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Title: Healthcare Professionals' Experiences of Pandemics: a rapid review of qualitative research

Running title: Healthcare Professionals' Qualitative Experiences of Pandemics

Authors: Ben Vincent PhD¹, Evelyn Callahan MSc¹, Erica Borgstrom PhD¹, Richard Holti PhD¹.

(1) Open University, Milton Keynes, United Kingdom.

Running title: Healthcare Professionals' Qualitative Experiences of Pandemics

Corresponding author contact data: Erica Borgstrom, The Open University, Walton Hall, Milton Keynes, UK MK7 6AA erica.borgstrom@open.ac.uk

All authors have the same mailing address: The Open University, Walton Hall, Milton Keynes, UK MK7 6AA

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Note: This review was conducted in 2020 upon request from healthcare professionals working in the UK during the early stages of the COVID-19 pandemic. Early findings from the review were shared with them during meetings and email correspondence. The final review is being uploaded in the ORO repository so others have access to the information.

Healthcare Professionals' Experiences of Pandemics: a rapid review of qualitative research

Abstract

In Spring 2020, a pandemic of coronavirus disease 2019 (COVID-19) began and healthcare services around the world had to quickly adapt. Much of the focus was on how to clinically treat the disease rather than the impact on and how to support practitioners providing the care. This rapid review seeks to understand how healthcare practitioners experienced working under the conditions of a pandemic and the implications this may have for ongoing COVID-19 responses. The review focused on studies qualitatively addressing lived experiences and personal meanings of any professional healthcare provider in the context a WHO-recognized pandemic. Studies had to be written in English, published between 1900 and early May 2020, and were found via Scopus and Google Scholar. All included sources were iteratively thematically analyzed focusing on qualitative accounts of experiences of clinical practice during a pandemic. Themes identified across sources were grouped together with exemplary findings provided for each theme. The review did not seek to provide a meta-analysis or weigh the studies. This analysis resulted in the emergence of five main themes: preparation, information dissemination, adapting policies and practice, management of staff, time, and resources, and personal protective equipment (PPE) use and risk to staff. The insights of healthcare practitioners on each of these themes from past pandemics as well as from the current crisis could have implications for updating COVID-19 responses moving forward as well as for preparing for future pandemics.

Registration: The review has not been registered.

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Background

In Spring 2020, a pandemic of coronavirus disease 2019 (COVID-19) began, with over 3.5 million confirmed cases and over 248,000 deaths reported globally by 4th May.(1) A pandemic is defined by the World Health Organisation as “the worldwide spread of a new disease”.(2) COVID-19 was officially granted pandemic status by the WHO on 11th March 2020.(3) Reporting the experiences of healthcare professionals working under the conditions of a pandemic may provide lessons to support healthcare staff in relation to the (currently ongoing) COVID-19 pandemic and future pandemics.

Previous work has considered how General Practitioners (GPs) respond to infectious disease public health crises, particularly focusing on epidemic and pandemic contingency planning. (4) Their study captured six quantitative, two mixed method, and two qualitative studies. The themes of this review included “difficulties with information access; supply and use of personal protective equipment; performing public health responsibilities; obtaining support from the authorities; appropriate training; and the emotional effects of participating in the response to an infectious disease with unknown characteristics and lethality” (p. 522). (4) This previous review suggests that there is existing literature about healthcare professionals’ experiences of clinical practice during a pandemic, which has not yet been collectively reviewed.

Method

There is a lack of standardisation in how rapid reviews are ultimately conducted.(5) Drawing on the thematic series ‘Advances in Rapid Reviews’ published in *Systematic Reviews* and the *Rapid Review Guidebook*, the research question ‘How have healthcare practitioners experienced working under the conditions of a pandemic?’ was formulated.(5,6,7,8) As a question concerning lived experiences and personal meanings, the review only considered qualitative research outputs, in relation to a defined population and setting.(8) The population of interest was any professional healthcare provider, while the setting was open but within the context of a WHO-recognised pandemic. In this instance, the relevant literature was primarily related to the 2009-10 H1N1 pandemic. This is due to the relatively recent nature of this pandemic as opposed to previous examples, and therefore healthcare provider experiences are more readily comparable. Engagement with HIV literature was not a focus despite being an ongoing pandemic, due to the significant differences in transmission and acuity of healthcare system load.

A given combination of relevant search terms was input to a given database (either Google Scholar or Scopus, the two databases used for this rapid review). The exact search terms used, the database, and the total number of items found were then recorded. The titles of the search results were then read, to initially consider the

relationship between each output and the research question. In cases where the search results were large, the first 20 pages (200 articles) were checked. This number was selected as a relatively manageable amount, and due to the drop-off in search relevance, the first searches undertaken did not appear to yield relevant results at this depth of searching. Articles with titles that did not clearly communicate their content had their abstracts checked. If an output was judged potentially relevant, the abstract was read, and a decision made on whether to read the full article, based on its relationship to the research question. Included articles were recorded in relation to the search term(s) that initially identified them, and this list was cross-referenced whenever a new output was identified for inclusion, such that duplications were excluded, together with material in languages other than English.

Given the current nature of the ongoing pandemic and need to rapidly review the literature, the search of the literature was severely limited by time and researcher availability (a single researcher over a five-day period). In addition to the outputs identified by this process, several more were included from early scoping searches which were not recorded.(9,10,11,12,13) All included sources were iteratively thematically analyzed focusing on accounts of experiences of clinical practice during a pandemic.

Results

Following the search process outlined above, 24 outputs were identified. Four of these were eliminated from further analysis after being identified as unsuitable. The remaining 20 outputs were analyzed and the following five themes emerged.

Preparation

There were different considerations of preparation within the identified literature, including practitioner's views on whether they were prepared, what would be necessary for their healthcare context to be well prepared, or their experiences of preparatory planning. In the context of the H1N1 pandemic, while there had been a sense that practitioners had "been waiting for the pandemic flu for quite a while now" it "just didn't fit the text books" (p. 375).(14) In the COVID-19 context, a lack of adequate preparation created significant problems with palliative care, with participants noting that the practicality of holistic care broke down, with significant implications for the future of palliative care management even after the pandemic is over. (13)

A doctoral thesis examining public health nurses' experiences during the H1N1 pandemic response included some discussion of preparatory experiences within a theme labelled 'anticipating an emergency'.(15) This included accounts of staff who were not adequately trained or briefed on new roles as part of rapid response clinics

(oriented around immunization). Lack of preparation could relate to extremely limited advance notice of required tasks and locations. Useful experiences of preparation could be informal or incidental, such as working on public advice hotlines to give pandemic information, or individuals electing to shadow at another clinic in advance.

Some GP practices assigned a member of staff the role of 'flu champion', who ensured higher stocks of personal protective equipment (PPE), rigorous hygiene practices and disaster plans, all of which were achieved in advance of any emergency.(16) Practices without such contingency planning experienced PPE shortages and acquisition problems: "six practices ran critically low during the early pandemic with two practices being unable to access masks from any source within their first 2 weeks of the pandemic: 'we were shocked at public health suggestions to try hardware chain-stores'" (p. 314).(16) It was noted that earlier pandemic planning failed to be appropriate, that public health authorities inadequately engaged with intensive care professionals, and the main limitation on later Intensive Care Unit (ICU) expansion was availability of nursing staff with ICU experience.(10) Pandemic preparation, whether ensuring adequate supplies or staff with specialised skill sets, cannot be obtained in good time once a pandemic has already begun.

Information Dissemination

The literature made reference to a wide range of information types that healthcare practitioners needed or discussed, including: healthcare information to answer patient questions; information on how to fulfill new roles for staff (or adapt existing roles to address the situation); specific treatment or procedure information (such as dosing and drug suitability); national versus localised information. In interviews with staff exploring the role of Australian GP practices in an influenza pandemic, when staff were asked about the support they needed, "the most prominent element identified was timely, relevant, accurate information" (p. 112-3).(17) No preferences were expressed for information channels, but information should be small, frequent, non-overlapping, delivered across multiple channels, coordinated, and make use of specific local information and integration. Communication processes between public health authorities (such as the Centers for Disease Control (CDC)) and frontline clinicians were also described.(11) It was found that "key informants noted that information in guidance documents was usually designed to meet institutional needs and resources rather than to provide a comprehensive set of all the information required by frontline clinicians".(11) It was also noted that when existing documents were updated, the new information was not highlighted in any particular way leading to staff needing to reread the entire document despite content repetition. Reports could lack consistency regarding how the disease was named (similarly to the interchanged proliferation of COVID-19, coronavirus, SARS-CoV-2, etc.). Participants in a UK study described not

having been given information about pandemic influenza as well as not knowing what or when to disseminate to patients when asked questions about a current situation.(18) It was particularly noted that changes to guidance could render practitioners insecure about providing information that would rapidly age out of being correct or useful. In support of this,¹GPs noted that during the H1N1 pandemic “information provided was not necessarily synchronous with their on-the-ground experience, not oriented toward practical clinical guidelines and not tailored specifically to primary care” (p. 314).(16)

Adapting Policies and Practice

Uncertainty and lack of comprehensive information are inevitable when dealing with a novel disease, but the employment of dedicated infection control representatives is recommended within ICUs, who would be assigned responsibility for acute pandemic management.(12) It was suggested that “this role could include ensuring compliance to infection control protocols such as isolation procedures, proper use of PPE among staff and visitors and environmental cleaning procedures; acting as a resource for questions regarding infection control issues; and to provide education sessions on infection control precautions and the latest information regarding the disease” (p. 584). (12) This is comparable to the ‘flu champion’ role.(16)

A claim was made of inadequate informational adaptation.(9) In the Australian H1N1 context, it was stated that the Victorian public health guidance around a particular classification of drugs as related to pregnancy “did not sufficiently recognise the evidence for the adverse consequences of influenza infection during pregnancy” (p. 88).(9) In short, there may be concerns that adaptation of guidance for drug use will struggle to keep up with the evidence base in the context of a novel disease.

Management of Staff, Time, and Resources

Australian practitioners discussed what they felt they would need in the context of an influenza pandemic (with interviews conducted in 2005, significantly before the H1N1 pandemic).(17) Local divisions were considered responsible for supply distribution, workforce coordination, inter-practice support, real-time problem solving and devolution of national developments for specific regional contexts. It was also noted that early uncertainty regarding the infectivity and severity of a novel disease could trouble planning.(10,19)

PPE use and Risk to Staff

Clinicians noted that they were sometimes too busy to wash their hands between patients.(20)²⁰ A recurring theme was the tension between continuing to look after patients while ensuring their own families remained safe,(18,21) and fatigue compounded by the necessity of overtime to keep healthcare sites functional.(22) Psychological impact on staff was linked by practitioners to inadequate preparation.(13)

Two of the GP practices in one case study “had unused capacity due to a failure in resupply of PPE or workforce limitations”. (16) Additionally, a practitioner in another study noted “as supplies ran out the ‘rules’ changed and surgical masks and plastic aprons were [considered] effective” (p. 580).(12) There could also be perceptions of a lack of guidance over what PPE was required, or that guidance altered too quickly to keep up.(12) The point was also raised that PPE disposal generated large quantities of additional waste, of which the disposal generated additional work and stress, and communication could be impeded by masks particularly for individuals who depend on lip-reading. An inconsistency of PPE use between sites was noted, where “[o]ne physician in a high risk area noted use of ‘very rigorous dressing procedures including FP2 masks and special overalls’ while in another high risk area the interviewee commented ‘no mandatory protection, professionals can choose what to do’”.(13)

Additional Findings

Several outputs discussed attitudes to vaccination among healthcare workers, primarily focusing on individuals’ reasons for accepting or refusing the H1N1 vaccine.(15,20,21,23,24,25) This was more relevant for the H1N1 pandemic where a vaccine was made available relatively quickly, however if a COVID-19 vaccine is developed it would be pertinent to return to this element of the literature.

One output²⁶ differs from the rest for its conspicuous absence of any suggestion from healthcare workers that services might be strained. Interviewers raised the issues of triaging large numbers of patients and the emotional and operational stress caused by having to make decisions that may lessen the standard of patient care, however staff claimed that everyone would be treated the same even after probing.

Finally, the idea of a sense of a “duty to work” among healthcare workers was found in a few of the papers.(13,18,22) ‘Barriers to working’ were separated into ‘ability’ on the one hand, and ‘willingness’ on the other.¹⁸ Expression of an unwillingness to work by healthcare workers under COVID-19 resists the discourse of heroism that has been constructed through popular responses to work under often traumatic, overstretched, or dangerous conditions.

Discussion

Sharper discourses around risk and severity of COVID-19 means that some discussion of practical and emotive experiences during the 2009 H1N1 pandemic do not necessarily provide comparable lessons regarding staff experiences for the 2020 context. For example “only one respondent... reported ever using [eye protection]” (p. 27),(21) and scepticism could be seen among some staff regarding the necessity of facemasks.(27) It was reported that “one participant identified those with a ‘small, flat

face' or an Asian face without the 'bridge on their nose' would have difficulty achieving a proper fit with the current respirator that was one-size-fits-all".(27) While we disagree with the problematic generalisation implied by the phrase 'Asian face', we argue more research is needed to consider diversity of body shapes and sizes in PPE manufacture which may disproportionately negatively impact minority groups. This is particularly salient given the overrepresentation of Black and Minority Ethnic (BAME) staff within the UK healthcare staff mortality statistics. (28)

This rapid review suggests that while there are significant parallels between experiences of prior pandemic circumstances and COVID-19, particularly regarding practitioner fear for family well-being, shortages with PPE and adequately trained staff and the impact of improper or ill-fitting advance planning. The infectivity and virulence of COVID-19 mean that significant differences can also be inferred, as consideration of factors such as differently timed and managed national lockdowns were not discussed, and limited discussion of travel bans were critical or sceptical in the 2009 context. In relation to the context of the UK and USA, greater transparency is necessary to establish the extent to which clinical difficulties have been a result of political mismanagement. This is particularly salient when considering Exercise Cygnus, a UK simulation exercise which aimed to estimate the impact of an influenza pandemic has not been fully declassified, but suggested the National Health Service (NHS) would be overwhelmed, particularly due to lack of ICU space and ventilators.(29) A particularly insightful point was made when it was noted that "[a]fter such an exaggerated national and local response to a relatively mild flu illness, the UK public may be extremely skeptical about the threat of a further pandemic even if it is real" (p. 743).(19) It is possible that some of the challenges the UK is facing in mounting its COVID-19 response are in part resultant from seeming to have 'cried wolf' during H1N1.

There are several take-home messages for healthcare professionals based on this review, especially for those in managerial positions or generating communications. Firstly, offering emergency preparedness as part of ongoing staff training is useful and resources (and supply chains) should be regularly reviewed, including plans for escalation and de-escalation to prepare for multiple waves. Staff may need quick retraining, and this can include frontline administrative staff providing public health information. However, a sense of a lack of preparedness can be distressing for all staff and should be acknowledged. Identifying a 'champion' within settings or teams can help foster a sense of preparedness and coherence. When communicating with staff, information should be small, frequent, non-overlapping, delivered across multiple channels, coordinated, and make use of specific local information and integration, and where policies or guidelines are updated, new information should be highlighted and reflect frontline practice. Information coordinators within teams or practices can help facilitate communication within healthcare systems and connect practitioners with local

populations. Lastly, there will be various individual responses to PPE use and adherence, due to different risk-adversity and fit. This variance may also be anticipated for vaccine uptake by staff where more can be done to address negative attitudes to and uncertainty about vaccination amongst healthcare professionals.

The impact of COVID-19 on healthcare practitioners will unfold more fully months and years following the pandemic event itself, particularly regarding the impact of moral injury resultant from staff being underprepared, and asked to work in unbearably difficult circumstances.(30)

Conflict of interest: None of the authors have a conflict of interest.

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