CHEST

Ebola Virus Disease
Ethics and Emergency Medical Response Policy

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Caring for patients affected with Ebola virus disease (EVD) while simultaneously preventing EVD transmission represents a central ethical challenge of the EVD epidemic. To address this challenge, we propose a model policy for resuscitation and emergent procedure policy of patients with EVD and set forth ethical principles that lend support to this policy. The policy and principles we propose bear relevance beyond the EVD epidemic, offering guidance for the care of patients with other highly contagious, virulent, and lethal diseases. The policy establishes (1) a limited code status for patients with confirmed or suspected EVD. Limited code status means that a code blue will not be called for patients with confirmed or suspected EVD at any stage of the disease; however, properly protected providers (those already in full protective equipment) may initiate resuscitative efforts if, in their clinical assessment, these efforts are likely to benefit the patient. The policy also requires that (2) resuscitation not be attempted for patients with advanced EVD, as resuscitation would be medically futile; (3) providers caring for or having contact with patients with confirmed or suspected EVD be properly protected and trained; (4) the treating team identify and treat in advance likely causes of cardiac and respiratory arrest to minimize the need for emergency response; (5) patients with EVD and their proxies be involved in care discussions; and (6) care team and provider discretion guide the care of patients with EVD. We discuss ethical issues involving medical futility and the duty to avoid harm and propose a utilitarian-based principle of triage to address resource scarcity in the emergency setting. CHEST 2015; 148(3):794-800

ABBREVIATIONS: AMA = American Medical Association; CDC = Centers for Disease Control and Prevention; DNAR = do not attempt resuscitation; EVD = Ebola virus disease; PPE = personal protective equipment; RRT = renal replacement therapy

The Ebola virus disease (EVD) epidemic is described by the Centers for Disease Control and Prevention (CDC) as "the largest in history," affecting not only multiple countries in West Africa but also locally acquired cases involving health-care workers in the United States.[1] As of March 18, 2015, the CDC reports 14,646 laboratory-confirmed cases and 10,236 deaths, with widespread transmission in Guinea, Liberia, and Sierra Leone, and limited transmission in the United Kingdom, Nigeria, Senegal, Spain, the United States, and Mali. Caring for patients affected by EVD while simultaneously preventing EVD transmission represents a central challenge

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of the epidemic. As US health-care facilities care for and prepare to care for patients with EVD by developing protocols and policies, recruiting and training volunteer providers, and practicing the donning and doffing of personal protective equipment (PPE), this challenge becomes more pressing.

The ethical principles we propose carry implications for future infectious diseases where patient care and provider safety must be carefully weighed. To address these ethical concerns, we have developed a model for Resuscitation and Emergent Procedure Policy of patients with EVD. We discuss this policy along with its ethical and scientific rationale. Although the model policy we set forth is intended to guide policy for EVD, it also offers guidance for other communicable diseases that share with EVD the features of being highly contagious, highly virulent, and highly lethal (ie, having a high rate of death). Specific policies may vary depending on relevant features of the infecting agent. For example, Ebola-like viruses, such as Marburg hemorrhagic fever, might be governed by a similar policy. By contrast, Middle East respiratory syndrome is similar to EVD in certain respects, yet the coronavirus that causes Middle East respiratory syndrome is less lethal than EVD, which alters the associated risk assessment.[2]

Model Policy

Ebola Virus Disease: Resuscitation and Emergent Procedure Policy

1. A code blue will not be called for patients with confirmed or suspected EVD; however, properly protected providers may initiate resuscitative efforts if, in their clinical assessment, these efforts are likely to benefit the patient. This approach represents a limited code status for patients with confirmed or suspected EVD. Code blue refers to paging the code team to come to the patient's bedside and provide emergency medical care; it summons emergency responders throughout the hospital who are not properly donned with PPE and may not have received safety training related to caring for individuals with EVD.
2. Resuscitation will not be attempted for patients with advanced EVD if resuscitation would be medically futile, put treating clinicians at unreasonably high risk of infection, or both. However, all patients with EVD will receive ongoing support and appropriate medical and comfort care.
3. Providers caring for or having contact with patients with confirmed or suspected EVD will be properly protected and trained, including training in the proper use of PPE.
4. The treating team will anticipate, treat, and/or prepare for likely causes of cardiac and respiratory arrest to minimize the need for emergency response. Goals of care will be evaluated on an ongoing basis.
5. Patients with EVD and their families or proxies will be involved in goals of care discussions throughout hospitalization and will be made aware of limitations of care as they apply. Discussion will include notification of the patient's code status and its rationale. Although neither consent nor assent of the patient, family, or both is ethically required for limited resuscitation status, patients and families are ethically entitled to full disclosure.
6. Care team discretion will guide general management of patients with EVD. Responding providers will exercise discretion regarding which medical interventions, including resuscitative efforts, can be safely and effectively delivered to patients with EVD. Identified ethics consultants will be available on an ongoing basis to members of the health-care team.

Operationalizing the above policy requires modifying existing protocols. Although this could be accomplished by assigning a "do not attempt resuscitation" (DNAR) status to all patients with known or suspected EVD, we propose instead assigning a "limited resuscitation" status to patients with EVD. The alternative of a standard DNAR order carries the following disadvantages: (1) DNAR may be misinterpreted to mean that providers have no obligation to assume reasonable risk when caring for patients with EVD. (2) It is easier to justify limited resuscitation for patients with suspected, but not confirmed, EVD than it is to justify DNAR, because limited resuscitation leaves open the possibility of providing certain resuscitative measures. (3) A limited resuscitation status for patients with EVD maintains a patient-centered focus better than a standard DNAR status. A DNAR order may be understood by some providers to preclude what, in some cases, would be helpful interventions.

Ethical and Scientific Rationale

Balancing Risks and Benefits

Risk of exposure to EVD varies depending on disease stage:

> Ebola virus is usually detectable in the blood at the time of early symptom presentation. It then increases logarithmically and can reach extremely high levels (5-10 billion RNA copies/mL serum). Viral levels are highest when the patient is in the most active phase of the disease.[3]