An Overview of Evidence Regarding the Impact of POLST

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Objectives

- Discuss the evidence regarding use of the POLST Paradigm
- Identify limitations of existing research and gaps in knowledge
- Propose directions for future research and policy change
POLST Orders and Individualized Care

- Code status does not predict preferences for other treatments
  - 77% of nursing home residents with DNR orders requested additional treatment\(^a\)
  - 78% of hospice patients with DNR requested additional treatment\(^b\)
- Unique combinations of POLST orders in community sample\(^c\) = 35

\(^a\)Hickman, Tolle, Brummel-Smith, & Carley (2004)
\(^b\)Hickman, Nelson, Moss, Hammes, Terwilliger, Jackson, & Tolle (2009)
\(^c\)Hammes, Rooney, Gundrum, Hickman, & Hager (2012)
Information About Treatment Preferences in Chart

- Resuscitation: 100.0% POLST, 85.5% No POLST
- Medical Interventions: 97.6% POLST, 8.2% No POLST
- Antibiotics: 96.0% POLST, 2.9% No POLST
- Feeding Tubes: 92.8% POLST, 6.7% No POLST

N = 1792; *p < .001

Source: Hickman, Nelson, Perrin, Moss, Hammes, & Tolle (2010)
## POLST orders vary by population

<table>
<thead>
<tr>
<th>Study Sample</th>
<th>Section A Resuscitation</th>
<th>Section B Medical Interventions</th>
<th>Section C Antibiotics*</th>
<th>Section D Feeding Tubes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>DNR</td>
<td>Full</td>
<td>Comfort Care</td>
<td>Lim/Full</td>
</tr>
<tr>
<td>Multistate Hospicea</td>
<td>99%</td>
<td>1%</td>
<td>79%</td>
<td>21%</td>
</tr>
<tr>
<td>Deceased WIC</td>
<td>98%</td>
<td>2%</td>
<td>62%</td>
<td>39%</td>
</tr>
<tr>
<td>Oregon NHs</td>
<td>88%</td>
<td>12%</td>
<td>40%</td>
<td>60%</td>
</tr>
<tr>
<td>Multistate NHsd</td>
<td>86%</td>
<td>14%</td>
<td>42%</td>
<td>58%</td>
</tr>
<tr>
<td>Oregon Registrye</td>
<td>72%</td>
<td>28%</td>
<td>37%</td>
<td>63%</td>
</tr>
</tbody>
</table>

*Note: Orders to limit antibiotics include “for comfort measures only” to “no IM/IV” to “determine use at time of infection.”

aHickman et al., 2009; bHammes et al, 2012; cHickman et al., 2004; dHickman et al., 2010 eFromme et al., 2012
POLST orders vary by state?

Nursing facility residents divided by None vs. Limited/Full Treatments

<table>
<thead>
<tr>
<th></th>
<th>Section A Resuscitation**</th>
<th>Section B Medical Interventions*</th>
<th>Section C Antibiotics**</th>
<th>Section D Feeding Tubes*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>DNR</td>
<td>Full</td>
<td>None</td>
<td>Lim/Full</td>
</tr>
<tr>
<td><strong>Oregon</strong></td>
<td>85%</td>
<td>15%</td>
<td>50.9%</td>
<td>49.1%</td>
</tr>
<tr>
<td><strong>Wisconsin</strong></td>
<td>94.7%</td>
<td>5.3%</td>
<td>50.5%</td>
<td>49.5%</td>
</tr>
<tr>
<td><strong>West Virginia</strong></td>
<td>83.6%</td>
<td>16.4%</td>
<td>38.3%</td>
<td>61.7%</td>
</tr>
</tbody>
</table>

*p < .01; ** p < .001

Note: Analysis does not control for potential covariates including age, cognitive status, race, life status, or hospice use

Source: unpublished R01 data - see Hickman, Nelson, Perrin, Moss, Hammes, & Tolle (2010)
Clinician reports about experience with POLST

- Hospice staff (n = 71)\(^b\)
  - Helps initiate conversation (96%)
  - Provides clear instructions (92%)
- EMS Personnel (n = 383)\(^b\)
  - POLST changed treatment plans in 45% of cases
- EMS Personnel (n = 23)\(^c\)
  - POLST altered decision to transport (26%)

\(^a\) Hickman, Nelson, Moss, Hammes, Terwilliger, Jackson, & Tolle (2009)
\(^b\) Schmidt, Hickman, Tolle, & Brooks (2004)
\(^c\) Schmidt, Olszewski, Zive, Fromme, & Tolle (2013)
% NH Residents Receiving Treatments: POLST Section B Orders vs No POLST

<table>
<thead>
<tr>
<th>Treatment Type</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>No POLST</td>
<td>25.6%</td>
</tr>
<tr>
<td>POLST Full Tx</td>
<td>22.9%</td>
</tr>
<tr>
<td>POLST Ltd. Additional</td>
<td>18.8%</td>
</tr>
<tr>
<td>POLST Comfort Care</td>
<td>13.7%</td>
</tr>
</tbody>
</table>

Section B Treatments = hospitalization/emergency department (ED) visits, IV fluids, dialysis, transfusion, surgery/invasive diagnostic tests, chemotherapy/radiation, and intubation/ventilator support

Source: Hickman, Nelson, Perrin, Moss, Hammes, & Tolle (2010)
Consistency with Orders for POLST Users

<table>
<thead>
<tr>
<th>Section</th>
<th>% treatments consistent with POLST Orders</th>
</tr>
</thead>
<tbody>
<tr>
<td>Section A: Resuscitation&lt;sup&gt;a&lt;/sup&gt;</td>
<td>98% (300/306)</td>
</tr>
<tr>
<td>Section B: Medical Interventions&lt;sup&gt;b&lt;/sup&gt;</td>
<td>91.1% (102/112)</td>
</tr>
<tr>
<td>Section C: Antibiotics&lt;sup&gt;b&lt;/sup&gt;</td>
<td>92.9% (224/241)</td>
</tr>
<tr>
<td>Section D: Feeding Tubes&lt;sup&gt;b&lt;/sup&gt;</td>
<td>63.6% (14/22)</td>
</tr>
</tbody>
</table>

<sup>a</sup> Reflects consistency of treatments with orders to limit or provide life-sustaining treatments.

<sup>b</sup> Reflects consistency of treatments with orders to limit life-sustaining treatments.

Source: Hickman, Nelson, Moss, Tolle, Perrin, & Hammes (2011)
Documented effect of POLST on Treatment

- Multi-state data
  - Antibiotics
    - No differences between POLST and standard care
  - Resuscitation and Feeding Tubes
    - Too infrequent to analyze

Source: Hickman, Nelson, Perrin, Moss, Hammes, & Tolle(2010)
Does POLST represents patient preferences?

- Evidence of informed consent in records of 94% of decedents with POLST forms \textsuperscript{a}
- Reports of hospice staff ($n = 71$) \textsuperscript{b}
  - 93% believe POLST reliably expresses patient treatment preferences
- Nursing home chart reviews + interviews ($n = 7$) \textsuperscript{c}
  - POLST accurately conveys treatment preferences 90% of time
- Interviews following hospital discharge ($n = 38$) \textsuperscript{d}

\textsuperscript{a}Hammes, Rooney, Gundrum, Hickman, & Hager (2012)  
\textsuperscript{b}Hickman, Nelson, Moss, Hammes, Terwilliger, Jackson, & Tolle (2009)  
\textsuperscript{c}Meyers, Moore, McGrory, Sparr, & Ahern (2004)  
\textsuperscript{d}Hickman, Nelson, Smith-Howell, & Hammes (in review)
Limitations of Existing Research

- Generalizability
- Correlational and descriptive data
- Lack of matched controls
- Unanswered questions
Recommendations

- **Directions for Future Research**
  - Quality of POLST decisions
  - Evidence-based education and decision-support tools for POLST
  - Population-based with matched controls
  - Patient/family experience with POLST

- **Policy**
  - Increase incentives (e.g. regulatory, financial) for systematic ACP
  - Upstream and broaden access to palliative care to introduce targeted ACP earlier in patients with serious illness
  - Inclusion of ACP documents in development of EMRs and information exchanges to facilitate transition care
References


Hammes, Rooney, Gundrum, Hickman, & Hager (2012). The POLST Program: A retrospective review of the demographics of use and outcomes in one community where advance directives are prevalent. Journal of Palliative Medicine, 15, 77-85.


References (continued)


