

The Case of Mistaken Intubation

June 1, 2016

Silveira MJ. The Case of Mistaken Intubation. PSNet [internet]. 2016.

<https://psnet.ahrq.gov/web-mm/case-mistaken-intubation>

Case Objectives

- Appreciate that most older adults and many younger chronically ill patients have discussed or documented their preferences for life-sustaining treatments.
- List the characteristics of Physician Orders for Life-Sustaining Treatments (POLST) forms.
- Describe why electronic health records are the optimal location to store and display POLSTs or advance directives.
- List the steps institutions can take to ensure effective use of POLST forms or advance directives.

The Case

A 65-year-old man with a history of end stage renal disease, injection drug use, and multiple prior infections was living at a skilled nursing facility (SNF). He had recently been discharged from the hospital after a prolonged and complicated hospitalization for severe sepsis secondary to osteomyelitis.

During a routine morning vital signs check at the SNF, he was found confused and tachypneic, complaining of severe shortness of breath. Paramedics were immediately called, and they found him hypoxic, hypotensive, and tachycardic. He was taken to the hospital. A packet with the appropriate documentation from the nursing facility was transported with the patient. The physician at the SNF who knew him well called the emergency department (ED) to provide clinical details.

When the patient arrived in the ED, he had persistent hypoxia despite maximal oxygenation. The ED providers attempted to determine the patient's wishes for intubation and life-sustaining care, but no family members were present and they could not find clear documentation in the records from the SNF.

The patient was intubated and placed on a mechanical ventilator, and a central line was inserted. He was treated for severe pneumonia with antibiotics and intravenous fluids. The ED providers contacted the inpatient internal medicine team for admission.

The inpatient team happened to be the same team that had recently discharged him. When hearing about the case, the resident asked why the patient had been intubated as the patient had made it clear during the last admission that "he did not want to be intubated or resuscitated under any circumstances." The resident stated the patient had completed a POLST form (Physician Orders for Life-Sustaining Therapy), and the team had clearly documented his wishes in the discharge summary. They had also spoken directly with the provider at the SNF.

The admitting team evaluated the patient in the ED. When the patient's family arrived, the team explained to them that the patient had been intubated because his wishes were not clear when he arrived to the ED in acute respiratory distress. In discussions with the family, all agreed the patient would not want ongoing aggressive therapy. The endotracheal tube was removed and he was taken off life support. He died peacefully later that day with his family at the bedside.

Given the serious nature of the adverse event, the case was referred for a formal root cause analysis (RCA). At the RCA, a number of errors were identified, including:

- During the first admission the patient had completed the POLST form, but it had not been loaded into the computer system because the house staff did not know the standard process. They simply put the form in the paper chart.
- The POLST form that had been completed was not included with the paperwork sent with the patient to the SNF when he left the hospital.
- When the patient became ill, the physician at the nursing facility called the ED at the nearest hospital and told them about the patient (including his code status as DNR/DNI). However, the patient was taken to a different hospital (the one he had been discharged from) by the ambulance, and the physicians there had not spoken with the SNF physician.
- In the paperwork that came with the patient from the SNF, there was conflicting information about his wishes. While an old advance directive documented "full code," a more recent physician progress note documented "DNR/DNI."

The Commentary

The error described in this case, where a patient was resuscitated against his wishes, is among the gravest that can occur in a hospital. There is little data regarding how often such unwanted resuscitations occur. Although the patient had previously specified his preferences to avoid life-sustaining measures, his wishes were not available at the point of care. This case provides an opportunity to discuss how to optimally transmit wishes for life-sustaining treatments across different health care settings.

Evidence suggests that most older adults (1) and many younger chronically ill patients (2) have discussed or documented their preferences for life support and identified their surrogate decision-maker in some fashion. It is anticipated that these rates will increase even further after Medicare's recent announcement that they will reimburse clinicians for advance care planning discussions.(3) Today, most physicians managing patients without decision-making capacity are well advised to operate under the assumption that patients have an advance directive or advance care plan *somewhere*. I say this because the primary responsibility for finding the patient's documentation of prior preferences lies with the accepting physician,

and that physician will be unlikely to aggressively search for an advance directive if he simply assumes there isn't one.

That said, finding an advance directive or advance care plan is not easy. Unless it is readily available in the local electronic health record (EHR), providers must try to identify someone who is able to provide either a history of the patient's discussions or furnish a copy of the paper advance directive. In a study using Epic data, of 76,887 patients with advance directives, 43% had them scanned into the EHR.⁽⁴⁾ Given the fragmentation of the health care system and the increasing use of community and home-based providers, it is no wonder many physicians cease their search after failing to find an advance directive in the EHR.

There are many challenges to the consistent and effective implementation of advance directives, not the least of which is portability. Although the exact numbers are unknown, anecdotal experience suggests that few patients carry their advance directives with them. Some patients wear medical alert bracelets, but bracelets may show only a limited amount of information. A few patients have been known to tattoo their preference against CPR on their chest, but this is an extreme measure fraught with potential problems.^(5,6) Many patients use smartphones to document their emergency contacts, and this technology holds promise to help document and disseminate surrogate and care preferences as well. For example, Apple's "Health" app (included on all recent iPhone models) allows patients to list an emergency contact, and this can be used to stipulate a preferred surrogate decision-maker. Another mobile option is the American Bar Association's "My Health Care Wishes" app, which was specifically developed for documenting advance directives on iOS and Android devices. Nevertheless, affordability, privacy, and compatibility concerns make this an unlikely solution for everyone.

Beyond portability, clinical authority is another limitation of traditional advance directives. A patient's written preference, when not paired with a physician's DNR, has no authority over ancillary clinical staff. Indeed, nurses and paramedics are obligated to resuscitate all patients in cardiopulmonary arrest unless a physician directs them otherwise; this is a particular issue in assisted and independent living facilities. This means that patients without an active DNR order who are found unresponsive in the community must be resuscitated regardless of what their living will says.

Physician Orders for Life-Sustaining Treatment (POLST) forms were developed to overcome these (and other) limitations. POLSTs document a patient's wishes for surrogate decision-making and specify a range of acceptable treatments (e.g., CPR and life-sustaining treatment). The POLST must include a signed physician's order to effectuate the patient's wishes. POLSTs are statutory forms printed on neon-colored cardstock that should be easily recognizable in health care settings. To date, 38 states have POLST programs.⁽⁷⁾ POLSTs are supposed to be posted within sight of the patient and follow the patient wherever he goes. However, as the current case illustrates, POLSTs are only as effective as the systems in place are at ensuring POLSTs are transmitted from one setting to the next. A previous WebM&M commentary explores POLST forms in more detail.

Whether the patient has a documented advance directive or POLST, it is critical that health care institutions have an explicit "chain of custody" (in law, this refers to the chronological documentation or paper trail, showing the seizure, custody, control, transfer, analysis, and disposition of physical or electronic evidence [⁸]) for these documents and an identified "point person" to ensure they are incorporated into the medical

record. More importantly, all providers in the institution must be familiar with the institution's protocol for POLST documentation and incorporation and be encouraged to follow it. This presents a particular challenge in academic institutions where staff turns over on a regular basis. However, if large academic hospitals are able to train their staff on a myriad of other important issues—from billing to fire safety—they should be able to educate new house staff on the process for documenting an advance directive or POLST.

In an ideal world, the advance directive or POLST would be in the EHR and available to all providers at the point of care when needed. Indeed, several EHRs, including Epic, already have the functionality to store and disseminate advance directives. There are several advantages to using the EHR as the primary location to store advance directives or POLST forms. EHRs are ubiquitous in the hospital setting and rapidly expanding into primary care clinics and other community health care settings as well. More importantly, EHRs can provide a critical link between documentation and action, allowing physicians to write orders that reflect patients' preferences. As this case illustrates, even the best intended system that relies on paper documentation is likely to fail. In fact, it is difficult to come up with an alternative to the EHR that addresses so many of the challenges presented by advance directives.

Although the EHR is a good solution for patients at risk of rehospitalization to the same institution, it does not necessarily help patients who cycle from one facility to another. Patients often end up admitted to multiple different hospitals, especially in large urban areas. For such patients, documenting wishes regarding life-sustaining treatments in the EHR is only effective if the systems are interoperable. Such seamless interoperability does exist, but usually within vertically integrated health care systems such as Kaiser Permanente, Geisinger, and the Veterans Administration. Still, most EHR vendors have the capacity to link their customers to one another; Epic, for example, has "Care Everywhere," which allows customers in different health care organizations to see each other's records on shared patients. The biggest barrier to exchanging information across institutions is not so much technology as it is the data-sharing agreements that first must be forged to do so safely. Despite the bureaucratic and political hurdles this presents, providers in some regions have been able to develop health information exchanges with success (e.g., [Michigan's Health Information Network](#)). A previous WebM&M commentary discussed barriers to true interoperability.

Because advance directives and POLST forms are not routinely transmitted across inpatient and outpatient settings, nine states have taken the issue into their own hands and created advance directive registries. Such registries attempt to standardize the documentation of patients' wishes and make these available in a centralized location. However, there are multiple reasons why state registries are unlikely to be an ideal or universal solution. Many registries require patients to submit "snail mail" paper versions of their advance directive and also pay a \$10 to \$20 fee to register it with the state. In some states, patients cannot edit their advance directive online, thus limiting the speed with which changes become visible to providers. Additionally, many states require that patients either give permission to specific providers and surrogates, or that providers and surrogates apply for permission before accessing individual advance directives, limiting their accessibility. State registries do not cross state lines, while patients often do. Lastly, state registries are difficult to sustain; one (Washington) closed after losing its funding from the state. Private online advance directive registries (profit and not-for-profit) do exist, but they face similar challenges relating to uptake, sustainability, and the balance between privacy and usability.

In summary, the physician responsible for the patient is also responsible for locating and documenting an advance directive if it exists. That physician must be adequately trained on his institution's protocol for handling advance directives. All institutions, in turn, must accept that they are the *de facto* "home" for advance directives and POLSTs and, as such, carry the responsibility for developing explicit protocols for handling them and educating their staff. Because of the ubiquity and unique properties of EHRs, institutions are well advised to make their EHR the centerpiece of their advance directive protocol. Additionally, institutions should use cases like the one described to illustrate why participation in health information exchanges is an important safety activity. Individual patients should discuss with their primary care provider the optimal way to document their health care preferences and how to ensure those wishes can easily be transmitted across health care settings. Primary care providers should consider building mechanisms to automate this process for their patients if possible.

In this case, the patient had taken appropriate steps to document his wishes, and yet these preferences were not respected because of a dysfunctional system. Ideally, the original hospital team would have been aware of how to upload his POLST, and this would have been stored in the system's EHR at the time of the original discharge. Moreover, the nursing facility would have had a standard procedure for documenting wishes for life-sustaining treatments that would have been visible to the emergency department providers. If either of these steps had been in place, the patient would likely have avoided the unfortunate adverse event at the end of his life.

Take-Home Points

- Most older adults and many younger chronically ill patients have discussed or documented their preferences for life support or identified their surrogate decision-maker.
- Written advance directives or POLST forms are often not easily transmitted across health care settings.
- Health care institutions should have a standard protocol to ensure written advance directives or POLST forms are efficiently incorporated into the electronic health record.
- The electronic health record is the best repository for the advance directive or POLST as the information can be easily available and may be transmitted to other connected health care institutions.

Maria J. Silveira, MD, MA, MPH
Associate Professor, Internal Medicine
University of Michigan
Ann Arbor, MI

Faculty Disclosure: The author has declared that neither they, nor any immediate member of their family, have a financial arrangement or other relationship with the manufacturers of any commercial products discussed in this continuing medical education activity. In addition, the commentary does not include information regarding investigational or off-label use of pharmaceutical products or medical devices.

References

1. Silveira MJ, Wiitala W, Piette J. Advance directive completion by elderly Americans: a decade of change. *J Am Geriatr Soc.* 2014;62:706-710. [\[go to PubMed\]](#)
2. Wilson DM, Houttekier D, Kunju SA, et al. A population-based study on advance directive completion and completion intention among citizens of the western Canadian province of Alberta. *J Palliat Care.* 2013;29:5-12. [\[go to PubMed\]](#)
3. Advance care planning as an optional element of an annual wellness visit. Centers for Medicare and Medicaid Services. CR 9271: December 22, 2015.
4. Tai-Seale M, Wilson C, Tapper S, et al. CC1-03: Documentations of advanced health care directives in the electronic health records: where are they? *Clin Med Res.* 2012;10:167. [\[go to PubMed\]](#)
5. Smith AK, Lo B. The problem with actually tattooing DNR across your chest. *J Gen Intern Med.* 2012;27:1238-1239. [\[go to PubMed\]](#)
6. Cooper L, Aronowitz P. DNR tattoos: a cautionary tale. *J Gen Intern Med.* 2012;27:1383. [\[go to PubMed\]](#)
7. POLST. [\[Available at\]](#)
8. Federal Rules of Evidence, Rule 901: Authenticating or identifying evidence. Arlington, VA: Federal Evidence Review; 2015. [\[Available at\]](#)

This project was funded under contract number 75Q80119C00004 from the Agency for Healthcare Research and Quality (AHRQ), U.S. Department of Health and Human Services. The authors are solely responsible for this report's contents, findings, and conclusions, which do not necessarily represent the views of AHRQ. Readers should not interpret any statement in this report as an official position of AHRQ or of the U.S. Department of Health and Human Services. None of the authors has any affiliation or financial involvement that conflicts with the material presented in this report. [View AHRQ Disclaimers](#)