

At Least One in Five Were Infected in Flu Pandemic, International Study Suggests



At least one in five people in countries for which data are available were infected with influenza during the first year of the 2009 H1N1 pandemic, according to a new study.

The highest rates of infection were in children, with 47 per cent of those aged five to 19 showing signs of having caught the virus. Older people were affected less, with only 11 per cent of people aged 65 or older becoming infected.

The findings come from an international collaboration led by the World Health Organization and Imperial College London, which analysed data from 19 countries, including the UK, US, China and India, to assess the global impact of the 2009 influenza pandemic.

The results, published in the journal *Influenza and Other Respiratory Viruses*, showed that 20-27 percent of people studied were infected in the pandemic during the first year of circulation. The researchers believe the incidence of influenza is likely to have been similar in countries where data were not available, meaning that as many as a quarter of the world's population may have been infected.

The study collated results from more than two dozen research studies involving more than 90,000 blood samples collected before, during and after the pandemic. The samples were tested for antibodies produced by the body in response to the specific flu strain that caused the pandemic.

While this study did not set out to look at mortality, the authors also used previously published estimates of pandemic influenza mortality together with mortality estimates that are still in progress, to estimate the proportion of people infected who died from the pandemic virus. Based on an estimate of approximately 200,000 deaths, they suggest that the case fatality ratio was less than 0.02 percent.

Multiple exposures to previously circulating influenza viruses may have given older people some protection against the strain that emerged in 2009. Blood samples from before the pandemic showed that 14 per cent of people aged 65 or over already had antibodies that reacted to the 2009 strain.

Dr Maria Van Kerkhove, from the Medical Research Council Centre for Outbreak Analysis and Modelling at Imperial College London, one of the lead authors of the study, said: "This study is the result of a combined effort by more than 27 research groups worldwide, who all shared their data and experience with us to help improve our understanding of the impact the pandemic had globally."

Dr Anthony Mounts of the World Health Organization, the senior author, said: "Knowing the proportion of the population infected in different age groups and the proportion of those infected who died will help public health decision-makers plan for and respond to pandemics. This information will be used to quantify severity and develop mathematical models to predict how flu outbreaks spread and what effect different interventions may have."

The study was funded by the Medical Research Council.

Reference

- Van Kerkhove et al. (2012) 'Estimating age-specific cumulative incidence for the 2009 influenza pandemic: a meta-analysis of A(H1N1)pdm09 serological studies from 19 countries.' *Influenza and Other Respiratory Viruses* DOI: 10.1111/irv.12074.

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