Cooke, M; Van-Tam, J (2005) Modelling study suggests pandemic influenza could be controlled at source. Euro surveillance, 10 (8). E050811.4. ISSN 1025-496X

Downloaded from: http://researchonline.lshtm.ac.uk/2320/

DOI:
Modelling study suggests pandemic influenza could be controlled at source

Mary Cooke (mary.cooke@hpa.org.uk) and Jonathan Van-Tam, Respiratory department, Health Protection Agency Centre for Infections, London, United Kingdom

The highly pathogenic avian influenza A (H5N1) virus which is causing influenza outbreaks in South East Asia represents the most plausible candidate for a pandemic human influenza strain since the last influenza pandemic in 1968 [1]. Initial reports of outbreaks in poultry in the region were received in 2003. These were soon followed by sporadic reports of human infection. As yet there have been no confirmed reports of sustained human to human transmission that would signal evolution towards a pandemic.

A keynote paper from a group modelling the course of an influenza pandemic and the impact of control measures has recently been published. The study predicts that, given enough antiviral medication, local cooperation, operational efficiency in implementing measures and a rapid response, a pandemic could be controlled at a potential source in rural South East Asia.
In the study, it was assumed that an infected individual would spread the virus to 1.8 other people ($R_0 = 1.8$) [2]. The impact of a combination of geographically targeted treatment and prophylaxis was modelled (it was assumed that 90% of cases are detected and treated and 90% of persons within a 5 km radius of the pandemic source are prophylaxed). This would require 2-3 million courses of antiviral drugs, as well as social-distancing (such as closing schools and workplaces) and quarantine measures.

The World Health Organization (WHO) currently has a stockpile of approximately 120 000 antiviral treatment courses resulting from a charitable donation. This study suggests that a significantly larger stockpile is likely to be needed along with considerable liaison and planning between the WHO and the national and local governments likely to be affected.

References:


A(H7N9) virus, China, 2013/14
A comparison of rapid point-of-care tests for the detection of avian influenza A(H7N9) virus, 2013
Surveillance of avian influenza A(H7N9) virus infection in humans and detection of the first imported human case in Taiwan, 3 April to 10 May 2013
Epidemiological link between exposure to poultry and all influenza A(H7N9) confirmed cases in Huzhou city, China, March to May 2013

The publisher's policy on data collection and use of cookies.

Disclaimer: The opinions expressed by authors contributing to Eurosurveillance do not necessarily reflect the opinions of the European Centre for Disease Prevention and Control (ECDC) or the editorial team or the institutions with which the authors are affiliated. Neither ECDC nor any person acting on behalf of ECDC is responsible for the use that might be made of the information in this journal. The information provided on the Eurosurveillance site is designed to support, not replace, the relationship that exists between a patient/site visitor and his/her physician. Our website does not host any form of commercial advertisement. Except where otherwise stated, all manuscripts published after 1 January 2016 will be published under the Creative Commons Attribution (CC BY) licence. You are free to share and adapt the material, but you must give appropriate credit, provide a link to the licence, and indicate if changes were made. You may do so in any manner, but not in any way that suggests the licensor endorses you or your use.

Eurosurveillance [ISSN 1560-7917] - ©2007-2016. All rights reserved.

This site complies with the HONcode standard for trustworthy health information:
verify here.