Flu mortality formula is potentially misleading, say scientists

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Many mild cases may go unconfirmed, suggest researchers

A standard calculation used in forecasting potential numbers of deaths during the swine flu pandemic risks misleading healthcare planners by being open to both over- and under-estimation of the true figures, say the authors of new research published today in the *British Medical Journal*.

The proportion of people who die due to infection during an influenza outbreak - known as the case fatality ratio - is calculated by dividing the number of deaths by the total number of cases in the same time period. Early data from the current swine flu pandemic suggested that the new influenza A (H1N1) virus causes mild disease, with case fatality ratios of around 0.5%, or 5 deaths per 1000 people infected.

However, the researchers from the MRC Centre for Outbreak Analysis & Modelling at Imperial College London, say this ratio may not be accurate.

They highlight three reasons for the inaccuracy. Firstly, that the total number of deaths during this pandemic is being underestimated because the cause of death is not correctly attributed to swine flu (e.g. influenza can temporarily increase the risk of vascular events, such as heart attacks).

Secondly that as the pandemic progresses, the total number of cases tends towards underestimation, as people presenting with milder symptoms may not be tested or visit a doctor at all, leaving only the most severe to be reported.

Thirdly, that the 'snapshot' calculation does not take account of the time delay between infection and death, thus leading to the false impression that the infection is actually becoming more severe as the pandemic progresses.

Dr Tini Garske, lead author of the study from the MRC Centre for Outbreak Analysis & Modelling at Imperial College London, said:

"Accurately predicting the severity of this swine flu pandemic is a very tricky business, and our research shows that this can only be achieved if data is collected according to well designed study protocols and analysed in a more sophisticated way than is frequently being performed at present.

"If we fail to get an accurate prediction of severity, we will not be providing healthcare planners, doctors and nurses, with the information that they need to ensure they are best prepared to fight the pandemic as we head into the flu season this autumn.

More information: ."Assessing the severity of the novel influenza A(H1N1) pandemic" *British Medical Journal,* 15 July 2009.

Source: Imperial College London (news : web)