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Identifying Relevant Topics for Inclusion in an Ethics Curriculum for Anesthesiology Trainees: A Survey of Practitioners in the Field

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Abstract

Anesthesiology training programs are tasked with equipping trainees with the skills to become medically and ethically competent in the practice of anesthesia and to be prepared to obtain board certification, yet there is currently no standardized ethics curriculum within anesthesia training programs in the United States. To bridge this gap, and to provide a validated ethics curriculum to meet the aforementioned needs, in July 2021, a survey was sent to anesthesia scholars in the field of biomedical ethics to identify key areas that should be included in such an ethics curriculum. The responses were rated on a Likert scale and ranked. This paper identifies the top ten topics identified as high priority for inclusion in an anesthesiology training program and consequently deemed most relevant to meet the educational needs of graduates of an anesthesiology residency: (1) capacity to consent; (2) capacity to refuse elective versus lifesaving treatment; (3) application of surrogate decisionmaking; (4) approach to do not resuscitate (DNR) status in the operating room; (5) patient autonomy and advance directives; (6) navigating patient beliefs that may impair care; (7) “futility” in end-of-life care: when to withdraw life support; (8) disclosure of medical errors; (9) clinical criteria for “brain death” and consequences of this definition; and (10) the impaired anesthesiologist.

Keywords: ethics; bioethics; anesthesiology; trainee; resident education

Introduction

Anesthesiologists have broad representation in clinical practice, including the perioperative space, intensive care units, chronic pain centers, palliative care centers, and trauma/emergency departments. Additionally, anesthesiologists are represented in laboratory research, the classrooms of medical schools, journal review boards, and in administrative settings. Difficult ethical questions/dilemmas arise in each of these environments and challenge our definitions of “quality” and of “right and wrong” and may call into question the well-being of our patients, their families, our colleagues, and ourselves.

The American Board of Anesthesiology (ABA) requires that anesthesiologists demonstrate competence in ethical practice to receive board certification. The BASIC Exam, which is taken after Clinical Anesthesia year one, includes content on “Physician Impairment of Disability” and “Ethics, Practice Management, and Medicolegal Issues,” and the ADVANCED Exam, taken after the completion of a residency in anesthesiology, tests “Ethics and Medico-Legal Issues.”¹ Additionally, the Accreditation Council for Graduate Medical Education (ACGME) supports Competency-Based Medical Education

(CBME) to promote the development of basic standards of practice for all residents so that they can practice independently by the time of residency graduation. Underpinning CBME are six core competencies, two of which (“Patient Care” and “Professionalism”) require a fund of knowledge in biomedical ethics to master.² Accordingly, a formal ethics curriculum should be an integral component of an anesthesiology residency program.

There is a need for the introduction of formal medical ethics training in core anesthesiology graduate medical education. Yet in a recent survey of national anesthesiology training program directors, less than half (48%) of the respondents reported formal ethics training in their program, averaging 3.8 ± 1.6 hours per year.³ More concerning, only 58% of respondents agreed that their resident physicians were competent at managing biomedical ethical dilemmas upon graduation. The barriers most frequently cited were (1) lack of an established curriculum, (2) lack of experienced faculty, and (3) lack of time to devote to such an educational endeavor. However, the majority of anesthesiology program directors agreed that formal ethics education is important in training programs, and most expressed an interest in integrating this topic into the established curriculum.

Herein, we present the results of our national survey, which identifies core topics that should be included in a bioethics curriculum designed to meet the needs of graduates of an anesthesiology residency.

Methods

Setting and participants

In July 2021, a survey generated by the research team was sent, along with an informed consent document, via email to members of the American Society of Anesthesiologists (ASA) Committee on Ethics, which was formed in 1992 and has established the ASA Ethical Guidelines to which anesthesiologists are expected to adhere.⁴ The principal investigator also identified and emailed the survey to anesthesiologists with a background in bioethics or medical ethics who were contributors to a leading textbook in the field of clinical ethics.⁵ Study data were collected and managed using REDCap electronic data capture tools hosted at Children’s National Hospital.⁶ The list of ethical topics sent via the survey was adapted from the textbook *Clinical Ethics: A Practical Approach to Ethical Decisions in Clinical Medicine*, first published in 1982 and still one of the leading textbooks referenced by clinicians and ethicists, to generate a total of 38 topics to be ranked by recipients.⁷ The survey, including all topics participants were asked to rank, is found in [Supplement 1](#). The survey instrument was not validated as the goal of the project was to include an expansive list of ethical topics for respondents to rank, and a literature search did not reveal any prior studies that utilized a validated survey of an adequately thorough list of topics.

Outcomes measured

In addition to rating the proposed ethical topics, respondents were asked to provide their gender, race/ethnicity, geographical region, and professional degree(s) held. The responses to the survey remained anonymous. Due to the large number of ethical topics included in the survey, for ease of survey completion, a five-point Likert scale (rather than a rank-order approach) was utilized. A score of 1 indicates “not at all important,” and a score of 5 indicates “extremely important.”

Analysis of the outcomes

Data from the survey were collected and analyzed using Stata Statistical Software.⁸ Demographic characteristics of survey participants were summarized with descriptive statistical methods and reported as percentages. Survey responses for each topic were summarized with descriptive statistical methods and reported as the mean Likert score with standard deviation (SD). We used Pearson’s chi-squared tests to measure associations and considered a p -value <0.05 to be significant.

Institutional Review Board (IRB) statement

The George Washington University School of Medicine and Health Sciences Institutional Review Board reviewed this study and determined eligibility for exempt status.

Table 1. Demographic characteristics of survey participants (n = 25)

Demographics	N (%)
Gender	
Female	10 (40%)
Male	15 (60%)
Professional degree type	
Clinical (MD, DO)	19 (76%)
Nonclinical (PhD, JD, MPH, etc.)	6 (24%)
U.S geographic region	
Northeast	9 (36%)
Southeast	4 (16%)
Southwest	1 (4%)
Midwest	10 (40%)
West	1 (4%)

Results

A total of 110 individuals were sent the survey, with 25 responses received (22.7% response rate). The demographic characteristics of the respondents are outlined in Table 1. Cronbach's alpha was calculated to assess the internal consistency/reliability of the survey. The alpha coefficient for the 38 items was 0.9462, denoting an acceptable level of the survey's reliability.

Of the 38 ethical topics surveyed, the ten topics receiving the highest mean scores for inclusion in anesthesiology training program were as follows: (1) capacity to consent, with special attention to pediatrics; (2) capacity to refuse elective versus lifesaving treatment; (3) application of surrogate decisionmaking; (4) approach to "DNR status" in the operating room; (5) patient autonomy and advance directives; (6) navigating patient beliefs that may impair care (i.e., Jehovah's witness and blood transfusion); (7) "futility" in end-of-life care: when to withdraw life support; (8) disclosure of medical errors: ethical vs legal considerations; (9) clinical criteria for "brain death" and consequences of this definition; and (10) the impaired anesthesiologist (e.g., addiction, sleep deprivation): ethical vs legal considerations. Table 2 indicates the mean score and SD of the total population for these ten topics.

Discussion

The results of our survey provide a recommendation from scholars in the field of anesthesia and bioethics to use as an outline for a formal ethics curriculum in anesthesia training programs. The ten topics with the highest mean score should be considered "high priority" when designing curricula.

One theme that arose in our study was a preponderance of ethical topics related to a patient's right to self-determination. Six of our ten high-priority ethical topics incorporated this theme: (1) capacity to consent, with special attention to pediatrics; (2) capacity to refuse elective versus lifesaving treatment; (3) application of surrogate decisionmaking; (4) approach to do not resuscitate (DNR) status in the operating room; (5) patient autonomy and advance directives; and (6) navigating patient beliefs that may impair care. This highlights the importance of adequate training on the informed consent process and concepts of patient involvement in decisionmaking for anesthesia trainees.

Another important area of ethics education that was highlighted in our responses was that of professional conduct. Both (8) disclosure of medical errors: ethical vs legal considerations and

Table 2. Ethical principles identified as high priority for inclusion in an anesthesiology training program

Ethical principle	Mean (SD)
Capacity to consent, with special attention to pediatrics	3.76 (0.44)
Capacity to refuse elective versus lifesaving treatment	3.76 (0.52)
Application of surrogate decisionmaking	3.76 (0.52)
Approach to “DNR status” in the operating room	3.76 (0.52)
Precedent autonomy and advance directives	3.52 (0.77)
Navigating patient beliefs that may impair care (i.e., Jehovah’s witness and blood transfusion)	3.52 (0.65)
“Futility” in end-of-life care: when to withdraw life support	3.44 (0.87)
Disclosure of medical errors: ethical vs legal considerations	3.44 (0.77)
Clinical criteria for “brain death” and consequences of this definition	3.4 (0.76)
The impaired anesthesiologist (e.g., addiction, sleep deprivation): ethical vs legal considerations	3.36 (0.99)

(10) the impaired anesthesiologist (e.g., addiction, sleep deprivation): ethical versus legal considerations included this theme.

A third core ethical topic highlighted in our research relates to navigating complex medical decisions in the presence of ambiguous medical standards and definitions. These include (7) “futility” in end-of-life care: when to withdraw life support and (9) clinical criteria for “brain death” and consequences of this definition.

In our survey, the topics that received lower ratings and were not highlighted in the top ten included research involving animal subjects; physician response to natural disasters; the implications of distinguishing research from quality improvement; and expert testimonies by physicians. Furthermore, respondents were neutral on topics relating to cultural influences.

The topics identified as high priority in our study align with those identified in similar surveys and existing ethics curricula for medical trainees. The topics, (1) capacity to consent, (4) approach to DNR status in the operating room, and (7) “futility” in end-of-life care: when to withdraw life support, align with three of the five focus areas identified in a proposed ethics curriculum for surgical residents through a structured literature review and synthesis strategy.⁹ Similarly, a systematic review of existing ethics training curricula during surgical residency found that the most commonly included curricular content focused on “informed consent, the doctor-patient relationship, breaking bad news, decisionmaking, end-of-life care, conflicts of interest, considering patients’ personal contexts, and surgical research ethics.”¹⁰ The themes of consent and end-of-life care were also identified as high priority in our study.

The current state of ethics training

To date, there is a paucity of medical ethics education among anesthesia training programs in the United States, with only 48% of programs currently incorporating a formal ethics curriculum for trainees.¹¹ Furthermore, demonstrating competence in ethical practice is an important component of the anesthesia board certification process. Anesthesia, however, is not unique compared to other specialties in having a paucity of formal ethics training in the curriculum. Surveys of residents and faculty in general surgery, obstetrics and gynecology, and psychiatry have also identified a gap in ethics training and a desire for the integration of more formal ethics education during residency.^{12,13,14,15} Across residency programs, formal ethics training has been found to be helpful for clinical decisionmaking and in communication with patients and their family members.¹⁶

Although competence in the identification and management of ethical dilemmas is critical to safe and effective practice in all fields of medicine, proficiency in these topics is of particular importance in the field of anesthesia, as clinicians frequently confront ethical challenges in high-pressure, time-sensitive

situations. Previous research has identified a preponderance of ethical challenges for clinicians in trauma and resuscitation settings because the clinician is often unable to ascertain a patient's preferences and must rely on his/her own expert judgment.^{17,18} The process of obtaining informed consent also frequently introduces ethical challenges for the anesthesiologist. A qualitative analysis found that the most common ethical challenges anesthesiologists face in obtaining informed consent involve "patient wishes not honored, conflict between patient and family wishes and medical judgment, patient decisionmaking capacity, and upholding professional standards."¹⁹ Robust training in ethics will equip anesthesiologists with the knowledge and skillset to make the most appropriate decisions in these situations.

Considerations and future directions

Our survey results offer ten validated topics in medical ethics that should be included in anesthesia residency program education. One important consideration when augmenting a graduate medical curriculum is the limited time available to trainees. Proposing an addition to the already-dense curriculum that residency programs have developed for trainees can be challenging, but residency curricula are dynamic and must evolve to meet the changing landscape and demands of the specialty. To minimize the additional time required to complete this curriculum, an effort should be made to integrate these topics into existing lectures or other educational sessions where possible. Prior studies have found that even a one-hour ethics course for clinicians and trainees can produce a significant increase in baseline knowledge,²⁰ and a pilot project²¹ that implemented four 90-minute modules for surgical residents found a significant improvement in perceived confidence in addressing ethical issues. The subject of ethics lends itself well to Socratic discussions, and educational materials may come in many forms, such as podcasts and readings that can be done at an individual's own pace. Content delivery timelines that have shown success vary widely and include content delivered over a one-hour course,²² a 20-hour curriculum (2 hours/week for 10 weeks),²³ and monthly educational case conferences.²⁴ There is a general consensus that content should be delivered via a variety of formats such as group discussions, journal clubs, standardized patient encounters, debates, reading materials, and ethics morbidity and mortality conferences, in addition to traditional didactic sessions, to promote trainee engagement and elicit active participation.^{25,26}

Some training programs have gone a step further, implementing formal, longitudinal ethics training. A one-year certificate in biomedical ethics was recently introduced and offered to trainees at Vanderbilt Medical Center, and evaluations from participants have been strongly favorable.²⁷ To meet the requirement of professionalism set forth by the ACGME, a subcommittee of the American Board of Dermatology composed of experts in ethics and dermatology resident education developed a 3-year ethics and professionalism curriculum,²⁸ which it recommends be delivered over 60-minute sessions every other month.²⁹ It has been suggested, and we agree, that integrating formal ethics training sends a message to trainees that faculty prioritize a robust education in ethical issues.³⁰

Given the importance of a strong background in ethics training for anesthesiologists, guidance should be sought from the ABA on the development of a formal ethics curriculum. One manner this could be achieved is through the formation of a task force of current academic and community anesthesiologists to further identify critical ethical topics and principles. The ten ethical topics our survey identified as high priority could guide the foundation of the curriculum, and additional input from program directors and resident educators should be solicited to determine the most effective means of incorporating this training into existing education modules.

Limitations

The goal of our research was to propose a guideline for more formal medical ethics training in the core anesthesiology graduate medical education programs. Our study does have some limitations.

In contrast to an interval scale, in which data can be categorized, ranked, and evenly spaced, data in an ordinal scale such as the Likert cannot be presumed to be evenly spaced. The intervals between responses in a Likert scale cannot be derived from the frequency of individual responses. For example, a grade of

three indicates that the respondent believes a topic is of intermediate importance, somewhere between “not at all important” and “extremely important,” but it does not provide insight as to why a respondent rated an item as being of intermediate importance.

Another limitation of the Likert scale is the limited utility of the mean and median. Particularly when responses are clustered at one end of the scale (i.e., “not at all important” or “extremely important”), the mean will fall somewhere in the middle, corresponding to a grade of “intermediate importance,” a conclusion that is misleading. A third limitation of the Likert scale is the large number of responses required and response fatigue. This was unavoidable as including all foundational topics from *Clinical Ethics: A Practical Approach to Ethical Decisions in Clinical Medicine* was considered critical to developing a robust and comprehensive curriculum by our team.

The low survey response rate of 22.7% must also be addressed. This is likely in large part due to the survey being sent via email, with many email addresses being acquired via online searches of the recipients’ names and titles. Individuals who have moved to a different institution or with an invalid email address listed online may not have received the survey. Additionally, the length of the survey and the inclusion of 38 proposed topics to rank may have discouraged recipients from completing the survey.

Conclusion

Anesthesiologists are tasked with making challenging ethical decisions on a frequent basis, and yet many physicians in the field feel that their training in medical ethics is lacking. In order to better prepare trainees to act independently, it is critical that residency programs offer instruction in the field of ethics. In this project, we utilized a Likert scale to determine which topics are considered more important than others by experts in the fields of anesthesiology and biomedical ethics. The ten topics that scored the highest should be used to guide a structured curriculum that equips anesthesia residents with the tools they need to handle challenging ethical situations and to do so in a professional manner that does not compromise patient care. How exactly to deploy these topics within a curriculum is an area of active research, with positive outcomes seen across varying modes of content delivery and amount of time invested in ethics education.

Supplementary material. The supplementary material for this article can be found at <http://doi.org/10.1017/S0963180124000240>.

Competing interest. The authors declare none.

Notes

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