Overcoming Barriers to Early Dementia Diagnosis and Management in Primary Care

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INTRODUCTION

Primary care providers with no advanced training in geriatrics or dementia predominately care for geriatric patients around the world. Therefore, dementias are commonly overlooked or misdiagnosed in busy primary care practices.[1] A potential cause for missed dementia diagnoses is infrequently utilizing evidence-based evaluation and management strategies in primary care settings.[2, 3] A clinical tool is needed to assist in detecting and managing cognitive impairment when concerns arise.

Previously, EHRs have been utilized to successfully implement clinical tools in primary care settings.[4, 5] Use of EHR clinical decision tools for dementia evaluation during resident training has been shown to improve resident assessment and management of dementia.[6] Given the rates of EHR use in primary care and the ability to make workflows standard across settings, we hypothesized that an EHR platform to improve dementia management for primary care providers could have significant clinical impact.

METHODS

An EHR-based clinical tool designed to guide providers through dementia assessment and management was evaluated in Oregon Health and Science University's internal medicine clinic. Study participants, voluntary primary care providers without geriatric training, received an hour training on diagnosis and management of dementia using the EHR tool. Providers completed retrospective pretest-posttest surveys to evaluate perceived confidence with dementia practices before and after the training. The dementia EHR tool was implemented in general practice and the same confidence survey was given at the close of the study.

Chart review of participating providers' patients seen for cognitive concerns was performed 6 months pre- and 12 months post-training. Patients seen by a neurologist or geriatrician for cognitive evaluation within 12 months of the study start date were excluded to prevent confounding. Overall, 25 providers participated in the study and 138 patients (54 pre-intervention, 84 post-intervention) were evaluated by these providers for new memory concerns during the study period.

One-tailed Wilcoxon signed-rank tests analyzed change in provider confidence before and after training and EHR tool implementation. A two-tailed Pearson's χ^2 test or Fisher's exact test compared dichotomous pre- and post-intervention data from the chart review. The significance level was 0.05. All statistical analyses used R Studio (version 1.2.5001; 2009–2019 R Studio, Inc.).

RESULTS

Providers reported increased confidence in all areas of the survey after intervention and six reached statistical significance (Table 1). The majority of patients had testing with SLUMS or MoCA. Most scored in the mild cognitive impairment range (21–26/30), while a significant number scored in the dementia range (5–20/30). Among those with abnormal scores, work-up such as depression screening, gait assessment, TSH, and B12/MMA labs was common throughout both pre- and post-intervention periods. Other areas of evaluation, such as activities of daily living assessment, had perpetually low rates. While many patients met criteria for a specific cognitive impairment diagnosis, the majority received non-specific diagnoses (Table 2).

Providers frequently ordered referrals to physical therapy but rarely to other specialties. Patients received information regarding home safety and tai chi more commonly than resources such as driving safety and caregiver resources (Table 2). None of these measures improved significantly after the EHR tool implementation.

DISCUSSION

Despite reported increases in confidence in dementia management with use of the novel EHR tool, this intervention did not significantly increase rates of additional work-up, diagnosis, or management in patients with abnormal scores on cognitive testing.

Dementia care incorporates recognizing memory concerns, making an accurate and specific diagnosis, and providing referrals and resources to patients and families. Our providers routinely performed cognitive testing but often missed key

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Table 1 Perceived confidence scores of providers at baseline and following EHR tool use

Confidence survey 2—use of dementia smart set	Before median (IQR)	After median (IQR)	*P* value
Screening for dementia	4 (2.5–4)	4 (3.5–4)	0.074
Making diagnosis of dementia	3 (2.5–3)	4 (3–4)	0.018
Distinguishing Alzheimer's from other forms of dementia	3 (2.5–3)	3 (3–3.5)	0.036
Understanding of assessment instruments	3 (2.5–3.5)	4 (3–4)	0.186
Understand role of brain imaging in diagnosis	3 (2–4)	4 (3.5–4)	0.024
Provide initial treatment	3 (2–4)	4 (4–4)	0.044
Use of medications	3 (2–3.5)	4 (3.5–4)	0.047
Explain diagnosis to patient	3 (3–3.5)	3 (3–4)	0.173
Deliver education about dementia	2.5 (2–3)	3.5 (3–4)	0.010
Refer to resources	2.5 (2–3)	3 (2.25–3.75)	0.186

Table 2 Chart review results before and after dementia EHR tool implementation

	Pre-EHR tool *N* (%)	Post-EHR tool *N* (%)	*P* value
Work-up			
B12/MMA checked	41 (75.93%)	52 (61.90%)	0.086
TSH checked	43 (79.63%)	63 (75.00%)	0.529
RPR checked	19 (35.19%)	23 (27.38%)	0.331
HIV checked	12 (22.22%)	15 (17.86%)	0.528
CT head	14 (25.93%)	17 (20.24%)	0.435
Depression screen	48 (88.89%)	65 (77.38%)	0.087
ADL assessment	11 (20.37%)	19 (22.62%)	0.755
Gait assessment	44 (81.48%)	64 (76.19%)	0.462
Diagnosis used			
Specific diagnosis	20 (37.03%)	32 (38.09%)	0.900
MCI	18 (33.33%)	30 (35.71%)	0.774
Mixed AD and vascular dementia	1 (1.85%)	2 (2.38%)	0.999
Mild dementia	1 (1.85%)	0 (0.00%)	0.391
Non-specific diagnosis	34 (62.96%)	52 (61.90%)	0.900
Memory change	7 (12.96%)	10 (11.90%)	0.854
Cognitive impairment/deficit	6 (11.11%)	7 (8.33%)	0.586
Memory loss/problem/impairment	20 (37.04%)	35 (41.67%)	0.588
Age-related cognitive decline	1 (1.85%)	0 (0.00%)	0.391
Cognitive testing			
Overall	43 (79.63%)	62 (73.81%)	0.434
Score 0–10	0 (0.00%)	3 (4.92%)	0.140
Score 11–15	3 (6.98%)	4 (6.56%)	0.933
Score 16–20	4 (9.30%)	6 (9.84%)	0.928
Score 21–26	28 (65.12%)	34 (55.74%)	0.337
Score 27–30	8 (18.60%)	14 (22.95%)	0.593
Referrals			
Neuropsychology	9 (16.67%)	6 (7.14%)	0.079
Speech therapy	10 (18.52%)	5 (5.95%)	0.021
Neurology	7 (12.96%)	8 (9.52%)	0.526
Geriatrics	3 (5.56%)	9 (10.71%)	0.366
PT	21 (38.89%)	31 (36.90%)	0.814
OT	4 (7.41%)	4 (4.76%)	0.711
Resources given			
Diagnosis-related resources	12 (22.22%)	20 (23.81%)	0.829
Driving eval info	2 (3.70%)	0 (0.00%)	0.151
AD association	10 (18.52%)	14 (16.67%)	0.779
Caregiver resources	3 (5.56%)	4 (4.76%)	0.999
Tai chi	15 (27.78%)	33 (39.29%)	0.166
Mediterranean diet	6 (11.11%)	9 (10.71%)	0.942
Home safety	17 (31.48%)	22 (26.19%)	0.501

elements of the evaluation, used non-specific diagnoses, and rarely provided referrals and resources. These findings indicate gaps in provider attention to complete dementia evaluations, incomplete follow-up, and missed opportunities for optimal management of cognitive impairment with patients and families.

Limitations of this study include generalizability due to small sample size within a single practice and no "gold standard" in diagnosis of dementia. More work needs to be done to find strategies to improve dementia care in general practice settings. This study showed that improving perceived confidence in managing dementia care with an EHR tool may have helped to ensure appropriate testing for dementia, but does not translate into change in practice patterns regarding care of patients with memory complaints.

Emily Morgan, MD[1]
Bryanna Lima, MPH[1]
Tatyana Aleksandrova, MD[2]
Lisa Sanders, MD[3]
Elizabeth Eckstrom, MD, MPH[1]

[1]Division of Internal Medicine and Geriatrics, Oregon Health & Science University, Portland, OR, USA
[2]Providence St. Vincent Medical Center, Portland, OR, USA
[3]Providence Portland Medical Center, Portland, OR, USA

Corresponding Author: *Emily Morgan, MD; Division of Internal Medicine and Geriatrics, Oregon Health & Science University Portland, OR, USA (e-mail: morganem@ohsu.edu).*

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REFERENCES

1. **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.
2. **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.
3. **Lathren CR**, **Sloane PD**, **Hoyle JD**, **Zimmerman S**, **Kaufer DI**. Improving dementia diagnosis and management in primary care: a cohort study of the impact of a training and support program on physician competency, practice patterns, and community linkages. BMC Geriatr 2013;13(1):134.
4. **Casey CM**, **Parker EM**, **Winkler G**, **Liu X**, **Lambert GH**, **Eckstrom E**. Lessons learned from implementing CDC's STEADI falls prevention algorithm in primary care. The Gerontologist 2017;57(4):787-796.
5. **Casey CM**, **Salinas K**, **Eckstrom E**. Electronic Health Record Tools to Care for At-Risk Older Drivers: A Quality Improvement Project. The Gerontologist. 2015;55(Suppl_1):S128-S139.
6. **Litvin CB**, **Davis KS**, **Moran WP**, **Iverson PJ**, **Zhao Y**, **Zapka J**. The use of clinical decision-support tools to facilitate geriatric education. J Am Geriatr Soc 2012;60(6):1145-1149.