

PERSPECTIVE

Clinical and ethical challenges for emergency departments during communicable disease outbreaks: Can lessons from Ebola Virus Disease be applied to the COVID-19 pandemic?

Alexandra MARKWELL,^{1,2,3} Rob MITCHELL ,^{4,5} April L WRIGHT⁶ and Anthony FT BROWN^{1,3}

¹Emergency and Trauma Centre, Royal Brisbane and Women's Hospital, Brisbane, Queensland, Australia, ²Clinical Senate, Queensland Health, Brisbane, Queensland, Australia, ³School of Medicine, The University of Queensland, Brisbane, Queensland, Australia, ⁴Emergency and Trauma Centre, Alfred Hospital, Melbourne, Victoria, Australia, ⁵School of Public Health and Preventive Medicine, Monash University, Melbourne, Victoria, Australia, and ⁶Business School, The University of Queensland, Brisbane, Queensland, Australia

Abstract

EDs fulfil a frontline function during public health emergencies (PHEs) and will play a pivotal role during the COVID-19 pandemic. This perspective article draws on qualitative data from a longitudinal, ethnographic study of an Australian tertiary ED to illustrate the clinical and ethical challenges faced by EDs during PHEs. Interview data collected during the 2014 Ebola Virus Disease PHE of International Concern suggest that ED clinicians have a strong sense of professional responsibility, but this can be compromised by increased visibility of risk and sub-optimal engagement from hospital managers and public health authorities. The study exposes the tension between a healthcare worker's right to protection and a duty to provide treatment. Given the narrow window of opportunity to prepare for a surge of COVID-19 presentations, there is an immediate need to reflect and learn from previous experiences. To maintain the confidence of ED clinicians, and minimise the risk of moral injury, hospital and public

health authorities must urgently develop processes to support ethical healthcare delivery and ensure adequate resourcing of EDs.

Key words: COVID-19, Ebola, public health.

Background

The COVID-19 pandemic will have a major impact on EDs all over the world. The outbreak is likely to disrupt usual ED functioning and precipitate clinical and ethical challenges for emergency care clinicians.

This perspective article draws on qualitative interview data from a longitudinal, ethnographic research study of an Australian adult tertiary ED to illustrate the tensions that arise during public health emergencies (PHEs). The lessons learned from these experiences may assist EDs in their efforts to prepare for the COVID-19 pandemic.

ED and PHEs

EDs are a place of 'social inclusion'¹ and play an essential role in delivering

universal health coverage.² They are the primary access point for patients with acute and undifferentiated illness, and bridge gaps in care for vulnerable patient groups. These roles are maintained during PHEs, when EDs fulfil surveillance, triage and clinical care functions.³

Experience from many PHEs and mass casualty incidents have shown that the public rely on EDs as a consistent place of care. This is particularly the case when the PHE involves a high volume of patients (e.g. during disasters) and significant or unknown clinical severity.^{4–6}

In this context, communicable disease PHEs poses a particular challenge for EDs. When the risk of the exposure can be quantified (i.e. the risks are known), protection strategies are available and patient volume does not overwhelm resources, it is feasible to preserve usual approaches to clinical care. In the absence of these conditions, social and clinical cohesion can be disrupted and ethical challenges emerge. Historical examples of relevance include the emergence of human immunodeficiency virus and severe acute respiratory syndrome (SARS). PHEs of this nature have highlighted tensions between a healthcare worker's right to protection and a duty to provide treatment.^{3,7,8}

Ebola Virus Disease

In 2014, the World Health Organization declared a PHE of International Concern (PHEIC) in relation to an

Correspondence: Dr Rob Mitchell, Emergency and Trauma Centre, Alfred Hospital, Commercial Road, Melbourne, VIC 3004, Australia. Email: ro.mitchell@alfred.org.au

Alexandra Markwell, BSc, MBBS (Hons), FACEM, Emergency Physician, Chair of the Queensland Clinical Senate; Rob Mitchell, MBBS (Hons), BMedSc (Hons), MPH&TM, GradCertDisRefHlth, FACEM, Emergency Physician, PhD Scholar; April L Wright, BBus, MBus, PhD, Associate Professor in Strategy; Anthony FT Brown, MBChB, FRCP, FRCEM, FACEM, Emergency Physician, Professor of Emergency Medicine.

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Ebola Virus Disease (EVD) outbreak in West Africa.⁹ With a case fatality rate of approximately 50%, the emergency caused more than 10 000 deaths including 495 among healthcare workers. Although the majority of cases were managed in low-resource settings, two nurses working in the USA acquired the disease after caring for an infected patient.^{3,7,9}

At the time of this outbreak, a longitudinal ethnographic study of an Australian ED was being undertaken.¹ The methods for the original study, published elsewhere,^{1,10,11} followed a standard approach used in qualitative, field-based management studies.¹² Ethics approval was obtained from the auspicing university and health service under the National Health and Medical Research Council guidelines for low and negligible risk research (reference LR 09/25). The study provides unique insights into the real-time reflections of Australian ED staff during a PHE.

Key themes

In the early stages of the study, during routine operations, the study ED was demonstrated to be a highly functional facility with a shared set of values including social inclusion and responsible resource management.¹⁰ The vignette in Box 1 illustrates the essential role of the ED in managing the nexus between inpatient and community care, and meeting the needs of vulnerable patients.

The study period captured the 2009 H1N1 pandemic. Despite the high volume of patients presenting to the ED, staff were confident that they had sufficient information and adequate resources to manage infection risk and maintain a high quality of care. For these reasons, shared values were not compromised (Box 2).

A subsequent data collection period encompassed the 2014 EVD PHEIC. Significant disruption occurred as a result of fear and uncertainty.¹ Staff were distrusting of the quality and accuracy of information conveyed to them, and access to appropriate personal protective equipment (PPE) was limited (Box 3). In the context of the high mortality associated with EVD,⁹

BOX 1. *Vignette illustrating the ED as a place of social inclusion and tension with finite resource management*

Patient P presents to triage with vomiting and diarrhoea. Triage nurse assigns a bed in the acute area. Nurse N comforts P and inserts an intravenous drip. Senior doctor, Dr S, examines P and tests a sample in the blood gas machine. Dr S discusses with N whether P needs a bed in the Short Stay room. 'P is young, not very mature, lives alone, feels like crap and doesn't want to be at home by themselves. Poor thing', Dr S says with compassion. N nods but warns, 'Short Stay is pretty full at the moment'. Phoning the doctor in charge, Dr S summarises P's clinical problem and home situation and they agree that the patient's need warrants being allocated the last Short Stay bed currently available. (Fieldnotes).

BOX 2. *Vignette illustrating preserved clinical care during H1N1 pandemic*

The protocols coming down from Public Health Authorities specifying how EDs should assess, diagnose and treat persons presenting with suspected H1N1 changed daily. A doctor explained how he read each revised protocol because 'I want to make sure I'm doing the right thing'. He continued, 'It was annoying, but by the same token I can completely understand how that happens and how it comes about. And I'm not sure it could've been done in a different fashion really because the government themselves – the Public Health [authorities] – were getting continual updates that would change their response. For me, I just thought, "Okay, such is life. I'll just get on with it"'.
Another doctor described how resources were allocated to assess H1N1 cases in a contained area of the ambulance bay. 'Resources was probably the main thing because almost always you'd send down a senior resident or a registrar and they'd just churn through the 15 or so flu cases who were sitting in the ambulance bay'. (Interview notes).

BOX 3. *Vignette illustrating fear due to a perceived lack of information*

Doctors and nurses are working on a shift in the ED when the World Health Organization announces that a second nurse caring for an Ebola patient in a US hospital has become infected. ED staff are shocked that hospitals in the developed countries could not prevent Ebola transmission to healthcare workers wearing personal protective equipment (PPE) and following recommended protocols. 'So how did they get sick if they were wearing the correct PPE?' 'Do we really understand how Ebola is transmitted?' Throughout the shift, worried doctors check for updates and question the adequacy and effectiveness of the ED's supply of protective clothing. In a follow-up interview, a doctor reasoned that after two nurses fall ill in America, 'then the staff suddenly can see we've got a right to be scared'. (Fieldnotes).

the event provided an opportunity to examine how individuals in a previously cohesive ED were able to resolve an ethical tension between the duty to treat and the right to personal safety.

A strong theme in participant interviews was volunteerism, a common value among healthcare workers responding to PHEs.¹³ Overall, clinicians expressed a strong desire to assist in a time of crisis, and felt a sense of duty to remain at work despite the threats to personal safety (Box 4).

ED clinicians also demonstrated strong custodianship of healthcare resources. They recognised their role in applying guidelines and public health advice to sustain care over a prolonged period of time (Boxes 2 and 4).

Despite study respondents demonstrating a large degree of resilience, interviews also provided evidence of frustration with hierarchical, top-down approaches to management of the PHE. ED clinicians were keen to discuss challenges and collaboratively participate in the development of response strategies, including surge planning (Box 5).

COVID-19 pandemic

COVID-19 poses an unprecedented threat to the Australian healthcare system. Epidemiological data from China suggest that the SARS-Cov-2 virus causes mild disease in 81% with a fatality rate of 2.3% in the general population.¹⁴ This increases to nearly 15% in patients aged ≥ 80 years and 49% in those deemed critically unwell. It is estimated that approximately 5% of patients require critical care support,¹⁴ but recent experience in Italy suggests this number may be higher.¹⁵

At the time of writing, over 3000 healthcare workers have been infected, resulting in at least five deaths. The proportion of healthcare workers who developed severe infection has decreased over time, from 45% to 8.7% in early February.¹⁴ In Australia, three Sydney healthcare workers (two hospital doctors and a residential aged-care nurse) have already acquired the disease.¹⁶ Initial

BOX 4. *Quotes illustrating how ED clinicians conceptualised their responsibilities during the EVD PHEIC*

‘[T]here was a lot of concern initially ... because in [this city], we are the Ebola hospital ... but our concerns and our emotions were contained [over time]. You can’t ban the community just because you have certain concerns. ... Public emergency departments are a place if you’re sick you can come to emergency and we’ll look after you’.

‘I think the emergency department has always had to deal with whatever gets thrown our way, whether it’s a plane crash at the airport or a major industrial accident happening in the industrial area, or pandemic disease, whatever it is. We are the only department of the hospital that truly deals with totally uncontrolled input. I see the Ebola crisis sort of in the same light ... that we have had to be as prepared as possible to deal with whatever turned up, in the best way possible’.

‘The way you see yourself as an emergency physician and who you are as an emergency physician and that ethos and everything can be challenged by “Well, maybe I don’t want to look after that sort of sick patient with Ebola”. ... The implication being that if I don’t, who’s going to? Because emergency’s always been very team based. ... We’re all going to cop the shit together but we’re all going to stay together’. (Interview notes).

BOX 5. *Quotes illustrating how ED clinicians viewed public health responses during the EVD PHEIC*

‘We felt like we were just being strung out to dry by administrators who didn’t really understand what we were worried about with Ebola. I think they thought we were just being alarmists ... I guess it just came back down to a communication issue. I think it really helped to have the meeting that we did with infectious diseases and public health and hospital executive and everyone there so we could hash out the issues and at least just get some of the weight off everyone’s chest. ... It felt like they listened and cared for a moment’.

‘You actually want your executives to support you. ... Rather than [executives] saying “Hey do this” and having just a one-way direction, we want to have a two-way conversation, “Yeah we want to do it, but this is what we want.” Particularly working things out like if the patients get transferred from another hospital across the state, where are they going to go? Are they coming to us – which is double handling and there’s more risk – or are they going directly to infectious diseases? ... That’s the conversations I guess we wanted with the executive, rather than being told “Hey, do it”’. (Interview notes).

data suggest that appropriate use of PPE by clinicians can substantially lower acquisition rates.¹⁷

The Australian Health Sector Emergency Response plan plots COVID-19 as a highly transmissible but moderate severity illness,

meaning there is potential for significant disease burden among the Australian community.¹⁸ Critical care resources are likely to be severely stretched,¹⁵ and the supply of essential medical consumables, including PPE, is already under threat.¹⁹

Lessons from EVD relevant to COVID-19

Despite important differences between H1N1, EVD and COVID-19, the staff responses profiled in Boxes 2–5 provide insights into ED conditions during PHEs. Addressing clinician concerns will help ensure an effective and sustained response across Australian EDs.

The EVD experience suggests that healthcare workers will inevitably weigh their own health needs against caring for patients. Initially, when patient volume and perceived risk are both low, the impact on workforce supply is likely to be minimal. If, however, case load escalates and/or PPE supply is compromised, risk visibility will increase. In this situation, healthcare workers may feel conflicted in their responsibility to provide care, particularly given the potential flow-on consequences for their families.

Following the SARS epidemic, expert consensus suggested that healthcare workers have a duty to treat patients with infectious diseases, but it is not absolute.⁷ Rather, it is dependent on the degree of risk, their capacity to protect themselves, individual skills and expertise, and the particular circumstances of the case and broader PHE.²⁰ In managing these competing interests, hospitals will need to draw on existing guidance regarding ethical responsibilities during PHEs.^{3,7,8}

Health services can support their staff by ensuring an uninterrupted supply of PPE and training them in its correct use. In light of supply chain failure, further drawdowns on the national medical stockpile will be required.^{19,21} These actions are likely to improve confidence among clinicians and decrease infection rates.²²

More broadly, it is essential that governments and health services maintain clear and concise communication with clinicians, and involve them in decision-making processes (particularly in relation to operational responses and surge planning). Consistent with the interview data, collaborative engagement between public health personnel, hospital management and frontline

clinicians is likely to build trust and confidence.

An important part of enhancing system resilience will be to offload public EDs wherever possible. Relevant strategies will include establishing community ‘flu’ or ‘fever’ clinics for low acuity patients, bolstering primary care resources and utilising private EDs as part of a system-wide response plan.^{23,24}

Additional considerations

While the EVD PHEIC did not result in treatment rationing in Australia, it is a distinct possibility during the COVID-19 pandemic. International experience suggests that ward, critical care and invasive ventilation resources may be rapidly overwhelmed by the volume of patients.¹⁵

This situation will require clinicians to make difficult decisions regarding eligibility for limited resources, on a scale that has never been tested in Australia. Consideration of alternate management options (such as supportive and/or palliative care in residential aged care facilities) will be required. International frameworks for the allocation of scarce resources during disasters, developed through community consultation, may be of relevance.^{25,26}

It is essential that healthcare workers are supported to make these challenging decisions, ideally with contemporary, transparent, evidence-based guidance based on epidemiological data, consumer consultation and international experience. This will help clinicians anticipate and contextualise care needs for patients with COVID-19, with the goal of maximising healthcare value and minimising moral injury to staff, patients and families.^{7,26} Evolving guidelines from the Australian and New Zealand Intensive Care Society will be helpful in this respect.²⁷

Conclusion

The COVID-19 pandemic is likely to challenge the construct of emergency care delivery across Australian EDs. Learning from previous experiences is critical to anticipating the ethical

and clinical challenges that will arise from overwhelming demand for care. Evidence from the EVD PHEIC suggests that clinicians have a strong sense of professional responsibility, but this can be compromised by increased visibility of risk and sub-optimal engagement from hospital managers and public health authorities. There is a narrow window of opportunity to apply these lessons and optimise preparations for the COVID-19 pandemic.

Author contributions

All authors collaboratively conceived the concept. ALW was the lead author of the research paper on which this article is based. AM wrote the first draft. All authors reviewed the manuscript.

Competing interests

None declared.

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