Adapting despite “*walls coming down*”: Healthcare providers’ experiences of Covid-19 as an implosive adaptation

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Abstract

Background

The Covid-19 pandemic has been a daunting exercise in adaptation for healthcare providers. While we are beginning to learn about the challenges faced by teams during the Covid-19 pandemic, what remains underexplored are the ways team members identified and adapted to these challenges. This is the goal of this study.

Methods

We interviewed 20 healthcare workers at various hospitals in Ontario, who provided care as part of clinical teams during the Covid-19 pandemic. Data was collected and analyzed following Constructivist Grounded Theory principles including iteration, constant comparison and theoretical sampling.

Results

Participants' accounts of their experiences revealed the process of 'implosive adaptation'. The 'reality check', the 'scramble', and the 'pivot' comprised this process. The reality check described the triggers, the scramble detailed the challenges they went through, and the pivot prescribed the shifting of mindset as they responded to challenges. These stages were iterative, rather than linear, with blurred boundaries.

Conclusion

That not all adaptations have to be successful during a crisis was the major insight gained by our participants. The language of Reality Check, Scramble, and Pivot provides a framework for teams to talk about and make sense of their approaches to crisis, even beyond the Covid-19 pandemic.

Introduction

The Covid-19 pandemic has been a daunting exercise in adaptation for healthcare providers (HCPs). HCPs have had to dramatically change the way they do their work with little time to make sense of those changes. What has this process of adaptation looked like? This is the question this paper aims to answer. We are only beginning to learn about the challenges faced by teams during the Covid-19 pandemic(1–3). However, what remains underexplored are the ways team members identified and adapted to these challenges. Covid-19 will not be the last pandemic our society will endure; nor will pandemics be the most difficult hurdle faced by healthcare teams. We believe that understanding how team members made sense and responded to the challenges imposed by this crisis carry important insights. And these insights will become critical not only for working in future pandemics, but also for working in situations that require high levels of adaptability.

Covid-19 has impacted healthcare teamwork in every hospital worldwide(3,4). Daily routines were profoundly disrupted, which required healthcare providers to adapt rapidly. They navigated operational and psychological challenges. For instance, some have documented the various change management strategies their teams and institutions had to adopt to prepare for the influx of patients from expanding bed capacity to creating negative pressure rooms(2,5,6). Others have documented the incidence of moral distress and fear when healthcare providers had to care for colleagues or deal with shortage of personal protective equipment(7). While some of these challenges were more pressing in the early waves, as the pandemic has evolved, so have the types of challenges. As we go through the third wave at the time of writing this manuscript, new challenges loom: how to optimize the capacity of intensive care units with sicker patients needing beds? And how to manage the ongoing impact on non-covid patients (e.g. cancelled surgeries, reduced in-person visits leading to unmanageable wait-lists and delayed diagnoses) (8–10)?

Novel challenges are sometimes difficult to talk about, leading to ineffective communication. And without effective communication, solutions may be inaccessible. Part of the issue may rest in lack of common language due to lack of experience with this type of crises. Research exploring teamwork in extreme contexts can provide some of that language. In a recent review of the science of teamwork, the authors summarized the dimensions of teamwork that may be impacted by Covid-19: collective efficacy, task vigilance, team trust, psychological safety, shared mental models, and team conflict(11) While useful to guide conversations, we still know little about how healthcare providers talk about and make sense of the challenges that Covid-19 has placed on healthcare teams. Empirical studies are recently beginning to be published(3). These studies have mainly focused on teasing out the common themes that healthcare providers shared about their experiences with Covid-19. Our study aims to advance this knowledge by exploring how healthcare providers navigated and adapted to on-the-ground challenges imposed by Covid-19. The complex problems of our society will continue to test the resilience of healthcare, as an industry. It is therefore critical that we continue to build useful language that enables healthcare teams to adapt within the current crisis and when facing any future, inevitable disruptions.

Methods

In this study, we used Constructivist grounded theory (CGT) because of its focus on dynamic social processes and interactions.

We utilized both purposeful sampling and snowball sampling strategies(12). In total we recruited 20 healthcare workers across multiple fields and disciplines – including, nursing, emergency medicine, intensive care, anesthesia, and surgery – at various hospitals in Ontario, Canada, who provided care as

part of clinical teams during the Covid-19 pandemic. Data collection occurred throughout the pandemic starting in April 2020 and concluding in April 2021. Participants were invited to participate in a single, 60-minute, audio-recorded semi-structured interview via Zoom with EF or SC. Participants were asked to share experiences where their teams had to navigate challenges imposed by Covid-19. Once specific situations were described by participants, they were also invited to share additional insights around questions such as: What were the surprising/unexpected issues during that situation? How did they evolve? How did your team navigate and adapt to those issues? How was teamwork impacted?

Data collection and analysis in CGT requires multiple readings of the dataset using an iterative process – meaning that data collection and analysis occurred simultaneously. This analytical process occurred in three progressively interpretive stages: initial, focused, and theoretical. *Initial Coding* - the first five transcripts were read line-by-line and coded by SC and EF using gerunds (action words ending in 'ing'), and participants' words (in vivo codes) to capture the meanings and actions described by participants. The intention of this first stage of analysis is to describe, rather than interpret, participants' perspectives and experiences to ensure that preliminary findings are firmly 'grounded' in the data. *Focused Coding* – Next, EF applied the initial coding framework to code five more interviews. EF, SC, and TT met to consolidate the initial codes into preliminary themes that were used to focus code the rest of the transcripts. *Theoretical Coding* - a coding framework (see appendix) was finalized by EF, TT, and SC and used to re-code the entire dataset. EF and SC are qualitative research experts. TT is a physician who has qualitative research experience and who has worked on the frontlines throughout the pandemic. This research team met frequently throughout this process to deepen our analysis of the data as well as examine how themes evolved. The results of this analytical process were presented to a sub-group of the participants to consider resonance, trustworthiness and transferability, ensuring the rigor of the analysis(13).

All study procedures were approved by the institution's research ethics board (REB#113589).

Results

All healthcare workers have had to adapt during the Covid-19 pandemic. Some areas of the world have had to do so more rapidly than others. The participants in this study had to adapt their day-to-day work processes during the first and second wave, but unlike New York or Italy, did not have an onslaught of patients during the first or second wave. However, as they entered the third wave, *"there has been a tectonic shift"* (p20). For most, adaptation came with a sense of urgency and *"we adapted, but it was an implosion, it was not a successful adaptation"* (p14).

As we attempted to tease out this process of **implosive adaptation** – i.e., having to adapt amidst “*walls coming down*” (p19) – we identified 3 overlapping stages that healthcare providers worked through with their teams to navigate Covid-19. First, rapid changes in the usual way of doing work sparked a **reality check** for team members. They described the triggering moments that made them realize that things could deteriorate rapidly. Once the situation became critical, team members faced multiple challenges that forced them to **scramble**. Most challenges involved working at odds with traditional values. Team members wrestled with the reality that preserving autonomy and hierarchy clashed with efficiency and productivity. As they began to realize what did and did not work early in the pandemic, team members recognized the need to shift their mindset to be able to **pivot** and move forward. For most participants, these three stages “*resonated with the cycle of change [they] went through over the last few months*” (p19).

The rest of this section will provide a narrative illustration of the key dimensions of each stage. These narratives have been composed from participants’ quotes(14) in order to preserve the accuracy while offering diversity of participants’ experiences.

The Reality Check

A “reality check” occurred for participants when it became apparent that Covid-19 was a global pandemic that was likely going to walk through the doors of their hospitals and work environments. This shift in their reality created moments of disruption that were – and continued to be – a catalyst for adaptation. Participants described it in several ways.

For many it felt like “*every single piece of the puzzle was shifting from masking to where you could travel in the hospital to how people needed to be isolated to who is taking care of patients*” (p2). They lost the sense of certainty about what to do on a day-to-day basis. Coupled with shortages of personal protective equipment and conflicting understandings of what PPE was necessary for which procedures, the clinical work environment completely shifted. This was in part because of the acuity of the crisis, but mostly “*because of the sort of changing processes and changing rules. So, you’re never quite sure whether you’re doing the right thing*” (p5).

While Covid did not overwhelm the local system during the first wave, team members did not escape the anxiety of remaining alert. Many of them talked about the calm before the storm and described it as the idea that “*being backstage is more anxiety provoking than being on stage. Because you can’t enter your*

flow when you're preparing for something." And missing the sense of certainty added to the anxiety because *"none of us were naturally trained to think about how to prepare for a pandemic."* (p9)

Those feelings brought the realization that expertise became a commodity in high demand. Some described it as *"you know, it's just so pathetic because we really have no expertise but we're the experts. And so, it was just this terrifying reality"* (p9). After the acuity of the first wave receded, participants understood that being experts without expertise not only applied to treating Covid patients. For patients with chronic conditions, they began asking *"what happens if this person is exposed to COVID? And how is this treatment pathway going to influence that? COVID itself added that layer of complexity that made you second guess"* (p17)

In addition to the rapid changes in the usual way of doing work, the reality check brought out the fears that healthcare providers have experienced and how those fears have evolved through time, as this participant described it.

"Talking to colleagues in New York, they told us, you're going to know somebody, whether it's a colleague or a family member or yourself who is going to die from this. So, there was actual fear about safety for yourself, bringing the virus home and giving it to loved ones. And there was real concern from the provision of care about what's going to happen if, say, doctors and nurses get sick, and we don't have the staffing because of that? Now with vaccines out and this wave, it's a different fear, we're not worried about running out of equipment, we're not worried about personal safety, it's the numbers of beds and access to ICU and the effect on non-COVID patients and their access to care." (p20)

In dealing with these reality checks, team members faced multiple challenges that forced them to scramble as they tried to care for others and themselves.

The Scramble

Early in the pandemic, participants agreed with the strategies of switching people around or re-deploying them to different roles or tasks. The way units were staffed changed, as this participant described, *"we took the three or four younger, healthier nephrologists, and say, you're now our ICU nephrologist... and that was a big win"* (p11).

While redeployment was viewed as an effective strategy by most, it was difficult for many who found themselves working outside their usual scope of practice with little time to mentally adapt to this change. Particularly for *“these nurses in operating room [who] now all of a sudden a few of them are in Emerg, some are in ICU, some are in the COVID assessment unit. So, there was a lot of tears”* (p3). As time passed and people realized that it was reasonable to work outside their scope, they became grateful, because that helped alleviate the work. They realized that *“the rules have been blended, and we’re very thankful for those that are willing to bend their scope.”* (p13).

Working outside the scope brought benefits but also challenges. For instance, a major scramble for participants in our study related to mitigation strategies that had unintended consequences within resuscitation teams. Anesthetists, who were not typically part of resuscitation teams, were recruited to form a special COVID airway team. This airway team was intended to be called for all resuscitations, despite that airway management was within the resuscitation team’s scope. This strategy proved challenging because it created significant tension particularly around: who is deemed the expert? whose expertise applies for what task? and in what context?

For some, the scientific rationale was justified based on previous experience *“handling airways in the SARS-1 emergency in the ‘90s [which] found that you want the most skilled people because you want it to go smoothly, minimize exposures, and minimize aerosol-generated procedures”* (p18). Based on this rationale the assumption was made that anesthesiologists would be the ideal specialists to compose these teams. However, for other specialists who were previously routinely responsible for airway management in emergencies, it felt like *“the things that we have within our scope being done by other”* (p14), but also being done with a different sense of what’s important in the moment. It was described as *“this clash of cultures, like Emergency, like ICU, where moving fast, adapting quickly is just part of the culture. But then there were these solutions or the strategies of bringing in people from other specialties that had a different mindset and that created a whole sort of issues.”* (p19). The perception that new, unfamiliar team members brought a different mindset was particularly frustrating and unwelcomed. This led teams to implement informal work around strategies during the first wave. One of them was to reinforce role separation by saying *“you do your job, stay in your lane as an intubation team person [so] that the trauma team still functions autonomously and independently, and treats the intubation team, for better or for worse, as technicians, not as a consultative service.”* (p11). Rather than confronting and constraining the airway teams in this way, other groups opted to stop calling them altogether.

The airway team strategy looked good on paper, but its potential was not fully realized. For some the problem was *“people kind of being dropped in”,* rather than *“somebody who was going to be a part of our team”*. If the latter had been a possibility, *“I think we could meet in the middle”,* as some participants

indicated. Specially during the first wave, it felt like *“many of these processes [were] just dumped in”*. (p15)

The scramble of having to incorporate new, unfamiliar team members created strong dissonance that prompted an explicit reflection after the first wave. This reflection revolved around ideas on *“how to work with our new intubation teams, ... they’re a great resource, but the pros and cons or bumps in the road, how to integrate one more group into our team, and that was an important learning objective for us”* (pXX). As the situation improved in relation to healthcare providers becoming more used to Covid patients and getting vaccinated, the reflection resulted in changes to these teams. As one intensivist described it, *“it kind of went from being very awkward and almost shunned and pushed away initially to us getting more comfortable, the team changing. By any means it’s not perfect but it fits in a lot better with trauma care and ICU care than it did six months ago.”* (p19)

For other healthcare teams, the scramble involved adapting to the loss of team members and the loss of wider support from other specialties. Participants working directly with potential Covid patients outside of the ICU described being viewed as *“lepers”* (P6) by colleagues in other specialties resulting in *“a huge dichotomy between those who are actually doing COVID and those who aren’t”* (p13). This dichotomy left healthcare providers having to either appeal to their colleagues to *“please, just do this... please, do my test”* (p2) or expand their usual scope of practice when specific specialties would no longer come to complete a procedure. They either had to *“put that thing in yourself or do that procedure yourself”* (p6). Additionally, several participants in the ER realized that redeployment to their department was not being considered. They felt the loss of support when they *“looked at that [redemption] survey”* and realized that *“they’re clearly not interested in sending anyone to emerge. This was an ICU questionnaire”* (p6). The scramble for these teams was not only to adapt *“their roles to work for the greater good”* (p13) but to maintain their cohesiveness as *“people have [had to] pulled together to support each other”* (p4). This involved covering each others shifts, offering to be the *“Covid nurse”* (p7) when your fellow colleagues were concerned, and working to improve team morale.

Overall, we found that teams scrambled the most when incorporating unfamiliar team members or losing the support of specialties that forced them to work outside their scope. For the former, teams had to adapt to mitigation strategies that took experts out of one context (airway management in the operating room) and put them in a different context (airway management in the emergency room) while expecting them to immediately adapt to, and be welcomed into, that context. For the latter, teams had to adapt to the loss of support from other specialties which threatened the way they carried out work and the team’s cohesiveness. In both cases, team members wrestled with how to preserve their autonomy without

compromising efficiency and patient care. As they began to realize what worked and what didn't work early, team members also realized the need for a pivot in mindset to find their way out of the scramble.

The Pivot

As the pivot entails a shift in mindset, it also requires the longest reflection. Health care providers in our study reflected on the many ways in which their perspectives have shifted as they approach the peak of the third wave.

We found that one of the major pivots in mindset occurred in relation to the idea that *"there is no emergency in a pandemic"* (pXX). Most participants reflected that the biggest change for people was realizing that even though *"it's really hard to have to stop [you must] accept the greater good of the rest of the team by putting your PPE on because you cannot be lost."* (pXX). According to another participant,

"what that means is if the patient arrests, you leave the room, and you leave them arrested. Nobody touches them until everybody has their full PPE on, is in the room, the negative pressure is turned on, and the door is shut. We will lose some patients because of that, but you have to protect the staff in this case. Losing a patient from a cardiac arrest during COVID-19 is terrible. Losing two nurses because they got exposed is a disaster. So, that was a weird thing for everybody to get their head around." (pXX)

Also, as redeployment became more normalized, we found that team members started to accept it and even offered it, as this participant described it:

"Truthfully, I was likely to be redeployed anywhere. I haven't worked in Emerg for a while but, should they have needed me there I would have been able to go there. I could be deployed to the ICU to medicine if needed and surgical services, anesthesia or assist. So, I simply said plug me in where you need me." (pXX)

As others reflected, the learning that came from embracing the idea that making people interchangeable was reasonable, gave team members a boost of optimism despite the challenges, as this participant illustrated it: *"we have rheumatologist running the ventilators. But you know, it was very normalizing, I guess. OK, no matter what happens, like we're going to be okay to figure this out."* (pXX)

In the face of the third wave, and likely the worst one for the participants in our study, some began to reflect on how the pivot in mindset *“has felt like a whole exercise in dissonance”* (p18). Dissonance revealed in various forms: *“I have a professional duty but when I look at the behaviour of some in the general public; that creates dissonance. I know I am an independent professional but there are all these rules being imposed on me; that creates dissonance. I have gathered scientific knowledge to support why we should be doing something, but other experts disagree with me; that creates dissonance”* (p18). According to participants, the pivot in mindset that allowed them to manage this dissonance, has hinged in whether *“the different specialties have had an opportunity to develop a culture of responding to challenges”* (p14).

The reality check, the scramble, and the pivot comprised **the process of implosive adaptation** that we found most of our participants engaging with. While the reality check described the triggers, the scramble detailed the challenges they went through, and finally the pivot prescribed the shifting of mindset that has resulted thus far as they responded to challenges.

Discussion

We captured our participants' accounts of adapting during Covid-19 as implosive adaptation, which we represented in three stages: the reality check, the scramble, and the pivot. As they navigated this process of implosive adaptation, they realized that as multiple reality checks were thrown at them, there was no time to dwell on them. They quickly found themselves dealing with the challenges of the scramble. And as long as the feeling of scrambling was present – with more waves appearing – the pivot persisted.

While described in 3 separate stages for clarity's sake, these stages were iterative, rather than linear, with blurred boundaries. Nonetheless, as our participants reflected during our return-of-findings interviews, the separation of the stages afforded a language that they found useful to reflect on and share their experiences with others.

As it has already been reported, working outside scope was a mitigation strategy that most hospitals deemed necessary(1,2,4,15). In our study, participants indicated that working outside scope happened in one of three ways: by switching people around – commonly referred to as redeployment, by doing tasks outside or beyond their training level or experience, and by having to allow others outside their teams do tasks that were normally part of their team's scope.

Having to work outside scope because of lack of support or having to grant their scope to others outside their teams were particularly controversial in our study. For instance, while the creation of the airway

teams was justified by lessons learned during the SARS epidemic, its implementation was fraught with challenges. Similarly, the strong focus on resourcing ICU exposed other teams – particularly, those not dealing with Covid patients – to losing members or losing support from other specialties. This insight suggests that well-intentioned mitigation strategies can create tensions across teams during a crisis. As tensions cannot always be predicted or controlled, teams must be prepared to expect them and to find ways to experiment and work through alternatives. While assuming that in a crisis well-established teams will immediately adapt to the presence of another team, in reality, teams may resist giving up their autonomy, particularly if they sense that it could compromise efficiency and patient care. It is important to clarify that our study didn't intend to criticize the strategy of creating airway teams. Rather, such strategy is used in this discussion to bring awareness to the careful consideration of mitigation strategies that might require crossing specialty boundaries and cultures.

Covid-19 not only imposed professional challenges to healthcare teams; it also permeated into their personal lives. After a year, HCPs are not immune to the frustration that we all have felt throughout. Some of them have reflected on it as having to deal with dissonance particularly with imposed rules, contested knowledge, and misinformed behaviours. Yet their accounts of dissonance should not create the illusion of a complaint. It should prompt teams to reflect on the inescapable nature of crises. The lesson here is that fighting dissonance only runs counter to a team's efforts to protect their well-being. That not all adaptations have to be successful during a crisis was the major insight gained by our participants.

Limitations

As with any other study, the findings presented here are bounded by research design decisions that draw attention to certain aspects and deflect attention from others. For instance, our decision to sample team members from a variety of specialties allowed us to identify the patterns that informed the articulation of the 3 stages of the implosive adaptation process but prevented us from exploring in detail how specialties navigated each stage of the process. Future work should investigate the cultural features of different clinical environments that influence a team's response to challenges. Furthermore, since this is a dynamic – and not yet finished – pandemic, the lessons articulated here are contextual and likely still in flux as the situation continues to unfold.

Conclusion

In this paper, we have described the process of implosive adaptation that healthcare team members went through as they navigated the challenges imposed by Covid-19. While simplistic in appearance, the language of Reality Check, Scramble, and Pivot provides a framework for teams to talk about and make sense of their approaches to crisis, even beyond the Covid-19 pandemic.

Declarations

Conflict of interest: None

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Appendix

ATA COVID CODEBOOK

Areas of Adaptation/Preparation

- Are we prepared?
- Human Resources
- Patient Flow/Triage/Testing
- Policies/Procedures/Processes
- Space
- Mindset

Adaptation Timeline

- Evolving over time
- Calm before the storm
- The new normal
- Second wave
- Key Stories

Experts without Expertise

- What we think we know vs what we actually know
- Crowd sourcing

Expanding

- Redeployment
- New team members
- Expanding Scope/Shifting Role
- Stepping up

Managing Information Overload

- Information overload
- Strategies/Streamlining

Impacts

- Accountability
- Emotional Impacts on Individuals
- Financial
- Impacts on Patients
- Manifestations of Anxiety
- Impact on Teams (Pos and Neg)

Problems of Bureaucracy

- Priorities
- Speed of Response

Public Discourse

PPE

- Competing Understandings
- Fears/Shortages

Safety

- HCP First
- Tensions

Simulation

- Debrief
- Importance
- Protected Code Blue

Lessons Learned

- What went well
- What went wrong
- Institutional memory/legacy