambulatory care, care setting, dementia, disparities, home, palliative care

Highlights

- Most persons with dementia are community-dwelling and disproportionately disadvantaged.
- Access to palliative care is limited for community-dwelling persons with dementia.
- CAACPS visits may address this gap.
- Our findings show the use of CAACPS visits is very low.

1 | BACKGROUND

Older adults diagnosed with Alzheimer's disease and related dementias (ADRD) experience distressing symptoms, progressive functional incapacity, and a disease trajectory that ultimately leads to total dependency and death.[1] By 2025, an estimated 6.5 million older adults will have a diagnosis of ADRD.[2] Over the course of their disease, persons with dementia (PWD) will ultimately require family, friends, or professional caregivers to provide assistance in all activities of daily living.[1] On average, the time from diagnosis to death for persons with ADRD is 5.0 years.[3] Contrary to public perception, the majority of PWD reside outside of care facilities and are disproportionately minority and low-income.[4,5] PWD living in the home setting often have multiple comorbidities, which must be managed along with a unique constellation of functional, behavioral, and communication challenges.[5]

Despite the high symptom and caregiver burden associated with this terminal illness, the availability of palliative care for PWD outside acute and skilled care settings is low. Most PWD receive ambulatory care that is fragmented and medically focused and rarely addresses the complex caregiving issues and advance care planning (ACP) needs inherent in ADRD. In 2016, Medicare began offering physician reimbursement for conducting ACP conversations and would waive the copayment for ACP when conducted as part of an annual wellness visit. Since this reimbursement was instituted, there has been a steady rise in the uptake of ACP visits, with the prevalence for 2018 being estimated at 3.67% to 5.9% among Medicare fee-for-service beneficiaries.[6,7] Nonetheless, the uptake is low despite evidence that ACP is associated with increased patient and family satisfaction and decreased intensity of treatment at end of life.[8,9]

To further promote comprehensive care for PWD, the Centers for Medicare and Medicaid Services (CMS) created the cognitive assessment and care planning services (CAACPS) billing code in 2017, with input from the Alzheimer's Association Expert Task Force. This code consists of eight elements involving assessments of patients' cognitive, behavioral, and functional status; a review of medications; a check on caregiver well-being; the provision of care planning services with caregivers; and indicated referrals to additional resources.[10,11] Since the launch of the CAACPS code, only one study has reported on its uptake; in 2021, Li et al. reported that among 895,726 Medicare fee-for-service beneficiaries with ADRD, only 0.29% had a CAACPS visit in 2017 and 0.41% had a CAACPS visit in 2018.[12]

The care elements captured by ACP and CAACPS visits represent a palliative approach to the care of PWD, but their uptake has been minimal. Furthermore, studies reporting the delivery of ACP or CAACPS visits have used data exclusively from beneficiaries enrolled in Medicare fee-for-service programs, accounting for only about 60% of the Medicare population. In 2018 to 2019, approximately 40% of Medicare beneficiaries were enrolled in Medicare Advantage (MA) programs,[13] which differ markedly from traditional Medicare fee-for-service programs. MA programs offer lower out-of-pocket costs and expanded services, and they attract beneficiaries that on the whole are more likely to be Black or Hispanic, have better health, and have less edu-

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RESEARCH IN CONTEXT

1. **Systematic review**: The authors reviewed the literature using recognized sources (PubMed and CINAHL). We found several articles on the delivery of ACP visits, including information about the proportion of visit recipients having ADRD, and we were made aware of one article related to the delivery of CAACPS visits. We have cited these appropriately.
2. **Interpretation**: Our findings describe the delivery of CAACPS and ACP visits in 2018 and 2019 in a sample of community-dwelling MA beneficiaries with ADRD and demographic characteristics associated with visits provided.
3. **Future directions**: This manuscript provides baseline data on the use of the CAACPS visit, including disparities in delivery. These findings provide direction for future studies to determine barriers and facilitators related to CAACPS visit delivery including provider-level and systems-level factors.

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cation and income than those enrolled in Medicare fee-for-service programs.[14] Because ACP and CAACPS visits have the potential to meet the palliative care needs of community-living PWD, it is important to understand patterns, trends, and any disparities in their delivery. Utilizing MA plan data for this analysis offers two distinct advantages: MA beneficiaries may be more likely to reflect the demographic characteristics of community-living PWD, and the analysis has the potential to show whether the delivery of ACP and CAACPS visits differs in managed care programs versus what has been reported for Medicare fee-for-service programs. The purpose of this study is to (1) describe the frequency and characterize sociodemographic characteristics of patients who received ACP or CAACPS visits in 2018 and 2019, (2) compare sociodemographic characteristics between patients who received ACP or CAACPS visits and those without ACP or CAACPS visits in 2018 and 2019, and (3) identify sociodemographic predictors of receiving ACP or CAACPS visits.

2 | METHODS

2.1 | Design and data source

This study is a cross-sectional comparative cohort analysis using Optum's deidentified Clinformatics Data Mart Database. The Clinformatics database consists of administrative claims data from UnitedHealthcare, a provider of commercial and Medicare health insurance to over 68 million enrollees. The Clinformatics socioeconomic status view includes individual- and household-level demographic data, including age, sex, race, ethnicity, education, and household-level income and net worth. Age, sex, and race/ethnicity are derived from electronic

health record data, education level is derived from census block data, and annual household income and net worth are generated using linkages to an external consumer marketing database.[15–17] The data used for this analysis consist of claims pertaining to MA program beneficiaries. We evaluated ACP and CAACPS visits for the years 2018 and 2019. The study was reviewed by the University of Pittsburgh Human Subjects Protection Office and determined not to be human subject research.

2.2 | Sample

For each year we included continuously enrolled patients aged ≥65 years with an ADRD diagnosis who were alive for at least 3 months of that year and had less than 100 days of residency in a skilled nursing facility (SNF). We defined age as the number of whole years alive on the first day of the year being analyzed. We defined ADRD diagnosis as having one or more of the *International Classification of Diseases-10th Revision* codes indicative of cognitive impairment, Alzheimer's disease, and any related dementia syndrome recommended by the Alzheimer's Association Expert Task Force (Appendix A).[10] We identified ACP visits using the *Current Procedural Terminology* (CPT) Code 99497, and we identified CAACPS visits using the CPT code 99483. We excluded ACP and CAACPS visits conducted in acute-care, SNF, and long-term care settings.

2.3 | Analyses

We used descriptive statistical procedures to describe the sociodemographic characteristics of the sample, including age category, gender, race/ethnicity, educational attainment, household income, and net worth. We calculated the frequency and percentage of beneficiaries receiving ACP visits and CAACPS visits, then performed chi-squared analysis to compare beneficiaries receiving ACP or CAACPS visits and those not receiving ACP or CAACPS visits by age group, gender, race/ethnicity, educational attainment, household income, and net worth. Finally, we conducted logistic regression modeling of receipt of an ACP or CAACPS visit to examine which sociodemographic characteristics were significantly associated with receipt of visits when adjusting for other covariates. The descriptive and comparative analyses for this paper were generated using SAS software version 9.4 (Copyright 2013, SAS Institute Inc., Cary, NC, USA). Logistic regression analyses were conducted using STATA version 18 (StataCorp. 2023. Stata Statistical Software: Release 18. College Station, Texas, USA).

3 | RESULTS

3.1 | Sample characteristics

Our sample consisted of 248,464 beneficiaries in 2018 and 281,044 beneficiaries in 2019. We show the sociodemographic characteristics of the sample in Table 1. In 2018, 3.5% received an ACP visit and 0.4%

TABLE 1 Sociodemographic characteristics of study sample for years 2018 and 2019.

Characteristic	2018 (n = 248,464)	2019 (n = 281,044)
Age category in year, n (%)		
65 to 74	42,426 (17.1)	43,164 (15.4)
75 to 84	99,624 (40.1)	109,649 (39.0)
>85	106,414 (42.8)	128,231 (45.6)
Gender, n (%)		
Female	159,232 (64.1)	178,384 (63.5)
Male	89,222 (35.9)	102,649 (36.5)
Unknown	10 (0.0)	11 (0.0)
Race, n (%)		
Asian	6861 (2.4)	7836 (2.8)
Black/African American	30,833 (12.4)	34,823 (12.4)
Hispanic	28,102 (11.3)	31,833 (11.3)
White	176,774 (71.1)	199,739 (71.1)
Unknown	7775 (3.1)	6813 (2.4)
Educational attainment, n (%)		
Less than 12th grade	1145 (0.5)	1319 (0.5)
High school diploma	68,662 (27.6)	78,304 (27.9)
Less than bachelor's degree	137,106 (55.2)	155,128 (55.2)
Bachelor's or higher	41,023 (16.5)	45,678 (16.3)
Unknown	528 (0.2)	615 (0.2)
Household income in annual dollars, n (%)		
<$40,000/year	70,268 (28.3)	80,529 (28.7)
$40,000 to $59,000/year	38,854 (15.6)	44,499 (15.9)
$60,000 to $74,000/year	24,540 (12.2)	28,332 (10.0)
$75,000 to $99,000/year	30,296 (12.2)	34,810 (12.4)
>$100,000	36,842 (14.8)	42,253 (15.0)
Unknown	47,664 (19.2)	50,621 (18.0)
Net worth in US dollars n (%)		
<$25,000	44,910 (18.1)	51,446 (18.3)
$25,000 to $149,000	35,557 (14.3)	41,462 (14.8)
$150,000 to $249,000	21,485 (8.6)	24,869 (8.8)
$250,000 to $499,000	36,846 (14.8)	42,412 (15.1)
$500,000+	62,382 (25.1)	70,688 (25.2)
Unknown	47,284 (19.0)	50,167 (17.9)

of beneficiaries received a CAACPS visit. In 2019, the frequency of ACP visits increased to 5.4% while the frequency of CAACPS visits rose only slightly (0.5%).

3.2 | ACP visits

Our bivariate analysis showed that age and race/ethnicity were associated with receipt of an ACP visit in both 2018 and 2019, while household income was associated with receipt of an ACP visit in 2018

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TABLE 2 Comparison of ACP visit recipients in 2018 and 2019.

Characteristic	ACP visit 2018			ACP visit 2019		
	Yes	No		Yes	No	
	(n = 8657)	(n = 239,807)	p	(n = 15,179)	(n = 265,865)	p
Age[a] category, n (%)			**<0.001**			**<0.001**
65 to 74	1348 (15.6)	41,078 (17.1)		2131 (14.0)	41,078 (17.1)	
75 to 84	3370 (38.9)	96,254 (40.1)		5584 (36.8)	96,254 (40.0)	
≥85	3939 (45.5)	102,475 (42.7)		7464 (49.2)	102,475 (42.7)	
Gender, n (%)						
Female	5472 (63.2)	153,760 (64.1)	0.082	5472 (63.2)	153,760 (64.1)	0.082
Male	3185 (36.8)	86,037 (35.9)		3185 (36.8)	86,073 (35.9)	
Unknown	0 (0.0)	10 (0.0)		0 (0.0)	10 (0.0)	
Race, n (%)			**<0.001**			**<0.001**
Asian	406 (4.7)	6455 (2.7)		568 (3.7)	7268 (2.7)	
Black	1181 (13.6)	29,652 (12.4)		2229 (14.7)	32,594 (12.3)	
Hispanic	1024 (11.8)	27,078 (11.3)		1660 (10.9)	30,173 (11.3)	
White	5869 (67.8)	170,905 (71.3)		10,389 (68.4)	189,350 (71.2)	
Unknown	177 (2.0)	5717 (2.4)		333 (2.2)	6480 (2.4)	
Education level n (%)			0.092			0.358
Less than 12th grade	60 (0.7)	1085 (0.5)		83 (0.5)	1236 (0.5)	
High school diploma	2373 (27.4)	66,289 (27.6)		4186 (27.6)	74,118 (27.9)	
Less than bachelor's	4748 (54.8)	132,358 (52.2)		8355 (55.0)	146,773 (55.2)	
Bachelor's or higher	1457 (16.8)	39,566 (16.5)		2251 (16.6)	43,157 (16.2)	
Unknown	509 (0.2)	509 (0.2)		34 (0.2)	581 (0.2)	
Household income[b] n (%)			**0.024**			0.054
<40,000/year	2599 (30.0)	67,669 (28.2)		4505 (29.7)	76,024 (28.6)	
40,000 to 59,000	1468 (15.8)	37,486 (15.6)		2043 (16.9)	44,252 (15.8)	
60,000 to 74,000	881 (10.2)	23,659 (9.9)		1533 (10.1)	26,799 (10.1)	
75,000 to $99,000	1024 (11.8)	29,272 (12.2)		1814 (12.0)	32,996 (12.4)	
>100,000	1360 (15.7)	36,636 (14.8)		2306 (15.2)	39,947 (15.0)	
Unknown	1425 (16.5)	35,482 (19.2)		2618 (17.2)	48,003 (18.1)	
Net worth[c] n (%)			0.103			0.961
<25,000	1649 (19.0)	43,261 (18.0)		2875 (18.9)	48,571 (18.3)	
25,000 to 149,000	1231 (14.2)	34,326 (14.3)		2257 (14.9)	39,205 (14.7)	
150,000 to 249,000	695 (8.0)	20,790 (8.7)		1258 (8.3)	23,611 (8.9)	
250,000 to 499,000	1298 (15.0)	35,548 (14.8)		2216 (14.6)	40,196 (15.1)	
>500,000	2375 (27.4)	60,007 (25.0)		3974 (26.2)	66,714 (25.1)	
Unknown	1409 (16.3)	45,875 (19.1)		2599 (17.1)	47,568 (17.9)	

Abbreviation: ACP, advance care planning.
Bolded values indicate p < 0.05.
[a] Age in years.
[b] Annual income in USD.
[c] In USD.

only (Table 2). When examining ACP visits in the adjusted model, we observed those in the youngest age category were least likely to receive an ACP visit in 2018 and 2019 (odds ratio [OR] = 0.79; 95% confidence interval [CI] = 0.74 to 0.85; p < 0.001 and OR = 0.78; 95% CI = 0.74 to 1.83; p < 0.001) compared to those 85 years and older (Table 3). Interestingly, there was no difference in ACP visits by gender in 2018; however, in 2019, female beneficiaries were significantly less likely (OR = 0.95; 95% CI = 0.92 to 0.99; p = 0.016) to receive a

TABLE 3 Logistic regression modeling of ACP visits, 2018 and 2019.

Characteristic	ACP visit 2018			ACP visit 2019		
	OR	95% CI	p	OR	95% CI	p
Age[a] category n (%)						
65 to 74	0.79	0.74 to 0.85	**<0.001**	0.78	0.74 to 1.83	**<0.001**
75 to 84	0.88	0.84 to 0.93	**<0.001**	0.83	0.80 to 0.87	**<0.001**
≥85	Ref	Ref		Ref	Ref	Ref
Gender, n (%)						
Female	0.97	0.93 to 1.02		0.95	0.92 to 0.99	
Male	Ref	Ref	0.304	Ref	Ref	**0.016**
Race, n (%)						
Asian	1.82	1.62 to 2.03	**<0.001**	1.43	1.30 to 1.57	**<0.001**
Black	1.21	1.12 to 1.30	**<0.001**	1.24	1.18 to 1.32	**<0.001**
Hispanic	1.11	1.03 to 1.20	**0.005**	0.99	0.94 to 1.06	0.807
White	Ref	Ref	Ref	Ref	Ref	
Education level n (%)						
Less than 12th grade	1.21	1.03 to 1.90	**0.033**	1.20	0.93 to 1.54	0.166
High school diploma	1.05	0.96 to 1.14	0.315	0.99	0.93 to 1.06	0.826
Less than bachelor's	1.05	0.98 to 1.13	0.190	1.01	0.95 to 10.6	0.822
Bachelor's or higher	Ref	Ref	Ref	Ref	Ref	Ref
Household income[b] n (%)						
<40,000	Ref	Ref	Ref	Ref	Ref	Ref
40,000 to 59,000	0.93	0.87 to 1.00	0.065	0.98	0.93 to 1.04	0.495
60,000 to 74,000	0.93	0.85 to 1.02	0.039	0.98	0.92 to 1.05	0.604
75,000 to 99,000	0.87	0.79 to 0.95	**0.002**	0.93	0.87 to 1.00	0.058
>100,000	0.91	0.82 to 1.00	0.053	0.94	0.87 to 1.02	0.136
Net worth[c] n (%)						
<25,000	Ref	Ref	Ref	Ref	Ref	Ref
25,000 to 149,000	0.97	0.90 to 1.05	0.491	1.00	0.94 to 1.06	0.902
150,000 to 249,000	0.93	0.84 to 1.02	0.132	0.94	0.87 to 1.01	0.092
250,000 to 499,000	1.04	0.95 to 1.14	0.449	0.97	0.91 to 1.04	0.415
>500,000	1.05	1.05 to 1.27	**0.005**	1.07	0.99 to 1.16	0.083

Abbreviations: ACP, advance care planning; CI, confidence interval; OR, odds ratio.
Bolded values indicate p < 0.05.
[a] Age in years.
[b] Annual income in USD.
[c] In USD.

visit with ACP compared to male beneficiaries, after adjusting for other covariates.

Regarding the delivery of ACP visits by racial/ethnic group, in 2018, Asian, Black, and Hispanic beneficiaries were all significantly more likely than White beneficiaries to receive an ACP visit, after adjusting for covariates (Table 3). In 2019, Asian and Black beneficiaries were significantly more likely than White beneficiaries to receive an ACP visit, although the likelihood was somewhat attenuated for Asian beneficiaries.

For both 2018 and 2019, we found few significant differences in ACP visits by level of educational attainment, annual income, and net worth in the adjusted model. Regarding educational attainment, the only significant difference was that in 2018, beneficiaries with less than high school education were 1.21 times more likely (95% CI = 1.03 to 1.90; p = 0.033) to have an ACP visit compared to those with a bachelor's degree or greater level of educational attainment. When evaluating differences by annual income, our adjusted analysis showed that in 2018, those with an annual income of US$75,000 to US$99,000 were slightly less likely (OR = 0.87; 95% CI = 0.79 to 0.95; p = 0.002) to receive an ACP visit compared to those with an income <US$40,000 per year. Furthermore, looking at differences by net worth, our adjusted analysis showed only that in 2018 beneficia-

ries with a net worth >US$500,000 were slightly more likely to have an ACP visit (OR = 1.05; 95% CI = 1.05 to 1.27; $p = 0.005$) compared to those with a net worth <US$25,000 (Table 3).

3.3 | CAACPS visits

Bivariate analysis showed that age, race/ethnicity, education level, and household income were associated with receipt of a CAACPS visit in both 2018 and 2019 (Table 4). After adjusting for covariates, we found those 65 to 74 years were 1.7 times more likely (OR = 1.74; 95% CI = 1.14 to 2.01; $p < 0.001$) and those 75 to 84 years were 1.39 times more likely (OR = 1.39; 95% CI = 1.19 to 1.63; $p < 0.001$) to receive a CAACPS visits than their ≥85-year-old counterparts, after adjusting for gender, race/ethnicity, education, household income, and net worth (Table 5). We saw no difference in receipt of a CAACPS visit by gender in either year. When comparing recipients of a CAACPS visit by race/ethnicity, we observed significant differences after adjusting for age, gender, education, household income, and net worth. In both 2018 and 2019 Hispanic beneficiaries were significantly more likely to receive a CAAPCS visit (OR = 1.44; 95% CI = 1.18 to 1.76; $p < 0.001$ and OR = 1.44; 95% CI = 1.23 to 1.69; $p < 0.001$) compared to White beneficiaries. And in 2019, Asian beneficiaries appear to be only half as likely (OR = 0.47; 95% CI = 0.29 to 0.75; $p = 0.001$) to receive a CAACPS visit, compared to their White counterparts.

In the adjusted model, we also saw differences in receipt of a CAACPS visit by level of educational attainment. Compared to beneficiaries with a bachelor's degree or higher level of educational attainment, those with a high school diploma were significantly less likely (OR = 0.76; 95% CI = 0.60 to 0.97; $p = 0.030$) to receive a CAACPS visit in 2018, and those with less than a bachelor's degree were significantly less likely (OR = 0.79; 95% CI = 0.68 to 0.93; $p = 0.004$) to receive a CAACPS visit in 2019.

We observed modest differences in CAACPS visit recipients by income in the adjusted model. Those in the two highest annual income categories (US$75,000 to US$95,000 and > US$100,000) were significantly more likely to receive a CAACPS visit in both years compared to those with an annual income <US$40,000 after controlling for other covariates. Furthermore, the odds of receiving a CAACPS visit increased successively by income category, with those in the highest category being the most likely to receive a CAACPS visit (Table 5).

Examining net worth in our adjusted analysis, we observed no differences in receipt of CAACPS visits in 2018. However, our analysis showed that in 2019, compared to those with a net worth <US$25,000, those with a net worth of US$25,000 to US$149,000 and those with a net worth of US$250,000 to US$499,000 were more likely to receive a CAACPS visit (OR = 1.26; 95% CI = 1.00 to 1.59; $p = 0.050$ and OR = 1.26; 95% CI = 1.01 to 1.58; $p = 0.041$, respectively), Table 5.

4 | DISCUSSION

This analysis provides unique insights into the provision of ACP and CAACPS visits to community-living PWD enrolled in MA programs and

underscores the low uptake of these visits in a population with documented ADRD. While some analyses comparing MA and traditional Medicare fee-for-service programs suggest that MA programs perform better on quality-of-care metrics, including preventive visits,[18] others point to very mixed findings for beneficiaries with serious illness.[14]

When examining visits with ACP, our overall rates of 3.5% in 2018 and 5.4% in 2019 were not unlike rates reported by Reich and colleagues[19] for 2017 (4.2% for those with serious illness, 5.2% for those with serious illness and frailty); Palmer et al.[6] for 2018 (3.7%); and Weissman et al.[7] for 2016 to 2018 (5.9%), all of whom evaluated ACP visits in data from traditional Medicare fee-for-service programs. However, it is important to note that these studies – except for Reich et al., whose subgroup analysis of serious illness included ADRD – examined ACP rates among all beneficiaries. This suggests that community-living persons with ADRD do not receive ACP more frequently than other older adults. Furthermore, it suggests that ACP rates may not differ in MA programs compared to traditional Medicare fee-for-service programs.

Regarding differences in ACP by age, our findings that ACP rates increased with age are similar to those reported by Palmer et al.[6] and Weissman et al.[7] Regarding differences in ACP visits by race, prior studies in Medicare fee-for-service program beneficiaries showed Black beneficiaries had lower rates of ACP visits compared to White beneficiaries,[6] although Weissman et al. showed the gap narrowed significantly from a rate of 1.8 in 2016 to a cumulative rate of 5.9 for 2016 to 2018.[7] Regarding differences in ACP visits by ethnicity, Palmer et al.[6] reported a lower likelihood of ACP visits for Hispanic beneficiaries, while our findings showed Hispanic beneficiaries had small but significantly greater odds of receiving an ACP visit. Our findings of small but statistically significantly greater odds of an ACP visit for both Black and Hispanic beneficiaries with ADRD may reflect differences in practice among providers in MA programs or simply a difference in the demographic makeup of MA versus traditional Medicare fee-for-service populations.[14] Likewise, our findings that female beneficiaries had a slightly lower likelihood of a visit with ACP in 2019 differs from findings reported by Palmer et al. and Reich et al.[6,19] and again may reflect differences in the populations.

Our analysis shows that in this large national sample, CAACPS visits were provided to persons with ADRD diagnoses very infrequently, but their use increased slightly over time. This low uptake may be explained by the novelty of the benefit and the potential difficulty faced in implementing all required components of the visit. Nonetheless, we observed rates very similar to those published by Li and colleagues, who reported that among traditional Medicare fee-for-service beneficiaries with an ADRD diagnosis, 0.29% received a CAACPS visit in 2017 and 0.41% received a CAACPS visit in 2018.[12] Li et al. also reported a significantly lower likelihood of CAACPS visits in the oldest age group, though the reason is unclear since annual CAACPS visits are covered by Medicare.[11] Low provision of CAACPS visits to this group may represent a misunderstanding of the purpose of the visit beyond a structured cognitive assessment or patients' difficulty traveling to or completing the visit. CAACPS visits have the potential to provide valuable support and referrals to PWD and their caregivers throughout the course

TABLE 4 Comparison of CAACPS visit recipients, 2018 and 2019.

| Characteristic | CAACPS visit 2018 | | | CAACPS visit 2019 | | |
| | Yes | No | | Yes | No | |
	(n = 957)	(n = 247,507)	p	(n = 1461)	(n = 279,583)	p
Age[a] category n (%)			**<0.001**			**<0.001**
65 to 74	218 (22.8)	42,208 (17.1)		323 (22.1)	42,841 (15.3)	
75 to 84	423 (44.2)	99,201 (40.1)		638 (43.7)	109,011 (39.0)	
≥85	316 (33.0)	106,098 (42.9)		500 (34.2)	127,731 (45.7)	
Gender, n (%)			0.719			0.245
Female	608 (63.5)	158,624 (64.1)		906 (62.0)	177,478 (63.5)	
Male	349 (36.5)	88,873 (35.9)		555 (38.0)	102,094 (36.5)	
Unknown	0 (0.0)	10 (0.0)		0 (0.0)	11 (0.0)	
Race, n (%)			**0.009**			**<0.001**
Asian	33 (3.4)	6828 (2.8)		21 (1.4)	7815 (2.8)	
Black	109 (11.4)	30,724 (12.4)		167 (11.4)	34,656 (12.4)	
Hispanic	138 (14.4)	27,964(11.3)		218 (14.9)	31,615 (11.3)	
White	665(68.4)	176,119 (71.2)		1014 (69.4)	198,725 (71.1)	
Unknown	22 (2.3)	5872 (2.4)		41 (2.8)	6772 (2.4)	
Education level, n (%)			**<0.001**			**<0.001**
Less than 12th grade	6 (0.6)	1139 (0.5)		6 (0.4)	1313 (0.5)	
High school diploma	222 (23.2)	68,440 (27.7)		372 (25.5)	77,932 (27.9)	
Less than bachelor's	521 (54.4)	136,585 (52.2)		771 (52.8)	154,357 (55.2)	
Bachelor's or higher	206 (21.5)	40,817 (16.5)		307 (21.0)	45,371 (16.2)	
Unknown	2 (0.2)	526 (0.2)		5 (0.3)	610 (0.2)	
Household income[b] n (%)			**<0.001**			**<0.001**
<40,000	235 (11.2)	70,033 (19.2)		353 (11.3)	80,176 (28.7)	
40,000 to 59,000	1162 (16.9)	38,692 (15.6)		247 (16.9)	44,252 (15.8)	
60,000 to 74,000	101 (10.6)	24,439 (9.9)		163 (11.2)	28,169 (10.1)	
75,000 to 99,000	146 (15.3)	30, 150 (12.2)		218 (14.9)	34,592 (12.4)	
>100,000	206 (21.5)	36,636 (14.8)		315 (21.6)	41,938 (15.0)	
Unknown	107 (11.2)	47,557 (19.2)		165 (11.3)	50,456 (18.0)	
Net worth[c] n (%)			0.103			0.961
<25,000	165 (17.2)	44,745 (18.1)		234 (16.0)	51,212 (18.3)	
25,000 to 149,000	133 (13.9)	35,424 (14.3)		192 (13.1)	41,270 (14.8)	
150,000 to 249,000	88 (9.2)	21,397 (8.6)		149 (10.2)	24,720 (8.8)	
250,000 to 499,000	142 (14.8)	36,704 (14.8)		263 (18.0)	42,149 (51,1)	
>500,000	324 (33.9)	62,058 (25.1)		460 (31.5)	70,228(25.1)	
Unknown	105 (11.0)	47,179 (19.1)		163 (11.2)	50,004 (17.9)	

Abbreviation: CAACPS, cognitive assessment and care planning service.
Bolded values indicate p < 0.05.
[a] Age in years.
[b] Annual income in USD.
[c] In USD.

of the disease, so it will be important to explore the reasons for this disproportionate use.

Our adjusted analysis revealed several unexpected disparities in CAACPS visit receipt by race/ethnicity. Notably, in both years, Hispanic beneficiaries were nearly 50% more likely to receive a CAACPS visit, compared to White beneficiaries, after adjusting for other covariates. The reason for this sustained difference is unclear and may be related to the high MA enrollment seen in geographic regions with large His-

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TABLE 5 Logistic regression modeling of CAACPS visits, 2018 and 2019.

Characteristic	CAACPS visit 2018			CAACPS visit 2019		
	OR	95% CI	p	OR	95 CI	p
Age[a] category n (%)						
65–74	1.74	1.14 to 2.01	**<0.001**	1.85	1.58 to 2.15	**<0.001**
75–84	1.39	1.19 to 1.63	**<0.001**	1.40	1.23 to 1.59	**<0.001**
≥85	Ref	Ref	Ref	Ref	Ref	Ref
Gender, n (%)						
Female	1.05	10.91 to 1.21	0.490	1.04	0.93 to 1.17	0.461
Male	Ref	Ref	Ref	Ref	Ref	Ref
Race, n (%)						
Asian	1.26	0.87 to 1.81	0.218	0.47	0.29 to 0.75	**0.001**
Black	1.11	0.89 to 1.40	0.352	1.10	0.91 to 1.32	0.235
Hispanic	1.44	1.18 to 1.76	**<0.001**	1.44	1.23 to 1.69	**<0.001**
White	Ref	Ref	Ref	Ref	Ref	
Education level n (%)						
Less than 12th grade	1.19	0.51 to 2.74	0.690	0.54	0.20 to 1.46	0.224
High school diploma	0.76	0.60 to 0.97	**0.030**	0.84	0.69 to 1.02	0.076
Less than bachelor's	0.83	0.69 to 1.00	0.054	0.79	0.68 to 0.93	**0.004**
Bachelor's or higher	Ref	Ref	Ref	Ref	Ref	Ref
Household income[b] n (%)						
<40,000	Ref	Ref	Ref	Ref	Ref	Ref
40,000 to 59,000	1.28	1.02 to 1.59	**0.031**	1.18	0.99 to 1.42	0.072
60,000 to 74,000	1.21	0.92 to 1.59	0.169	1.17	0.94 to 1.45	0.169
75,000 to 99,000	1.34	1.02 to 1.76	**0.034**	1.25	1.00 to 1.55	**0.045**
>100,000	1.45	1.09 to 1.93	**0.011**	1.45	1.15 to 1.83	**0.001**
Net worth[c] n (%)						
<25,000	Ref	Ref	Ref	Ref	Ref	Ref
25,000 to 149,000	0.95	0.74 to 1.21	0.654	0.97	0.79 to 1.19	0.773
150,000 to 249,000	1.01	0.76 to 1.36	0.934	1.26	1.00 to 1.59	0.050
250,000 to 499,000	0.91	0.69 to 1.21	0.527	1.26	1.01 to 1.58	**0.041**
>500,000	1.08	0.80 to 1.45	0.618	1.15	0.90 to 1.47	0.257

Abbreviations: CAACPS, cognitive assessment and care planning service; CI, confidence interval; OR, odds ratio.
Bolded values indicate p < 0.05.
[a]Age in years.
[b]Annual income in USD.
[c]In USD.

panic populations.[14] We also observed divergent findings regarding CAACPS visits among Asian beneficiaries for the 2 years analyzed, but given how few Asian beneficiaries were in our sample, interpretation is difficult.

We observed a number of unsurprising disparities related to the provision of CAAPCS visits in our adjusted model, the most marked being that individuals in the highest income categories were significantly more likely than their lower-income counterparts to have a visit, and the greater a beneficiary's income, the greater the likelihood he or she would receive a CAACPS visit. A similar pattern was reported by Li et al. in their study of traditional Medicare fee-for-service beneficiaries.[12] While the absolute differences we report are

small, they are consistent with well-demonstrated disparities in care for PWD.[20] We did not observe substantive differences in provision of CAACPS visits by educational attainment or net worth.

We must acknowledge a number of limitations of this study. We relied on claims data to understand care delivery, and it is possible that providers delivered the elements of CAACPS visits and elements of ACP visits but did not bill accordingly. We used MA data from a single healthcare entity with multiple MA products, each of which might have different coverage and rates of payment. In addition, it is important to note that analysis suggests that the Clinformatics Data Mart database may include data from zip codes that have older, disproportionately White, wealthier, and more educated residents, which may introduce

bias,[21] and we did not examine geographic region as a variable, which may have been a confounder. Because our goal was to explore overall trends in the use of CAACPS visits across the 2 years studied, and any disparities by various sociodemographic characteristics, we did not compare potential overlap in the sampled years. Furthermore, from a conceptual perspective, we did not include chronic care management as a primary palliative care tool in the care of community-living PWD. Finally, due to the global pandemic, we did not include the years 2020 to 2022 in our analyses, as the results would not reflect care under typical circumstances.

In conclusion, CAACPS and ACP visits represent a palliative approach to the care of community-dwelling PWD and their caregivers. This novel, exploratory study suggests that provision of the newly established CAACPS visit is low but growing. Furthermore, we demonstrate that the delivery of visits with ACP, which has been reimbursed since 2016, remains low.

With the return of in-person, primary-care visits after the pandemic, it will be possible to resume study of longitudinal trends related to the delivery of ACP and CAACPS visits, including disparities in their delivery. Perhaps the most compelling reason to promote CAACPS visits is the potential synergistic impact of CAACPS with the newly launched CMS Guiding an Improved Dementia Experience (GUIDE) model.[22] Currently, providers who identify needs related to any of the CAACPS domains (e.g., behavioral symptoms, caregiver burden, home safety) must make individual referrals to outside resources in the community as part of their comprehensive care plan. However, as comprehensive GUIDE model programs are implemented, primary providers can potentially make a single referral to address multiple patient–caregiver needs.

It is estimated that fully half of Medicare recipients are now enrolled in MA plans.[13] Historically, it has been very difficult to compare MA and traditional Medicare fee-for-service care due to limited MA data availability and completeness.[18] Policies to facilitate access to this data are needed to ensure high-quality care is provided to the growing population of community-living PWD and all Medicare beneficiaries.

In addition, focused research is needed to understand provider-level, practice-level, and system-level barriers and facilitators to implementation, regardless of Medicare plan. This includes identifying the knowledge, attitudes, and practices of providers regarding ACP and CAACPS visits and the characteristics of practice settings to understand variation in their delivery and overcome barriers to implementation of these important primary palliative care tools.

CONFLICT OF INTEREST STATEMENT

The authors have no conflicts of interest to disclose. Author disclosures are available in the Supporting Information.

CONSENT STATEMENT

This study was reviewed by the University of Pittsburgh Human Subjects Protection Office and determined not to be human subject research (STUDY22070072), so consent was not required.

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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