

Should trainees be involved in the direct care of patients with Ebola Virus Disease?

Nasia Safdar[1], Andrew Ruis[2], Daniel Shirley[3], Norman Fost[4]

Corresponding author: Dr Nasia Safdar ns2@medicine.wisc.edu

Institution: 1. Division of Infectious Disease, School of Medicine and Public Health, University of Wisconsin, Madison, 2. Department of Medical Ethics, School of Medicine and Public Health, University of Wisconsin, Madison, 3. Divisions of Hospital Medicine and Infectious Disease, School of Medicine and Public Health, University of Wisconsin, Madison, 4. Department of Pediatrics, School of Medicine and Public Health, University of Wisconsin, Madison

Categories: Educational Strategies, Professionalism/Ethics, Students/Trainees

Received: 03/06/2016

Published: 06/06/2016

Abstract

With the world in the throes of the largest outbreak of Ebola Virus Disease (EVD) in history, many institutions in the United States have developed institutional policies and procedures for the screening, diagnosis and management of patients with EVD. Healthcare workers caring for these seriously ill patients are at high risk of contracting EVD through contact with blood and body fluids. With the exception of experimental therapeutics, treatment is largely supportive, requiring healthcare workers to have regular close contact with patients. Given the proportion of healthcare workers who have contracted EVD from patients and the high mortality rate, a central consideration has been whether healthcare trainees should be exempted from the direct care of patients with EVD. Educational needs and ethical issues are discussed. We provide arguments for and against this approach, and present a multifaceted framework that may be useful to institutions grappling with this issue.

Keywords: Ebola Virus Disease, Physician Trainee, Healthcare Ethics

Article

Background

In 2014 and 2015, the world faced the largest outbreak of Ebola Virus Disease (EVD) in history (Frieden et al., 2014; Team WHOER, 2014; Del Rio et al., 2014). The disease has taken a devastating toll on the populations of three West African Nations—Guinea, Sierra Leone and Liberia with 2018, 3350 and 3826 deaths respectively as of Feb 9, 2015 (CDC 2014). Mortality rates in West Africa have ranged from 50-70% (Team WHOER, 2014); the mortality in the United States is less than 10% thus far, a discrepancy thought to be due in large part to asymmetries in the availability of early and advanced supportive care.

At the present time, at least four cases of EVD have been diagnosed in U.S. healthcare workers (HCW) who took care of patients with EVD. While cases are on the decline in two of the three most affected countries, EVD nonetheless remains a major public health issue, and more cases are projected to occur in the United States due to travel to West Africa and international aid work. Because of the ongoing outbreak of EVD in West Africa and cases in the United States, US healthcare institutions have recently implemented extensive planning activities for the diagnosis and management of patients with suspected or confirmed EVD (Klompas et al., 2014).

Healthcare workers caring for seriously ill patients with EVD are at high risk of contracting EVD through contact with blood and body fluids. With the exception of experimental therapeutics, treatment is largely supportive, requiring healthcare workers to have regular close contact with patients. In a recent, well publicized case in Texas, two healthcare workers involved in the care of a patient with EVD developed EVD despite use of personal protective equipment (PPE). The Centers for Disease Control thus recommend limiting the number of HCWs who provide hands-on care to patients with EVD to minimize exposure.

Given the recommendation to limit the number of healthcare workers with direct contact with EVD patients, each institution must make policies that define who, if anyone might be exempted from caring for patients with EVD. Within this discussion, a central consideration has been whether or not trainees should be involved in the care of the patients with EVD. The Accreditation Council for Graduate Medical Education (ACGME) has published guidance on this matter:

“ACGME expects that residents and fellows be both aware of, and able to appropriately respond to, this viral disease. They must understand the expected type of patient care contact and the patient care they might provide in the context of their respective specialty educational programs. ACGME also expects that sponsoring institutions and their hospital, medical center, and ambulatory care sites (sic) will provide residents, fellows, faculty, and other staff with adequate resources, facilities, and training to properly recognize and care for these patients.” (ACGME 2014)

However, many institutions are reportedly planning not to allow trainees to participate in hands-on care of patients with EVD. The Veterans Administration (VA), which supports a large number of trainees, has recommended that trainees not be involved in the care of EVD patients. Given these conflicting recommendations, we believe it would be helpful to analyze what a healthcare institution needs to consider when deciding on the role of trainees in direct care of EVD patients.

A definition of “trainee,” is required as this could include student, resident, or fellow and could be from a variety of disciplines. Within each of these categories, there would be a wide variation in knowledge, skill, and other competencies. Furthermore, “need to know” must be defined based on trainees’ career choices. An infectious disease fellow might be more interested in acquiring experience in caring for patients with EVD, or have a need for such experience regardless of his/her interest than would a dermatology resident spending a month on a general medical floor as part of a rotating internship.

Similarly, a chief resident in surgery may be an important member of a hospital’s service program, with requisite skills that have not yet been mastered by a first year resident. In addition to physician trainees, consideration must also be given to nurse trainees and other healthcare workers at various stages of professional development who may be involved in direct care or who may come into contact with patients’ bodily fluids.

In some circumstances, such as a mass disaster or an EVD outbreak which overwhelmed the available pool of attending physicians, it might be necessary to include trainees. Similarly, there are circumstances where the involvement of trainees might occur as an unplanned event, as when a patient in the early

stages of EVD arrives at a clinic or emergency room and the front-line caregiver happens to be a trainee. While these are of course important considerations, we restrict our discussion at this point to situations in which involvement of trainees is optional and in a planned setting for a patient with EVD. Assuming that adequate numbers of fully trained healthcare professionals are available and EVD does not become an epidemic in the United States, at first glance it seems reasonable to exclude all trainees from the direct care of patients with EVD to reduce the number of potentially exposed individuals to the lowest number needed to provide adequate care. We present arguments for and against this approach to provide a balanced view of this important question.

Discussion

There are at least three reasons for limiting the number of HCWs involved in the care of EVD. First, limiting direct contact decreases the number of persons at risk for contracting the disease, which would reduce the risk for secondary cases that would increase the burden on the health care system. Secondly, the use of PPE for this condition requires intensive training of personnel, including multiple practice sessions, with substantial costs in terms of time and money, and requires hospitals to have more PPE on hand. Limiting the number of personnel providing this advanced care can therefore reduce costs. Third, the limited cohort of highly trained providers would be more skilled at using PPE, which makes secondary cases less likely. This rationale, of course, also supports a policy of limiting the number of trained staff, not just trainees, to the fewest number needed. Most hospitals are presumably limiting the number of members on their response teams in this way.

Some have argued that rather than training level alone (student, intern, resident, fellow), relevant clinical experience (such as infectious diseases) and training in practices relevant to EVD (such as PPE) should be a major factor in the decision regarding trainee involvement (Frader & Friedman Ross. 2014). For example, a medical resident with experience providing acute care while wearing PPE may be a better fit for a response team than a non-trainee health professional who does not have such experience.

Regardless of how membership in the response team is determined, institutions should anticipate claims about fairness when some members are exempted from risky situations while others are expected to assume substantial risks. Presumably, policies which exempt trainee physicians should apply to other HCWs in addition to physicians –i.e., trainees in nursing, respiratory therapy, and so on.

One counter argument to exemption is that trainees, in their role as healthcare professionals, may feel that they have a duty to provide care. For many, the desire to help seriously ill patients may be what motivated them to become physicians. This consideration would argue for a policy of *allowing* trainees to be involved in the care of high risk patients with EBV but not *require* such involvement.

A second argument is that trainees should be prepared to perform at a high level when they begin their careers as staff physicians, and they cannot master those skills without practice in a training environment. Due in part to several recent epidemics and disasters, both natural and anthropogenic, (Smith & Anderscavage, 2011; Kapur & Smith, 2011; McGlown & Robinson, 2011) the American College of Emergency Physicians, the Association of American Medical Colleges, and the Institute of Medicine have all recommended inclusion of emergency preparedness training in the medical curriculum, but this has not been broadly implemented, nor is it clear whether these groups anticipated an Ebola-type epidemic, with a high mortality rate and a small margin for error (Scott et al., 2012).

We suggest that the answers to these policy questions are not universal. Rather, policy leaders and healthcare institutions should consider a number of issues when determining who will be allowed—or expected, or required—to provide direct care for patients with EVD. While all health professionals,

including trainees, ought to learn to recognize the signs of EVD and understand the procedures for providing care, it is important to limit the number of persons who come into contact with EVD patients to reduce the likelihood of nosocomial transmission and the number of new cases.

We propose the following framework for this complex problem.

First, one should consider the learning needs of trainees. Educational activities in medicine should be driven by specialty-specific learning objectives. Providers from some medical specialties, such as Infectious Disease, Emergency Medicine, Hospital Medicine, and Critical Care, will be at the frontlines in the care of EVD patients. As we see outbreaks such as EVD become more frequent and widespread, early training may be important for trainees in those areas. As with all training activities in medicine, education must be balanced against the risk to the patient, the trainee and other caregivers.

Secondly, the societal need for trained medical personnel must be considered. With increasing numbers and a wider geographical range of disasters and epidemics, this kind of training may be important enough to warrant including trainees. Early clinical experiences can contribute to recruitment of trainees into underserved fields, (Littlewood et al., 2005) and treating EVD patients may help trainees develop an interest in global health.

A third point in the proposed framework is to consider the trainees' competing obligations and evaluate where EVD training falls in those obligations. However, trainees themselves may not be in the best position to judge whether they are able to contribute to EVD patient care, as experience in direct patient care and exploration of ethical issues in healthcare is a rapidly evolving learning process during training. Planning for an adverse event, such as the provision of care for a patient with EVD, provides an excellent opportunity for supervisors to discuss with their trainees—and help their trainees reflect on—how medical professionals evaluate their suitability for participation in various care-giving situations (Mann et al., 2009).

Fourth, one must also consider that the risk for transmission of the Ebola virus is much lower in the earlier stages of disease. Policies on involvement of trainees could be based upon exposure risk, especially in areas where the number of available HCWs is limited. Thus, if a healthcare institution chooses to give trainees the option to participate, the institution must think carefully about how to approach trainees so as to minimize the risk of inadvertent coercion.

Finally, consider the power dynamics of trainee-supervisor relationship. Would giving trainees the *option* to volunteer put undue pressure on them to volunteer due to power asymmetries which may create an expectation that trainees should volunteer? It is difficult to understand and anticipate the effects of being a trainee working under supervisors who may have substantial power to affect a learner's career. Beyond the considerations for direct care enumerated above, institutions should consider innovative ways to engage trainees in EVD preparedness, and patient care while not putting themselves at risk such as telemedicine, simulation, drills and risk management planning meetings.

Conclusions

In conclusion, the answer to the question of whether and to what extent trainees should be involved in the direct care of patients with EVD is not a simple yes or no. In a setting where trainee involvement is necessary due to a need for personnel, or desired due to individual career choices (such as infectious diseases or critical care), institutions must take into consideration the trainee learning experience and balance it against the risk of exposure. Regardless, trainees at all levels of training may and should be encouraged to participate in the care of EVD patients in ways that provide for learning opportunities without putting them at risk, such as via telemedicine. Trainees should also be encouraged, where

educationally appropriate, to participate in risk management and response planning for epidemics/disasters, to learn about safe and thorough intake procedures for suspected cases of highly infectious diseases, and to discuss with peers and mentors their interest in and concerns about providing care in high-risk situations, such as those posed by EVD.

Take Home Messages

Notes On Contributors

Nasia K Safdar, MD, PhD, is the Associate Chief of Staff for Research at the Madison VA Hospital, and is also the Medical Director for Infection Control at University of Wisconsin Hospital and Clinics. **Andrew R. Ruis, PhD**, is in the Department of Medical History and Bioethics and the Wisconsin Center for Education Research in the School of Medicine and Public Health, University of Wisconsin. **Daniel Shirley, MD, MS**, is a Clinical Assistant Professor in the Department of Medicine, Divisions of Infectious Disease and Hospital Medicine, University of Wisconsin. **Norman Fost MD, MPH**, is Emeritus Professor at the Departments of Medical History and Bioethics and Pediatrics, School of Medicine and Public Health, University of Wisconsin.

Acknowledgements

Bibliography/References

- ACGME Guidance Statement on Ebola Virus Infection and Resident/ Fellow Training in the United States (2014). Retrieved from <https://www.acgme.org/acgmeweb/Portals/0/PDFs/Nasca-Community/ACGME-GME-Ebola-Final1.pdf>.
- CDC's webpage 2014 Ebola Outbreak in West Africa-Case Counts. (n.d). Retrieved from <http://www.cdc.gov/vhf/ebola/outbreaks/2014-west-africa/case-counts.html>
- Del Rio C., Mehta A.K., & Lyon G.M., 3rd, Guarner J. (2014). Ebola hemorrhagic fever in 2014: the tale of an evolving epidemic. *Ann Intern Med.*, 161(10), 746-8. doi: 10.7326/M14.1880.
- Frader J., & Friedman Ross L. (2014). Responding to Ebola: Health Care Professionals' Obligations to Provide Care. *Bioethics Forum Blog*. Retrieved from <http://www.cdc.gov/vhf/ebola/outbreaks/2014-west-africa/case-counts.html>.
- Frieden T.R., Damon I., Bell B.P., Kenyon T., & Nichol S. (2014). Ebola 2014--new challenges, new global response and responsibility. *N Engl J Med.*, 371(13), 1177-80. doi:10.1056/NEJMp1409903.Epub2014 Aug 20.
- Kapur G.B., & Smith J.P. (2011). Public Health Security: Protecting Populations from Emergencies. In: Jones, Bartlett, eds. *Emergency Public Health: Preparedness and Response* (pp. 3-10). Sudbury, MA: Jones & Bartlett.
- Klompas M., Diekema D.J., Fishman N.O., & Yokoe D.S. (2014). Ebola fever: reconciling planning with risk in U.S. hospitals. *Ann Intern Med.*, 161(10), 751-2. doi: 10.7326/M14.1918.

- Littlewood S., Ypinazar V., Margolis S.A., Scherpbier A., Spencer J., & Dornan T. (2005) Early practical experience and the social responsiveness of clinical education: systematic review.
<http://dx.doi.org/10.1136/bmj.331.7513.387>
- Mann K., Gordon J., & MacLeod A. (2009). Reflection and reflective practice in health professions education: a systematic review. *Advances in Health Sciences Education*, 14(4):595-621.
<http://dx.doi.org/10.1007/s10459-007-9090-2>
- McGlown K.J., & Robinson P.D. (2011). *Anticipate, Respond, Recover: Healthcare Leadership and Catastrophic Events*. Chicago, IL: Health Administration Press.
- Scott L.A., Maddux P.T., Schnellmann J., Hayes L., Tolley J., & Wahlquist A.E. (2012). High-fidelity multiactor emergency preparedness training for patient care providers. *Am J Disaster Med.*, 7(3):175-88.
<http://dx.doi.org/10.5055/ajdm.2012.0093>
- Smith J.P., & Anderscavage S.M. (2011). Nongovernmental Organizations' Response to Crisis. In: G.B. Kapur, J.P. Smith (Eds.) *Emergency Public Health: Preparedness and Response* (pp. 103-130). Sudbury, MA: Jones & Bartlett.

Appendices

Declaration of Interest

The author has declared that there are no conflicts of interest.