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RESEARCH REPORT

Reflecting back to move forward: Lessons learned about COVID-19 safety protocols from pediatric anesthesiologists

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Abstract

Background: The COVID-19 pandemic brought about the immediate need for enhanced safety protocols in health care centers. These protocols had to evolve as knowledge and understanding of the disease quickly broadened.

Aims: Through this study, the researchers aimed to understand the experiences of pediatric anesthesiologists at the Montreal Children's Hospital and the Shriners' Hospital Canada as they navigated the first wave of COVID-19 at their institutions.

Methods: Nine participants from the Montreal Children's Hospital and the Shriners' Hospital were interviewed. Interviews were recorded, transcribed verbatim, and then analyzed using an applied philosophical hermeneutics approach.

Findings: Participants expressed their wish for simple and easy-to-apply protocols while recognizing the challenge of keeping up with evolving knowledge on the disease and its transmission. They pointed to some limitations and unintended consequences of the safety protocols and the system-wide flaws that the COVID-19 pandemic helped bring to light. They described their frustrations with some aspects of the safety protocols, which they at times felt could be more efficient or better suited for their daily practice.

Conclusions: The findings of this study highlighted the importance of listening to and empowering anesthesiology staff working in the field during crises, the implications of shifting from patient-centered care to community-centered care, and the fine line between sharing as much emerging information as possible and overwhelming staff with information.

KEYWORDS
COVID-19, hermeneutics, hospital administration, intersectoral collaboration, qualitative research

1 | BACKGROUND

Early in the COVID-19 pandemic, hospitals struggled to balance their limited resources with the demands of COVID-19.[1,2] Anesthesiologists and respiratory therapists perform intubation and ventilation for critically ill patients while adhering to strict self-protection precautions.[3] Increased risk of transmission during procedures may make the anesthesiology team vulnerable to increased psychological distress and mental health problems, as reported among frontline health care professionals.[4] Ali et al reported[5] that 65% of anesthesia and intensive care unit physicians experienced elevated levels of psychological distress during the acute portion of the pandemic.

The hermeneutic findings in this article emerged from conversations with pediatric anesthesiology staff of the Montreal Children's

Hospital and the Shriners Hospital Canada regarding their behaviors, attitudes, and risk perception on the frontline of the COVID-19 crisis.

2 | METHODS

This study was reviewed and approved by the McGill University Institutional Review Board (IRB A06-B47-20B). Inclusion criterion requires participants to be pediatric anesthesiologists of the Anesthesia Department of the Montreal Children's Hospital and Shriners Hospital Canada in Montreal or respiratory therapists of the Shriners Hospital. Pediatric anesthesiologists of the Anesthesia Department of the Montreal Children's Hospital provide anesthesia services at the Shriners Hospital.

Participants were recruited at a Shriners Hospital staff meeting. Those interested were screened for eligibility and signed an informed consent form to participate in a research interview.

Interviews took place between July 21, 2020, and August 14, 2020. In Quebec at that time, the "first wave" of the pandemic was tapering off, and conversation on preparing for the "second wave" had begun.[6] During this period, participants used different protocols at the Montreal Children's Hospital and the Shriners' Hospital, despite both institutions being staffed by the same pediatric anesthesiologists. Protocols at these institutions were harmonized later that year.[7]

Seventeen individuals showed interest in the study. We interviewed nine participants after screening and consent processes: 4 men and 5 women. Eight participants were pediatric anesthesiologists, and one was a respiratory therapist. Each participant was invited for one interview via Zoom. The average interview's duration was 28:13 minutes, the longest lasted 49:52 minutes, and the shortest, 12:33 minutes. All interviews were anonymized for confidentiality, and gender-neutral pronouns were used. Interviews were audio-recorded, transcribed verbatim, and analyzed using an applied philosophical hermeneutics approach. Additionally, interviews conducted in French were translated to English by the authors. As a highly collaborative research activity, interpretation continues until an agreement is achieved among the researchers that no new or different narrative data arises.[8] This is sometimes referred to as "data saturation" in other qualitative methodologies. In this study, researchers came to this consensus after the ninth interview.

2.1 | Data analysis

Applied philosophical hermeneutics as a research approach within health sciences involves selecting participants who share a common experience that informs a perspective on a topic and invites a new understanding of it.[9,10] In applied philosophical hermeneutics, interpretation is an ongoing process that begins with initial understandings of the research topic and continues through the interview process, transcription, and textual analysis.[11,12] This approach relies on a deep engagement with the topic and textual data. It attempts to generate new or different understandings through a circular interpretive movement from the narrative parts of the experience to the whole (the hermeneutic circle).[11,13]

In this approach, interviews are open-ended, semi-structured, and conducted to allow the meaning of the content and context of the experience to be expressed fully from the participant's perspective.[14] When participants tell their personal experiences out loud and into the world, it joins with the experiences of others.[15] The individual narrative becomes part of the shared history of the participant group by showing how one narrative account is an instance of something that can be more commonly understood.[13,14]

Like many others that utilize applied philosophical hermeneutics to analyze data, this article will amalgamate discussion and findings into one section.

Clinical Implications

What is already known?

- During the COVID-19 pandemic, there was a steep learning curve on how to best protect both patients and anesthesiologists.

What this article adds

- This article explores the trajectory of developing best practices for pediatric anesthesiologists during a pandemic.

3 | FINDINGS AND DISCUSSION

3.1 | Dealing with uncertainty

During the first wave of this pandemic, uncertainty was one of only a few consistent realities in the lives of most. A constant and never-ending influx of new information was waiting to be overturned, changed, and adapted from one day to the next.

Participant 01 explains that the medicine behind their work had not changed, but the rules surrounding their practice were regularly changing:

> The greatest difficulty wasn't performing anesthesia but keeping up with the protocols that constantly changed inside an institution that did not always inform us within a reasonable delay, and sometimes would inundate us with information, protocols, and changes. [...] It was the Sword of Damocles of changing protocols.

Participant 06 discusses the practical impossibility of keeping up with the constantly evolving medical knowledge. The speed at which COVID-related studies were conducted and published was not

consistent with the time needed for institutions to review the available literature and propose changes to existing protocols:

> At the beginning, we had established protocols by asking "what are the best practices?" But we don't know. We write protocols on things we don't know so it for sure won't be perfect. It would evolve, so we wouldn't update the protocol every time, otherwise we'd spend our lives writing protocols.

Participant 12 points to the need for consensus in daily clinical practice. When daily protocols are left up to interpretation, different interpretations can differ and clash, especially when stakes are as high as operating on a potentially COVID-positive patient:

> I felt safer but felt like things were constantly changing and it was just very hard to keep up. All the different players involved, from nurses, to anesthesia, to surgeons… everyone kind of thought something different and it was just chaotic.

Participant 17 contributes to the observation above and adds that anesthesiologists were seen as resources for other health care professionals to turn to if they had safety concerns:

> There's a need to interpret often because it's not very clear for some situations, and it doesn't quite fit into a protocol, or you can interpret things in different ways. In our position in anesthesia, I found that the nurses often look to our guidance to go forward and to determine what was safe. It feels like a lot of responsibility in that sense.

The participants highlight the impact that sudden and ongoing change can have on anesthesiologists, who are responsible for the health and well-being of their patients. Participant 01's reference to the sword of Damocles, an allegory about leaders living under constant threat, was particularly salient.[16] The metaphorical sword hanging over the participants' heads can represent the COVID-19 virus or the danger of contracting it and transmitting it. It may also describe the use of an out-of-date or inefficient protocol that may endanger patients and health care teams. Given the novelty of COVID-19, early safety protocols contained gaps that were later filled as knowledge and literature poured in. As explained by Participant 17, interpreting a safety protocol can affect patients and health care teams. An ideal safety protocol should be clear and easy to follow.

3.2 | Patient safety

As described in the previous finding, anesthesiologists sometimes needed to interpret safety protocols to protect patients and health care staff. Sometimes, the protection of one came at the detriment of the other. Participants then had to weigh the risks and benefits and decide how to proceed.

Participant 01 explains that the new protocols aimed to prevent health care professionals from becoming infected, missing workdays, and transmitting the virus to other patients. This may have decreased focus on patient safety:

> Initially, all measures were amplified to protect us. So, people wanted to protect themselves, protect hospital employees. To get this, we made all kinds of compromises with regard to patient safety […]

Participant 06 points out another aspect of the new protocols that hindered the work of anesthesiologists:

> Usually, it's rare that I pre-medicate children. I can make them laugh, distract them, find something to occupy them for the 2 minutes they are with me and not asleep. But we were scaring kids, so the quantity of pre-medication we were giving children was insane.

In addition to the intimidating aesthetic, the newly required personal protective equipment created difficulties in performing some medical procedures. Participant 06 briefly explains: "Putting in an IV on a three-kilogram baby with two pairs of gloves… It's complicated."

On the other hand, Participant 17 felt that the province-wide slow-down in health care activities[17] may have been beneficial to patient safety:

> I actually think we've had a very safe approach for patients in all aspects. I think we slowed down our activities enough to ensure a safe environment for all, including the patients. I think it's possible there is an increase in patient safety than there was before.

The participants' perspectives on changes to patient safety covered a broad spectrum. The quoted participants lived through the same situation and assessed it differently, sometimes entirely differently. This difference in perception and approaches speaks directly to the possible outcomes of issuing safety protocols that are not directly applicable, contain gaps, or are left to interpretation. Different individuals will interpret or apply the protocols differently, filling the gaps with guiding principles they deem most important to the situation. In other words, safety protocols can have unintended consequences that can only be detected once deployed. Therefore, listening to the feedback of those applying protocols is paramount to limit their unintended consequences.

3.3 | Judgment calls in risk assessment

Situations will inevitably arise where safety protocols should be interpreted or adapted to comply with competing guidelines. When

the situation requires it, it is important to trust and empower anesthesiologists to use their clinical judgment.

Participant 02 explains that risk is always present in a COVID-19 world and highlights the importance of acknowledging it:

> You know that now you are carrying a risk at all times, so you have to decide for whatever action you are taking what risk you are carrying – not only for yourself but everybody, patients and co-workers around you.

Participant 01 expands this explanation with a real-life, high-stakes example:

> If the patient's risk of having COVID is low, not zero but low, and that you don't go in to help your colleague, the patient might… [pause] It's easy to make the decision.

Participant 05 highlights the reality that every contact during a pandemic holds its share of risk. Therefore, anesthesiologists must be empowered to perform an individual risk assessment for each case. Such empowerment allows anesthesiologists to keep their focus on patient-centered care:

> I think in the end, it's important to have ways of determining if a contact is high or low risk, no matter where we make it, whether it's in life or in the hospital environment.

The experiences recounted in this finding indicate that participants were willing to adapt safety protocols in cases where their risk assessment revealed that it would be greatly beneficial for the patient. Throughout the interviews, all reported instances of protocol deviation happened with the specific goal of greatly improving patient outcomes. Participants' concern with patient safety and well-being was evident throughout the interviews. Since very few protocols can be applied in all clinical cases, anesthesiologists should feel empowered to use clinical judgment in exceptional circumstances and supported in doing so.

3.4 | Unidirectional process

Participants also discussed their frustrations with the circumstances surrounding safety protocols. Be it delays in including new knowledge, resources that could be used more efficiently, or processes that could be made safer, participants' observations all pointed to "cracks" in the system.

Participant 01 discusses their frustration with new knowledge not being implemented fast enough in safety protocols:

> As much as we talk about Lean process, it still has to be the chief infectious disease specialist who gives the okay. But we are the ones on the ground. So there are huge delays before the guy at the top says okay, and when he says okay, it doesn't make sense anymore.

This frustration is echoed by Participant 06, who felt that resources could be better utilized if MRI scheduling was done differently. At the time of the interviews, all pediatric MRI appointments were allotted much more time than usual to accommodate the COVID-19 safety protocols in case the patient had to be intubated:

> Most days, our MRIs finish at 1:30 p.m. because most kids don't need to be intubated. There are times where we have to do it, but if we know and if we test them, we don't need to give ourselves such a big window. We can be more efficient.

The issue of testing was also brought up by Participant 17, who explained that approaching untested patients can cause anesthesiologists additional stress:

> We still are dealing with a subset of patients who are not tested, so we have to approach those patients differently. Having that differential of approaches is problematic and has been a big issue for our department with the infectious diseases group and a little source of frustration as well. Definitely, there is a mental overload of having to double-check and think twice about everything that you used to do quite routinely.

Participant 06 expresses further frustration with the testing policy:

> What's stressing us is that block patients, for reasons x, y, z, the hospital says 'it's not worth it to test them,' but it's the same team, it's the same anesthesiologists, and sometimes we intubate them. I find that frustrating.

Participants point to instances where there may be a wide gap between the reason for a particular policy and its effects. Those gaps may be a result of a lack of dialogue between hospital policymakers and anesthesiologists. This may be due to a structural issue such as not having proper feedback mechanisms for anesthesiologists to voice their concerns to the department in charge of protocol writing. Participants perceived that the process of drafting safety protocols happened unidirectionally, with one department giving instructions to another. Ensuring that anesthesiologists had access to a mechanism for feedback may have helped calm some of their frustrations.

3.5 | The Gift of COVID

Describing the COVID-19 pandemic as a gift may seem unusual, as it brought more than its fair share of challenges. However, most

participants discussed some positive aspects of it unprompted. There was no question in the semi-structured interview guide about the positive aspects of the pandemic.

Participant 01 points to the importance of reflexivity in daily clinical practice. Repeating the same procedures mechanically every day without reflecting on the meaning of these procedures can become uninteresting. The intellectual stimulation described below stems from a renewed engagement with daily clinical practice:

> So at least, the change in practice brought stimulating challenges, things we weren't considering, or things we didn't appreciate that we now appreciate. So, I've found it to be a good opportunity to get re-interested in certain aspects of what we were doing that often become mundane and less stimulating.

Participant 02 discusses the need for intentionality in life and clinical practice. COVID-19 protocols in hospitals and public spaces have created challenges and barriers to routine and innocuous actions. Having to plan a trip to the grocery store or sedation for an MRI now requires significantly more attention to safety and commitment than pre-pandemic:

> First of all, it slows our everyday life. For example, when you have to go to the grocery store, you're going to have to wait in line. It's not going to take five minutes in and out. So you have to plan your day knowing that you will have unused time. Two, it forced us to define our priorities… [pause] In other words, now if you want to travel, it must be important because it's going to be a pain either going or coming back. So, you do it if it's worth it. So, it gives us priorities in life. And the third one is that it shows both the cracks and the good points of society.

Participant 17 emphasizes the need for anesthesiologists to communicate their reflexive thoughts and intentions to the rest of their team. Being aware of where they stand and what they intend on doing is only the steppingstone of expected leadership, which requires communicating these goals to a team and ensuring their buy-in:

> I do think that's the positive aspect of all of this. I do also think that it brought people together to deal with it together. There was anxiety, and different people deal with things differently and I think many of us allowed each other to deal with that anxiety the way they felt was best, such as making sure everybody was comfortable with decisions being made.

It is no accident that participants organically brought up these metaphorical silver linings through conversation. Life situations filled with grief and suffering at first, once carefully unwrapped through conversation, can reveal themselves to bring about a gift of transformation.[18] When given time and space to reflect on their experiences of the past few months, participants could speak cathartically about these experiences and find how they were negatively and positively affected.[15] The "cracks" mentioned by Participant 02 are a particularly apt metaphor for discussing the gift of the COVID-19 pandemic: cracks can be seen as open displays of weakness. Still, they can also bring light to a previously dark space. Indeed, the findings presented thus far seem to indicate that it would be beneficial to facilitate and enhance communication between departments writing protocols and those applying them. This dialogue may bring to light what was not initially expected.

4 | LIMITATIONS

The findings discussed in this article are located within specific limitations. It is important to reiterate that the focus of this study was the perceptions of risk and safety of anesthesiology staff, which in turn affected their behaviors. These perceptions result from each individual's interpretation of facts and events as they navigate their life-world.[19] Despite the active involvement of some members of the Department of Anesthesia at the Montreal Children's Hospital in the protocol drafting process, participants reported feelings of helplessness, particularly at the very beginning of the pandemic. Additionally, the scope of this study was limited by the number of participants, the participating institutions, and the time frame of the interviews. The findings presented in this article do not imply that the experiences shared by the participants are representative of the entire population of Canadian pediatric anesthesiologists but that these experiences exist within the population.

5 | CONCLUSION

The findings in this study reveal essential lessons to carry with us as we move further into this pandemic. Ideally, safety protocols should be simple, applicable, and uninterpretable. However, the reality of the COVID-19 pandemic, with its rapidly evolving knowledge of the disease, made it so that protocols had to be released and updated quickly, sometimes resulting in unintended interpretations and consequences. Given the metaphorical "cracks"' in this process coming to light only once the protocols are deployed, it is essential to empower anesthesiologists to use clinical judgment to bridge the gap between the intent of the protocol and its potential unintended consequences. These findings raise questions about shifting from patient-centered care to community-centered care and the fine line between sharing as much information as possible and overwhelming staff with information.

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CONFLICT OF INTEREST

Dr. Ingelmo is a member of the Editorial Board of Pediatric Anesthesia. The rest of the authors confirm that there is no conflict of interest relevant to this article.

DATA AVAILABILITY STATEMENT

Research data are not shared.

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