



## Effective Health Care

### In Home Monitoring of People with Dementia and Alzheimer's Disease

#### Results of Topic Selection Process & Next Steps

The nominator, Envoy at Home, is interested in digital platforms, data, and tools to solve caregiver stress and improve quality of life for persons with dementia and persons with Alzheimer's disease. They plan to use this information to develop a caregiver technology toolkit to enhance routines (i.e. activities of daily living, eating, and sleep cycles), detect treatment non-compliance, and patient safety issues.

We identified one ongoing and one completed systematic review covering the scope of the nomination, therefore, a new review would be duplicative of an existing product. No further activity on this nomination will be undertaken by the Effective Health Care (EHC) Program.

#### Topic Brief

**Topic Number and Name:** In Home monitoring of people with dementia and Alzheimer's Disease, #830

**Nomination Date:** 11/11/2018

**Topic Brief Date:** 3/18/2019

**Authors**

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**Conflict of Interest:** None of the investigators have any affiliations or financial involvement that conflicts with the material presented in this report.

## Background

- Alzheimer’s disease is an irreversible, progressive brain disorder that destroys memory and thinking skills, and the ability to carry out simple tasks.<sup>1</sup>
- Many conditions and diseases cause dementia. Alzheimer’s disease is the most common cause. Other causes include brain changes that lead to vascular dementia, Lewy body dementia, and frontotemporal disorders.
- In 2014, as many as 5 million Americans were living with Alzheimer’s disease. This number is projected to rise to nearly 14 million people by 2060.<sup>1</sup>
- People with Alzheimer’s disease and related dementias are usually cared for by family members or friends. The majority (80%) of people with Alzheimer’s disease and related dementias are receiving care in their homes. Each year, 15 million Americans provide more than 17 billion hours of unpaid care for family and friends with Alzheimer’s disease and related dementias. More than six in ten (62%) caregivers were women, almost one in four (23%) were 65 years of age and older, and three in ten (30%) had children under 18 years old living with them.<sup>2</sup>
- The demands of caregiving can limit a caregiver’s ability to take care of themselves. Family caregivers of people with Alzheimer’s and related dementias are at greater risk for anxiety, depression, and poorer quality of life than caregivers of people with other conditions.<sup>2</sup>
- 31 percent of Alzheimer’s and dementia caregivers say the greatest difficulty is that it creates stress, compared to 23.7 percent of non-Alzheimer’s caregivers.<sup>3</sup>
- Technology to support persons with dementia and their caregivers was a research priority identified in the 2017 National Research Summit on Care, Services and Supports for Persons with Dementia and their Caregivers<sup>4</sup>

## Key Questions and PICOs

The key questions for this nomination are:

1. What is the effectiveness of digital platforms, data, and tools on outcomes for people with dementia or Alzheimer’s disease, and those who care for them?

To define the inclusion criteria for the key questions, we specify the population, interventions, comparators, and outcomes, (PICO) of interest (Table 1).

**Table 1.** Key Questions and PICO

<b>Key Questions</b>	
<b>Population</b>	People with dementia or Alzheimer’s disease
<b>Interventions</b>	Digital platform, data, tools aimed at management, treatment adherence, or safety
<b>Comparators</b>	Other digital platform, data or tools No intervention
<b>Outcomes</b>	Caregiver outcomes, including stress Quality of life for people with dementia or Alzheimer’s disease

*Abbreviations:*

## Methods

We assessed nomination for priority for a systematic review or other AHRQ EHC report with a hierarchical process using established selection criteria. Assessment of each criteria determined the need to evaluate the next one. See Appendix A for detailed description of the criteria.

1. Determine the *appropriateness* of the nominated topic for inclusion in the EHC program.

2. Establish the overall *importance* of a potential topic as representing a health or healthcare issue in the United States.
3. Determine the *desirability of new evidence review* by examining whether a new systematic review or other AHRQ product would be duplicative.
4. Assess the *potential impact* a new systematic review or other AHRQ product.
5. Assess whether the *current state of the evidence* allows for a systematic review or other AHRQ product (feasibility).
6. Determine the *potential value* of a new systematic review or other AHRQ product.

### Appropriateness and Importance

We assessed the nomination for appropriateness and importance.

### Desirability of New Review/Duplication

We searched for high-quality, completed or in-process evidence reviews published in the last three years on the key questions of the nomination. See Appendix B for sources searched.

## Results

See Appendix A for detailed assessments of all EPC selection criteria.

### Appropriateness and Importance

This is an appropriate and important topic.

### Desirability of New Review/Duplication

A new evidence review would be duplicative of an existing evidence review. We identified an in-process AHRQ systematic review and a completed Cochrane systematic review that addresses the nomination.

- Care Interventions for People With Dementia (PWD) and Their Caregivers<sup>5</sup>
- Mindfulness-based stress reduction for family carers of people with dementia<sup>6</sup>

We also identified an older systematic review that might be of interest to the nominator:

- Mobile Applications and Internet-based Approaches for Supporting Non-professional Caregivers: A Systematic Review<sup>7</sup>

See Table 2

**Table 2.** Key Questions and Results for Duplication

Key Question	Duplication (3/2016-3/2019)
KQ	Total number of identified systematic reviews: 2 <ul style="list-style-type: none"> <li>• AHRQ EPC: 1<sup>5</sup></li> <li>• Cochrane: 1<sup>6</sup></li> </ul>

*Abbreviations:* AHRQ=Agency for Healthcare Research and Quality; KQ=Key Question

## Summary of Findings

- Appropriateness and importance: The topic is both appropriate and important.
- Duplication: A new review would be duplicative of an existing product. We found one complete and one in-process systematic review.

## References

1. Alzheimer's Disease. Atlanta, GA: Centers for Disease Control and Prevention. <https://www.cdc.gov/aging/aginginfo/alzheimers.htm#Curriculum>. Accessed on 18 March 2019.

2. Caregiving for Person with Alzheimer's Disease or a related Dementia. Atlanta, GA: Centers for Disease Control and Prevention. <https://www.cdc.gov/aging/caregiving/alzheimer.htm>. Accessed on 18 March 2019.
3. Caregivers of Persons with Alzheimer's Disease or Dementia in 8 States and the District of Columbia: Data from the 2009 & 2010 Behavioral Risk Factor Surveillance System. Chicago, IL: Alzheimer's Association. <https://www.alz.org/media/Documents/combined-caregiving-2009-2010-brfss.pdf>.
4. Kolanowski A, Fortinsky RH, Calkins M, et al. Advancing Research on Care Needs and Supportive Approaches for Persons With Dementia: Recommendations and Rationale. J Am Med Dir Assoc. 2018 Dec;19(12):1047-53. doi: 10.1016/j.jamda.2018.07.005. PMID: 30145171. <https://www.ncbi.nlm.nih.gov/pubmed/30145171>
5. Care Interventions for People With Dementia (PWD) and Their Caregivers: Draft Key Questions. Rockville, MD: Agency for Healthcare Research and Quality. <https://effectivehealthcare.ahrq.gov/topics/care-interventions-pwd/key-questions>. Accessed on 18 March 2019.
6. Liu Z, Sun YY, Zhong BL. Mindfulness-based stress reduction for family carers of people with dementia. Cochrane Database Syst Rev. 2018 Aug 14;8:CD012791. doi: 10.1002/14651858.CD012791.pub2. PMID: 30106471. <https://www.ncbi.nlm.nih.gov/pubmed/30106471>
7. Dyer EA, Kansagara D, McInnes DK, et al. Mobile Applications and Internet-based Approaches for Supporting Non-professional Caregivers: A Systematic Review. Washington (DC); 2012.
8. First Meeting of the Committee on Care Interventions for Individuals with Dementia and Their Caregivers. Washington DC: National Academy of Sciences. <https://www8.nationalacademies.org/pa/projectview.aspx?key=51304#MeetingId10326>. Accessed on 18 March 2019 .

## Appendix A. Selection Criteria Assessment

Selection Criteria	Assessment
1. Appropriateness	
1a. Does the nomination represent a health care drug, intervention, device, technology, or health care system/setting available (or soon to be available) in the U.S.?	Yes
1b. Is the nomination a request for a systematic review?	No
1c. Is the focus on effectiveness or comparative effectiveness?	Yes
1d. Is the nomination focus supported by a logic model or biologic plausibility? Is it consistent or coherent with what is known about the topic?	Yes
2. Importance	
2a. Represents a significant disease burden; large proportion of the population	Yes. In 2014, as many as 5 million Americans were living with Alzheimer's disease. This number is projected to nearly triple to 14 million people by 2060. <sup>1</sup>
2b. Is of high public interest; affects health care decision making, outcomes, or costs for a large proportion of the US population or for a vulnerable population	Yes In 2010, the costs of treating Alzheimer's disease were projected to fall between \$159 and \$215 billion. <sup>2</sup>
2c. Represents important uncertainty for decision makers	Yes
2d. Incorporates issues around both clinical benefits and potential clinical harms	Yes
2e. Represents high costs due to common use, high unit costs, or high associated costs to consumers, to patients, to health care systems, or to payers	Yes
3. Desirability of a New Evidence Review/Duplication	
3. Would not be redundant (i.e., the proposed topic is not already covered by available or soon-to-be available high-quality systematic review by AHRQ or others)	<p>We identified two systematic reviews that address the scope of the nomination:</p> <ul style="list-style-type: none"> <li>• Care Interventions for People With Dementia (PWD) and Their Caregivers.<sup>5</sup> This AHRQ systematic review is in-process. We confirmed with the AHRQ project officer that the type of interventions from the nomination would be included in the review. This systematic review will inform a National Institute on Aging and National Academy of Science report. The goal is to inform decision making about which care/nonpharmacologic interventions are ready for dissemination and implementation on a broad scale.<sup>8</sup></li> <li>• Mindfulness-based stress reduction for family carers of people with dementia. This Cochrane systematic review is complete.<sup>6</sup></li> </ul> <p>We also identified an older systematic review that might be useful to the nominator:</p> <ul style="list-style-type: none"> <li>• Mobile Applications and Internet-based Approaches for Supporting Non-</li> </ul>

	professional Caregivers: A Systematic Review. This was developed under the VA Evidence-based Synthesis Program. <sup>7</sup>
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*Abbreviations:* AHRQ=Agency for Healthcare Research and Quality; VA=Veterans Administration

## Appendix B. Search for Evidence Reviews (Duplication)

Listed below are the sources searched, hierarchically

<b>Primary Search</b>
AHRQ: Evidence reports and technology assessments <a href="https://effectivehealthcare.ahrq.gov/">https://effectivehealthcare.ahrq.gov/</a> ; <a href="https://www.ahrq.gov/research/findings/ta/index.html">https://www.ahrq.gov/research/findings/ta/index.html</a> ; <a href="https://www.ahrq.gov/research/findings/evidence-based-reports/search.html">https://www.ahrq.gov/research/findings/evidence-based-reports/search.html</a>
VA Products: PBM, and HSR&D (ESP) publications, and VA/DoD EBCPG Program <a href="https://www.hsrd.research.va.gov/publications/esp/">https://www.hsrd.research.va.gov/publications/esp/</a>
Cochrane Systematic Reviews <a href="http://www.cochranelibrary.com/">http://www.cochranelibrary.com/</a>