

# The Journal of Education in Perioperative Medicine

ORIGINAL RESEARCH

## Millennial Medical Students' Educational Expectations of Anesthesia Clerkships

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### INTRODUCTION

Are anesthesia clerkships meeting the expectations of the millennial generation of medical students? The millennial generation has been transforming academics with preferences for online instruction, digital resources over books, hands-on learning, interactive problem solving to passive instruction, and immediate feedback.<sup>1-3</sup> Characterized as “lazy, entitled, and glued to their phones—millennials have as bad a reputation in medical circles as they do in popular media.”<sup>4-6</sup> Yet, “students are the future of our specialty, and without constant physician replenishment, anesthesiology risks becoming [a field] with no research, no advancement, and decreased patient safety.”<sup>7</sup> Faculty of anesthesia departments must develop curricula to provide high-quality educational experiences, expose medical students to the many aspects of anesthesiology, and make the specialty appealing. Despite this knowledge, no definitive medical school curriculum has been developed for clinical anesthesia education in the United States, nor is an anesthesia clerkship required by the Liaison Committee on Medical Education.

Surveys have been previously conducted to assess the anesthesia education currently provided to medical students. These surveys aimed to discover an “implemented curriculum,” by identifying topics commonly taught, methods of instruction, and methods of evaluation used by anesthesia departments across the United States and globally.<sup>7-11</sup> However, assessing

students' expectations of a clinical rotation is necessary, as they often vary from those of faculty.<sup>12</sup> Acknowledging the characteristics and preferences of millennial medical students may help to develop instructional methods and assessment tools to produce effective learning outcomes. Literature is emerging in the field of anesthesiology that focuses on millennial residents<sup>13</sup> and millennial resident applicants,<sup>14</sup> but a paucity of anesthesia literature focuses on the millennial medical student. Therefore, the purpose of this study was to survey first- and second-year millennial medical students to identify expectations and preferred methods of instruction and assessment for an anesthesia clerkship.

### MATERIALS AND METHODS

The Oakland University Institutional Review Board (IRB) approved this study with exempt status and gave permission to waive a written consent form. In lieu of written consent, an information sheet describing the study was provided on the survey's first page that included an electronic button stating “I agree to be in this study” that, once clicked on, began the survey and served as consent to participate (surveys are available in Supplemental Online Material). The information sheet included contact information for all study personnel as well as a general overview of the study's purpose. Inclusion criteria were current first-year (MS1) and second-year (MS2) medical students at the Oakland University William Beaumont School of Medicine (OUWB) during the 2018/2019

academic year, who pressed “I agree to be in this study” to consent. Participation in the study was completely voluntary, and all responses were collected without identifiable personal information. At the time of matriculation into OUWB, the mean age of first-year medical students (class of 2021) was 24 years (age range 21 to 40 years), with a class size of 125 students. The mean age of second-year medical students (class of 2020) was 23 years (age range 21 to 34 years), with a class size of 122.

One MS1 and 3 MS2 medical students from the millennial generation were recruited to contribute to this study and the creation of a survey to ensure it contained questions relevant to the millennial generation. A literature review found no preanesthesia clerkship surveys conducted on medical students. Existing postanesthesia clerkship survey questions were reviewed for part of the construction of the survey.<sup>8,9,15</sup> The survey was formatted using Qualtrics software (Qualtrics, Provo, UT) and distributed to a pilot group of 9 medical students from all 4 classes (first- through fourth-year medical students) who critiqued its usefulness and clarity, and provided insight into what they would like anesthesia clerkship directors to know before the clerkship. Adjustments were made to the survey and sent to the biostatisticians for final approval. The final survey consisted of 16 questions. Survey questions used a multiple choice format; however, a question on evaluation preferences allowed multiple selections

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(“check all that apply”) and a question on educational content used a Likert scale (1 = *not interested*, 3 = *somewhat interested*, 5 = *very interested*).

A recruitment email with the survey link was sent to MS1 and MS2 medical students via the class listserv at OUWB in June 2018. A reminder email was sent 8 weeks later in an attempt to increase the response rate. iPads were provided in the OUWB Medical Student Lounge during that time to enhance recruitment and appeal to the target demographic. The Qualtrics software system was used to electronically deliver the survey questionnaire and capture respondents’ answers.

Two biostatisticians at OUWB were consulted for statistical support. When comparing 2 groups, 2 samples independent *t*-tests were used for continuous variables and  $\chi^2$  tests were used for categorical variables. This pilot study used a convenience sample sent to all MS1 and MS2 medical students at one medical school. As a result, no a priori calculation was performed. A response rate of 74 (30%) of 247 between the 2 classes was achieved. When comparing 3 or more groups, 1-way analysis of variance was used for continuous variables, and  $\chi^2$  variables were used for categorical variables. Any *P* value < .05 indicates statistical significance. Statistical significance does not imply practical significance. Multiple comparisons/pairwise comparisons used the Bonferroni correction when comparing 3 or more groups, so *P* < .0167 indicates statistical significance in the multiple comparisons. Groups compared include time spent on pain medicine, time spent studying during a rotation, and amount of responsibility during the clerkship. Assumptions for all statistical tests were met. SAS 9.4 was used for all statistical analysis (SAS Institute Inc., Cary, NC).

## RESULTS

A total of 89 (36%) of 247 surveys were collected; however, 15 surveys were not completed, which led to a final sample size of 74 surveys. Table 1 represents the descriptive statistics of the participants with responses to questions on how an anesthesia clerkship should be structured.

Of the completed surveys, 34 (46%) of the 74 responses were from MS1 medical students and 40 (54%) were from MS2 medical students. First-year medical students (MS1) preferred completing an anesthesia rotation during their third year (22 [65%] of 34), compared with second-year medical students (MS2), who would rather have the rotation during their fourth year (28 [70%] of 40) (*P* = .019). Most medical students responded that the anesthesia rotation should be mandatory (45 [61%] of 74) versus elective (29 [39%]). Almost half of the medical students were interested in anesthesia as a career (33 [46%] of 74). There was no statistical significance between interest in anesthesia as a career and year in medical school. Regarding number of lectures preferred, 15 (20%) of 74 millennial medical students surveyed wanted no lectures, 37 (50%) wanted 1 lecture, 16 (22%) wanted 2 lectures, 6 (8%) wanted 3 lectures, and no students wanted  $\geq 4$  lectures per week.

Table 2 represents data collected on learning preferences and evaluation methods for an anesthesia clerkship as preferred by preclinical millennial medical students. There is a statistically significant association between year in medical school and how many hours of studying should be done per day. MS2 students, on average, responded that 2 hours or less of studying (37 [93%] of 40) is reasonable as compared with MS1 students preferring 2 hours or more (28 [83%] of 34) (*P* = .027). There is a statistically significant association between number of lectures per week and how many hours of studying should be done per day. Students interested in more than 2 hours of studying per day want a greater number of required lectures per week (average: 2.83 per week) when compared with students who prefer less than 2 hours of studying per day (average: 2.05 per week) (multiple comparison *P* = 0.009). No student (0 [0%] of 74) responded that lectures were the best format for learning while on the anesthesia rotation, as compared with observing in the operating room and pain clinic (36 [49%]), practicing procedures on real patients (26 [35%]), simulation lab practice (9 [12%]), or self-directed learning (eg, readings, podcasts, videos) (3 [4%]). More responsibility is preferred on an anesthesia clerkship, including making medical decisions, performing procedures,

and taking history and physicals (40 [55%]) compared with just observing procedures and taking history and physicals (9 [12%]).

Teaching from both residents and attendings is preferred (64 [86%] of 74) compared with attendings only (6 [8%] of 74) or residents and fellows only (4 [5%] of 74). Daily feedback (44 [59%] of 74) was the preferred method of formative feedback, whereas use of written exams (43 [58%] of 74) was the preferred assessment method. Students preferring more time on anesthesia than pain management want clinical performance examinations (16 [55%] of 29) when compared with students preferring equal time on anesthesia and pain management (8 [20%] of 41) (multiple comparison *P* = .002).

Figure 1 is a bar graph depicting the educational content preferences of preclinical millennial medical students for an anesthesia clerkship. A comparison of the variables found that students wanting a mandatory anesthesia rotation rated career information lower (average: 2.86 on a 5-point scale) as compared with students wanting an elective anesthesia rotation (average: 3.60 on a 5-point scale) (*P* = .038). Students interested in less time in anesthesia than pain management rate pharmacology/physiology significantly more important (average: 4.33 on 5-point scale) when compared with students interested in more time in anesthesia than pain management (average: 2.90 on 5-point scale) (multiple comparison *P* = .001).

Figure 2 is a bar graph representing affirmative responses to clinical procedures medical students should perform while on an anesthesia rotation. Two optional responses were not depicted in Figure 2, those being “no procedures” and “other procedures,” of which 4 (5%) of 74 responded that medical students should perform “no procedures” on an anesthesia rotation, and 3 (4%) of 74 who responded medical student should perform “other procedures.”

## DISCUSSION

This is the first study to survey millennial medical students on their educational expectations and learning preferences “before” their exposure to an anesthesia

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clerkship. Assessing student expectations before an anesthesia clerkship eliminates potential bias compared with post-clerkship surveys, when responses could be influenced by a student's experience on a rotation.<sup>7-11</sup> Potential sources of bias could include interest in anesthesia as a career, the personal relationship between faculty and learner, quality of teaching provided, fear of being identified, ability to perform procedures, and a student's final grade. This study recruited millennial medical students to contribute to the construction and piloting of the survey to ensure it encompassed questions relevant to the millennial generation. Examples of questions not contained in "typical" faculty-created surveys include questions on reasonable study time, preferred teachers (eg, resident, fellow, or attending physician), identification of career interests, and preferred amount of responsibility. Finally, this study offers a new perspective by surveying all preclinical medical students, including those who may not have an interest in anesthesia as a career.

The results of this study highlight discrepancies between the preferences of millennial medical students and the anesthesia education that is currently provided according to the literature. A survey of 125 anesthesia departments with 85 responding, revealed 42% offered clinical anesthesia clerkships as an elective, whereas only 16% made the clerkship required.<sup>7</sup> This is in stark contrast to the preferences of millennial medical students surveyed in this study, whereby 45 (61%) of the 74 respondents preferred the anesthesia rotation to be mandatory and only 29 (39%) to be an elective. These results demonstrate the educational value preclinical medical students perceive of a mandatory anesthesia clerkship.<sup>16</sup> Previous studies reveal that the duration of an anesthesia clerkship, in the United States, typically ranges from 1 week (19%), 2 weeks (44%), or 4 weeks (47%); whereas this study found that millennial medical students prefer the duration to be 1 week 3 (4%) of 74, 2 weeks 23 (31%), 3 weeks 33 (45%), and 4 weeks 14 (19%).<sup>7</sup> These results reveal that preclinical students prefer a 2- to 3-week clerkship relative to clinical students, who prefer a 1- or 4-week clerkship.

In addition to clerkship logistics, this study examined millennial medical student learning preferences. The traditional curriculum implemented on anesthesia clerkships include lectures (83%), operating room teaching (97%), and full-body simulators (57%).<sup>7</sup> In contrast, the results of this study identify millennial medical students' preferred format for learning to be lectures (0 [0%] of 74), self-directed learning (3 [4%]) (eg, readings, podcasts, videos), simulation laboratory practice (9 [12%]), observing in the operating room and pain clinic (36 [49%]), and practicing procedures on real patients (26 [35%]). These findings correlate with the characterization of millennials with preferences for "hands-on" learning, immediate feedback, and interactive problem solving to passive instruction. It also demonstrates millennial medical students prefer real-life interactive teaching to online instruction and digital resources.<sup>1-3</sup> Attributes of the millennial generation were reflected in the results of this study regarding preferred assessment methods, with most students preferring daily evaluations of performance (44 [59%]) and written exams (43 [58%]). In contrast, the literature reveals that anesthesia departments primarily use written examinations alone for evaluation.<sup>7,9</sup>

There are a number of limitations in this study. A longer data collection time could have improved response rate. One medical school is a microcosm of students that represents the greater field of future physicians who are considered millennials. Medical schools possess different student demographics, admission criteria, and cultures. Thus, there could have been inherent bias in surveying students from only 1 medical school. The mean age of respondents in the MS1 and MS2 classes, and the age range of the MS2 class, fell within the accepted definition of millennial generation. The age range, though, of the MS1 class fell outside of this definition. Notably, the anesthesia clerkship is currently a mandatory part of the curriculum at the institution where this study was conducted. In addition, 33 (45%) of the 74 students who completed the survey were interested in anesthesia as a career, which is higher than the proportion of students applying into anesthesia each year both nationally and at the institution where this survey was conducted.

This study shows that medical students do indeed possess preconceived educational expectations for their anesthesia clerkship. Major findings in this study identify that millennial medical students would structure an anesthesia clerkship as a 2- to 3-week mandatory rotation that includes experiences both in the operating room and the pain clinic. Learning preferences include instruction from faculty, residents, and fellows. Reasonable amounts of studying per day on the rotation was identified at 2 hours or less. Observing in the operating room and practicing procedures on real patients was preferred to lectures, self-directed learning, or simulation laboratory instruction. Daily performance evaluations and written examinations were also identified as the preferred form of evaluation. Yet it remains true that preclinical medical students have an extremely limited understanding of the clinical clerkship curriculum, and may not fully appreciate the barriers to teaching, including the high institutional cost of operating room time, prolonged anesthesia times, delayed surgeries, impacted patient safety, and manpower requirements.

This study demonstrates that millennial medical students have preconceived educational objectives and learning preferences for an anesthesia clerkship before any clinical rotation experiences. Identifying these educational objectives and learning preferences before the start of a rotation provides anesthesiologists and clerkship directors opportunities to meet the expectations of millennial medical students that would otherwise be missed by using the traditional practice of sending satisfaction surveys post-rotation. For example, an anesthesiologist could tailor instruction to meet the individual goals of a student by providing more opportunities to observe regional procedures rather than general anesthesia, should that be an educational objective of the student. A clerkship director could make arrangements to this student for the off-site locations at their institution, based on knowing the student's educational objective is to learn the scope of anesthesia practice during their rotation. The survey tool created for this study can be implemented by clerkship directors and anesthesiologists in its original form. It also

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can be used as a template to develop a pre-rotation survey or verbal questionnaire to identify the educational expectations of millennial medical students rotating on their service.

### Acknowledgments

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### Abstract

**Background:** The unique characteristics of the millennial generation has promulgated changes in the workplace and in academia. A lack of national standards necessitates that anesthesia faculty create educational content for anesthesia clerkships. Assessing expectations before an anesthesia rotation would provide data to accommodate millennial medical students' needs and preferences for learning.

**Methods:** A 16-question survey using Qualtrics software was created, with input from millennial medical students, to query preclinical medical students at the Oakland University William Beaumont School of Medicine on their educational expectations of an anesthesia clerkship.

**Results:** Seventy-four surveys were completed, with 34 (46%) of 74 from first-year and 40 (54%) of 74 from second-year medical students. Daily feedback (44 [59%] of 74) and written exams (43 [58%] of 74) were preferred methods of evaluation. No lectures, observing in an operating room, and performing procedures on real patients were the preferred format for instruction. Two (23 [31%] of 74) to 3 (33 [45%] of 74) weeks was the preferred duration of an anesthesia rotation.

**Conclusions:** This study demonstrates that millennial medical students have preconceived educational expectations of an anesthesia clerkship, and identifies learning preferences that differ from the implemented anesthesia curriculum currently described in the literature.

**Keywords:** Undergraduate education, education in anesthesia, curriculum, millennials, medical student

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## Tables

**Table 1.** Demographic and Anesthesia Clerkship Preferences of Millennial Medical Students

Question	Optional Responses	n/N (%)
What year in medical school are you?	MS1	34/74 (46)
	MS2	40/74 (54)
Do you have any interest in anesthesia as a career?	Yes	33/74 (45)
	No	41/74 (55)
Which specialty type are you most interest in?	Medicine	23/74 (31)
	Procedural	33/74 (45)
	Surgery	18/74 (24)
What year would you like the anesthesia and pain medicine rotation?	MS3 Year July-December	13/74 (18)
	MS3 Year January-June	21/74 (28)
	MS4 Year July-December	26/74 (35)
	MS4 Year January-Graduation	14/74 (19)
Do you think the anesthesia and pain rotation should be mandatory or an elective?	Mandatory	45/74 (61)
	Elective	29/74 (39)
How many weeks do you think the anesthesia and pain medicine rotation should be?	1 week	3/74 (4)
	2 weeks	23/74 (31)
	3 weeks	33/74 (45)
	4 weeks	14/74 (19)
	More than 4 weeks	1/74 (1)
How much of the rotation should be dedicated to anesthesia versus pain management?	100% anesthesia and no pain management	1/74 (1)
	75% anesthesia and 25% pain management	28/74 (38)
	50% anesthesia and 50% pain management	41/74 (55)
	25% anesthesia and 75% pain management	4/74 (5)
	No anesthesia and 100% pain management	0/74 (0)

Abbreviations: MS1, MS2, MS3, MS4, first-, second-, third-, and fourth-year medical student, respectively.

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## Tables continued

**Table 2. Anesthesia Clerkship Evaluation and Learning Preferences of Millennial Medical Students**

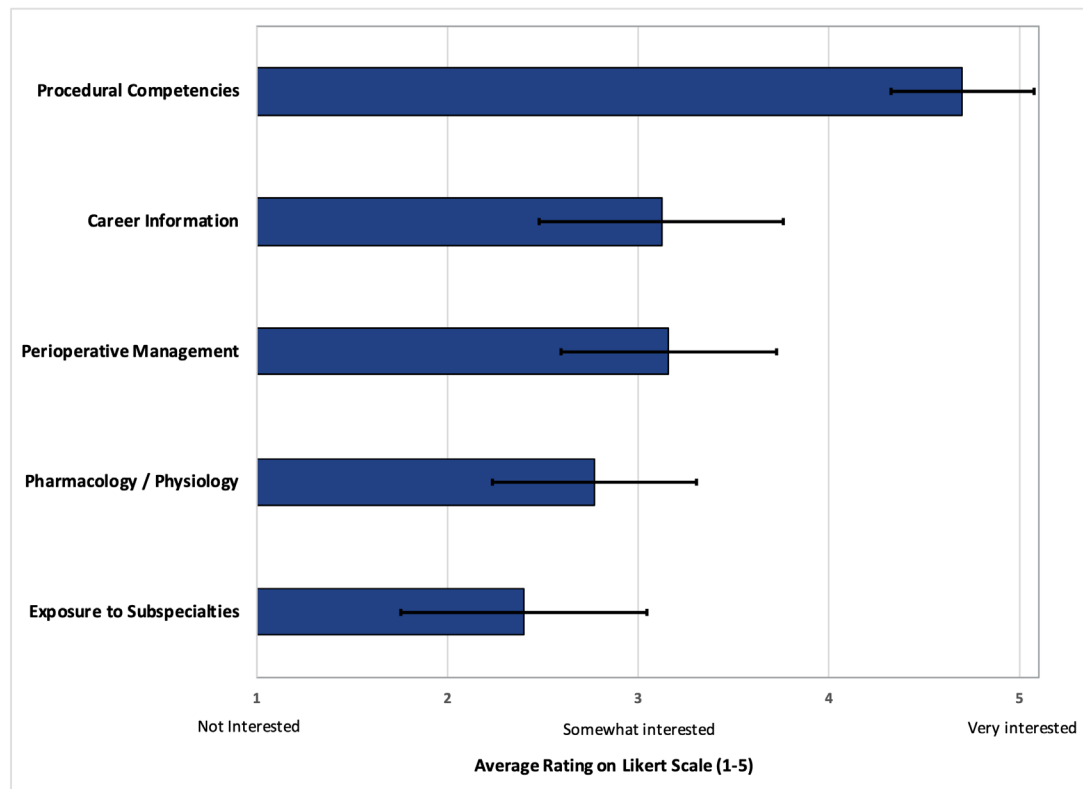
Question	Optional Responses	n/N (%)
How many hours of studying per DAY do you think is reasonable while on the anesthesia rotation?	1/2 hour	5/74 (7)
	1 hour	17/74 (23)
	2 hours	40/74 (54)
	3 hours	7/74 (9)
	4 or more hours	5/74 (7)
Who would you prefer to teach you during your rotation?	An anesthesiologist (attending) only	6/74 (8)
	An anesthesia resident or fellow only	4/74 (5)
	Both an attending and resident	64/74 (86)
How would you prefer to be evaluated on what you have learned on your anesthesia rotation?	Written exam	43/74 (58)
	Oral exam	6/74 (8)
	Practical exam	24/74 (32)
	Daily feedback	44/74 (59)
	Essay	20/74 (27)
	Open-book exam	17/74 (23)
How much responsibility do you want while on your anesthesia rotation?	Observing procedures and taking history and physicals (H&P)	9/73 (12)
	Performing procedures and taking H&P	24/73 (33)
	Involvement in medical decision making, performing procedures, and taking H&P	40/73 (55)
What is the best environment for learning while on the anesthesia rotation?	Lectures	0/74 (0)
	Self-directed learning (eg, readings, podcasts, videos)	3/74 (4)
	Observing in the operating room and pain clinic	36/74 (49)
	Simulation lab practice	9/74 (12)
	Practicing procedures on real patients	26/74 (35)

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## Figures

**Figure 1.** Millennial medical student education content preferences for an anesthesia clerkship.



Procedural Competencies (n = 53, min = 1.00, max = 5.00, mean = 4.70, standard deviation (SD) = 0.75)

Career Information (n = 57, min = 1.00, max = 5.00, mean = 3.12, SD = 1.28)

Perioperative Management (n = 57, min = 1.00, max = 5.00, mean = 3.16, SD = 1.13)

Pharmacology/Physiology (n = 57, min = 1.00, max = 5.00, mean = 2.77, SD = 1.07)

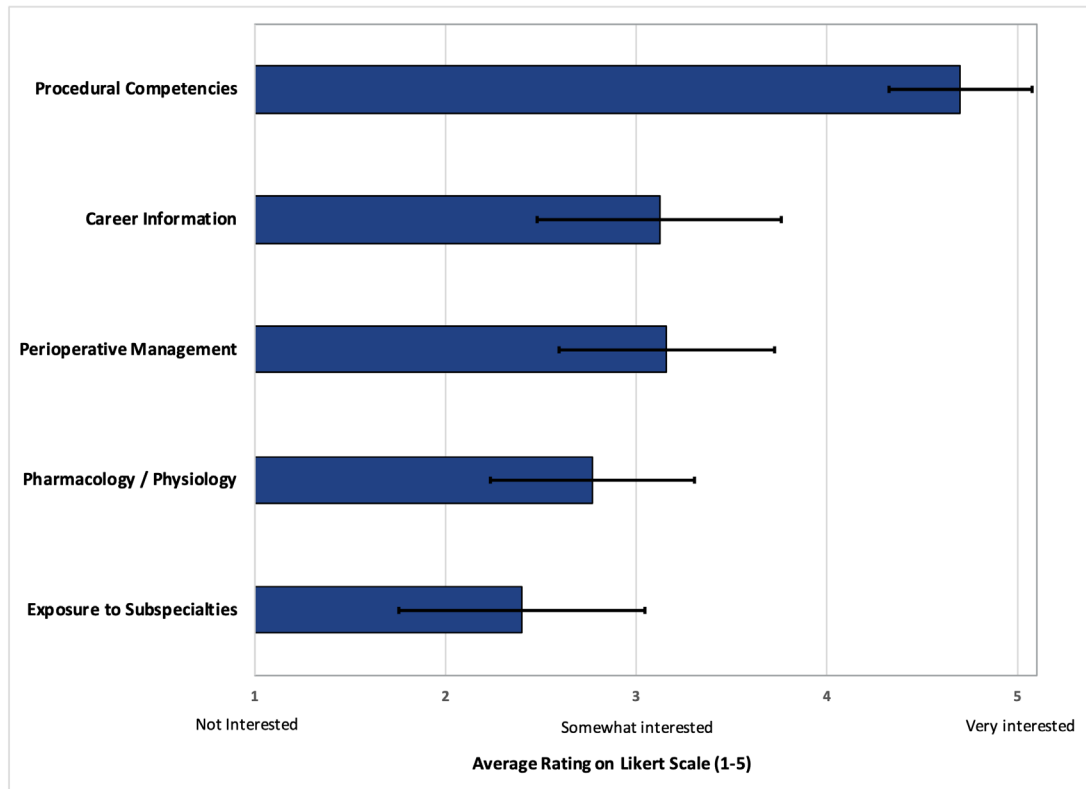
Exposure to Subspecialties (n = 67, min = 1.00, max = 5.00, mean = 2.40, SD = 1.29)

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## Figures continued

Figure 2. Millennial medical student procedure preferences for an anesthesia clerkship.



Intravenous (IV) starts (n = 61/74, 82%)

Intubations (n = 46/74, 62%)

Arterial lines (n = 37/74, 50%)

Nerve blocks (n = 36/74, 49%)

Central lines (n = 35/74, 47%)

Epidurals (n = 32/74, 43%)

Spinals (n = 28/74, 38%)

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## Supplemental Online Material

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### Anesthesia Survey

#### Start of Block: Block 1

Information Sheet

#### Information Sheet for a Research Study

Expectations of Anesthesia Clerkship: Identifying Medical Student Perspectives

#### Introduction

You are being asked to be in a research study that is being done by Oakland University researchers. This study is being done by Lucas Reitz, Lisa Spencer, and Carly Farr, under the direction of Kathy Schlecht, DO, Anesthesiology, the faculty advisor for this project.

This form describes the study and what you will be asked to do. The researchers can answer any questions you may have so you can make an informed decision. You can talk with your friends and family about this research study before making your decision. When your questions have been answered, you can decide if you want to be in this study. This process is called “informed consent.” If you decide to participate, your participation will indicate that you have read this information sheet and that you understand what it says.

#### What is the purpose of this study?

The purpose of this research study is to identify the expectations first- and second-year medical students have for their anesthesia clerkship in order to better align the goals among educators and medical students.

#### Who can participate in this study?

You are being asked to participate in the study because you are 18 years or older and are a currently enrolled medical student at Oakland University William Beaumont School of Medicine within the class of 2020 or 2021.

#### Where will this study take place?

This study will take place online using a survey platform that can be completed at a time and place that you choose.

#### What do I have to do?

If you are in this research study you will be asked to complete an online survey using Qualtrics.

#### How long will I be in the study?

This is a 1-time survey that will take approximately 5 minutes to complete. Participation in this study will not require extra time beyond this.

#### Are there any risks to me?

Research studies may involve different kinds and levels of risks or discomforts. These could be physical, emotional, social, economic, or legal risks. For this study, the potential risks and discomforts that we know about are described in the following.

With many research studies, there is a risk of breach of confidentiality. A breach of confidentiality means that it is possible that someone who is not part of this research may accidentally see your personal information. We will try to make sure that this does not happen by keeping your research records as confidential as possible. However, no researcher can guarantee complete confidentiality.

To minimize the risk of a breach of confidentiality, survey submissions are anonymous and no personally identifiable information is collected. Please note that Qualtrics has specific privacy policies of its own. If you have concerns, you should consult Qualtrics directly at <https://www.qualtrics.com/privacy-statement/>.

There may also be risks involved from taking part in this study that we do not know about at this time.

#### Are there any benefits to me?

The possible benefits to you for participating in the research study are increased awareness of medical student expectations for the anesthesia clerkship among clerkship directors.

#### What are the alternatives to participation in this study?

You may choose not to participate in this study.

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## **Supplemental Online Material** *continued*

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### **How much will it cost me to participate in the study?**

There is no cost to you for participating in this study.

### **Will I receive anything for participating?**

You will not receive anything for participating in this study.

### **Who could see my information?**

The researcher/research team will have access to your information. Information about your research participation may be shared with others if required by law (for example, child or elder abuse and/or neglect).

Your research records may be reviewed by the following groups:

Representatives of the Oakland University Institutional Review Board and/or other regulatory compliance staff, whose job is to protect people who are in research studies.

Regulatory authorities who oversee research (Office for Human Research Protections, or other federal, state, or international regulatory agencies)

When the results of this research are published or discussed in conferences, no information will be included that personally identifies you.

### **What are my rights if I participate in this study?**

Your decision to participate in this study is voluntary. You do not have to be in this study. There is no penalty or loss of benefits if you don't want to participate or if you stop participating. Your decision will not affect your present or future relationship with Oakland University, Oakland University William Beaumont School of Medicine, the researcher, or the anesthesiology department. If you are a student or employee at Oakland University, your decision about participation will not affect your grades or employment status.

### **Who do I contact if I have questions about this study or my rights as a research participant?**

For questions about the study you may contact:

Co-Investigators:

Carly Farr

Lisa Spencer

Lucas Reitz

Jacob Jewulski

Faculty advisor: Dr. K. Schlecht D.O.

**For questions regarding your rights as a participant in human subject research, you may contact the Oakland University Institutional Review Board, 248-370-4898.**

Q20 You have read this form, or someone has read it to you. By clicking the **“I agree to be in this study”** button below you are indicating your understanding and consent to participate in the study, and agree to the following: I am being asked to be in a research study.

I understand the possible risks and potential benefits. I have had the chance to ask questions and they have been answered to my satisfaction. I agree to be in this study.

I agree to be in this study (1)

I do not agree to be in this study (2)

**End of Block: Block 1**

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## **Supplemental Online Material *continued***

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### **Start of Block: Default Question Block**

Q1 What year in medical school are you?

- MS1 (Class of 2021) (1)
- MS2 (Class of 2020) (2)

Q2 Do you have any interest in anesthesia as a career ?

- Yes (1)
- No (2)

Q18 Have you completed your Anesthesia rotation yet?

- Yes (1)
- No (2)

Q3 Which specialty type are you most interest in?

- Medicine (eg, internal medicine, psychiatry, family medicine) (1)
- Procedural (eg, anesthesia, emergency medicine, interventional radiology) (2)
- Surgery (eg, general surgery, ophthalmology, OB/gyn) (3)

Q4 What year would you like the anesthesia and pain medicine rotation?

- MS3 Year July-December (1)
- MS3 Year January-June (2)
- MS4 Year July-December (3)
- MS4 Year January-Graduation (4)

Q5 Do you think the anesthesia and pain rotation should be mandatory or an elective?

- Mandatory (1)
- Elective (2)

Q6 How many weeks do you think the anesthesia and pain medicine rotation should be?

- 1 week (1)
- 2 weeks (2)
- 3 weeks (3)
- 4 weeks (4)
- More than 4 weeks (5)

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## **Supplemental Online Material *continued***

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Q7 How much of the rotation should be dedicated to anesthesia versus pain management?

- 100% anesthesia and no pain management (1)
- 75% anesthesia and 25% pain management (2)
- 50% anesthesia and 50% pain management (3)
- 25% anesthesia and 75% pain management (4)
- No anesthesia and 100% pain management (5)

Q8 How many hours of studying per DAY do you think is reasonable while on the anesthesia rotation?

- 1/2 hour (1)
- 1 hour (2)
- 2 hours (3)
- 3 hours (4)
- 4 or more hours (5)

Q9 Who would you prefer to teach you during your rotation?

- An anesthesiologist (attending) only (1)
- An anesthesia resident or fellow only (2)
- Both an attending and resident (3)

Q10 How would you prefer to be evaluated on what you have learned on your anesthesia rotation (check all that apply)?

- Written exam (1)
- Oral exam (2)
- Practical exam (3)
- Daily evaluations of your performance (4)
- Essay on what you learned during the rotation (5)
- Open-book exam with multiple choice and essay questions (6)

Q11 Please select how much responsibility you want while on your anesthesia rotation.

- Observing procedures and taking history and physicals (1)
- Performing procedures and taking history and physicals (2)
- Being involved in medical decision making, performing procedures, and taking history and physicals (3)

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## **Supplemental Online Material *continued***

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Q13 What is the best environment for learning while on the anesthesia rotation?

- Lecture (1)
- Self-directed learning (eg, readings, podcasts, videos) (2)
- Observing in the operating room and pain clinic (3)
- Simulation lab practice (4)
- Practicing procedures on real patients (5)

Q12 How many lectures do you feel should be required per week during the anesthesia and pain medicine rotation?

- 0 (1)
- 1 (2)
- 2 (3)
- 3 (4)
- 4 (5)
- 5 (6)

Q14 Please check the procedures, (if any), medical students should perform while on their rotation?

- Intravenous (IV) starts (1)
- Arterial lines (2)
- Spinals (3)
- Intubations (4)
- Epidurals (5)
- Nerve block (6)
- Central lines (7)
- None (8)
- Other Please Comment (9) \_\_\_\_\_

Q17 Please rank what you want to learn on your anesthesia rotation. (1 = Not interested, 3 = Somewhat interested, 5 = Very interested)

\_\_\_\_\_ Procedural competencies (eg, airway management, spinals, epidurals, IVs, nerve blocks) (1)

\_\_\_\_\_ Career information (eg, residencies, fellowships, practice models, lifestyle) (2)

\_\_\_\_\_ Perioperative management (eg, preoperative assessment, IV fluid management, blood transfusions, ventilation management) (3)

\_\_\_\_\_ Pharmacology/Physiology (eg, anesthetic drugs, pain management) (4)

\_\_\_\_\_ Exposure to anesthesia subspecialties (eg, Pain, Cardiac, Pediatric, Neuro, Ob) (5)

**End of Block: Default Question Block**