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SPECIAL ARTICLE

From the front lines: a qualitative study of anesthesiologists' work and professional values

Nouvelles du front: une étude qualitative du travail et des valeurs professionnelles des anesthésiologistes

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Abstract

Purpose *Despite significant contributions to medicine, anesthesiology is poorly recognized and faces the threat of "deprofessionalization". Clear articulation of its work and professional values plays an integral role in maintaining the viability of a profession. The purpose of this qualitative study is to explore anesthesiologists' perspectives in order to define the distinct elements of their work and their professional values.*

Methods *A qualitative research approach was used for this study. Sixteen Canadian faculty anesthesiologists were interviewed regarding their choice of anesthesiology as a career, the characteristics of a good anesthesiologist and good anesthetic care, and the sources of work-related stress. The interviews were taped and transcribed. The qualitative analysis of the interviews included primary coding, which separated the data into units of meaning. Next, similar codes were clustered into pattern codes to identify common themes and subthemes. The relationships between the themes and subthemes were analyzed and interpreted to identify core values.*

Results *The anesthesiologists were motivated to choose their career path by the academic, technical, and practice aspects of the profession, influential role models, and an interest in human consciousness. Five themes characterized a good anesthesiologist: clinical competence, personality traits, physician-patient relationship, approach to anesthetic care, and outcomes. The major sources of stress were: balancing clinical care and teaching, unexpected critical events, and administrative issues. Four core professional values were identified: goal-directed care, responsibility, control, and humility.*

Conclusions *Anesthesiology is characterized by its distinct work and core professional values. Under the threat of deprofessionalization, the practice of anesthesiology should be guided by its professional values in defining and envisioning its future.*

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Résumé

Objectif *Malgré ses contributions remarquables à la médecine, l'anesthésiologie est mal reconnue et fait face à la menace d'une «déprofessionnalisation». Pour assurer la viabilité d'une profession, il faut qu'elle soit en mesure d'articuler clairement son travail et ses valeurs professionnelles. L'objectif de cette étude qualitative était d'examiner les points de vue des anesthésiologistes afin de déterminer quels sont les éléments distinctifs de leur travail ainsi que leurs valeurs professionnelles.*

Méthode *Une approche de recherche qualitative a été utilisée pour cette étude. Seize anesthésiologistes universitaires canadiens ont été interrogés concernant leur choix d'une carrière en anesthésiologie, les caractéristiques d'un bon anesthésiologiste et de bons soins en anesthésiologie, ainsi que les sources de stress lié au travail. Les entretiens ont été enregistrés puis retranscrits. L'analyse qualitative des entretiens comprenait un encodage primaire, lequel séparait les données en unités sémantiques. Ensuite, les codes similaires ont été mis en grappes en codes schématiques afin d'identifier les thèmes et sous-thèmes courants. Les relations entre les thèmes et sous-thèmes ont été analysées et interprétées afin d'identifier les valeurs fondamentales.*

Résultats *La motivation des anesthésiologistes à choisir cette carrière reposait sur les aspects intellectuels et techniques de la profession, sur son mode de pratique, sur*

des modèles influents et sur un intérêt pour la conscience humaine. Cinq thèmes étaient caractéristiques d'un bon anesthésiologiste: la compétence clinique, les traits de caractère, la relation médecin-patient, l'approche des soins anesthésiques, et les devenirs. Les principales sources de stress étaient: trouver un équilibre entre les soins cliniques et l'enseignement, les événements critiques inattendus et les questions administratives. Quatre valeurs professionnelles fondamentales ont été identifiées: les soins orientés vers le résultat, la responsabilité, le contrôle et l'humilité.

Conclusion *L'anesthésiologie se caractérise par son travail distinctif et ses valeurs professionnelles fondamentales de base. Sous la menace d'une déprofessionnalisation, la pratique de l'anesthésiologie devrait être guidée par ses valeurs professionnelles afin de définir son avenir et lui donner une vision.*

Since the first successful public demonstration of the use of ether at the Massachusetts General Hospital's amphitheatre in 1846, anesthesiology has grown exponentially in scope and complexity. However, despite major contributions to modern medicine, anesthesiology as a profession continues to be poorly understood by the public and even by other members of the healthcare community.[1] Results of studies carried out in Britain, United States, and Australia have shown that the percentage of patients who identified anesthesiologists as physicians ranged anywhere from 50-88.7%.[1] Ho and Wong[2] found that the majority of survey participants believed that the primary role of anesthesiologists was to assist the surgeons. Goldik and Perek[3] warned of an "impending crisis" of anesthesiology in Israel, due, in part, to the devaluation of the specialty from poor public, government, and institutional recognition as well as low professional status.[3] These issues appear to be endemic for anesthesiologists elsewhere in the world.[4-6] Concerns have also been expressed about anesthesiology's long-term viability due to lack of public exposure, difficulties in communicating its role and contributions, recruitment difficulties, lack of research funding, and encroachment by non-physician anesthesia service providers.[7] Corporatization of healthcare management contributes to the risk of professions, such as anesthesiology, "becoming trade unions".[8] Moreover, emerging new technologies, like "MacSleepy", which allow automated or self-administered anesthetics, threaten to replace the traditional work arenas of anesthesiologists.[9] The above examples suggest a "de-professionalization" of anesthesiology.

Professions can be viewed from two perspectives, i.e., from a sociological viewpoint and on the basis of professionalism. First, from a sociological perspective, a profession has been defined as a means to monopolize knowledge and skills to gain social and economic benefits for its members.[10] The process by which an occupation becomes a profession is described as its "professional project" that includes engaging in "occupational closure" (using strategies of exclusion and demarcation in order to define work boundaries and restrict access to the profession).[10-12]

The second perspective defines a profession on the basis of professionalism—a moral and social contract between the profession and society.[13] To be precise, an occupation becomes a profession when it is given the privileges of autonomy and self-regulation based on trust that it will use its knowledge and skills in the best interests of society.[13-15] Wynia *et al.*[13] conceptualize the three elements of medical professionalism as: devotion to medical service and its values, public profession of its values, and social responsibility through negotiation of professional and social values. This perception highlights the importance of professional values to a profession.

The two perspectives denote differing connotations concerning the way anesthesiology is viewed as a profession. The sociological perspective, premised on occupational closure to maintain viability, is associated with an "explicit expectation of an endless effort on the part of an occupation to defend, maintain, and improve its position" against other groups attempting to usurp its areas of expertise.[10] On the other hand, the professionalism perspective sees the viability of a profession as being grounded in professionalism and professional values.[13-15] This latter perspective provides the framework for this paper. In view of the concerns about the future of anesthesiology as a profession, this paper advocates that anesthesiologists should direct more attention towards examining their professional work and values and use the results of their scrutiny as the basis for envisioning the future of their profession, rather than pursuing strategies directed exclusively towards occupational closure.

Given the importance of professional values, the purpose of this qualitative study was to define the work and values of anesthesiology as a profession by exploring anesthesiologists' perspectives and ascertaining their points of view regarding two questions: What is the work of anesthesiologists? What do they value in their work? In obtaining answers to these questions, it is hoped that this article will accomplish several goals. First, it will provide a clearer understanding regarding the role of anesthesiologists and their professional values. Second, it will encourage anesthesiologists to reflect on how their own professional beliefs and values shape the way they define, practice, and teach anesthesiology. Reflective practice (i.e., consciously and critically reflecting on one's practice) is considered an important component of enhanced expertise and continued professional development.[16] In so doing,

anesthesiologists may become more proficient in communicating about their profession to trainees, other health professionals, administrators, and the general public.[17] Finally, the article will substantiate the importance of articulating professional work and values in support of the "re-professionalization", preservation, and advancement of anesthesiology.[1,13-15]

Methods

Prior to conducting the study, ethics approval was obtained from the relevant university ethics review boards as well as from the associated institutional hospital ethics review boards, and individual written consent was obtained from the participants for the interviews.

A qualitative research approach was used to examine anesthesiologists' perspectives and professional values of their work. The approach to qualitative research differs from that of quantitative research in that its primary goal is directed towards understanding phenomena rather than towards determining cause and effect or predicting and testing hypotheses. The qualitative research approach is particularly relevant for understanding the meaning of experiences from the perspectives of the participants.[18] The research process is inductive and richly descriptive; words, images, and sounds, rather than numbers, are the primary sources of data.[18]

This study represents a qualitative subanalysis of a larger comparative case study of a Thai and Canadian anesthesia residency training program (in submission). The Canadian residency anesthesiology program was affiliated with a major university in Ontario, Canada and four teaching hospitals. The program offered training in the full spectrum of anesthesiology practice, except for cardiothoracic and liver transplantation. At the time of the study, the program consisted of 70 clinical faculty anesthesiologists and 32 anesthesia residents (Table 1). In addition to their clinical practices, the faculty anesthesiologists participated in the teaching and clinical supervision of medical students, residents, fellows, and other personnel, such as respiratory therapists, nurses, paramedics, and anesthesia assistants. The majority of anesthesiologists had general anesthesiology practices, although a number had a combined subspecialty (e.g., intensive care, cardiac anesthesia, pediatric, acute or chronic pain) and general practices. A number of the faculty also had major administrative or academic roles at the hospital or university level in addition to their usual clinical and teaching commitments. Faculty were responsible for only one operating room at a time when they were supervising trainees.

All of the clinical anesthesia faculty members from a Canadian anesthesia residency training program were eligible to participate in individual interviews with the investigator. Non-clinical faculty, trainees, and faculty members from other residency training programs were excluded. Sampling in qualitative research is purposive rather than probabilistic. The aim of purposive sampling is not to obtain a random sample that represents the general population, but rather to find an "information-rich" sample that will yield the most insight about the phenomenon and its meaning for the participants.[18] Likewise, sample sizes in qualitative research are not determined statistically but rather by "information saturation" (i.e., to the point of redundancy where no new information is obtained by further sampling).[18]

Two methods of recruitment were used. All clinical faculty anesthesiologists received information letters about the study by mail or e-mail inviting them to contact the investigator if they were interested in participating. Additionally, interested participants were asked to suggest or refer other potentially suitable participants for the study (snowball technique).[18] These recruitment techniques were used in order to seek out a wide range of faculty perspectives (maximum variation sampling).

Using the described sampling criteria, a total of 16 participants, five female and 11 male, were recruited. The sex ratio of the sample reflected that of the training program. The demographic characteristics of the study participants are summarized in Table 2.

After answering participants' questions about the study and obtaining their written informed consent, the investigator engaged in a 60-min semi-structured interview with each participant (taped with permission). Semi-structured interviews include specific questions, but they are flexibly conducted so that participants are free to elaborate or discuss associated topics. The participants were asked three questions. 1) Why did you choose anesthesiology as a career? This question was asked in order to identify the characteristics of anesthesiology that attracted participants to the profession and, by implication, those aspects about the work that they valued. 2) What is a good anesthesiologist and good anesthetic practice? This question was

Table 1 Demographic characteristics of the Canadian anesthesia residency training program

Faculty			Residents			Ratio faculty:residents
Female	Male	Total # faculty	Female	Male	Total # residents	
24	46	70	18	14	32	2.2 : 1

Table 2 Demographic characteristics of participants

Participant identification	Sex	Years of anesthesia practice	Type of practice: subspecialty general anesthesiology/ major administrative/ academic roles
M1	M	21	Intensive care, general anesthesiology, including obstetric anesthesia, Major administrative/academic
M2	M	33	General anesthesiology, including obstetric anesthesia
M3	F	23	General anesthesiology, including obstetric anesthesia
M4	M	3.5	General anesthesiology, including obstetric anesthesia
M5	M	15	General anesthesiology, including obstetric anesthesia
M6	M	5.5	General anesthesiology, including obstetric anesthesia Major administrative/academic
M7	F	27	General anesthesiology, including obstetric anesthesia
M8	M	7	Acute pain, general anesthesiology, including obstetric Major administrative/academic
M9	M	12	Acute pain, general anesthesiology, including obstetric anesthesia
M10	M	21	Pediatric anesthesia, general anesthesiology, including obstetrics
M11	F	6	Pediatric anesthesia, general anesthesiology, including obstetric anesthesia
M12	F	1	Chronic pain, general anesthesiology, including obstetric anesthesia
M13	F	26	General anesthesiology, including obstetric anesthesia
M14	M	21	General anesthesiology Major administrative
M15	M	26	Cardiac anesthesia, general anesthesiology
M16	M	20	Chronic pain, general anesthesiology, including obstetric anesthesia Major administrative/academic

Female: 5, Male: 11. Average years of practice = 16.7

asked to elicit a discussion about the nature of the work and what they believed to be good professional practice. 3) What do you find stressful about your work? The third question was asked to examine the difficulties associated with the work. Together, these three questions provided the means to elucidate the participants' perceptions of the nature of their work and their professional values.

All of the interviews were transcribed and analyzed using Miles and Huberman's[19] approach for qualitative analysis. Each interview transcript was read carefully line by line in order to subject the data to primary coding, which breaks down the data into chunks or units of meaning and often uses a participant's verbatim words or phrases. Subsequent second-level coding involved clustering similar or related primary codes within larger pattern codes. These pattern codes were used to identify common themes or subthemes within and across all of the interviews. This procedure was repeated for each interview question. The relationships between the themes and subthemes across interview questions were then analyzed in order to find overarching core professional values that comprehensively encompassed these themes.

The investigator ensured rigour in the analysis and interpretation of the data by adhering to accepted qualitative methodological procedures during sampling, data collection, and analysis and by maintaining a transparent audit trail (detailed documentation of all research procedures and decisions). Member checking (asking participants to review summaries and interpretations of their interviews to ensure accuracy of interpretation) and peer review, including a departmental presentation of the preliminary findings, were used to validate the trustworthiness of the analysis and interpretation.

Results

The participants discussed their work mainly with respect to the operating room. The principal themes for each of the research questions are summarized in Table 3. The analysis of the relationships amongst the principal themes of the interview questions was used to define the associated professional values. A detailed discussion follows with representative participant quotes.

Reasons for becoming an anesthesiologist

Four themes characterized the qualities that participants valued in anesthesiology as a career. A major theme was the *academic and practice elements* of anesthesiology. In

Table 3 Themes from interviews

Reasons for becoming an anesthesiologist
• Academic and practice elements of the profession
• Influence of mentors/role models
• Type of patient practice
• The "mystery" of consciousness
What is a good anesthesiologist and good anesthetic care?
• Clinical competence
• Personality traits
• Physician-patient relationship
• Approach to anesthetic care
• Clinical outcomes
Sources of stress in anesthesiologists' work
• Clinical teaching/supervision
• Unexpected critical incidents
• Politics/administrative

particular, participants were attracted to the clinical application of physiology and pharmacology and the emphasis on technical skills. Another attractive feature was the broad scope of practice and its multidisciplinary nature that allowed them to be involved in the full spectrum of the patient population as well as many different areas of medicine. Participants also valued the resuscitative and acute care aspects of the specialty that allowed them to immediately intervene and achieve quick therapeutic effects:

> I found it [anesthesiology] fascinating. It filled the critical care aspect that I really enjoyed. It fulfilled the technical aspect that I liked…but also…internal medicine…I felt like I was the general practitioner of specialists…and this gave me everything I could possibly want in one specialty. (M13)

For many of the participants, inspirational *mentors or role models* were influential in introducing them to these aspects of anesthesiology and thus played a major role in their career choice.

The *type of patient practice* in anesthesiology was another major theme in the career choice of the participants. Participants liked focusing on one patient at a time and the ability to help in very meaningful ways during a critical time in patients' lives:

> What I really enjoyed about anesthesia is that usually you're looking after one person [at a time] and you have a rather unique relationship with that person…I found it a rather unique opportunity when people were very frightened to be able to comfort them and to have a meaningful though short-lived experience with them. (M3)

Additionally, participants described the lack of ongoing long-term care beyond the perioperative period as being conducive to a balanced lifestyle. Others described the circumscribed time frame of patient care as helping them cope with their sense of "over-responsibility" for the patient:

> I found that when I did internal medicine or surgery, I really worried about my patients…With anesthesiology, I could stay after [the operation] as long as I wanted, but once they [patients] left the recovery room, they really weren't mine… I wasn't waking up in the middle of the night worrying that I have forgotten something. (M13)

Finally, a particularly interesting theme was the *manipulation of consciousness* as an integral part of the work. The mystery of consciousness was described in near-mystical terms and was associated with a sense of wonder:

> It's a field that almost touches metaphysics because of the manipulation of consciousness—we participate in the manipulation of consciousness, which we don't really understand, and somehow that not knowing intrigues me and provides stimulus for further development…in more of a psychological spiritual sense. (M11)

> Although we get pretty concrete in our day-to-day anesthesia lives, there is this remarkable question about what anesthetics do and where you go when you're anesthetized compared with where you are when you're asleep?…Why does your brain come back after it's been chemically anesthetized? (M16)

Good anesthesiologists and good anesthetic practice

There were five themes that characterized the qualities that participants valued in a good anesthesiologist and good anesthetic practice: *clinical competence, personality traits, physician-patient relationship, approach to anesthetic care, and clinical outcomes.*

Clinical competence was considered to be the most important cornerstone of a good anesthesiologist. This theme encompassed academic and clinical knowledge, technical skills, and clinical judgment. Certain personality traits were also valued as characteristic of a good anesthesiologist: vigilant, detail-oriented, focused, and able to remain calm, especially during emergency situations:

> When you're in trouble, the *last* thing you want to do is look like you're not in control, because everybody else panics. So, if you are able to stay calm, then people around you stay calm…you *have* to look like you know what you're doing. (M14)

In addition to having communication, collaboration, and leadership abilities, recognizing one's limitation was

emphasized as being an essential quality of a good anesthesiologist:

> Physicians who scare me…are ones who, for reasons of their ego, cannot accept defeat. So, the willingness to ask for help, ask when they don't know the answer, I think that's an absolute quality that needs to be present, particularly in anesthesiologists. (M1)

Good anesthesiologists were also described in terms of their *physician-patient relationships.* The participants stressed the importance of compassion, empathy, and patient advocacy:

> I *talk* to my patients. I talk to them in a very short and very pregnant time in their lives, very intense period of time. And maybe the things you can't measure are how the patient felt before they were going to sleep…Did they feel reassured or did they feel that the person talking to them is a technician, just to get it over with…Talk about vulnerability. Patient lying on the bed waiting for somebody to cut them…Most people need to be managed carefully…not just technically, [but also] emotionally. (M1)

The *approach to good anesthetic care* was described as consisting of a thorough "internal medicine-like appraisal of the patient", followed by a comprehensive plan that optimizes the patient's condition and takes into account all of the possible patient, medical, surgical, and anesthetic considerations, resulting in the "safest most practical management plan" in that particular anesthesiologist's hands. In conducting the anesthetic, a good anesthesiologist was described as someone who anticipated and "recognized where pitfalls, traps, and potential problems were going to occur and avoided them…" (M6).

Finally, *good clinical outcomes* were considered to be an important hallmark of a good anesthesiologist and anesthetic care. Good anesthetic care was described as care that satisfies the needs of the patient, the surgeon, and all members of the perioperative team and results in a safe perioperative course with minimal morbidity and mortality:

> It's the overall perioperative experience for the patient.…What gives me job satisfaction is seeing the patient in the recovery room, wide awake, not nauseated, and with minimal pain…And to me, that's good care. Good patient satisfaction. (M9)

Sources of work-related stress

There were three major sources of stress for the participants. The first related to the difficulties associated with *balancing clinical teaching and patient care*. These difficulties included ensuring patient safety and quality care while providing an adequate learning experience as well as dealing with the complications of care:

> The things that cause me a certain amount of anxiety are when I've got a junior learner who I don't know and I'm trying to provide good clinical care but at the same time provide some teaching. (M11)
>
> I feel very relaxed as a clinical anesthesiologist. I feel pretty stressed most of the time when I have a resident with me…the complications that you make yourself is hard enough but when you're dealing with complications that somebody else makes, it's really more difficult. (M3)
>
> I'm very…almost anal-retentive about the way I look after patients and I want things to be done exactly my way. And any time, I have to give over anything, I'm just *dying* inside watching the learners do it. Because, even though they may be doing a reasonable job, it's not the same as if I was doing it. And that can be very stressful, depending on what it is. (M9)

Participants described *unexpected critical incidents* as another source of stress in their work. The sense of not having anticipated the problem, losing control over the events, or not knowing what is happening were commonly described as being particularly stressful:

> "[The] most stress as a clinical anesthesiologist is being faced with unexpected difficulties that come on suddenly…because with expected ones, I know ahead and I plan…but it is the one that catches me off guard and I don't have a plan in place. (M6)

Finally, *administrative and political issues* around patient care were a third source of stress for some participants rather than the actual clinical work itself. Some of the specific issues associated with this theme were time limitations and "production pressure" to manage cases and turnover quickly, the lack of beds resulting in patient care dilemmas, as well as interpersonal conflict with co-workers.

The analysis of relationships amongst the themes of the interview questions revealed four core professional values that had particular relevance for anesthesiology. The first relates to the focused and *goal-directed* nature of anesthetic care. The point at which anesthesiologists interact with patients was seen as a delineated, intense, and time-compressed period in the patients' treatment journey during which the anesthesiologist is given a unique window of opportunity to make a difference. Participants found it gratifying to be able to reassure frightened patients at their most vulnerable. They valued the ability to focus on caring for one patient at a time and the "immediate gratification" to intervene and achieve therapeutic effects within a short period of time.

A second professional value relates to a heightened sense of *responsibility* for the overall perioperative care of the patient. This sense of responsibility for ensuring a smooth perioperative course for the patient was evident in the participants' descriptions of the components of good anesthetic care. They took all factors into account to develop and execute a comprehensive, competent, and compassionate management plan. Additionally, the participants saw their primary role as being responsible for coordinating the management of the operating room as well as taking the leadership role when complications arose.

A third professional value relates to *control*. This value was apparent in the personality traits the participants deemed important for a good anesthesiologist, particularly the emphasis placed on the need to remain calm and in control of both themselves and the anesthetic management during emergent situations. This value also became evident in exploring the aspects of their work that participants found stressful, e.g., the issues of maintaining control when supervising junior learners, and loss of control associated with unexpected intraoperative complications or crises.

Finally, the fourth professional value relates to *humility*. Participants viewed humility as the wherewithal to subordinate one's ego to the needs and safety of the patient. This value was reflected in their descriptions of the requirement to be vigilant and aware of hidden dangers, to avoid overconfidence, to be conscious of one's limitations, and to ask for help without hesitation, as needed.

Discussion

In this study, a group of faculty anesthesiologists from a Canadian residency training program were interviewed about their perspectives regarding their work and professional values. The aspects of anesthesiology that influenced the participants to choose this career path included: the intellectual challenge of applied physiology and pharmacology, the broad scope of practice, the technical aspects (often referred to as "hands-on work"), as well as the acute care and resuscitative aspects of practice. Anesthesiology was also perceived as offering a good lifestyle, because patient responsibilities were limited to the perioperative period. These findings are similar to those in previous studies, and thus it can be concluded that these are enduring characteristics of the specialty.[20,21]

From the findings of this study, anesthesiology can be defined as a profession that has a strong scientific basis in applied physiology and pharmacology that allows it to be a broad-based acute care specialty with a strong technical component and a circumscribed and intense physician-patient relationship that is therapeutically goal-driven. Work stressors included balancing teaching and clinical responsibilities and handling unexpected critical events as well as administrative and political issues around patient care. The profession typically attracts individuals who are highly responsible, focused, controlled, practical, and detail and action-oriented. A number of professional values described by the participants, such as clinical competency, good communication skills, collaborative and team leadership skills, could be generalized to other specialties. However, four core professional values were particularly pertinent in the context of anesthesiology: goal-directed patient care, responsibility, control, and humility.

Despite their pragmatism and the appeal of the intellectual and technical aspects of their work, the anesthesiologists in this study also showed a significant appreciation of the artistry in what they do. They expressed humbleness in the responsibility of their work and in the mysteriousness of consciousness. There was a deep satisfaction expressed in being able to comfort patients, relieve pain, and enable a patient who has undergone considerable surgical and physiologic trauma to emerge from the anesthetic safely, alert, and free from pain and nausea. As one anesthesiologist summarized:

> The anesthesiologist caricature is, in my mind, somebody with a bit of an obsessive compulsive disorder who *really attends* to the patient. Who fixates on a single patient over a period of several hours, obsessively monitoring their blood pressure, heart rate, respirations, their response to what's going on. Managing with small increments of medications to keep things all under control…but you have to do it while conveying a sense of calm and relaxation. That's what strikes me as being the ideal…You…expect other people to be scurrying around, but the thing that I have in my head as the ideal is this sort of highly functioning centre of calm at the head of the table. (M16)

Past studies into the work of anesthesiologists have painted a rather negative picture. Anesthesiologists have been described as having a higher incidence of drug addiction and abuse, higher suicide rates, and a shorter life expectancy compared with other medical specialties.[22-25] Based on personality tests, Reeve[26] found that anesthesiologists tended to be more conscientious and self-sufficient, but also more serious and tense compared with the general population. More recently, there have been a number of intriguing qualitative studies that explored the work of anesthesiologists from a more experiential perspective.[27-31] For example, Larsson *et al.*[27-29] took a phenomenographic research approach to examine the ways in which a group understand or experience a phenomenon. Based on interviews with experienced anesthesiologists, they concluded that there are four ways in which their work

is conceptualized: as a "professional artist" in delivering anesthetics and controlling patients' vital functions; as a "good Samaritan" in alleviating pain and anxiety; as a "servant" to the rest of the hospital, and as a "coordinator" in the operating room. Moreover they found trainees differed developmentally from experienced anesthesiologists in their conceptualization.[28] Smith *et al*.[30] and Pope *et al.*[31] used ethnographic approaches to observe anesthesiologists and understand the actual role they play in their daily work to acquire and transmit expertise. These studies provide vivid "on the ground" accounts of the manner by which anesthesiologists communicate, acquire expertise, and experience their work. This present study with its focus on defining the profession's specific elements and professional values differs from existing qualitative literature.

The CanMEDS Physician Competencies Framework defines the professional role of a physician as "commitment to the health and well-being of individuals and society through ethical practice, profession-led regulation, and high personal standards of behavior".[32] Kearney[33] used an expert panel to operationalize this construct specifically for anesthesiology using the Delphi technique. She defined three categories associated with professionalism: humanistic, personal development, and meta-competencies. Many of the qualities within each category, such as integrity, accepting of criticism, responsibility, respect for patients, and advocacy were mentioned by participants in this study. This present study took a more inductive "front-line" rather than "expert-led" approach by interviewing a group of practicing anesthesiologists to discover what they value about their work and articulating these specific professional values within the larger professionalism framework.

It is important to understand the qualities that front-line clinical anesthesiologists value in their work, because it is through the influence of its members that changes in the profession's direction can originate. Values, attitudes, and beliefs that a person or group of people possess directly impact on their behaviour.[34] Whether professionalism and professional values are defined broadly or narrowly, the thesis remains the same—they should provide the guiding basis for a profession.

Recently, there has been much angst expressed over the future direction of anesthesiology[7-9,35] There are predictions of the deprofessionalization or even demise of anesthesiology in face of new technologies, pharmaceuticals, and non-physician anesthesia providers appropriating the work of anesthesiologists.[35] In examining the future paradigms of anesthesiology practice, organizations have typically used an occupational closure approach in order to find and delineate new work territories.[7-9,35]

However, in order to change paradigms, it is important to base them on the professional values of its members. Elucidating core professional values enables anesthesiologists to conceptualize their work in a way that provides a framework for communicating their role to their students and trainees and ultimately to convey the profession's societal contributions to the public. For instance, *goal-directed patient care* can be operationalized and communicated as a focus on expeditious outcome-based patient-centred care. *Humility* (associated with vigilance and avoidance of overconfidence) can be conveyed as prioritizing patient safety, *control* as being meticulous and precise in patient care, and *responsibility* as being imminently amenable to the refashioning of anesthesiology into the full spectrum of perioperative care. New paradigms of work that are concordant with these professional values are more likely to be embraced and incorporated into the profession than those that are discordant. Using professionalism and core professional values to guide the future work and research paradigms of anesthesiology may be a more enduring and societally-responsive approach to the re-professionalization, preservation, and advancement of anesthesiology rather than basing them exclusively on delineating new work territories.

This study has several limitations. The investigator is a colleague of the participants; therefore, this position may have affected the responses negatively or positively. That is, participants may have felt compelled to respond in a socially acceptable fashion rather than free to provide a true reflection of their opinions. On the other hand, because the investigator is known to the participants, it is possible that they may have felt less inhibited to express opinions because of a pre-existing trust relationship. The investigator mitigated these issues by member checking, peer review, and departmental presentation of the findings to encourage feedback and critique.

While qualitative studies can have high validity by providing in-depth understanding of a phenomenon, generalizability or transferability of the study results to other contexts can be limited. This study took place in the context of one Canadian residency training program; therefore, the responses of the participants are not necessarily reflective of anesthesiologists practicing in non-teaching centres or in other residency training programs in other parts of Canada. To address this concern, a description of the department and the participants was elaborated to allow readers to evaluate the transferability of the findings to their own contexts.

As well, because the sample was largely self-selected, it may not be reflective of the "average" or "typical" anesthesiologist in the program or elsewhere. As well, the participants were predominantly male and sex differences were not analyzed. Further work in other contexts and a broader sampling strategy in future studies should be used to further validate, expand, or re-conceptualize these findings. It is interesting to note that participants focused the discussion on their work in the operating room despite the

increased scope of contemporary anesthesia practice, suggesting anesthesiology work remains largely perceived as administering anesthetics for surgical procedures. Asking broader questions about what anesthesiologists understand to be the scope of their work may allow for a wider discussion of other areas of practice.

Anesthesiology has been described as being at a "crossroads".[7] Under the threat of deprofessionalization, anesthesiology clearly needs to continue to branch out beyond the operating room. As previously mentioned, one suggestion is the re-definition of anesthesiology as perioperative medicine.[7] Other potential areas of substantiation could be in pain care and regional anesthesia. Another fascinating area to explore is that of human consciousness. Whatever the area may be, it is becoming increasingly clear that the profession cannot be limited to the technical aspects of its work, as these can be appropriated and reproduced easily. More important for its viability is the need to define anesthesiologists' work in a way that is grounded in its core professional values and communicates its societal contributions. This qualitative study is a tentative step in this direction, providing a stimulus for reflection and further studies as anesthesiology continues to map out its future.

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