RESEARCH ARTICLE

Primary care preparedness to care for patients with ADRD: A national survey study

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Abstract

INTRODUCTION: It is unknown how prepared primary care practices are to deliver recommended dementia care.

METHODS: A nationally representative survey of US primary care practices focused on care delivery processes, including those for patients with Alzheimer's disease and related dementias (ADRD).

RESULTS: A total of 1245 of 3498 practices (36%) responded. Most practices reported systems to detect patients with ADRD (67%) and refer patients for diagnostic testing (75%). Fewer required ADRD-related training (45%–46%) or maintained an ADRD registry (29%). Practices that scored higher on ADRD care preparedness were more likely to be smaller, receive a higher proportion of revenue from Medicare, and have other important practice capabilities.

DISCUSSION: Primary care practices have mixed preparedness to care for patients with ADRD. Efforts to boost ADRD preparedness, including providing adequate infrastructure and resources directly to primary care, should be a priority to address disparities in diagnosis and to optimize the patient and caregiver journey.

KEYWORDS
ADRD, ADRD preparedness, Alzheimer's disease, Alzheimer's disease and related dementias, dementia, primary care, primary care preparedness

Highlights

- Mixed ADRD preparedness identified in primary care practices across the United States.
- Practices often lack ADRD-specific registries and staff training initiatives.
- Medicare-reliant and larger physician-owned groups show higher ADRD preparedness.
- FQHCs reported lower ADRD preparedness, highlighting potential gaps in care.
- Cultural awareness and other support services correlate with better ADRD readiness.

1 | BACKGROUND

Identifying people with Alzheimer's disease[1] or a related dementia (ADRD) and providing them and their family caregivers with treatment and care are significant public health concerns. Currently, an estimated 6.93 million Americans are living with ADRD, with the highest rates among minoritized racial and ethnic groups.[2,3] An additional 12.23 million people have mild cognitive impairment (MCI), which significantly increases their likelihood of progressing to ADRD.[3,4] Without effective disease-modifying therapies that alter the trajectory of the disease, these estimates are expected to increase to 12.73 million[3,5] and 19.29 million,[3] respectively, by 2050.[6]

Unfortunately, fewer than half of people living with ADRD receive a diagnosis[7,8] with lower rates of recognition among African Americans and Hispanic Americans and significant regional variations in diagnosis.[5,9,10] For people who do receive a diagnosis, it typically occurs 2 to 3 years after the onset of symptoms,[11] a time when many are experiencing significant levels of cognitive, behavioral, and functional disability.[4,12] Delayed ADRD diagnoses can lead to worse outcomes for family caregivers, including increased stress, burden, and isolation.[13–18]

Previous studies demonstrate the importance of primary care in ADRD diagnosis and care. Approximately 57% of all ADRD diagnoses in the United States are made by primary care clinicians[19] and most people living with ADRD are treated in primary care settings.[15,20–22] Barriers to and delays in diagnosis stem from provider, patient, family, and health care system factors[15–17,23–25] yielding significant challenges to providing primary care to people with ADRD. For example, primary care clinicians may have less experience discussing cognitive health with their patients and patients' families[11,21,24,26–30] and there are no guidelines on the use of comprehensive cognitive assessments in primary care.[29] Additionally, primary care clinicians have limited time[11,23,25–30] and low reimbursement[11,23,26–31] for cognitive assessments, which can be difficult to implement into existing workflows.

While quality measures have been defined to assess care for individuals with ADRD, many of which are applicable to primary care, none have seen widespread or standardized use to assess ADRD care delivery in primary care.[32] Important factors that improve ADRD care and are applicable to primary care from the Centers for Medicare and Medicaid Services (CMS) Merit-based Incentive Payment System (MIPS) quality measures[33] and the Alzheimer's Association Dementia Care Practice Recommendations,[34] include detection and diagnosis, assessment and care planning,[35] training in dementia,[26,29] medical management of dementia symptoms and comorbidities,[21,26,29] and facilitating access to home- and community-based services.[21,29] One study[36] of Family Medicine physicians suggested high involvement in the assessment and routine care of patients with suspected ADRD or diagnosed with ADRD, but there are no recent national estimates on how prepared primary care practices in general are to provide care and services for patients with ADRD and their caregivers. As such, this national study of primary care practices addresses the gap in knowledge of US primary care practice preparedness to care for patients with ADRD and identifies practice characteristics associated with preparedness.

2 | METHODS

We conducted a cross-sectional, nationally representative survey study, the National Survey of Healthcare Organizations and Systems (NSHOS II) for Physician Practice Survey in 2022–2023, to assess what ADRD-related processes and systems were present in primary care practices. We identified systems, physician practices, and hospitals to sample from the health information firm, IQVIA's One Key database which is based on the American Medical Association's physician Masterfile, publicly available sources, and proprietary data collection strategies and is recognized as one of the most comprehensive lists of health system practices in the United States. Further details of the NSHOS II study, which builds on the 2017–2018 NSHOS I survey, have been described previously.[37–39] Briefly, the survey instrument consisted of 52 items selected based on our prior studies of primary care practice characteristics, capabilities, and quality[38,40] with five new items added to measure Alzheimer's disease and related dementias (ADRD) -specific care capabilities and processes and thirteen new items related to cultural awareness processes. We followed

the Consensus-Based Checklist for Reporting Survey Studies.[41] Dartmouth's Committee for the Protection of Human Subjects approved the study as exempt.

All of the new items added to the NSHOS II survey were developed by the study team that includes experts in primary care and health services research, quality measurement, and ADRD care and services. The five ADRD-specific items were selected using the published literature on recommended dementia care quality measures and on Dementia Care Practice Recommendations.[34,42,43] They cover the domains of diagnostic testing, routine screening, staff and clinician training, and having an ADRD registry (see Table 1 for detailed items). The thirteen cultural awareness items were developed based on the Culturally and Linguistically Appropriate Services (CLAS) standards.[44]

From the remaining survey items, we created ten composite measures (see Appendix) of other primary care practice-related capabilities assessed in prior work[37] to further examine practice-level ADRD capabilities and preparedness. Briefly, survey items for each composite were based on theoretical relevance to each other and further investigated with Cronbach's alpha and exploratory factor analysis (see Appendix for details). The 10 composites were (1) behavioral health provision, (2) culturally informed services, (3) behavioral and substance use screening, (4) screening for social needs, (5) social needs referrals, (6) social needs referral follow-up, (7) care processes for patients with complex and high-level needs, (8) patient-reported outcome measures, (9) shared decision-making and motivational interviewing training, and (10) decision aid use. We also measured practice characteristics such as size, ownership type, financial status, location, and Federally Qualified Health Centers (FQHC) status.

Similar to prior administrations of the NSHOS survey,[37] we used stratified-cluster sampling of primary care practices (excluding pediatric practices) based on all practices in the IQVIA OneKey database, a comprehensive list of physician practices in the United States that includes information about ownership, number of physicians, and types of clinicians.[45] The primary care practice sample consisted of prior respondent practices from NSHOS I and a stratified random selection of additional practices based on FQHC status,[46] area deprivation index score of practice location, and practice ownership type (e.g., independent, medical group, system) to ensure inclusion of safety net practices serving populations from less-advantaged areas and backgrounds and to be able to examine the major types of ownership in relation to ADRD preparedness.

RESEARCH IN CONTEXT

1. **Systematic review**: The authors reviewed literature and relevant clinical guidelines from sources such as PubMed, the Centers for Medicare and Medicaid Services (CMS), and the Alzheimer's Association. Key studies addressing barriers, diagnostic practices, and caregiver challenges were included to contextualize the need for systematic Alzheimer's disease and related dementias (ADRD) care within the primary care setting.

2. **Interpretation**: This study's insights contribute to understanding the integral role primary care plays in ADRD care and the variability in capabilities amongst practice types. Our results assess the current preparedness of primary care clinicians and identify several factors, such as receiving more Medicare revenue, associated with higher preparedness.

3. **Future directions**: Future research should investigate: (a) the development of standardized measures for assessing quality of ADRD care in primary care; (b) strategies to increase ADRD preparedness amongst diverse settings of primary care, including Federally Qualified Health Centers (FQHCs) to address disparities; and (c) policy interventions to enhance infrastructure support and financial resources for primary care ADRD capabilities.

SSRS, a market research firm, fielded the survey from June 2022 to February 2023 using three primary contacts per practice site who were either practice managers or physician leaders. Outreach to each practice contact was done on a rolling basis until at least one contact responded and consisted of a mailed notification, followed by a mailed survey packet with a $10 bill and paid return envelope. A second mailed survey packet with a pen and paid return envelope was sent 3–4 weeks later if the first mailed survey had not been completed on paper or online. Both packets included individualized links to an online survey as an alternative to the paper-based version and a promised $40 check when the paper or online survey was received.

TABLE 1 NSHOS II survey ADRD specific items.

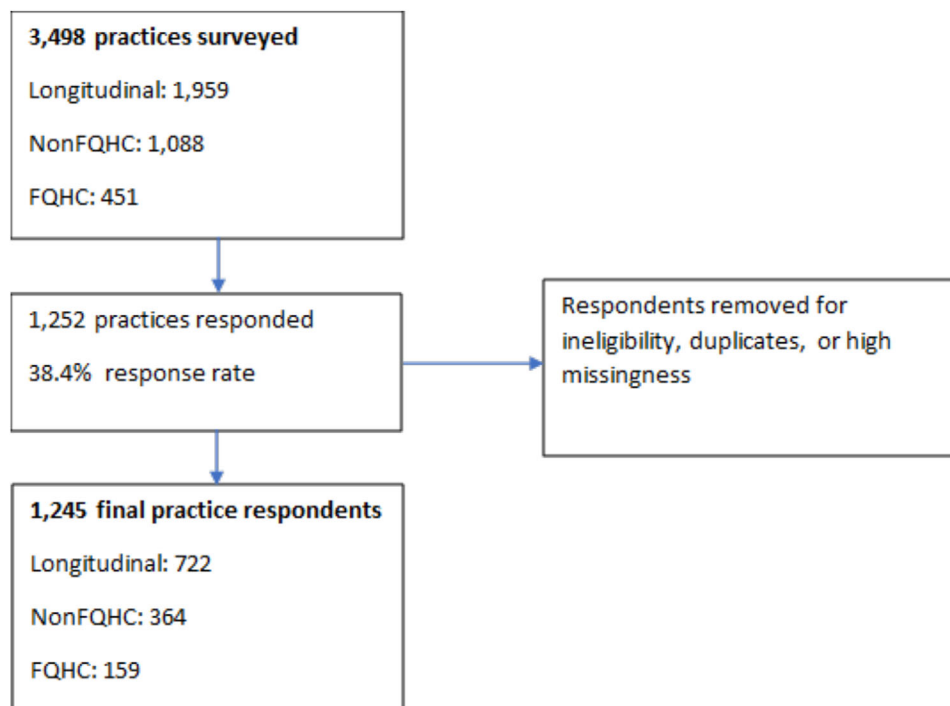| |
|---|
| Does your practice maintain a list or registry to help manage the care of patients with ADRD? |
| Does your practice require training for clinicians and staff on the following: Identifying patients with Alzheimer's disease and related dementias who may be at risk of abuse and neglect? |
| Does your practice require training for clinicians and staff on the following: Incorporating family caregivers of patients with Alzheimer's disease and related dementias into care and decision-making. |
| Does your practice have a system in place to routinely screen patients for ADRD? |
| Does your practice have a system in place to make it easy for clinicians to refer patients for diagnostic testing for Alzheimer's disease and related dementias? |

Abbreviations: ADRD, Alzheimer's disease and related dementias; NSHOS, National Survey of Healthcare Organizations and Systems.

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┌──────────────────────────────┐
│ 3,498 practices surveyed      │
│                               │
│ Longitudinal: 1,959           │
│                               │
│ NonFQHC: 1,088                │
│                               │
│ FQHC: 451                     │
└──────────────────────────────┘
              │
              ▼
┌──────────────────────────────┐         ┌──────────────────────────────┐
│ 1,252 practices responded     │────────▶│ Respondents removed for       │
│                               │         │ ineligibility, duplicates, or │
│ 38.4% response rate           │         │ high missingness              │
└──────────────────────────────┘         └──────────────────────────────┘
              │
              ▼
┌──────────────────────────────┐
│ 1,245 final practice respondents │
│                               │
│ Longitudinal: 722             │
│                               │
│ NonFQHC: 364                  │
│                               │
│ FQHC: 159                     │
└──────────────────────────────┘
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FIGURE 1 Flow of sample and respondent practices.

2.1 | Analysis methods

All analyses were performed using survey weights to account for the probability that a practice was sampled from the sampling frame of eligible practices (established based on the 2022 population of medical practices in the United States per IQVIA OneKey database) and whether the practice responded to our survey (to account for non-response). We used descriptive summaries to describe the practice characteristics and to examine responses for ADRD capabilities and preparedness and differences by practice characteristics. We calculated overall ADRD capabilities and preparedness scores as the number of ADRD items a practice had implemented. We did not assign any greater value or weight to specific ADRD items since the relative importance of each item has been described as quality care[33] but has not been systematically examined for impact on patient outcomes and may vary among experts. Since the survey included five ADRD items, practices were given preparedness scores between 0 and 5, with a zero indicating they did not have any of the capabilities and a five indicating implementation of all of the capabilities.

We used one-way analysis of variance (ANOVA) F-tests to examine the association between practice characteristics and ADRD preparedness and to partially account for multiple comparisons, then performed linear regressions to do pairwise comparisons of practices with differing levels of ADRD preparedness. A further analysis leveraged linear regression to examine the association between ADRD preparedness and the 10 practice capabilities. These regressions were adjusted for practice ownership[47,48] and size[49] to account for potential greater resources available in these practices for delivering patient care. All analyses were conducted using Stata SE 18.[50]

3 | RESULTS

A total of 3498 primary care clinics across the United States were surveyed, of which 1245 (35.6%) responded (see sample flow chart, Figure 1). Table 2 provides an overview of respondent practice characteristics. The majority of respondent practices are small (less than or equal to four physicians) or medium (five to nine physicians) sized (40% and 36%, respectively), are not FQHCs (85%) or rural (93%), and are located in the Midwest (32%) or the South (29%). A third are independently owned (32%) or owned by a healthcare system (41%) and more than half reported receiving 20% to 49% of their revenue from Medicare (including Medicare and Medicaid dually-eligible patients). Many (45%) clinics rated their financial status as "Good" with a further 30% rating it as "Fair." A majority (80%) reported being involved in some kind of value-based care arrangement.

Figure 2 provides summary results of practices' level of ADRD capabilities and preparedness results. Most practices reported having systems to detect patients with potential ADRD and to refer patients for additional diagnostic testing (67%, 75%, respectively). In contrast, fewer than half of practices require clinician or staff training related to identifying ADRD patient neglect and abuse or incorporating caregivers in decision-making (45% and 46%, respectively). Finally, less than one-third of practices maintain a list or registry of patients with ADRD to support planning care and treatment (29%).

When examining ADRD preparedness across all items (Figure 3), we found approximately 89% of practices had at least one ADRD capability (score > 0) whereas only 16% had all the ADRD-related capabilities (score of 5). When examining practice characteristics by overall level of ADRD preparedness (Table 3), more preparedness (e.g., having a

TABLE 2 Characteristics of primary care practice respondents.

Parameter	N (unweighted)	Weighted percent distribution[d]
Total	(N = 1245)	
Size of practice[a]		
Small (0–4 physicians)	468	40.1%
Medium (5–9 physicians)	426	36.0%
Large (10 + physicians)	336	23.9%
Is Rural[b]		
Yes	116	7.5%
No	1129	92.5%
Census region[a]		
Northeast	239	21.6%
Midwest	332	31.5%
South	368	28.6%
West	306	18.3%
FQHC status[c]		
FQHC	221	14.8%
Non-FQHC, safety net	237	20.0%
Non-FQHC, non-safety net	787	65.2%
Practice ownership[a]		
Independently owned	515	32.3%
Physician group	123	8.0%
Hospital	123	15.1%
Healthcare system	422	40.9%
Other	55	3.7%
% of practice patient care revenue from Medicare and Medicare/Medicaid		
< 10%	38	3.5%
10%–19%	177	16.7%
20%–49%	575	58.8%
50%–79%	198	17.6%
> = 80%	55	3.5%
Rating of practice financial status		
Poor	106	8.2%
Fair	380	30.3%
Good	526	45.7%
Very good	193	15.7%
Participates in a Capitated Medicare ACO, or Commercial ACO		
Yes	891	79.9%
No	250	20.1%

Abbreviations: ACO, Accountable Care Organization; FQHC, Federally Qualified Health Centers.

[a]Size, census, and ownership are derived from IQVIA Onekey variables.
[b]Rurality is based on the IQVIA zip code and assigned using RUCA. How the practice is doing financially is from NSHOS II survey response.[45.]

(Continues)

higher score) was associated with practices being smaller, having a higher proportion of revenue from Medicare patients, being owned by a larger physician group, not being an FQHC, and having a "very good" financial status. Characteristics such as the clinic's census region, participation in an ACO or capitated payment program, and rurality were not significantly associated with ADRD preparedness.

We used linear regression to determine associations between practice ADRD preparedness scores and our other measures of practice composite capabilities (Table 4). Practices with higher ADRD capability scores were significantly higher on all other composite capabilities, with the exception of the provision of behavioral health. Even moderate ADRD preparedness scores, (e.g., scores 2 and 3), were associated with increased capabilities of behavioral and substance use screening, use of patient-reported outcome measures, and decision aid use. Furthermore, practices who reported the most ADRD preparedness (scores 4 to 5), were associated with greater levels of culturally informed services, social needs screening, social needs referrals and social needs referral follow-up, processes to care for patients with high-level and complex needs, and training for shared decision-making and motivational interviews.

4 | DISCUSSION

In this national study of primary care practices capabilities and preparedness for caring for patients with ADRD, we found that most practices have processes to screen for ADRD and refer patients for ADRD diagnostic testing, although one-third to one-quarter, respectively, do not. Other ADRD processes were reported by less than half of practices, including training of clinicians and staff or registry-based tracking. Such results suggest a need to focus on areas for improvement such as training, which prior research[11,26,29] has identified as a substantial and widespread barrier to ensuring high quality care for ADRD patients.

When examining overall ADRD preparedness, primary care practices that receive a larger percentage of revenue from Medicare, are not FQHCs, and are owned by larger physician groups appear to be more prepared than other practice types. Given that higher revenue from Medicare suggests a larger population of older adult patients and given that age is the most significant risk factor for ADRD, our results on revenue sources may not be surprising. Similarly, FQHCs lower preparedness may be related to their relatively small share of

TABLE 2 (Continued)

[c]FQHCs were defined based on NSHOS II survey response and cross-checked with the Health Resources and Services Administration's list of FQHC and FQHC look-alike sites. Non-FQHC "safety net" practices or non-FQHC, non-safety net practices were based on whether or not the practice reported 20% or more of their annual income coming from uninsured and/or Medicaid patients, respectively.

[d]Weighted analyses were performed using survey weights to account for the probability that a practice was sampled from the sampling frame of eligible practices (established based on the 2022 population of medical practices in the US per IQVIA OneKey database).

Percent of Practices with these ADRD Capabilities
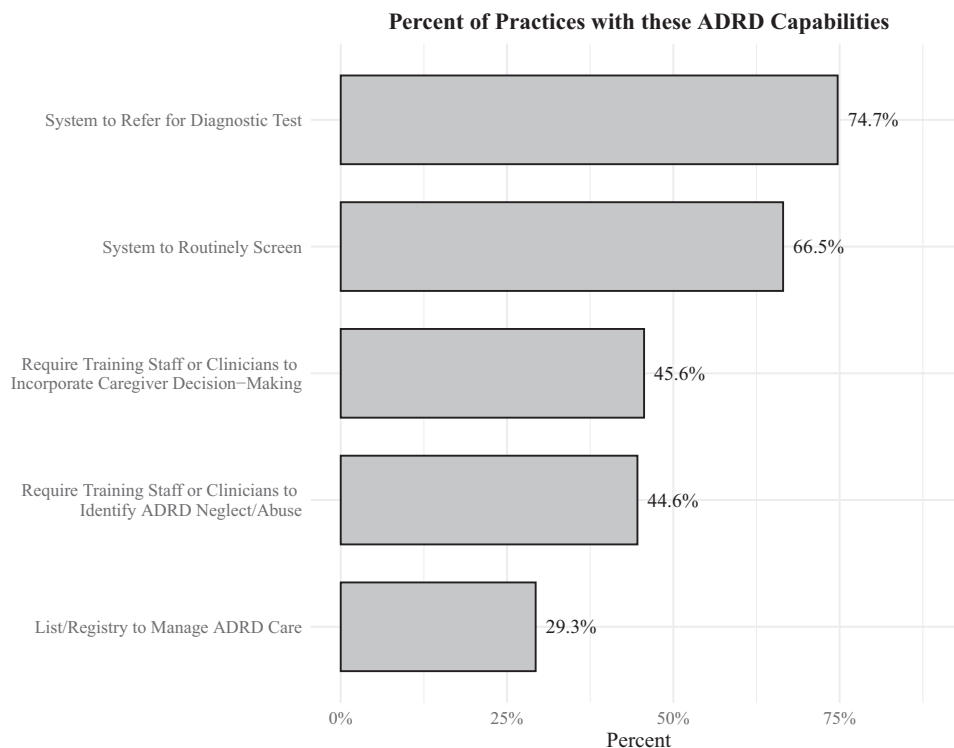
FIGURE 2 Level of preparedness of primary care practices for ADRD care. ADRD, Alzheimer's disease and related dementias.

Distribution of Primary Care Practice ADRD Preparedness
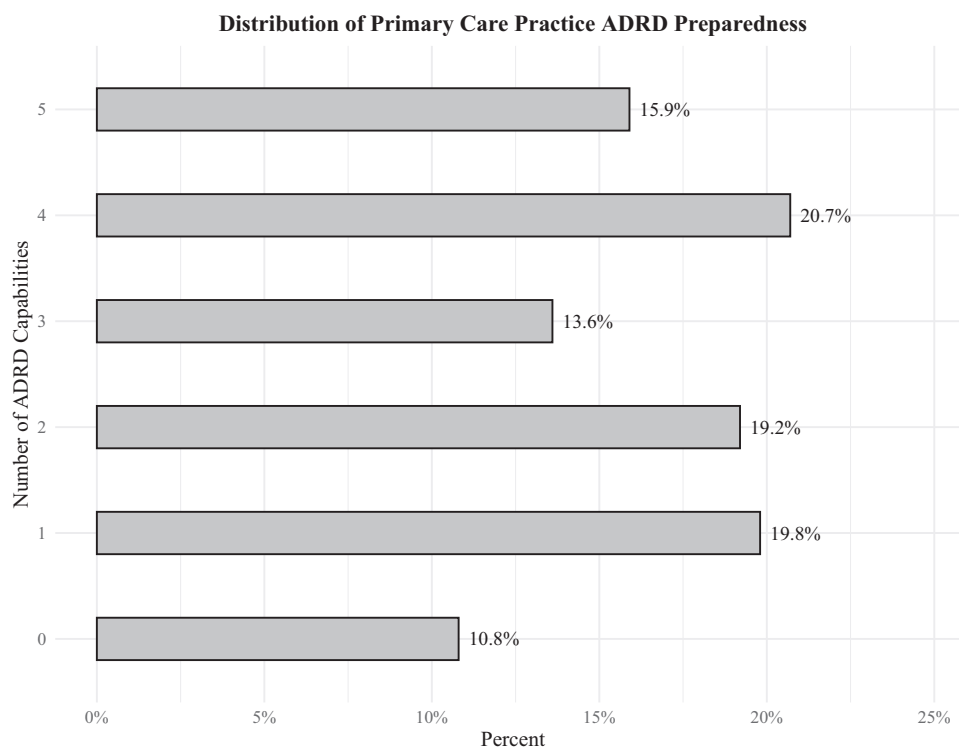
FIGURE 3 Distribution of weighted 0–5 ADRD score. ADRD, Alzheimer's disease and related dementias.

TABLE 3 Characteristics of primary care practices by level of ADRD preparedness.

Parameter	N (unweighted)	Average ADRD score (0–5)	Standard deviation	p-value*
Size of practice[a]				0.0219*
Small (0–4 physicians)	468	2.91	1.608	
Medium (5–9 physicians)	426	2.48	1.523	
Large (10+ physicians)	336	2.32	1.735	
Is Rural[b]				0.6280
Yes	116	2.50	1.853	
No	1129	2.62	1.609	
Census region[a]				0.0869
Northeast	239	2.90	1.554	
Midwest	332	2.49	1.537	
South	368	2.72	1.523	
West	306	2.33	1.928	
FQHC status[c]				<0.001***
FQHC	221	1.87	1.881	
Non-FQHC, safety net	237	2.75	1.619	
Non-FQHC, non-safety net	787	2.74	1.527	
Practice ownership[a]				0.0024***
Independently owned	515	2.59	1.822	
A larger physician group	123	3.00	1.776	
A hospital	123	2.74	1.319	
A healthcare system	422	2.60	1.473	
Other	55	1.68	1.675	
% of practice patient care revenue from Medicare and Medicare/Medicaid				<0.001***
< 10%	38	1.61	1.785	
10%–19%	177	2.20	1.625	
20-49%	575	2.65	1.597	
50-79%	198	2.97	1.433	
> 80%	55	3.47	2.101	
Rating of practice financial status				0.0106*
Poor	106	2.81	1.552	
Fair	380	2.35	1.709	
Good	526	2.54	1.536	
Very Good	193	3.21	1.595	
Participates in a capitated medicare ACO or commercial ACO				0.0615
Yes	891	2.71	1.591	
No	250	2.35	1.651	

Note: *Asterisks indicate the levels of significance for rejecting the null hypothesis that the relative frequency distribution of practice-type (the columns) is the same across the levels of the given factor (the rows), * = $p < 0.05$, ** = $p < 0.01$, *** = $p < 0.001$.

Abbreviation: ACO, Accountable Care Organization; ADRD, Alzheimer's disease and related dementias; FQHC, Federally Qualified Health Centers.

[a]Size, census, and ownership are derived from IQVIA OneKey variables.

[b]Rurality is based on IQVIA zip code and assigned using RUCA.

[c]FQHCs were defined based on NSHOS II survey response and crosschecked with the Health Resources and Services Administration's list of FQHC and FQHC look-alike sites. Non-FQHC "safety net" practices or non-FQHC, non-safety net practices were based on whether or not the practice reported 20% or more of their annual income coming from uninsured and/or Medicaid patients, respectively.

TABLE 4 Linear regression for comparison of composite practice capability scores between practices with differing levels of ADRD preparedness.

Composite capabilities	Behavioral health provision	Culturally informed services	Behavioral and substance use screening	Screening for social needs	Social needs referrals	Social needs referral follow-up	Care processes for patients with complex or high-needs	Patient-reported outcome measures	Shared decision-making and/or motivational interviewing training	Decision aid use
ANOVA Type III for ADRD Category	F: 3.77***	F: 18.02***	F: 6.25***	F: 6.90***	F: 5.06***	F: 5.59***	F: 4.64***	F: 13.52***	F: 5.76***	F: 8.87***
Independent variable: ADRD category (0-5)										
Score: 0	(base)	(base)	(base)	(base)	(base)	(base)	(base)	(base)	(base)	(base)
Score: 1	−5.89	−0.40	6.91	−13.57*	−5.08	−7.78	−4.47	2.26	0.68	−2.71
	(3.75)	(2.84)	(5.06)	(5.53)	(6.54)	(5.41)	(6.04)	(5.60)	(4.00)	(4.67)
Score: 2	−9.32*	3.53	13.78***	−3.83	10.51	10.21	7.02	14.91**	8.34	17.15***
	(3.64)	(2.73)	(3.83)	(5.65)	(6.93)	(7.51)	(5.37)	(4.83)	(4.92)	(5.38)
Score: 3	−5.94*	10.80***	17.18***	−0.10	3.93	0.04	11.23	21.37***	5.50	12.00*
	(2.99)	(3.22)	(3.90)	(5.63)	(7.79)	(5.85)	(6.22)	(5.03)	(4.37)	(5.42)
Score: 4	−5.41	17.92***	23.26***	12.49*	18.64**	12.18	16.75**	26.18***	15.59***	18.46***
	(3.82)	(3.26)	(3.61)	(5.97)	(6.30)	(6.72)	(5.44)	(5.28)	(4.08)	(4.29)
Score: 5	−9.95*	29.48***	24.25***	22.56***	28.40***	38.52***	12.50*	39.28***	23.31***	38.11***
	(4.10)	(3.20)	(3.85)	(6.93)	(7.61)	(8.11)	(5.71)	(4.76)	(5.69)	(5.54)

Note: ANOVA Type III F-statistic and associated p-value reported to account for multiple testing. Regression models are adjusted for size of practice (based on number of physicians) and ownership category. Asterisks indicate the levels of significance. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Abbreviations: ADRD, Alzheimer's disease and related dementias; ANOVA, analysis of variance.

TABLE 5 Comparison of NSHOS II respondent and non-respondent characteristics.

Parameter	Respondents (*n* = 1311)	Non-respondents (*n* = 2187)	Sample frame[a] (*n* = 11,364)
Size			
% Solo: 1 Physician (*n*)	2.95 (38)	2.57 (55)	2.38 (257)
% Small: 2-9 Physicians (*n*)	69.77 (900)	65.47 (1399)	67.56 (7285)
% medium: 10-20 physicians (*n*)	15.74 (203)	17.31 (370)	16.95 (1828)
% large: 21+ physicians (*n*)	11.55 (149)	14.65 (313)	13.10 (1,41)
Mean # of physicians[b] (*sd*)	10.85 (21.68)	13.55 (69.83)	12.31 (38.58)
Mean # of primary care physicians (SD)	7.04 (8.08)	8.09 (16.05)	6.95 (11.65)
Mean # of specialists (SD)	3.80 (16.23)	5.45 (56.43)	5.37 (30.2)
Mean # of advanced practice clinicians (SD)	4.46 (6.57)	4.93 (13.43)	4.53 (8.8)
Geography			
% Metropolitan (*n*)	80.40 (960)	85.03 (1,687)	83.21 (8,956)
% Micropolitan (*n*)	10.64 (127)	7.96 (158)	8.78 (945)
% Small Town (*n*)	6.37 (76)	5.24 (104)	5.47 (589)
% Rural (*n*)	2.60 (31)	1.76 (35)	2.54 (273)
% Northeast (*n*)	19.72 (255)	19.81 (426)	19.36 (2095)
% Midwest (*n*)	26.30 (340)	26.23 (564)	28.97 (3135)
% South (*n*)	29.54 (382)	30.42 (654)	29.85 (3230)
% West (*n*)	24.44 (316)	23.53 (506)	21.81 (2360)
Practice ownership			
% Independent (*n*)	24.15 (312)	15.73 (338)	15.53 (1679)
% Medical Group (*n*)	31.35 (405)	34.53 (742)	22.02 (2380)
% Hospital/ health care system (*n*)	44.50 (575)	49.74 (1069)	62.45 (6750)

Abbreviation: NSHOS, National Survey of Healthcare Organizations and Systems.

[a]Includes surveyed and non-surveyed organizations.

[b]Physicians = All MDs/DOs; Sum of Primary Care and Specialist Physicians within practice.

revenue from Medicare (15% of FQHC revenue) and their patient demographics (only 12% of FQHC patients were aged 65 and above in 2022).[51] Nevertheless, given racial and ethnic disparities in ADRD diagnosis and treatment,[7] that 63% of FQHC's patients are from racial and/or ethnic minority groups,[51] and the important role FQHCs play in addressing the needs of underserved communities,[52] the lower level of ADRD preparedness among FQHCs is concerning. Finally, while larger medical groups have previously been found to have better quality on some measures,[53] other studies have found smaller practices owned by physicians provide better care (which our results support).[54]

Our results also reveal that practices with higher ADRD preparedness had many other practice capabilities that may enhance care for ADRD patients and their families (Table 4). This included having systems for social needs screening and referrals, greater decision aid, and patient-reported outcome measure use, along with a variety of other capabilities. This suggests that ADRD preparedness may be part of a suite of care processes and practice workflows put in place by practices that are focused on meeting the needs of adult patients across a spectrum of conditions. Gaining more understanding into how resources,

practice set-up, or other contextual factors (e.g., payment) contribute to overall care processes, capabilities, and equitable care may assist with improving care for patients with ADRD and reducing disparities. Further research should additionally focus not only on the existence of these capabilities but also measure practice commitment and allocated resources in their implementation.

4.1 | Conclusion

As is the case for many conditions, primary care often serves as patients' first point of contact to detect early signs of ADRD, to be referred for diagnosis, and to provide ongoing care and support for patients and their caregivers. This may be particularly true for patients in rural areas[55] and with lower access to specialists and financial resources.[56,57] Our study suggests that primary care practices have mixed preparedness to care for patients with ADRD and identifies characteristics of practices that appear to be better prepared. Efforts to boost ADRD preparedness, including providing adequate infrastructure and resources directly to primary care,[1] should be a priority

to address disparities in diagnosis and to optimize the patient and caretaker journey from detection to diagnosis and ongoing care.

4.2 | Limitations

Due to the self-reported nature of our data, we were not able to independently verify the capabilities reported by practice leaders. It is possible that reported capabilities do not receive sufficient support or resources. A further limitation is that ADRD capabilities were not weighted, potentially treating ADRD capabilities that have a smaller or larger impact on patient outcomes equally. Finally, while our response rate was modest, it is similar to rates found in other large-scale surveys in this pandemic period,[58] our comparison of respondents and nonrespondents did not show notable differences (see Table 5), and our analyses were weighted for non-response. While such weighting greatly ameliorates the risk of non-response bias, there still remains a chance of unmeasured factors which are not accounted for.

CONFLICT OF INTEREST STATEMENT

The authors declare no conflicts of interest. Author disclosures are available in the Supporting Information.

CONSENT STATEMENT

All human subjects provided informed consent.

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REFERENCES

1. Sabbagh MN, Boada M, Borson S, et al. Early detection of mild cognitive impairment (MCI) in primary care. *J Prev Alzheimers Dis.* 2020;7(3):165-170. doi:10.14283/jpad.2020.21
2. 2023 Alzheimer's disease facts and figures. *Alzheimers Dement J Alzheimers Assoc.* 2023;19(4):1598-1695. doi:10.1002/alz.13016
3. Rajan KB, Weuve J, Barnes LL, McAninch EA, Wilson RS, Evans DA. Population estimate of people with clinical Alzheimer's disease and mild cognitive impairment in the United States (2020-2060). *Alzheimers Dement.* 2021;17(12):1966-1975. doi:10.1002/alz.12362
4. van der Flier WM, de Vugt ME, Smets EMA, Blom M, Teunissen CE. Towards a future where Alzheimer's disease pathology is stopped before the onset of dementia. *Nat Aging.* 2023;3(5):494-505. doi:10.1038/s43587-023-00404-2
5. Alzheimer's Association. 2019 Alzheimer's disease facts and figures. *Alzheimers Dement.* 2019;15(3):321-387. doi:10.1016/j.jalz.2019.01.010
6. Heintz H, Monette P, Epstein-Lubow G, Smith L, Rowlett S, Forester BP. Emerging collaborative care models for dementia care in the primary care setting: a narrative review. *Am Am J Geriatr Psychiatry.* 2020;28(3):320-330. doi:10.1016/j.jagp.2019.07.015
7. Amjad H, Roth DL, Sheehan OC, Lyketsos CG, Wolff JL, Samus QM. Underdiagnosis of Dementia: an observational study of patterns in diagnosis and awareness in US older adults. *J Gen Intern Med.* 2018;33(7):1131-1138. doi:10.1007/s11606-018-4377-y
8. Lang L, Clifford A, Wei L, et al. Prevalence and determinants of undetected dementia in the community: a systematic literature review and a meta-analysis. *BMJ Open.* 2017;7(2):e011146. doi:10.1136/bmjopen-2016-011146
9. Bynum JPW, Benloucif S, Martindale J, O'Malley AJ, Davis MA. Regional variation in diagnostic intensity of dementia among older U.S. adults: an observational study. *Alzheimers Dement.* 2024;20(10):6755-6764. doi:10.1002/alz.14092
10. Lennon JC, Aita SL, Bene VAD, et al. Black and White individuals differ in dementia prevalence, risk factors, and symptomatic presentation. *Alzheimers Dement J Alzheimers Assoc.* 2022;18(8):1461-1471. doi:10.1002/alz.12509
11. de Levante Raphael D. The knowledge and attitudes of primary care and the barriers to early detection and diagnosis of alzheimer's disease. *Med Kaunas Lith.* 2022;58(7):906. doi:10.3390/medicina58070906
12. Brayne C, Fox C, Boustani M. Dementia screening in primary care: is it time?. *JAMA.* 2007;298(20):2409-2411. doi:10.1001/jama.298.20.2409
13. Tebb S, Jivanjee P. Caregiver isolation. *J Gerontol Soc Work—J GERONTOL SOC WORK.* 2000;34:51-72. doi:10.1300/J083v34n02_06
14. Connell CM, Boise L, Stuckey JC, Holmes SB, Hudson ML. Attitudes toward the diagnosis and disclosure of dementia among family caregivers and primary care physicians. *Gerontologist.* 2004;44(4):500-507. doi:10.1093/geront/44.4.500
15. Callahan CM, Hendrie HC, Tierney WM. Documentation and evaluation of cognitive impairment in elderly primary care patients. *Ann Intern Med.* 1995;122(6):422-429. doi:10.7326/0003-4819-122-6-199503150-00004
16. Covinsky KE, Newcomer R, Fox P, et al. Patient and caregiver characteristics associated with depression in caregivers of patients with dementia. *J Gen Intern Med.* 2003;18(12):1006-1014. doi:10.1111/j.1525-1497.2003.30103.x
17. Hurd MD, Martorell P, Delavande A, Mullen KJ, Langa KM. Monetary costs of dementia in the United States. *N Engl J Med.* 2013;368(14):1326-1334. doi:10.1056/NEJMsa1204629
18. Solimando L, Fasulo M, Cavallero S, et al. Suicide risk in caregivers of people with dementia: a systematic review and meta-analysis. *Aging Clin Exp Res.* 2022;34(10):2255-2260. doi:10.1007/s40520-022-02160-6
19. Drabo EF, Barthold D, Joyce G, Ferido P, Chang Chui H, Zissimopoulos J. Longitudinal analysis of dementia diagnosis and specialty care among racially diverse Medicare beneficiaries. *Alzheimers Dement J Alzheimers Assoc.* 2019;15(11):1402-1411. doi:10.1016/j.jalz.2019.07.005
20. Valcour VG, Masaki KH, Curb JD, Blanchette PL. The detection of dementia in the primary care setting. *Arch Intern Med.* 2000;160(19):2964-2968. doi:10.1001/archinte.160.19.2964

21. Sideman AB, Ma M, Hernandez de Jesus A, et al. Primary care pracitioner perspectives on the role of primary care in dementia diagnosis and care. *JAMA Netw Open*. 2023;6(9):e2336030. doi:10.1001/jamanetworkopen.2023.36030

22. Okonkwo OC, Griffith HR, Copeland JN, et al. Medical decision-making capacity in mild cognitive impairment: a 3-year longitudinal study. *Neurology*. 2008;71(19):1474-1480. doi:10.1212/01.wnl.0000334301.32358.48

23. Bradford A, Kunik ME, Schulz P, Williams SP, Singh H. Missed and delayed diagnosis of dementia in primary care: prevalence and contributing factors. *Alzheimer Dis Assoc Disord*. 2009;23(4):306-314. doi:10.1097/WAD.0b013e3181a6bebc

24. Antonelli Incalzi R, Marra C, Gemma A, Capparella O, Carbonin PU. Unrecognized dementia: sociodemographic correlates. *Aging*. 1992;4(4):327-332. doi:10.1007/BF03324114

25. Boise L, Camicioli R, Morgan DL, Rose JH, Congleton L. Diagnosing dementia: perspectives of primary care physicians. *Gerontologist*. 1999;39(4):457-464. doi:10.1093/geront/39.4.457

26. Aminzadeh F, Molnar FJ, Dalziel WB, Ayotte D. A review of barriers and enablers to diagnosis and management of persons with dementia in primary care. *Can Geriatr J CGJ*. 2012;15(3):85-94. doi:10.5770/cgj.15.42

27. Bernstein A, Rogers KM, Possin KL, et al. Dementia assessment and management in primary care settings: a survey of current provider practices in the United States. *BMC Health Serv Res*. 2019;19(1):919. doi:10.1186/s12913-019-4603-2

28. Borson S, Small GW, O'Brien Q, Morrello A, Boustani M. Understanding barriers to and facilitators of clinician-patient conversations about brain health and cognitive concerns in primary care: a systematic review and practical considerations for the clinician. *BMC Prim Care*. 2023;24(1):233. doi:10.1186/s12875-023-02185-4

29. Mansfield E, Noble N, Sanson-Fisher R, Mazza D, Bryant J. Primary care physicians' perceived barriers to optimal dementia care: a systematic review. *Gerontologist*. 2019;59(6):e697-e708. doi:10.1093/geront/gny067

30. Fox C, Maidment I, Moniz-Cook E, et al. Optimising primary care for people with dementia. *Ment Health Fam Med*. 2013;10(3):143-151.

31. Bernstein Sideman A, Al-Rousan T, Tsoy E, et al. Facilitators and barriers to dementia assessment and diagnosis: perspectives from dementia experts within a global health context. *Front Neurol*. 2022;13:769360. https://www.frontiersin.org/journals/neurology/articles/10.3389/fneur.2022.769360

32. Sourial N, Godard-Sebillotte C, Bronskill SE, Hacker G, Vedel I. Quality indicator framework for primary care of patients with dementia. *Can Fam Physician Med Fam Can*. 2022;68(9):e270-e278. doi:10.46747/cfp.6809e270

33. Centers for Medicare and Medicaid Services. Quality measures: traditional MIPS Requirements. Quality Payment Program. Accessed October 17, 2024 https://qpp.cms.gov/mips/quality-requirements

34. Fazio S, Pace D, Maslow K, Zimmerman S, Kallmyer B. Alzheimer's Association dementia care practice recommendations. *Gerontologist*. 2018;58(suppl_1):S1-S9. doi:10.1093/geront/gnx182

35. Tilburgs B, Vernooij-Dassen M, Koopmans R, Weidema M, Perry M, Engels Y. The importance of trust-based relations and a holistic approach in advance care planning with people with dementia in primary care: a qualitative study. *BMC Geriatr*. 2018;18(1):184. doi:10.1186/s12877-018-0872-6

36. Stewart TV, Loskutova N, Galliher JM, et al. Practice patterns, beliefs, and perceived barriers to care regarding dementia: a report from the American Academy of Family Physicians (AAFP) national research network. *J Am Board Fam Med*. 2014;27(2):275-283. doi:10.3122/jabfm.2014.02.120284

37. Fisher ES, Shortell SM, O'Malley AJ, et al. financial integration's impact on care delivery and payment reforms: a survey of hospitals and physician practices. *Health Aff Proj Hope*. 2020;39(8):1302-1311. doi:10.1377/hlthaff.2019.01813

38. Rodriguez HP, Berube AD, Hung DY, Shortell SM, Fisher ES. Primary care practice characteristics associated with medical assistant staffing ratios. *Ann Fam Med*. 2024;22(3):233-236. doi:10.1370/afm.3100

39. Schifferdecker K, Yang C, Mackwood M, et al. Safety net primary care capabilities after the COVID-19 Pandemic. *JAMA Health Forum*. 2024;5(8):e242547.

40. Shortell SM, Poon BY, Ramsay PP, et al. A multilevel analysis of patient engagement and patient-reported outcomes in primary care practices of accountable care organizations. *J Gen Intern Med*. 2017;32(6):640-647. doi:10.1007/s11606-016-3980-z

41. Sharma A, Minh Duc NT, Luu Lam Thang T, et al. A Consensus-based checklist for reporting of survey studies (CROSS). *J Gen Intern Med*. 2021;36(10):3179-3187. doi:10.1007/s11606-021-06737-1

42. Schultz SK, Llorente MD, Sanders AE, et al. Quality Improvement in dementia care: dementia management quality measurement set 2018 implementation update. *Am J Psychiatry*. 2020;177(2):175-181. doi:10.1176/appi.ajp.2019.19121290

43. Unwin BK, Loskutova N, Knicely P, Wood CD. tools for better dementia care. *Fam Pract Manag*. 2019;26(1):11-16.

44. U.S. Department of Health and Human Services. CLAS Standards. Think Cultural Health. Accessed August 4, 2024. https://thinkculturalhealth.hhs.gov/

45. Dun and Bradstreet. IQVIA—onekey healthcare reference data. Data Marketplace. Accessed August 4, 2024. https://www.dnb.com/marketplace/data/iqvia.html

46. Human Resources and Services Administration. FQHCs and LALs by State. Data.HRSA.Gov. Accessed November 11, 2023. https://data.hrsa.gov/data/reports/datagrid?gridName=FQHCs

47. Perry CK, Lindner S, Hall J, Solberg LI, Baron A, Cohen DJ. How type of practice ownership affects participation with quality improvement external facilitation: findings from evidenceNOW. *J Gen Intern Med*. 2022;37(4):793-801. doi:10.1007/s11606-021-07204-7

48. Rotenstein LS, Cohen DJ, Marino M, Bates DW, Edwards ST. Association of clinician practice ownership with ability of primary care practices to improve quality without increasing burnout. *JAMA Health Forum*. 2023;4(3):e230299. doi:10.1001/jamahealthforum.2023.0299

49. Ng CWL, Ng KP. Does practice size matter? Review of effects on quality of care in primary care. *Br J Gen Pract*. 2013;63(614):e604-610. doi:10.3399/bjgp13X671588

50. StataCorp..What's new in Stata 18. New in Stata. Published April 25, 2023. Accessed August 4, 2024. https://www.stata.com/new-in-stata/

51. Health Resources and Services Administration. National Health Center Program Uniform Data System (UDS) Awardee Data. Data.HRSA.Gov. Accessed September 12, 2024. https://data.hrsa.gov/tools/data-reporting/program-data/national

52. Lee EK, Donley G, Ciesielski TH, Freedman DA, Cole MB. Spatial availability of federally qualified health centers and disparities in health services utilization in medically underserved areas. *Soc Sci Med*. 2023;328:116009. doi:10.1016/j.socscimed.2023.116009

53. Weeks WB, Gottlieb DJ, Nyweide DJ, et al. Higher health care quality and bigger savings found at large multispecialty medical groups. *Health Aff*. 2010;29(5):991-997. doi:10.1377/hlthaff.2009.0388

54. Casalino LP, Pesko MF, Ryan AM, et al. Small primary care physician practices have low rates of preventable hospital admissions. *Health Aff Proj Hope*. 2014;33(9):1680-1688. doi:10.1377/hlthaff.2014.0434

55. Xu WY, Jung J, Retchin SM, Li Y, Roy S. Rural-urban disparities in diagnosis of early-onset dementia. *JAMA Netw Open*. 2022;5(8):e2225805-e2225805. doi:10.1001/jamanetworkopen.2022.25805

56. Klee M, Leist AK, Veldsman M, Ranson JM, Llewellyn DJ. Socioeconomic deprivation, genetic risk, and incident dementia. *Am J Prev Med*. 2023;64(5):621-630. doi:10.1016/j.amepre.2023.01.012

57. Vassilaki M, Petersen RC, Vemuri P. Area deprivation index as a surrogate of resilience in aging and dementia. *Front Psychol*.

2022;13:930415. https://www.frontiersin.org/journals/psychology/articles/10.3389/fpsyg.2022.930415

58. Sinsky CA, Brown RL, Stillman MJ, Linzer M. COVID-related stress and work intentions in a sample of us health care workers. *Mayo Clin Proc Innov Qual Outcomes.* 2021;5(6):1165-1173. doi:10.1016/j.mayocpiqo.2021.08.007

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