The risk of a pandemic with the influenza A (H1N1) virus

On April 24, 2009, the World Health Organization (WHO) announced a public health emergency of international importance, in accordance with the International Health Regulations, caused by infection with the new influenza A (H1N1) virus. Its beginning is possibly associated with an epidemic of febrile respiratory illness that first struck Mexico in March 2009. The epidemic behaved unusually when compared to seasonal influenza, since it occurred outside of winter, predominantly in young adults, and initially with more severe cases (although the latter has since proven not to characterize the epidemic).

The virus was first positively identified in the United States, through tests performed in two children in California on April 17 (MMWR Morb Mortal Wkly Rep 2009; 58:400-2). Since then, spread of the virus elsewhere in the United States has been detected, including community transmission. Subsequent to spread of the virus in Mexico and the United States, cases were detected in Canada, where community transmission was also reported. By mid-May, more than 40 countries had confirmed cases, Brazil included, and autochthonous transmission had also been reported outside of North America. This situation led the WHO to increase the pandemic alert to level 5 and adopt recommendations aimed at decreasing the epidemic's effects, by activating the national preparedness plans for the influenza H5N1 pandemic, with the appropriate adaptations to the current epidemic. The new epidemic shows a predominance of cases in children and young adults and low case-fatality (< 1%), with a majority of mild and moderate cases of a flu syndrome and higher case fatality in patients with an underlying chronic illness, while most cases have recovered without specific treatment. Transmission occurs through either direct person-to-person contact or respiratory secretions from infected individuals. The first estimates based on analysis of cases in Mexico indicated lower transmissibility than for previous influenza pandemics (Fraser et al. Science 2009; Epub 14 May) or the epidemic of severe acute respiratory syndrome (SARS).

Assuming that these characteristics hold out over the course of the epidemic, three possible scenarios can be predicted: (a) this epidemic will follow a similar pattern to that of a seasonal influenza epidemic; this scenario is further consistent with sustained transmission in other regions, but with a self-limited tendency; (b) after waning during the hot months in the Northern Hemisphere, the epidemic will recrudesce, with more severe cases; or (c) the epidemic will continue to spread unchecked to other countries and regions, acquiring the characteristics of a pandemic.

Due to the high degree of uncertainly and (unfortunately) the lack of available information from affected countries, it is necessary to maintain the pandemic alert and activate the preparedness plans, with the needed adaptations to the various possible scenarios. Furthermore, we should always remember the experience with SARS, which was only managed effectively by sharing information and technologies with transparency, coordination, and solidarity, thereby favoring better knowledge of the disease, developing diagnostic methods, and adopting adequate control measures. For influenza, it will also be necessary to extend these benefits to production and universal access to vaccines and drugs. Finally, the measures that have been adopted to deal with the current epidemic should enable the structuring and strengthening of public health services for early detection and effective response to public health emergencies.

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