

Health Care Worker Quarantine for Ebola: To Eradicate the Virus or Alleviate Fear?

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The 2014 Ebola outbreak originating in West Africa is a public health emergency of international concern that has drawn worldwide media attention.¹ Quarantine—an action that restricts movement of individuals, with the goal to protect the public health—is a historic public health action.² Despite our global experience with emerging infectious diseases, politicians empowered with making health policy decisions and even some scientists have created confusion, fear, and stigmatization of health care workers by inconsistent use of quarantine.^{3,4}

The paradoxical application of quarantine during the 2014 Ebola outbreak has led to confusion among health care workers and the public alike. Within the United States, conflicting policies have resulted in a nurse being placed in quarantine in a tent next to a hospital in New Jersey and later in her home in Maine after returning from treating Ebola patients in West Africa, yet at the same time other returning health care workers moved about freely, including a physician in New York City who later tested positive for Ebola. Asymptomatic health care workers returning from treating Ebola patients in West Africa even met with the President of the United States, a strong indication that they were of no threat to others. Furthermore, health care workers caring for patients with Ebola within the United States and other non-African countries have not had their movement restricted. Similarly, the US ambassador to the United Nations returned from an Ebola-stricken country and was simply placed under public health monitoring, whereas the media concurrently reported that returning US military troops would be quarantined for 21 days. Physicians from West Africa were told they would be quarantined if they traveled to the United States to attend a professional meeting at the same time that physicians who returned from treating Ebola patients moved freely about at the annual American College of Emergency Physicians (ACEP) *Scientific Assembly*. So what is the truth about quarantine?⁵

Quarantine is an ancient term that is derived from the Italian *quaranta*, which refers to the 40-day sequestration imposed on arriving merchant ships during plague outbreaks of the 14th century.⁶ Although the terms are frequently used interchangeably, quarantine differs from isolation in important ways. According to the 2001 US Model State Emergency Health Powers Act, both quarantine and isolation are tools that “enforce physical separation

and confinement of an individual or groups of individuals...to prevent or limit the transmission of the disease.”⁷ Quarantine is for asymptomatic (healthy) persons who have been or may have been exposed to a contagious disease, whereas isolation is for symptomatic (ill) persons with a contagious infectious disease.⁸ A key concept is that for persons to be placed into quarantine, they must pose a threat to the public health. Thus, for quarantine to make scientific sense, the disease must be transmissible before symptom onset, during its incubation period. Otherwise, with modern contact tracing and monitoring technology, exposed persons can simply be immediately isolated if they become sick.

Some may argue, why not quarantine just in case? But what about potential negative consequences of quarantine? The current state of the science says that Ebola is not transmissible from person to person before the onset of symptoms. As evidenced by lack of transmission to contacts of a patient in Dallas and another in New York City, Ebola is unlikely to be spread even when symptoms first manifest. Early on, the patient’s viral load is low and, in fact, initial PCR testing may be negative and must be repeated in 72 hours to rule out infection. Thus, quarantine is unnecessary in asymptomatic persons. In addition to the obvious infringement of civil liberties of unnecessary quarantine, imposing it can also deter health care workers from treating Ebola patients in their home countries or, more importantly, from traveling to West Africa to assist with eradication of the disease at its source. Furthermore, removing health care workers from duty for 21 days could have deleterious consequences on routine patient care at a time when we already have daily staff shortages in many locales. In addition, quarantine may be difficult to implement in today’s globally connected world. And what would we do if someone refused to comply? Will authorities forcibly detain or even shoot a person for an action that is only a misdemeanor in some countries (such as the United States)?

Numerous authoritative bodies have issued statements opposing the mandatory quarantine of asymptomatic health care workers who have treated Ebola patients, including the ACEP Ebola Expert Panel⁹ (of which I am a member), the Infectious Diseases Society of America,¹⁰ and the Society for Healthcare Epidemiology of America.¹¹ The statements correctly advise that quarantine in this setting has no scientific foundation and can have negative consequences.

Instead of trying to allay public fears by misapplication of quarantine, we should instead educate according to rigorous science and apply evidence-based policies and procedures. Modern technologies exist for robust public health monitoring that can replace an antiquated system of quarantine for exposed persons who have no potential to transmit disease before symptom onset. Health care workers who have cared for Ebola patients and are asymptomatic should not be restricted from work or other activities as long as they can be effectively monitored for symptoms and then isolated and tested if those develop. Politicians must heed their scientific advisors and not be swayed by misinformed public fear. In addition, we should seek out and apply these simple modern technologic solutions that maximize public health and safety. Only in this way can we eradicate Ebola rather than applying misguided attempts with unintended consequences in an attempt to alleviate fear.

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