

UCSF

UC San Francisco Previously Published Works

Title

Experiences with targeting inpatient advance care planning for emergency general surgery patients: A resident-led quality improvement project.

Permalink

<https://escholarship.org/uc/item/1n5982c3>

Journal

Surgery, 174(4)

Authors

Lin, Joseph
Johnson, Christopher
Finlayson, Emily
et al.

Publication Date

2023-10-01

DOI

10.1016/j.surg.2023.04.031

Peer reviewed



Published in final edited form as:

Surgery. 2023 October ; 174(4): 844–850. doi:10.1016/j.surg.2023.04.031.

Experiences with targeting inpatient advance care planning for emergency general surgery patients: A resident-led quality improvement project

Alexis Colley, MD, MS^a, Joseph Lin, MD, MPH^a, Logan Pierce, MD^b, Christopher Johnson, MA^c, Tasce Bongiovanni, MD, MPP^a, Emily Finlayson, MD, MS^a, Rebecca Sudore, MD^d, Elizabeth C. Wick, MD^{a,*}

^aDepartment of Surgery, University of California–San Francisco, CA

^bDepartment of Medicine, University of California–San Francisco, CA

^cSchool of Medicine, University of California–San Francisco, CA

^dDivision of Geriatrics, Department of Medicine, University of California–San Francisco, CA

Abstract

Background: For patients who may permanently or temporarily lose their ability to communicate preferences, advance care planning is a critical mechanism to guide medical decision-making but is currently underused among surgical patients.

Methods: A resident-led quality improvement project, including education and performance measurement, was conducted on an emergency general surgery service to increase the completion of inpatient advance care planning notes using a specialized template in the electronic health record. Advance care planning documentation was defined as either preadmission advance care planning documentation (eg, advance directive) or inpatient advance care planning (use of the electronic health record template). Data from patients admitted to the emergency general surgery service for 12+ hours were analyzed, and baseline data (July 2020 to June 2021) were compared with data from the intervention period (July 2021 to June 2022). The chart review evaluated the content of the inpatient advance care planning documentation from the intervention period.

Results: The frequency of inpatient advance care planning documentation increased (9.3%, $n = 56$ to 16.6%, $n = 92$, $P < .001$) with a greater contribution of inpatient advance care planning notes by the surgery team (16.7% to 55.4%) in the intervention period. Content analysis indicated that 79.0% of inpatient advance care planning notes listed preferences for life-sustaining therapy, 78.3% listed surrogacy, 57.3% listed overall health goals, and 50.3% listed treatment goals specific to the surgical encounter.

This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

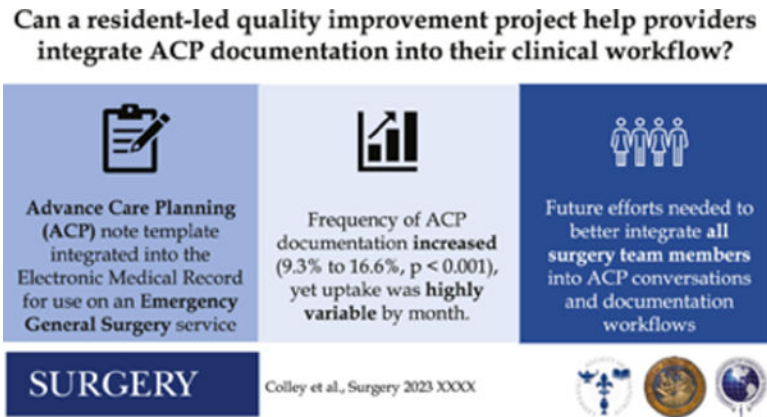
*Reprint requests: Elizabeth C. Wick, MD, Department of Surgery, University of California, San Francisco, 513 Parnassus Ave, HSW 1601, San Francisco, CA 94143. Elizabeth.Wick@ucsf.edu (E.C. Wick).

Conflict of interest/Disclosure

Dr Finlayson reports that she is the founder of Ooney Inc. The remaining authors have no conflicts of interest to declare.

Conclusion: Although a resident-led quality improvement project contributed to greater adoption of standardized inpatient advance care planning documentation on an emergency general surgery service, progress was slow, and integration into standard work was not achieved. Future efforts are needed to better understand the integration of essential advance care planning elements into workflows and to establish inclusive educational programming to prepare all team members for conducting and documenting advance care planning conversations.

Graphical Abstract



Introduction

Adults 65 years and older comprise a significant and growing percentage of patients undergoing emergency general surgery. For those who survive a hospitalization for emergency general surgery (EGS) a year after discharge, more than half are re-hospitalized, and 1 in 3 are dead.¹ Given that the precipitant for EGS admission is usually an acute change in health trajectory, incorporating existing goals of care into preoperative preparation is an important step to ensure that the intervention resonates with a patient’s goals and preferences.

Advance care planning (ACP) is a process of understanding and sharing personal values, life goals, and preferences regarding future medical care.² Although a robust body of evidence points to the benefits of ACP to help reduce rates of decisional conflict, anxiety and depression, and even posttraumatic stress disorder in patients and their loved ones when making serious medical decisions, rates of ACP among surgical patients are low.³⁻⁷ In fact, only a quarter of adults 65 years and older with multiple chronic conditions who undergo major surgery have ACP documentation preoperatively.⁶ Although patients may receive basic information about the option to appoint surrogate decision-makers at the time of hospital admission, patient preferences are infrequently recorded in a standardized, easily accessible location, and surrogates may not even know they have been designated as such.⁸ Furthermore, ACP for EGS patients tends to be reactive and associated with postoperative complications instead of universal and proactive.^{7,9} In fact, data from our institution indicate that in 2019, most ACP documentation for surgical patients was completed before admission, and surgeons did not regularly engage in the documentation of inpatient ACP. Advanced care planning conducted within the context of EGS care can

Author Manuscript

Author Manuscript

Author Manuscript

Author Manuscript

provide a critical perspective on patients' and families' tolerance for surgical risk and, more importantly, postoperative recovery and implications for functional status. Therefore, the lack of accessible ACP documentation represents a critical missed opportunity to work toward patient-centered surgical care. Standardized, accessible, and timely documentation of ACP conversations is essential so that all clinicians caring for the patient can review and update the patient's goals and preferences throughout the hospitalization.

To address the lack of standardized, easily accessible ACP documentation among our EGS patients, we developed a multipronged, interdisciplinary quality improvement (QI) approach. We hypothesized that providers would begin integrating ACP documentation into their clinical workflow through a standardized workflow, educational conferences, support from faculty and the institution, and individual-level incentives. Herein we detail the development, implementation, and assessment of our QI project by using the American College of Surgeons Quality Improvement Framework.¹⁰

Methods

Local context

Our QI project focused on inpatient ACP documentation for patients admitted to the EGS service. The EGS service consists of residents (24 postgraduate year 1 [PGY-1] and 24 postgraduate year 3 [PGY-3] annually), advance practice providers (APPs), and medical students, and is staffed on a rotating weekly basis by an attending general/acute care surgeon (9 attending surgeons contributed to weekly coverage). The EGS service is responsible for admitting all patients from the Emergency Department, and inpatients on other services requiring EGS care who have acute general surgery needs. The EGS service admits between 550–700 patients annually.

QI project team and intervention development

The QI project was designed to directly improve patient care at the individual and systemic levels by making ACP more accessible to clinicians caring for hospitalized surgical patients. General Surgery residents convened and led a team of faculty surgeons, a physician informaticist, APPs, registered nurses, and medical students to describe best practices in ACP for surgical patients, practical barriers to completion of ACP documentation, and strategies for improvement. The team was further supported by physician leaders in hospital-wide QI and other hospital leaders (eg, Chair, Department of Surgery, and Chief Population Health Officer).

The project team collaborated with experts in the field of ACP (R.S.) and geriatric surgical care (E.F., T.B.) to delineate an educational strategy, which included monthly educational didactics for residents on the EGS service, 2 department-wide grand rounds presentations, and creation and distribution of pocket cards for residents (Figure 1). We specifically chose to have faculty present to provide education and draw support for the residents' efforts with an overall aim to include ACP as part of the culture of the service rather than a one-time QI project. The project team contacted on-service residents individually via e-mail every 2

weeks to review the ACP process, answer questions, and encourage ACP conversations and documentation.

As the cornerstone of the intervention, the team developed an EHR note template (Figure 2) in accordance with the best practices outlined in the American College of Surgeons Geriatric Surgical Verification Program.¹¹ The ACP dot phrase was made available for any surgical service line. The template can be used in any note type and will automatically insert the note text into an ACP section of the EHR. This allowed for the aggregation of ACP-related documentation from different sources (both note type and service type) in a central repository in the chart.

Real-time data collection

A web-based Tableau dashboard (Tableau Server Version 2021.2.16, Tableau Software, LLC, Seattle, WA) was designed to track data on ACP notes in real time. The metrics were visible by patients' race/ethnicity and preferred language because we specifically wanted to address existing institutional inequities regarding the adoption of ACP for minoritized groups. This dashboard made the main process measure of the frequency of inpatient ACP documentation per EGS encounter available to the QI project team daily. To understand resident-identified barriers to ACP documentation on the EGS service, PGY-1 and PGY-3 residents were surveyed electronically at the mid-point of the project (February 2022). Survey questions asked about what barriers to ACP conversation and documentation exist in the context of the EGS service. The survey was anonymous, and residents were not compensated for participating.

At the end of the intervention year, data on ACP documentation were extracted from the EHR for all patients admitted to the EGS service for at least 12 hours during the baseline period (July 2020 to June 2021) and the intervention period (July 2021 to June 2022). Descriptive statistics were calculated via Stata version 16.1 (StataCorp, LLC; College Station, TX) and SAS 9.4 (SAS Institute, Cary, NC). Categorical variables were compared between baseline and intervention periods using χ^2 analysis or Fisher's exact test (as appropriate), and continuous variables were compared using Student's *t* tests or Wilcoxon rank-sum tests (as appropriate). A chart review was conducted, including a content review of all inpatient ACP notes from the intervention period. This study was approved by the Institutional Review Board at the University of California, San Francisco. Informed consent was waived.

Results

Frequency of ACP documentation

A total of 1,145 patients were included in the analysis (590 in the baseline year; 555 in the intervention year; Table I). Patient characteristics did not differ significantly between the 2 periods except for the shorter median duration of stay in the intervention year (median 4.0 days [IQR, 2.0–8.0] vs, 3.0 [IQR, 2.0–7.0], $P < .001$). The frequency of any ACP documentation, including preadmission ACP and inpatient ACP notes, was similar between the baseline and intervention periods (28.6%, $n = 169$ vs 32.1%, $n = 179$, $P = .21$; Table

II). During the intervention period, inpatient ACP documentation significantly contributed to the overall ACP rate (9.3%, $n = 55$ vs 16.6%, $n = 92$, $P < .001$). In-patient mortality was 2.5% in the baseline period, with zero patients having ACP documentation before death, whereas in the intervention period, in-patient mortality was similar (2.0%), but 90.9% had ACP documentation before death (100% had inpatient ACP documentation and 18.2% also had scanned ACP).

During the intervention period, 61.4% ($n = 341$) of patients on the EGS service underwent an operation. These patients more frequently had ACP documented during the intervention period than in the baseline period (19.3% vs 47.2%, $P < .001$; Table II). In a subset of 126 patients who underwent a “major operation” (defined as any abdominal procedure that was not a laparoscopic appendectomy, laparoscopic cholecystectomy, endoscopy, and interventional radiology-performed procedures), 35.7% had ACP documentation (either preadmission or inpatient).

Inpatient ACP notes

For the 92 patients with inpatient ACP notes, the average age at admission was 65.8 years, and 75.0% were either 65 years or older or had a Charlson Comorbidity Index score of 3+. Of these 92 patients, 20.7% also had preadmission ACP (eg, advance directive, physician orders for life-sustaining treatment), which had been created an average of 5.9 years before admission (Table III). There was a total of 157 unique ACP notes for these 92 patients. For example, eight patients had >5 inpatient ACP notes each, and one patient had 13 unique ACP notes written by multiple providers during a 238-day hospitalization.

Members of the surgery team contributed 16.7% ($n = 22$) of inpatient ACP notes in the baseline period and 54.8% ($n = 87$) in the intervention period, although the frequency of ACP documentation fluctuated widely by month and was not necessarily related to the overall EGS service census (Figure 3). Among the authors of inpatient ACP documentation by the surgery team, most notes were written by PGY-3 residents (35.6%), followed by PGY-1s (25.3%), moonlighters (23.0%), APPs (10.3%), and attendings (4.6%). Instead, as the data were examined, it was clear that some residents clearly felt that it was important and prioritized integrating it into their workflow and tended to complete it every time while others failed to engage. As we continue this work, it will be important to better identify what is motivating the positive deviants. The remaining inpatient ACP notes in the intervention period were written by other services, most frequently critical care (16.6%), hospital medicine (14.6%), and palliative care (5.7%). On average, inpatient ACP notes were created 17 days after admission, whereas notes written by the surgical team were generated on average 5 days after admission. For patients who underwent an operation and had inpatient ACP, 35.7% had a preoperative ACP note, and 64.3% had a postoperative ACP note. Preoperative inpatient ACP was completed an average of 1 day before the operation, and postoperative ACP was completed an average of 27 days after the operation.

According to content analysis of the 157 inpatient ACP notes, 79.0% of inpatient ACP notes listed preferences for life-sustaining therapy, 78.3% listed surrogate (which was the same as the emergency contact in 95.1% of notes containing a surrogate), 57.3% listed overall health goals, and 50.3% listed treatment goals specific to the surgical encounter (Table III).

Resident survey feedback

At the mid-point of the intervention year, a total of 16 (response rate 61.5%) PGY-1 and PGY-3 residents completed the electronic survey designed to elicit feedback on barriers to ACP documentation on an EGS service. The most commonly encountered barriers to ACP documentation were competing clinical duties (68.8%), time (62.5%), patient or family hesitancy (31.3%), unsure how to initiate the conversation (18.8%), unclear expectations (18.8%), language barriers (12.5%), and personal comfort level with having ACP conversations (6.3%).

Discussion

Our study shows that a resident-led QI intervention had some successes in increasing the frequency of inpatient ACP documentation from 9.3% to 16.6%, with a greater overall contribution (16.7% to 54.8%) from the surgical team. This increase was realized with considerable effort. Regarding content, code status and surrogate decision maker were in most notes, but only 50% included information about goals specific to surgery. At the end of the year, there was still significant variation in practice among clinicians, suggesting that the intervention had likely not changed the pervasive culture or standard workflow of the EGS service.

Several prior efforts by internal medicine residents in the outpatient setting at other institutions have sought to increase ACP-related knowledge, frequency of ACP conversations, and documentation, most with evidence of success.¹²⁻¹⁶ However, we know of only one prior QI project targeted at increasing rates of ACP documentation among surgical patients, possibly because publication bias accounts for the dearth of reports about real-world surgical ACP interventions. That project focused on surgical patients admitted to the Denver Health Medical Center intensive care unit and aimed to increase the documentation of surrogate decision-makers.¹⁷ By the end of the intervention period, 75% of patients had a documented surrogate (compared to 8% in the baseline period). The targeted single-metric project (ie, surrogate documentation) may be a useful strategy to take in the EGS context to focus resident efforts and achieve higher rates than our QI project. However, the long-term sustainability of the intensive care unit intervention is unknown.

Although the increase from 9.3% to 16.6% of patients with inpatient ACP notes in our QI project was modest, there was a 46% jump in notes contributed by the surgical team and a 28% increase in patients undergoing an operation who had ACP. Nevertheless, only 29.3% of ACP documentation for patients undergoing an operation occurred preoperatively. When documented postoperatively, inpatient ACP discussions were recorded an average of 17 days after the operation, signaling that ACP discussions may have been a reaction to adverse outcomes or worsening trajectories rather than proactive. This reactivity would echo the pervasive practice among many surgeons whereby ACP conversations and documentation are related to major postoperative complications and death instead of being universal and proactive.^{7,9} Our project was premised on the strong belief that ACP should be standardized and proactive for all patients 65 years old, those with serious illnesses (often those co-managed by a Medicine service), and those undergoing high-risk procedures.

Our finding that the surgery team was more involved in ACP documentation specific to the surgical disease and/or surgical encounter does not appear to have reached the level of culture change because the percentage of patients with inpatient ACP documentation fluctuated widely from month to month with a few key contributing residents who integrated ACP into their daily morning rounds or admission interview. Table IV summarizes lessons learned and the next steps for understanding why these “positive deviants” engaged patients in ACP discussions and how they integrated those discussions into their workflow. Anecdotally, we found that clinicians who cared for patients with challenging postoperative courses in which preoperative ACP may have eased some of the postoperative decision-making tended to be more likely to integrate ACP into their workflow. The fluctuations in ACP documentation frequency by month did not appear to be related to the service census, yet lack of time is an often-cited barrier to completing ACP documentation.^{18,19} Another known barrier to surgical ACP is difficulty in documenting complex conversations.^{18,19} Evidence of this challenge appeared to manifest in the note content analysis in which only half of the notes documented patients’ overall health goals or treatment goals specific to the surgical encounter and instead focused on a narrower definition of ACP (eg, code status). A third and well-known barrier to ACP for surgical patients, which may have played some role in this project, is the lack of training among surgical providers.^{18,20} Our QI intervention aimed to provide a basic understanding of ACP specifically tailored to surgical residents and, after the initial kickoff, APPs as well, but finding ways to durably integrate palliative care principles and education into surgical training is imperative.²¹

Our QI project and findings should be interpreted considering limitations. First, the project was conducted on a busy inpatient surgical service where PGY-1 and PGY-3 surgery residents rotate. It is possible that the intervention may either have been better received or not with different levels of residents. The APPs informally expressed eagerness to contribute to ACP, but based on conversations, prior experience and knowledge were highly variable, largely driven by experience in prior jobs. Secondly, the project took place within a period of hospital-wide emphasis on ACP documentation (eg, QI projects in Internal Medicine and Neurosurgery both targeted ACP documentation and occurred during the same period). Although residents on these services have little formal clinical overlap, there may have been some degree of overlap in efforts or documentation (eg, among consult patients). Another aspect of the project’s timing is that it was conducted during the COVID-19 pandemic, and although services may have been affected less than elective surgical services, the pandemic undoubtedly impacted the interventions and outcomes. Although the importance of ACP was highlighted with the uncertainty early in the COVID-19 pandemic, this may have positively impacted the project. On the flip side, the pandemic was also associated with additional work and staffing challenges which may have made effecting change more difficult. Lastly, as with all evaluations of ACP documentation, it is difficult to measure ACP conversations that may have happened but were not documented, and therefore the overall prevalence of ACP may be higher than apparent.

In conclusion, this resident-led QI intervention had some successes in increasing the frequency of inpatient ACP documentation from 9.3% to 16.6%, with a greater overall contribution from the surgical team. The frequency of ACP documentation fluctuated widely by month and was not necessarily related to the overall EGS service census. Yet, these

strides were realized with considerable effort, and there was still significant variation in practice among clinicians. Taken together, these findings suggest that the intervention had likely not changed the pervasive culture or standard workflow of the EGS service. But it seems that given that much of the ACP content was related to the surrogate decision maker and code status, there continues to be an opportunity to better integrate the entire team into the process of discussing ACP with EGS patients with details related to the goals of care specific to surgery integrated into surgeon workflow. There is significant ground to cover in integrating palliative care principles and education into surgical training and determining practical, standardized, and level-appropriate workflow.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

Acknowledgements

We would like to thank the surgery residents and Advance Practice Providers who participated in this quality improvement project and the Biostatistics Core, which is funded by the University of California San Francisco University of California, San Francisco Department of Surgery for statistical support.

Funding/Support

A.C. received funding from National Institutes of Health (NIH) 5T32CA251070-02 (applied to salary). E.W. received funding from Agency for Healthcare Research and Quality (AHRQ) R01HS024532 (applied to salary and analysis support). E.F. received in-kind funding. R.S. received funding from National Institute on Aging (NIA) K24AG054415 (applied to salary).

References

1. Lee KC, Sturgeon D, Lipsitz S, Weissman JS, Mitchell S, Cooper Z. Mortality and health care utilization among medicare patients undergoing emergency general surgery vs those with acute medical conditions. *JAMA Surg* 2020;155: 216–223. [PubMed: 31877209]
2. Sudore RL, Lum HD, You JJ, et al. Defining advance care planning for adults: a consensus definition from a multidisciplinary Delphi panel. *J Pain Symptom Manage* 2017;53:821–832. [PubMed: 28062339]
3. Bleicher J, McGuire LE, Robbins RB, et al. Preoperative advance care planning for older adults undergoing major abdominal surgery. *Am J Hosp Palliat Care* 2022;39:406–412. [PubMed: 34047202]
4. Kalbfell E, Kata A, Buffington AS, et al. Frequency of preoperative advance care planning for older adults undergoing high-risk surgery: a secondary analysis of a randomized clinical trial. *JAMA Surg* 2021;156: e211521. [PubMed: 33978693]
5. Marks S, Wanner JP, Cobb AS, Swetz KM, Lange GM. Surgery without a surrogate: the low prevalence of healthcare power of attorney documents among preoperative patients. *Hosp Pract (1995)* 2019;47:28–33. [PubMed: 30328723]
6. Tang VL, Dillon EC, Yang Y, et al. Advance care planning in older adults with multiple chronic conditions undergoing high-risk surgery. *JAMA Surg* 2019;154:261–264. [PubMed: 30516794]
7. Colley A, Lin JA, Pierce L, Finlayson E, Sudore RL, Wick E. Missed opportunities and health disparities for advance care planning before elective surgery in older adults. *JAMA Surg* 2022;157:e223687. [PubMed: 36001323]
8. Shalowitz DI, Garrett-Mayer E, Wendler D. The accuracy of surrogate decision makers: a systematic review. *Arch Intern Med* 2006;166:493–497. [PubMed: 16534034]
9. Shah SK, Manful A, Reich AJ, et al. Advance care planning among Medicare beneficiaries with dementia undergoing surgery. *J Am Geriatr Soc* 2021;69: 2273–2281. [PubMed: 34014561]

10. Ko CY, Shah T, Nelson H, Nathens AB. Developing the American College of Surgeons quality improvement framework to evaluate local surgical improvement efforts. *JAMA Surg* 2022;157:737–739. [PubMed: 35704310]
11. Cooper L, Abbett SK, Feng A, et al. Launching a geriatric surgery center: recommendations from the society for perioperative assessment and quality improvement. *J Am Geriatr Soc* 2020;68:1941–1946. [PubMed: 32662064]
12. Nassikas NJ, Baird GL, Duffy CM. Improving advance care planning in a resident primary care clinic. *Am J Hosp Palliat Care* 2020;37:185–190. [PubMed: 31476887]
13. Dunlay J, Reinhardt R, Roi LD. A placebo-controlled, double-blind trial of erythromycin in adults with acute bronchitis. *J Fam Pract* 1987;25:137–141. [PubMed: 3302093]
14. Millstein LS, Allen J, Bellin MH, et al. An interprofessional training to improve advance care planning skills among medicine, nursing, and social work students. *J Interprof Educ Pract* 2020;21:100382. [PubMed: 34327286]
15. 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 Care* 2014;31:275–280. [PubMed: 23588577]
16. Berns SH, Camargo M, Meier DE, Yuen JK. Goals of care ambulatory resident education: training residents in advance care planning conversations in the outpatient setting. *J Palliat Med* 2017;20:1345–1351. [PubMed: 28661787]
17. Cralley A, Madsen H, Robinson C, et al. Sustainability of palliative care principles in the surgical intensive care unit using a multi-faceted integration model. *J Palliat Care* 2022;37:562–569. [PubMed: 35138198]
18. Suwanabol PA, Kanters AE, Reichstein AC, et al. Characterizing the role of US surgeons in the provision of palliative care: a systematic review and mixed-methods meta-synthesis. *J Pain Symptom Manage* 2018;55:1196–1215. e1195. [PubMed: 29221845]
19. Udelsman BV, Lee KC, Traeger LN, Lillemoe KD, Chang DC, Cooper Z. Clinician-to-clinician communication of patient goals of care within a surgical intensive care unit. *J Surg Res* 2019;240:80–88. [PubMed: 30909068]
20. Blackwood DH, Vindrola-Padros C, Mythen MG, Walker D. Advance-care-planning and end-of-life discussions in the perioperative period: a review of healthcare professionals' knowledge, attitudes, and training. *Br J Anaesth* 2018;121:1138–1147. [PubMed: 30336859]
21. Bonanno AM, Kiraly LN, Siegel TR, Brasel KJ, Cook MR. Surgical palliative care training in general surgery residency: an educational needs assessment. *Am J Surg* 2019;217:928–931. [PubMed: 30678805]

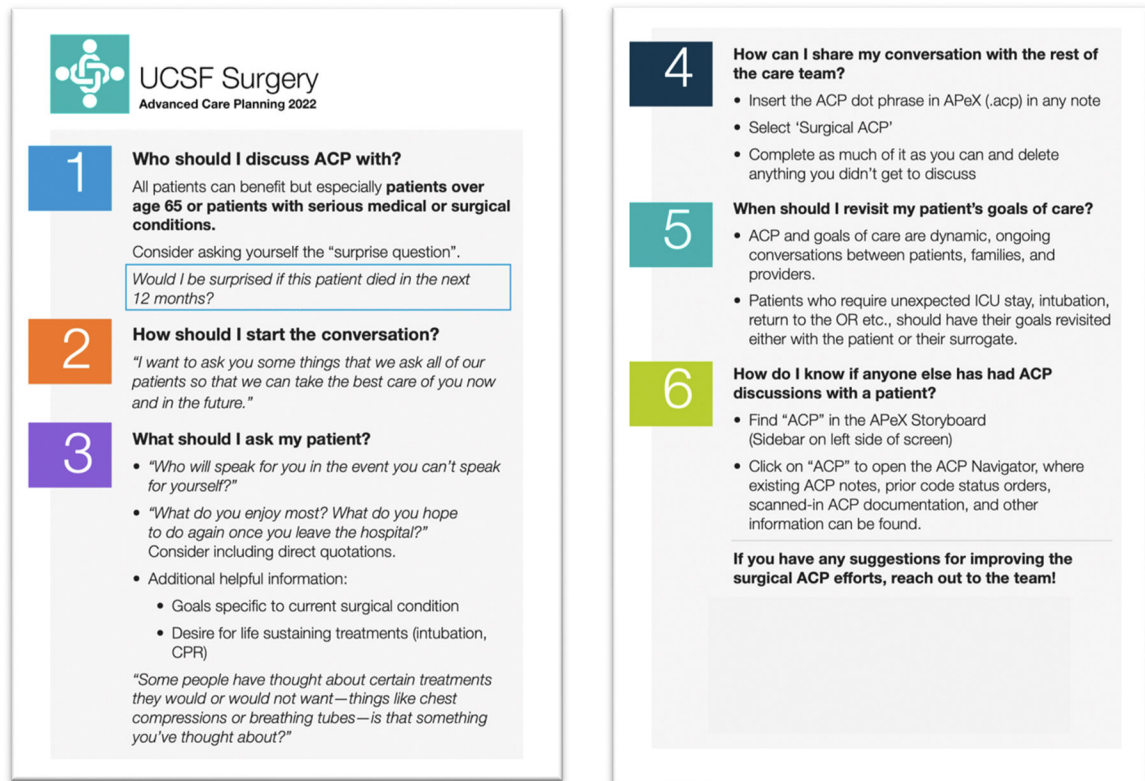


Figure 1. Pocket card with advance care planning best practices. *ACP*, advance care planning; *CPR*, cardiopulmonary resuscitation; *ICU*, intensive care unit; *OR*, operating room.

My Note Tag Share w/ Patient Details ^

Type: Progress Notes Service: General Surgery Date of Service: 10/4/2022 01:29 PM

Cosign Required

★ **B** + abc ↶ ↷ ? + Insert SmartText ← → ↶ ↷ ↻

Advance Care Planning Discussed with: ***

Planned Procedure: ***

Surrogate decision maker:
{Surrogate decision maker:304147765}

Life sustaining treatment preferences (i.e. Code): {ACP Treatment Preferences/Discussion:31330}

Establish patient's overall health goals
{Record patient responses to open-ended questions such as:38824}

Establish patient's treatment goals specific to the current surgical condition
{Record patient treatment goals:38823}

Align the treatment plan with the patient's goals
As the note author, I have discussed the impact of surgical and non-surgical treatments on symptoms, function, burden of care, living situation, and survival: {Yes or No:22831}

I attest that the recommended treatment in this note is informed by discussion that includes the patient's health goals: {Yes or No:22831}

|

Refresh Pend Share Sign Cancel

Figure 2.
Template for inpatient advance care planning note. *ACP*, advance care planning.

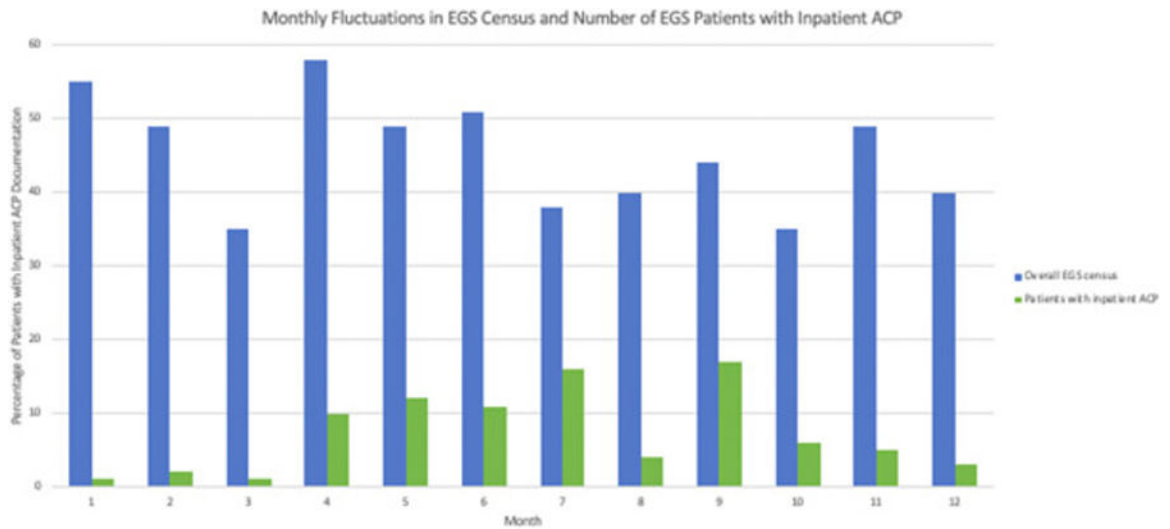


Figure 3. Monthly fluctuations in emergency general surgery census and number of emergency general surgery patients with inpatient advance care planning documentation. *ACP*, advance care planning; *EGS*, emergency general surgery.

Table 1

Patient characteristics in the baseline and intervention periods

	No. (%)		P value
	Baseline N = 590	Intervention N = 555	
Age, mean (SD), y	55.4 (19)	55.1 (19)	.82
Sex			.28
Female	306 (52)	307 (55)	
Male	284 (48)	247 (45)	
Nonbinary	0 (0.0)	1 (0.2)	
Race and ethnicity			.55
Asian	124 (21)	109 (20)	
Black	45 (7.8)	47 (8.5)	
Latino	74 (13)	89 (16)	
White	306 (53)	279 (51)	
Other	31 (5.3)	29 (5.2)	
Primary language			.55
English	526 (90)	482 (87)	
Chinese	29 (4.9)	31 (5.6)	
Spanish	16 (2.7)	21 (3.8)	
Other	17 (2.9)	21 (3.8)	
Charlson Comorbidity Index score			.76
0–2	368 (62)	351 (63)	
3	222 (38)	204 (37)	
Median duration of stay (Q1–Q3), d	4.0 (2.0–8.0)	3.0 (2.0–7.0)	.001
ICU admission	80 (14)	62 (11)	.22
90-day mortality	26 (4.4)	22 (4.0)	.71
Operative management	405 (69)	341 (61)	.01
Major case	154 (26)	131 (24)	.33

ICU, intensive care unit.

Table II

Changes in frequency of advance care planning documentation

	No. (%)		P value
	Baseline N = 590	Intervention N = 555	
Any ACP documentation	169 (29)	179 (32)	.21
Operation with any ACP	78 (19)	161 (47)	< .001
Inpatient ACP note	55 (9.3)	92 (17)	< .001

ACP, advance care planning.

Author Manuscript

Author Manuscript

Author Manuscript

Author Manuscript

Characteristics of 157 inpatient advance care planning documents in the intervention periods

Table III

Characteristic	Average
Inpatient ACP days after admission	17 d
Inpatient ACP days from operation *	
Preoperatively	1 d
Postoperatively	27 d
Service writing note †	No. (%)
Emergency general surgery	87 (55)
Critical care	26 (17)
Hospital medicine	23 (15)
Palliative care	9 (5.7)
Chaplain services	5 (3.2)
Geriatrics	3 (1.9)
Note content ‡	
Preferences for life-sustaining therapy	124 (79)
Surrogate decision maker	123 (78)
Overall health goals	90 (57)
Treatment goals specific to surgical encounter	79 (50)

* 126 patients had an operation and inpatient ACP; ACP, advance care planning.

† Clinicians from Emergency Medicine, Neurology, and Radiation Oncology each contributed one note.

‡ Categories not mutually exclusive; total may add to >100%.

Table IV

Lessons learned and suggested next steps

Domain	Lessons learned	Suggestions
Clinician	Change highly variable month-to-month and dependent on individual stakeholders (ie, a few residents wrote the majority of ACP notes)	<ul style="list-style-type: none"> • Interview residents who readily incorporated new workflow to build suggested generalizable workflow. Ask why they engaged patients in perioperative ACP
	Variation in level of experience and comfort with ACP conversations (eg, APP staff generally interested in and supportive of efforts, yet engagement was highly variable by past work experience)	<ul style="list-style-type: none"> • Incorporate APP champions with significant past ACP experience into further educational interventions • Develop incentives for those who seek further training or engage with inpatient ACP
	Project targeted PGY-3 residents, and secondarily APP and PGY-1s. Unknown if more senior residents would engage differently with the intervention or ACP documentation	<ul style="list-style-type: none"> • Develop differential intervention and education for varying levels of residents. • Engage senior residents as leaders of change
	Challenges with buy-in from residents	<ul style="list-style-type: none"> • Engage stakeholders in “real time” by sharing live data at biweekly conferences instead of passively distributing updates by e-mail
	Benefits of ACP are not realized by most team members	<ul style="list-style-type: none"> • More widely share cases where patients had unexpected events and knowledge of ACP allowed the team to more nimbly provide goal concordant care
Documentation	Note quality, or the amount of clinically relevant information in a given note, was highly variable with only half of notes documenting treatment goals specific to the surgical encounter	<ul style="list-style-type: none"> • Develop simplified note template that allows providers to confirm/change code status as a prefilled field from the EHR but requires documentation of patient treatment goals
	Increase in the proportion of ACP documentation among patients who underwent an operation, yet postoperative ACP was still more common than preoperative ACP	<ul style="list-style-type: none"> • Create a preoperative checklist in which ACP documentation is required and conversations are conducted alongside informed consent conversations • Shift project focus to patients at greatest chance of benefit (ie, those with major medical comorbidities or those undergoing a major operation)

ACP, advance care planning; APP, advance practice provider; EHR, electronic health record; PGY, postgraduate year.