MARYLAND MEDICAL ORDERS FOR LIFE-SUSTAINING TREATMENT (MOLST) 
EVALUATION STUDY PROPOSAL
Accepted for funding in September, 2014 by the Maryland Department of
Health and Mental Hygiene

1. Purpose and Summary
a. Title: Evaluating the Maryland Medical Orders for Life-Sustaining Treatment (MOLST) Form

b. Purpose: The purpose of this research proposal is to evaluate whether MOLST forms are being used correctly and what impact the MOLST program has had on end-of-life care for Marylanders since the MOLST program went into effect statewide in 2011.

c. Project Summary: This grant is being requested by the Maryland Healthcare Ethics Committee Network (MHECN), in collaboration with the State Advisory Council Quality Care at the End-of-Life. Although traditional advance directives can be an important tool to assist those facing the end of life, end-of-life decision making in the United States is often poorly implemented, with patients receiving care inconsistent with preferences, a poor match of aggressive care with prognosis, undue suffering, and wasted resources (Wilkinson, et al., 2007). Recognized as a “next generation” advance directive, Physicians Orders for Life-sustaining Therapy (POLST) has caught the attention of communities around the country seeking to improve end-of-life care. Currently more than 26 states have implemented POLST-like orders. The POLST/MOLST Program works by transforming life-sustaining treatment preferences into medical orders that can be followed by emergency medical technicians, nursing facility staff, and other health professionals in times of crisis and transition from one setting to the next. Completion of a MOLST form, or review of an existing form, became legally mandated in Maryland in October, 2011 for patients admitted to the following health care settings:
- Nursing home
- Assisted living facility
- Home health agency
- Hospice
- Kidney dialysis center
- Hospitals (for certain patients)

While thousands of health care providers have received training on Maryland’s MOLST form and its proper use, some questions and concerns have been raised. In a pilot survey MHECN conducted prior to a MOLST train-the-trainer workshop in April, 2013, respondents identified the following problems they encountered with use of MOLST forms:
- Clinicians lack the time, motivation, and skills to discuss goals of care/end-of-life care with patients/surrogates (particularly in the acute care setting), leading to completion of MOLST forms with errors, such as:
  - MOLST orders that don’t reflect the patient’s wishes or best interests, e.g.:
    - MOLST orders that contradict a patient’s advance directive
    - Contradictory orders on Pages 1 and 2 of the MOLST form
    - MOLST orders that are inconsistent with Maryland’s Health Care Decisions Act
  - “Health care agent” is checked on p. 1 when there is no appointed agent
- Difficulty keeping track of the most recent MOLST form
- MOLST forms not accompanying patients/residents transferring across health care settings
- Concerns that completing the MOLST form over-burdens healthy/non-terminal patients.
States that have implemented a POLST-type programs have identified similar problems. However, with time, education, training, and health care organizational buy-in, these programs have demonstrated success in achieving the goal of communicating patients’ end-of-life treatment preferences and matching their end-of-life care to their preferences (Caprio, Rollins & Robers, 2012; Hammes et al., 2012; Hickman et al., 2009; Hickman et al., 2011; Lee et al., 2000; Schmidt et al., 2004; Sugiyama et al., 2013; Tolle et al., 1998; Wenger et al., 2013).

As a quality improvement initiative, we propose to evaluate how the MOLST program is functioning in Maryland after three years of legally mandated use.

2. Expected Outcomes
Two stages of data collection will be conducted. This funding proposal addresses Stage 1.

a. STAGE 1
The first stage of the research will evaluate MOLST form use in Maryland:

- Hospitals
- Nursing homes
- Assisted living facilities
- Hospices
- Home care agencies
- Dialysis centers

The evaluation methods will answer the following questions:

1. What is the rate of hospital compliance with the MOLST-on-discharge obligation?
2. For MOLST orders written on hospital discharge, what percentage go beyond page 1?
3. Is there evidence of some process underlying completion of the MOLST form?
4. What is the MOLST form completion error rate?
5. How often is each MOLST order section completed and with what orders?
6. Who (RN, SW, MD) is discussing MOLST with whom (patient, surrogate, etc.)?
7. Are methods to track the active MOLST form effective when there are multiple forms?
8. What educational interventions and training materials has the facility employed, and for whom?
9. Is completion of the MOLST form complementing or replacing advance directive completion?
10. What is the rate of compliance with reviewing/revising the MOLST form?
3. Results Measurement: Endpoints for analysis are as follows:

<table>
<thead>
<tr>
<th>RESEARCH QUESTIONS</th>
<th>FACILITY</th>
<th>ENDPOINTS/MEASUREMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is the rate of hospital compliance with the MOLST-on-discharge obligation?</td>
<td>Hospital</td>
<td>% patients discharged to qualifying facility with MOLST on discharge</td>
</tr>
<tr>
<td>For MOLST orders written on hospital discharge, what percentage go beyond page 1?</td>
<td>Hospital</td>
<td>% MOLST forms on hospital discharge for which any portion of p. 2 is completed</td>
</tr>
<tr>
<td>Is there evidence of some process underlying completion of the MOLST form?</td>
<td>Hospital, NH, AL, Hospice, Home, Dial</td>
<td>% of MOLST orders written by facility clinician with documentation in medical record Justifying MOLST orders written</td>
</tr>
<tr>
<td>What is the MOLST form completion error rate?</td>
<td>Hospital, NH, AL, Hospice, Home, Dial</td>
<td>% MOLST forms with any of the following errors: wrong surrogate selected; contradictions between p. 1 &amp; 2; contradictions with AD; contradictions with MD HCDA; not signed</td>
</tr>
<tr>
<td>How often is each MOLST order section completed and with what orders?</td>
<td>Hospital, NH, AL, Hospice, Home, Dial</td>
<td>Descriptive statistics summarizing frequency of MOLST orders in sections 1-9; may do statistical comparisons between facilities, by clinician type, and by patient ethnicity/race</td>
</tr>
<tr>
<td>Who (RN, SW, MD) is discussing MOLST with whom (patient, surrogate, etc.)?</td>
<td>Hospital, NH, AL, Hospice, Home, Dial</td>
<td>Statistics for boxes checked under CERTIFICATION on p. 1, signing practitioner’s discipline &amp; last review questions</td>
</tr>
<tr>
<td>Are methods to track the active MOLST form effective when there are multiple forms?</td>
<td>Hospital, NH, AL, Hospice, Home, Dial</td>
<td>Of facilities with more than one MOLST form on file, % with evidence that prior forms were properly voided</td>
</tr>
<tr>
<td>What educational interventions and training materials has the facility employed, and for whom?</td>
<td>Hospital, NH, AL, Hospice, Home, Dial</td>
<td>Descriptive statistics of response to facility tool (Appendix VII, q.4-7)</td>
</tr>
<tr>
<td>Is completion of the MOLST form complementing or replacing advance directive completion?</td>
<td>NH, AL, Dial</td>
<td>Descriptive statistics of response to facility tool (Appendix VII, q.8) &amp; % patients who have MOLST form &amp; advance directive</td>
</tr>
<tr>
<td>What is the rate of compliance with reviewing/revising the MOLST form?</td>
<td>NH, AL, Dial</td>
<td>Analysis of chart review data, submitted copies of MOLST forms and advance directives, and whether MOLST form renewed at least annually</td>
</tr>
</tbody>
</table>
The following methods are proposed to answer these research questions:

<table>
<thead>
<tr>
<th>RESEARCH QUESTIONS ADDRESSED</th>
<th>SITE</th>
<th>METHOD</th>
<th>SAMPLING OF FACILITIES</th>
<th>SAMPLING WITHIN FACILITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1-#9</td>
<td>Hospitals</td>
<td>Chart review</td>
<td>All 56 Maryland adult, non-psychiatric hospitals, target 60% response (n=34)</td>
<td>Last 20 adult (non trauma, psych, OB) discharges to qualifying site, &amp; last 10 adult non-trauma/psych/OB deaths &lt;300 beds: half above</td>
</tr>
<tr>
<td>#3-#10</td>
<td>Nursing homes</td>
<td>Chart review</td>
<td>Randomly sample 50% of 229 Maryland nursing homes (stratified by bed size &lt; or ≥ 100), target 60% response (n=69)</td>
<td>Last 15 admissions &amp; Last 15 deaths 30-149: 8 adm &amp; 8 dth &lt;30: current residents</td>
</tr>
<tr>
<td>#3-#10</td>
<td>Assisted Living</td>
<td>Chart review</td>
<td>Randomly sample 50% of 347 Maryland assisted living facilities (stratified by Baltimore City &amp; County YES=93 NO=254), target 60% response (n=104)</td>
<td>Last 15 admissions &amp; Last 15 deaths 30-149: 8 adm &amp; 8 dth &lt;30: current residents</td>
</tr>
<tr>
<td>#3-#9</td>
<td>Hospices</td>
<td>Chart review</td>
<td>All 30 Maryland hospice agencies, target 60% response (n=18)</td>
<td>Last 30 deaths &lt;30: current patients</td>
</tr>
<tr>
<td>#3-#9</td>
<td>Home care agencies</td>
<td>Chart review</td>
<td>All 56 Maryland home care agencies, target 60% response (n=34)</td>
<td>Last 30 admissions</td>
</tr>
<tr>
<td>#3-#10</td>
<td>Dialysis centers</td>
<td>Chart review: Random 30 patients</td>
<td>All 30 Maryland dialysis centers, target 60% response (n=18)</td>
<td>Random 30 current patients &lt;30: current patients</td>
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</tbody>
</table>

See Appendix I for facility chart review forms. Modifications may be made to chart review forms based on piloting. Materials will also be developed to facilitate enrollment and proper completion of facility chart reviews. This will include a postcard to alert facility staff to the upcoming study and encourage their support, a cover letter, and a training packet.

b. STAGE 2

After evaluating the data collected from Stage 1, a second stage will be implemented (pending funding support) that will focus on obtaining feedback from individuals. Methods for evaluation will be informed by data analysis from Stage 1. The evaluation methods will answer the following questions:

1. What strategies for improving outcomes of the MOLST program are identified by Maryland clinicians who routinely complete MOLST forms with patients/residents/surrogates?
2. What strategies for improving outcomes for the MOLST program are identified by Maryland emergency medical technicians (EMTs) who routinely encounter MOLST forms?
3. What strategies for improving outcomes for the MOLST program are identified by Maryland consumers (patients/residents/surrogates) who have completed MOLST forms?

A separate funding request will be made for Stage 2, as the methods for addressing these questions will be influenced by the data analysis from Stage 1.
4. Consumer and Other Stakeholder Involvement
a. This project is being developed by the principal investigator (PI), Diane Hoffmann, in collaboration with Anita Tarzian, Program Coordinator of the Maryland Healthcare Ethics Committee Network (MHECN), which is a membership-supported organization run out of the UM Carey School of Law that serves members of Maryland healthcare ethics committees. MHECN has formed an advisory panel for this project consisting of members of the healthcare community who have direct experience with the Maryland MOLST program. At the time of this proposals, there are 23 members of the advisory panel representing various disciplines (e.g., law, medicine, social work, nursing, bioethics, chaplaincy) and settings (hospital, home care, private practice, long-term care, palliative care/hospice). One of the 11 MOLST master trainers is a member of the advisory panel. Additional volunteers will be sought throughout the state.

5. Timeline and dates
MHECN received notification that this proposal was accepted in September, 2014. The PI and research team plans to complete the Stage 1 evaluation according to the timeline below.

<table>
<thead>
<tr>
<th>Activity</th>
<th>2014</th>
<th>2015</th>
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<tbody>
<tr>
<td></td>
<td>OCT</td>
<td>NOV</td>
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<tr>
<td>Assemble facility contacts</td>
<td></td>
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<tr>
<td>Create invitation/training packets</td>
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<tr>
<td>Pilot at one of each facility type</td>
<td>X</td>
<td></td>
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<tr>
<td>Modify review tools from pilot</td>
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<tr>
<td>Send recruitment postcard</td>
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<tr>
<td>Enroll facilities</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Follow-up facility enrollment</td>
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<tr>
<td>Create chart review database</td>
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<tr>
<td>Analyze chart review data</td>
<td></td>
<td>X</td>
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<tr>
<td>Write final report</td>
<td></td>
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6. Quarterly Reporting
The principal investigator will provide a progress report by December 31, 2014, March 31, 2015, June 30, 2015, and a final report by August 31, 2015.

7. Involved Organizations
The UM Carey School of Law and The Maryland Healthcare Ethics Committee Network (MHECN) (administered by the UM Care School of Law) and the University of Maryland School of Nursing.

11. Contacts (person responsible for the project):
PI: Diane E. Hoffmann, JD, MS
UM Carey School of Law
500 W. Baltimore St., Baltimore, MD 21201
dhoffmann@law.umaryland.edu
(410) 706-7191

Project Manager: Anita J. Tarzian, PhD, RN
MHECN Project Coordinator
UM Carey School of Law
500 W. Baltimore St., Baltimore, MD 21201
atarzian@law.umaryland.edu
(410) 706-1126
REFERENCES


