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Bird Flu: Predictions Prompt Call For Antiviral Drugs To Be Shared

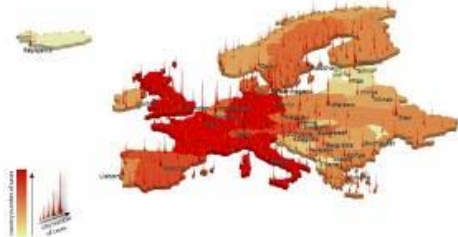
Science Daily — New predictions about bird flu, involving the use of a mathematical model, suggest that international cooperation to share antiviral drugs might be the best way to deal with an emerging pandemic.

'Bird flu' (avian H5N1 influenza) has not triggered a worldwide human epidemic yet because it rarely passes between people. If it does acquire this ability, it would take 6-8 months to develop a vaccine effective against the new virus. Public health officials therefore need to consider how they would protect people during the first few months of a pandemic. Measures might include the use of antiviral drugs and international travel restrictions.

In a new study published in PLoS Medicine, researchers use detailed information on air travel to model the global spread of an emerging influenza pandemic and its containment. They conclude that much will depend on the 'reproductive number' (a measure of how many people an infectious individual infects on average) of the new virus that emerges. If this number is low, it will take many months before the virus spreads worldwide and there will be plenty of time to bring an effective vaccine into use. But if the number is high then it could be difficult or impossible to contain the virus with vaccination.

Other measures could therefore be crucial, but it is likely that only a few countries will be able to stockpile supplies of drugs active against the virus. In these circumstances, compared with a 'selfish strategy' in which countries use their antiviral drugs only within their borders, limited worldwide sharing of antiviral drugs would slow down the spread of a flu virus by many months, to the benefit of both drug donors and recipients.

Citation: Colizza V, Barrat A,



Simulated outbreak of a pandemic influenza in Europe. The epidemic starts in Hanoi, Vietnam, at the beginning of October with $RO=1.9$ and no containment interventions are considered. The snapshot refers to the situation in Europe on March 1 of the following year. Countries are shown with a different color corresponding to the average number of cases observed within the country by March 1, from cream (10^3 cases) to red color (10^6 cases). The local situation within each city is represented by peaks whose height scales logarithmically with the number of cases reported in the city, from 10^2 cases to 10^5 cases. Simulations consider 3100 urban areas worldwide (513 in Europe) while for the sake of visualization the map shows only a set of major European cities. (Image courtesy of Public Library of Science)

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Barthelemy M, Valleron AJ, Vespignani A (2007) Modeling the worldwide spread of pandemic influenza: Baseline case and containment interventions. PLoS Med 4(1): e13.

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Note: This story has been adapted from a news release issued by Public Library of Science.

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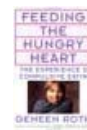
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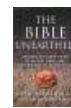


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