Topic Brief: Physical Therapy Evaluations for Older Adults

Date: 4/13/2023
Nomination Number: 1023

Purpose: This document summarizes the information addressing a nomination submitted on October 27, 2022 through the Effective Health Care Website. This information was used to inform the Evidence-based Practice Center (EPC) Program 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 nominator hypothesizes that annual prophylactic physical therapy evaluations for older adults may lead to reductions in hospitalizations, falls, chronic disease complications, and substance abuse, which could improve quality of life and reduce costs of care. They are interested in evidence on the effectiveness of annual evaluations to ultimately influence coverage by funding sources.

Findings: The EPC Program will not develop a new systematic review because we did not find enough primary studies addressing the concerns of this nomination.

Background

About 36 million falls occur in older adults each year in the U.S., resulting in more than 32,000 deaths. About 3 million older adults are treated in emergency departments for fall injuries annually.[1] Falls can lead to serious injuries, decreased ability to function, reduced quality of life, increased fear of falling, and increased health care use.[2] In 2015, the medical costs attributable to both fatal and nonfatal falls was approximately $50.0 billion. For nonfatal falls, Medicare paid approximately $28.9 billion, Medicaid paid approximately $8.7 billion and private and other payers spent approximately $12.0 billion. Overall medical spending for fatal falls was estimated to be $754 million.[3]

Some steps to prevent falls include communicating with healthcare providers about fall risks and prevention, exercising to improve balance and strength, having eyes and feet checked, and making the home environment safer by removing trip hazards, for example.[1] Physical therapy is another intervention used to prevent falls.[4] Physical therapy, also known as physiotherapy, is used to relieve pain, improve movement/mobility, and strengthen muscles. Treatment may include certain exercises, massage, and treatments based on physical stimuli (e.g. heat, cold, electrical currents or ultrasound).[5] The nominator hypothesizes that annual prophylactic physical therapy evaluation in elderly adults may help prevent falls, thus improving quality of life and reducing medical expenses.

Scope

What is the effectiveness and harms of annual physical therapy evaluation in older adults?

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

Questions	Prophylactic annual physical therapy evaluation
Population	Community-dwelling adults ≥ 65 years old
Interventions	Physical therapy annual evaluation by a physical therapist
Comparators	Treatment as usual, pro re nata (prn) evaluation, none
Outcomes	hospitalizations related to musculoskeletal issues, falls, frailty, functionality performance on tests of agility and balance (e.g., Get Up and Go Test), chronic disease complications, substance abuse; harms-injury or other harms of treatment, costs and other resources
Setting	outpatient

Assessment Methods
See Appendix A.

Summary of Literature Findings
We did not find any systematic reviews or primary studies addressing the research question.

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

Summary of Selection Criteria Assessment
The nominator hypothesizes that annual prophylactic physical therapy evaluations for older adults may lead to improved quality of life and reduced healthcare costs. We did not find any studies on the effectiveness and harms of annual physical therapy evaluation in older adults.

Please see Appendix B for detailed assessments of individual EPC Program selection criteria.

Related Resources
We found resources related to the research questions that may be of interest. Specifically, we found a systematic review of clinical practice guidelines for falls prevention and management in older adults across all settings. The guidelines included were older, with the most recent published in 2018. As a whole, guidelines strongly recommended performing risk stratification, assessment tests for gait and balance, fracture and osteoporosis management, multifactorial interventions, medication review, exercise promotion, environment modification, vision and footwear correction, referral to physiotherapy, and cardiovascular interventions.[6]

Additionally, we identified a program created by the Centers for Disease Control (CDC), the Stopping Elderly Accidents, Deaths, and Injuries (**STEADI**) initiative, which helps physical therapists, primary care providers, geriatricians, and other healthcare providers use fall prevention in routine care for older adults. STEADI provides screening tools, educational resources, and online trainings for healthcare providers. STEADI was developed for use by all members of the outpatient care team to screen older adults for fall risks, assess modifiable risk factors, and recommend effective fall prevention approaches.[4]

References
1. Keep on your feet- preventing older adult falls. Centers for Disease Control and Prevention. doi: https://www.cdc.gov/injury/features/older-adult-falls/index.html.

2. Falls. Agency for Healthcare Research and Quality. doi: https://www.ahrq.gov/topics/falls.html.
3. Florence CS, Bergen G, Atherly A, et al. Medical Costs of Fatal and Nonfatal Falls in Older Adults. J Am Geriatr Soc. 2018 Apr;66(4):693-8. doi: https://doi.org/10.1111/jgs.15304. PMID: 29512120.
4. STEADI helps physical therapists incorporate older adultfall prevention in routine care. Centers for Disease Control and Prevention. doi: https://www.cdc.gov/steadi/stories/routine.html.
5. [Internet]. Io. Physical Therapy. Institute for Quality and Efficiency in Health Care (IQWiG). 2020. doi: https://www.ncbi.nlm.nih.gov/books/NBK561514/.
6. Montero-Odasso MM, Kamkar N, Pieruccini-Faria F, et al. Evaluation of Clinical Practice Guidelines on Fall Prevention and Management for Older Adults: A Systematic Review. JAMA Netw Open. 2021 Dec 1;4(12):e2138911. doi: https://doi.org/10.1001/jamanetworkopen.2021.38911. PMID: 34910151.
7. Lieberz D, Borgeson H, Dobson S, et al. A Physical Therapy Mobility Checkup for Older Adults: Feasibility and Participant Preferences From a Discrete Choice Experiment. J Patient Cent Res Rev. 2022 Winter;9(1):24-34. doi: https://doi.org/10.17294/2330-0698.1874. PMID: 35111880.

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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 March 6, 2020 - March 6, 2023 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/
- PROSPERO Database (international prospective register of systematic reviews and protocols) http://www.crd.york.ac.uk/prospero/
- PubMed https://www.ncbi.nlm.nih.gov/pubmed/
- Joanna Briggs Institute http://joannabriggs.org/
- Epistemonikos https://www.epistemonikos.org/

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 March 6, 2018 – March 6, 2023. 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. We then calculated the projected total number of included studies based on the proportion of studies included from the random sample.

Search strategy

Ovid MEDLINE ALL 1946 to March 03, 2023

Date searched: March 6, 2023

1 exp Physical Therapy Modalities/ or Physical Therapists/ (178229)

2 (PT or "physical therap*" or physiotherap* or "physio-therap*").ti,ab,kf. (127115)
3 or/1-2 (277616)
4 Mass Screening/ or Physical Examination/ (156889)
5 (assess* or battery or evaluat* or exam$1 or examination$1 or inventor$3 or measur* or perform* or prescreen* or questionnaire$1 or scale$1 or screen* or test* or tool$1).ti,ab,kf. (14227437)
6 or/4-5 (14257078)
7 "Appointments and Schedules"/ or House Calls/ or Office Visits/ (9787)
8 ((annual$1 or (("12" or twelve) adj month*) or year$2) adj10 (appointment$1 or checkup$1 or check-up$1 or screen$3 or visit$1)).ti,ab,kf. (81671)
9 or/7-8 (90968)
10 Aged/ or "Aged, 80 and over"/ or Centenarians/ or Frail Elderly/ or Geriatric Assessment/ or Geriatrics/ or Health Services for the Aged/ or Nonagenarians/ or Octogenarians/ (3458454)
11 (aged or ageing or aging or centenarian$1 or elder$2 or frail$2 or geriatric* or Medicare or nonagenarian$1 or octogenarian$1 or old or older or oldest or senior$1).ti,ab,kf. (2682114)
12 (ageing or aging or geriatric* or gerontolog*).jw. (196281)
13 or/10-12 (5364832)
14 and/3,6,9,13 (442)
15 and/3,9,13 (487)
16 or/14-15 (487)
17 16 not ((exp Animals/ not Humans/) or (animal model* or bitch$2 or bovine or canine or capra or cat or cats or cattle or cow$1 or dog$1 or equine or ewe$1 or feline or goat$1 or hamster$1 or horse$1 or invertebrate$1 or macaque$1 or mare$1 or mice or monkey$1 or mouse or murine or nonhuman or non-human or ovine or pig or pigs or porcine or primate$1 or rabbit$1 or rat$1 or rattus or rhesus or rodent* or sheep or simian or sow$1 or vertebrate$1 or zebrafish or adolescen* or child or children or school* or teen* or young or youth*).ti. or (comment or editorial or letter or news).pt.) (447)
18 limit 17 to english language (423)
19 limit 18 to yr="2020 -Current" (94)
20 19 and ((meta-analysis or systematic review).pt. or (meta-anal* or metaanal* or ((evidence or review or scoping or systematic or umbrella) adj3 (review or synthesis))).ti.) (6)
21 limit 18 to yr="2018 -Current" (152)
22 21 and ((controlled clinical trial or randomized controlled trial).pt. or (control or controls or controlled or placebo$1 or random* or trial*).ti,ab,kf.) (73)
23 22 not 20 (69)
24 21 not (20 or 23) (77)

CINAHL Complete (EBSCO)
Date searched: March 6, 2023
S1 (MM "Physical Therapy+") OR (MM "Physical Therapists") (117,370)
S2 TI (physical therap* OR physiotherap* OR physio-therap*) OR AB (physical therap* OR physiotherap* OR physio-therap*) (49,538)
S3 (S1 OR S2) (146,014)
S4 (MM "Health Screening") OR (MM "Physical Therapy Assessment") (31,241)
S5 TI (assess* or battery or evaluat* or exam or examination* or inventor* or measur* or perform* or prescreen* or questionnaire* or scale* or screen* or test* or tool*) OR AB (assess* or battery or evaluat* or exam or examination* or inventor* or measur* or perform* or prescreen* or questionnaire* or scale* or screen* or test* or tool*) (2,892,001)
S6 S4 OR S5 (2,895,564)
S7 (MH "Office Visits") OR (MH "Home Visits") (15,413)

S8 TI (((annual* or month* or year*) N10 (appointment* or checkup* or check-up* or screen* or visit*))) OR AB (((annual* or month* or year*) N10 (appointment* or checkup* or check-up* or screen* or visit*))) (44,925)
S9 S7 OR S8 (58,320)
S10 (MH "Geriatric Functional Assessment") OR (MH "Geriatric Assessment") OR (MH "Gerontologic Care") OR (MH "Aged") OR (MH "Aged, 80 and Over") OR (MH "Health Services for Older Persons") OR (MH "Medicare") OR (MH "Gerontologic Care") (988,536)
S11 TI (aged OR ageing OR aging OR centenarian* OR elder* OR frail* OR geriatric* OR Medicare OR nonagenarian* OR octogenarian* OR old OR older OR oldest OR senior*) OR AB (aged OR ageing OR aging OR centenarian* OR elder* OR frail* OR geriatric* OR Medicare OR nonagenarian* OR octogenarian* OR old OR older OR oldest OR senior*) (697,714)
S12 S10 OR S11 (1,378,659)
S13 S3 AND S6 AND S9 AND S12 (383)
S14 S3 AND S9 AND S12 (435)
S15 S13 OR S14 Limiters - Published Date: 20200301-20230331; English Language; Exclude MEDLINE records; Publication Type: Meta Analysis, Systematic Review (2)
S16 S13 OR S14 Limiters - Published Date: 20180301-20230331; English Language; Exclude MEDLINE records; Publication Type: Clinical Trial, Randomized Controlled Trial (31)
S17 S13 OR S14 Limiters - Published Date: 20180301-20230331; English Language; Exclude MEDLINE records (115)

Ovid EBM Reviews - Cochrane Central Register of Controlled Trials February 2023
Date searched: March 6, 2023
1 exp Physical Therapy Modalities/ or Physical Therapists/ (33412)
2 (PT or "physical therap*" or physiotherap* or "physio-therap*").ti,ab. (39901)
3 or/1-2 (68376)
4 Mass Screening/ or Physical Examination/ (5340)
5 (assess* or battery or evaluat* or exam$1 or examination$1 or inventor$3 or measur* or perform* or prescreen* or questionnaire$1 or scale$1 or screen* or test* or tool$1).ti,ab. (1331964)
6 or/4-5 (1332137)
7 "Appointments and Schedules"/ or House Calls/ or Office Visits/ (531)
8 ((annual$1 or (("12" or twelve) adj month*) or year$2) adj5 (appointment$1 or checkup$1 or check-up$1 or screen$3 or visit$1)).ti,ab,kf. (11721)
9 or/7-8 (12215)
10 Aged/ or "Aged, 80 and over"/ or Centenarians/ or Frail Elderly/ or Geriatric Assessment/ or Geriatrics/ or Health Services for the Aged/ or Nonagenarians/ or Octogenarians/ (242255)
11 (aged or ageing or aging or centenarian$1 or elder$2 or frail$2 or geriatric* or Medicare or nonagenarian$1 or octogenarian$1 or old or older or oldest or senior$1).ti,ab. (283732)
12 or/10-11 (480541)
13 and/3,6,9,12 (513)
14 and/3,9,12 (518)
15 or/13-14 (518)
16 limit 15 to yr="2018 -Current" (199)
17 16 not "Trial registry record".pt. (32)

Appendix B. 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 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.
2. Importance	
2a. Represents a significant disease burden; large proportion of the population	Yes. About 36 million falls by older adults occur each year in the U.S., resulting in more than 32,000 deaths. About 3 million older adults are treated in emergency departments for fall injuries each year in the U.S.[1]
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. About 36 million falls by older adults occur each year in the U.S., resulting in more than 32,000 deaths. About 3 million older adults are treated in emergency departments for fall injuries each year in the U.S. [1] Falls can lead to serious injuries, decreased ability to function, reduced quality of life, increased fear of falling, and increased health care use.[2] In the U.S. in 2015, the estimated medical costs attributable to both fatal and nonfatal falls was approximately $50.0 billion. For nonfatal falls, Medicare paid approximately $28.9 billion, Medicaid paid approximately $8.7 billion and private and other payers paid approximately $12.0 billion. Overall medical spending for fatal falls was estimated to be $754 million.[3]
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 2015, the estimated medical costs attributable to both fatal and nonfatal falls was approximately $50.0 billion. For nonfatal falls, Medicare paid approximately $28.9 billion, Medicaid paid approximately $8.7 billion and private and other payers paid approximately $12.0 billion. Overall medical spending for fatal falls was estimated to be $754 million.[3]
3. Desirability of a New Evidence Review/Absence of Duplication	

3. A recent high-quality systematic review or other evidence review is not available on this topic	**Yes. We did not find a systematic review addressing research question.**
4. Impact of a New Evidence Review	
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. There are no recent guidelines addressing the research question.
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. Physical performance measures to identify preclinical mobility disability are rarely used in medical care.[7]
5. Primary Research	
5. Effectively utilizes existing research and knowledge by considering: - Adequacy (type and volume) of research for conducting a systematic review - Newly available evidence (particularly for updates or new technologies)	We did not find any primary studies addressing the research question.

Abbreviations: AHRQ=Agency for Healthcare Research and Quality;