



Effective Health Care The Use of Physician or Medical Orders for life sustaining treatment (POLST or MOLST)

Results of Topic Selection Process & Next Steps

The nominator is a Nurse Practitioner who is the Director of Palliative Medicine at Shore Medical Center, a small community hospital in New Jersey. She is interested in using a new systematic review to characterize how facilities are incorporating the information documented on these forms into the treatment of an individual when the person presents in the ER or facility with an acute episode of illness. She finds that at many facilities the clinicians are not looking for, or incorporating the directives into the plan of care.

Because there is limited original research addressing the key questions, a new review is not feasible at this time. The Effective Health Care (EHC) Program will undertake no further activity on this topic.

Topic Brief

Topic Name: The Use of Physician or Medical Orders for life sustaining treatment (POLST or MOLST) in end-of-life planning (#0763)

Nomination Date: 01/31/2018

Topic Brief Date: 05/11/2018

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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.

Summary of Key Findings:

- **Appropriateness and importance:** The topic is both appropriate and important.
- **Duplication:** A new review on this topic would not be duplicative of an existing product. No systematic reviews were identified.
- **Impact:** A new systematic review has high impact potential to inform implementation and potentially reduce variation between states and healthcare systems in terms of advance care planning and end of life care.
- **Feasibility:** A new systematic review is not feasible. We identified 6 studies potentially relevant to the key question in the nomination.

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Introduction

As the U.S. population continues to age, the issues related to end of life care and death including cost and location will increase in importance. The CDC National Vital Statistics System (NVSS) reports 2,712,630 deaths in 2015 and an average life expectancy of 78.8 years.¹ Data from the National Hospital Discharge Survey, 2000–2010 revealed that the number of inpatient hospital deaths decreased 8%, from 776,000 in 2000 to 715,000 in 2010. In 2000, 2005, and 2010, about one-quarter of inpatient hospital deaths were for patients aged 85 and over. From 1989 to 2007 the percent of deaths in the home increased from 15.9% to 25.4%.²

Spending on individuals in the last twelve months accounts for 8.5% of total aggregate medical spending in the United States.³ A disproportionate percentage of health care dollars are spent in the last 6 months of life, and intensive care unit (ICU) stays are a significant portion of these health care costs. In the United States, 17% of deaths in 2001 followed a stay in the ICU, and 47% of hospital deaths were preceded by an ICU stay. In 2005, intensive and critical care medicine accounted for 13% of hospital costs and 4% of national health expenditures. Published rates of patient-reported advanced directives (AD) completion varied from 21% to 53% with ADs available to emergency department (ED) personnel for 1% to 44% of patients. Patient sociodemographic and health status factors are associated with increased rates of AD completion, though rates are low for all populations.⁴

The 2014 Institute of Medicine (IOM) report *Dying in America: Improving quality and honoring individual preferences near the end of life* made the following recommendations concerning Clinician-Patient Communication and Advance Care Planning:

- all individuals, including children with the capacity to do so, to have the opportunity to participate actively in their health care decision making throughout their lives and as they approach death, and receive medical and related social services consistent with their values, goals, and informed preferences;
- clinicians to initiate high-quality conversations about advance care planning, integrate the results of these conversations into the ongoing care plans of patients, and communicate with other clinicians as requested by the patient; and
- clinicians to continue to revisit advance care planning discussions with their patients because individuals' preferences and circumstances may change over time.

In addition the IOM report recommendations for Policies and Payment Systems to Support High-Quality End-of-Life Care included that the federal government should “encourage states to develop and implement a Physician Orders for Life-Sustaining Treatment (POLST) paradigm program in accordance with nationally standardized core requirements.”⁵

Advance care planning helps ensure patient treatment preferences are documented, regularly updated, and respected. There are two documents used to record these preferences: advance directives and Physicians Orders for Life-Sustaining Treatment (POLST) forms. These two documents differ in many ways; however, they can work together in approaching end-of-life planning. The POLST Form assures patients that health care professionals will provide only the treatments that patients themselves wish to receive, and not the treatments they wish to avoid. The form includes the patients' treatment preferences with respect to cardiopulmonary resuscitation, medical interventions (i.e. comfort measures only, limited treatment and full treatment) and artificially administered nutrition.⁶ The National POLST Paradigm or approach to end-of-life planning that emphasizes communication and shared decision-making, is intended

for patients with serious illness or frailty, for whom a health care professional would not be surprised if they died within one year.⁷

The National POLST Paradigm Program Task Force (NPPTF) was convened to establish quality standards for POLST programs and to assist states in program development. State programs vary in name (e.g. MOLST, MOST, and POST), how their programs are implemented, and in the appearance of their forms. At this time, 22 states have Task Force endorsed programs, 24 states have developing programs, and 4 states (Nebraska, Vermont, Massachusetts and Maryland) have programs that do not conform to National POLST Paradigm requirements.⁸

The end of life care literature suggests multiple problems and controversies regarding POLSTs.

- Numerous concerns exist that the forms are either not completed, not available to emergency medical services personnel, do not represent the patients current preferences or contain inconsistencies (e.g. do not resuscitate and full treatment).

Other related issues include instances when the patients' preferences were not concordant with the care received. Examples are death in a hospital when death in the home was preferred and administration of CPR when a patient specified it not be administered.

The contextual questions for this nomination are:

1. What factors contribute to the completion rate, implementation and adherence (i.e. concordance) to patients POLST preferences? Specific factors to be considered are clinician specialty, POLST placement and retrieval in electronic health record (EHR).
2. How do healthcare facilities incorporate MOLST/POLST into the treatment plans and decisions of acutely ill patients?

The key question for this nomination is:

What are the benefits and harms of using POLST/MOLST on treatment decisions and clinical outcomes?

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

Table 1. Key Questions and PICOTS

Key Question	
Population	Any adult potential patient, whether general or identified by disease
Interventions	POLST or MOLST
Comparators	Other tool or AD or no AD to communicate treatment decisions
Outcomes	Decision agreement, confidence, patient satisfaction, knowledge, comfort, uptake, out of hospital death, hospice admission. May be from the perspective of either patient, family/caregiver or investigator
Timing	All
Setting	All including inpatient, outpatient, emergency department, hospice, home)

Abbreviations: AD=Advanced Directive, MOLST=Medical Orders for life sustaining treatment, POLST= Physician Orders for life sustaining treatment

Methods

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.

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

We conducted a literature search in PubMed from April 2013 to April 2018

We reviewed all identified titles and abstracts for inclusion and classified identified studies by study design, to assess the size and scope of a potential evidence review.

See Appendix C for the PubMed search strategy and links to the ClinicalTrials.gov search.

Compilation of Findings

We constructed a table with the selection criteria and our assessments (Appendix A).

Results

Appropriateness and Importance

Advance care planning and POLST forms specifically are an intervention which results in patient-centered outcomes. End of life care is a significant burden in terms of the aging of the U.S. population and healthcare costs. It is a significant burden in terms of healthcare costs. Healthcare providers frequently feel compelled to provide maximal end of life care despite their professional opinion regarding the futility of interventions based on the patients' morbidities and prognosis. Appropriate end of life care, documented in a POLST form, can specify patient preferences, maximize their comfort and minimize costs. Inappropriate end of life care can be discordant with patient preferences, cause patient discomfort and increase costs. End of life care is a significant burden in terms of healthcare costs related to hospitalizations, interventions and intensive care.

Desirability of a New Review/Duplication

A new evidence review would not be duplicative of an existing product. We identified no completed or in-process systematic reviews in our searches (Appendix B). We identified two relevant evidence reviews but they were not considered duplicative. One was an AHRQ technical brief, Decision Aids for Advance Care Planning but did not include POLST forms. The other was a literature review that did not include risk of bias assessment or strength of evidence grading.⁹ See Table 2, Duplication column.

Impact of a New Evidence Review

The impact of an evidence review is significant. A new systematic review has high impact potential to inform implementation and reduce variation between states and healthcare systems in terms of the use of POLST forms in advance care planning and their effect on end of life care.

Feasibility of New Evidence Review

A new systematic review is not feasible. We identified 6 studies for the nomination's KQ in our search: 3 retrospective cohorts¹⁰⁻¹², and three record reviews¹³⁻¹⁵. Two retrospective cohort studies were registry based, had sample sizes of over 2,000 subjects, compared subjects with POLST forms versus other AD forms and measured out-of-hospital death as the outcome. The third retrospective cohort had a sample size of 44 nursing home residents, compared those who desired comfort only versus cure focused antimicrobials and measured days of antimicrobial therapy and antibiotic resistant organisms as outcomes. The three record review studies ranged in sample size from 182 to 373. One was registry based and described the end-of-life care and place of death. The other two studies examined the concordance between patient preferences and end-of-life care received.

ClinicalTrials.gov search identified six studies; five interventional clinical trials and one prospective cohort study.¹⁶ Two studies are recruiting, three are active and three are completed. None of these studies included POLST forms as the primary intervention and five of the studies included POLST forms as a secondary outcome (e.g. percent completed).

We identified 30 studies that are relevant to the contextual questions, but not the key question: record reviews (7)¹⁷⁻²³, surveys (8),²⁴⁻³¹ cross-sectional (3),³²⁻³⁴ clinical trials (2),^{35, 36} and other including non-systematic literature reviews (8).³⁷⁻⁴⁴ The studies were heterogeneous in terms of populations, interventions and outcomes studied,

- Four of the studies were state registry-based with sample sizes from 10,122 to 268,386. Record reviews sample sizes ranged from 28 to 90,671.
- Populations studied included physicians, emergency medical service (EMS) providers, critical care nurses, emergency department patients, nursing home residents, patients with cancer, heart failure, dementia and those receiving on dialysis.
- Interventions examined included POLST versus no POLST present, a given provider specialty (e.g. oncologist, APRN vs. other), death due to cancer versus other causes and POLST plus patient preferences via video message versus no message.
- Outcomes examined included POLST completeness and contradictions, POLST concordance with patient preferences, clinical specialty signatory, code status interpretation, 1-year survival, referral to palliative care, POLST availability in the EHR, and timing of POLST relative to the cause of death.

See Table 2, Feasibility column.

Table 2. Key Questions and Results for Duplication and Feasibility

Key Question	Duplication (4/2015-4/2018)	Feasibility (4/2013-4/2018)
KQ#1	Total number of identified systematic reviews: 0 <ul style="list-style-type: none"> • None 	<p><u>Size/scope of review</u> Relevant Studies Identified: 6</p> <ul style="list-style-type: none"> ○ RCT: 0 ○ Retrospective cohort: 3 ○ Record reviews: 3 ○ Cross-sectional: 0 <p><u>Clinicaltrials.gov: 6 (5 interventional clinical trials and 1 prospective cohort)</u></p> <ul style="list-style-type: none"> • Recruiting: 2 • Active: 3 • Complete: 3
Contextual Question	Total number of identified systematic reviews: 0 <ul style="list-style-type: none"> • None 	<p><u>Size/scope of review</u> Relevant Studies Identified: 30</p> <ul style="list-style-type: none"> ○ Record reviews: 7 ○ Surveys: 8 ○ Cross-sectional: 3 ○ Clinical trials: 2 ○ Other: 8 <p><u>Clinicaltrials.gov</u></p> <ul style="list-style-type: none"> • Recruiting: 0 • Active: 0 • Complete: 0

Abbreviations: AHRQ=Agency for Healthcare Research and Quality; KQ=Key Question; RCT=Randomized Clinical Trial

Summary of Findings

- Appropriateness and Importance: The topic is both appropriate and important.
- Duplication: A new review on this topic would not be duplicative of an existing product. No systematic reviews were identified.
- Impact: A new systematic review has high impact potential to inform implementation and potentially reduce variation between states and healthcare systems in terms of advance care planning and end of life care.
- Feasibility: A new systematic review is not feasible.
 - *Size/scope of review*:

Our search of PubMed resulted in 50 unique titles. Upon title and abstract review, we identified 6 studies potentially relevant to the key question in the nomination.

- *ClinicalTrials*: We identified 6 open or recently closed relevant clinical trials on ClinicalTrials.gov.

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Appendix A. Selection Criteria Summary

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, a health care intervention (i.e. advance care planning and POLST forms specifically)
1b. Is the nomination a request for a systematic review?	Yes
1c. Is the focus on effectiveness or comparative effectiveness?	Yes, effectiveness of POLST forms on patient centered outcomes
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	End of life care is a significant burden in terms of the aging of the U.S. population and healthcare costs.
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	End of life care is a significant burden in terms of healthcare costs.
2c. Represents important uncertainty for decision makers	Healthcare providers frequently feel compelled to provide maximal end of life care despite their professional opinion regarding the futility of interventions based on the patients' morbidities and prognosis.
2d. Incorporates issues around both clinical benefits and potential clinical harms	Yes, appropriate end of life care can match patient preferences, maximize their comfort and minimize costs. Inappropriate end of life care can be discordant with patient preferences, cause patient discomfort and increase costs.
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	End of life care is a significant burden in terms of healthcare costs related to hospitalizations, interventions and intensive care.
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)	Not redundant. We did not identify systematic reviews for the nomination key question. One non-systematic review identified for KQ#1.
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)?	No, the IOM 2014 report recommendations, while not a formal clinical practice guideline are clear and specific. The report did identify information gaps and research needs.

Selection Criteria	Assessment
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, the IOM 2014 report recommendations have not been implemented across the U.S. State laws and regulations vary. Variation also exists between and within healthcare systems regarding the quality, availability and compliance with POLSTs.
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)	Size/scope of review: total 12 studies KQ #1 and 26 studies for contextual questions #1 and 2 Estimate of size: not feasible Six studies identified in ClinicalTrials.gov: 2 recruiting, 3 active and 3 completed Cochrane RCT filter results: None
6. Value	
6a. The proposed topic exists within a clinical, consumer, or policy-making context that is amenable to evidence-based change	Yes, advance care planning and end of life care is amenable to evidence-based change.
6b. Identified partner who will use the systematic review to influence practice (such as a guideline or recommendation)	Yes, the National POLST Paradigm Program Task Force's intended use of the SR is to inform implementation, help focus what needs to be changed to improve quality of end of life care, educate healthcare providers and administrators, and help call state legislatures to action. Neither a professional society or guideline group were identified to influence the practice of end of life care.

Abbreviations: AHRQ=Agency for Healthcare Research and Quality; KQ=Key Question; IOM=Institute of Medicine; POLST= Physician Orders for life sustaining treatment; RCT=randomized controlled trial; SR=systematic review

Appendix B. Search for Systematic Reviews (Duplication)

Listed below are the sources searched.

Sources Searched
AHRQ: Evidence reports and technology assessments, USPSTF recommendations
VA Products: PBM, and HSR&D (ESP) publications, and VA/DoD EBCPG Program https://www.hsrd.research.va.gov/
Cochrane Systematic Reviews and Protocols http://www.cochranelibrary.com/
PubMed
PubMed Health http://www.ncbi.nlm.nih.gov/pubmedhealth/
HTA (CRD database): Health Technology Assessments http://www.crd.york.ac.uk/crdweb/
PROSPERO Database (international prospective register of systematic reviews and protocols) http://www.crd.york.ac.uk/prospero/
CADTH (Canadian Agency for Drugs and Technologies in Health) https://www.cadth.ca/
DoPHER (Database of promoting health effectiveness reviews) http://epi.ioe.ac.uk/webdatabases4/Intro.aspx?ID=9
ECRI institute https://www.ecri.org/Pages/default.aspx
Campbell Collaboration http://www.campbellcollaboration.org/
McMaster Health System Evidence https://www.healthsystemsevidence.org/
Robert Wood Johnson http://www.rwjf.org/ None
Systematic Reviews (Journal) : protocols and reviews http://systematicreviewsjournal.biomedcentral.com/
UBC Centre for Health Services and Policy Research http://chspr.ubc.ca/
WHO Health Evidence Network http://www.euro.who.int/en/data-and-evidence/evidence-informed-policy-making/health-evidence-network-hen

Appendix C. Search Strategy & Results (Feasibility)

PUBMED Search Strategy:

((POLST[Title/Abstract] OR "physician orders for life-sustaining treatment"[Title/Abstract]) OR MOLST[Title/Abstract] OR "medical orders for life-sustaining treatment"[Title/Abstract] Sort by: Title Filters: published in the last 5 years; Humans

Search dates April 2013 to April 2018

ClinicalTrials.gov Search Strategy:

<https://clinicaltrials.gov/ct2/results?cond=&term=%22POLST%22+OR+%22physician+orders+for+life-sustaining+treatment%22+OR+%22MOLST%22+OR+%22medical+orders+for+life-sustaining+treatment%22&cntry=&state=&city=&dist=>