Short paper

A descriptive analysis of obstacles to fulfilling the end of life care goals among cardiac arrest patients

Ghania Haddad, Timmy Li, Danielle Turrin, Casey Owens, Daniel Rolston

Department of Emergency Medicine, The Feinstein Institutes for Medical Research, Northwell Health System, Manhasset, NY, United States
Department of Emergency Medicine, Donald and Barbara Zucker School of Medicine at Hofstra/Northwell, Manhasset, NY, United States
Department of Surgery, Donald and Barbara Zucker School of Medicine at Hofstra/Northwell, Manhasset, NY, United States

Abstract

Background and Objectives: Performing cardiopulmonary resuscitation (CPR) on cardiac arrest patients with Do Not Resuscitate (DNR) orders does not respect patients’ autonomy. We aimed to 1) determine the frequency of patients who wished to be DNR prior to cardiac arrest; 2) determine what proportion received CPR; and 3) explain why DNR patients received CPR.

Methods: This was a retrospective chart review study of cardiac arrest patients at an emergency department. We reported the frequency and proportion of patients who 1) had valid DNR orders presented at the time of cardiac arrest; 2) had valid DNR orders that were unavailable at the time of arrest; 3) had Advanced Directives but no DNR orders; 4) had their DNR orders rescinded; and 5) wished to be DNR but did not have any documents in place.

Results: Of 419 patients, 65 (15.51%) wished to be DNR. Out of these 65 patients, 38 (58.46%) patients were resuscitated. Among the 38 patients, 23 (60.52%) received CPR accordingly and 15 (39.47%) patients were inappropriately resuscitated.

Conclusion: In our sample of 419 patients, 65 (15.51%) did not want CPR in the event of cardiac arrest and 38 (9.06%) received CPR against their wishes. This was due to failure to document DNR orders, lack of recognition of documented valid DNR orders, and use of non-actionable Advanced Directives to relay patients’ wishes.

Keywords: DNR Resuscitation, Cardiac arrest, CPR MOLST, Living will, Healthcare proxy, Patient autonomy

Introduction

There is no international uniform approach to Do-Not-Resuscitate (DNR) as it may vary based on culture, religion, government policies, or the lack of them. Some patients opt to forego resuscitation and allow a natural death. This decision is often influenced by age, comorbidities, and functional status. Advanced Directives serve as the primary legal tool for patients to communicate their end-of-life healthcare goals and/or to appoint a proxy decision maker in the event of incapacity.

The ideal method to communicate DNR status is to have a Medical or Physician Order for Life Sustaining Treatment stating DNR, signed by the patient and a physician. Other advanced directives, such as living wills can describe what therapy the patient would or would not want in the event the patient is unable to make an informed decision, but are not medical orders. Patients can also appoint a healthcare proxy to make decisions on their behalf in accordance with their wishes.

Unfortunately, some patients receive Cardiopulmonary Resuscitation (CPR) during a cardiac arrest despite their wishes to allow a natural death. The objectives of this study were to 1) determine the frequency of cardiac arrest patients who wished to be DNR prior to cardiac arrest, 2) determine what proportion of these DNR patients received CPR, and 3) explain why these patients received CPR.
We identified 419 adult cardiac arrest patients during the study period. Overall, median age at time of cardiac arrest was 79 years, 57.04 % were male and 42.72 % were female. 308 (73.50 %) patients had out of hospital cardiac arrest and 110 (27.21 %) patients had the cardiac arrest while they were in the ED (Table 1). Based on documentation from Emergency Medical Services regarding initial cardiac rhythm, 114 (56.7 %) patients were in asystole, 41 (9.79 %) in PEA, 26 (6.21 %) in VF, 6 (1.43 %) in VT, and 14 (3.34 %) had an unknown rhythm or undocumented. The ED first arrest rhythm were as follow: 157 (37.47 %) patients were in asystole, 124 (29.59 %) patients were in PEA, 35 (8.35 %) patients were in VF, 13(3.10 %) were in VT and 47(11.22 %) patients had unknown or undocumented rhythm.

### Results

In the vast majority of cases, performing CPR on patients with DNR orders is unethical as it does not respect patient autonomy. We quantified the proportion of patients who received CPR against their wishes and identified barriers that prevented them from being honored. We found that 9.06 % (38 out of 419) patients received CPR, despite their wishes to not be resuscitated (Table 2).

There were 15 patients who received CPR despite having the appropriate paperwork completed prior to their cardiac arrest. The majority of these events occurred because the patient’s DNR paperwork was not readily available. This is the most concerning failure of the current paradigm in cardiac arrest care since patients or their proxies went through the appropriate channels to document their wishes but in the end, their wishes were not honored. Completing an end-of-life planning document stating DNR is not enough, its accessibility in an emergency is critically important.

Ease of DNR identification needs to be improved. Patients and caregivers must be educated so that first responders can easily identify patients with known DNR status and provide the appropriate care. In addition, nursing facilities need to have easily accessible DNR forms, as well as education and training of employees on where to find DNR forms quickly. One potential modality to improve recognition and communication of DNR status is an electronic database of signed DNR forms, end-of-life conversations, verbal consents, and any substantiating signatures. In New York, the electronic Medical Order for Life-Sustaining Treatment (eMOLST) registry is accessible by any clinical site.3,7 Some states have adopted and created medical alert bracelets for the documentation of DNR status.3 ILCOR received a proposal to discuss the possibility of implementing an international DNR symbol to be printed on patients’ wristbands.3 DNR bracelets or necklaces offer visual cues for healthcare providers to the presence of a valid DNR order in place. However, this creates concern for patient’s privacy and the disclosure of a personal decision, and for some families the concern of a constant reminder of patient’s prognosis or eventual mortality.

Another area of concern regarding patient autonomy is the act of rescinding valid DNR orders. In our study, 3 patients had forms indicating their preference for DNR. However, family members rescinded those orders, although only 2 of them were lawfully rescinded. In the United States, DNR orders should only be rescinded by the patient who completed the form or by the healthcare proxy if the patient lacks capacity and a major change in health condition occurred.1 While these issues vary by country and state, increasing medical providers’ awareness regarding the law and who may legally rescind a DNR order may spare patients from unwanted interventions.

Six patients had advanced directives such as living wills and healthcare proxies. DNR orders are the only legal medical orders in New York State,3,10 allowing first responders to withhold resuscitation in the event of cardiac arrest. In the U.S., an advance planning
A care document or a medical order is agreed upon by both the patient and a physician. Alternatively, a living will is a document relaying the patient’s wishes but not medical recommendations, it is therefore not a medical order. Patients prepare a living will in case they lose their capacity to state their treatment preferences in the future. It can inform a healthcare proxy or be extrapolated to the patient’s current situation to facilitate decision making. A healthcare proxy’s role is to follow the patient’s expressed wishes if the patient loses the capacity to make medical decisions. If these wishes are not known, the healthcare proxy should make decisions according to the patient’s best interest. A healthcare proxy has the authority to allow CPR or refuse it on behalf of the patient, unless the patient specifically stated otherwise. Educational institutions and teaching hospitals should provide clinicians training in advance care planning to help them navigate through the different documents of advanced directives and patients should be informed about the difference between an actionable medical order and the limits of a living will.

Fourteen patients had their wishes relayed by family members but did not have prior documents. This underscores a lack of communication between patients, families, and physicians about end-of-life wishes. It is important that conversations about end-of-life care happen early enough in the disease process, otherwise it would be a lost opportunity for the patient to exercise their autonomy. Care should be taken to involve patients, family members, healthcare proxies, and surrogates in these conversations, and they should be provided with information about advance planning to understand decisions and their implications. Finally, the importance of end-of-life planning could be addressed more prominently in the media, so people can begin these conversations outside the medical setting.

**Limitations**

The main limitation of this study was the lack of follow up with family members to confirm patient’s wishes, for patients who did not have any documentation in their medical records. This might not always reflect the patients’ true wishes, as that information might not have been available at the time of cardiac arrest.

Another limitation is that this was a single center study; however, these barriers to following DNR orders might still be the same for other centers.
Conclusions

Some patients receive resuscitation despite not wanting CPR. Reasons for this include not having DNR orders available at the time of cardiac arrest, as well as having improper documentation, or not having their wishes documented at all. Improved education and methods of making DNR wishes known are needed.

Disclosure Statement

Timmy Li receives research support from Nihon Kohden Corporation and United Therapeutics. Casey Owens and Ghania Haddad receive research support from United Therapeutics.

CRediT authorship contribution statement

Ghania Haddad: Methodology, Investigation, Data curation, Writing – original draft, Writing – review & editing. Timmy Li: Methodology, Writing – review & editing, Supervision, Project administration. Danielle Turrin: Writing – review & editing. Casey Owens: Writing – review & editing. Daniel Rolston: Conceptualization, Methodology, Writing – review & editing, Supervision.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

REFERENCES

1. Manalo MF. End-of-Life Decisions about Withholding or Withdrawing Therapy: Medical, Ethical, and Religio-Cultural Considerations. Palliat Care 2013;7:1–5. https://doi.org/10.4137/PCRT.10796.
2. Popp B. Legislative Attempts to Improve End-Of-Life Care in New York State. AMA J Ethics 2013;13(12):1062–8. https://doi.org/10.1001/virtualmentor.2013.15.12.pfor1-1312.
3. The Acting Director of the Bureau of EMS, “DNR and Medical Orders for Life- Sustaining Treatment (MOLST).” 16 June 2010. [Online]. Available: https://www.health.ny.gov/professionals/ems/policy/10-05.htm [accessed 24 Feb 2021].
4. Emanuel L. Living wills can help doctors and patients talk about dying. West J Med 2000;173(6):368–9. https://doi.org/10.1136/ewim.173.6.368.

5. New York State Department of Health. “Advanced Care Planning,” July 2018. [Online]. Available: https://www.health.ny.gov/diseases/conditions/dementia/adv_care_planning.htm [accessed 25 02 2021].

6. Baharlou S, Orem K, Kelley A, Aldridge M, Popp B. Rapid Implementation of eMOLST Order Completion and Electronic Registry to Facilitate Advance Care Planning: MOLST Documentation Using Telehealth in the Covid-19 Pandemic. NEJM Catal Innov Care Deliv 2020;10. https://doi.org/10.1056/CAT.20.0385.

7. MOLST.org, “eMOLST Program Manual v11.,” Feb. 2015. [Online]. Available: https://molst.org/wp-content/uploads/2018/05/eMOLSTProgramManual.pdf [accessed 24 Feb. 2021].

8. Herbelet S, Allaert E, Heyse B, Lobbestael J, Pype P, Coppens M. Proposition for an international DNR symbol printable on patients’ wristbands and usable in hospital, nursing and retirement homes with the aim to avoid unwanted CPR in patients with a DNR status. Resuscitation 2020;152:131–2. https://doi.org/10.1016/j.resuscitation.2020.05.021.

9. New York State Department of Health, “Deciding About Health Care: A Guide for Patients and Families,” Feb. 2018. [Online]. Available: https://www.health.ny.gov/publications/1503/ [accessed 25 02 2021].

10. New York State Department of Health, “Frequently Asked Questions (FAQs),” September 2018. [Online]. Available: https://www.health.ny.gov/professionals/patients/patient_rights/molst/frequently_asked_questions.htm [accessed 25 February 2021].

11. New York State Office of The Attorney General, “advancedirectives.pdf,” [Online]. Available: https://ag.ny.gov/sites/default/files/advancedirectives.pdf [accessed 24 Feb. 2021].

12. Calam B, Far B, Andrew R. Discussions of “code status” on a family practice teaching ward: what barriers do family physicians face? CMAJ 2000;163(10):1255–9.

13. Yuen J, Reid M, Fetters M. Hospital do-not-resuscitate orders: why they have failed and how to fix them. J Gen Intern Med 2011;26 (7):791–7. https://doi.org/10.1007/s11606-011-1632-x.