

# UCLA

## UCLA Previously Published Works

### Title

A population-based, electronic health record-guided approach to improve the quality of dementia care.

### Permalink

<https://escholarship.org/uc/item/3039p3kc>

### Journal

Journal of the American Geriatrics Society, 71(3)

### ISSN

0002-8614

### Authors

Reuben, David B  
Rosenstein, Hanina L  
Chen, Kimberly  
[et al.](#)

### Publication Date

2023-03-01

### DOI

10.1111/jgs.18193

### Copyright Information

This work is made available under the terms of a Creative Commons Attribution License, available at <https://creativecommons.org/licenses/by/4.0/>

Peer reviewed

# A population-based, electronic health record-guided approach to improve the quality of dementia care

David B. Reuben MD<sup>1</sup> | Hanina L. Rosenstein MSOD<sup>2</sup> |  
Kimberly Chen MSN RN-BC, PMP<sup>3</sup> | Ajaya Pillai MBA, MS, PMP<sup>3</sup> |  
David R. Lee MD, MBA<sup>1</sup> | Sarah D. Meshkat MHA<sup>2</sup> | Grace I. Chen MD<sup>1</sup>

<sup>1</sup>Division of Geriatrics, David Geffen School of Medicine at UCLA, Los Angeles, California, USA

<sup>2</sup>Office of Population Health & Accountable Care, UCLA Health Faculty Practice Group, Los Angeles, California, USA

<sup>3</sup>Information Services & Solutions, UCLA Health Information Technology, Los Angeles, California, USA

## Correspondence

David B. Reuben, David Geffen School of Medicine at UCLA, Division of Geriatrics, 10945 Le Conte Ave., Suite 2339, Los Angeles, CA 90095-1687, USA.  
Email: [dreuben@mednet.ucla.edu](mailto:dreuben@mednet.ucla.edu)

## Abstract

**Background:** The quality of care of the 6.5 million Americans living with dementia has been suboptimal, leading to worse outcomes and higher costs. Few health systems have formal systems in place to guide the care of these patients. To help improve the care of persons living with dementia, we developed and preliminarily evaluated the effectiveness of electronic health record (EHR)-generated recommendations for patients with dementia.

**Methods:** This quality improvement study was conducted from October 2020 through June 2022 at a single academic healthcare system and included patients identified as having dementia on their problem list and their physicians. Ten (seven outpatient and three inpatient) algorithms based on clinical logic and evidence were embedded in an EHR system to generate specific recommendations based on combinations of utilization, diagnosis, and medications. The number of each type of recommendation generated, and orders for each type of recommendation were recorded, as well as physician's perceptions of this approach.

**Results:** Three thousand six hundred and nine recommendations on 763 patients were triggered by the algorithms in the outpatient setting, and 185 referrals were placed. The most common recommendations were for ongoing care through the UCLA Alzheimer's and Dementia Care program, Palliative Care, the Extensivist Clinic, Urogynecology, and Clinical Pharmacy. The most commonly acted upon by providers were recommendations for referral to Pharmacists and the UCLA Alzheimer's and Dementia Care program.

The most common reason for not responding to specific recommendations was that these were not perceived as relevant to the patient. Compared to general medicine physicians, geriatricians felt more comfortable managing dementia care without a referral to a service (23% (95% CI 15%–34%) versus 3% (95% CI 0%–17%),  $p = 0.012$ ) and less commonly felt the recommendation was appropriate (1% (95% CI 0%–7%) versus 13% (95% CI 4%–30%),  $p = 0.02$ ).

**Conclusions:** EHR-generated algorithms can help guide patients with dementia to appropriate clinical services.

**KEYWORDS**

dementia care, electronic health record, quality improvement

**INTRODUCTION**

Currently, an estimated 6.5 million Americans have Alzheimer's disease, which is expected to rise to 12.7 million by 2050.<sup>1</sup> The quality of care for persons living with dementia (PLWD) is poor,<sup>2</sup> much lower than for many other conditions that affect older persons,<sup>3</sup> but can be improved.<sup>2,4,5</sup> PLWD have diverse needs based on stage of disease, complications (e.g., psychological and behavioral), and resources available. A major challenge is determining which PLWD should receive which services. Accordingly, a population-based approach that tailors interventions to the needs of subpopulations has been proposed to best meet the triple aim of better quality, better outcomes, and lower costs for persons with dementia.<sup>6</sup> One way to implement a population-based approach is to classify PLWD based on utilization and create tiers defined by percentiles targeting PLWD at each tier to receive appropriate services.

In April 2017, the UCLA Health Office of Population Health and Accountable Care identified dementia as one of three high-cost subpopulations where there were opportunities to create value by reducing expenses while improving clinical outcomes and the patient experience.<sup>7</sup> Accordingly, a Dementia Initiative was launched that aimed to ensure that every PLWD who receives ongoing primary, neurology, or psychiatry specialty care at UCLA Health gets high quality dementia care. Conceptually, the Dementia Initiative consisted of three steps: creation of a dementia registry, identification of resources to improve the care of PLWD, and referral of patients to these resources.

In its first iteration, the Dementia Initiative identified 4384 PLWD who were receiving care in the UCLA Health primary care practices, 72% of whom were in the Medicare Shared Savings Program (MSSP) and incurred an average of \$1768 per member per month spending largely driven by inpatient and intensive care unit days. PLWD were tiered based on their acute utilization and those in Tiers 1–3 (highest utilization) were referred to the UCLA Alzheimer's and Dementia Care (ADC) program.<sup>8</sup> The initiative demonstrated a small (1%) but statistically significant ( $p < 0.03$ ) monthly reduction in inpatient days.<sup>7</sup>

After 2018, the Dementia Initiative switched to a more efficient implementation strategy that utilized the electronic health record (EHR) to search for patterns of utilization and clinical characteristics to determine appropriate services using algorithms based on clinical

**Key Points**

- The quality of dementia care is less than optimal and few health systems have formal systems in place to guide the care of dementia patients.
- Routinely collected electronic health record data on diagnoses, medications, and utilization patterns can be used to generate recommendations for clinical services that may provide benefit.
- Physician responses to these recommendations are variable but the concept has been viewed by physicians as valuable, particularly for those who are generalists.

**Why does this paper matter?**

This paper provides a proof-of-concept that EHRs can be used to generate recommendations for improving care for persons living with dementia; this approach can be customized by other health systems to draw upon their available services.

logic. Clinicians were then prompted to order specific recommended dementia care services tailored to the individual needs of their patients. In addition, additional existing services were added and new services were created to meet unaddressed needs. This paper describes UCLA Health's implementation and early experience with providing population-based dementia care using EHR-generated recommendations.

**METHODS**

Prior to launch of the EHR-generated algorithms, the health system needed to create a registry of PLWD that would be accurate enough to use in recommending services. In conjunction with a group working to improve Hierarchical Condition Category coding, an early step was to create a "suspect dementia" Best Practice Advisory (BPA) that prompted primary care physicians to add dementia, including specific dementia types, to the

TABLE 1 UCLA resources for caring for persons with dementia

Resource	Services provided	Staffing
Alzheimer's & Dementia Information Service (ADIS)	Telephone assistance to help patients and their families by providing guidance about UCLA and community resources for dementia for patients and caregivers	Unlicensed staff
UCLA Alzheimer's and Dementia Care Program (ADC)	Co-management program designed to help patients and their families with the complex medical, behavioral and social needs of dementia	Nurse practitioner
Medical Home Visit Program	Primary care provided in patients' homes	Physician, nurse practitioner
Extensivist Program	Primary care transferred to small-panel, resource-intensive primary care practices	Physician, support team
Urology or gynecology (Pelvic Health)	Consultation for prevention of recurrent UTIs	Physician
Pharmacist	Consultation to help eliminate unnecessary medications, simplify regimes, provide patient education and reduce the risk of adverse effects and drug interactions	Pharmacist
Palliative Care	Consultation to address the bigger picture of person-centered goals	Physician, nurse practitioner

problem list. Once in the dementia registry, the algorithms could be applied based on additional clinical and utilization information in the EHR.

Rather than recommending specific evidence-based care processes, the approach relies on referrals to clinical services (Table 1) whose clinicians who are up to date with the most recent evidence base for the conditions that triggered the recommended referral. Services include longitudinal dementia care through: (1) the UCLA ADC Program,<sup>6</sup> (2) more intensive primary care through the UCLA Extensivist program, which follows patients in inpatient and outpatient settings and has smaller patient panels and more support services; and (3) the UCLA Medical Home Visit Program (MVP), which provides primary care of frail patients, including those with dementia, in their homes. In addition, consultative services were available from Palliative Care Specialists, Clinical Pharmacists, and pelvic health specialists (urologists and urogynecologists). The leaders of these existing programs agreed to provide services appropriate for PLWD within their specialty. In addition, a telephone-based Alzheimer's and Dementia Information and referral Service (ADIS) was created to assist PLWD who are at milder or earlier stages of their disease find resources within and outside UCLA.

With these resources in place, the Dementia Initiative team, including experts in dementia care, population health, relevant subspecialties, and informatics, created a series of algorithms (Table 2) based on clinical logic and evidence that could be embedded in CareConnect, UCLA Health's EHR, an Epic-based system. The algorithms

generate specific recommendations for PLWD depending on combinations of utilization, diagnosis, and medications (Table 3) that can be applied in outpatient and inpatient settings. Recommendations are triggered by: documentation of a new diagnosis of dementia, hospitalizations and emergency department visits, other diagnoses (e.g., pneumonia requiring hospitalization, recurrent urinary tract infections), utilization thresholds, and medication orders. Recommendations and rationale for the recommendations are transmitted via in-basket messages and best practice advisories (BPAs) at the time of the outpatient visit or order entry in the hospital. The overall strategy is presented as Figure 1.

In October 2020, the algorithm-generated recommendations were piloted with primary care physicians in the geriatrics practice and, based on their experiences, the algorithms were revised. In spring 2021, the pilot was expanded to 16 additional primary care physicians (PCPs) in several practices with higher volumes of PLWD. After additional refinement, beginning in August 2021, it was rolled out to all UCLA Health primary care practices. Using reports from EHR-generated data, we calculated the BPA trigger and referral rates for each recommended dementia clinical service from October 2020 through June 2022.

In addition, a set of EHR-generated algorithms (Table 2) was created for PLWD who are hospitalized. These are aimed at common reasons for hospitalization (pneumonia and recurrent urinary tract infections) and PLWD who have multiple hospitalizations and for whom conversations about goals of care are appropriate. These algorithms have been piloted on the geriatrics inpatient service since August 2021.

TABLE 2 Recommended intervention, referral criteria, and timing of trigger

Suggested intervention	Criteria summary	When triggered
<b>Outpatient Ongoing Care</b>		
Referral to Alzheimer's and Dementia Care (ADC) Program	<i>Utilization:</i> 1 pneumonia admission, inpatient psychiatry hospitalization, ED visit or hospitalization for falls, 2 or more visits to outpatient psychiatry in past year <i>OR</i> <i>Specific dementia diagnosis:</i> Young onset, Lewy Body, Frontotemporal, Parkinson's <i>OR</i> <i>Medications:</i> new Rx: anti-psychotic medications	Discharge from hospital/ED Or when a dementia diagnosis is added to the problem list
Referral for Medical Home Visit Program	<i>Utilization:</i> 2 hospitalizations, 14 bed days, or 4 ED Visits <i>And</i> No outpatient visit within 3 months of hospitalization.	3 months after discharge from hospital/ED, if no patient visit
Referral to Extensivist Program	<i>Utilization:</i> 2 hospitalizations, 14 bed days, or 4 ED Visits <i>AND</i> Heart Failure, ESRD on dialysis, or 2 UTI-related admissions in past year	Discharge from hospital/ED
<b>Outpatient Consultative Care</b>		
Referral to Urology or Gynecology (Pelvic Health)	<i>Diagnoses:</i> Two UTI admissions within past 6 months/ 3 within last 12 months	After discharge from hospital/ED or during face-to-face office visit
Referral to Clinical Pharmacist	<i>Medications:</i> New Rx of highly anti-cholinergic medication or anti-psychotic medications <sup>a</sup> (any typical, more than 1 unique atypical, atypical over certain daily dosage)	At the time, the new Rx is prescribed
Referral to Palliative Care (Clinic or Home)	<i>Utilization:</i> 3 hospitalizations, 21 bed days, or 3 ED Visits <i>AND</i> Cancer (other than skin), COPD (on inhalers, chronic O <sub>2</sub> ), Heart Failure, ESRD on dialysis, or Creutzfeldt-Jakob disease	Discharge from hospital/ED
Referral to Alzheimer's & Dementia Information Service (ADIS) for mild Dementia	No more than 1 ED/Hospital utilization in past year; Does not qualify for any of the other referrals above	When a dementia diagnosis is added to the problem list
<b>Inpatient</b>		
Ultrasound of kidney and ureters	<i>Utilization:</i> Currently hospitalized for UTI <i>AND:</i> Two UTI admissions within past 6 months/ 3 within last 12 months	At the time of admission
Referral to Urology or Gynecology (Pelvic Health)	<i>Diagnoses:</i> Two UTI admissions within past 6 months/ 3 within last 12 months	After discharge from hospital/ED or during face-to-face office visit
Swallowing Evaluation	<i>Utilization:</i> Currently hospitalized for pneumonia <i>OR</i> Nurses assessment that trouble swallowing or coughing with eating	At the time of admission
Discontinue H2 blockers and proton pump inhibitors	<i>Medications:</i> H2 blocker or proton pump inhibitor <i>AND</i> no diagnosis of ulcer, gastrointestinal bleed, or gastroesophageal reflux	Discharge from hospital
Referral to Palliative Care (inpatient)	<i>Utilization:</i> 3 hospitalizations, 21 bed days, or 3 ED Visits <i>AND</i> Cancer (other than skin), COPD (on inhalers, chronic O <sub>2</sub> ), Heart Failure, ESRD on dialysis, or Creutzfeldt-Jakob disease	At the time of admission

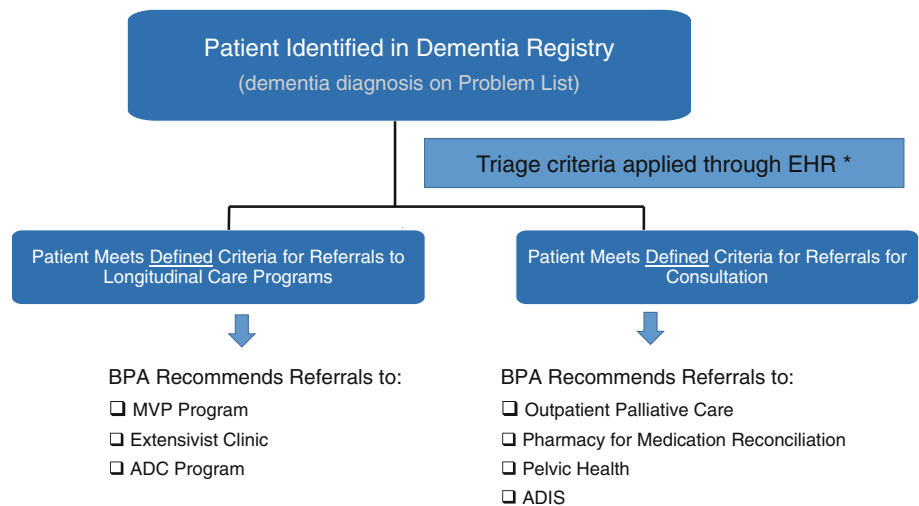
Abbreviations: COPD, chronic obstructive pulmonary disease; ED, emergency department; ESRD, end stage renal disease; O<sub>2</sub>, oxygen therapy; UTI, urinary tract infection.

<sup>a</sup>The trigger of a clinical pharmacist referral by a new antipsychotic prescription was suspended from August 4, 2021 to present to accommodate an unrelated research project.

**TABLE 3** Patient-level reasons for not responding to the dementia best practice advisories.

	Total	General medicine (6 physicians)	Geriatric medicine (10 physicians)
N (patient-level)	113	31	82
Referral order not appropriate	33 (29%)	9 (29%)	24 (29%)
Feels comfortable managing without the consultant	20 (17%)	1 (3%)	19 (23%)
Not applicable (Hospice, Deceased, Nursing Home, Moved away)	18 (16%)	12 (39%)	6 (7%)
Already receiving care from consultant or has referral order	16 (14%)	2 (7%)	14 (17%)
Not the patient's PCP	9 (8%)	0 (0%)	9 (11%)
Multiple reasons	8 (7%)	0 (0%)	8 (10%)
Appropriate recommendation, but no referral order yet	5 (4%)	4 (13%)	1 (1.%)
Needs further discussion with patient prior to placing referral order	4 (4%)	3 (10%)	1 (1%)

**FIGURE 1** Identifying patients with dementia and triaging to appropriate services. ADC, Alzheimer's and Dementia Care Program; ADIS, Alzheimer's Disease Information Service; BPA, best practice advisory (notification within electronic health record); MVP, Medical (Home) Visit Program. \*Algorithm based on utilization measures, diagnoses, & medication from 1-year lookback.

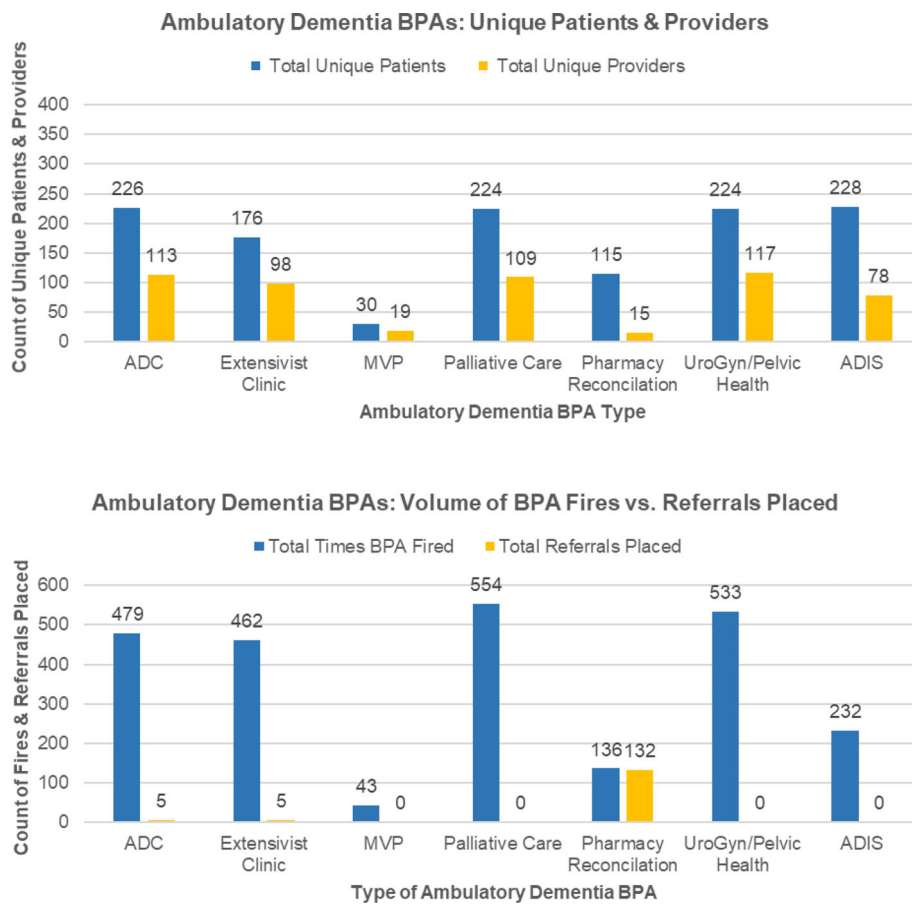


To provide additional insight into how physicians responded to the BPAs, we conducted individual semi-structured interviews with 16 PCPs (10 geriatricians and six general medicine), who each had at least five patients who generated BPAs during the pilot phase. The intent of the interviews was to improve the quality of the dementia BPAs and not for research purposes; therefore, the project was determined not to be human subjects research and was not submitted to UCLA Institutional Review Board. Interviews were conducted virtually using an interview guide with patient name and recommendation. Physicians were asked to discuss the appropriateness of each triggered recommendation for that patient. Recognizing time constraints, if physicians had more than 10 patients, we randomly chose 10 patients to discuss. Physicians were also asked to share their feelings about

BPAs in general and in relationship to this innovation; they were also asked for recommendations to improve this clinical decision support tool. Two authors (DRL, DBR) used thematic analysis<sup>9</sup> to qualitatively explore interview comments at both the patient and provider level. The responses were inductively coded, categorized into themes, and then grouped by PCP type. Bivariate analysis of responses at the patient-level were conducted using Fisher's exact test with a significance level at an alpha of 0.05.

**RESULTS**

Between October 2020 and the end of June 2022, 3609 recommendations on 763 patients were triggered by the



**FIGURE 2** Outpatient recommendations and clinicians' actions. ADC, Alzheimer's and Dementia Care; ADIS, Alzheimer's and Dementia Information Service; BPA, best practice advisory; MVP, Medical Home Visit Program. Total BPA fires: 1818, Total unique patients: 869; Total providers: 233. Data source: EHR Reports; October 1, 2020 to June 30, 2022.

algorithms in the outpatient setting, and 185 referrals were placed (Figure 2). Many patients generated multiple triggers for the same recommendations. The most common recommendations for unique patients were for ongoing care through the UCLA ADC program, Palliative Care, the Extensivist program, Pelvic Health, and Pharmacists. The most commonly acted upon by providers were recommendations for referral to Pharmacists (132 referrals placed for 115 unique patients) (some were re-referrals because of canceled appointments or re-eligibility), the UCLA ADC program (five referrals placed for 226 unique patients), and the Extensivist program (five referrals placed for 176 unique patients).

For both general medicine and geriatric physicians, the most common reason for not responding to specific BPAs (Table 3) was that these were not perceived as relevant to the patient. Compared to general medicine PCPs, geriatricians felt more comfortable managing dementia care without a consultant or referral to a service (23%, 95% CI 15%–34% vs. 3%, 95% CI 0%–17%,  $p = 0.012$ ) and less commonly felt the BPA referral recommendation was appropriate (1%, 95% CI 0%–7% vs. 13%, 95% CI 4%–30%,  $p = 0.02$ ). Compared to geriatricians, general medicine physicians had more patients for whom the BPA was not applicable because the patient was already on

hospice, deceased, living in a nursing home, or had moved away (39%, 95% CI 22%–58% vs. 7%, 95% CI 3%–15%,  $p < 0.01$ ).

Provider-level comments were categorized into three main themes: challenging aspects, beneficial aspects, and recommendations for improving the approach. Examples of challenging aspects of the workflow included disruptions such as BPA recommendations for orders to be placed during the patient visit, lack of time to complete discussions with the patient regarding the recommended referral, competing priorities for the patient visit, multiple clicks, and “alert fatigue” due to “too many BPAs.” Beneficial aspects of the BPAs included reminding PCPs to discuss important aspects of care with the patient and improving “awareness of resources especially for newer faculty.” Some geriatricians commented that this tool would be helpful for non-geriatricians who do not regularly see patients with dementia. Recommendations for improvement included creating an option to have an “opt out or stop feature” to prevent repeated alerts for a patient, modifying certain recommendations to ensure that patients are eligible for the recommended service, decreasing the number of clicks to place a referral, and restricting this tool to providers less familiar with dementia care.

During the pilot of the inpatient algorithms between August 2021 and July 2022, 883 recommendations on 108 patients were triggered by the algorithms and 38 referrals or orders were placed. The most common recommendations were for referrals for a Palliative Care consult (42 patients) and for outpatient pelvic health evaluations for women with recurrent urinary tract infections (40 patients); these were also the most commonly acted upon recommendations.

## DISCUSSION

Dementia care in health systems is often haphazard and of lower quality than other conditions affecting older persons.<sup>3</sup> In this paper, we provide proof-of-concept that EHR-generated algorithms can help guide PLWD to appropriate clinical services, reflecting an implementation science approach<sup>10</sup> to bringing evidence-based care into clinical practice. This model of care addresses both specific dementia quality of care deficits as well as quality deficits for conditions (e.g., recurrent UTIs, aspiration pneumonias) that PLWD often experience, which lead to high utilization. Although every algorithm-generated recommendation may not be appropriate for each PLWD, these are an improvement on what currently exists. In fact, the accuracy does not need to be extremely high because clinicians are only prompted to order the resource; the orders are not placed without a clinician's review of appropriateness.

To our knowledge, leveraging the EHR to generate patient-specific dementia care recommendations has not been attempted before. Because UCLA Health's EHR is Epic based (the most widely used EHR in the US),<sup>11</sup> the potential for widespread dissemination, if successful, is enormous. Of note, geriatricians, who understand clinical interventions and how health care systems work, took a lead role in creating, implementing, and evaluating this system-level improvement.

Our initial experience showed modest rates of physicians ordering services in response to BPAs. This finding is consistent with research on BPAs in other situations when there is not a "hard stop" that demands a response before the chart can be closed.<sup>12,13</sup> Interviews with physicians confirmed that these recommendations might be helpful, particularly for generalist physicians. Physicians also suggested recommendations (e.g., easier opt outs, and elimination of repeated BPAs to prevent alert fatigue)<sup>14</sup> for future iterations of the process.

This approach must be considered in light of several limitations. First, the algorithms do not include referrals to psychiatry or neurology, specialties that are commonly included in dementia care. The reasons these specialties were excluded were: the lack of need for diagnostic services

because all PLWD have dementia on their problem lists, long delays in receipt of services due to lack of availability, and the ability of some of the resources (e.g., the UCLA ADC Program) to perform some of the processes of care (e.g., medication management) that would be provided by these specialists. Second, this approach was implemented at a single academic institution with high technological capability, population-based approaches to quality improvement, and innovation in dementia care models. Nevertheless, many of the services (e.g., palliative care, pelvic health) recommended are available in most health care systems. Moreover, in light of the increasing numbers of PLWD, more health systems are implementing dementia care programs.<sup>15</sup> Finally, it is a first iteration and will need to be modified to improve response rates to the recommendations. This will require additional collaboration with PCPs; geriatricians, who can provide PCP education; and informaticists to focus on knowledge and workflow barriers.

In summary, we have demonstrated that a system of EHR-guided, individually tailored dementia care recommendations is feasible and physicians respond to BPAs for some patients. Although current rates of implementation are not high, steps can be taken to increase rates of ordering recommended care. Moreover, the algorithms and sequence of steps can be adopted and modified by other health systems that want to take a population approach to caring for the rapidly growing numbers of PLWD.

## AUTHOR CONTRIBUTIONS

Conception and design: David B. Reuben, Hanina L. Rosenstein, Sarah D. Meshkat, Kimberly Chen. Acquisition of data: Hanina L. Rosenstein, Kimberly Chen, Ajaya Pillai, David R. Lee, Sarah D. Meshkat, GIC. Analysis and interpretation of data; David B. Reuben, Hanina L. Rosenstein, Kimberly Chen, Ajaya Pillai, David R. Lee, Sarah D. Meshkat, Grace I. Chen. Drafting the article or revising it critically for important intellectual content: All authors. Final approval of the version to be published: All authors.

## FUNDING INFORMATION

No specific funding was received for this work.

## CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

## SPONSOR'S ROLE

Not applicable.

## REFERENCES

- 2022 Alzheimer's disease facts and figures. *Alzheimers Dement.* 2022;18(4):700-789. doi:10.1002/alz.12638



2. Jennings LA, Tan Z, Wenger NS, et al. Quality of care provided by a comprehensive dementia care Comanagement program. *J Am Geriatr Soc*. 2016 Aug;64(8):1724-1730. doi:10.1111/jgs.14251
3. Wenger NS, Solomon DH, Roth CP, et al. The quality of medical care provided to vulnerable community-dwelling older patients. *Ann Intern Med*. 2003;139(9):740-747.
4. Ganz DA, Koretz BK, Bail JK, et al. Nurse practitioner comanagement for patients in an academic geriatric practice. *Am J Manag Care*. 2010;16(12):e343-e355.
5. Reuben DB, Ganz DA, Roth CP, McCreath HE, Ramirez KD, Wenger NS. Effect of nurse practitioner comanagement on the care of geriatric conditions. *J Am Geriatr Soc*. 2013;61(6):857-867. doi:10.1111/jgs.12268
6. Lees Haggerty K, Epstein-Lubow G, Spragens LH, et al. Recommendations to improve payment policies for comprehensive dementia care. *J Am Geriatr Soc*. 2020;68(11):2478-2485. doi:10.1111/jgs.16807
7. Gupta R, Roh L, Lee C, et al. The population health value framework: creating value by reducing costs of Care for Patient Subpopulations with Chronic Conditions. *Acad Med*. 2019; 94(9):1337-1342. doi:10.1097/ACM.0000000000002739
8. Reuben DB, Evertson LC, Wenger NS, et al. The University of California at Los Angeles Alzheimer's and dementia care program for comprehensive, coordinated, patient-centered care: preliminary data. *J Am Geriatr Soc*. 2013;61(12):2214-2218.
9. Braun V, Clarke V. Using thematic analysis in psychology. *Qual Res Psychol*. 2006;3(2):77-101.
10. Stevens K, Tobin J. Introduction to the JCTS special issue on dissemination and implementation sciences. *J Clin Trans Sci*. 2020;4(3):149-151. doi:10.1017/cts.2020.488
11. <https://www.beckershospitalreview.com/ehrs/klas-epic-cerner-dominate-emr-market-share.html>. accessed 1/5/2020
12. Ramirez M, Chen K, Follett RW, Mangione CM, Moreno G, Bell DS. Impact of a "chart closure" hard stop alert on prescribing for elevated blood pressures among patients with diabetes: quasi-experimental study. *JMIR Med Inform*. 2020;8(4):e16421. doi:10.2196/16421
13. Ramirez M, Maranon R, Fu J, et al. Primary care provider adherence to an alert for intensification of diabetes blood pressure medications before and after the addition of a "chart closure" hard stop. *J Am Med Inform Assoc*. 2018;25(9):1167-1174. doi:10.1093/jamia/ocy073
14. Ancker JS, Edwards A, Nosal S, et al. Effects of workload, work complexity, and repeated alerts on alert fatigue in a clinical decision support system. *BMC Med Inform Decis Mak*. 2017; 17(1):36. doi:10.1186/s12911-017-0430-8 Erratum in: *BMC Med Inform Decis Mak*. 2019;19(1):227.
15. Reuben DB, Evertson LC, Jackson-Stoeckle R, et al. Dissemination of a successful dementia care program: lessons to facilitate spread of innovations. *J Am Geriatr Soc*. 2022;70(9):2686-2694. doi:10.1111/jgs.17900

**How to cite this article:** Reuben DB, Rosenstein HL, Chen K, et al. A population-based, electronic health record-guided approach to improve the quality of dementia care. *J Am Geriatr Soc*. 2023;71(3):927-934. doi:10.1111/jgs.18193