



The Office of the National Coordinator for  
Health Information Technology



## Electronic End-of-Life and Physician Orders for Life-Sustaining Treatment (POLST) Documentation Access through Health Information Exchange (HIE)

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## OREGON

### Background

The Oregon Health & Science University (OHSU) established a Center for Ethics and Health Care in 1989. The POLST Program started in Oregon with [OHSU Center for Ethics](#) serving as the administrative home. The initial development efforts began in 1991 when medical ethics leaders recognized that patient wishes for life-sustaining treatments were not being honored consistently despite the availability of advance directives. The [Oregon POLST Program](#) remains at OHSU. The National POLST Paradigm was administratively housed at OHSU from its inception in 2004 until January 20, 2017, at which time they became a 501(c)(3) under the Tides Foundation. The Oregon POLST Program separated from the National POLST Paradigm in June of 2017.

After years of extensive development and pilot testing, Oregon released its POLST form for statewide use in 1995. Use was adopted into clinical practice with regulatory changes but without legislation. In 2007, Oregon began planning to build a POLST registry. Given widespread use of the POLST forms, the registry was quickly set up and piloted in a single county that benefited from the high community penetration of POLST activity.

In 2009, the Oregon POLST program worked with the state legislature to create the Oregon POLST Registry. The legislation contained the mandate for any physician, nurse practitioner, physician assistant or naturopathic physician (as of 2018) in the state who signs a POLST to submit a copy of the completed form to the registry, unless a patient specifically opts out of POLST registry participation. The Registry was legislatively mandated by the passing of House Bill 2009, and is operated at OHSU through a contract with the Oregon Health Authority. The Registry remains administratively distinct from the Oregon POLST Program.

For more information about the Oregon POLST program, please see the [Oregon POLST](#) website. The website includes a detailed history of the Oregon POLST program as well as the National POLST Paradigm's [Oregon POLST Fact Sheet](#). For additional information about the Oregon POLST Registry, please visit the [Oregon POLST Registry](#) website.

### Key Features

The Oregon POLST Registry is a POLST-only electronic form repository. With legislative funding, OHSU was contracted by the Oregon Health Authority for statewide expansion in 2009. [House Bill 2009](#) funded the Registry and also required submission of signed forms by the signing health care professional or their designee unless a patient opts out of inclusion.

The registry functionality includes a three-step process: Validate, Enter and Activate. The validation step includes validating to make sure the form is registry ready (e.g., signed, dated, patient name, date of birth and orders) and all data fields are filled. Once validated, the form is scanned into the Registry, and data from the form are entered into the database. The final step is activation, where another staff member reviews all POLST information extracted and entered against the physical copy of the form.

The Oregon POLST Registry was built to be the backup system for the paper form completed by the physician with the patient and provided to the patient. Emergency personnel called to a patient's home or skilled nursing facility look for the paper POLST form. The system is designed to provide information

to EMS in the field and to be portable across all care settings. Once the patient arrives at the hospital, the patient's EHR also serves as a backup system and often has a copy of the patient's POLST form available. If the form is available in the field or in the hospital's EHR, there is no need to access the registry. Providers call the registry when they cannot locate a POLST form in their EHR system or in the patient's home.

Oregon uses its 24-hour Emergency Communication Center (ECC) for EMS providers to call via phone or radio to obtain POLST information. The ECC releases Sections A and B of the POLST form to medical providers in the field once the call center identifies a patient match. The matching process assigns points to different patient demographic information to ensure there is a correct match. There are two mechanisms for requesting forms: (1) use of a non-public phone number for emergent POLST requests from health care providers and (2) use of the ECC business office during normal business hours for non-urgent POLST requests.

EMS POLST inquiry calls to the ECC can be answered and resolved within one minute. The Oregon POLST Registry releases a [monthly report](#) on its website that shows the number and duration of these calls. Providers can also request the POLST form to be faxed to the receiving hospital, in cases where the patient is being transported. The ECC maintains a registered list of all active and validated hospital ED fax numbers used for POLST transmissions. They have received more than 7,000 calls in the first six years of operation, with an estimated 40 percent of calls resulting in patient match with a POLST form found.

Oregon designed its POLST system to integrate with EMS, EDs and acute care units. Integration with EHRs to enable hospital providers to easily see the patient's POLST orders with a single click from the patient header is functional. The ePOLST system is color coded to immediately notify the provider of the treatment level requested on the POLST form. Oregon found that physicians really like the single sign-on function. They want to be able to easily see, when they log on, if the POLST document is available and do not want to search the EHR for the document.

In 2013, OHSU enlisted the help of a software vendor to develop an EHR-embedded electronic POLST Completion System (ePOLST) that would support delivery of the hospital's POLST forms to the Registry and minimize errors using electronic business rules. OHSU evaluators tested the system with physicians, nurse practitioners, physician assistants, social workers and health information technology staff to iteratively provide feedback throughout the development process. System champions and evaluators reviewed the system and provided feedback on how it could be improved. The vendor and hospital provided extensive mandatory education for residents and fellows at OHSU about advance directives and POLST to support the implementation.

When an OHSU health care professional completes an ePOLST with a patient, it is automatically submitted to the state registry. This process reduces human error by eliminating a manual submission process and ensuring that all completed forms are submitted. The provider then downloads and prints the POLST form for the patient to take home, maintaining both paper and electronic forms. Patients also receive a confirmation packet from the Oregon POLST Registry, which includes a business card-sized pink magnet that has their unique registry identification number on it as well as stickers for chart placement or wallet placement.

In the ePOLST system, the health care provider can pull a significant amount of information from the EHR itself to complete the ePOLST form (e.g., name, birth date, address). The provider documents the patient's wishes in each section, adds any specific additional orders and then signs the ePOLST to complete.

ePOLST systems are now in use in several large Oregon hospitals and health systems and the Registry will continue to identify appropriate, secure mechanisms for transmitting and receiving electronic data. Oregon has a relatively small state population of just over 4 million people, which has allowed the state to develop a tight and easily maintained POLST program. Oregon benefitted from being able to leverage preexisting EMS workflows that required EMS staff to call into the existing and centralized statewide ECC. Integrating the POLST program into the existing EMS system was cost-efficient, minimizing operational overhead and required less funding and training than creating a new program and infrastructure.

Oregon highly advocates and stresses the need to design systems that easily locate the POLST (separately from advance directives) with a single click. Oregon attributes the widespread use and adoption of the Oregon POLST Registry (with over 250,000 forms submitted) largely due to the legislative mandate to submit all POLST forms to the registry. This requirement enabled the registry to amass a high volume of POLST forms. The Registry's success is also largely attributable to the fact that it was designed to meet the access and workflow needs of both EMS providers in the field and acute care providers.

### **Current Activities**

In 2016, Oregon implemented one bi-directional ePOLST exchange with OHSU where the Registry is accessed through the EHR using web application programming interface (API) calls. OHSU receives data from the Registry via a third-party system that updates ePOLST. With state approval and support, Oregon has successfully implemented bi-directional access within EHRs where the EHR is connected to the Registry and the information from the Registry is available to the EHR in systems outside of OHSU. Currently, one vendor's ePOLST system can query the Oregon POLST Registry so that health care professionals can see POLST orders completed in any care setting that have been submitted to the Registry.

Oregon is collaborating with the Emergency Department Information Exchange (EDIE) to alert health care organizations of when a person has a POLST on record. As they expand HIE integration with the Emergency Department Information Exchange, every hospital in the state (except Veterans Administration (VA) hospitals) will have electronic identification of patients with forms registered in the POLST Registry, regardless of where they were completed, with forms provided at Emergency Department registration in near real-time.

Oregon has three mechanisms to access POLST forms: a 24/7 call center, API-based EHR bi-directional access, and the EDIE system. Acute care units, emergency departments, and hospitals are allowed access to the 24/7 call center, which remains the predominant method of requesting POLST forms. Over half (51%) of calls received at the call center are from emergency departments. The registry updated its system to allow entry of the newest Oregon POLST form in January of 2018.

## Challenges

The development of ePOLST systems and increased awareness and training of health care professionals regarding advance planning documents has likely led to the significant increase in volume of POLST forms handled by the Registry. In 2017, the Registry received over 61,000 POLST forms, and is on track to process 65,000 forms in 2018. Validation of the forms is one of the most important and time-consuming processes for the Registry. About 20% of the forms submitted are non-registry-ready. The process for correcting POLST forms is a challenging, and exacerbated with increased volume. The Registry continues to send out POLST packets to patients to ensure information is updated.

## Next Steps

One of the largest focus areas for the Oregon POLST registry is to manage the significant increase in volume. The team is revisiting the system structure to improve the processing speed and efficiency of forms. Some of the enhancements under consideration include: direct raw data transfer into the registry, using patient matching algorithms, redesign for accessible APIs, and integration with other information exchanges. A new POLST form may be developed within the next one or two years. The Registry will continue to work with additional EHR vendors, and will continue Registry enhancements.

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