PEER REVIEW HISTORY

ARTICLE DETAILS

TITLE (PROVISIONAL)	Protecting the Healthcare Workforce During COVID-19: A Qualitative Needs Assessment of Employee Occupational Health in the US National Veterans Health Administration
AUTHORS	Brown-Johnson, Cati; McCaa, Matthew; Giannitrapani, Susan; Singer, Sara; Lorenz, Karl; Yano, Elizabeth; Thanassi, Wendy; DeShields, Cheyenne; Giannitrapani, Karleen

VERSION 1 – REVIEW

REVIEWER	Li, Liping Shantou University Medical College
REVIEW RETURNED	10-Feb-2021

GENERAL COMMENTS	I suggested that the author had better supplement the methods section in detail.

REVIEWER	Alele, Faith James Cook University
REVIEW RETURNED	19-Feb-2021

GENERAL COMMENTS	Thanks for the opportunity to review this manuscript entitled "Protecting the Healthcare Workforce During COVID-19: A Rapid Qualitative Needs Assessment of Employee Occupational Health in a National Healthcare System". The authors have done a great job of providing such interesting information about the barriers and facilitators of Employee Occupational Health role expansion during COVID. However, I have a few comments. Introduction: Line 18: Page 4, please include the full meaning of VA. Line 50: Reference 21 does not report mental health support with COVID. Please use an appropriate reference to support the statement. Methods: I understand that the authors have chosen to use a rapid qualitative assessments, however, based on the interview questions provided, it appears that there may be more rich information that could be obtained from this study's data using a traditional qualitative research methodology. The authors acknowledged this in the limitation section. The results section was presented as needs states/themes identified. However, the authors were investigating both facilitators and barriers which all got mixed up in the themes and this made it a bit difficult to follow. The preliminary findings presented in the Appendix was easier to read with each theme highlighted and facilitators and barriers presented and signposted. It would be

	better if the authors could consider presenting the results using a similar format wherein the needs statement/theme is identified and the facilitators and barriers for each statement are presented. In addition, the discussion of the findings of the study is limited. There is a need for a more in-depth discussion of the findings of the study and compare the findings with other studies (using appropriate references). The entire discussion section had only one reference and it appears it is a repetition of the results section.

VERSION 1 – AUTHOR RESPONSE

Reviewer: 1
Prof. Liping Li, Shantou University Medical College

Comments to the Author:
I suggested that the author had better supplement the methods section in detail.
RESPONSE: We have expanded our methods section and outlined our step-by-step approach.
"Analysis: We used standard qualitative methods, including rapid content analysis[18,19] and member-checking.[20] Within the VHA, rapid qualitative approaches have successfully been used to provide real-time insights backed by high-quality research methods.[19] Indeed, a VHA comparison of rapid vs. in-depth qualitative methods found the analyses to be consistent.[21]

Step 1: Templated case summaries and team debriefing discussion to create initial themes. Per rapid qualitative analysis methods, we created templated case summaries for each interview which were reviewed by at least two team members (CBJ and KG or N) and discussed during weekly debriefing calls with the research team.[18] Initial themes were derived from these templated case summaries and debriefing calls (conducted with entire co-author research team).

Step 2: Creation and circulation of interim report for feedback (Lightning Report and modified member check). We used a Lightning Report approach - a rapid qualitative actionable product meant for wide distribution[18] – to create a preliminary report based on themes from case summaries and post-interview debriefing calls once we had collected half of the data sample (2 months from first interview, n=10; see Appendix B for interim report). We circulated this Lightning Report to study advisors, VHA EOH central leadership, and participants for feedback, constituting a modified Synthesized Member Check.[20]

Step 3: Integration of member check feedback and additional interviews for thematic saturation. Informed by EOH leader feedback and Step 1's templated case summaries and team debriefing for the additional subsequent interviews (n=11), CBJ and KG formalized a provisional final theme list. This theme list was reviewed with research advisors and subject matter experts and iteratively modified to five themes representing needs with theme definitions and examples. Mental health needs emerged as a new theme in Step 3, originating from templated case studies of the additional interviews.

Step 4: Verification/query of themes with final transcripts. CD transcribed interviews and identified exemplary quotes from transcripts to represent the major themes. NS and CBJ also reviewed transcriptions to confirm/disconfirm emergent themes."
18 Brown-Johnson C, Safaeinili N, Zionts D, et al. The Stanford Lightning Report Method: A comparison of rapid qualitative synthesis results across four implementation evaluations. Learn Health Syst 2019;4. doi:https://doi.org/10.1002/lrh2.10210

19 Hamilton AB, Brunner J, Cain C, et al. Engaging multilevel stakeholders in an implementation trial of evidence-based quality improvement in VA women's health primary care. Behav Med Pract Policy Res 2017;7:478–85. doi:10.1007/s13142-017-0501-5
20 Birt L, Scott S, Cavers D, et al. Member Checking: A Tool to Enhance Trustworthiness or Merely a Nod to Validation? Qualitative Health Research Published Online First: 22 June 2016. doi:10.1177/1049732316654870
21 Gale RC, Wu J, Erhardt T, et al. Comparison of rapid vs in-depth qualitative analytic methods from a process evaluation of academic detailing in the Veterans Health Administration. Implementation Science 2019;14:11. doi:10.1186/s13012-019-0853-y

Reviewer: 2
Dr. Faith Alele, James Cook University

Comments to the Author:
Thanks for the opportunity to review this manuscript entitled "Protecting the Healthcare Workforce During COVID-19: A Rapid Qualitative Needs Assessment of Employee Occupational Health in a National Healthcare System".
The authors have done a great job of providing such interesting information about the barriers and facilitators of Employee Occupational Health role expansion during COVID. However, I have a few comments.
RESPONSE: Thank you for the thoughtful review.

Introduction:
Line 18: Page 4, please include the full meaning of VA.
RESPONSE: Thank you. This has been updated to "US Veterans Health Administration (VHA)," the only nationwide US healthcare system.

Line 50: Reference 21 does not report mental health support with COVID. Please use an appropriate reference to support the statement.
RESPONSE: Thank you. We have extracted Reference 21 and this part of the introduction, and rechecked all references.

Methods:
I understand that the authors have chosen to use a rapid qualitative assessments, however, based on the interview questions provided, it appears that there may be more rich information that could be obtained from this study's data using a traditional qualitative research methodology. The authors acknowledged this in the limitation section.
RESPONSE: Thank you. Indeed a deeper theory-based study is underway based on our data. In order to make this information readily available to the field, we chose to use rapid qualitative methods. We have greatly expanded our methods section by outlining our step-by-step approach (See response to Reviewer 1), and alluded to additional theory-based qualitative analysis next steps in our Limitations section:
"…we may have missed important theoretical insights as a result of rapid analysis, which we hope to remedy with future in-depth theoretical analyses."

Results:
The results section was presented as needs states/themes identified. However, the authors were investigating both facilitators and barriers which all got mixed up in the themes and this made it a bit difficult to follow. The preliminary findings presented in the Appendix was easier to read with each theme highlighted and facilitators and barriers presented and signposted. It would be better if the

authors could consider presenting the results using a similar format wherein the needs statement/theme is identified and the facilitators and barriers for each statement are presented.
RESPONSE: Thank you for this suggestion. We have restructured our findings within each topic theme around facilitator/barrier subsections, moving significant pieces of our text to align with these facilitator/barrier subsections (moved sections that were otherwise unedited have not been marked in the Marked Copy).

Discussion:
In addition, the discussion of the findings of the study is limited. There is a need for a more in-depth discussion of the findings of the study and compare the findings with other studies (using appropriate references). The entire discussion section had only one reference and it appears it is a repetition of the results section.
RESPONSE: We have reorganized and expanded our discussion section, including adding citations throughout:
"Understanding how best to rapidly expand roles and scale the dynamically changing job demands of EOH during an infectious outbreak is needed in advance of future pandemics, and disaster preparedness is particularly important for this setting, the US Veterans Health Administration (VHA), which identifies preparedness as its "Fourth Mission".[22] We took on this needs assessment when guidance in March 2020 from VHA national leadership forced EOH to the front and center of the organization's response.[8] We were particularly concerned that in order to minimize staffing shortages, healthcare organizations might choose to encourage potentially contagious but asymptomatic health personnel to work. Having EOH providers navigate this reality was complex, nuanced, and something for which they had not prepared. EOH needed to learn, adapt, and create new processes on the fly in a high-stakes setting.

Our identified facilitators of EOH assuming new challenging and dynamically changes roles during COVID included: a) training or access to expertise (in infectious diseases, public health management, and disaster management); b) existing mechanisms for information-sharing (national reports from CDC and a VA-specific listserv); c) flexible and responsive staffing; and d) leveraging other institutional expertise not previously affiliated with EOH (e.g., chaplains to support mental health and bereavement).

In this qualitative systematic account of national EOH provider experiences, we found needs at the local and national level centered on systems/structure and people, similar to other international reports that identified preparedness, structures, and physical/mental health as primary challenges.[14] Our study found primary barriers to EOH assuming expanded roles were related to funding for systems (e.g., EHR implementation) and people including limited staffing and leadership at both local and national levels.

In particular, the need for mental health and psychosocial support, identified in our fifth theme, has been documented to be a robust challenge for HCW internationally.[13,23–25] Other explorations of EOH needs during COVID also identified EOH issues faced by medical health workers, and overlapped with this study in terms of identifying work stressors and "the need for supportive supervision" as major issues.[26] Support for HCW mental health may be facilitated by organizational support and underpin the psychological safety needed to nimbly respond to disasters.[27] Rounding out the need for mental health support, recent reviews have identified frontline and non-physician HCWs as having greater mental health needs during the COVID-19 pandemic.[24]

As COVID persists and other pandemics emerge, the role of employee occupational health providers in national healthcare systems should not be under-valued. Thought the role of EOH may be underestimated or unconsidered in healthcare settings, it is critical to the safety of the healthcare workforce. Further, EOH's potential role in minimizing COVID spread among HCWs is directly

relevant to the safety of employees and their families, vulnerable patients, and the community at large.

Promising practices beyond VA. Despite the fluctuation of recommendations from some national agencies (e.g., CDC),[28] our EOH providers reported relying heavily on external agency standards to inform their local response. Ideally, national leadership could provide enough guidance that in times of crisis individual sites are not learning by themselves; inter-site communication gave EOH providers a community to engage in shared learning and accelerate spread of learnings, processes, and policy adaptations. Thinking beyond acute disasters, a high-functioning national EOH community in an integrated healthcare system could event potentially positively address long-standing health and civil wellness issues (e.g., racism and racial inequality).

Promising practices beyond COVID-19. These lessons from the COVID-19 pandemic critically inform future EOH preparedness. Past healthcare crises have pointed to the demand for decisive leadership, collaborative networks, and employee monitoring systems,[29] echoing the needs of VHA EOH. Although EOH providers felt VHA piloted the employee EHR too late in response to COVID-19, this EHR system will likely prove useful in the future. In the wake of increasing epidemics and natural disasters, it is crucial that we recognize both the immediate and long-term benefits of equipping EOH with the tools to expand their role in managing HCW safety."

22 Massarweh N, Itani K, Tsai T. Maximizing the US Department of Veterans Affairs' Reserve Role in National Health Care Emergency Preparedness—The Fourth Mission. JAMA Surg 2020;155:913–4. doi:10.1001/jamasurg.2020.4153
23 Chen Q, Liang M, Li Y, et al. Mental health care for medical staff in China during the COVID-19 outbreak. The Lancet Psychiatry 2020;7:e15–6. doi:10.1016/S2215-0366(20)30078-X
24 Moitra M, Rahman M, Collins PY, et al. Mental health consequences for healthcare workers during the COVID-19 pandemic: a scoping review to draw lessons for LMICs. Frontiers in psychiatry 2021;12:22.
25 Spoorthy MS, Pratapa SK, Mahant S. Mental health problems faced by healthcare workers due to the COVID-19 pandemic–A review. Asian Journal of Psychiatry 2020;51:102119. doi:10.1016/j.ajp.2020.102119
26 Krystal JH, Alvarado J, Ball SA, et al. Mobilizing an institutional supportive response for healthcare workers and other staff in the context of COVID-19: The Yale experience. General Hospital Psychiatry 2020.
27 Lee H. Changes in workplace practices during the COVID-19 pandemic: the roles of emotion, psychological safety and organisation support. Journal of Organizational Effectiveness: People and Performance 2021;8:97–128. doi:10.1108/JOEPP-06-2020-0104
28 Benzian H, Johnston M, Stauf N, et al. Presenting or Spinning Facts? Deconstructing the U.S. Centers for Disease Control Statement on the Importance of Reopening Schools Under COVID-19. Front Public Health 2021;9. doi:10.3389/fpubh.2021.645229
29 Khan Y, O'Sullivan T, Brown A, et al. Public health emergency preparedness: a framework to promote resilience. BMC Public Health 2018;18:1344. doi:10.1186/s12889-018-6250-7

Reviewer: 1
Competing interests of Reviewer: None declared

Reviewer: 2
Competing interests of Reviewer: None