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The Influence of the COVID-19 Pandemic on Intensivists' Well-Being

A Qualitative Study



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BACKGROUND: The COVID-19 pandemic has strained health care systems and has resulted in widespread critical care staffing shortages, negatively impacting the quality of care delivered.

RESEARCH QUESTION: How have hospitals' emergency responses to the pandemic influenced the well-being of frontline intensivists, and do any potential strategies exist to improve their well-being and to help preserve the critical care workforce?

STUDY DESIGN AND METHODS: We conducted semistructured interviews of intensivists at clusters of tertiary and community hospitals located in six regions across the United States between August and November 2020 using the "four S" framework of acute surge planning (ie, space, staff, stuff, and system) to organize the interview guide. We then used inductive thematic analysis to identify themes describing the influence of hospitals' emergency responses on intensivists' well-being.

RESULTS: Thirty-three intensivists from seven tertiary and six community hospitals participated. Intensivists reported experiencing substantial moral distress, particularly because of restricted visitor policies and their perceived negative impacts on patients, families, and staff. Intensivists also frequently reported burnout symptoms as a result of their experiences with patient death, exhaustion over the pandemic's duration, and perceived lack of support from colleagues and hospitals. We identified several potentially modifiable factors perceived to improve morale, including the proactive provision of mental health resources, establishment of formal backup schedules for physicians, and clear actions demonstrating that clinicians are valued by their institutions.

INTERPRETATION: Restrictive visitation policies contributed to moral distress as reported by intensivists, highlighting the need to reconsider the risks and benefits of these policies. We also identified several interventions as perceived by intensivists that may help to mitigate moral distress and to improve burnout as part of efforts to preserve the critical care workforce.

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KEY WORDS: burnout syndrome; clinician well-being; COVID-19 pandemic; ICU; moral distress; qualitative methods; visitor policies

FOR EDITORIAL COMMENT, SEE PAGE 285

ABBREVIATION: PPE = personal protective equipment

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Take-home Points

Study Question: How have hospitals' emergency responses to the pandemic influenced the well-being of frontline intensivists? Do any potential strategies exist to improve clinicians' well-being and help to preserve the critical care workforce during current and future public health emergencies?

Results: In this qualitative study of 33 intensivists at tertiary and community hospitals across the United States, physicians reported experiencing substantial moral distress, particularly because of restricted visitor policies and their perceived negative impacts on patients, families, and staff. Intensivists also frequently reported burnout symptoms because of their experiences with patient death, exhaustion over the pandemic's duration, and perceived lack of support from colleagues and hospitals. We identified several potentially modifiable factors perceived to improve morale, including the proactive provision of mental health resources, establishment of formal backup schedules for physicians, and clear actions demonstrating that clinicians are valued by their institutions.

Interpretation: Restrictive visitation policies contributed to moral distress as reported by intensivists, highlighting the need to reconsider the risks and benefits of these policies. We also identified several interventions as perceived by intensivists that may help to mitigate moral distress and may improve symptoms of burnout as part of efforts to preserve the critical care workforce.

Intensivists experience higher rates of burnout compared with other specialties.¹⁻³ The COVID-19 pandemic has strained existing critical care resources and increased rates of depression, anxiety, posttraumatic stress disorder, and burnout syndrome among

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intensivists.²⁻⁹ Burnout syndrome has numerous negative consequences for clinicians. Personally, it is associated with increased risks of depression, posttraumatic stress disorder, alcohol misuse disorder, and suicidal ideation among physicians.^{1,10} Professionally, it is associated with poor work performance, decreased quality of care, and increased job turnover.¹

Not surprisingly, the pandemic has exacerbated critical care staffing shortages, further compromising the quality of care delivered.¹¹ It is important to better understand the factors influencing clinicians' well-being during the pandemic as part of efforts to lessen the psychological burden they experience and to preserve this crucial workforce. However, the impact of hospitals' emergency preparedness and responses on clinicians' well-being has not been well described. Therefore, we conducted semistructured interviews of intensivists in multiple settings across the United States (1) to evaluate qualitatively the influence of hospitals' COVID-19 responses on intensivists' well-being and (2) to gain insight into potential strategies to help preserve the critical care workforce.

Study Design and Methods

Study Purpose and Participant Selection

As part of a larger qualitative study evaluating the influence of the COVID-19 pandemic on ICU organization and care processes,¹² we also sought to understand better the impact of the pandemic and hospitals' responses to it on clinician well-being to inform efforts to preserve the critical care workforce. As described previously,¹² we purposely selected participants from clusters of tertiary medical centers and community hospitals in six states across the United States that experienced surges early in the pandemic based on publicly available county-level case rates.^{13,14} We included hospitals in Arizona, California, Louisiana, Michigan, New York, and Washington. Using key informant and snowball sampling methods,¹⁵ we recruited three practicing intensivists (including one medical ICU director) per hospital via e-mail between August 6 and November 4, 2020. We sought to recruit 36 participants across 12 hospitals based on prior studies showing that 20 to 40 interviews are needed to reach saturation across multisite qualitative studies.¹⁶ All participants consented and were provided remuneration. We report detailed methods using the Consolidated Criteria for Reporting Qualitative Research guideline (e-Table 1).¹⁷

Data Collection

We used similar interview guides for frontline intensivists and ICU directors, with the latter containing additional structured questions about ICU organization and staffing models (e-Appendix).^{12,18} We used the "four S" theoretical framework of emergency preparedness (ie, space, staff, stuff, and system) to organize the semistructured interview guides and to provide context for intensivists' perceptions of their hospitals' responses to the pandemic.¹⁹ The multidisciplinary research team, including intensivists (K. C. V., K. S. M., T. S. V., A. D., K. P. S., S. Y. C., and C. L. H.), a health services researcher (S. N.), and sociologists with expertise in qualitative methods (A. S. and S. E. G.), iteratively revised the

interview guide during six pilot interviews, which were used to generate a preliminary codebook, but otherwise were not included in analyses. A. S. conducted one-on-one interviews virtually over a secure web-based platform. Interviews were recorded digitally, transcribed, deidentified, and verified for accuracy.

Data Analysis

The study team used deductive analysis methods²⁰ to code data independently from the six pilot interviews and to create a preliminary codebook of themes.^{19,20} Next, K. C. V. and S. E. G. jointly coded the first four study transcripts using the framework method for inductive thematic analysis.^{20,21} We subsequently independently coded the remaining transcripts and created

framework matrices to aid interpretation. We met frequently to review data and perform comparative analyses of each set of codes to note similarities and differences, to discuss codes that were unclear or coded differently, to add new codes or to collapse them as appropriate, to resolve differences, and to achieve consensus.²²⁻²⁴ Throughout this process, the research team performed analytic triangulation and re-reviewed transcripts to ensure that analyses remained well grounded in data. We used ATLAS.ti Scientific Software Development GmbH software (version 8) to organize data, to code transcripts, and to track decisions related to the codebook and analyses. The study was approved by the Veterans Affairs-Oregon Health and Science University Joint Institutional Review Board.

Results

We recruited 36 intensivists, with 33 (92%) participating (including 20 from seven tertiary hospitals, and 13 from six community hospitals). Interviews ranged between 45 and 90 min. All participants completed fellowship in critical care medicine, and 12 (36%) were women (Table 1). We reached thematic saturation²⁵ after reviewing 26 transcripts. Subsequent transcripts were reviewed, but no additional novel themes were identified.

We identified four major themes focused on clinician well-being that were consistent across both tertiary care and community hospital settings and both ICU directors and frontline intensivists. These four themes, each with several subthemes noted in Table 2, included (1) contributors to moral distress, (2) contributors to burnout symptoms, (3) long-term impacts of the pandemic on the critical care workforce, and (4) targeted interventions to address clinician well-being and morale as perceived by intensivists.

Importantly, participants were not asked explicitly about moral distress or burnout symptoms in the semistructured interview guide (e-Appendix); instead, these topics were discussed spontaneously and frequently by all participants in their own words and emerged as prominent themes early on in the coding process. To ensure consistency and reliability across coders in subsequent data analyses, we defined moral distress as the inability to act according to one's core values and perceived obligations because of internal or external constraints.²⁶ We defined burnout syndrome as characterized by three symptoms: (1) emotional exhaustion related to devoting excessive time and effort to tasks not perceived to be beneficial, (2) reduced sense of personal accomplishment, including feelings of helplessness, and (3) depersonalization, including indifferent or negative attitudes toward work, colleagues,

TABLE 1] Participant and Hospital Characteristics

Participant Characteristics	N = 33
Female sex	12 (36)
Fellowship training	
Pulmonary/critical care medicine	29 (88)
Internal medicine/critical care medicine	3 (9)
Emergency medicine/critical care medicine	1 (3)
Role	
Frontline intensivist	21 (64)
ICU director	12 (36)
Hospital type	
Tertiary	20 (61)
Community	13 (39)
<hr/>	
Hospital Characteristics	N = 13
Hospital type	
Tertiary	7 (54)
Community	6 (46)
Teaching status in medical ICU	
Internal medicine residency and pulmonary or critical care fellowship, or both	8 (62)
Family medicine residency, transitional internship program, or both	2 (15)
Nonteaching	3 (23)
Staffing model in medical ICUs	
Closed ICU ^a	8 (62)
Open ICU ^b	5 (38)
Intensivist in-house 24/7	
Before COVID-19	3 (23)
During COVID-19	10 (77)

Data are presented as No. (%).

^aStaffing model in which ICU patients are under the full responsibility of a trained intensivist.

^bStaffing model in which ICU patients are admitted under the care of another attending physician with intensivists potentially available for consultation.

TABLE 2] Emerging Themes and Subthemes

Theme	Subtheme
Contributors to moral distress	<ul style="list-style-type: none"> • Restrictive visitor policies • Fear of infection • Allocation of scarce resources • Use of experimental treatments for patients with COVID-19
Contributors to burnout symptoms	<ul style="list-style-type: none"> • Emotional exhaustion: illness severity, pandemic duration • Reduced personal accomplishment: sense of helplessness • Depersonalization: negative attitudes toward colleagues
Long-term impacts of the COVID-19 pandemic on critical care workforce	<ul style="list-style-type: none"> • Compromised trust in institution • Feeling undervalued by institution • Concern for the development or worsening of depression, anxiety, and posttraumatic stress disorder • Attrition of critical care workforce
Interventions to improve intensivist well-being and morale	<ul style="list-style-type: none"> • Establishment of formal backup system for attendings • Use of electronic devices for communication with families • Creation of protocols to guide allocation of scarce resources • Meeting basic needs of staff: food, water, parking, and space to decompress • Proactive provision of mental health resources to clinicians • Tangible gestures of appreciation toward staff

or patients.^{1,25} A conceptual model of our findings is shown in [Figure 1](#), with representative quotations in [Table 3](#).

Contributors to Moral Distress

Restrictive Visitor Policies: All participants worked at hospitals that restricted visitors during the pandemic. Participants described negative consequences of these policies on three stakeholder groups: patients, families, and staff. First, participants believed that restricting visitors potentially worsened patient outcomes such as delirium (quotations 1-5). Several intensivists also noted that families’ absences worsened patients’ morale. For example, one highlighted the “devastating” impact of restricting visitors on patients “who are teetering on the edge of intubation . . . who need all the encouragement they can get . . . We try, but we’re not family. We don’t have the same power over our patients that their loved ones have” (quotation 5). Intensivists also believed that restricting visitors prolonged patients’ suffering because families were unable to see the “medical reality” of their loved ones (quotation 6). For this reason, several participants reported being more assertive in their recommendations to withhold life support among patients at the end of life (quotation 7).

Second, participants described harm that these policies inflicted on families by disrupting communication and trust with care teams (quotations 8 and 9). One explained that restricting visitors changed the dynamic of end of life discussions, making it difficult for families

to “[understand] what their loved one is enduring [and that] we are all working really hard to keep your loved one alive . . . There would be one person who just doesn’t seem to trust you because they can’t see it with their own eyes” (quotation 8).

Third, many intensivists were distressed by their own loss of humanity attributed to restricted visitor policies. For example, one stated that such policies “giving [families] information over the phone that your loved one is dying . . . should be a personal thing. [Restricting visitors] has taken out some of that humanity” (quotation 10). Several participants believed that restricting visitors was “barbaric” and the most challenging part of the pandemic. One explained, “[Restricting visitors] was . . . [one] of the worst things that I have ever seen . . . Looking back, that was the real nightmare: . . . watching that many people die in the ICU alone” (quotation 11). Given their concerns about patients dying alone, many ICU staff chose to be present with dying patients. A few participants deliberately violated policy to allow families at the bedside, further contributing to clinicians’ moral distress. One participant explained, “I find that very frequently, [physicians and nurses] break the rules . . . It’s kind of the final kick in the crotch for your failure. You couldn’t save the person and now they are going to die by themselves. I find a lot of us will just let the family go . . . in the backdoor” (quotation 12).

Fear of Becoming Infected: Many intensivists described tension between their fear of becoming infected and their desire to help patients. For example, one

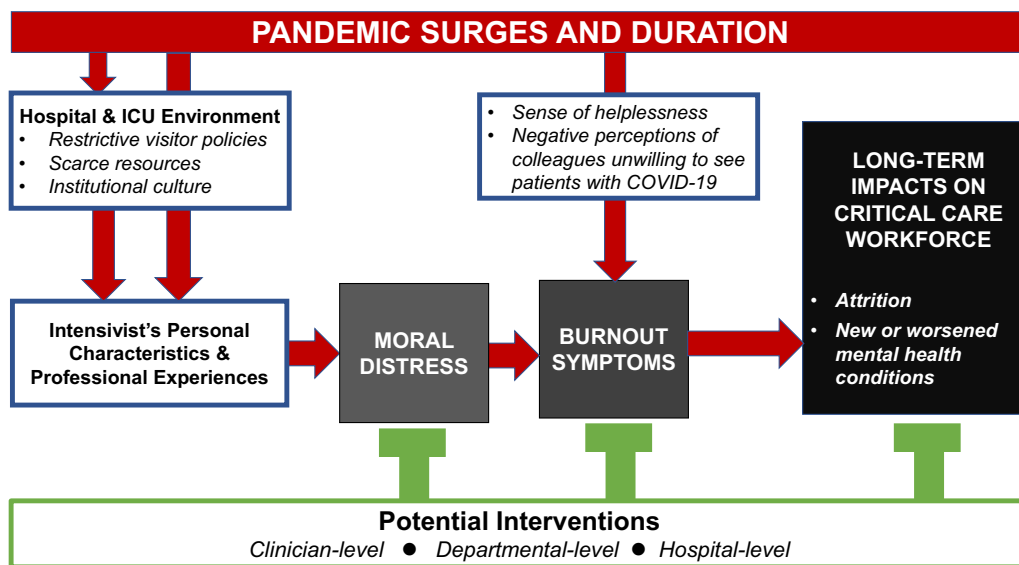


Figure 1 – Diagram showing a conceptual model of factors contributing to moral distress and burnout symptoms among frontline clinicians during the COVID-19 pandemic as perceived by intensivists.

participant explained, “When this started, my own fear was 200% . . . I asked people for pep talks . . . like, inspire me that I can do this because I’m scared . . . tell me this is what I was meant to do” (quotation 13). Such fear was intensified when their own colleagues fell ill. One participant stated, “Just the psychological stress [of] knowing that you are very vulnerable, seeing our colleagues who work in the same field getting sick and maybe pass away . . . [has been] very emotionally stressful” (quotation 14). Because of concerns about infecting their loved ones, many chose to live separately from their families, further exacerbating their stress.

Allocation of Scarce Resources: Intensivists experienced moral distress related to the potential or actual need to allocate scarce resources during surge events. Many hospitals developed strategies to assist clinicians with resource allocation (quotation 15). However, several intensivists reported implicitly having to triage which patients received limited resources based on perceptions of who would benefit the most (quotation 16). One explained, “We had concerns about whether allocation was being done fairly . . . We were bumping up against the principle of distributive justice” (quotation 17).

Use of Off-Label Therapies: Finally, several intensivists experienced moral distress because of the use of experimental therapies outside of clinical trials for patients with COVID-19. For example, one participant described the conflict that existed between physicians’ desire to “do something” and the lack of evidence-based treatments early in the pandemic (quotation 18).

Another physician described how they “went along” with prescribing hydroxychloroquine early on, but when data showed the drug was either “ineffective or maybe associated with harm . . . now you’re thinking, ‘Great. How many people did I harm as a result of using this medication which I never thought there was good evidence for?’” (quotation 19).

Contributors to Burnout Symptoms

Emotional Exhaustion Resulting From Illness Severity and Pandemic Duration: Many participants explained that the sheer number of dying patients caused substantial emotional exhaustion and distinguished the pandemic from other experiences caring for critically ill patients (quotations 20-23). For example, one physician explained how intensivists are used to dealing with death among their patients “in a way that doesn’t affect you in the long run . . . [But] during COVID, it was that times 100 . . . You . . . do the best job you can and a third still die” (quotation 20). The duration of the pandemic also impacted physicians’ level of exhaustion and morale (quotations 24-27). One intensivist explained, “My concern about staff well-being is that this . . . fight-or-flight response can only last for so long, but the chronic stress of having to do this over and over again without a solution at the end of the tunnel . . . that [adds] to the strain” (quotation 24).

Reduced Personal Accomplishment Associated With Feelings of Helplessness: Intensivists reported a reduced sense of personal accomplishment, often

TABLE 3] Exemplary Quotes

Quotation Number, Hospital Setting, and Participant Identification	Subtheme	Exemplar Quotation
Theme 1: contributors to moral distress		
1, tertiary, 409	Restrictive visitor policies: impact on patients	“Part of the recovery is recovering your mental state, especially when you are sick, but not being able to have your family around or having been there for limited hours also affects that.”
2, tertiary, 316	Restrictive visitor policies: impact on patients	“When you have elderly individuals at high risk for delirium, taking out contact and communication with people that are normally a part of their life is very bad, and only exacerbates that problem.”
3, community, 432	Restrictive visitor policies: impact on Patients	“Initially when COVID hit . . . the hospital instituted a no-visitor policy. It was all well intentioned . . . we didn’t want family members exposed, we didn’t want nurses exposed to potentially infected families. I think something that I haven’t seen discussed is the law of unintended consequences. You don’t have family in the room, so redirection is difficult. You are keeping the nurse out of the room, so redirection is more difficult . . . These patients definitely were difficult to sedate and control on the ventilator, which led to more delirium.”
4, community, 221	Restrictive visitor policies: impact on patients	“Not having someone to advocate for [patients] may have affected their care because a lot of times sick patients can’t ask for stuff and do stuff and it’s their family members that kind of advocate for them. So, I do think to a certain extent it may have affected the quality of care that they got.”
5, community, 623	Restrictive visitor policies: impact on Patients	“The morale that having family around gives to a patient— them not having that has been devastating. Especially with these patients who are kind of teetering on the edge of intubation on max high flow, who need all the encouragement they can get, and there’s no one there to give it except for the nurses and ourselves, and we try, but we’re not family. We don’t have the same power over our patients that their loved ones have.”
6, tertiary, 412	Restrictive visitor policies: impact on Patients	“We really struggled with what was a very unique challenge to try to engage family members in surrogate decision-making since so many of these patients were dying and you really needed to make some decisions about what the goals of care were. It was a tremendous impediment to not have that family member able to visit with the family, to actually see the medical reality of their loved one. That was a tremendous impediment to the dying process.”
7, community, 407	Restrictive visitor policies: impact on patients	“I’m a little bit more adamant and a little bit more assertive in my withholding of critical care, of life support, when there are situations when it is not going to help in the long run, not going to make them survive. And I know that if they are on that, they are going to die on a ventilator in a room by themselves. I will frequently tell patient’s family . . . , ‘I will not offer it. It’s not going to help you.’”
8, community, 305	Restrictive visitor policies: impact on families	“[Restricted visitor policies] really changed the dynamic of end-of-life discussions, understanding what their loved one is sort of enduring, as well as we are all working really, really hard to try and keep your loved one alive and trying to do better and I would say that the vast, vast majority of people trusted us and were thankful for what we did, and felt like we were doing a good thing in the world. But very, very rarely there would be the one person who just doesn’t seem to trust you because they can’t see it with their own eyes.”

(Continued)

TABLE 3] (Continued)

Quotation Number, Hospital Setting, and Participant Identification	Subtheme	Exemplar Quotation
9, tertiary, 103	Restrictive visitor policies: impact on families	“One unintended consequence [of restricted visitor policies] is that [families] did not fully grasp the gravity of the situation the patients were in. To me that’s the one big downside, is that you can’t really call them and have a discussion that involves informed consent if you can’t inform them. Part of being informed is seeing how bad things are, and if they can’t see it, then how can they really be informed?”
10, tertiary, 409	Restrictive visitor policies: impact on clinicians	“[Restricted visitor policies] made it incredibly difficult to interact with patients’ families, especially for patients who have COVID, and giving them that information over the phone that your loved one is dying, I think should be a personal thing and it has taken out some of that humanity.”
11, tertiary, 410	Restrictive visitor policies: impact on clinicians	“Everyone in the ICU has the same disease, so on a given day, there may be half the patients in your ICU [who] just die. They die alone because their families can’t come visit them because they have COVID. Watching that many people die alone is probably something that is going to give a lot of us critical care providers . . . a lot of us PTSD at the end of this. That was probably some of the worst things that I have ever seen Looking back, that was the real nightmare that occurred, and it occurred at every hospital in the country. Every hospital just had to do this. But watching that many people die in the ICU, alone—and they had us with them, but that’s not what they would want—that’s not the ideal way that people want to die. That, understandably, affected [the] mental health of everyone.”
12, community, 407	Restrictive visitor policies: impact on clinicians	“I find that very, very, very frequently myself and nurses, and other physicians, break the rules. Because when you talk about things that are the biggest strain on physicians, that’s the biggest strain, is watching that. Because it’s kind of the final kick in the crotch for your failure. You couldn’t save the person now they are going to die by themselves. I find a lot of us will just let the family go in the room, go in the back door.”
13, tertiary, 513	Fear of infection	“When this first started, my own like fear anxiety was like 200% . . . before I started service in the ICU, I asked people for pep talks . . . [to] inspire me that I can do this because I’m kind of scared Tell me this is what I was meant to do.”
14, tertiary, 211	Fear of infection	“The psychologic stress [of] knowing that you are very vulnerable; seeing your colleagues, nurses, physicians, who work the same field as you do getting sick, maybe pass . . . [has been] very emotionally stressful for a lot of staff.”
15, tertiary, 319	Allocation of scarce resources	“We had a whole group of people . . . working on formal policies around contingency vs crisis capacity There are many readily available policies ready to go if we were to reach [a] crisis of how we would allocate scarce resources.”
16, tertiary, 517	Allocation of scarce resources	“At the height of the pandemic, I was called upon to make several triage decisions regarding bed allocation Other hospitals would call us and ask us to transfer COVID patients and I was called upon to make decisions about whether they were sick enough to come to us or not, and that felt uncomfortable.”
17, tertiary, 412	Allocation of scarce resources	“We had concerns [about] whether allocation was being done fairly, and so it was an interesting situation whereby we had to develop guidelines where we would use remdesivir and when we would not use it because we felt it to be a scarce resource. We were bumping up against the principle of distributive justice.”

(Continued)

TABLE 3] (Continued)

Quotation Number, Hospital Setting, and Participant Identification	Subtheme	Exemplar Quotation
18, community, 407	Use of experimental therapies	"I noticed a big dichotomy [among physicians]: either you don't know what you are doing, [so you] don't do anything . . . [Or you're in the school of thought that says] 'we've got to do something.'"
19, tertiary, 316	Use of experimental therapies	"We felt like it was important to go along and give hydroxychloroquine for the sake of avoiding a lot of variation in care between providers And then of course, all the data comes out showing that they're either ineffective or maybe associated with harm, and now you're sitting there thinking, "Well, great. How many people did I harm as a result of using these medications which I never thought there was any good evidence for?"
Theme 2: contributors to burnout symptoms		
20, tertiary, 410	Emotional exhaustion	"There is, on a good day in the intensive care unit, some of the things that staff witness with the human condition and with patients dying in the ICU. On a good day, it's not something you can see over and over again and be completely comfortable with it and adapt to it and process it in a way that it doesn't affect you in the long run, emotionally, mentally. And that's on a good day. During COVID, it was just that times 100. I mean, now you have a patient population in the ICU where a third of them are going to die, that you are going to do the best job you can and a third will still die because there isn't a cure for this disease."
21, community, 623	Emotional exhaustion	"It's certainly the most amount of death that any of us have seen compacted into this short of a time period."
22, tertiary, 211	Emotional exhaustion	"Just the sheer volume of patients and the hours they had to work, and everybody was physically very exhausted by the end of it, so I think that's one thing that happened. The other thing that happened is just the psychologic stress, you know And yeah, just seeing the sheer amount of death in generally, in terms of the patients just not doing well. In our experience you did all you could, but a lot of patients just didn't do well."
23, community, 407	Emotional exhaustion	"After our initial surge wound down, when we saw [another wave] coming back . . . then you saw morale really dip because you think you are through it and then you see it coming again and people don't want to do it again after the first run through."
24, tertiary, 325	Emotional exhaustion	"My concern about staff well-being is that this sort of fight-or-flight response that people had initially can only last for so long, but the chronic stress of having to do this over and over and over again without a solution at the end of the tunnel right now . . . that [adds] to the strain."
25, tertiary, 102	Emotional exhaustion	"As the pandemic has progressed, we have this double wave that has now become a very prolonged course of being engaged, you know, and this has caused people to be very tired. We are talking about six, seven months of just being on the alert and, you know, just that level of physical and emotional exhaustion that I could tell among our staff."
26, community, 114	Emotional exhaustion	"Our nursing staff have reached burnout several times. I think over the last six months, I think it was especially emotionally difficult, psychologically difficult to have our peak get so much better and then have what was worse than the first go-around. And so, I think that was mentally and emotionally difficult for the staff Physician burnout is something we are struggling with as well."

(Continued)

TABLE 3] (Continued)

Quotation Number, Hospital Setting, and Participant Identification	Subtheme	Exemplar Quotation
27, community, 628	Emotional exhaustion	“Fatigue is a big deal and also the morale and the emotional state of the staff has been pretty negatively impacted in our ICU . . . Some of these patients are on this high-flow oxygen support for weeks and weeks, and our nurses and staff in general get to know these patients during that time and they still even weeks later deteriorate and pass away. And I think that’s the biggest sort of impact on the staff is sort of the emotional state and being able to continue on because it’s that and then being overworked, working more often than you would normally do is kind of a bad mix for mental health.”
28, tertiary, 409	Reduced personal accomplishment	“I know a couple of colleagues that burned out also to the point of I took a week off and just went off to a quiet lake and needed time to recover. It was traumatic. It was very, very traumatic and the colleagues that I have spoken to who are willing to talk about it seem to have suffered that trauma also. In terms of mental health, burnout, trauma, at times depression, because you knew you couldn’t do anything about the people who were dying.”
29, community, 222	Reduced personal accomplishment	“I cried with some of my colleagues just about some of the losses, feeling helpless in certain situations. It still feels very raw.”
30, community, 623	Depersonalization	“Consultants have actually been the most challenging part of it Delaying procedures that should have been done same day, waiting for a COVID test to come back. Like a GI bleeder coming into the ICU for hemorrhagic shock and the endoscopy gets postponed waiting for a COVID test, because we don’t have, or we didn’t at the time, have any in-house testing, so it took 48, 72 hours to get a test back. We’re like, a GI bleeder with varices, you know, why? That’s not okay It’s hard to advocate for your patient in that setting.”
31, tertiary, 103	Depersonalization	“Let me give you an example of some tension here. I am on service in the COVID ICU and I need an ultrasound for one of my patients done. And none of the radiology techs nor radiologists—who were all wearing “Healthcare Hero” t-shirts that were provided—none of them will come to the ICU to do that procedure because they don’t want to be exposed to COVID. That kind of tension exists in the hospital.”
32, tertiary, 624	Depersonalization	“There were consultants who refused to see patients . . . patients were being ruled out, they wouldn’t see until they were ruled out. The consultants I’m talking about are like surgeons, or ENTs, ear, nose, and throat doctors. I just was really angry, honestly, about all that.”
33, tertiary, 517	Depersonalization	“Getting diagnostic tests was very challenging. It was just a real challenge actually, to provide what I think we consider standard of care for many of our patients. So, that was quite frustrating, and I think from a personal perspective, we often felt like we’re in the hospital here for 12-plus hours a day in the patient’s room trying to take care of them and here are our colleagues who are at home, scared to come in to sort of help us.”
Theme 3: long-term impacts of the COVID-19 pandemic on critical care workforce		
34, community, 407	Compromised trust in institution	“I noticed the hospital has claimed that we never ran out or been low [on] PPE. At the same time, it was not available at plenty of times.”

(Continued)

TABLE 3] (Continued)

Quotation Number, Hospital Setting, and Participant Identification	Subtheme	Exemplar Quotation
35, tertiary, 517	Compromised trust in institution	“Even during the phase of the pandemic where we were trying to reuse our N95 masks, there was still an ample supply of N95 masks . . . I remember being in the ICU and becoming aware that the infection control standards had been lessened. We all thought it was preposterous. We were all like, ‘Whoa, I’m not going to go in that patient’s room with a surgical mask. I’m going to wear an N95 mask no matter what.’ So, we, at the unit level, chose to ignore them.”
36, tertiary, 513	Feeling undervalued	“Benefits started being cut. Salaries were cut . . . There were a number of layoffs . . . There are ways to break morale and that’s unfortunately one of them.”
37, community, 331	Concern for development of mental health disorders	“We were all messes, in retrospect, from March through at least June . . . Things that normally would not make you cry, would make me cry. One of my partners actually was saying to me how she realized recently how she was laughing at things again, and that it had been a really long time since she laughed that easily. So, I think it’s more in retrospect people recognize how depressed and stressed they were.”
38, community, 432	Concern for development of mental health disorders	“I notice a lot more signs of burnout. A lot more sign around PTSD, of anxiety. Anecdotally, much more of an increase in providers seeking counseling as well as providers requiring medications that they weren’t on a year ago . . . We have had debriefing on what did work as well as debriefing on death and some difficulties related to visitation, things like that . . . [but] not as many as we should or would like to have had.”
39, tertiary, 211	Attrition of critical care workforce	“A number of nurses have left after the pandemic; it was just too much to handle . . . Anybody who was of retirement age or was thinking of retiring, they retired after COVID pandemic. It did have a lot of physical and emotional impact.”
40, community, 623	Attrition of critical care workforce	“The nurses have been very, very affected by it. Some of them have had to take leave because they are just emotionally drained and that compounded with the fact that some of their family members have gotten sick, it just kind of exacerbated the situation.”
Theme 4: targeted interventions to improve intensivist well-being and morale		
41, tertiary, 627	Formal backup system	“One thing that has changed is like nobody comes to work sick anymore, which is not the situation in the ICU world as long as I have been an ICU doc. If you have the sniffles, you have a little cold, you have a little cough, you just go to work . . . [but] now, any small symptom someone calls out . . . Probably one of the good things that are going to come out of this pandemic is that physicians won’t come in sick. Many of us, myself included, have never taken a sick day in like 12 years, right, because you just come in sick.”
42, tertiary, 530	Formal backup system	“It would be great if out of this came a formal backup system that actually made a culture of psychological safety . . . [in which] it’s okay to say I can’t work for whatever reason.”
43, tertiary, 513	Creation of protocols to guide resource allocation	“You know what? [Decisions about how to allocate scarce resources are] out of my hands. And I have so much to worry about that, luckily, this decision is not mine . . . We are going to delegate [that] effort and I’m going to focus on all the other parts of ICU care that only I know.”

(Continued)

TABLE 3] (Continued)

Quotation Number, Hospital Setting, and Participant Identification	Subtheme	Exemplar Quotation
44, tertiary, 204	Meeting basic needs of staff	"[Free parking] helped a lot. It's a small thing . . . but everyone was so grateful that we never went a meal where someone didn't donate a bunch of food."
45, tertiary, 316	Meeting basic needs of staff	"There was always food available for any staff that was working in the unit. I think that was actually very good for morale."
46, tertiary, 211	Meeting basic needs of staff	"[The dedicated break room] is a very quiet room with nice music, nice pictures, and so during [our] breaks [we] can take time off to go sit down there, just relax and just meditate for a bit. So, I think that also helped a lot . . . It was very well received by staff."
47, community, 318	Tangible gestures of appreciation	"We had letters and cards from churches and girl scout troops and individuals. And restaurants would feed us multiple times a day! It was unbelievable support from the community! I cannot get over it. It was just our whole break room was covered. There was not a wall to be found. It's just covered in letters and notes and posters and kindness! The food! It was unbelievably amazing, the community support! One group even bought us socks, warm, fuzzy socks, right. So, like when we were home, we were kind of hugged by our feet."
48, tertiary, 624	Tangible gestures of appreciation	"When I first started in the COVID ICU it was really rewarding because family members were so thankful and they would be saying things like, 'God bless you for being there and taking care of my loved one when I can't really be there,' you know. So, it's nice when weight of what you're doing is really appreciated."

PPE = personal protective equipment; PTSD = posttraumatic stress disorder.

manifested as helplessness that they could not prevent patients with COVID-19 from dying (quotations 28 and 29). One stated, "It was very traumatic . . . in terms of mental health, burnout, trauma, and at times depression, because you knew you couldn't do anything about people who were dying" (quotation 28).

Depersonalization Manifesting as Negative Attitudes

Toward Colleagues: Many intensivists expressed negative attitudes toward hospital staff who were perceived as unwilling to see patients with COVID-19 in person (quotations 30-33). Participants also noted that hesitancy among consultants to see patients led to inappropriate treatment delays. One described an instance of ordering an ultrasound for an ICU patient, noting, "None of the radiology techs or radiologists . . . who are all wearing 'Healthcare Hero' t-shirts . . . [would] come into the ICU to do that procedure because they don't want to be exposed to COVID" (quotation 31).

Long-term Impacts on Critical Care Workforce

Concerns about the long-term impact of the pandemic on ICU staff were common. Several intensivists lost trust

in and felt undervalued by their institutions because of their perception that hospital administrators did not prioritize clinicians' safety when it came to availability and use of personal protective equipment (PPE). For example, one participant stated, "I noticed the hospital claimed that we never ran out . . . of PPE. At the same time, it was not available plenty of times" (quotation 34). Another explained that, at a time that their hospital had an "ample supply of N95s," intensivists were told to use surgical masks in the rooms of patients with COVID-19—recommendations that they considered "preposterous" and chose to ignore (quotation 35). Several hospitals ended up cutting benefits or salaries of physicians, which further compromised their morale (quotation 36).

Additionally, intensivists expressed concerns about the long-term impact of the pandemic on their mental health and the critical care workforce writ large (quotations 37-40). One explained, "We were all messes . . . Things that normally would not make you cry, would make me cry. One of my partners . . . realized recently how she was laughing at things again—and that

it had been a really long time since she laughed that easily” (quotation 37). Many also witnessed signs of posttraumatic stress disorder and anxiety in their colleagues with a notable increase in those seeking counseling and pharmacologic treatment (quotation 38).

Interventions to Improve Intensivist Well-Being and Morale

Participants described several factors at the individual, departmental, hospital, and community levels that improved morale and well-being (Fig 2). At the individual level, many participants found it helpful if mental health providers proactively reached out to frontline clinicians, rather than relying on them to seek help. Additionally, several noted that before the pandemic, physicians commonly would work even when sick themselves. In the setting of COVID-19, however, many departments created formal backup systems for physicians to call out sick, which represented a welcomed change (quotation 41). One participant noted that establishing formal backup systems for physicians helped create a culture of “psychological safety [in which] it’s okay to say I cannot work” (quotation 42). Others found it helpful to reduce the number of consecutive days worked.

At the hospital level, several participants noted that the use of electronic devices and web-based platforms was helpful to improve communication with families in the setting of restrictive visitor policies. Additionally, intensivists appreciated having protocols in place that explicitly excluded the treatment team from making

decisions about allocation of scarce resources (quotation 43). Many participants also explained how helpful it was for hospitals to provide basic resources, including free parking and food. In some cases, hospitals provided childcare or alternative housing to enable providers to isolate from their families. Many hospitals repurposed waiting rooms within hospitals to create “serenity spaces” in which staff could spend time away from the bedside (quotations 44-46). Physicians rarely received hazard pay, but when they did, they believed that it boosted morale.

Finally, some participants noted how much they appreciated expressions of gratitude from their communities. One explained, “We had letters and cards Restaurants would feed us! It was unbelievable support from the community One group even bought us warm, fuzzy socks, so . . . we were kind of hugged by our feet” (quotation 47). Another noted how rewarding it was when family members expressed gratitude, explaining, “It’s nice when the weight of what you’re doing is really appreciated” (quotation 48).

Discussion

This qualitative study provides an in-depth understanding of the influence of hospitals’ emergency responses to the COVID-19 pandemic on the well-being of intensivists working at geographically diverse tertiary and community US hospitals during the pandemic. Intensivists reported experiencing moral distress, particularly because of

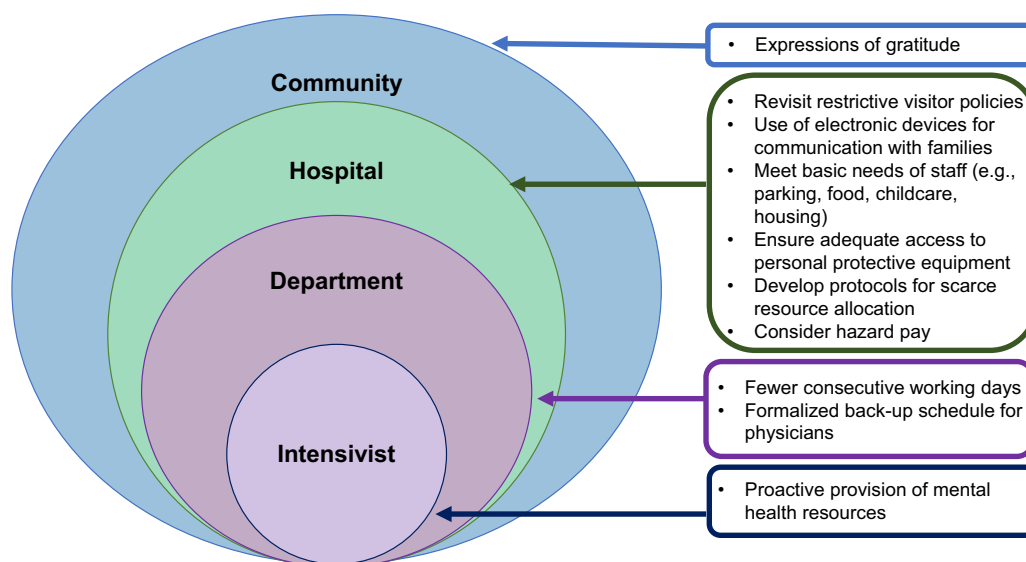


Figure 2 – Diagram showing potential interventions to improve clinicians’ well-being and morale at the levels of the clinician, department, hospital, and community.

restricted visitor policies and their perceived negative impacts on patients, families, and ICU staff. Intensivists also frequently reported burnout symptoms resulting from their experiences with patient death, exhaustion over the pandemic's duration, and perceived lack of unified support from colleagues and hospitals. Participants identified several potentially modifiable factors at the levels of the individual clinician, department, and hospital that were perceived to improve morale, build trust, and reduce burnout. These include the proactive provision of mental health resources for frontline staff, creation of formal backup schedules for physicians, and clear actions demonstrating that clinicians' well-being is valued by their institutions.

Even under normal circumstances, ICU clinicians are a limited resource.^{1,27,28} Our findings suggest that the COVID-19 pandemic may accelerate shortages of the critical care physician workforce by exacerbating moral distress, a key factor associated with burnout syndrome.² Among health care workers, moral distress and burnout syndrome often are related to the organizational environment; therefore, addressing the interaction between the health care worker and their work environment is fundamental in efforts to mitigate moral distress.^{1,29} Our use of the "four S" framework to organize the interview guide provided context for intensivists' perceptions of their hospitals' responses to the pandemic and on clinician well-being. Moreover, our findings were consistent across both tertiary and community hospital settings and reinforce the need for a coordinated, national response to combat burnout and to improve clinician well-being.³⁰

Participants identified restricted visitor policies as the major contributor to moral distress during the pandemic because of threats they posed to patient- and family-centered care. The absence of family at the bedside disrupted the care team's communication with family members and further complicated complex decision-making processes, particularly among patients at the end of life.³¹ Although restricting visitors during the pandemic was common^{32,33} and has substantial face validity to minimize virus transmission and to conserve PPE, our findings question whether the benefits of restricting visitors outweigh the risks. More research to quantify better the risks and benefits of restrictive visitor policies is needed urgently to inform ongoing and future pandemic responses.

Although many factors contributing to burnout symptoms were beyond the control of clinicians and hospitals, participants identified several factors that potentially were modifiable. For example, ensuring adequate access to PPE may help to reduce clinicians' fear of becoming infected while simultaneously building trust in their institutions. Additionally, some participants noted that proactive involvement of mental health professionals with frontline staff was helpful in efforts to mitigate psychological burden and potentially to reduce burnout symptoms. Our findings build on recent literature by focusing on moral distress experienced by ICU physicians and outlining potential strategies to address clinicians' mental health proactively during and after the pandemic.^{3,6,34,35} These include actively screening staff to evaluate the influence of the pandemic on their mental health, as well as proactively educating clinicians about the possibility of moral distress and burnout.³⁶ Such actions are particularly important in light of evidence that clinicians often are reticent to speak about their mental health because of stigma.³⁵

Finally, our study adds to the literature by providing an in-depth understanding of how strategies implemented at the departmental and hospital levels may reduce distress and improve morale among intensivists. For example, physicians miss work for illness much less often than other hospital staff.^{37,38} Furthermore, intensivists' often work up to 14 consecutive days³⁹; such schedules are associated with burnout.^{40,41} A recent study found that limiting the number of consecutive days worked by intensivists was associated with shorter ICU length of stay, without differences in ICU readmissions or hospital mortality.⁴² Taken together, these findings suggest that both intensivists and patients may benefit from implementation of staffing models at the departmental level that limit the number of consecutive days worked, provide more formalized systems for backup coverage, or both.

At the hospital level, intensivists reported the importance of ensuring that basic needs of frontline staff (eg, food, childcare) are met during surge events. Such actions by a health care system represent tangible demonstrations of support for health care workers, which reinforce institutional compassion and help clinicians to overcome distress and fear to continue to provide care under difficult circumstances.^{35,43,44}

Strengths of our study include its rich perspectives from intensivists at tertiary and community hospitals across

the United States. Additionally, we identified novel contributors to moral distress within the context of the COVID-19 pandemic. Our study also has limitations. First, the experiences and strategies described in this study do not reflect the multidisciplinary perspectives of all ICU team members. Second, women constituted approximately one-third of study participants, although this proportion generally reflects the representation of women in the critical care workforce nationwide.⁴⁵ Third, we did not collect data on age, race, or ethnicity of participants to protect the confidentiality of participants. Fourth, given the qualitative methodology, we were unable to capture granular details about hospitals' visitor policies over time. Fifth, perceptions of intensivists may have evolved over time, and given time constraints, transcripts were not returned to participants for their review. Finally, we did not measure moral distress or burnout quantitatively.

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Interpretation

This study provides an in-depth understanding of specific factors contributing to moral distress and burnout symptoms as perceived by intensivists working in US hospitals during the COVID-19 pandemic. We found that restrictive visitor policies contributed to moral distress among intensivists, highlighting the need to consider the risks and benefits of visitor policies more carefully before their widespread implementation. Additionally, several potentially modifiable factors were identified to improve morale and to mitigate burnout symptoms, including the proactive provision of mental health resources for frontline staff, creation of formal backup schedules for intensivists, and clear actions demonstrating that clinician well-being is valued. Implementation of these interventions may help to preserve the critical care workforce during current and future public health crises.

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