

Humans not heroes: Canadian emergency physician experiences during the early COVID-19 pandemic

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for the Network of Canadian Emergency Researchers

Handling editor Kirsty Challen

► Additional supplemental material is published online only. To view, please visit the journal online (<http://dx.doi.org/10.1136/emermed-2022-212466>).

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Received 25 March 2022
Accepted 29 September 2022
Published Online First
17 October 2022

ABSTRACT

Background The pandemic has upended much clinical care, irrevocably changing our health systems and thrusting emergency physicians into a time of great uncertainty and change. This study is a follow-up to a survey that examined the early pandemic experience among Canadian emergency physicians and aimed to qualitatively describe the experiences of these physicians during the global pandemic. The study was conducted at a time when Canadian COVID-19 case numbers were low.

Methods The investigators engaged in an interview-based study that used an interpretive description analytic technique, sensitised by the principles of phenomenology. One-to-one interviews were conducted, transcribed and then analysed to establish a codebook, which was subsequently grouped into key themes. Results underwent source triangulation (with survey data from a similar period) and investigator-driven audit trail analysis.

Results A total of 16 interviews (11 female, 5 male) were conducted between May and September 2020. The isolated themes on emergency physicians' experiences during the early pandemic included: (1) disruption and loss of emergency department shift work; (2) stress of COVID-19 uncertainty and information bombardment; (3) increased team bonding; (4) greater personal life stress; (5) concern for patients' isolation, miscommunication and disconnection from care; (6) emotional distress.

Conclusions Canadian emergency physicians experienced emotional and psychological distress during the early COVID-19 pandemic, at a time when COVID-19 prevalence was low. This study's findings could guide future interventions to protect emergency physicians against pandemic-related distress.

INTRODUCTION

Frontline medical workers, such as emergency physicians, have had their lives upended by the COVID-19 pandemic. Working at the junction between the external world and the hospital, emergency physicians have had a unique experience and a singular vantage point. Much has been publicised about pandemic-related emergency physician moral injury and mental health¹⁻³ related to treating critically ill patients with COVID-19 and inadequate resources. Our early pandemic survey among Canadian emergency physicians also reported large COVID-19 impacts on work and personal life, at

WHAT IS ALREADY KNOWN ON THIS TOPIC

- ⇒ Research shows that the COVID-19 pandemic was associated with psychological distress, anxiety and depression among healthcare workers.
- ⇒ Limited research identified factors associated with this distress.

WHAT THIS STUDY ADDS

- ⇒ Distress was commonly experienced by Canadian emergency physicians in the initial months of the pandemic, when rates of COVID-19 infection in Canada were low.
- ⇒ This distress was thought to be attributed to a combination of workplace and personal factors associated with psychological distress.

HOW THIS STUDY MIGHT AFFECT RESEARCH, PRACTICE OR POLICY

- ⇒ We found multiple factors contributing to distress among emergency physicians at a time when there were minimal COVID-19 cases.
- ⇒ This informs our understanding of working during a pandemic.

a time when the Canadian COVID-19 prevalence was low.⁴

When designing our Canadian emergency physician longitudinal survey,⁴ we were mindful that an online survey would capture general themes without fully understanding the reasons behind these findings. At the outset, our survey was designed to be complemented by in-person qualitative physician interviews. The aim of the present study is to highlight how the Canadian emergency physician described their experiences during the first wave of the pandemic, and how they felt the initial part of the pandemic impacted their emotional and mental well-being.

METHODS

We conducted an interview study of emergency physicians from March to September 2020. This qualitative research study followed the Consolidated criteria for Reporting Qualitative research standards of reporting.⁵ Our study was sensitised by the principles of phenomenology⁶ but applied an interpretive description⁷ approach for analysis,



► <http://dx.doi.org/10.1136/emermed-2022-212466>



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To cite: Tran A, Wallner C, de Wit K, et al. *Emerg Med J* 2023;**40**:86–91.



as we were aiming to best understand the experience of front-line Canadian emergency physicians during the first 6 months of the COVID-19 pandemic. Sensitisation is a process borrowed from sociological traditions that allows qualitative researchers to expand their views to examine the data using perspectives beyond their original analytic technique or theoretical framework.⁸ For the purposes of describing our population, we also asked participants to answer the Anxiety Symptoms Questionnaire (ASQ) and report other demographic data (age, gender, training level or years in practice, etc).

Study participants

Participants were sampled from our longitudinal emergency physician cohort. In brief, this cohort study started in March 2020 with weekly surveys during the first 10 weeks of the COVID-19 pandemic and repeat surveys at discrete intervals thereafter.^{4,9} Participants were recruited to the cohort by direct emails to 20 ED physician groups in seven provinces, email invitations via four key national societies associated with emergency care in Canada (Society of Rural Physicians of Canada, the Canadian Association of Emergency Physicians, Association des Médecins d'Urgence du Québec and Association des Spécialistes en Médecine d'Urgence du Québec) and via social media (Twitter @EmergWell and Facebook).

During the first wave, participants could indicate whether they were interested in further sharing experiences during the initial phase of the pandemic. An interview invitation was sent by email or text (depending on participant choice) to those indicating they would like to share their experiences. The interview invitation was sent by the survey principal investigator (KdW) up to a maximum of three times, following which, no further invitations were offered.

All physicians who work in Canadian emergency departments (EDs) were eligible to participate in our longitudinal survey. Emergency physicians in Canada work in a variety of group practice models. In general, remuneration is per patient or else per shift depending on the department funding model. Most emergency physicians work between 12 and 18 shifts per month, in addition to any academic work. Staff emergency physicians spend each shift directly assessing and managing patients as well as one-on-one supervision of medical students and residents. The data for this analysis were collected at a time when COVID-19 prevalence was low in Canada (see figure 1).¹⁰

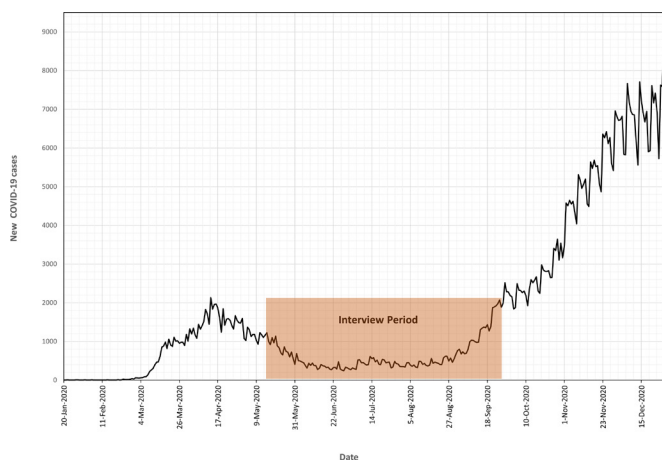


Figure 1 Data obtained from Health Infobase Canada.

Study interview

The semi-structured interviews were designed in March 2020, prior to collection of survey data. The investigators aimed to cover a broad overview of work conditions, physical health as well as mental health. The interview guide can be found in the online supplemental appendix 1. The interview guide was collaboratively created and refined by the investigators. The interviewer was the lead researcher (AT, female, experienced qualitative researcher). We selected AT to conduct the interviews as she did not have any prior relationship with the participants.

The interviews were conducted with video-conferencing software using our institutional license (Zoom via McMaster University), at a time to suit the participant. At the outset, the interviewer made clear that this study intended to explore emergency physician experiences during the pandemic. Participant confidentiality and anonymity were assured. Participants could choose not to answer components of the interview. A clear safety plan with resources was outlined for the interviewer to activate, should there be concerns for participant mental health safety.

Research team and reflexivity

Our research team comprised a diverse group of emergency physicians (CW, KdW, PA, SG, TM-YC), psychologist (KR), psychiatrist (CG-L), students (AT, MB), coordinator (NC) and expert academic researchers (MM, LS). The core analysis team consisted of both emergency physicians (CW, TM-YC) and one non-emergency physician (AT), but the results were presented to all team members for investigator triangulation. To ensure reflexivity, each member of the core analysis team engaged in a self-declaration process to help understand each other's assumptions, perspectives and rationale for working on this project.

Analysis

We performed a qualitative analysis. Interviews were de-identified and transcribed verbatim. Transcripts were reviewed in totality by the interviewer to ensure their veracity and accuracy before being analysed by the research team. We sequentially analysed the interview transcripts, using interpretive description.⁷ Originating in the nursing literature,⁷ the aim of interpretive description is to generate new knowledge within applied health disciplines (such as emergency medicine) to understand clinical scenarios and contexts better.¹¹ A unique codebook (online supplemental appendix 2) was generated by the core analysis team (AT, TM-YC, CW) based on the interviews. We continued to interview participants until our research team achieved thematic sufficiency.¹² Once all analyses were completed, we triangulated our findings with those of our early pandemic survey.⁴ We then amalgamated our final coding schema across both sources to determine the key themes, which are presented in this final report. Finally, two members of our investigatory team (KR, CGL) conducted an audit of the data trail across all the analyses.

Patient and public involvement

We studied Canadian emergency physicians. Our research design was informed by the Canadian Association of Emergency Physician research committee and the Network of Canadian Emergency Researchers.

RESULTS

Demographics

Of the approximately 6500 practising emergency physicians across Canada, 461 physicians participated in the survey, of whom 65 received an email invitation to a virtual interview.

Eighteen participants agreed to an interview and 16 participants completed the interview. Participants lived in six different provinces. We do not report the participant locations to protect their anonymity. Eleven participants were female and five were male. Participant ages ranged from 28 to 62 years (mean 43; SD 10). There were 15 staff physicians and 1 resident. ASQ scores ranged from 11 to 192 (mean 101; SD 53); one participant chose not to complete the ASQ. As a reference, the ASQ can range from 0 to 340; it functions as a global measure of anxiety, and a higher score connotes more self-reported anxiety.

Findings

The interviews lasted from 40 to 112 min (mean 68; SD 19) and yielded a total of 294 pages of transcripts. Our interviews revealed that participants were affected by a combination of workplace-based and personal factors which contributed to their distress. With regard to workplace-based distress, a major contributor was the disruption and loss of ED shift work and the stress of COVID-19 uncertainty coupled with constant information bombardment. They had concern for patient isolation, miscommunication and disconnection from care. However, during this phase, they also found that there was a silver lining in the increased team bonding that occurred during this time period. Meanwhile, many participants described greater personal life stress and emotional distress. Participant quotes illustrating themes are presented in [table 1](#). These statements indicate exemplars of our findings, while the following sections highlight key findings from each theme.

Disruption and loss of emergency department shift work

The first few weeks of the pandemic saw a rapidly changing work environment, both in terms of clinical shifts and operations. The beginning of the survey aligned with both the early phase of the pandemic in Canada, and spring break. There was frequent mention of cancelled shifts due to a myriad of reasons. On return from travel, many physicians were instructed to self-isolate. Physicians quarantined due to acute illness and missed shifts due to fatigue. Participants reported shift loss due to lack of childcare. There were concerns about personal finances due to the decrease in shifts. Participants noted cancellation of regular shifts due to low patient volumes, however, some sites were understaffed despite lower patient volumes.

While clinical shifts were reducing, many noted increased non-clinical duties, often non-paid work in administrative and disaster planning roles, in efforts to rapidly develop pandemic preparation plans. In other cases, lack of regular in-person teaching responsibilities was balanced by increased in situ simulation for the department COVID-19 response preparation. Other changes in work responsibilities included additional clinical work such as COVID-19 assessment clinics and telemedicine.

Stress of COVID-19 uncertainty and information bombardment

Stressors in the first few weeks initially focused on continuously changing guidelines and protocols, poor communication from administration as well as concerns about lack of appropriate use of personal protective equipment (PPE) and uncertain PPE supply. These policies and equipment shortages contributed to a feeling of an unsafe work environment and personalised the risk of being an emergency physician during the pandemic.

This stress added to fears regarding COVID-19 unknowns and how Canadian hospitals would be impacted by the growing number of cases. Efforts to keep up to date on the rapidly

evolving situation manifested as information bombardment via social media and emails. The constant onslaught of updates blurred the divides between participants' work lives and personal lives, generating a great deal of stress that made it challenging to escape a 'work' state of mind. Information was also often inconsistent across regional, provincial and national sources with regard to PPE recommendations and departmental protocols.

Concern for patients' isolation, miscommunication and disconnection from care

Participants were concerned about critically ill patients staying home and avoiding the ED, potentially resulting in increased morbidity and mortality. The sustained low volume contributed to a sense of impending disaster as the surge observed in other regions had yet to be seen. Physicians also noted concern about the impact of restricted visitation policies on patients and their well-being. These visitation policies were reported to exacerbate isolation for patients, as well as create difficult circumstances for emergency physicians whereby they were required to have difficult end-of-life discussions with family members over the phone. Moreover, participants reported that PPE usage throughout their shifts introduced challenges with communication, and created barriers to providing empathetic and high-quality clinical care to their patients.

Increased team bonding

While the initial phase of the pandemic was stressful and anxiety-provoking for many emergency physicians, some participants identified benefits of the pandemic response for their clinical work. For instance, there was a sense of collegiality and teamwork where colleagues were very supportive. In addition, prioritisation of patients with COVID-19 and acute crises improved patient flow through the ED and communication with consultants.

Greater personal life stress

As the pandemic progressed, feelings around the personal impact of the pandemic began to unravel. Sustained low clinical volumes were frequently noted as a contributor of stress. There was ongoing concern for decreased income due to quarantine or cancelled shifts, while having an increased heavy burden of unpaid non-clinical work such as pandemic planning or on-call shifts. These issues increased the overall financial stress experienced by many emergency physicians.

More importantly, the fear of bringing COVID-19 home was one of the most significant contributors to personal stress. Many reported difficulties with trying to self-isolate from family both within and outside of the home. This added to the stress of the pandemic's concomitant unknowns and the lack of adequate pandemic preparation plans in many EDs.

Emotional distress: humanity not heroism

Participants reported feeling fatigue, anxiety, anger, much of which was attributed to the uncertainty of the pandemic and the long hours of PPE usage. Frustration and tensions also arose in the workplace between colleagues regarding PPE complacency, as well as with hospital administrations and governments due to a feeling of a lack of adequate support and communication from these governing bodies. Participants also reported feeling useless in the face of COVID-19 illness.

On a personal level, participants reported intense cravings for social interaction both in and out of work, given the restrictions in social gatherings and limitations in usual outlets for stress

Table 1 Key quotes demonstrating themes

Theme	Participant info	Quote
Disruption and loss of ED shift work	Participant 353 (F) (line 137)	"I think it was easier in a way for people to pick up those [shifts] because the whole rest of their lives were put on hold. So all the things that would normally be reasons why you couldn't pick up a shift, like a particular teaching session, or a meeting, or some other engagement, suddenly your calendar was completely clear so you didn't have all those other engagements and I think people were anxious to find a way that they could do something helpful".
	Participant 527 (F) (line 130)	"So we had about 6 people off at the beginning because they travelled for March break. And some of them couldn't return early, some of them did choose to return early, but they were all on 14-day isolation, so they couldn't work for the 14 days. They ended up trying to do some other admin roles when it was able, not everybody was".
	Participant 531 (F) (line 283)	"One of my [emergency physician] colleagues, she had a babysitter that was hired for the summer taking care of her kids and now the babysitter for whatever reason, learned that the physician was actually an emergency doctor in contact with COVID patients and she bailed out".
Stress of COVID-19 uncertainty and information bombardment	Participant 447 (F) (line 562)	"I think the toughest part for the first month and a half was really the uncertainty, the not having a good grasp. I mean you've been working for 10, 12 years, you know what you need to do, you're comfortable in your work. Now it's like okay, our work is changing almost every day, we don't know what's going to happen, we don't know if we're going to run out of PPE, I'm not sure what this disease looks like, so it was really a lot of the unknown and already you can see a change".
	Participant 268 (F) (line 209)	"I don't think I could have ever pictured that I would have a dangerous job and it kind of felt dangerous for a little bit because you have so little control over how things are going to go. I don't know. I think I picked a field of work where we deal with the unexpected all the time but the unexpected in a pandemic when somebody is coming in with respiratory distress can make it difficult because you have to gown up or down with all of your PPE and you may not have the time to do that.(...) Initially, you don't really think about it because it's just what you have to do but as time goes it just weights a little bit heavier and you wish 'I just wish things could go back to normal' or 'I don't know how good I had it before'. It does play a little bit on the mental psyche".
	Participant 89 (F) (line 657)	"I mean I think the hardest time was right at the beginning when it was really scary, and things were—there was just this huge workload, like the firehose of information to process and the boatload of emails to reply to. I wasn't sleeping very much. I think even if I hadn't been so busy though, I wouldn't have been sleeping very much because you know, you're sitting there scrolling through Twitter trying to understand what's happening and just kind of that adrenaline rush".
Increased team bonding	Participant 524 (M) (line 258)	"So yeah, initially those first three weeks, boom. We're excited, we're in it together. Somebody misses a shift, they'll go oh! I'll take your shift! Right? Because I want to be there, I'm in the trenches ready to go".
	Participant 353 (F) (line 253)	"Well I really loved the sense of collaboration in terms of working with other units and other teams in the hospital. We do a lot of work that can be siloed, I could have a particular idea and take it to somebody, and by the time it filtered through all the various committees and all the different hands it has to pass through, it could take 2 years to get to its final stage. And we were turning things over and having meetings and bringing people together and reaching consensus and agreement, like almost in real time. So, it was satisfying in that way to see those silos come down and people actually make things happen".
Concern for patients' isolation, miscommunication and disconnection from care	Participant 128 (F) (line 289)	"[Low ED volumes] means people are staying home with their appendicitis until it perforated. That means they're staying home with their MI, and then coming in with heart failure a week later when you couldn't tell if they had heart failure or if they had COVID at presentation. People are completing their stroke. These sorts of things, people are... there have been... this drop, emergency department visits in the province went down by 50%. That's not because people are not getting sick".
	Participant 333 (F) (line 575)	"When we intubate a COVID patient, (...) we often give the phone to the person, because they don't have visitors, to talk to their loved ones, and we know that this could be the last time that they talk to them. So, we're witnessing this very personal, intense moment and it's kind of soul crushing so... most of medicine is not personalized. But suddenly you are taken into a very personal part of someone's life that you could probably relate to, what if it was you talking or somebody you love talking?"
	Participant 268 (F) (line 350)	There's been probably a lot of times when I've discharged the patient home and they just didn't understand some of the stuff that I explain and it would be lost in translation (...) Then later on a family member will call and be like 'can you just summarize what happened because my mom or dad didn't really understand' and you're like 'oh shoot'".
Greater personal life stress	Participant 41 (F) (line 519)	"[My elderly parents] basically said 'we would rather get COVID from you and die than continue with this. So we will take that risk so that we will have more normal interactions and that we feel that we're happier human beings and quality of life is better'. But that's a hard conversation to have. Like I'm tearing up just now, just thinking about it (chuckles), (holds back tears) Um, so... that scares me. Bringing it home".
	Participant 128 (F) (line 524)	"I think when this whole thing first hit, and provincial lockdown occurred through late March, I was really anxious, I was really nervous, I was worrying a lot, I felt a lot of tension, I was having trouble falling asleep, I was having... I was... actually, I was anxious enough that I had chest pain (chuckles).(...) you know the feeling you get in your chest if you're about to cry because somebody said something really upsetting to you or really hurtful? Almost that feeling when you would think about, 'oh my god' there's just this... and I realize I was really, really worried and there was no way I... and we can't make it safe".

Continued

Table 1 Continued

Theme	Participant info	Quote
Emotional distress: humanity not heroism	Participant 531 (F) (line 238)	"I'm more afraid about the long-term consequences. To be honest, there have been days where I have been like, 'Do I really still want to do this for the rest [of my life?]' (...) I never felt at any point like a hero. On the opposite, we're kind of like, we feel so useless to be honest. Most of the time we're powerless and those people just, being at the end of their life dying without anything we can do. It's almost — I mean at the beginning it was kind of nice, now it's almost like, I'm almost angry at this term to be honest".
	Participant 490 (M) (line 619)	"Yeah, a desire for human connection. I got off call this morning for example, off night call, and we hand over among colleagues all the cases on the board and it was an hour after my shift was done that we were still there, because you know, we were just craving human connection. And connection with the people that we would normally connect with. So we're standing around all masked up at the hospital and it's like, 'what have you been doing?' 'Hey, what about politics this?' 'Have you read the news of that?' And 'hey you know I got married 2 weeks ago?' Which by the way, I got married 2 weeks ago, which is another challenge (laughs) that I didn't tell you about".
	Participant 585 (F) (line 391)	"So, in my hospital when we want to bring info up, it has to go up all through that top, and then it has to be uniformized—it has to be the same for all the hospitals—so they try to change things to bring them down to all the hospitals. But in the same group we have very different hospitals: we have big regional hospitals and small, remote hospitals. So it cannot be the same for everyone. That's why it takes so much time so have that protocol going down. And yeah, it's all barriers, it's frustrating".

F, female; M, male; PPE, personal protective equipment.

coping, such as going to the gym. Additionally, participants reported experiencing challenges in emotionally processing how their personal and work lives were changing because of the pandemic. Notably, participants also stated that they began feeling the weight of social expectations during the later stages within this early period of the pandemic. Many remarked that they did not feel like they represented the 'hero' persona that many members of the public had been expressing gratitude for.

DISCUSSION

We describe the early COVID-19 pandemic experience from the personal vantage point of emergency physicians across Canada. Although the data presented an array of experiences, key common themes emerged. We found that Canadian emergency physicians experienced loss of clinical shift work, stress from COVID-19 unknowns and information bombardment, increased team bonding, greater personal life stress, concern for patients and emotional distress during the early period of this pandemic.

We reported previously that Canadian emergency physicians experienced work-related impacts and lifestyle-related COVID-19 impacts.⁴ In our qualitative interviews, we explored how these changes caused participants to experience psychological and emotional distress. We identified multiple sources of distress, even though Canadian COVID-19 prevalence remained low during the first pandemic wave. Distress arising from moral injury during times of emergency triage and resource shortage likely contributes only a proportion of all personal distress experienced by emergency physicians. Our findings agree with an American College of Emergency Physician survey where almost half of the respondents reported distress from reduced hours and pay, and a quarter reported distress caused by additional administrative demands.¹³ Other studies have pointed to poor communication of rapid protocol changes as a major source of distress.^{11–16}

We identified several positive pandemic effects very early in the first few weeks of the pandemic such as greater team bonding. These good experiences included the perception that familiar, inefficient systems were replaced by rapid, effective versions because of a confluence of factors. Hallway medicine disappeared and consultants were 'at the ready'. Similar to other studies, our physicians reported colleagues¹⁷ and members of the public were respectful and thankful.¹⁸ However, the positive

impacts on physician mental health were short lived and the overall sense was that participants had experienced negative mental health during the early pandemic. The mean participant anxiety score was comparable with those reported in outpatients with general anxiety, social anxiety and panic disorder.¹⁹

LIMITATIONS

While there are some strengths to our study, there are still some limitations to our findings that we must report. Our study recruited a broad, national cohort of interviewees that complement data from a survey study and the interviews featured in our study were conducted real-time during the first pandemic wave. The main limitation was that only those who had expressed an interest in sharing their story were invited to avoid overburdening survey participants at a stressful time.

Another important limitation is that this pandemic has not been a static phenomenon. While many of our themes may resonate with us later in the pandemic, each new wave brings new sources of stress. For example, the current wave has seen increased workload with fewer additional resources for overcrowded departments and many more emergency physicians have contracted the illness.²⁰

CONCLUSIONS

Canadian emergency physicians experienced emotional and psychological distress during the early COVID-19 pandemic, at a time when COVID-19 prevalence was low. We highlight the many adverse effects they experienced, some of which were linked to unique work setting of the ED.

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Funding This study was funded by Hamilton Health Sciences, The Juravinski Research Fund.

Competing interests CG-L reports employment with the Canadian Medical Association and notes that the opinions and conclusions expressed are the writers' own and are not those of the Canadian Medical Association.

Patient and public involvement Patients and/or the public were not involved in the design, or conduct, or reporting, or dissemination plans of this research.

Patient consent for publication Consent obtained directly from patient(s).

Ethics approval The study was approved by the Hamilton Integrated Research Ethics Board. Participants gave informed consent to participate in the study before taking part.

Provenance and peer review Not commissioned; internally peer reviewed.

Data availability statement Data are available on reasonable request.

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Interview Guide

Verbal consent

Hi _____. Thank you for taking time out of your busy schedule to chat with me about your experiences during this COVID-19 crisis. Thank you for all the hard work you are doing to serve the public in these difficult times. What you are doing is really important, and this is exactly why we want to take some time to archive your thoughts and reflections on your experience.

I'm turning on the recorder now.

So, just a little bit about myself... My name is _____, and I'm a research associate at McMaster University and Hamilton Health Sciences. This project was reviewed by the Hamilton Integrated Research Ethics Board. We anticipate this study will result in scholarly paper and abstracts, but all of your data will be analyzed en bloc with data from other participants.

I am just going to read through the consent information that we emailed you [reads the interview consent document].

The interview will take 30–60 minutes. The interview will be audio recorded on my end. All audio recordings will be used for the purpose of better understanding of the effects of pandemics like COVID-19 as well as improving the quality of your experience as a clinician. All data is being collected by myself and will only be listened to in its raw form by our transcriptionist. We will respect your privacy. Anyone or any institution you mention in this interview will not be disclosed. No information about who you are will be given to anyone or be published without your permission. Subsequent and secondary scholarship may be produced, but all efforts will be made to ensure that your identity is kept anonymous. That said, sometimes very specific incidents will make it possible to identify you, so we caution you against providing highly detailed accounts of specific encounters.

Do you consent to this audio recording?

<participant responds>

Now, I just have two portions of our consent that I will review with you now.

Firstly, you can stop at any time without providing a reason, and you may choose to answer only certain questions. We guarantee that your employment will not be affected by participating in this study. Due to our analytic technique we are using (constant comparative method), once you have provided the information to us, it may become very difficult for us to excise your data from others' data. Therefore, withdrawal from the study must be initiated within 3 weeks of today's date. Do you understand?

<participant responds>

Secondly, at a future date, you may be contacted to confirm that we interpreted your responses accurately. This will be in a form of an email with key bullets of what you and other participants have shared. You can clarify points with us or let us know that all the information is correct. By doing this, we are making sure that we captured your responses accurately. But if you do not wish to be contacted again after this interview, that's fine too. So, would you agree to be contacted one more time after this interview?

<participant responds>

Great. Do you have any questions for me?

Do you consent to taking this interview?

<answers questions, if any>

Ok, now let's get started.

Interview script for physicians

We are going to start off with some questions about yourself and your role.

1. Can you please tell me a bit about your healthcare provider role?
 - a. When did you start this role?
 - b. If you hold multiple roles – which one is most important? That's cool, why is that the most important role?
 - c. What sort of training did you take to get here?
 - d. What were your previous roles?
 - e. How has it been to fulfil these roles during the COVID-19 pandemic?
2. What would you consider are your other work-related responsibilities? If any?
 - a. Do you have any leadership roles?
 - b. Do you have any educational roles?
 - c. How has it been to fulfil these roles during the COVID-19 pandemic?
3. We anticipate that there have been members of your group who have had to miss shifts or became ill. Have members of your physician group missed shifts? What were the reasons they missed shifts?
 - a. How did you feel about your colleagues missing these shifts?
 - b. What measures have been taken to ensure coverage for these physicians who were not able to work?
4. Have you yourself missed any shifts during the COVID-19 pandemic?
 - a. Can you tell me a bit more about why you missed these shifts?
 - b. What happened to those shifts you could not attend?
 - c. How did it make you feel to miss these shifts?
5. [ONLY for those who have been self-isolated or quarantined] Can you describe your experience with self-isolation or quarantine?
 - a. What did your day look like?
 - b. How did you feel during this experience? (Both emotionally and physically)
 - c. How long did you have to do this?
6. [ONLY for those who have been diagnosed with COVID] Can you describe to me about your experience with being infected by COVID-19?
 - a. Did you become ill?
 - b. How did you feel during this experience? (Both emotionally and physically)
 - c. How long did you need to recover?
7. Can you describe how your clinical environment changed during the COVID-19 pandemic?
 - a. Was there a shift in the culture? If so, what was the culture like before? How did it change?
 - b. Any changes you want to make to this culture you describe?

Great. This is very helpful information.

For the next set of questions, I'd like to ask you to think about your views on your wellbeing, health, and safety during the pandemic.

8. How has COVID-19 impacted the way you view clinical work?
 - a. Have your perspectives on approaching clinical work changed? How so?
 - b. What did you learn about clinical work that you did not know before?
9. Can you tell me about some of the personal challenges you have experienced in regard to working in the emergency department during this pandemic?

10. Do you think you have developed any new coping strategies to help you in your work life?
11. The following is a series of questions based on a standardized tool known as the ASQ.¹ I will be describing some symptoms that you might experience, and I will ask you to rate each symptom on a scale of 0 to 10. 0 = none, 1-3 = mild, 4-6=moderate, 7-9 = severe distress, 10 = extreme distress.
- a. Think of your time thus far during the pandemic – what would you rate the following along that 0-10 scale?
 - i. Anxiety
 - ii. Nervousness
 - iii. Worrying
 - iv. Irritability
 - v. Muscle Tension or Tightness
 - vi. Trouble Relaxing
 - vii. Trouble Falling or Staying Asleep (rate the most troubling symptom)
 - viii. Fatigue or Lack of Energy
 - ix. Problems with Concentration or Attention
 - x. Trouble Remembering Things
 - xi. Shortness of Breath, Chest Tightness/Pain, Pounding/Skipping/Racing Heart
 - xii. Stomach Upset, Nausea, Constipation, Diarrhea, or Irritated Bowels (rate the most troubling symptom)
 - xiii. Numbness, Tingling, Excessive Sweating, Flushing, or Frequent Urination rate the most troubling symptom)
 - xiv. Feeling restless, Keyed Up, or On Edge
 - xv. Anticipating or fearing something bad might happen
 - xvi. Trouble functioning at home, work, or society due to anxiety (rate the most troubling symptom)
12. Now we are changing course. This time we will have a slightly different scale. During the pandemic. This time we will ask you to describe the frequency of various symptoms. 0 = Never, 1-3 = occasionally, 4-6 = often, 7-9 = usually, 10 = all of the time
- a. Anxiety
 - b. Nervousness
 - c. Worrying
 - d. Irritability
 - e. Muscle Tension or Tightness
 - f. Trouble Relaxing
 - g. Trouble Falling or Staying Asleep (rate the most troubling symptom)
 - h. Fatigue or Lack of Energy
 - i. Problems with Concentration or Attention
 - j. Trouble Remembering Things
 - k. Shortness of Breath, Chest Tightness/Pain, Pounding/Skipping/Racing Heart
 - l. Stomach Upset, Nausea, Constipation, Diarrhea, or Irritated Bowels (rate the most troubling symptom)
 - m. Numbness, Tingling, Excessive Sweating, Flushing, or Frequent Urination rate the most troubling symptom)
 - n. Feeling restless, Keyed Up, or On Edge
 - o. Anticipating or fearing something bad might happen
 - p. Trouble functioning at home, work, or society due to anxiety (rate the most troubling symptom)
13. How has the COVID-19 changed your leadership capacity? How so?
14. Did the COVID-19 change the way you view yourself as a clinician? Why or why not?
- a. Did COVID-19 change the way that your work integrated with your life?
15. What are some of the improvements that can be made in pandemic planning for your physician group?
- a. If you could dial back time, what things would you change?
 - b. Were there any innovations that you heard about that you wished you had implemented at your location?

16. Do you think that the COVID-19 pandemic has changed your work environment or physician group? If so, how?
17. Thank you for all your suggestions and input on this. Are there any last points you'd like to add to improve the pandemic response and planning in the future, or any comments about it in general?

We have reached the end of the interview. Thank you once again for taking time out of your busy schedule. Your information is very valuable because it will help us evaluate and further develop better responses to pandemics in the future.

Do you have any questions for me?

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1. Marginalization
 - 1.1. Due to race
 - 1.2. Outsider status
2. Racism
 - 2.1. Active discrimination
 - 2.2. Being visible minority
3. Pre-existing leadership roles (helped people feel better prepared)
 - 3.1. EMS
 - 3.2. Military
 - 3.3. University research lead
 - 3.4. Chief
 - 3.4.1. Greater feeling of empowerment
 - 3.4.2. Actively fostering connection between colleagues
 - 3.5. Disaster medicine specialist
 - 3.6. ER director
 - 3.7. Vice president of hospital medical staff association
4. New (post-COVID) leadership roles - feeling empowered
 - 4.1. "Disaster Specialist" part of Incident Management Team for hospital
 - 4.1.1. Was able to demonstrate skills to peers
 - 4.1.2. "Covid Lead"
 - 4.2. PPE training and simulations
5. Reasons for missing shifts - feeling guilty
 - 5.1. Mild symptoms of COVID-19
 - 5.1.1. Would have worked a shift before COVID-19
 - 5.2. Needing COVID-19 swab
 - 5.3. Travel
 - 5.3.1. Locums who cover shifts (mandatory isolation)
 - 5.4. Redeployment
 - 5.4.1. Emergency Operations Centre
 - 5.5. Opting out of shifts for self-protection
 - 5.6. Giving shifts away for own well being
6. Reasons for covering for other colleagues
 - 6.1. Covering for locums who travelled in to work and could not
 - 6.2. "Wanted to be there" to help colleagues at beginning of pandemic
 - 6.3. Vacation plans cancelled
 - 6.4. Mild URI symptoms
 - 6.5. Unrelated medical issue with increased risk for COVID
 - 6.6. Increased availability due to cancelled work
 - 6.7. Overworking as a coping mechanism
7. Pandemic fatigue
 - 7.1. "Post-deployment blues"
 - 7.2. Anticlimactic preparation - Waiting for Godot
 - 7.3. Increased complexity of routine tasks
 - 7.4. PPE fatigue
 - 7.4.1. Cognitive load
 - 7.4.2. Perceptions of difficulty
 - 7.5. Information bombardment
 - 7.5.1. Social media fatigue

- 7.5.2. Needing to rapidly learn more about COVID
- 7.5.3. Conflicting information
- 7.6. Fatigue of consultants
- 8. Work environment
 - 8.1. Usual culture of ED use
 - 8.1.1. Entitled patients
 - 8.1.2. Low acuity, non-emergent cases
 - 8.1.3. New specialty on the block
 - 8.1.4. Catch all (safety net)
 - 8.1.5. Overcrowding
 - 8.2. Feelings & zeitgeist
 - 8.2.1. Fear/anxiety
 - 8.2.1.1. Lack of knowledge of COVID-19
 - 8.2.1.2. Uncertainty about...
 - 8.2.1.2.1. Life during the pandemic
 - 8.2.1.2.2. Natural history of COVID-19 as a disease
 - 8.2.1.3. Fear...
 - 8.2.1.3.1. For patients
 - 8.2.1.3.2. For colleagues / profession
 - 8.2.1.3.3. For family
 - 8.2.1.3.4. Of lack of PPE
 - 8.2.1.3.5. Of workforce ramifications
 - 8.2.1.3.6. For personal health
 - 8.2.1.3.7. About medical exams
 - 8.2.1.4. Vigilance of potential exposure to others
 - 8.2.1.5. Lack of transparency from Province/Leadership
 - 8.2.1.5.1. Unclear rationale for decisions [*resources vs. evidence best practice*]
 - 8.2.1.5.2. Lack of practical acknowledgement for healthcare workers
 - 8.2.2. Anger/frustration
 - 8.2.2.1. Feeling dismissed by admin
 - 8.2.2.2. Frustration with colleagues not wearing masks social distancing
 - 8.2.2.3. Frustration with colleagues for not taking leadership roles/participating in system planning
 - 8.2.2.4. Frustration with COVID-19 self screening and whether to go to work
 - 8.2.2.5. Frustration with other essential sectors for expecting healthcare workers to take extra risks but not doing the same
 - 8.2.2.6. Frustration with extra burden in the ER (more sick, lack of primary care, etc)
 - 8.2.3. Need for control
 - 8.2.3.1. Helplessness
 - 8.2.4. Pride (524)
 - 8.2.4.1. Admiration for colleagues
 - 8.2.4.2. Admiration for and supported by administration
 - 8.2.4.3. Cohesiveness with other facilities/good interfacility communication
 - 8.2.5. Sense of purpose
 - 8.2.5.1. Feeling validated for professional work
 - 8.2.6. Feeling overworked/overstimulated
 - 8.2.6.1. Bleeding of work into life, lack of work/life divide
 - 8.2.6.2. Bombardment about COVID-19 via social media

- 8.2.6.3. COVID information overload
- 8.2.6.4. Maintaining long work hours despite being COVID+
- 8.2.6.5. Too much email
- 8.2.7. Relief
 - 8.2.7.1. Prepared
 - 8.2.7.2. After infection, now immune
- 8.2.8. Isolation/desire for human connection
- 8.2.9. Soul crushing experiences
- 8.3. Systems changes to COVID
 - 8.3.1. Development of hot & cold zones
 - 8.3.2. New innovations
 - 8.3.2.1. Separating different zones
 - 8.3.2.1.1. Hot/cold mixed
 - 8.3.2.1.2. Renovations to existing units
 - 8.3.2.2. Drive-through services
 - 8.3.2.3. 3-D printing
 - 8.3.2.4. Virtual care
 - 8.3.2.5. Ideas for new innovations
 - 8.3.2.6. Virtual meetings
 - 8.3.2.7. Improved protocols
 - 8.3.2.8. Increased patient care areas
 - 8.3.2.8.1. Tents
 - 8.3.2.8.2. Additional ICU
 - 8.3.2.9. Hearing aids for patients
 - 8.3.2.10. Check-ins for physician well being
 - 8.3.2.11. Cohorting staff based on COVID risk
 - 8.3.2.12. Procedural supply kits
 - 8.3.2.13. Virtual translator
 - 8.3.2.14. Increased housekeeping and cleaning
 - 8.3.2.15. Pictures on scrubs
 - 8.3.3. Interdepartmental collaboration/code blue teams
 - 8.3.3.1. Failed airway team
 - 8.3.4. Wearing universal PPE
 - 8.3.4.1. Changes the way you relate to patients
 - 8.3.4.2. Fear with regard to PPE efficacy
 - 8.3.4.3. Inadequate PPE standards
 - 8.3.4.4. Out of supplies
 - 8.3.4.5. No choice in PPE, strict protocols
 - 8.3.4.6. Protected code blue
 - 8.3.5. Staffing of physicians
 - 8.3.5.1. Additional call system (unpaid)
 - 8.3.5.2. Additional backup system
 - 8.3.5.3. Calling back retired physicians
 - 8.3.5.4. Impact of pre-shift screening
 - 8.3.5.5. Keeping empty shifts empty (impact of low volumes on schedule)
 - 8.3.6. Changes in compensation
 - 8.3.6.1. Unpaid work
 - 8.3.6.1.1. Call

- 8.3.6.2. Pay changes decrease
- 8.3.6.3. Pay changes increase
- 8.3.6.4. Lack of hazard/pandemic pay
- 8.3.7. Resources changes/increasing complexities
 - 8.3.7.1. Availability of consultants
 - 8.3.7.2. Changes to patient care
 - 8.3.7.3. Availability of specific tests
 - 8.3.7.4. Difficulties with standardizing new protocols
 - 8.3.7.5. Shift in responsibilities
- 8.3.8. Cultivating a sense of community/togetherness
 - 8.3.8.1. Support group
 - 8.3.8.2. Town halls with leadership
- 8.3.9. Wake up call
- 8.3.10. New influx of COVID patients
- 8.3.11. Crowded staff environments
- 8.3.12. Visiting policy changes
- 8.3.13. Systems change failures
 - 8.3.13.1. Did not use new procedures/used old procedures
- 8.4. Teamwork
 - 8.4.1. Reasons for improved teamwork
 - 8.4.2. Positives
 - 8.4.2.1. Sense of solidarity, team building
 - 8.4.2.2. Commonality of experience (being “in the trenches”)
 - 8.4.2.3. Greater empathy for colleagues
 - 8.4.3. Negatives
 - 8.4.3.1. Hero worship of single individual (not recognizing team or luck?)
 - 8.4.3.2. Not a war situation
 - 8.4.3.3. Disappointment in lack of teamwork
 - 8.4.3.3.1. Loss of team-bonding due to isolation/distancing
 - 8.4.3.4. Scapegoating staff due to outbreaks or infection
 - 8.4.3.4.1. Long-term care workers
- 8.5. Desire for better resources/planning
 - 8.5.1. Better isolation facilities
 - 8.5.2. Palliative care resources
 - 8.5.3. Inequalities with rural communities
 - 8.5.4. Harder to recruit adequate staffing
 - 8.5.5. Better communication with non-hospital facilities (eg. long-term care, walk-in clinic)
 - 8.5.6. Better and more PPE
 - 8.5.7. Increased training before event (pre-planning)
 - 8.5.8. Structural changes/physical plant
 - 8.5.8.1. Negative pressure rooms
 - 8.5.9. COVID testing availability for healthcare workers
- 9. The experience of physicians’ families
 - 9.1. Fear
 - 9.2. New home protocol
 - 9.3. Explaining to kids
 - 9.4. Hard on partner
 - 9.5. Unable to (choosing not to) isolate from family within the home

- 9.6. More time with family
- 9.7. Socializing with those not fearful of COVID
- 9.8. Loss of alternate care givers and childcare
- 9.9. Isolation from family outside of household
- 9.10. Separation from core family members
- 10. Overall experience during the pandemic
 - 10.1. Early (first 3 weeks) = enthusiasm
 - 10.1.1. Fear of going outside
 - 10.1.2. Not what they expected
 - 10.1.3. Fear of spreading COVID
 - 10.1.3.1. Bringing COVID home to family
 - 10.1.4. Uncertainty about COVID
 - 10.1.5. Lack of pandemic preparedness
 - 10.1.5.1. Overwork of administration/leaders
 - 10.1.5.2. Inadequate admin support for physician leadership
 - 10.1.5.3. Poor coordination with public health unit
 - 10.1.6. Increased responsiveness from other hospital colleagues
 - 10.1.7. Quality improvement
 - 10.1.7.1. Improvisation
 - 10.1.7.2. Rapidly changing protocols
 - 10.1.7.3. Simulations
 - 10.1.8. Feeling appreciated by public
 - 10.1.8.1. Temporary appreciation
 - 10.1.9. Patient care more difficult (PPE, fear of COVID, new protocols)
 - 10.2. Middle (4-7 weeks)
 - 10.2.1. Chronic & usual illnesses that were ignored now acute ill
 - 10.2.2. Lower volumes
 - 10.2.2.1. Decreased mental health patients
 - 10.2.2.2. Decreased waiting times
 - 10.2.2.3. Increased time to spend with patients
 - 10.2.3. Fear for patients not presenting even though sick
 - 10.2.4. Fear for patients who have had elective surgeries cancelled
 - 10.2.5. End-of-life care
 - 10.2.6. Less fear of COVID due to immunity
 - 10.2.7. Pandemic effect on elderly patients
 - 10.3. Late (weeks 8+) = annoyance with PPE, increasing volumes
 - 10.3.1. Return to pre-COVID-19 behaviours
 - 10.3.2. Anxiety
 - 10.3.2.1. Provider dissipation of anxiety
 - 10.3.2.2. Increase in patients with anxiety issues
 - 10.3.3. Complacency with PPE
 - 10.3.3.1. Personal
 - 10.3.3.2. Supply stock
 - 10.3.4. Lack of primary care providers/resumption of healthcare services occurred at different rates
 - 10.3.5. General supplies unavailable
 - 10.4. 4th wave (beyond initial 3 waves) - economic/psychosocial
 - 10.4.1. Increased stressors for patients

- 10.4.2. Psychosocial supports for healthcare workers
 - 10.4.2.1. Lack of supports
 - 10.4.2.2. Presence of supports
- 10.5. Bracing for 2nd wave of COVID-19/recurrence
- 11. Desire for change in the healthcare system
 - 11.1. Entire system needs to be blown up and reassembled
 - 11.1.1. Desire to end hallway medicine
 - 11.1.2. Functioning electronic medical record
 - 11.1.3. Lack of primary care access for patients (driving ED volumes/poor care)
 - 11.2. Inadequate pandemic response for provision of medical supplies/equipment
 - 11.3. Inappropriate utilization and distribution of specialists and experts
 - 11.4. Improved communication required
 - 11.4.1. Bad communication from health authority
 - 11.4.2. Unified electronic health record
 - 11.4.3. Intercommunication issues between ED staff
 - 11.4.4. Communication with patients and family
 - 11.4.5. Sharing of resources/learnings
 - 11.4.6. Check ins for physician well being
 - 11.5. Overcrowding in emerge
 - 11.6. Need for change in outpatient services
 - 11.6.1. Poor patient flow through the department/hospital
- 12. Desire for change outside of the healthcare system
 - 12.1. Closing of borders
- 13. Physician health & well-being
 - 13.1. COVID-19 illness
 - 13.2. Other health
 - 13.2.1. Mental health deterioration
 - 13.2.2. Physical health deterioration
 - 13.3. Effects of pandemic on physician life
 - 13.3.1. Physical distancing/quarantine
 - 13.3.2. Cancelling of major life events
 - 13.3.3. Continuing education cancelled
 - 13.3.4. Physical activity/exercise
 - 13.3.5. Called back from vacation
 - 13.3.6. More time to be with family due to self-isolation
 - 13.3.7. New long-term goals
 - 13.3.8. Social Isolation from others
 - 13.4. Coping mechanisms
 - 13.4.1. Increased physical activity/exercise
 - 13.4.2. Engaging in hobbies
 - 13.4.3. Keeping in contact with friends and family
 - 13.4.4. Overworking
 - 13.4.5. Identifying as a hero
 - 13.4.6. Acknowledging benefits of...
 - 13.4.7. Being with nature
 - 13.4.8. Less time spent watching the news
 - 13.4.9. More time spent watching the news
 - 13.4.10. Meditation

- 13.4.11. Maintaining/reinforcing self-awareness techniques
- 13.4.12. Increased virtual meetings with friends/family
- 13.5. Dissatisfaction with career
- 13.6. Financial worries