A Resident-Led Quality Improvement Initiative to Increase End-of-Life Planning in Primary Care

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ABSTRACT

Background Despite many benefits of end-of-life (EOL) planning, only 1 in 3 adults has EOL documentation, with low rates in resident primary care clinics as well.

Objective To increase clinic completion of life-sustaining treatment (LST) notes and advance directives (AD) for veterans at highest risk for death.

Methods The setting was a Veterans Affairs (VA) internal medicine primary care clinic. All clinic residents in the 2021-2022 academic year and all clinic patients identified through a VA risk-stratification tool as highest risk for death were included. Baseline AD and LST completion rates were determined through manual chart review. Our interventions included 2 hours of teaching to increase resident knowledge of EOL planning and a systematic process improvement to complete EOL planning appointments. Outcomes assessed included anonymous resident pre- and post-surveys of self-assessed knowledge and comfort with EOL conversations, as well as rates of LST and AD completion determined through serial chart review.

Results In the 2021-2022 academic year, 22 residents (100%) and 54 patients were included. Post-intervention surveys (n=22, 100%) showed improved self-assessed knowledge of EOL concepts and comfort with patient discussions (median Likert increase 3 to 4). The number of residents who completed an EOL planning visit increased from 9 of 22 (41%) to 15 (68%). LST completion increased from 9 of 54 (17%) to 29 (54%), and AD completion increased from 18 of 54 (33%) to 33 (61%).

Conclusions A brief teaching intervention to prepare residents for comprehensive EOL visits combined with process improvement to offer EOL planning visits improved self-reported knowledge and comfort and completion of EOL visits.

Introduction

The benefits of end-of-life (EOL) planning for adults include better alignment of patient goals and health care decisions,[1-3] fewer intensive medical interventions in the final days of life,[4] and improved caregiver support when decision-making is required.[3] Despite these benefits, only about 1 in 3 adults has EOL planning documentation completed.[5] Primary care is an appropriate forum for EOL planning discussions, as continuity of relationships allows for anticipatory guidance that incorporates understanding of patient goals and values.[6,7] Older patients with chronic diseases are more satisfied with their primary care physicians when advance directives (AD) are discussed.[8]

Training improves performance in EOL planning.[9] Graduate medical education programs largely lack teaching for effective EOL care.[10,11] Focused teaching has been effective in small pilot studies in hospitals and hospice settings,[12] but studies have focused on education and barriers[13,14] rather than system processes.

We noted a gap between the Veterans Affairs (VA) goal that all primary care patients have EOL documentation completed[15] and actual note completion at our internal medicine (IM) resident outpatient VA primary care clinic. To address this care gap, we developed a resident-led quality improvement (QI) project to increase EOL planning visits with embedded resident education, which was lacking in our program.

Methods

Setting and Participants

The study took place in the Central Texas VA Health Care System Austin Outpatient Clinic, an IM resident primary care clinic, with both categorical and primary care residents, during the 2021-2022 academic year. All IM residents assigned to the VA ambulatory clinic were included. The project leadership team included 2 resident leaders and the Chief Resident in Quality and Safety. In addition, faculty physician mentors with expertise in QI and palliative care and the Director of the Primary Care Residency Track served in advisory roles requiring minimal time

DOI: http://dx.doi.org/10.4300/JGME-D-24-00271.1

Editor's Note: The online supplementary data contain resources and the surveys used in the study.

commitments. We used a VA algorithm to stratify patients into percentiles from 1 to 99 to predict risk of hospitalization or death, which was based on the Care Assessment Need (CAN) score.[15] This score had not been routinely incorporated into clinical care at our site. All patients with CAN scores 95 and above, identified through the electronic health record (EHR), were included in the study. A CAN score at the 95th percentile and above is associated with a 39% risk of hospital admission or death over 1 year.[16]

The project used a QI framework, based on the Institute for Healthcare Improvement's Model for Improvement,[17] to increase EOL visits. Life-sustaining treatment (LST) and AD completion were chosen as primary measures with input from the VA palliative care leader on the leadership team. Given baseline rates, determined by manual chart review, of 17% for LST note and 33% for AD completion, the leadership team developed 2 aims: (1) residents will receive training and practice in EOL discussions in the context of primary care, and (2) by May 15, 2022, for veterans with CAN scores 95 and above, resident LST notes will increase to at least 34% and AD completion will increase to at least 50%.

KEY POINTS

What Is Known
Patients prefer talking to their physicians about end-of-life (EOL) planning, but few documented conversations occur in resident primary care clinics.

What Is New
To improve documentation of advance care and EOL discussions, this Veterans Affairs quality improvement study used targeting criteria for internal medicine patients at highest risk of death, a team approach for scheduling patients for EOL visits, and resident education.

Bottom Line
Resident knowledge, patient visits, and documented advance care plans increased substantially with these approaches.

Program Description

Education: The educational intervention consisted of two 1-hour lunch teaching sessions. The first session was a talk (eg, importance of EOL planning in primary care vs emergency settings, stratifying patients via CAN, details on completing documentation, and communication strategies), and the second session briefly reviewed the previous material followed by role play of EOL conversations with real-time feedback from leadership team members (see online supplementary data Appendices 1 and 2 for a description of topics of each session as well as teaching slide decks from each session).

Residents were encouraged to reflect on the strong emotions of many patients and families in these conversations. The second session concluded with visit documentation and practical steps. Scheduling EOL patients began at the start of the program, but no visits occurred until after both educational sessions were completed (see project sequence in online supplementary data Appendix 3).

Systems Improvement: The leadership team designed a process to offer, schedule, and complete appointments for all included veterans (see online supplementary data Appendix 4). This process included a plan for completion of EOL documentation (ie, all elements of both LST and AD required for completion) during a designated 1-hour clinic visit and subsequent same-day social work appointment. We enlisted nursing, clerical, and social work staff for input prior to beginning our process change to ensure team buy-in and appropriate workflow. Veteran phone call invitations by residents took place during dedicated QI time (4 hours per clinic week × 10 clinic weeks per academic year per resident), with real-time coordination with scheduling clerks to immediately call veterans back and schedule appointments per veteran preferences. Team nurses, as the veteran's primary point of contact for usual care, made reminder calls and were involved in appointment coordination as needed.

Plan-Do-Study-Act (PDSA) cycle 1 included all of the above interventions and began September 1, 2021. Due to lagging AD completion, beginning February 13, 2022 (PDSA cycle 2), the leadership team initiated a process change for completing ADs during resident visits and added resident education on signature and completion requirements for ADs, which was not part of the initial educational sessions (for PDSA cycle 1 and 2 specifics, see online supplementary data Appendix 5).

Assessment

Residents completed pre- and post-teaching (between 2 and 4 months after teaching) surveys. Without models in the literature, the authors designed the survey, with 3 yes/no knowledge questions; and 2 Likert-type questions (1 to 5) to rate comfort with EOL conversations and stratifying patients for dedicated EOL visits (see online supplementary data Appendix 6). We estimated confidence intervals of the changes in percentages in resident knowledge outcomes (yes/no responses) using the Wilson method, and of the changes in medians in resident comfort outcomes (Likert scale responses) using the Hodges-Lehmann method.

Chart review through the EHR was performed during protected QI time by residents for scheduled and completed EOL visit, LST note, and AD completion for patients selected through CAN. In addition, resident team leaders serially reviewed completion to ensure data accuracy. The evaluation period ended on May 15, 2022.

This VA-based QI project was deemed exempt from institutional review board review by the Central Texas VA System.

Results

The 22 residents spanned all 3 years of training and were in primary care (n=8) and categorical (n=14) IM tracks. Prior to the intervention, 6 of 22 participants (27%) reported previous formal palliative care teaching. All 22 residents completed pre- and post-surveys. EHR review of all faculty clinic patients (n=2881), which included all resident panels, found 82 patients with CAN scores 95 and above. After exclusions for death (n=13), moving away from the Austin VA (n=8), and having recurrent mental health hospitalizations without comorbid conditions that would qualify for palliative or hospice review (n=7), 54 patients were included in the intervention patient cohort. Of these 54, 53 were male (98%) and ages ranged from 46 to 91 years.

Survey Results

Comparing resident pre- to post-self-assessed knowledge showed that residents reporting that they could explain the difference between a medical power of attorney and a medical surrogate increased by 50% (95% CI 21-79). The percentage of residents who reported they could explain the difference between an AD and out-of-hospital do not resuscitate increased by 36% (95% CI 10-63; FIGURE 1). On the Likert scale 1 to 5, residents' self-evaluated comfort with risk-stratifying patients increased from a median of 3 to 4 (increase of 1; 95% CI 1-2) and comfort with EOL discussions increased from a median of 3 to 4 (increase of 1; 95% CI 1-2). All residents (100%) found the curriculum helpful in incorporating EOL planning into primary care.

EOL Visits and Documentation

Prior to the intervention, of the 54 patients, 9 (17%) already had an LST note and 18 (33%) had a completed AD. After the second PDSA cycle, 29 (54%) had completed LST notes. Concurrent completion of ADs increased minimally during the first PDSA cycle, from 18 (33%) to 21 (39%). After the subsequent process change to complete ADs during resident visits (PDSA cycle 2), 33 (61%) patients had completed AD (FIGURE 2).

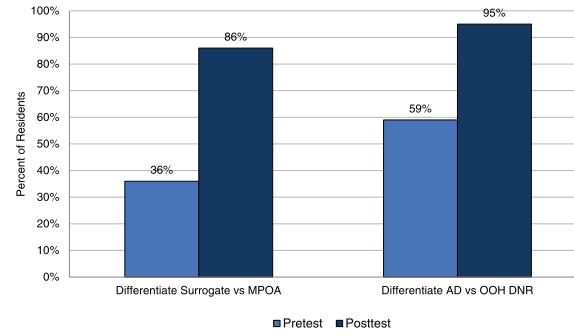

FIGURE 1
Resident Knowledge Outcomes
Abbreviations: MPOA, medical power of attorney; AD, advance directive; OOH DNR, out-of-hospital do not resuscitate.

Prior to our intervention, 9 of 22 (41%) residents reported in pretest surveys previous completion of an EOL planning visit and post-intervention, 15 of 22 (68%) reported in the posttest survey they had completed a visit.

Discussion

A 2-session teaching intervention, in conjunction with clinic process changes and followed by additional brief teaching on ongoing performance gaps, resulted in increased completion of LST notes and ADs, with high resident acceptability at this VA primary care IM clinic. The intervention was highly acceptable to residents, which may reflect use of targeting criteria—patients with highest CAN scores—for clinic staff for scheduling and reminders.

Despite questions about the effectiveness of advance care planning,[18] substantial evidence suggests that patients and families are interested in advance care planning. Patients and physicians benefit from, at minimum, the designation of a decision-maker.[19] Previous studies have used hospital electives or hospice rotations for resident EOL training,[12] with less focus on incorporating EOL teaching into primary care contexts[10] or including systems process change.[11] Using clinic QI time instead of elective time has advantages, including incorporating EOL practice into an optimal site for these discussions: a continuity care setting. As the educational and clinic process changes—CAN score and EOL scheduled visits—were implemented together in PDSA cycle 1, it is not known which component had more effect. A second educational intervention and process change was needed to improve AD completion, which may imply a need for additional "booster" sessions over time.

The context of this QI project—a VA primary care clinic—is shared by many other VAs with

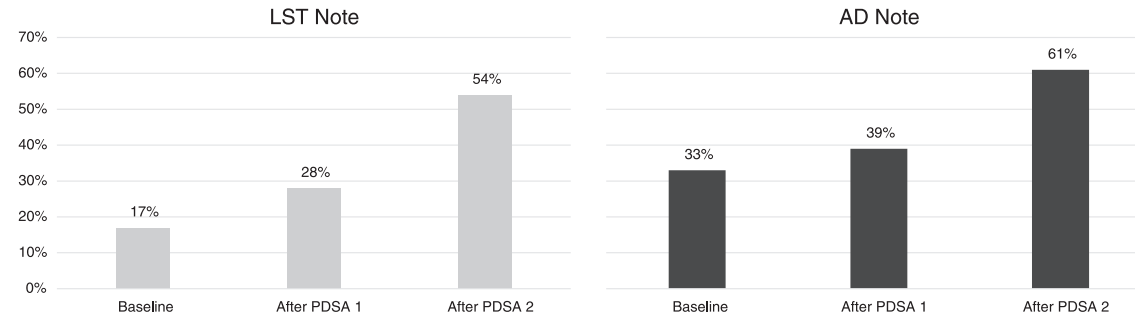

FIGURE 2
End-of-Life Note Completion

Abbreviations: LST, life-sustaining treatment; AD, advance directive; PDSA, Plan-Do-Study-Act cycle.

similar resources: QI chief resident, palliative medicine faculty experts, and a national EHR of shared data. Other non-VA settings may not be able to implement a similar intervention. The survey questions were not tested; thus, respondents may not have interpreted them as intended. Moreover, the survey assessed self-reported knowledge, which does not align well with externally assessed knowledge; therefore, these improvements may reflect subjective comfort rather than objective knowledge. The project is missing feedback from veterans and their families about the EOL discussions, which is important information for successive iterations. The lack of balancing measures means that other important tasks, whether by clerical, nursing, social work, or residents, may have declined.

Next steps may include expansion of these interventions in additional settings as well as including veterans with lower CAN scores.

Conclusions

This VA primary care QI project, combining resident education, risk of death stratification with CAN, and clinic process changes such as proactively scheduled EOL visits, found an increase in self-reported knowledge and comfort with EOL discussions in IM residents, as well as greatly increased rates of LST note and AD completion.

References

1. Centers for Disease Control and Prevention. Benson WF. Advance care planning: ensuring your wishes are known and honored if you are unable to speak for yourself. Accessed August 7, 2024. https://www.cdc.gov/aging/pdf/advanced-care-planning-critical-issue-brief.pdf
2. Kossman DA. Prevalence, views, and impact of advance directives among older adults. *J Gerontol Nurs*. 2014;40(7):44-50. doi:10.3928/00989134-20140310-01
3. Silveira MJ, Kim SYH, Langa KM. Advance directives and outcomes of surrogate decision making before death. *N Engl J Med*. 2010;362(13):1211-1218. doi:10.1056/NEJMsa0907901
4. Arruda LM, Abreu KPB, Santana LBC, Sales MVC. Variables that influence the medical decision regarding advance directives and their impact on end-of-life care. *Einstein (Sao Paulo)*. 2020;18:eRW4852. doi:10.31744/einstein_journal/2020RW4852
5. Yadav KN, Gabler NB, Cooney E, et al. Approximately one in three US adults completes any type of advance directive for end-of-life care. *Health Aff (Millwood)*. 2017;36(7):1244-1251. doi:10.1377/hlthaff.2017.0175
6. Quill TE. Initiating end-of-life discussions with seriously ill patients addressing the "elephant in the room." *JAMA*. 2000;284(19):2502-2507. doi:10.1001/jama.284.19.2502
7. Solis GR, Mancera BM, Shen MJ. Strategies used to facilitate the discussion of advance care planning with older adults in primary care settings: a literature review. *J Am Assoc Nurse Pract*. 2018;30(5):270-279. doi:10.1097/JXX.0000000000000025
8. Tierney WM, Dexter PR, Gramelspacher GP, Perkins AJ, Zhou XH, Wolinsky FD. The effect of discussions about advance directives on patients' satisfaction with primary care. *J Gen Intern Med*. 2001;16(1):32-40. doi:10.1046/j.1525-1497.2001.00215.x
9. Block SD, Bernier GM, Crawley LM, et al. Incorporating palliative care into primary care education. *J Gen Intern Med*. 1998;13(11):768-773. doi:10.1046/j.1525-1497.1998.00230.x
10. Spiker M, Paulsen K, Mehta AK. Primary palliative care education in U.S. residencies and fellowships: a systematic review of program leadership perspectives. *J Palliat Med*. 2020;23(10):1392-1399. doi:10.1089/jpm.2020.0331
11. Alderman JS, Nair B, Fox MD. Residency training in advance care planning: can it be done in the outpatient

clinic? *Am J Hosp Palliat Med*. 2008;25(3):190-194. doi:10.1177/1049909108315301

12. von Gunten CF, Mullan PB, Nelesen R, et al. Primary care residents improve knowledge, skills, attitudes, and practice after a clinical curriculum with a hospice. *Am J Hosp Palliat Med*. 2017;34(8):713-720. doi:10.1177/1049909116655767
13. Dussault N, Nickolopoulos E, Henderson K, Hemming P, Cho A, Ma JE. Internal medicine resident barriers to advance care planning in the primary care continuity clinic. *Am J Hosp Palliat Med*. 2023;40(11):1205-1211. doi:10.1177/10499091231154606
14. Tung EE, Wieland ML, Verdoorn BP, et al. Improved resident physician confidence with advance care planning after an ambulatory clinic intervention. *Am J Hosp Palliat Med*. 2014;31(3):275-280. doi:10.1177/1049909113485636
15. Foglia MB, Lowery J, Sharpe VA, Tompkins P, Fox E. A comprehensive approach to eliciting, documenting, and honoring patient wishes for care near the end of life: the Veterans Health Administration's life-sustaining treatment decisions initiative. *Jt Comm J Qual Patient Saf*. 2019;45(1):47-56. doi:10.1016/j.jcjq.2018.04.00716
16. Veterans Affairs. Fihn S, Box T. Care Assessment Need (CAN) Score and the Patient Care Assessment System (PCAS): tools for care management. Published June 27, 2013. Accessed August 7, 2024. https://www.hsrd.research.va.gov/for_researchers/cyber_seminars/archives/713-notes.pdf
17. Institute for Healthcare Improvement. How to improve: model for improvement. Accessed July 19, 2023. https://www.ihi.org/resources/Pages/HowtoImprove/ScienceofImprovementHowtoImprove.aspx
18. Morrison RS, Meier DE, Arnold RM. What's wrong with advance care planning? *JAMA*. 2021;326(16):1575-1576. doi:10.1001/jama.2021.16430
19. McMahan RD, Hickman SE, Sudore RL. What clinicians and researchers should know about the evolving field of advance care planning: a narrative review. *J Gen Intern Med*. 2024;39(4):652-660. doi:10.1007/s11606-023-08579-5

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Funding: The authors report no external funding source for this study.

Conflict of interest: The authors declare they have no competing interests.

This study was previously presented at the Texas Chapter of the American College of Physicians (ACP) Annual Meeting, October 28-29, 2022, Dallas, Texas, USA; National ACP Conference, April 27-29, 2023, San Diego, California, USA; Society for General Internal Medicine Annual Meeting, May 10-13, 2023, Aurora, Colorado, USA.

The authors would like to thank the following contributors to the development and execution of this project: Asma Nuri, MD, for her assistance with VA planning and EHR data collection; Heather Herrington, MD, and Sarah Mills, MD, for their guidance in developing the educational framework; and the Palliative QI Resident Team for the 2021-22 academic year who went above and beyond in their repeated efforts to bring our sickest patients into clinic for these visits.

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Received March 25, 2024; revision received July 15, 2024; accepted July 16, 2024.