# Q/ How well do POLST forms assure that patients get the end-of-life care they requested?

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## EVIDENCE-BASED ANSWER

A/ **QUITE WELL,** for cardiopulmonary resuscitation (CPR). Most patients (91%-100%) who select "do not resuscitate" (DNR) on their physician's orders for life-sustaining treatment (POLST) forms are allowed a natural death without attempted CPR across a variety of settings (community, skilled nursing facilities, emergency medical services, and hospice). Few patients (6%) who select "comfort measures only" die in the hospital, whereas more (22%) who choose "limited interventions," and still more (34%) without a POLST form, die in the hospital (strength of recommendation [SOR]: **B,** large, consistent cross-sectional and cohort studies).

Most patients (84%) who select "attempt resuscitation" receive resuscitation for out-of-hospital cardiac arrest in emergency services settings (SOR: **B**, small retrospective cohort study).

POLST orders declining other services (intravenous fluids, intensive care, intubation, feeding tubes) are carried out in most (84%-100%) cases. POLST orders regarding antibiotic treatments are less effectively implemented (SOR: **B**, moderate-sized retrospective chart review).

## Evidence summary

The POLST form offers choices within 4 treatment areas: "attempt CPR" or "allow natural death" if the patient is in cardiopulmonary arrest; "comfort," "limited," or "full" medical interventions if pulse or breathing is present; choices of additional orders, including intravenous fluids, feeding tubes, and antibiotics; and additional written orders. Most POLST studies used cross-sectional and retrospective cohort designs and assessed whether CPR was attempted. Fewer studies also evaluated adherence to orders in the other treatment areas.

### Community settings: Patients with POLST more likely to die out of hospital

The largest study of POLST use in community settings evaluated deaths in Oregon over one year.[1] It found that patients who indicated "do not attempt CPR" on a POLST form were 6 times more likely to die a natural, out-of-hospital death than those who had no POLST form (**TABLE**[1-10]).

A West Virginia study found that patients with POLST forms had 30% higher out-of-hospital death rates than those with traditional advanced directives and no POLST.[2] In a Wisconsin study, no decedents who indicated DNR on their POLST forms received CPR.[3]

One study that evaluated the consistency of actual medical interventions with POLST orders in all 4 treatment areas found it to be good in most areas ("feeding tubes," "attempting CPR." "antibiotics," and "IV fluids") except "additional written orders.[4]

### Skilled nursing facilities: Generally high adherence to POLST orders

The largest study to evaluate the consistency of treatments with POLST orders among nursing home residents found high adherence overall (94%).[5] Caregivers performed CPR on none of 299 residents who selected

**TABLE**

## Are physicians' orders for life-sustaining treatments followed? The evidence for consistency

| Setting | Study method | Population | Primary outcome | Results | Comparison, if applicable | Comments |
|---|---|---|---|---|---|---|
| Community | Cross-sectional study[1] | 17,902 of 58,000 Oregon decedents with POLST in statewide registry | In-hospital death rates | 6% with "comfort measures only" on POLST | 34% if no POLST | "Limited" and "full" interventions had 4 times and 10 times more in-hospital deaths, respectively |
| | Retrospective cohort study[2] | 2027 West Virginia decedents with advanced directive and/or POLST in statewide registry | Out-of-hospital death rates in patients with POLST vs patients with advanced directive only | Comfort measures only=88%<br>Limited/full orders=76% | Advanced directive only=57%;<br>*P*<.001 for each comparison | Out-of-hospital death rate with POLST for hospice patients: 92% |
| | Retrospective review of medical records and death certifications[3] | 255 Wisconsin decedents with POLST forms | Consistency of treatments given with POLST orders (%) | DNR=100% (250/250 received no CPR) | | 15/157 (10%) with "comfort only" hospitalized<br>5/5 (100%) with "full treatment" hospitalized |
| | Retrospective chart review[4] | 54 ElderPlace program decedents in Oregon with POLST forms, last 2 weeks of life | Consistency of treatments given with POLST orders (%) | DNR=91%<br>No antibiotics=86%<br>No IV fluids=84%<br>No feeding tubes=94%<br>No other medical interventions=46% | | Percent of patients where treatments given matched all POLST orders=39% |
| Nursing facilities | Retrospective chart review[5] | 870 living and deceased residents in 90 nursing facilities in Oregon, Wisconsin, and West Virginia | Consistency of treatments given with POLST orders (%) | Overall=94%<br>DNR=100%<br>No antibiotics=68%<br>No feeding tubes=99% | | CPR not attempted in 6 of 7 patients (86%) with "attempt CPR" orders |
| | Prospective chart review[6] | 180 nursing home residents in 8 facilities in Oregon over 1 year | Consistency of treatments given with POLST orders (%) | DNR=100%<br>No intensive care=100%<br>No ventilator support=100% | | 83% of hospitalizations were for comfort measures;<br>2 patients died in the hospital |
| | Chart review and template analysis of interviews[7] | 21 nursing home residents in 4 facilities in Washington | Consistency of treatments given with POLST orders (%) | Overall=91% | | POLST forms 100% congruent with existing advanced directives |
| Emergency medical services (EMS) | Retrospective cohort study[8] | 82 patients with POLST in Oregon registry, found in out-of-hospital cardiac arrest | Consistency of resuscitation performance with POLST orders (%) | CPR not attempted or halted=94% (patients with DNR)<br>CPR attemped=84% (patients with "attempt CPR") | | CPR initiated in the field in 11 of 50 patients (22%) with DNR order |

**TABLE**

## Are physicians' orders for life-sustaining treatments followed? The evidence for consistency (*continued*)

| Setting | Study method | Population | Primary outcome | Results | Comparison, if applicable | Comments |
|---|---|---|---|---|---|---|
| Emergency medical services (EMS) (*continued*) | Telephone survey[9] | 23 EMS interviews and 11 patient or surrogate interviews in Oregon | Consistency of EMS management with POLST orders (%) | Overall=91% (EMS care matched POLST) | | Paper POLST form never located at the scene=87%<br>Registry POLST orders changed EMS management=44% |
| Hospice | Telephone survey and chart review[10] | 255 patients at 15 hospice programs in Oregon, Wisconsin, and West Virginia | Consistency of treatments given with POLST orders (%) | Overall=98%<br>DNR=100%<br>No intubation =100%<br>No feeding tubes =100% | | 99% of hospice patients designated DNR on POLST forms |

CPR, cardiopulmonary resuscitation; DNR, do not resuscitate; POLST, physician's orders for life-sustaining treatments.

"DNR." However, they did not administer CPR to 6 of 7 who chose "attempt CPR" and administered antibiotics to 32% of patients who specified "no antibiotics" on their POLST forms.[5]

A second study of nursing home residents who selected "comfort measures only" also found high consistency for attempting CPR, intensive care admission, and ventilator support, although physicians hospitalized 2% of patients to extend life.[6] Similarly, treatments matched POLST orders well overall in a Washington state study, although one patient got a feeding tube against orders.[7]

### POLST adherence is good, but can EMS workers find the form?

A study comparing emergency medical services (EMS) management with POLST orders in an Oregon registry found good consistency.[8] EMS providers didn't attempt or halted CPR in most patients with DNR orders who were found in cardiac arrest and initiated CPR in most patients who chose "attempt CPR." EMS providers initiated CPR in the field on 11 patients (22%) with a DNR order but discontinued resuscitation en route to the hospital.

In a smaller study, EMS providers never located paper POLST forms at the scene in most cases.[9]

### Hospice: POLST orders prevent unwanted Tx, except maybe antibiotics

A study evaluating management in hospice programs in 3 states found that care providers followed POLST orders for limited treatment in 98% of cases.[10] No patients received unwanted CPR, intubation, or feeding tubes. POLST orders didn't predict whether patients were treated with antibiotics, however. JFP


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