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Frontline healthcare workers' perspectives on interprofessional teamwork during COVID-19

Sarah R. Jordan [a], Susan C. Connors [b], Katarzyna A. Mastalerz [c,d,*]

[a] Division of Geriatric Medicine, University of Colorado School of Medicine, Aurora, CO, USA
[b] The Evaluation Center, University of Colorado, Denver, CO, USA
[c] Division of Hospital Medicine, Eastern Colorado VA Medical Center, Aurora, CO, USA
[d] Division of Hospital Medicine, University of Colorado School of Medicine, Aurora, CO, USA

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ABSTRACT

Effective interprofessional teamwork serves an important role in successful crisis response. Responses to past public health crises have relied on interprofessional communication and trust to support healthcare worker (HCW) resiliency. To understand interprofessional interactions and perceptions of teamwork during the COVID-19 response, we conducted in-depth semi-structured interviews with 18 inpatient HCWs (11 bedside nurses, 5 care coordinators, and 2 pharmacists) from one VA Medical Center between March and June 2020. Using thematic analysis, we identified four key themes that describe the strengths and challenges of interprofessional teamwork, communication, patient care, and organizational response during the initial COVID-19 surge. Interprofessional teams were fragmented. HCWs who transitioned to remote work lost their status on inpatient teams and struggled to provide pre-pandemic levels of quality of care. Conversely, interprofessional teamwork improved for HCWs who continued to work on inpatient units, where study participants described a decline in interprofessional hierarchies and an increase in mutual support. Participants described the need for timely, accurate, transparent communication as they faced new patient safety and communication challenges brought on by the pandemic. HCWs expressed a desire for sustained leadership support and inclusion in institutional decision-making. The challenges to teamwork, communication, and patient care reported in this study highlight the need for consistent, transparent communication and organizational response from hospital leadership during times of crisis.

1. Introduction

Throughout the COVID-19 pandemic, healthcare workers (HCW) in hospitals have faced significant professional and personal stressors resulting in disengagement with work and moral injury. They have battled inadequate supplies of personal protective equipment, anxiety about spreading the virus to loved ones, and concerns about rapidly changing inpatient protocols, procedures, and standards of practice.[1,2] Interprofessional collaboration is a key factor in patient safety and successful communication, especially during the COVID-19 pandemic,[3] as effective teamwork has been essential to supporting HCWs during responses to past crises.[4]

Rates of stress, anxiety, and depression are high among frontline responders,[5] and working during COVID-19 has resulted in chronic fatigue, insomnia, PTSD, and burnout among healthcare professionals.[6] Effective communication and interprofessional teamwork are necessary when navigating crises and can have a significant role in staff empowerment and personal health. During the Severe Acute Respiratory Syndrome outbreak in 2003 and the Middle East Respiratory Syndrome outbreak in 2012, effective communication, collaboration, and trust across healthcare provider teams were crucial to crisis management. This created a sense of closeness and empowerment, which in turn fostered strong collective leadership and staff resilience.[7,8] HCWs who worked during the H1N1 influenza pandemic in 2009 and the Ebola Virus Disease response in 2014 described the importance of receiving teamwork training and establishing clarity on team roles to support patient safety and personal health, and noted this as a key area for preparedness for future outbreaks.[9,10]

Abbreviations: HCW, healthcare worker; IDR, interdisciplinary rounds; RC, relational coordination.

* Corresponding author. Leprino Building, 4th Floor, Mailstop F-782, 12401 E. 17th Avenue, Aurora, CO 80045, USA.
E-mail address: Katarzyna.Mastalerz@CUAnschutz.edu (K.A. Mastalerz).

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During the current COVID-19 pandemic, several hospital systems succeeded in mobilizing frontline interprofessional teams to respond to the crisis, which facilitated crucial communication and collaboration between frontline staff and incident command.[11,12] Because the organizational change necessary to tackle the COVID-19 crisis relies on interprofessional collaboration,[3] it is critical to analyze successes with and challenges to interprofessional interactions during the pandemic. Understanding the social and structural conditions that facilitate or obstruct interprofessional work in hospital settings and studying the impact of COVID-19 on the nature of interprofessional work are important in preparing for future crises.[4] In this study, we explored the perceptions of teamwork from non-physician frontline healthcare team members during the initial COVID-19 surge.

2. Methods

2.1. Study design

This qualitative descriptive study explored the perspectives of inpatient frontline HCWs on teamwork, communication, and leadership at a regional VA medical center during the initial COVID-19 surge. Study participants were a part of teams that performed daily structured bedside interdisciplinary rounds (IDR) together prior to the pandemic. This study was part of a larger study that investigated the experiences of HCWs and patients with bedside IDR. This study was approved by the Colorado Multiple Institutional Review Board and informed consent was obtained (protocol approval COMIRB #19–2644).

2.2. Setting and participants

We recruited a convenience sample of bedside nurses, pharmacists, and care coordinators on the acute care inpatient medical units at Rocky Mountain Regional VA Medical Center (RMR VAMC), an 88 bed academic regional hospital. All care coordinators were nurses by training. Participants were eligible for the study if they had participated regularly in bedside IDR prior to the pandemic (more than 50% of their shifts); our intent was to sample from those who were familiar with bedside IDR and could comment on changes to teamwork and communication over time. Bedside IDR was implemented on acute care wards at RMR VAMC in June 2019 and involved structured input from physicians, nurses, pharmacists, and care coordinators about care plans at the patient bedside. During the COVID-19 surge, interprofessional teams continued to round together outside of patient rooms, attempting to contact those team members who were working remotely by voice technology.

2.3. Data collection

We recruited participants between March and June of 2020 via email and word of mouth in team huddles. Participation was voluntary, confidential, and not tied to work roles or responsibilities.[13] An experienced qualitative researcher without a pre-existing relationship to participants consented participants and conducted 18 semi-structured, in-depth interviews by phone (SRJ). The participation rate was 46% (of 39 eligible HCWs invited to participate). Interview topics included experiences with teamwork and communication during COVID-19, effects of the pandemic on IDR and leadership, and staff engagement during the COVID-19 response. Interviews lasted up to 1 hour and were audio-recorded and professionally transcribed. We conducted interviews until data saturation was reached, where no new information was emerging.[14,15] Participants received a $25 gift card in appreciation of their time.

2.4. Data analysis

We conducted analysis using an iterative, team-based, inductive approach to identify key themes.[16] Informed by thematic analysis,[17,18] the study team defined and agreed upon a codebook and two coders (SC, MP) coded all de-identified transcripts independently; any differences in coding were compared and reconciled throughout the process. First, we coded transcripts deductively using a provisional set of codes drawn from the interview questions; the codebook included definitions of each code to frame the analysis. Results were then reviewed and discussed by the study team (KM, SRJ, SC) to interpret preliminary findings. Using these insights, we conducted a second cycle of coding inductively to look for patterns within the initial coding and identify themes.[19] Representative quotes were selected for each theme and subtheme shown in Table 2. We performed member checking of findings, where we shared preliminary results with participants for their review as a measure of validity, and two participants responded confirming the results.[13] NVivo software version 12 was used for data management (QSR International Pty Ltd. (2020) NVivo).

3. Results

We interviewed eleven nurses, five care coordinators, and two pharmacists (n = 18) working on acute care medical units at RMR VAMC between March and June 2020. Participants were between 31 and 50 years of age, with a mean age of 38, and were predominantly female (88.9%) and Caucasian (83%). The average number of years of practice was 10.3 and the average years of employment in the VA system was 7.9. Additional self-reported demographic characteristics are presented in Table 1. We present four key themes that highlight interprofessional healthcare workers' perspectives on teamwork during the COVID-19 pandemic: 1. Interprofessional teamwork during COVID-19, 2. Communication during COVID-19, 3. Patient care during COVID-19, and 4. Organizational response during COVID-19. Themes are described below and additional illustrative quotes are listed in Table 2.

3.1. Theme 1. Interprofessional teamwork during COVID-19

Participants described both challenges and improvements to teamwork during the initial COVID-19 response. Among the challenges, changes to team assignments, geographic separation, and minimized staff in COVID-19 units were some of the most difficult. During this time, pharmacists and care coordinators were moved off units to work remotely due to personal protective equipment (PPE) shortages. They described how emotionally difficult it was to not be able to physically work in those areas alongside their teammates and likened the feeling to survivors' guilt. Participants struggled to feel integral to patient care when communication with teams and patients was limited to voice technology only. This indirect communication with inpatient teams and patients distanced them from their teams; they felt their input was less

Table 1
Demographic characteristics of interviewees (n = 18).

Demographic Characteristics	Participants, n	% of Participants
Discipline		
Nurse	11	61.1
Care coordinator	5	27.8
Pharmacist	2	11.1
Gender		
Female	16	88.9
Male	2	11.1
Race		
White	15	83
Black	1	5.6
Hispanic	1	5.6
Mixed race	1	5.6
Experience	Years (± SD)	
Mean age[20]	38 ± 6	
Mean years of practice[20]	10.3 ± 5.6	
Mean years working in VA system[20]	7.9 ± 4.5	

sought-after and their recommendations carried less weight. One care coordinator said:

> *"I found that the medicine teams weren't as available because they couldn't see me. I was just a voice on the other end [of the phone] and so I wasn't seen as kind of integral to what was going on."* (Participant 22, care coordinator)

Bedside nurses described not seeing other team members over the course of weeks due to individuals being assigned to COVID-19 units to minimize cross-contact. Despite this, many nurses felt that teamwork actually improved within their unit, attributing this to a sense of 'banding together' with those that remained at the bedside. They described a collective, shared experience of working through a new, frightening experience together and stepping up to help each other with tasks like delivering supplies to patient rooms. Nurses also noted increased collaboration with physicians as professional siloes diminished and physicians helped with nursing tasks for COVID-19 patients. One nurse shared:

> *"The silos, the barriers that we go through on a day-to-day basis in a normal situation … a lot of that has fallen."* (Participant 24, nurse)

Additionally, new frontline interprofessional communication strategies such as increased team huddles improved nurses' ability to raise concerns about issues with patient care, also improving their sense of teamwork.

3.2. Theme 2. Communication during COVID-19

Organizational communication across disciplines, units, and teams was described as a large determinant of healthcare worker wellness and affected trust in the organization. Participants expressed that effective, transparent, and consistent communication from leadership and across teams was key for navigating the COVID-19 response. Consistent communication from leadership was highly valued among all participants. Many described how organizational communication intensified in the early weeks of the COVID-19 surge. One pharmacist said:

> *"We were having twice-a-day meetings about code blues, which is our emergency response system. We were having daily meetings on this one floor, just to try to be a source of COVID [information] … our incident command was giving us daily emails and that was actually comforting."* (Participant 28, pharmacist)

Other valued elements of communication during the pandemic included transparency, such as leadership delivering updates even when it was 'bad news' or when decisions had not yet been made but were in progress. Also important was communication that built community and relationships between HCWs. One example of such communication was "COVID Conversations," daily interprofessional huddles co-led by a physician and nurse manager from March to April 2020. All frontline interprofessional staff were invited to these huddles and many interviewees described it as a time to share concerns that affected interprofessional teams and patients.

In contrast to huddles, some participants noted that emails were a less effective communication method during the pandemic, given they were not easily accessible at home and impractical for communication during highly stressful and busy days. Others described frustration when their questions or concerns seemed to go unanswered by management and when follow-up was lacking. While participants appreciated that communication initially intensified, many mentioned that communication frequency decreased in May and June 2020 with an expectation to return to a "new normal." This decrease in communication led to feelings of chaos and abandonment. One nurse said in May 2020:

> *"The communication at first was just absolutely amazing. Now, I'd say in the last two or three weeks, I just feel that's completely dropped off and nobody really cares about the nurses anymore. I think now it's just kind of a systems thing, where nobody really knows what's going on anymore and there's so much chaos with going back to the new normal."* (Participant 31, nurse)

Pharmacists and care coordinators, in contrast to nurses, described not receiving much direct information from their leadership even at the beginning of the pandemic. They reported receiving little information from direct leadership about staffing decisions, PPE use, and changing protocols regarding patient care. Most reported actively having to seek out updates about patient care outside of their core professional groups.

3.3. Theme 3. Patient care during COVID-19

Due to participants' prior involvement with bedside IDR, many discussed how the inability of teams to gather in patient rooms regularly affected patients during COVID-19. Patients were unable to participate in care discussions when teams met in the hallway or when nurses and doctors were unable to communicate directly with patients or keep them company. One nurse said:

> *"I had several reports of patients being frustrated because they didn't know what was happening. They just didn't have the communication that they wanted."* (Participant 24, nurse)

Patients also faced new safety concerns during the COVID-19 surge. One pharmacist described that previously, questions about medication administration often came up naturally during the course of bedside IDR, but since they were working remotely, these questions were not brought to their attention. Nurses also pointed to difficulty managing patients at risk for falls due to contact precautions and difficulty getting patients to procedures as a result of rapidly changing patient transport protocols.

3.4. Theme 4. Organizational response during COVID-19

Participants defined several features of the local VA organizational response to the COVID-19 outbreak that were valuable to their work or that needed improvement. One of the most positively perceived efforts they noted was the institution of emotional support programs for staff. This included sharing mental health resources (done regularly by executive leadership) and holding wellness presentations, talking with psychologists, and spending time with therapy dogs (arranged by frontline nurse/physician partnerships and the palliative care team). Another notable effort nurses described was the physical presence of their immediate managers on the unit, ensuring they were well-supplied and supported. In-person executive leadership visits were highly appreciated and valued among interprofessional staff, but were described as rare.

Nurses also described times when they did not feel understood or supported by leadership and when leadership failed to recognize constraints of their work during the COVID-19 response. Care coordinators and nurses both expressed a desire to be included in decision-making and have their ideas not only heard but incorporated by upper management, and to see greater transparency in the process of organizational decision making. One care coordinator expressed how organizational hierarchies prevented frontline HCW experience and knowledge from contributing to institutional decision making:

> *"Nurses here at certain points have not felt either heard or appreciated. I think it relates more to the management hierarchy structure that we have in place here, and so those in executive leadership may not be quite as knowledgeable and as detail oriented in terms of what is actually happening day-to-day on a minute level, but details that can really greatly impact how you go about your daily functioning here."* (Participant 21, care coordinator)

Table 2
Qualitative themes and illustrative quotations.

Theme	Subtheme	Quote
Theme 1. Interprofessional Teamwork during COVID-19	Challenge to teamwork: disengaged from teams	*My leadership did not want me on the unit… so I had to watch my patients from afar… and then it was just Vocera (voice technology) to talk to the medicine teams. Veterans were passing and I couldn't be there, I can't hold their hand, I can't get the family up there, I can't help. I felt like I couldn't help and I wasn't doing anything.* (Participant 22, care coordinator)
	Improvement to teamwork: breaking down interprofessional siloes	*I think teamwork has been better because we've all kind of come together and realized this is a scary situation for everybody and we don't want anybody to feel alone.* (Participant 30, nurse)
Theme 2. Communication-during COVID-19	Helpful aspects of communication during COVID-19	*We have the COVID update rounds, which happens at the nurse's station with doctors and nurses. And they just come up with updates or tell us any updates that are coming up or in the works. And they ask for any questions or concerns that we may have. And once those are expressed, they take them to the higher up, or come up with solutions. So they give an opportunity for nurses' voices to be heard. (Participant 23, nurse)*
	Unhelpful aspects of communication during COVID-19	*All the information I got about COVID-19 planning and changes, et cetera, was through either the K2 huddle, which is led by hospitalists, or through the discharge planner on my team who got more information because they're part of the patient flow center. So that was very unsettling because there's a lot of information that was being shared, but we weren't getting anything from our leadership.* (Participant 18, pharmacist)
	Decreased consistency in communication over time	*I'm hearing rumors of policy changes around how we are discontinuing isolation precautions and how we are deciding when a patient who was COVID positive is now no longer considered COVID positive and things like that. I think communication in terms of those policy changes and communication from infection control has dropped off as the incident management team hasn't been rounding and we haven't been doing the huddles and things.* (Participant 29, nurse)
Theme 3. Patient Care during COVID-19	Lack of patient interaction with care team	*We don't have as much time to sit and talk with them as they would like because most of them are lonely, or if we have placement patients that are there indefinitely that can't have family visiting them, who would normally have families come and sit with them.* (Participant 30, nurse)
	Patient safety risks	*I think everyone is learning as we go, but it feels tough when you come in one week and this is exactly what we're doing and this is how we're discharging a patient and this is how we're transporting patients. And then all of that is different than I expected [another week]. I think that has made safety feel like a moving target. (Participant 29, nurse)*
		I would say that since we aren't on the floor as much, perhaps we get fewer questions about medication administration and stuff like that. (Participant 18, pharmacist)
Theme 4. Organizational Response during COVID-19	Emotional support for staff	*They [leadership] were trying to somewhat address this super emotional impact and mental impact that this has.* (Participant 28, pharmacist)
	Need to incorporate frontline team members perspectives into decision making	*We're easily forgotten that we're around until something blows up. It's like they forget to send information down to us or ask us, "We're thinking of doing this, what do you guys think?" We have this huge mixture of people from all walks of nursing who could have potentially assisted in helping not only put our other nurses at ease but also coming up with ways of how we could have done our job. We weren't asked. We were just told.* (Participant 22, care coordinator)
	Valuing leadership on the unit	*I think a good place to start is shadowing for an entire day and seeing just how much we're running around… just having these people who are making these decisions be on the floor with us, would be a good place to start.* (Participant 31, nurse)
		It was actually really a nice change to feel like, "Oh, the director is on the floor today and he's asking if I have any questions or any needs that haven't been addressed." And like, "Oh, the director of nursing is around." (Participant 29, nurse)

4. Discussion

This study highlights the experiences and perspectives of inpatient nurses, care coordinators, and pharmacists with respect to communication, teamwork, patient care, and organizational efforts during the initial COVID-19 surge at a regional VA hospital. While interprofessional teams were fragmented, teamwork improved for those that remained on inpatient units as they worked towards common goals and broke down interprofessional siloes. Participants' experiences with teamwork, communication, patient care, and leadership yield recommendations for organizational strategies to improve HCW engagement and wellness during times of crisis. These recommendations include: 1) provision of clear, transparent, and consistent communication, 2) incorporation of frontline expertise into institutional decisions, and 3) consistent leadership support.

Our study adds to a recent body of literature that suggests frontline workers need and expect support from their organization to provide role clarity and knowledge of standard operating procedures,[21] to nurture psychological wellbeing,[22–24] and to hear frontline voices.[1] Pandemic interprofessional teamwork studies are limited to reporting the benefit of interprofessional pandemic planning[12] and describing teamwork adaptation during the pandemic.[25] This study offers a deeper understanding of frontline team dynamics during COVID-19, and brings forward suggestions for improving communication, teamwork, and leadership approach.

The experiences of our study participants map well to the concept of relational coordination (RC); effective teamwork is driven through timely, frequent, accurate, problem-solving communication based on shared knowledge, shared goals, and mutual respect.[26] RC improves quality and efficiency outcomes, supports worker wellness, and fosters innovation across industries.[27] However, our results suggest that RC between team members alone is not enough for HCW wellness and engagement; the role of organizational leadership cannot be understated. Our participants describe that staff empowerment is strongly rooted in how leadership responds to them and incorporates their ideas. Healthcare workers expect leadership to be physically present, learn about their scope of practice, communicate transparently, and include staff expertise in decision-making. Breakdowns in leadership communication and support erode HCW trust in their organization and contribute to moral injury.

Participants compared their prior experiences of working in teams on bedside IDR to their experiences during the COVID-19 surge, making them uniquely positioned to comment on how the pandemic impacted patient care and HCW relationships. Frontline team members who were working remotely felt disconnected from patients and experienced a loss of status on the interprofessional team. This disruption to teams caused a broken sense of community and hindered their ability to provide pre-crisis levels of quality patient care and safety. In contrast, bedside

nurses who remained on inpatient units reported improved teamwork and camaraderie with others on the frontline, driven by a breaking down of professional siloes and intensified mutual support. These findings suggest that shared workspaces contribute to a strong community that can drive HCW engagement and teamwork. Removing team members from common workspaces and team workflow can threaten interprofessional teams and patient safety and may work against efforts to break down professional siloes.

Another notable finding in our study includes the discrepancy in the amount of information available to different frontline professional groups in the same hospital. Pharmacists and care coordinators had to actively seek information about ongoing changes and protocols during the study period while this information was readily available – at least initially – to bedside nurses. The discrepancy between communication availability to different professional frontline groups suggests that hospital leadership may not fully understand the composition and functions of frontline interprofessional teams and their interdependence in providing patient care. A recent study about environmental health service employee perspectives supports this idea.[28]

Limitations of this study include a predominantly Caucasian female participant sample. We cannot comment on the points of view of disciplines that were not included in the study. Because this study took place in a VA hospital, we cannot comment on whether additional themes might arise in non-integrated non-government healthcare systems (such as additional considerations related to healthcare costs or care coordination). Strengths of this study include a representative sample of nurses, care coordinators, and pharmacists with diverse hospital experiences, and a rigorous, team-based analysis which incorporated medical, sociological, and educational backgrounds. While the sample size was small, we reached data saturation and the participation rate was high given the qualitative nature of the study and pandemic work conditions. As one participant pointed out during member checking,[13] with respect to organization communication and leadership strategies, this study also offers potential best practices to be further studied not just during the pandemic but in the context of 'normal times.'

Future work should include advocacy for the creation of structured, reliable communication processes that elevate frontline expertise to healthcare system leadership. Researchers should examine methods that can effectively incorporate frontline voices into organizational decision making in healthcare and explore effective methods for building mutual support in frontline teams.

Our study presents the perspectives of inpatient interprofessional healthcare teams during the initial COVID-19 surge. Participant experiences offer suggestions for strengthening teams and improving staff wellness during times of crises. While this was a single-site study, we believe the structure of the initial COVID-19 response strategies at this hospital were similar to that of other hospitals in the United States,[29] and the ideas offered by participants to enhance hospital communication and teamwork are likely to apply to many hospital settings.

5. Conclusions

Interprofessional healthcare teams were fragmented during COVID-19; while team members working remotely lost their status on frontline teams and struggled to provide pre-pandemic quality of care, those that stayed at the bedside strengthened mutual support and broke down interprofessional siloes. To successfully tackle future crises, HCW experiences suggest that healthcare systems must create and implement structured communication processes to reliably share HCW expertise with organizational leadership, and provide consistent leadership support for those on the frontlines.

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Other disclosures

The authors have no conflicts of interest to declare.

Ethical approval

The authors obtained VA Institutional Review Board approval and Colorado Multiple Institutional Review Board approval under expedited review.

Disclaimer

The contents of this manuscript do not represent the views of the Department of Veterans Affairs or the United States Government.

Data availability

The datasets analyzed during the current study are available from the corresponding author on reasonable request.

CRediT authorship contribution statement

Sarah R. Jordan: Data curation, Formal analysis, Investigation, Methodology, Validation, Project administration, Software, Visualization, Writing - original draft, Writing - review & editing. **Susan C. Connors:** Writing – review & editing, Formal analysis. **Katarzyna A. Mastalerz:** Conceptualization, Funding acquisition, Formal analysis, Investigation, Methodology, Supervision, Visualization, Writing - original draft, Writing - review & editing.

Declaration of Competing interest

None.

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