













**MODELS OF GERIATRIC CARE, QUALITY
IMPROVEMENT, AND PROGRAM DISSEMINATION****The Wisconsin Alzheimer's Institute Dementia Diagnostic
Clinic Network: A community of practice to improve
dementia care**

Maria Mora Pinzon MD, MS^{1,2}   | **Jody Krainer MSW, LCSW, MBA¹** |
Tamara LeCaire MS, PhD¹  | **Stephanie Houston BA¹** | **Gina Green-Harris MBA¹**  |
Nia Norris MA, PhD¹  | **Stacy Barnes PhD³**  | **Lindsay R. Clark PhD^{4,5}** |
Carey E. Gleason PhD^{4,5}  | **Bruce P. Hermann PhD⁶**  | **Helen Ramon MS⁷** |
Will Buckingham PhD⁸ | **Nathaniel A. Chin MD^{1,4}**  | **Sanjay Asthana MD^{4,5}** |
Sterling C. Johnson PhD^{1,4,5}  | **Art Walaszek MD^{1,9}**  |
Cynthia M. Carlsson MD, MS^{1,4,5} 

¹Wisconsin Alzheimer's Institute, University of Wisconsin, School of Medicine and Public Health, Madison, Wisconsin, USA

²Department of Family Medicine and Community Health, University of Wisconsin, School of Medicine and Public Health, Madison, Wisconsin, USA

³College of Nursing, Marquette University, Milwaukee, Wisconsin, USA

⁴Department of Medicine, Division of Geriatrics and Gerontology, University of Wisconsin School of Medicine and Public Health, Madison, Wisconsin, USA

⁵VA Geriatric Research, Education and Clinical Center (GRECC), William S. Middleton Memorial Veterans Hospital, Madison, Wisconsin, USA

⁶Department of Neurology, University of Wisconsin School of Medicine and Public Health, Madison, Wisconsin, USA

⁷Bader Philanthropies, Milwaukee, Wisconsin, USA

⁸Center for Health Disparities Research (CHDR), School of Medicine and Public Health, University of Wisconsin-Madison, Madison, Wisconsin, USA

⁹Department of Psychiatry, University of Wisconsin School of Medicine and Public Health, Madison, Wisconsin, USA

Correspondence

Maria Mora Pinzon, Wisconsin Alzheimer's Institute, University of Wisconsin, School of Medicine and Public Health, 610 Walnut Street, Office 946, Madison, WI 53704, USA.
Email: mmora2@wisc.edu

Funding information

The WAI-Dementia Clinic Network is supported by Bader Philanthropies, Milwaukee, WI; the U.S. Health Resources and Services Administration (HRSA grants UB4HP19062 and U1QHP28712 for the Geriatrics Workforce Enhancement Program); the Wisconsin Department of Health Services; and the

Abstract

Background: The Wisconsin Alzheimer's Institute (WAI) Dementia Diagnostic Clinic Network is a community of practice formed in 1998 as a collaboration of community-based clinics from various healthcare systems throughout the state. Its purpose is to promote the use of evidence-based strategies to provide high quality care throughout Wisconsin for people with dementia. The purpose of this study is to describe the use of a community of practice to facilitate education of healthcare providers on best practices in dementia care, and the implementation of an interprofessional approach to diagnose and manage dementia and related disorders.

Methods: Cross-sectional study of the members of the WAI's Dementia Diagnosis Clinic Network. Characteristics of clinics and healthcare teams, learners'

This is an open access article under the terms of the [Creative Commons Attribution-NonCommercial](https://creativecommons.org/licenses/by-nc/4.0/) License, which permits use, distribution and reproduction in any medium, provided the original work is properly cited and is not used for commercial purposes.

© 2022 The Authors. *Journal of the American Geriatrics Society* published by Wiley Periodicals LLC on behalf of The American Geriatrics Society.

University of Wisconsin School of Medicine and Public Health. Dr. Mora Pinzon was supported by the University of Wisconsin Department of Family Medicine and Community Health Primary Care Research Fellowship, funded by grant T32HP10010 from the Health Resources and Services Administration.

participation in educational events and educational outcomes were collected from evaluation forms. Number and characteristics of patients seen in the memory clinics were collected from de-identified data forms submitted by members to a centralized location for data analysis.

Results: The clinic network currently has 38 clinics affiliated with 26 different healthcare systems or independent medical groups in 21 of 72 Wisconsin counties. Most (56%) are based in primary care, 15% in psychiatry, and 29% in neurology. Between 2018 and 2021, we received data on 4710 patients; 92% were ≥ 65 years old, 60% were female, and 92% were white. Network members meet in-person twice a year to learn about innovations in the field of dementia care and to share best practices. Educational events associated with the network are shown to be relevant, useful, and improve knowledge and skills of participants.

Conclusion: Communities of practice provide added value via shared best practices and educational resources, continuing education of the health workforce, continuous quality improvement of clinical practices, and adoption of new diagnostic and management approaches in dementia care.

KEYWORDS

Alzheimer's disease, communities of practice, continuing education, dementia care, primary care

INTRODUCTION

Early detection of Alzheimer's disease and related dementias (ADRD) is critical, but estimates suggest that only 50% of patients are aware of their diagnosis.^{1,2} Under-diagnosis means that individuals with dementia and their caregivers do not have access to the necessary treatment and care management options to minimize the disruption caused by the symptoms.³⁻⁶ Under-diagnosis stems from a combination of factors including lack of dementia awareness, stigma, misperceptions about illness and aging, lack of adequate diagnostic services, shortage of specialists in dementia care fields (e.g., geriatric medicine, neurology, geriatric psychiatry, and neuropsychology),^{1,7,8} inadequate dementia care training among primary care providers (PCPs), and low PCP reimbursement rates.^{1,9,10} These factors disproportionately affect communities of color and worsen existing health disparities.^{2,11-13}

The vast majority (90%) of PCPs would like more guidance on which dementia assessment tools to use, and what follow-up steps to take when cognitive impairment is noted.¹⁴ Yet many feel they cannot keep up with advancements in dementia care because of barriers preventing access to training.⁹ Comprehensive collaborative care models provide an opportunity to address the above concerns and promote early diagnosis of dementia in primary care^{8,15-19} while reducing costs.^{15,17,20,21}

Memory clinics commonly include interprofessional teams comprised of physicians, social workers, nurses

Key points

- Communities of practice around dementia care improve dissemination of evidence and facilitate the adoption of new programs, diagnostic test, or treatment options.
- Sustainability to communities of practice is directly associated with dedicated staff that can provide customized attention to members of the community.

Why does this paper matter?

Provides practical information that organizations can use to develop a competent workforce for dementia care in under resourced settings, such as rural areas.

and neuropsychologists who diagnose dementia and related conditions, and provide medical and psychosocial interventions for managing these disorders.²² Recently, more memory clinics have promoted the use of collaborative models to improve the health of patients and their caregivers, but their adoption is low.²³ This is a result of lack of funding, few translational studies adapting these models to real world settings, lack of collaboration with community organizations, and limited success in influencing physicians and health systems structure.²⁴

One of the strategies that implementation researchers use to address some of the barriers mentioned, is the establishment of a learning collaborative to foster partnerships between teams and to serve as a platform for exchanging ideas and sharing best practices.²⁵ Communities of practice were originally described as a group of people who learn from each other about a particular topic and who join to address individual or collective challenges.²⁶ Numerous examples of communities of practice exist in health care,²⁷ and within dementia care.²⁸

The Wisconsin Alzheimer's Institute (WAI) Dementia Diagnostic Clinic Network, led by the University of Wisconsin—Madison (UW-Madison), is a community of practice which consists of memory clinics across the state. The group shares a set of common principles, promotes the exchange of ideas, and facilitates the implementation of evidence-based best practices in dementia care that align with current state and federal dementia plans.^{29,30} The purpose of this paper is to describe the WAI Dementia Diagnostic Clinic Network's community of practice, and how it serves as a tool for dissemination of evidence-based practices across healthcare systems in urban and rural areas throughout Wisconsin. This information is particularly relevant as more states and health systems seek effective strategies to improve healthcare professionals' ability to diagnose, disclose, and manage all types and stages of dementia.

METHODS

WAI Clinic Network—Overview

WAI was established in 1998 as an academic institute in the University of Wisconsin School of Medicine and Public Health (UWSMPH), representing a unique public/private partnership between the Helen Bader Foundation of Milwaukee, the State of Wisconsin, and the UWSMPH. The original concept for WAI came from a coalition of service providers, community-based organizations, educational institutions, and advocates organized by the Wisconsin Bureau on Aging Long-Term Care Resources, and the Helen Bader Foundation. The goal was to be a resource to Wisconsin residents to improve quality-of-care and access to dementia care services. The strategy chosen to address these goals was the development of the WAI Dementia Diagnostic Clinic Network, a community of practice established in Wisconsin to improve the capacity of primary care and specialty care providers to diagnose and manage dementia and related conditions.³¹

Since its creation, the purpose of the Clinic Network has been to provide education, mentorship and support to physicians, physician assistants, nurse practitioners,

psychologists, social workers, nurses, and therapists to promote the necessary skills and knowledge to provide quality care to patients with dementia and their families.³² WAI's staff assist clinics and healthcare organizations in developing and sustaining multidisciplinary diagnostic memory clinics. This includes organizing educational activities, sharing evidence-based research findings and best practices in dementia care, and providing updates based on the input of its members.

Current structure

WAI employs one full-time program manager (i.e., nurse or social worker), who reaches out to potential new memory clinics, engages with interested clinicians and healthcare administrators, assists memory clinics startup and implementation, develops new materials, and organizes educational events for network members. The manager travels around the state to meet in-person with existing or potential members, and to build relationships with additional administrative and community stakeholders. Teleconferences and web-based meetings are also used to regularly engage with stakeholders across the state. The program manager works closely with the Director of the Network (a geriatrician) who assures that the content shared with the network is current and evidence-based or evidence-informed. Dementia care experts are invited to present at educational events to provide a broad spectrum of practical knowledge for skill building across wide-ranging aspects of dementia care.

With input from a planning committee from diverse clinical specialties, the program manager and director lead the development of educational events, including the identification of new topics/speakers based on feedback from members, and implementation of innovative approaches to improve the quality of care. Since 2017, the Clinic Network has had a part-time scientist in charge of data collection and data analysis.

Setting up a memory clinic

To become an affiliated clinic, interested teams contact the WAI's Clinic Network manager to discuss the healthcare team members needed to establish an affiliated clinic, training requirements, support services provided by WAI staff, and the WAI guidelines for affiliated clinics^{33–38} (Tables 1 and S1). Ideally, the team should include a physician, a neuropsychologist, and a social worker. Based on available expertise, clinics can modify the structure according to their needs or train other team members to complete specific components of the

TABLE 1 Guidelines for WAI-affiliated dementia diagnostic clinics**Affiliated clinics and team members must agree to:**

1. Provide interdisciplinary care (Physician, a neuropsychologist and a social worker [preferably]; or other team members trained to complete the cognitive and psychosocial evaluations)
2. Be affiliated with a medical organization that provides space, scheduling assistance, laboratory/radiology services, an electronic health record, and an on-call service
3. Have a relationship with their local Alzheimer's support agency and other relevant community and government entities
4. Use standard diagnostic guidelines^a
5. Perform the following evaluations^a
 - a. Medical evaluation
 - b. Cognitive test administration that includes: Standard global cognitive; brief cognitive battery that evaluates key areas in validated standardized manner
 - c. Interpretation of cognitive tests should be completed by a neuropsychologist or a psychologist
 - d. Psychosocial assessments (*Mood and behavior, function, sleep, safety, caregiver burden, advance directives*)
6. Participate in systematic and high-quality data collection. (Strongly encouraged, but optional)
7. Provide educational and community resource information to patients and caregivers.
8. Attend twice annual meetings sponsored by the WAI

^aSee Supporting Information S1 for details on the diagnostic tools recommended to providers.

evaluation. For example, clinics in rural areas might establish a consulting agreement with a neuropsychologist at another clinic, other clinics may have a nurse practitioner perform some of the physician's tasks, and others might train staff members to perform the socio-behavioral assessment instead of a social worker. Administrators and/or clinic managers are also considered part of the team, which reflects the administrative support that clinics require to function and become sustainable.

During the first interaction, the network manager learns about the clinic's strengths, challenges, and opportunities, and uses the diagram in Figure S1 to describe the administrative, operational, regulatory, and financial functions that are necessary to have in place for a successful clinic launch. This information is used through a series of meeting to assess the readiness of the clinic and helps the teams to create a development plan according to their readiness level. Because memory clinics can be a part of any health system throughout the state, the network manager works with new clinics to reconcile

institutional regulations and the set of core principles that characterize the Clinic Network, and provides coaching on how to develop other aspects that assure organizational readiness. Once clinics have developed and executed a plan that accounts for the elements described in Figure S1 they are presented to WAI's leadership for approval and commencement of the official onboarding process. Once established, the network manager meets with affiliated memory clinics annually to assist in implementation, troubleshooting (e.g., replacement of a staff member, marketing, administrative management), and team training. Overall, this process of developing a new clinic can take between 1 and 3 years.

Ongoing education for network members

Clinic teams engage in the following training and educational opportunities through the year (see Table S2 for examples on the topics):

1. WAI's Alzheimer's Disease and Related Dementias Annual Update conference: a 2-day event where nationally recognized experts present the most up-to-date information regarding evidence-based dementia care.
2. Building Applied Skills in Dementia Care, and Core Skills trainings: workshops about basic skills in the diagnosis and management of dementia, including behavior management.
3. In-person Clinic Network meetings (twice a year): Peer education is emphasized at these meetings, with clinical teams engaging in detailed discussions about logistical issues that affect the care of patients.

In-person meetings are the primary and preferred mode of interaction among members. Email communications are sent on a regular basis to provide reminders about upcoming events and new opportunities related to dementia training. Additionally, the WAI's network manager provides ongoing consultation as needed, usually related to structural or logistical challenges, challenging clinical cases, or request for connections to other members of the network.

Data collection

Standardized information about the affiliated clinics is updated annually by the network manager through communications with clinic coordinators. Data include a description of healthcare team members, clinic logistics (e.g., screening processes), specialized populations served

(e.g., persons with developmental disabilities), and neuropsychology tests performed within the clinic. Although WAI provides guidelines on recommended tests and procedures (Table S1), each clinic can independently select a battery of cognitive tests and can modify the suggested procedures to account for their own internal protocols or institutional needs.

Network members submit information about new patients seen at the clinics using a HIPAA compliant de-identified form that includes age, gender, education, primary diagnosis, assessment results, treatment plan, and process measures that relate to quality of care provided. Clinic staff submit these forms to a central repository at WAI via fax or web-based surveys for analysis by WAI staff. These forms are revised every 3–4 years to assure that clinically relevant information is collected, and to include additional questions to capture research topics of interest to network members. For the purpose of this study, rurality was assigned using the location of the submitting clinic and using the 2013 Urban–Rural Classification Scheme for Counties.³⁹

Evaluation of the educational events was completed using evaluation forms distributed at the end of the events. Until fall 2018, this was done using paper forms, and since 2019 all attendees receive an email survey, followed by five reminders. The survey includes demographics, practice setting information, and statements that assess satisfaction and usefulness of the event using a 4-point Likert-scale (Excellent, Good, Fair, Poor). To assess knowledge increase, participants were asked to rate their skills/knowledge for each educational objective, using a before/after side by side table, where individuals rate their skills levels using a 5-point Likert, where 1 indicated low ability, and 5 indicated high ability (sample paper-evaluation form in Text S1).

Study data were collected and managed using REDCap (Research Electronic Data Capture) tools hosted at University of Wisconsin—Madison.^{40,41} REDCap is a secure, web-based software platform designed to support data capture for research studies, providing (1) an intuitive interface for validated data capture; (2) audit trails for tracking data manipulation and export procedures; (3) automated export procedures for seamless data downloads to common statistical packages; and (4) procedures for data integration and interoperability with external sources.

Data analysis

Descriptive statistics are used to describe patients' demographics and attendance of healthcare providers at network events. To compare changes in skill or knowledge

after the program, we described the difference between the before and after average scores for each topic and determined statistical significance using the Wilcoxon signed rank test for not normally distributed samples. A two-sided p -value of <0.05 was considered statistically significant. All analyses were performed using SAS version 9.4 and Microsoft Excel software. Data collection and study protocols were approved by the University of Wisconsin—Madison Institutional Review Board. This manuscript was redacted to comply with the SQUIRE guidelines for reporting quality improvement activities.⁴²

RESULTS

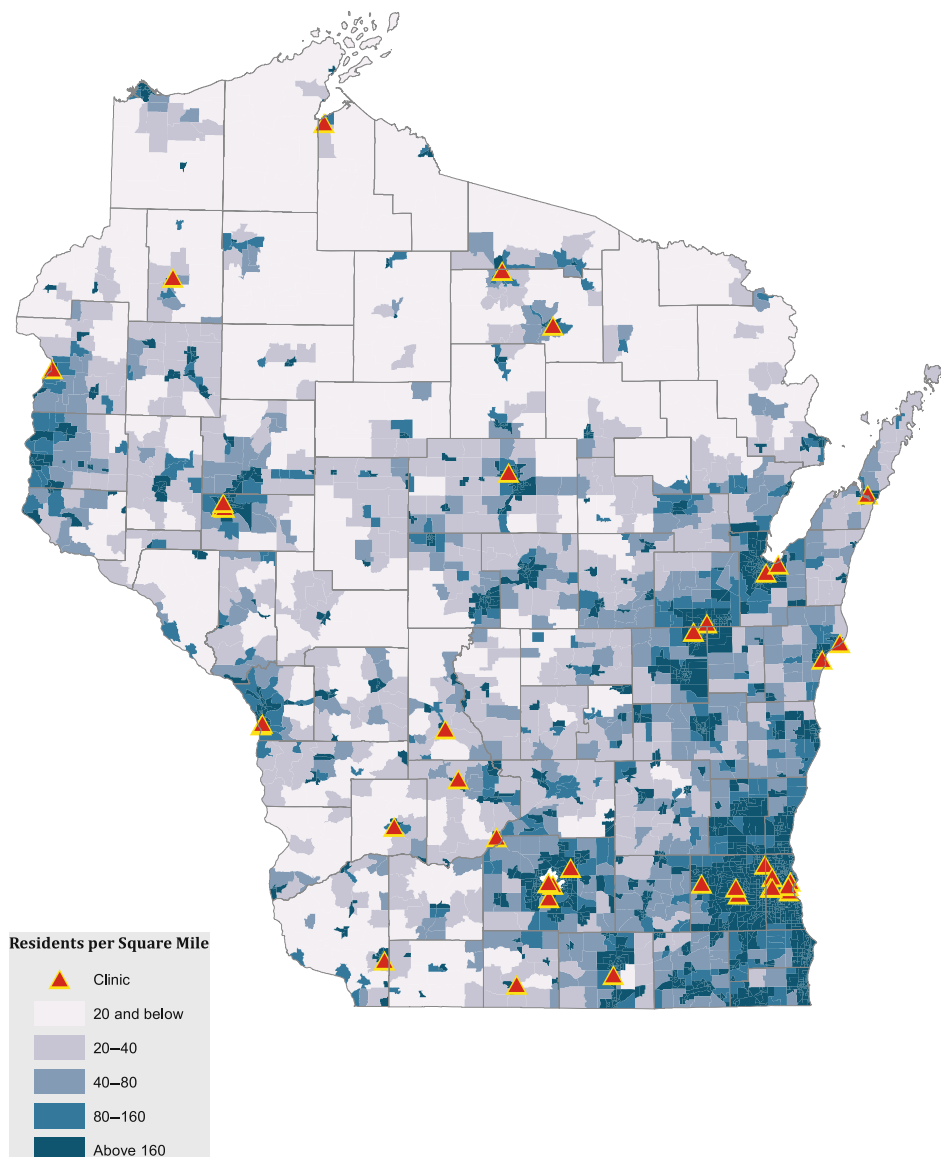
Between 2006 and 2021, the number of clinics affiliated with the WAI Dementia Diagnostic Clinic Network ranged from 32 to 44. This number has varied due to multiple factors, as new clinics open, others close due to a variety of factors such as: physician retirement, mergers across health systems, changes in workflow, and/or clinic closure due to financial constraints. Over this time period, we collected data on 25,000 patients seen by WAI affiliated clinics (Table S3). This report will focus on describing the clinic network and its associated outcomes between 2018 and 2021, as during this time period there were no changes in data collection forms or protocols.

Clinic characteristics

As of fall 2021, the clinic network was comprised of 38 clinics affiliated with 26 different healthcare systems or independent medical groups, and located in 21 counties (Figure 1). Most of Wisconsin is considered rural (Figure 1), with a larger population density in the southeastern corner of the state. However, the rural areas of the state have a larger proportion of adults older than 65 years old (Figure 2A). Figure 2B shows the location of the clinics and the driving time from the surrounded areas. Despite a large proportion of the state being rural, most of the state's population lives within 1-h driving distance from an affiliated clinic (Figure 2), which highlights the network's commitment to improving access to dementia care by providing education and resources to physician across Wisconsin.

The WAI-affiliated clinics are primarily housed within primary care practices (56%), with the remainder based in neurology (29%) and psychiatry (15%). Regarding the composition of the healthcare teams, 95% of the teams have a physician (MD or DO), 76% have a nurse or nurse practitioner, 63% have a psychologist or neuropsychologist, 59% have a social worker, 12% have an

FIGURE 1 Location of the WAI Dementia Diagnostic Network Clinics according to population density in the State of Wisconsin



occupational therapist, and 24% have other types of staff members (e.g., administrators).

Patient characteristics

Overall, 92% of patients were age 65 years and older, 60% were female, and 92% were white (Table 2). Primary care providers referred 77% of patients to the memory clinics. Self-referral or word-of-mouth accounted for 21% of patients, while the rest were referrals from other organizations or healthcare providers.

Educational outcomes

Table 3 shows the distribution by profession and practice setting and overall satisfaction with the events per year.

In 2020 and 2021, all events were virtual/online due to the COVID-19 pandemic and public health recommendations. Learner satisfaction was consistently high, with most attendees rating the educational programs overall as excellent or good (>98% each year). Moreover, 98% of attendees considered the educational programs to be relevant to their work and 82% indicated an ability to apply most/all of the information in their clinical practice. Some of the topics that demonstrated larger improvements were related to health disparities in ADRD, ethics, and care management.

DISCUSSION

The WAI Dementia Diagnostic Clinic Network is a community of practice that aims to facilitate dementia care partnerships across healthcare systems and provides

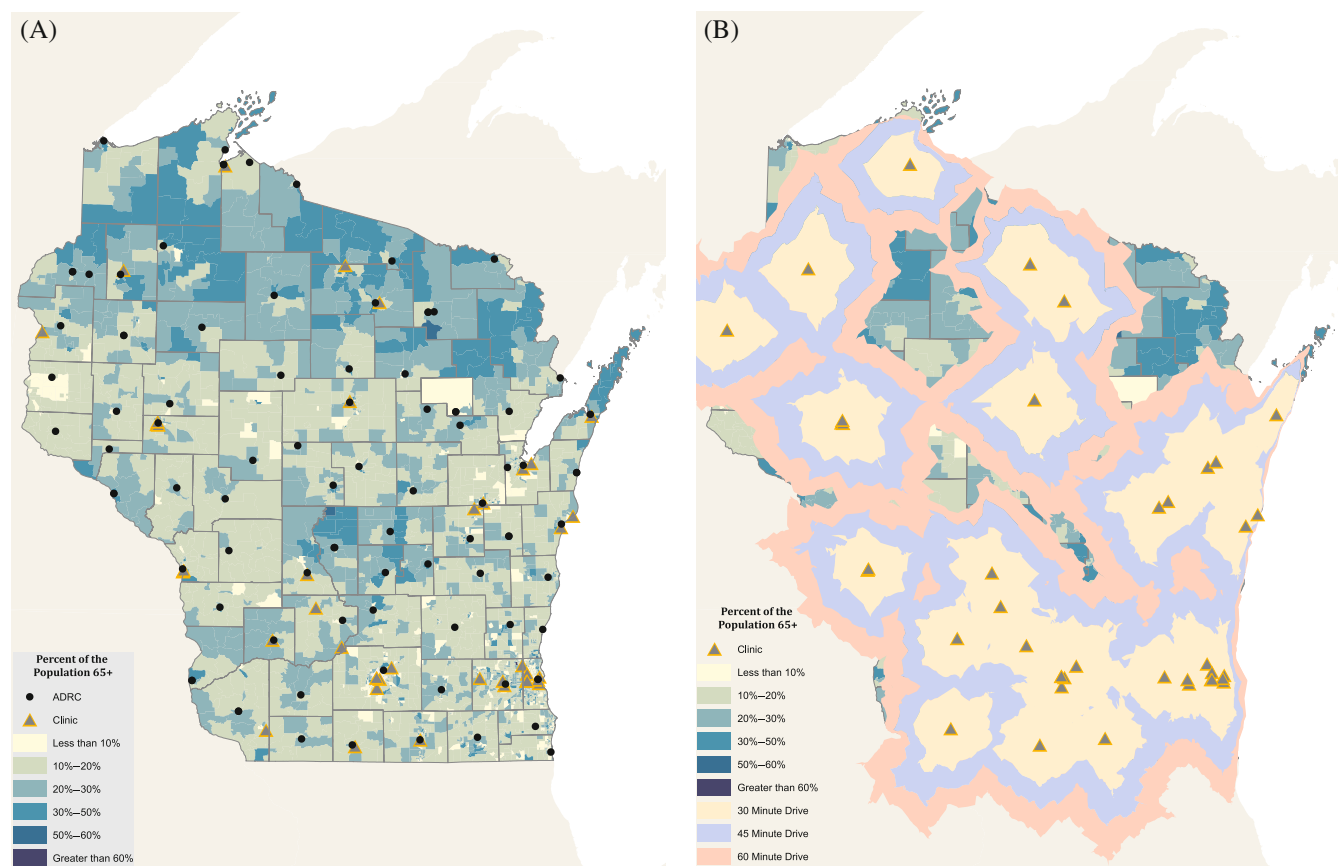


FIGURE 2 Area of service of the WAI Dementia Diagnostics Network Clinics based on (A) percent of the population that is 65 years old or older, and (B) driving time. ADRC, Aging and Disability Resource Centers. Clinics refers to WAI affiliated clinics members of the WAI Dementia Diagnostic Network

ongoing support, peer education, and professional development for healthcare teams. This community also promotes collaboration among WAI-affiliated clinics, Aging & Disability Resource Centers, local support groups, and the Alzheimer's Association. Our experiences demonstrate that it is possible to establish and sustain a community of practice across a variety of clinics and healthcare systems, and to keep a diverse group of professionals engaged in interprofessional team-based approaches to dementia care.

The success of WAI's Dementia Diagnostic Clinic Network is a result of members' participation in a variety of events and initiatives, which is facilitated by (1) having a champion within each clinic or hospital; (2) "buy-in" from clinic/hospital administration; and (3) having a full-time staff member (i.e., clinic network manager) who oversees the clinic teams and leads the development of educational events and resources for use by Network members. These elements are similar to those described in other studies involving communities of practice.⁴³

Mayrhofer et al. demonstrated that having champions at several clinics provided the opportunity to increase the

capacity of the communities of practice to participate and contribute to the achievement of the goals established by the community.⁴⁴ In our network, a champion is not an official role or position, but rather describes a person (usually a physician or psychologist) within the organization that has the status to influence administration and has insight to the political/financial dynamics of the organization. This person usually can advocate for the clinic by describing the importance for patients and their support systems, and mobilizing resources to establish/sustain the clinic. In our experience, institutional buy-in is achieved by highlighting the indirect financial value of the clinics to the organization (e.g., downstream revenue, potential cost avoidance management, cost-effective management of complex individuals, potential acute care cost containment, and improvement of patient relationships with providers and organization).

Changing clinician practice patterns is challenging, highlighting the need for novel educational models to change physician behavior.^{45,46} Standardized approaches alone (e.g., toolkits) have poor efficacy in impacting physician behavior compared to more interactive models

TABLE 2 Demographics at initial visit of patients seen at the WAI Dementia Diagnostic Clinic Network, September 2018 to November 2021 ($N = 4710$)

	<i>n</i>	%
Age (categories)		
20–44 years	– ^a	0.2
45–64 years	384	8.3
65–84 years	3309	71.8
≥85 years	906	19.7
Gender		
Female	2752	60.2
Male	1811	39.6
Other/missing	^a	0.2
Race/ethnicity		
African American non-Hispanic	85	1.8
Asian/Asian-American	27	0.6
Latino/Hispanic	172	3.7
Native American/Hawaiian	^a	0.4
Other non-Hispanic	61	1.3
White non-Hispanic	4344	92.2
Completed education		
Elementary	127	2.9
Eight grade	373	8.5
High school	1788	40.9
College or more	2084	47.7
Residence		
Lives with other adult	2964	64.4
Alone	1249	27.2
Assisted living	245	5.3
Nursing home	81	1.8
Other	61	1.3
Rurality^b		
Non-core (rural)	710	15.1
Micropolitan (rural)	304	6.4
Metropolitan (not rural)	3691	78.5
Duration of cognitive symptoms		
Less than a year	184	4.5
One year	1398	34.3
Two years	1029	25.2
Three years	535	13.1
Four years	272	6.7
Five years or more	661	16.2

^aCensored due to a value lower than 20.

^bAccording to the 2013 NCHS Urban–Rural Classification Scheme for Counties, where metropolitan refers to counties with an urban core of 50,000 or more people; Micropolitan refers to counties with an urban cluster population of 10,000–49,999, and non-core refers to nonmetropolitan counties that did not qualify as micropolitan.

such as workshops, panel discussions, academic detailing, and Project ECHO[®] (Extension for Community Healthcare Outcomes).^{45,46} Our community of practice actively works in adopting and implementing interactive educational tools, which have been shown to be efficient in engaging individuals and facilitating the adoption of new dementia care models. In our experience, the limitations to implement collaborative models are related to costs and change of institutional workflows. This highlights the need to include administrative staff and other stakeholders in the conversations to assure support for the care models, particularly in the early stages when budgetary constraints might endanger the sustainability of the memory clinic. Additionally, participation in training sessions and educational programs has been facilitated by WAI providing free or subsidized events for all network members, including clinic staff.

WAI Network members have flexibility to participate in data collection/research endeavors. However, data collection and research capacity to assess health outcomes remains a challenge, partly due to the highly variable clinical contexts represented across the network. As noted in the results, approximately half of the clinics submit data, mostly due to lack of time to collect data, high turnaround of staff responsible for data collection, institutional restrictions, or processes of the clinic not compatible with data collection. To address these, the network has simplified data collection protocols (e.g., eliminating laboratory/testing variables), designing data collection tools that can be easily used by new staff, providing more comprehensive reports for clinics to incentivize use, and evaluating of clinic-specific workflows. However, the lack of dedicated staff time remains the most important barrier. This highlights the critical need to explore what types of support or incentives might be necessary to facilitate research participation in studies that measure health outcomes in AD/DRD in primary care settings. While WAI supports current and developing dementia diagnostic clinics that provide focused care for individuals from African American, Native American, and Latinx communities (with services in Spanish), these communities are not well represented in data collection due to many of the barriers outlined above.

One of the limitations of our descriptive study is that we do not include the perspective of patients and caregivers; however, literature suggests that the use of collaborative approaches and specialty clinics such as memory clinics can improve the knowledge and comfort of caregivers of patients with dementia.⁴⁷ Our study also lacks information regarding the costs associated with multidisciplinary care provided by the network clinics, and the health outcomes experienced by our patients. Evidence

TABLE 3 Outcomes at the network, provider and community level per year 2018–2021

		2018	2019	2020	2021
Network level	Number of clinics at the start of the year	32	35	38	40
	New affiliates	4	4	3	1
	Closed affiliates	1	1	1	3
	Number of clinics at the end of the year	35	38	40	38
Provider level	Number of attendees to events	560	588	637	629
	Survey/evaluations response rate	413 (74%)	444 (76%)	465 (73%)	423 (67%)
	Profession of attendees at network events (% of total attendees)				
	Physician	19%	19%	13%	11%
	Psychologist	11%	9%	7%	4%
	Nurse/nurse practitioner	23%	22%	21%	11%
	Social worker	21%	19%	17%	21%
	Other	16%	15%	24%	20%
	Employment location				
	Primary care setting	42%	44%	30%	28%
	Medically underserved community	13%	19%	15%	16%
	Rural area	25%	35%	36%	30%
	Satisfaction with the events^a				
	Program is relevant to attendees work	98%	99%	98%	99%
	Would recommend to colleagues	96%	97%	99%	99%
	Program met expectations	96%	96%	98%	99%
	Knowledge gained^b				
	Overall	0.95	1.01	0.91	1.18
	Core skills (e.g., diagnosis, assessments)	0.85	0.96	0.86	0.88
	Disease related topics	0.95	0.89	0.73	1.32
	Care management	0.84	0.63	0.90	1.37
	Health disparities in ADRD	1.07	1.31	1.09	1.34
	Ethics (e.g., amyloid disclosure)	1.07	0.96	1.01	1.17
Dementia risk/protective factors	0.96	1.37	0.88	–	
Models of care/health services	0.89	0.94	0.93	0.99	
Extent to which attendees can apply what they learned					
All of it	23.2%	20%	26%	24%	
Most of it	49.1%	60%	55%	46%	
Half of it	20.1%	8%	9%	11%	
Some of it	7.6%	10.36%	9%	12%	
None of it			1%		
Community level	Number of patient forms submitted	1790	1769	1356	1185
	% diagnosed with MCI	506 (28%)	614 (35%)	467 (35%)	453 (38%)
	% diagnosed with dementia	656 (36%)	790 (45%)	677 (50%)	500 (42%)
	Number of referrals to healthcare services (e.g., imaging, labs)	631 ^c	1482	1285	1125
	Number of referrals to community services	738	581	604	568

^aPercentage of attendees that referred that they strongly agree/Agree with the statement.

^bParticipants were asked to self-rate their knowledge/skills before and after the program, using a 1–5 scale. This number was calculated using the formula “After Knowledge – Before Knowledge = Knowledge gained.”

^cIn 2018 the data collection form was changed to include referrals to imaging, laboratory, and other healthcare services. This includes only data for August–December 2018.

from other programs indicates that multidisciplinary and coordinated care can increase quality of care,⁴⁸ and these can result in cost savings that range between \$2856 and \$1136 per patient per year.^{20,21} It is important to note that WAI's educational programs are less intensive than some of the clinic models referenced here.

CONCLUSION

Communities of practice can help train geriatricians and other primary care providers by providing ongoing opportunities to acquire skills and knowledge through shared experiences, peer education, and access to educational resources. Clinical teams can share important feedback from diverse patient communities to ensure that clinical care is culturally tailored to patient and caregiver needs. Additionally, communities of practice can be used to keep practicing clinicians up-to-date with advances in the field, which is particularly important in the field of AD/DRD, with the rapid advancement of early diagnostic tools, such as amyloid positron emission tomography (PET) imaging and blood-based biomarkers, which are on the verge of moving from research into clinical practice.⁴⁹⁻⁵¹ These biomarkers may detect early risk for dementia decades before symptoms develop, hence, as the technology and evidence develop, primary care providers and other clinicians will need practical updates on how to integrate biomarkers into their clinical practice, in ways that are feasible to implement in diverse communities. In addition, the approval of novel therapeutics, such as anti-amyloid therapies, will necessitate changes to clinical practice and healthcare system infrastructure to ensure that appropriate patients are correctly identified and safely monitored throughout their treatment course. Communities of practice can help clinicians navigate such changes.

To sustain communities of practice, it is important to meet the needs of clinical team participants while minimizing interference with patient care activities. To achieve this, dedicated staff are necessary to foster bidirectional communications and to adjust educational events and opportunities to the needs expressed by the members. Communities of practice can be used in other contexts to facilitate changes in practice patterns and provide education to new staff members in the healthcare settings. Further research is necessary to explore the role of other educational initiatives, such as academic detailing and Project ECHO[®], in the adoption and sustainability of standards of care in dementia, and the effects that these types of educational programs have on health outcomes of diverse patients with AD/DRD and caregivers. At this time, WAI is developing toolkits and other aids that

can be adapted by institutions and networks interested in replicating our experiences, and developing new studies to research the effects of the community of practice in health outcomes of diverse populations.

ACKNOWLEDGMENTS

We want to thank Dr. Mark Sager for the creation of this initiative and his leadership over the years. In addition, we want to thank all of our past and present faculty and staff; they have worked tirelessly to promote the mission of the Wisconsin Alzheimer's Institute: Barbara Lawrence, Suzanne Bottum-Jones, Jane Mahoney, Naveena Jaspal, Heidi Pophal, Kate Kowalski, Donna Cole, and Sarah Klein. The WAI-Dementia Clinic Network is supported by Bader Philanthropies, Milwaukee, WI; the U.S. Health Resources and Services Administration (HRSA grants UB4HP19062 and U1QHP28712 for the Wisconsin Geriatric Education Center); the Wisconsin Department of Health Services; and the University of Wisconsin School of Medicine and Public Health. Finally, a recognition to all the members of the network that have supported this work over the years: Piero Antuono, Michael Malone, Debra Arrowood, Bonnie Basket-Harvey, Carrie Baumgartner, Angela Beckert, Kris Bell, Beth Belmore, Debasish Bhattacharyya, Paul Board, Julie Bobholz, Diane Book, Jessica Bordenave, Donna Brady, Rebecca Braun, Linda Carter, Al Castro, Jennifer Cilino-Folks, Lindsay Clark, Hannah Craanen, Joseph Cunningham, Elizabeth Daly, Kelly Darby, Laura Dauenhauer, Bala Davuluri, Becky DeBuhr, Donn Dexter, Missy Disbrow, Nancy Dodge, Jane Dolan, Rachel Doty, Georgien Dudzek, Alexis Eastman, Ryan Elliott, Marian Enne, Kathy Ertz, Lindsey Fabyan, Julie Feil, Becky Fenn, Barbara Fischer, Anne Focht, Colleen Foley, Malgorzata Franczak, Ruth Fuentes, Thomas Gabert, Anissa George, Kelley Goosage, Robert Gouthro, Joe Goveas, Elias Granadillo, Joan Hamblin, Valerie Hamilton, Harold Harsch, Michelle Heaton, Tammy Henrichs, Hector Hernandez, Carolyn Herrmann, Melissa Herzog, Tammy Hietpas, Travis Hinze, Maida Imsirovic, Stacie Jaquet, Julie Janecek, Tori Johns, Carol Johnson, Jana Jones, Teresa Jordan, Prasad Kanneganti, Jason Kanz, Kim Kavanagh, Krista Keck, Peter Keenan, Cindy Keller, Mary Kerwin, Margo Kneiart-Alfonso, Ronald Kodras, Christopher Koepl, Lisa Kokontis, Candace Kolenda, Lindsey Kregel, Megan Krueger, Janic Kuiper-Pikna, Katherine Levine, Janis Lindsey, Tom Loepfe, Richard London, Anna Loney, Natalie L Makepeace, Mike Malone, Teresa Mangin, Cori Marsh, Jennifer Miller Kass, Joelle Millikin, Bette Moderski, Roland More, Gloria Morel, Ann Morley, Joshua Morrison, Sue Moser, Lynn Naiberg, T.J. Norton, Kim Ogle, Angie Oldenberg, Barb Omit-Dorshorst, Janessa Pafford, Art Peek, Kay Petry,

Krista Pfister, Christine Piechura, Erin Plumley, Philomena Poole, Gregory Prichett, Bob Przybelski, Marc Rasansky, Michael Raster, Rick Reding, Gina Rehkemper, Michele Ries, Val Running, Ashley Sammann, Sara Sandager, Concepcion Santillan, Sue Scheller Kirby, Melissa Schulze, Eben Schwartz, Susanne Seeger, Gerry Lou Sertle, Caro Shabbat, Anne Shandera-Ochsner, Beth Sharpless, Tracey Sherman, Shelby Silverston, Kanwardeep Singh, Teresa Skora, Irma Smet, Robert Smith, Soryal Soryal, Mirtha Sosa Pacheco, Julie St. Pierre, Emily Stariha, Rebecca Stark, Ellen Sullivan, Jeni Synnes, Erin Szakala, Denise Tisch, Kristine Twomey, Mark Van Etten, June Vogel, Lee Vogel, Tammy Vogel, Kara Weiss, Deb Whitelaw Gorski, Stephanie Whitley, Janet Wiegel, Christy Wisniewski, Carla Wright, Kristi Yatchak, Heidi Zellmer, Amy Zinke, Colette Zunk.

CONFLICT OF INTEREST

The authors have no conflicts.

AUTHOR CONTRIBUTIONS

All authors participated in all the stages of the study: execution of the project, data collection, analysis and interpretation of data, and preparation of the manuscript.

SPONSOR'S ROLE

Sponsors/funders did not participate in data collection nor data analysis presented in this paper.

ORCID


Maria Mora Pinzon  <https://orcid.org/0000-0002-8090-5509>

Tamara LeCaire  <https://orcid.org/0000-0001-8248-7358>

Gina Green-Harris  <https://orcid.org/0000-0001-7733-1439>

Nia Norris  <https://orcid.org/0000-0002-9651-7519>

Stacy Barnes  <https://orcid.org/0000-0001-6701-7809>

Carey E. Gleason  <https://orcid.org/0000-0001-6210-4671>

Bruce P. Hermann  <https://orcid.org/0000-0003-0133-4427>

Nathaniel A. Chin  <https://orcid.org/0000-0001-8008-9356>

Sterling C. Johnson  <https://orcid.org/0000-0002-8501-545X>

Art Walaszek  <https://orcid.org/0000-0001-9416-6105>

Cynthia M. Carlsson  <https://orcid.org/0000-0001-5743-1563>

TWITTER

Maria Mora Pinzon  @mariacmorap

REFERENCES

- Gauthier S, Rosa-Neto P, Morais J, Webster C. *World Alzheimer Report 2021: Journey through the Diagnosis of Dementia*. Alzheimer's Disease International; 2021.
- U.S. Department of Health and Human Services—Office of Disease Prevention and Health Promotion. *Healthy People 2020: Dementias Including Alzheimer's Disease*. 2020. Accessed May 2020. <https://www.healthypeople.gov/2020/topics-objectives/topic/dementias-including-alzheimers-disease>
- 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
- Barthold D, Joyce G, Ferido P, et al. Pharmaceutical treatment for Alzheimer's disease and related dementias: utilization and disparities. *Journal of Alzheimers Disease*. 2020;76(2):579-589. doi:10.3233/jad-200133
- Ornstein KA, Zhu CW, Bollens-Lund E, et al. Medicare expenditures and health care utilization in a multiethnic community-based population with dementia from incidence to death. *Alzheimer Dis Assoc Disord Oct-Dec*. 2018;32(4):320-325. doi:10.1097/wad.0000000000000259
- Kosloski K, Schaefer JP, Allwardt D, Montgomery RJ, Karner TX. The role of cultural factors on clients' attitudes toward caregiving, perceptions of service delivery, and service utilization. *Home Health Care Serv Q*. 2002;21(3-4):65-88. doi:10.1300/J027v21n03_04
- Petriceks AH, Olivas JC, Srivastava S. Trends in geriatrics graduate medical education programs and positions, 2001 to 2018. *Gerontol Geriatr Med*. 2018;4:1-4. doi:10.1177/2333721418777659
- U.S. Department of Health and Human Services HRSAH, Bureau of Workforce. *Health Professions Training Curriculum: Alzheimer's Disease and Related Dementias*. Accessed May 2020. <https://bhw.hrsa.gov/grants/geriatrics/alzheimers-curriculum>
- Alzheimer's Association. 2020 Alzheimer's disease facts and figures. *Alzheimers Dement*. 2020;16:391-460. doi:10.1002/alz.12068
- Dorsey ER, George BP, Leff B, Willis AW. The coming crisis: obtaining care for the growing burden of neurodegenerative conditions. *Neurology*. 2013;80(21):1989-1996. doi:10.1212/WNL.0b013e318293e2ce
- Zuckerman IH, Ryder PT, Simoni-Wastila L, et al. Racial and ethnic disparities in the treatment of dementia among Medicare beneficiaries. *J Gerontol B Psychol Sci Soc Sci*. 2008;63(5):S328-S333. doi:10.1093/geronb/63.5.s328
- Chodosh J, Thorpe LE, Trinh-Shevrin C. Changing faces of cognitive impairment in the U.S.: detection strategies for underserved communities. *Am J Prev Med*. 2018;54(6):842-844. doi:10.1016/j.amepre.2018.02.016
- Gianattasio KZ, Prather C, Glymour MM, Ciarleglio A, Power MC. Racial disparities and temporal trends in dementia misdiagnosis risk in the United States. *Alzheimers Dement (N Y)*. 2019;5:891-898. doi:10.1016/j.trci.2019.11.008
- 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
- Reuben DB, Tan ZS, Romero T, Wenger NS, Keeler E, Jennings LA. Patient and caregiver benefit from a comprehensive dementia care program: 1-year results from the UCLA

- Alzheimer's and dementia care program. *J Am Geriatr Soc*. 2019;67(11):2267-2273. doi:10.1111/jgs.16085
16. Boustani MA, Sachs GA, Alder CA, et al. Implementing innovative models of dementia care: the healthy aging brain center. *Aging Ment Health*. 2011;15(1):13-22. doi:10.1080/13607863.2010.496445
 17. Possin KL, Merrilees JJ, Dulaney S, et al. Effect of collaborative dementia care via telephone and internet on quality of life, caregiver well-being, and health care use: the care ecosystem randomized clinical trial. *JAMA Intern Med*. 2019;179(12):1658-1667. doi:10.1001/jamainternmed.2019.4101
 18. Nebel KM, Loskutova NY. The AAFP cognitive care kit: a resource for family physicians. *Am Fam Physician*. 2017;96(10):630-631.
 19. America GSo. *The Gerontological Society of America Workgroup on Cognitive Impairment Detection and Earlier Diagnosis: Report and Recommendations*; 2015. Accessed May 2020. <https://www.geron.org/images/gsa/documents/gsaciworkgroup2015report.pdf>
 20. French DD, LaMantia MA, Livin LR, Herceg D, Alder CA, Boustani MA. Healthy Aging Brain Center improved care coordination and produced net savings. *Health Aff (Millwood)*. 2014;33(4):613-618. doi:10.1377/hlthaff.2013.1221
 21. Jennings LA, Laffan AM, Schlissel AC, et al. Health care utilization and cost outcomes of a comprehensive dementia care program for Medicare beneficiaries. *JAMA Intern Med*. 2019;179(2):161-166. doi:10.1001/jamainternmed.2018.5579
 22. Jolley D, Benbow SM, Grizzell M. Memory clinics. *Postgrad Med J*. 2006;82(965):199-206. doi:10.1136/pgmj.2005.040592
 23. U.S. Department of Health and Human Services ASfPaE, Office of Disability, Aging and Long-Term Care Policy. *Examining Models of Dementia Care: Final Report 2016*; 2016.
 24. 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 J Geriatr Psychiatry*. 2020;28(3):320-330.
 25. Powell BJ, Waltz TJ, Chinman MJ, et al. A refined compilation of implementation strategies: results from the Expert Recommendations for Implementing Change (ERIC) project. *Implementation Sci*. 2015;10(1):21.
 26. Wenger E. *Communities of Practice: Learning, Meaning, and Identity*. Cambridge University Press; 1998.
 27. Ranmuthugala G, Plumb JJ, Cunningham FC, Georgiou A, Westbrook JI, Braithwaite J. How and why are communities of practice established in the healthcare sector? A systematic review of the literature. *BMC Health Serv Res*. 2011;11(1):273. doi:10.1186/1472-6963-11-273
 28. Lee L, Hillier LM, Weston WW. "Booster Days": an educational initiative to develop a community of practice of primary care collaborative memory clinics. *Gerontol Geriatr Educ*. 2017;41(1):4-19. doi:10.1080/02701960.2017.1373350
 29. *National Plan to Address Alzheimer's Disease: 2020 Update*. U.S. Department of Health and Human Services; 2020. https://aspe.hhs.gov/sites/default/files/migrated_legacy_files//197726/NatlPlan2020.pdf
 30. Wisconsin Department of Health Services Division of Public Health. Wisconsin State Dementia Plan: 2019-2023; 2019. Accessed March 28, 2021. <https://www.dhs.wisconsin.gov/wltcac/state-dementia-plan.pdf>
 31. Wisconsin Alzheimer's Institute. *WAI-Affiliated Dementia Diagnostic Clinic Network*; 2020. Accessed June 9, 2020. <https://wai.wisc.edu/clinic-network/>
 32. Sager MA, Hermann BP, La Rue A, Woodard JL. Screening for dementia in community-based memory clinics. *Wis Med J*. 2006;105(7):25-29.
 33. McKhann GM, Knopman DS, Chertkow H, et al. The diagnosis of dementia due to Alzheimer's disease: recommendations from the National Institute on Aging-Alzheimer's Association workgroups on diagnostic guidelines for Alzheimer's disease. *Alzheimers Dement*. 2011;7(3):263-269. doi:10.1016/j.jalz.2011.03.005
 34. Román GC, Tatemichi TK, Erkinjuntti T, et al. Vascular dementia: diagnostic criteria for research studies. Report of the NINDS-AIREN International Workshop. *Neurology*. 1993;43(2):250-260. doi:10.1212/wnl.43.2.250
 35. McKeith IG, Boeve BF, Dickson DW, et al. Diagnosis and management of dementia with Lewy bodies: fourth consensus report of the DLB consortium. *Neurology*. 2017;89(1):88-100. doi:10.1212/wnl.0000000000004058
 36. Rascovsky K, Hodges JR, Knopman D, et al. Sensitivity of revised diagnostic criteria for the behavioural variant of frontotemporal dementia. *Brain*. 2011;134(Pt 9):2456-2477. doi:10.1093/brain/awr179
 37. Mesulam MM. Primary progressive aphasia--a language-based dementia. *N Engl J Med*. 2003;349(16):1535-1542. doi:10.1056/NEJMra022435
 38. Albert MS, DeKosky ST, Dickson D, et al. The diagnosis of mild cognitive impairment due to Alzheimer's disease: recommendations from the National Institute on Aging-Alzheimer's Association workgroups on diagnostic guidelines for Alzheimer's disease. *Alzheimers Dement*. 2011;7(3):270-279. doi:10.1016/j.jalz.2011.03.008
 39. Ingram DD, Franco SJ. 2013 NCHS urban-rural classification scheme for counties. *Vital Health Stat*. 2014;2(166):1-73.
 40. Harris PA, Taylor R, Thielke R, Payne J, Gonzalez N, Conde JG. Research electronic data capture (REDCap)—a metadata-driven methodology and workflow process for providing translational research informatics support. *J Biomed Inform*. 2009;42(2):377-381. doi:10.1016/j.jbi.2008.08.010
 41. Harris PA, Taylor R, Minor BL, et al. The REDCap consortium: building an international community of software platform partners. *J Biomed Inform*. 2019;95:103208.
 42. Ogrinc G, Davies L, Goodman D, Batalden P, Davidoff F, Stevens D. SQUIRE 2.0 (Standards for QUality Improvement Reporting Excellence): revised publication guidelines from a detailed consensus process. *BMJ Qual Saf*. 2016;25(12):986.
 43. Lee L, Weston WW, Hillier LM. Developing memory clinics in primary care: an evidence-based interprofessional program of continuing professional development. *J Contin Educ Health Prof*. 2013;33(1):24-32. doi:10.1002/chp.21163
 44. Mayrhofer A, Goodman C, Smeeton N. The role of dementia champion in dementia care: its aspirations, development and training needs (innovative practice). *Dementia (London)*. 2016;15(5):1306-1312. doi:10.1177/1471301216631448
 45. Mostofian F, Ruban C, Simunovic N, Bhandari M. Changing physician behavior: what works? *Am J Manag Care*. 2015;21(1):75-84.

46. Forsetlund L, Bjorndal A, Rashidian A, et al. Continuing education meetings and workshops: effects on professional practice and health care outcomes. *Cochrane Database Syst Rev.* 2009; (2):CD003030. doi:[10.1002/14651858.CD003030.pub2](https://doi.org/10.1002/14651858.CD003030.pub2)
47. Galvin JE, Valois L, Zweig Y. Collaborative transdisciplinary team approach for dementia care. *Neurodegener Dis Manag.* 2014;4(6):455-469.
48. Callahan CM, Boustani MA, Unverzagt FW, et al. Effectiveness of collaborative care for older adults with Alzheimer disease in primary care: a randomized controlled trial. *JAMA.* 2006; 295(18):2148-2157. doi:[10.1001/jama.295.18.2148](https://doi.org/10.1001/jama.295.18.2148)
49. Rossini PM, Di Iorio R, Vecchio F, et al. Early diagnosis of Alzheimer's disease: the role of biomarkers including advanced EEG signal analysis. Report from the IFCN-sponsored panel of experts. *Clin Neurophysiol.* 2020;131(6):1287-1310. doi:[10.1016/j.clinph.2020.03.003](https://doi.org/10.1016/j.clinph.2020.03.003)
50. Gupta Y, Lama RK, Kwon GR. Prediction and classification of Alzheimer's disease based on combined features from Apolipoprotein-E genotype, cerebrospinal fluid, MR, and FDG-PET imaging biomarkers. *Front Comput Neurosci.* 2019;13:72. doi:[10.3389/fncom.2019.00072](https://doi.org/10.3389/fncom.2019.00072)
51. Johnson SC, Kosciak RL, Jonaitis EM, et al. The Wisconsin registry for Alzheimer's prevention: a review of findings and current directions. *Alzheimers Dement (Amst).* 2018;10:130-142. doi:[10.1016/j.dadm.2017.11.007](https://doi.org/10.1016/j.dadm.2017.11.007)

SUPPORTING INFORMATION

Additional supporting information may be found in the online version of the article at the publisher's website.

Table S1 Guidelines for WAI-affiliated dementia diagnostic clinics

Table S2 Educational events available to network members on a yearly basis

Table S3 Demographics at initial visit of patients seen at the WAI Dementia Diagnostic Clinic Network, 2005–2021 ($N = 25,351$)

Figure S1 Diagram of the process to start a Dementia Diagnostic Clinic

Text S1 Paper form evaluation of the 2019 Annual Network Event

How to cite this article: Mora Pinzon M, Krainer J, LeCaire T, et al. The Wisconsin Alzheimer's Institute Dementia Diagnostic Clinic Network: A community of practice to improve dementia care. *J Am Geriatr Soc.* 2022;70(7): 2121-2133. doi:[10.1111/jgs.17768](https://doi.org/10.1111/jgs.17768)