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Filling the gaps in the COVID-19 pandemic response: medical personnel in the US military health system

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Abstract

Background The COVID-19 pandemic was an unprecedented public health emergency that heavily affected the healthcare workforce. Although the Military Health System (MHS) has robust capabilities and was able to deploy medical staff to support civilian hospitals during the crisis, it too was adversely impacted by personnel issues. We aimed to identify and address gaps in understanding the impact of the COVID-19 pandemic on healthcare personnel in the MHS.

Methods We conducted semi-structured key informant interviews with 28 MHS stakeholders, including policymakers, program managers, and healthcare providers. We recruited respondents using purposive and snowball sampling until we reached thematic saturation. Interviews were conducted virtually from December 2022 to March 2023 and coded by deductive thematic analysis using NVivo.

Results Burnout and mental health concerns across the workforce increased during the pandemic, although some felt military culture facilitated resilience. Reduction in personnel was noted and slow hiring processes and noncompetitive wages hindered hiring, contributing to staffing shortages. Initial disruptions occurred in training and skills readiness, although these issues were reduced over time. Concerns remain about newer trainees' preparedness and teaching staff's availability in the MHS.

Conclusion This study uniquely assessed the impact of the COVID-19 pandemic response on the MHS healthcare workforce through in-depth key informant interviews. Multi-pronged strategies are needed to promote personnel well-being in complex healthcare systems like the MHS.

Keywords Military health system, Medical personnel, Burnout, COVID-19 pandemic

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Background

The COVID-19 pandemic was an unprecedented public health emergency that had wide-reaching consequences. The healthcare workforce faced several challenges resulting from the pandemic, including higher risk of exposure to illness, staff shortages, increased workload, and mental health stressors [1–3]. As a national health system serving over 9.6 million beneficiaries, the US Military Health System (MHS) represents a large integrated healthcare network that had to address the service disruptions that typified the COVID-19 public health emergency [4]. The MHS delivers healthcare to its beneficiaries through direct care and private-sector care. The direct care setting consists of over 700 military treatment facilities (MTFs) in the US and abroad, employing approximately 128,000 healthcare professionals (70,000 military personnel and 58,000 civilian personnel) [5]. In 2018, the MHS began a 3-year transition process to centralize management and administration command of all MTFs under the Defense Health Agency (DHA) rather than under individual Services (Army, Navy, Air Force)—similar to hospital mergers in the civilian sector. This transition created structural changes to the MHS that were still untested and sometimes unclear at the start of the pandemic [6, 7].

During the pandemic, military medical personnel were deployed on COVID-19-specific missions which included providing clinical support and medical surge capacity to civilian healthcare settings [4]. Congressionally-mandated after-action reports (AARs) suggested that the MHS was affected by staff shortages and high stress among providers [7, 8]. These AARs, while identifying large-scale systemic concerns, do not provide granular insight into the issues confronting MHS personnel during the COVID-19 pandemic.

In this context, we used key informant interviews to better understand the pandemic's impact on the MHS healthcare workforce. We previously identified knowledge gaps around the impact of the pandemic response on personnel burnout, workforce retention, and skills readiness [7]. Identifying and mitigating these gaps and shortages in staffing, competencies, and training will provide valuable insights for the MHS in preparation for future disaster planning, with translational capacity to similar large civilian healthcare networks.

Methods

This study used content analysis to uncover themes and patterns in how the COVID-19 pandemic impacted the MHS healthcare workforce. We performed this qualitative study using semi-structured key informant interviews (KIIs). This analysis is part of a larger study that investigated gaps in knowledge as to how the COVID-19 pandemic impacted the MHS [9, 10]. The methodology is reported below following the guidelines of the

Consolidated Criteria for Reporting Qualitative Research (COREQ) checklist [11]. The completed checklist can be found as Supplement 1.

Participants

We recruited senior-level military and civilian stakeholders (e.g., policymakers, policy advisers, academic leaders, and healthcare providers) who were professionally affiliated with the MHS and involved in developing and implementing policies within the MHS from March 2020 to December 2022. Individuals who were not involved in MHS policy planning during the pandemic were excluded. We used purposive sampling based on existing professional relationships between the research team and stakeholders, followed by snowball sampling using participant recommendations. We contacted potential participants via email, briefly outlining the study's purpose and associated risks and benefits. We continued data collection until we reached thematic saturation, the point at which we did not anticipate new insights or information from further interviews.

Data collection

We conducted interviews virtually by video (using Google Meets or Microsoft Teams) or by phone. Interviews were not audio or video recorded. We explained the objectives and voluntary nature of the study and obtained verbal consent before beginning the interview. The interview guide contained 24 open-ended questions addressing known gaps in understanding the MHS pandemic response, with 4 questions specific to personnel issues encountered during the pandemic (Supplement 2). The guide also incorporated questions on additional topics such as telehealth utilization, clinical practice guidelines, research capacity, and financial impacts on the MHS. The semi-structured format allowed for the use of probing questions in order to encourage participants to elaborate on their responses. KIIs ranged from 45 to 60 min in duration, depending on the amount of detail provided in responses and participants' knowledge of the areas covered by the interview guide. Two or three researchers (TK, VM, AP) were present at all interviews, with one acting as the primary interviewer and the others serving as notetakers.

Data analysis

Two authors (VM, AP) coded interviews independently and then met to discuss and find consensus on coding patterns. Deductive thematic analysis was used to identify common patterns and themes in the interview data using NVivo 14 and open coding techniques. NVivo was used to organize interview notes, to categorize data into existing overarching themes, and to identify sub-themes in the data. Each author manually selected representative

Table 1 Interview participant characteristics

| Occupation | Civilian/military | Occupation | Civilian/military |
|-------------------|-------------------|------------------|-------------------|
| Academic Leader 1 | Civilian | Policy Advisor 8 | Civilian |
| Academic Leader 2 | Civilian | Policymaker 1 | Civilian |
| Clinician 1 | Military | Policymaker 2 | Civilian |
| Clinician 2 | Military | Policymaker 3 | Civilian |
| Clinician 3 | Military | Policymaker 4 | Civilian |
| Clinician 4 | Civilian | Policymaker 5 | Civilian |
| Clinician 5 | Military | Policymaker 6 | Civilian |
| Policy Advisor 1 | Civilian | Policymaker 7 | Civilian |
| Policy Advisor 2 | Civilian | Policymaker 8 | Civilian |
| Policy Advisor 3 | Civilian | Senior Leader 1 | Military |
| Policy Advisor 4 | Civilian | Senior Leader 2 | Military |
| Policy Advisor 5 | Civilian | Senior Leader 3 | Military |
| Policy Advisor 6 | Civilian | Senior Leader 4 | Military |
| Policy Advisor 7 | Civilian | Senior Leader 5 | Military |

quotes independently and then discussed selections together, resolving discrepancies via consensus. This study was reviewed and determined to be exempt by the Institutional Review Board at the Uniformed Services University of the Health Sciences.

Reflexivity statement

Data collection for this study was conducted by a team of three primary researchers (1 MPH, 2 PhD; all female) and three additional researchers who occasionally assisted with data collection (3 MPH; 2 female, 1 male). We are aware of our biases around the military and its systems

as a result of personal, familial, and professional experiences. To reduce the influence of these biases, we have built a team with a variety of experiences with the military, including a military veteran as one of the primary researchers conducting the interviews. In our study design, we included participants with different types of experience with the military, and we used open questions and did not record sessions to allow free expression.

Results

We conducted 28 key informant interviews from December 2022–March 2023, reaching saturation at 25 interviews. Interview participants were civilian and military, including academic leaders, clinicians, policy advisors, policymakers, and senior medical leaders (Table 1). We conducted interviews past thematic saturation to ensure a wide range of perspectives. We categorized our findings based on previously identified knowledge gaps from Congressionally-mandated AARs: burnout, retention and hiring, and clinical training and skills (Fig. 1).

Burnout

Participants stated that burnout among MHS personnel was a prominent issue during the pandemic. However, some participants felt the military culture of resilience was a buffer to burnout in the MHS ranks. Several participants also noted anecdotal differences between burnout in the MHS system and the civilian healthcare sector, indicating that burdens were greater for civilian healthcare sector workers than for the MHS healthcare workforce during the pandemic response:

Like the American health system, the MHS was not immune and it experienced some [burnout]. It was somewhat insulated because MTFs were not affected

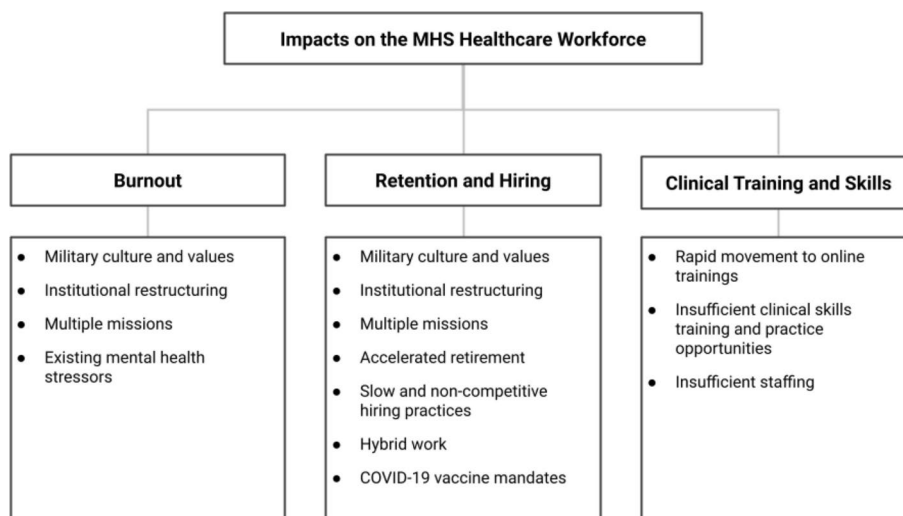


Fig. 1 Areas of impact on MHS healthcare workforce in the COVID-19 pandemic response

to the same extent as the civilian system. (Policymaker 3)

In general, military providers are pretty resilient. The pandemic and things that resulted are just part of the job. (Clinician 1)

Organizational changes, including transitioning health care management from each individual branch of service into a single defense health care system consolidated under the DHA, were regularly mentioned by policy advisors and senior military leaders as contributors to burnout in the MHS, and their responses provided a more nuanced understanding of how factors such as institutional restructuring contributed to burnout. Several participants cited systemic issues related to leadership structures and decreased autonomy within MTFs, which many participants felt was a significant factor leading to burnout.

One policymaker also pointed out that a culture of blame could lead to increased stress and risk of burnout among personnel:

It's also about the culture. Do we have a just culture in the MTFs that treats members of the staff fairly? Is there a willingness to report a near miss or adverse outcome? Is there a feeling that if that is reported, the response is "Who is going to be reported?" (Policymaker 2)

Participants acknowledged MHS personnel were overstretched in an effort to accomplish COVID-19-specific operations in addition to existing responsibilities at MTFs, such as maintaining the overall health of active duty service members and providing standard healthcare for their dependents. These compounded duties contributed to burnout:

There was a push to get back to doing mainstream MTF [work] while also doing COVID; strained the force and people burned out and got stressed out (Clinician 2)

The continued need to deploy added stress to the system. It's naive to think there were no mental health problems and burnout within the staff. (Policymaker 3)

At the same time that multiple missions were overburdening MHS personnel, policies that shifted patient care

to the civilian sector from MTFs left a sense of purposelessness among providers:

Care being shifted out to the network made some providers, especially specialists, feel less competent with what they are doing. (Clinician 5)

Finally, participants noted existing mental health stressors among individual providers could have been exacerbated by the pressures of the COVID-19 response, contributing further to burnout:

Necessary public health response to pandemic of physical distancing (social distancing) has exacerbated mental health issues and burnout. (Policymaker 5)

We were headed to burnout already—COVID was the last nail hammered on the head. (Senior Leader 5)

Retention and hiring

Senior leaders pointed out that the culture and values of the military had some positive contribution to retention among MHS personnel:

...I think that for the most part it's what people sign up to do—meet the nation's needs, needs that were mostly across the US. I think people very much were motivated when deployed within settings to support the civilian health system to support COVID [operations]. (Senior Leader 3)

Participants also observed that certain specialties appeared more affected by retention issues than others. Emergency response departments and intensive care units (ICUs), in particular, seemed to be impacted as a result of higher patient burdens. Retention differences were also noted between military and civilian employees within the MHS, where civilian positions were more susceptible to personnel turnover during the pandemic response:

[Retention] was more marked in the civilian and contractor ranks; the groups of people who have the ability to get off-duty employment and compensation increased. We experienced a net loss of personnel. (Senior Leader 4)

Additionally, participants observed that the pandemic seemed to accelerate retirement among MHS personnel, contributing to retention and understaffing issues:

Without question, the most important thing is that people that were thinking of moving from healthcare definitely accelerated retirement and exited from the workforce. Subsequently, competing with the commercial world, they are so far behind in major metropolitan areas for labor [rates for the healthcare workforce]. (Policymaker 8)

Beyond the stress of the pandemic, participants noted that other pandemic-related changes could have affected retention. In particular, telework and hybrid work allowed increased retention in some job categories, but there was concern that these benefits may be lost as the MHS implemented return-to-workplace orders:

Retained quite a few people because of the ability to go to hybrid work status...[but] coming off the pandemic, it remains to be determined ultimately what will happen with returning to the workplace. I can see how that might create some tensions. (Academic Leader 2)

Several participants also mentioned the role of the COVID-19 vaccine mandate as a contributor to retention loss since military staff in the MHS were subject to the mandate while civilian staff were not:

I was very uncomfortable about statements being made that the vaccine mandate has had no effect on retention. I don't see how you can make that statement—it was not a big effect, but it was there. (Senior Leader 1)

Other dynamics within the MHS, in tandem with the effects of the pandemic, may have contributed to retention loss and turnover. These additional factors included tension involved with the transition of authority to the DHA from individual branches of services and the subsequent changes in command and control structures, the increasing shift of patients away from MTFs into the civilian sector, the changing ratio of military to civilian personnel in the MHS, and the burden of having to undertake multiple missions:

Some anecdotal evidence of people leaving the service. But be careful because there were other dynamics within the MHS at the same time: transition with turmoil at the MTF level...Confluence of these: "I'm tired, I've been working hard, my workload is down

and I'm not getting the workload that keeps me professionally challenged." (Policy Adviser 1)

We concurrently had the pandemic, MHS transition, deployment of [electronic health records], the situation in Europe, divestiture by services of about 18,000 personnel, all of which are major stressors on the health workforce. It may have had an impact on recruitment and retention. (Policymaker 2)

Hiring issues during the COVID-19 pandemic were closely associated with retention issues, and participants expressed concern about having a sufficiently staffed healthcare workforce. One participant noted that during the pandemic response period, "there was a desperation to get as many people as we could hired, so we were very aggressive about hiring" (Clinician 2).

When queried about the problems related to hiring, participants suggested that the leading problems were a slow hiring and onboarding process, and competition with the civilian sector, particularly in terms of competitive labor rates. The contrast between government and private sector onboarding timelines compounded existing hiring challenges. Respondents noted that potential hires were often lost because of these factors, even once the hiring process had begun:

The antiquated way we hire—[it] takes an absurd amount of time. On multiple occasions, I lost very good candidates because they wouldn't get around to making an offer for a month or more. I don't know how, with a nationwide labor shortage, it takes MHS forever to hire...We didn't have the ability to hire at a competitive rate compared to the civilian sector. (Senior Leader 1)

Clinical training and skills

As a result of the personnel shortages and stay-at-home orders, clinical training, including continuing medical education and skills readiness, was expected to be particularly negatively affected by the pandemic response. Initially, many trainings were moved online where possible:

Early in [the] pandemic it was unclear how we would do classes like Advanced Cardiovascular Life Support (ACLS) or pediatric ACLS, but within [the] first year it was resumed. (Clinician 5)

However, some training opportunities and skills practice, especially clinical skills, could not be done online, negatively impacting clinical readiness. Some respondents

reported that insufficient skills training and practice (sometimes due to insufficient personnel available to conduct training) led to personnel leaving the MHS, as those personnel were unable to develop or maintain the skills required for their position:

The clinic was pulled so thin, we didn't have adequate time to train people, we were pulled so many different ways. Some employees ended up leaving because they did not have good training since we did not have time to train new hires. (Clinician 2)

New medical staff, in particular, were expected to need additional training due to reduced in-person training and clinical experience in medical schools during the COVID-19 pandemic:

[We deployed] a lot of MHS specialists to support [civilian facilities]...For many MTFs, this meant turning off EDs, shutting down all specialties. That had a massive effect on graduate medical education: we're going to have to retrain some of those folks or extend them in a program to allow them to get sufficient clinical experience. (Policymaker 7)

The absolute number of patient contacts has gone down, so [medical students] have less ability to see patients in the clinic, which means they don't have the clinical numbers. A lot of it became virtual, and if you're in training, is a virtual visit the same as an in-person touching-the-patient visit? That's up for debate. (Senior Leader 4)

In addition to a potentially lower skillset among new medical hires, participants expressed concern about having enough new trainees prepared to come into the medical ranks in the years immediately following the pandemic, as there continued to be shortages in personnel available to train aspiring medical professionals.

Discussion

Burnout was the most commonly discussed impact on personnel during key informant interviews. Participant responses were supported by reports from the 2023 National Defense Authorization Act (NDAA) citing multiple shifts, adjustments to force health protection, and clinical practice guideline changes as leading causes for burnout, with ongoing institutional transition and existing staff shortages as contributing factors [6–8, 12]. Adding the additional workload of COVID-19 missions and constantly changing regulations to an environment already conducive to burnout.

A 2021 survey of 12,939 military and civilian health-care staff showed 48% of respondents reporting feeling burned out, compared to 31% of staff reporting burnout in a 2019 Department of Defense Patient Safety Culture Survey [13]. The study pointed to several drivers of increasing burnout, including overwhelming workloads, low job satisfaction, concerns about work-life balance, and disconnection from the world. The civilian health-care workforce also experienced significant declines in mental health outcomes and a rise in burnout. A survey from 2022 on perceived working conditions and mental health showed that healthcare personnel reported more days of poor mental health and burnout compared to the period before the pandemic [14]. Another cross-sectional study in the civilian sector found that more than half of respondents reported symptoms of burnout, depression, and other mental health issues [15]. Many have pointed to systemic failures, including lack of organizational support, higher workloads combined with staff shortages, and underdeveloped public health infrastructure as root causes of exacerbating burnout among the healthcare workforce [16–18].

Existing mental health conditions among individual providers could have been exacerbated by the pressures of the pandemic response. As active duty service members, the MHS workforce is a unique population that is susceptible to mental health issues. Studies conducted before the pandemic showed that while all service members are at risk of developing post-traumatic stress disorder (PTSD) due to exposure to combat stressors, military medical personnel face substantial medical and combat stressors [19–21]. Front-line health workers are particularly vulnerable to negative mental health effects of treating outbreak victims, and may experience high levels of traumatic stress reactions, including depression, anxiety, hostility, and somatization symptoms [22]. Addressing burnout and mental health among the healthcare workforce of the MHS would therefore require focusing on circumstances unique to the military medical force.

MHS personnel with increased burnout severity showed a greater tendency to declare intentions to leave healthcare roles [13]. Losing portions of the healthcare workforce due to burnout and resignations places greater strain on remaining staff, creating a self-perpetuating burnout cycle that continuously diminishes the care delivery capacity of health systems [23]. Reports that resulted from the NDAA support responses that staffing shortages were a significant issue at MTFs during the pandemic [7]. Civilian healthcare systems similarly faced challenges with workforce shortages. In addition to personnel loss due to retirement, a substantial portion of personnel left their jobs due to the pandemic [24–26]. High turnover among the national healthcare workforce during the pandemic was influenced by several personal,

social, and organizational factors, including fear of COVID-19 exposure, increased workload due to staff shortages and higher demand for care, and lack of organizational support [27].

Recruiting new personnel to fill staff shortages has been a challenge since the onset of the pandemic [8, 12]. A combination of factors, including higher pay in the private sector and a complicated clearance and onboarding process, contributed to hiring challenges across the MHS. An evaluation of MTF leadership identified lengthy hiring and onboarding procedures as contributors to recruitment obstacles, such as a 9-step process for civilian hiring which could take 6 to 12 months to finalize; comparatively, the civilian sector reportedly hired and onboarded qualified candidates within days of job fairs [12]. In addition to hiring challenges specific to civilian personnel, DOD reports cited high attrition rates among active duty physicians and surgeons during the pandemic which further left MTFs short-staffed, with one report referring to the number of departures as “unprecedented” [28]. However, participants also noted that some job categories had increased retention due to the shift to remote work, which enabled members of the highly mobile extended military population to remain in positions they might otherwise have left as a result of transfers. Creating a plan for streamlined and expedited hiring processes during events such as public health emergencies would increase hiring and reduce staff shortages in these high-demand periods.

Vaccination mandates may have also influenced retention rates and hiring practices. While COVID-19 vaccination was required for military personnel, civilian personnel in the MHS did not have the same requirement [8]. This discrepancy within the workplace may have influenced the decision of some personnel to leave the MHS to reduce their risk of contracting severe illness from contact with unvaccinated colleagues. Additionally, many military personnel resisted the vaccination mandate before it was repealed in January 2023, resulting in many vaccine exemption requests and a relatively small number of separations across the services [29]. Although it was not the most significant factor impacting MHS retention rates and hiring practices, our participants confirmed that vaccination mandates were a consideration for MHS personnel.

Participants shared the many ways the pandemic outbreak disrupted clinical learning and training. Most graduate medical programs across the US pulled students from clinical rotations and placed them in ancillary support roles, including contact tracing, patient outreach and information dissemination, and research [30]. While remote instruction prevented a complete disruption to learning, the lack of in-person instruction prevented students from developing clinical competencies [31].

Additionally, many fourth-year students who had completed graduation requirements could graduate early to provide additional clinical capacity to overburdened and understaffed hospitals [30, 32]. The Uniformed Services University of the Health Sciences was among the schools that accelerated the graduation of fourth-year medical students in the early months of the pandemic to provide additional clinical capacity to MTFs [33]. These cohorts entering the MHS during the pandemic had fewer opportunities for patient interaction compared to previous cohorts and, thus, are likely to need additional training and supervision in the early stages of their careers [34]. However, staffing shortages at MTFs meant these and other new hires could not always get the training they needed to build and develop the clinical skills necessary to do their jobs. This lack of training likely led to personnel leaving their positions, further exacerbating the staff shortage and feeding into burnout-favorable conditions for remaining personnel. Although there was significant disruption to training and education, the pandemic did allow for some valuable experiences for students. Since in-person conferences and seminars were moved online, they became more accessible and allowed more students and medical residents to participate in such activities, expanding their knowledge and allowing engagement in interdisciplinary learning [31]. In addition, those who were in support of the recruitment of medical students to the frontlines during the pandemic have argued that not only have they provided clinical support for non-COVID-19 patient care (to minimize their risk of infection) but also that doing such work fosters soft skills, such as altruism and professionalism, in addition to clinical skills [31].

The MHS has already begun to implement changes to improve the situation for personnel. In December 2023, the DHA released the “Military Health System Strategy Plan for Fiscal Years 2024-2029” outlining strategic goals for improving the system, acknowledging the impact of the COVID-19 pandemic, two decades of war, and systemic transitions within the MHS [35]. The first goal is “Take Care of Our People”, which aims to restore the well-being of MHS healthcare personnel by creating empowering and supportive environments to reduce personnel burnout, and improving training and education at all career stages. To meet these outlined goals, the DHA could use an organizational framework that identifies the factors that trigger burnout, the consequences of personnel burnout, and the system levels at which those factors can be mediated to avoid burnout (e.g., National Academies of Medicine “Taking Action Against Clinician Burnout” [36], US Surgeon General’s Advisory on Building a Thriving Health Workforce [37]). Elsewhere in the report, the DHA also notes the importance of improving civilian hiring and retention practices; thus the three

primary themes of pandemic-era impacts on personnel are addressed in this DHA report [34]. Our findings emphasize the importance of these three themes for maintaining MHS personnel and may provide additional context to policymakers responding to the DHA report in order to produce and implement actionable processes.

This study is strengthened by its ability to obtain insights from senior-level DoD and MHS officials who were actively engaged with the pandemic response. This study is also the first to use in-depth interviews to assess these issues in the MHS with intention and granularity. The proximity of interviews to the COVID-19 crisis minimizes the prospect of recall bias. Moreover, because interviews were conducted before the end of the COVID-19 Public Health Emergency, impressions of the impacts of the pandemic response on the MHS were obtained in real-time. Given the nature of the MHS, there is good potential for ready translation of these findings to similarly sized healthcare systems and integrated networks.

We acknowledge several limitations. As we interviewed only a small number of MHS senior personnel and policy specialists, responses may not represent all stakeholders employed at other levels within the system. By their nature, interview responses are anecdotal and may benefit from corroboration with additional quantitative data for system-wide application. Furthermore, interviews were limited to senior personnel and clinicians in leadership roles within the MHS and Armed Services, so the full range of perspectives and opinions of frontline healthcare workers during the pandemic were not represented here. Current and ongoing research focuses on obtaining these viewpoints for a more comprehensive assessment of personnel issues (e.g. Korona-Bailey, et al., 2024) [38].

Conclusion

This study uniquely assessed the impact of the COVID-19 pandemic response on the MHS healthcare workforce through key informant interviews. Our findings indicate that increased burnout, mixed retention patterns, hiring challenges, and concerns about trainee preparedness impaired the efficacy of the pandemic response. Multi-pronged strategies are needed to promote the well-being of healthcare workers in complex health systems like the MHS, including improved access to mental health for workers, increasing investment into healthcare and public health infrastructure for personnel training, and building a system that protects and motivates the healthcare workforce. Future research should focus on the perspectives and experiences of other frontline medical personnel as well as the provider-patient experience during the pandemic.

Abbreviations

| | |
|------|--------------------------------------|
| AAR | After-Action Report |
| ACLS | Advanced Cardiovascular Life Support |
| DHA | Defense Health Agency |
| DoD | Department of Defense |
| ICU | Intensive Care Unit |
| KII | Key Informant Interview |
| MHS | Military Health System |
| MTF | Military Treatment Facility |
| NDAA | National Defense Authorization Act |
| PTSD | Post-Traumatic Stress Disorder |

Supplementary Information

The online version contains supplementary material available at <https://doi.org/10.1186/s12913-024-11616-6>.

Supplementary Material 1.

Supplementary Material 2.

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Authors' contributions

VM: Formal analysis; investigation; writing - original draft; writing - review and editing. AP: Formal analysis; investigation; writing - original draft; writing - review and editing. SP: Writing - review and editing. CLC: Writing - review and editing. AJS: Writing - review and editing. JSW: Writing - review and editing. TPK: Conceptualization; funding acquisition; investigation; supervision; writing - review and editing. All authors read and approved the final manuscript.

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Availability of data and materials

The datasets generated during and analyzed during the current study are not publicly available due to the presence of personal identifiers but are available from the corresponding author on reasonable request.

Declarations

Ethics approval and consent to participate

This study was reviewed and determined to be exempt by the Institutional Review Board at the Uniformed Services University of the Health Sciences (Protocol #956240). Participants were given detailed information about the study prior to each interview session, and informed consent was obtained verbally.

Consent for publication

Not applicable.

Competing interests

The authors declare no competing interests.

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