An Overview of Evidence Regarding the Impact of POLST

Susan E. Hickman, PhD
Associate Professor, School of Nursing
Co-Director, RESPECT Center
Indiana University

Objectives

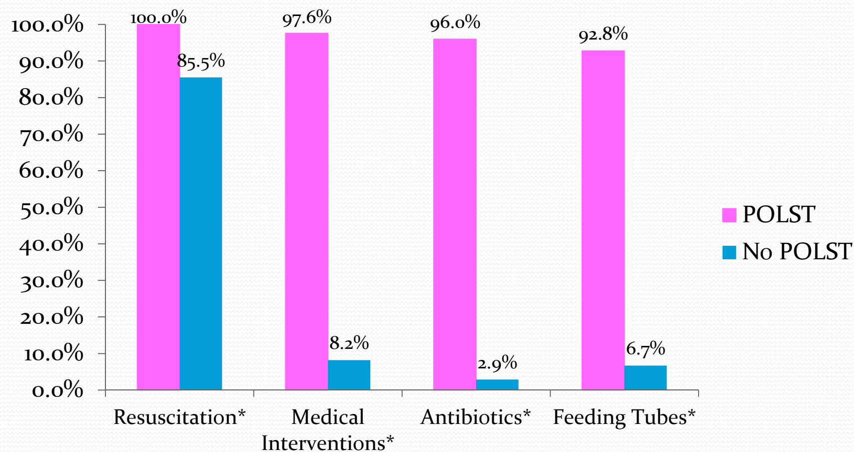
- Discuss the evidence regarding use of the POLST Paradigm
- Identify limitations of existing research and gaps in knowledge
- Propose directions for future research and policy change

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



N = 1792; *$p < .001$

Source: Hickman, Nelson, Perrin, Moss, Hammes, & Tolle (2010)

POLST orders vary by population

Study Sample	Section A Resuscitation		Section B Medical Interventions		Section C Antibiotics*		Section D Feeding Tubes	
	DNR	Full	Comfort Care	Lim/Full	None/ Lim	Full	None	Lim/Full
Multistate Hospice[a]	99%	1%	79%	21%	56%	44%	88%	12%
Deceased WI Community[b]	98%	2%	62%	39%	57%	43%	58%	42%
Oregon NHs[c]	88%	12%	40%	60%	42%	58%	50%	50%
Multistate NHs [d]	86%	14%	42%	58%	36%	64%	62%	38%
Oregon Registry[e]	72%	28%	37%	63%	53%	47%	58%	42%

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

[a]Hickman et al., 2009; [b]Hammes et al, 2012; [c]Hickman et al., 2004; [d]Hickman et al., 2010 [e]Fromme et al., 2012

POLST orders vary by state?

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

N = 898	Section A Resuscitation**		Section B Medical Interventions*		Section C Antibiotics**		Section D Feeding Tubes*	
	DNR	Full	None	Lim/Full	None	Lim/Full	None	Lim/Full
Oregon	85%	15%	50.9%	49.1%	9.8%	90.2%	56.9%	43.1%
Wisconsin	94.7%	5.3%	50.5%	49.5%	0%	100%	73.5%	26.5%
West Virginia	83.6%	16.4%	38.3%	61.7%	5.5%	94.5%	63.7%	36.3%

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

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

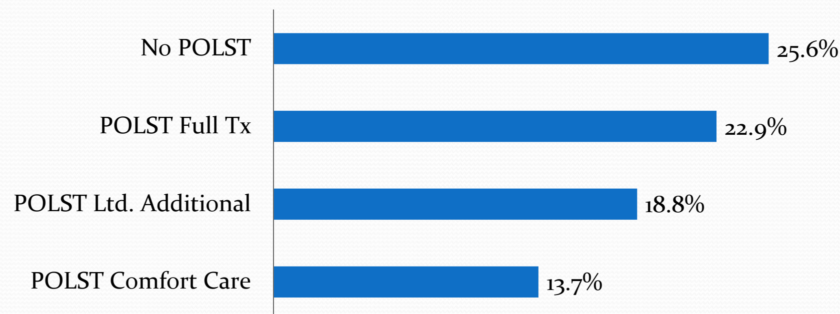
Source: unpublished R01 data (see Hickman, Nelson, Perrin, Moss, Hammes, & Tolle (2010))

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



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

Section	% treatments consistent with POLST Orders
Section A: Resuscitation[a]	98% (300/306)
Section B: Medical Interventions[b]	91.1% (102/112)
Section C: Antibiotics[b]	92.9% (224/241)
Section D: Feeding Tubes[b]	63.6% (14/22)

[a] Reflects consistency of treatments with orders to limit or provide life-sustaining treatments.
[b] 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

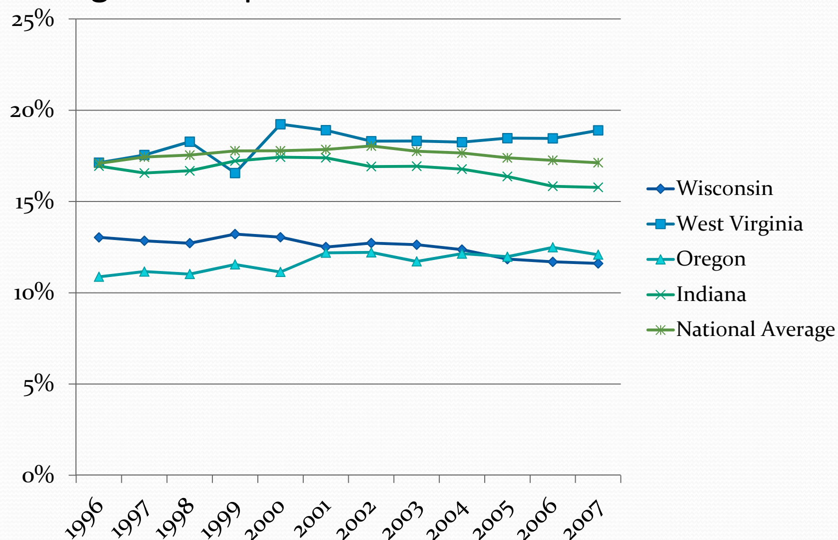
- Multi-state data
  - Antibiotics
    - No differences between POLST and standard care
  - Resuscitation and Feeding Tubes
    - Too infrequent to analyze

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 [a]
- Reports of hospice staff (n = 71) [b]
  - 93% believe POLST reliably expresses patient treatment preferences
- Nursing home chart reviews + interviews (n = 7)[c]
  - POLST accurately conveys treatment preferences 90% of time
- Interviews following hospital discharge (n = 38)[d]

[a]Hammes, Rooney, Gundrum, Hickman, & Hager (2012)
[b]Hickman, Nelson, Moss, Hammes, Terwilliger, Jackson, & Tolle (2009)
[c] Meyers, Moore, McGrory, Sparr, & Ahern (2004)
[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

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