Tropical Medicine and Surgery

Schieffelin JS et al., Trop Med Surg 2014, 2:4
DOI: 10.4172/2329-9088.1000177

Short Communication Open Access

Does Screening Keep Ebola Out of USA?

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Received date: October 22, 2014, **Accepted date:** November 11, 2014, 2014, **Published date:** November 14, 2014

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On Oct 8 2014, the U.S. government announced that five airports across the United States will start screening passengers arriving from Ebola-affected countries in West Africa to prevent the Ebola to spread to USA. However, we doubt the utility of airport screening. First, the sensitivity of airport screening is a product of the sensitivity of fever for detecting Ebola cases which in turn is a product of the sensitivity of the infrared thermo-scanners in detecting fever. Fever is not a specific indicator of Ebola disease and relying on it will lead to many false positives. Previous studies have already demonstrated that reliance on fever alone is unlikely to be feasible as an entry screening measure [1]. An Australian study shown that airport screening was ineffective in detecting cases of influenza A (H1N1) in 2009 [2]. The study found that among 625,147 passenger arrivals at Sydney Airport during the period, 5845 (0.93%) were identified as being symptomatic or febrile, and three of 5845 were subsequently confirmed to have H1N1, resulting in a detection rate of 0.05 per 10,000 screened (95% CI, 0.02-1.14 per 10,000). Likewise, Canada introduced various measures to screen airplane passengers at selected airports for symptoms and signs of severe acute respiratory syndrome (SARS). In spite of intensive screening, no SARS cases were detected [3]. Similarly, there were 1.84 million arrivals into Australia during the study period, and 794 were referred for screening to the staff. Of these, the findings in four travellers were consistent with the World Health Organization case definition for SARS, and they were referred by the Chief Quarantine Officers to designated hospitals for further investigation. None of these four people was confirmed to have SARS. One person reported as a probable SARS case acknowledged being symptomatic on arrival, but had been missed by border screening [4]. Those experiences clearly showed airport screening is not an effective intervention for the prevention and control for infectious diseases, although entry screening might delay local transmission [2].

Actually, right now all passengers from Ebola-affected areas must enter the US through 1 of 5 different airports. They will be screened there for symptoms and then their contact information will be sent to the Office of Public Health of their destination. It will then be up to the state to track them for 21 days. Most states would just call them daily and ask what their temperature is. However, others are leaning toward quarantining them at either their homes or a central location. In other words, the US is going to take both approaches: initial screening at airports followed by active surveillance for 21 days.

Of noted, quarantine might be more effective to prevent the spread of new emerging infectious diseases, which have been used as a public health measure for containing emerging epidemics since Black Death. However, mandatory quarantines could cause discrimination, e.g. China–Mexico case in H1N1 outbreak. Alternatively, voluntary quarantines are a potential measurement. In China, during 2003 SARS outbreak, the people from affected provinces were self-quarantine during the incubation period when they come back to hometown [5].

In conclusion, the screening program cannot protect USA people form the threat of Ebola. It is more likely to be a placebo to comfort the panic mood in the public, but without any help in prevention of the spread. However, fever screening at the airport may not be absolute screening of Ebola but it still is useful, cheap, rapid and practical method for mass screening of patients. Other methods should also be considered for more effective screening of Ebola infected travelers entering the country.

Acknowledgement

Dr. Schieffelin would like to thank the project (Mentoring Translational Researchers in Louisiana), National Institutes of Health Grant number P20GM103501, USA for providing financial support for the research in USA.

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