



# Topic Brief: Geriatric Consultations and Medical Care for Older Adults

**Date:** 12/26/2019

**Nomination Number:** 0874 / 0875

**Purpose:** This document summarizes the information addressing two nominations submitted on October 9, 2019 through the Effective Health Care Website. This information was used to inform the Evidence-based Practice Center (EPC) Program's decisions about whether to produce an evidence report on the topic, and if so, what type of evidence report would be most suitable.

**Issue:** The number of Americans aged 65 and older is expected to increase from 46 million in 2014 to 64 million, an estimated one fifth of the population, by 2030<sup>1</sup>. Effectively addressing the health needs of the elderly is a national priority and requires a combination of integrated models of care delivery and healthcare providers with geriatric expertise<sup>2</sup>. While geriatrician provided care is recognized as valuable, particularly among elderly patients with multiple comorbidities and complex care needs, there is no consensus as to which patient subpopulations benefit the most from geriatric care and which delivery models of geriatric services are most effective. A clear consensus on which patients are most likely to benefit is needed to guide allocation of geriatrician time and resources.

**Program Decision:** The EPC Program will not develop a new evidence review because we identified existing systematic reviews which address the effectiveness of geriatric care on patient outcomes and resource utilization. There was insufficient evidence to develop a new systematic review about the specific characteristics (either of the patient or the service model) which are associated with improved outcomes and reduced costs.

## Key Findings

- We identified twelve completed and in-process systematic reviews that assessed the effectiveness of geriatric care on patient care outcomes, healthcare utilization and costs, within inpatient and outpatient settings.
- We did not find any primary studies to support a new evidence review assessing which patient subpopulations or characteristics of geriatric care models are associated with improved patient outcomes and lower healthcare utilization and costs.
- We identified additional analyses, including an evidence synthesis research brief<sup>3</sup> and a National Academy of Medicine (NAM) evidence report<sup>4</sup> which may provide helpful information about care delivery models focused on patients with complex care needs.

## Background

In the U.S. in 2014, health care spending for persons 65 years and older was \$19,098 per person, which was five times higher than for working age persons<sup>5</sup>. Forty-six million Americans fell into the geriatric age range in 2014 and this number is expected to increase even further up to 64 million in 2030.<sup>1</sup> The area of geriatric medicine integrates many aspects of medicine, including internal medicine, family medicine, neurology, psychiatry and rehabilitation, to provide care to healthy and critically ill older adults in a variety of settings. Geriatricians are physicians with additional training and certification in the care of multiple and often complex health conditions common among the elderly, including cognitive impairment, depression, frailty, falls, chronic pain, end-of-life care and the frequent cooccurrence of these problems<sup>6</sup>. There is some agreement among nationwide directors of geriatric academic programs that geriatricians will be of most value when caring for the most complex and vulnerable older patients in primary care and inpatient care settings and for some subgroups including (1) aged 85 and older, (2) frailty, (3) geriatric syndromes, (4) elderly with severe functional impairment and (5) with complex biomedical and psychomedical conditions<sup>7</sup>.

The past 30 years witnessed the development of numerous successful models of comprehensive care for elder adults shown to improve the quality, efficiency and health-related outcomes among the elderly with multiple chronic conditions<sup>8</sup>. The implementation of these care models brought into the forefront the issue of effective management of multiple chronic conditions and led to the creation of geriatric care related Centers for Medicare and Medicaid (CMS) quality measures, such as readmission rates among patients with multiple chronic conditions.

Despite these accomplishments, geriatricians continue to struggle to answer the question of which specific subgroups of patients may benefit most from geriatrician-provided care and which care models maximize the impact of geriatricians' services and improve patient care and system outcomes.

## Nomination Summary

The goal of this joint nomination was to seek an evaluation of the available evidence regarding what specific subpopulations of geriatric patients and/or characteristics of geriatrician provided care delivery models are associated with improved patient outcomes and decreased care costs within inpatient and outpatient settings. The research questions to address this nomination were modeled after those utilized in the 2012 VA Evidence Synthesis Program (ESP) Evidence Brief: *Effects of Geriatricians on Outcomes of Inpatient and Outpatient Care*<sup>2</sup>.

## Scope

1. Do inpatient geriatric consultative services improve patient care outcomes compared with usual inpatient care?
  - a. If increased effectiveness is demonstrated, what specific characteristics (either of the patient or the service model) are associated with improved patient outcomes?
2. Do inpatient geriatric consultative services reduce healthcare utilization and cost?
  - a. If increased effectiveness is demonstrated, what specific characteristics (either of the patient or the service model) are associated with lower healthcare utilization and cost outcomes?

3. Do outpatient geriatric care models improve patient care outcomes compared with usual outpatient care?
  - a. If effectiveness is demonstrated, what specific characteristics (either of the patient or the care model) are associated with improved patient outcomes?
  
4. Do outpatient geriatric services reduce healthcare utilization and cost?
  - a. If effectiveness is demonstrated, what specific characteristics (either of the patient or the care model) are associated with lower healthcare utilization and cost outcomes?

**Table 1.** Questions and PICOS (population, intervention, comparator, outcome and setting).

<b>Question</b>	1. What is the effectiveness of inpatient services on patient care outcomes?	2. What is the effectiveness of inpatient services on healthcare utilization/costs?
<b>Population*</b>	Medical and surgical inpatients, aged 65 years and older	Medical and surgical inpatients, aged 65 years and older
<b>Interventions</b>	A geriatrician serving in the role of consultant or co-manager either individually or as part of a care team, including but not limited to the following: <ul style="list-style-type: none"> <li>• Comprehensive Geriatric Assessment (CGA)</li> <li>• Inpatient geriatric units, (e.g., ACE, GEMU)</li> <li>• Geriatric multidisciplinary teams</li> <li>• Geriatric consultations</li> </ul>	A geriatrician serving in the role of consultant or co-manager either individually or as part of a care team, including but not limited to the following: <ul style="list-style-type: none"> <li>• Comprehensive Geriatric Assessment (CGA)</li> <li>• Inpatient geriatric units, (e.g., ACE, GEMU)</li> <li>• Geriatric multidisciplinary teams</li> </ul> Geriatric consultations
<b>Comparators</b>	Primary care (without the use of a geriatrician)	Primary care (without the use of a geriatrician)
<b>Outcomes</b>	Clinical outcomes: <ul style="list-style-type: none"> <li>• Functional status</li> <li>• Falls</li> <li>• Advance care planning</li> <li>• Medication management (including the number and appropriateness of meds and/or adverse medication events)</li> </ul> Patient centered outcomes: <ul style="list-style-type: none"> <li>• Patient satisfaction</li> <li>• Patient QOL</li> </ul>	Healthcare utilization and cost outcomes: <ul style="list-style-type: none"> <li>• Hospital readmission</li> <li>• Length of hospital stay</li> <li>• Discharge to nursing home</li> <li>• Days spent at home</li> <li>• Emergency department visits</li> <li>• Outpatient visits</li> </ul>
<b>Setting</b>	Inpatient medical and surgical wards	Inpatient medical and surgical wards

<b>Question</b>	3. What is the effectiveness of outpatient services on patient care outcomes?	4. What is the effectiveness of outpatient services on healthcare utilization/costs?
<b>Population*</b>	Adults, aged 65 years and older	Adults, aged 65 years and older
<b>Interventions</b>	Geriatricians serving in the role of consultant or as part of a core management team, or as a primary care physician, including: <ul style="list-style-type: none"> <li>• Multidisciplinary teams including geriatricians</li> <li>• Geriatricians as outpatient consultants</li> <li>• Geriatricians as primary care providers</li> </ul>	Geriatricians serving in the role of consultant or as part of a core management team, or as a primary care physician, including: <ul style="list-style-type: none"> <li>• Multidisciplinary teams including geriatricians</li> <li>• Geriatricians as outpatient consultants</li> </ul> Geriatricians as primary care providers
<b>Comparators</b>	Primary care (without the care of a geriatrician)	Primary care (without the care of a geriatrician)
<b>Outcomes</b>	Clinical outcomes: <ul style="list-style-type: none"> <li>• Functional status</li> <li>• Falls</li> <li>• Advance care planning</li> <li>• Medication management (including the number and appropriateness of meds and/or adverse medication events)</li> </ul> Patient centered outcomes: <ul style="list-style-type: none"> <li>• Patient satisfaction</li> <li>• Patient QOL</li> </ul>	Healthcare utilization and cost outcomes: <ul style="list-style-type: none"> <li>• Hospital readmission</li> <li>• Length of hospital stay</li> <li>• Discharge to nursing home</li> <li>• Days spent at home</li> <li>• Emergency department visits</li> <li>• Outpatient visits</li> </ul>
<b>Setting</b>	Outpatient	Outpatient

\* The Population cannot be predefined. The overall aim of the report is to define the target population(s). Abbreviations: ACE = Acute Care for the Elderly; GEMU = Geriatric Evaluation and Management Units, QOL = Quality-of-Life, Advance Care Planning – involves face-to-face discussions of advance directives.

## Assessment Methods

See Appendix A.

## Summary of Literature Findings

Completed and in-process systematic reviews assessed the effectiveness of geriatric services on patient care outcomes and resource utilization within inpatient and outpatient settings that, taken together, address Questions 1-4. These reviews reported evidence that assessed whether particular patient subpopulations or specific features of geriatric care models and services (Questions 1a-4a) are associated with superior patient outcomes. Specifically, of the four systematic reviews presented for Questions 1a-4a, two were protocols for systematic reviews that stated plans to conduct sub-analyses on patient characteristics if the data were available, and the two completed systematic reviews included sub-analyses that covered a limited range of patient characteristics due to lack of sub-group data in the included studies (e.g., age, frailty, general complexity of health conditions). A subsequent search of primary studies did not reveal any studies that addressed Questions 1a-4a. Overall, there is limited evidence assessing patient characteristics in existing reviews and there are insufficient primary studies to warrant a new evidence review assessing which patient subpopulations and geriatric care model features are associated with improved outcomes.

**Table 2.** Literature identified for each Question

Question	Systematic Reviews (1/2017-1/2020)
Questions 1-4	Total included studies: 12
<p>Question 1: Do inpatient geriatric consultative services improve patient care outcomes?</p> <p>1a. What specific characteristics (either of the patient or the service model) associated with improved patient outcomes?</p>	<p>Q1: Total: 7</p> <ul style="list-style-type: none"> <li>• 3 completed               <ul style="list-style-type: none"> <li>○ Cochrane: 2<sup>9, 10</sup></li> <li>○ Other: 1<sup>11</sup></li> </ul> </li> <li>• 4 in-process<sup>12-15</sup></li> </ul> <p>Q1a: Total: 3</p> <ul style="list-style-type: none"> <li>• 2 in-process<sup>13, 14</sup></li> <li>• 1 completed<sup>10</sup></li> </ul>
<p>Question 2: Do inpatient geriatric consultative services reduce healthcare utilization and costs?</p> <p>2a. Specific characteristics (either of the patient or the service model) associated with lower healthcare utilization and costs</p>	<p>Q2: Total: 9 (7 also in Q1)</p> <ul style="list-style-type: none"> <li>• 5 completed               <ul style="list-style-type: none"> <li>○ Cochrane: 2<sup>9, 10</sup></li> <li>○ Other: 3<sup>11, 16, 17</sup></li> </ul> </li> <li>• 4 in-process<sup>12-15</sup></li> </ul> <p>Q2a: Total: 3</p> <ul style="list-style-type: none"> <li>• 2 in-process<sup>13, 14</sup></li> <li>• 1 completed<sup>10</sup></li> </ul>
<p>Question 3: Do outpatient geriatric care models improve patient care outcomes?</p> <p>3a. Specific characteristics (either of the patient or the service model) associated with improved patient outcomes</p>	<p>Q3: Total: 5 (1 also in Q1,2)</p> <ul style="list-style-type: none"> <li>• 2 completed<sup>18, 19</sup></li> <li>• 3 in-process<sup>13, 15, 20</sup></li> </ul> <p>Q3a: Total:2</p> <ul style="list-style-type: none"> <li>• 1 in-process<sup>13</sup></li> <li>• 1 completed<sup>19</sup></li> </ul>
<p>Question 4: Do outpatient geriatric services reduce healthcare utilization and costs?</p> <p>4a. Specific characteristics (either of the patient or the service model) associated with lower healthcare utilization and costs</p>	<p>Q4: Total: 5 (2 in Q1,2,3; 3 also in Q3)</p> <ul style="list-style-type: none"> <li>• 2<sup>18, 19</sup> completed</li> <li>• 3<sup>13, 15, 20</sup> in-process</li> </ul> <p>Q4a: Total: 2</p> <ul style="list-style-type: none"> <li>• 1 in-process<sup>13</sup></li> <li>• 1 completed<sup>19</sup></li> </ul>

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

### Summary of Selection Criteria Assessment

The assessment yielded duplicative materials for the questions of the effectiveness of geriatric models in inpatient and outpatient settings, but the evidence for the influence of patient characteristics was limited in the scope (e.g., limited to age, frailty), and included two protocols for systematic reviews that proposed to analyze patient characteristics if the data allowed. Given the limited evidence of patient characteristics and care models in the existing reviews and the lack of primary studies, a new systematic review is not warranted at this time.

### Related Resources

We identified a number of additional resources which, although they did not meet our inclusion criteria, may be of value to the nominator.

We found one narrative review of randomized controlled trials and systematic reviews that attempted to elucidate the subtypes of geriatric patients that derive the most value from the Comprehensive Geriatric Assessment (CGA). The review concluded that the implementation of the CGA care model within inpatient and in-home settings was associated with improvement in patient related outcomes, such as decreased mortality and disability and improved cognitive functioning. This review also references a number of ongoing studies evaluating the effectiveness of the CGA model among elderly frail patients who may be candidates for elective surgery, seen in emergency departments, admitted to orthogeriatric inpatient units, or have complex care needs related to cancer or cognitive impairment<sup>21</sup>.

There are two in-process evidence reports by the VA Evidence Synthesis Program (ESP). One review, entitled *Deprescribing in Older Veterans*<sup>22</sup>, will assess the comparative effectiveness and harms of different deprescribing interventions and what specific elements of deprescribing interventions make some of these interventions more effective than others. The other in-process review, entitled *Models and Tools for Care Coordination Implementation*<sup>23</sup>, whilst not specifically focused on geriatric populations, is relevant because it evaluates different care coordination models focused on reducing hospital admissions or emergency department visits. This review will also assess the different care settings where these models have been implemented.

A 2015 evidence brief entitled *Models of Care for High-Need, High-Cost Patients: An Evidence Synthesis Research Brief*<sup>3</sup> provides an evidence summary of care models focused on patients with complex medical needs. Whilst these care models are not focused exclusively on geriatric populations, given that many elderly patients have complex care needs, these models may be applicable to geriatric populations.

The recently developed Age Friendly Health Systems framework aims to develop a unified methodology to help health systems across the U.S. adapt person centered, coordinated and location appropriate care for the elderly<sup>24</sup>. The main goals of the Age Range of Health Systems initiative are to build upon the known successful characteristics of the existing geriatric care models while implementing a set of measurable, geriatric specific care goals called “4Ms” and evidence-based care interventions focused around each goal. The 4M Model goals include “What Matters”, that defines the health outcome goals and care preferences of individual patients, “Medications” focused around safe medication practices, “Mobility”, aimed at individualized mobility and falls prevention plans and “Mentation”, which includes interventions to ensure adequate nutrition, hydration, sleep and management of cognitive impairment and depression. The intention behind the 4M Model is to not only improve geriatric care by centering it on meaningful for patient care outcomes but to also continue to grow the evidence-base for geriatric care through monitoring and tracking of the 4M focused outcomes.

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## Appendix A: Methods

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

### Appropriateness and Importance

We assessed the nomination for appropriateness and importance.

### Desirability of New Review/Absence of Duplication

We searched for high-quality, completed or in-process evidence reviews published in the last three years [January 3, 2017 to January 3, 2020] on the questions of the nomination from these sources:

- AHRQ: Evidence reports and technology assessments
  - AHRQ Evidence Reports <https://www.ahrq.gov/research/findings/evidence-based-reports/index.html>
  - EHC Program <https://effectivehealthcare.ahrq.gov/>
  - US Preventive Services Task Force <https://www.uspreventiveservicestaskforce.org/>
  - AHRQ Technology Assessment Program <https://www.ahrq.gov/research/findings/ta/index.html>
- US Department of Veterans Affairs Products publications
  - Evidence Synthesis Program <https://www.hsrd.research.va.gov/publications/esp/>
  - VA/Department of Defense Evidence-Based Clinical Practice Guideline Program <https://www.healthquality.va.gov/>
- Cochrane Systematic Reviews <https://www.cochranelibrary.com/>
- University of York Centre for Reviews and Dissemination database <https://www.crd.york.ac.uk/CRDWeb/>
- PROSPERO Database (international prospective register of systematic reviews and protocols) <http://www.crd.york.ac.uk/prospéro/>
- PubMed <https://www.ncbi.nlm.nih.gov/pubmed/>

### Impact of a New Evidence Review

The impact of a new evidence review was qualitatively assessed by analyzing the current standard of care, the existence of potential knowledge gaps, and practice variation. We considered whether it was possible for this review to influence the current state of practice through various dissemination pathways (practice recommendation, clinical guidelines, etc.).

### Feasibility of New Evidence Review

We conducted a limited literature search in PubMed for the last five years January 3, 2015 - January 3, 2020 on parts of the nomination scope not addressed by earlier identified systematic reviews. Because a large number of articles were identified, we reviewed a random sample of 200 titles and abstracts for each question for inclusion. We classified identified studies by question and study design, to assess the size and scope of a potential evidence review.

Search strategy

**Ovid MEDLINE(R) ALL**

Date searched: January 3, 2020

1 Geriatric Assessment/ or Geriatric Medicine/ or Geriatricians/ or Geriatrics/ (55242)

2 (geriatrician\* or ((frailty or geriatr\*) adj5 (assess\* or consult\* or evaluat\* or stratif\*)) or comprehensive-geriatric).ti,ab,kf. (11112)  
3 or/1-2 (61182)  
4 exp Primary Health Care/ or Patient Care Team/ or (primary-care or primary-healthcare or "primary health care" or general-practice or general-practitioner\* or GP or GPs or friendly or team\* or interdisciplinary or inter-disciplinary or multidisciplinary or multi-disciplinary or interprofessional or inter-professional).ti,ab,kf. (622449)  
5 and/3-4 (7215)  
6 limit 5 to english language (6187)  
7 ("randomized controlled trial" or "controlled clinical trial").pt. (586631)  
8 trial.ti. or ((control adj2 group\*) or controlled or random\*).ab. (1868644)  
9 or/7-8 (2035795)  
10 9 not (exp Animals/ not Humans/) (1764368)  
11 and/6,10 (885)  
12 limit 11 to yr="2014 -Current" (298)  
13 (meta-analysis or systematic review).pt. (179622)  
14 (meta-analy\* or metaanaly\* or ((evidence or systematic) adj3 (review or synthesis))).ti,ab,kf. (283728)  
15 or/13-14 (305388)  
16 and/6,15 (189)  
17 limit 16 to yr="2016 -Current" (68)  
18 limit 6 to yr="2014-Current" (2125)  
19 18 not (12 or 17) (1776)  
20 exp Specialties, Surgical/ or su.fs. (2100227)  
21 3 and 20 (2251)  
22 limit 21 to english language (1643)  
23 limit 22 to yr="2016 -Current" (500)  
24 15 and 23 (28)  
**25 24 not 17 (23)**

### **EBM Reviews (Ovid) - Cochrane Central Register of Controlled Trials**

Date searched: January 3, 2020

1 (geriatrician\* or ((frailty or geriatr\*) adj5 (assess\* or consult\* or evaluat\* or stratif\*)) or comprehensive-geriatric).ti,ab. (1797)  
2 (primary-care or primary-healthcare or "primary health care" or general-practice or general-practitioner\* or GP or GPs or friendly or team\* or interdisciplinary or inter-disciplinary or multidisciplinary or multi-disciplinary or interprofessional or inter-professional).ti,ab. (49226)  
3 and/1-2 (524)  
4 limit 3 to english language (364)  
5 limit 4 to yr="2014 -Current" (168)

### **ClinicalTrials.gov**

Date searched: January 3, 2020

geriatrician OR ((frailty OR geriatric) AND (assessment OR consultation OR evaluation OR stratification)) OR "comprehensive geriatric" | Recruiting, Not yet recruiting, Active, not recruiting, Enrolling by invitation Studies | primary-care OR primary-healthcare OR EXPAND[Concept] "primary health care" OR general-practice OR general-practitioner OR GP OR friendly OR team OR interdisciplinary OR multidisciplinary OR interprofessional | Older Adult | First posted from 01/01/2014 to 12/18/2019 (249)

Search URL:

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## Appendix B. Selection Criteria Assessment

Selection Criteria	Assessment
<b>1. Appropriateness</b>	
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 an evidence report?	Yes.
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.
<b>2. Importance</b>	
2a. Represents a significant disease burden; large proportion of the population	Yes. 46 million Americans were in the geriatric age range in 2014 and this number is expected to increase to 64 million in 2030 <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. 46 million Americans were in the geriatric age range in 2014 and this number is expected to increase to 64 million in 2030 <sup>1</sup> .
2c. Incorporates issues around both clinical benefits and potential clinical harms	Yes.
2d. 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. In the U.S. in 2014, annual health care spending for people aged 65 years and older was \$19,098 per person, which was five times higher than for working age people <sup>5</sup> .
<b>3. Desirability of a New Evidence Review/Absence of Duplication</b>	
3. A recent high-quality systematic review or other evidence review is not available on this topic	<p>Yes. We identified twelve completed and in-process systematic reviews that are duplicative of the main Questions 1-4.</p> <p>For Questions 1a-4a, we identified two completed and two in-process systematic reviews that address a narrow range of patient characteristics (e.g., frailty and age) and two protocols for systematic reviews that included proposed sub-analyses to assess patient characteristics if the data allows. The patient characteristics included in analyses within the systematic reviews were restricted by limited primary data and a narrow range of patient characteristics (i.e., age, frailty, and general complexity of medical status) to be of use for informing decisions as to which patients are the best candidates for specialty geriatric care.</p>
<b>4. Impact of a New Evidence Review</b>	
4a. Is the standard of care unclear (guidelines not available or guidelines inconsistent, indicating an information gap that may be addressed by a new evidence review)?	Yes. The standard of care for geriatric patients is determined by applicable guidelines. However, the field of geriatrics is continuing to evolve and requires evidence to inform more effective care approaches and strategies. There is uncertainty about which patients benefit most from geriatrician care.
4b. Is there practice variation (guideline inconsistent with current practice, indicating a potential implementation gap and not best addressed by a new evidence review)?	Yes. Several different geriatric care delivery models currently exist and there is a lot of heterogeneity between these programs.

Selection Criteria	Assessment
5. Primary Research	
5. Effectively utilizes existing research and knowledge by considering: <ul style="list-style-type: none"> <li>- Adequacy (type and volume) of research for conducting a systematic review</li> <li>- Newly available evidence (particularly for updates or new technologies)</li> </ul>	We reviewed primary studies for patient characteristics/ features of effective geriatric care models (Questions 1a-4a) and did not identify any studies addressing these questions.

*Abbreviations:* AHRQ=Agency for Healthcare Research and Quality