Severe Pandemic Influenza: A Unique Set of Challenges for Preparedness and Response

Updated September 20, 2011 (Comments to estarbuck@savechildren.org please)

Although a severe influenza pandemic may have no single unique characteristic to distinguish it from all other potential large scale disasters, the combined set of characteristics does pose a unique and formidable challenge for preparedness and response:[1]

1. Limited recent experience (The last severe flu pandemic began in 1918. SARS and recent pandemics have had limited relevance to severe pandemic flu preparedness and response.);
2. Unpredictable onset (The continuing endemicity of H5N1 HPAI in poultry in several countries, along with continuing high case fatality among confirmed human cases, is a reminder of the continuing threat of a severe pandemic, but the risk of onset by any future date, of a severe pandemic, from H5N1 or from another subtype, can not be quantified.);
3. Unpredictably high mortality (25% to 45% of the population will become ill with flu. In 1918 in the US, approximately 2% of illnesses resulted in death. H5N1 cumulative case fatality since 2003 approaches 60%. Mortality in the next severe pandemic is unpredictable, but is expected to be elevated in vulnerable populations and in high risk groups, such as pregnant women. A large proportion of deaths will be in those under the age of 65.);
4. Person-to-person respiratory transmission (Persons at home, work, school, etc. are a threat.);
5. Infeasibility of containment (except under certain conditions in the first few weeks following initial emergence of a new pandemic strain, because of substantial transmission from those with mild non-specific symptoms, peak transmission around the time of symptom onset, and flu's short serial interval / generation time of about 3 days – all very different from SARS);
6. Global scale (will limit international aid to countries and any outside help for communities).;
7. Extended duration (The pandemic will last 1 year or more, with most communities on earth experiencing 1 to 3 "waves" or local outbreaks, each lasting between 6 and 16 weeks.);
8. Limited benefits of pharmaceutical interventions (Pandemic vaccine will not become widely available until late in the course of the pandemic, if at all, and the availability and/or effectiveness of antiviral drugs will also be limited.);
9. Important role, but substantial negative socio-economic consequences of non-pharmaceutical interventions (NPIs will be implemented to reduce person-to-person transmission, but some interventions, such as extended school closures, and restrictions of movement across borders and/or within jurisdictions, will have substantial negative consequences.);
10. Substantial social, economic, and essential services disruption (partly due to high rates of absenteeism from work because of illness, those caring for the ill at home, those caring for children when schools are closed, and those seeking to reduce their exposure to the virus);
11. Responding facilities and organizations themselves challenged (around the world, by obligations of protecting their own staff, absenteeism, economic disruptions, and/or large numbers of ill needing care).

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[1] These characteristics, which are expected to apply until a "universal" influenza vaccine comes into widespread use (protecting against a pandemic strain before its emergence), are based on authoritative sources, including: Pandemic influenza preparedness and response. A WHO guidance document, April 2009 (www.who.int/csr/disease/influenza/pipguidance2009/en/index.html); Interim Pre-Pandemic Planning Guidance: Community Strategy for Pandemic Influenza Mitigation in the United States - Early, Targeted, Layered Use of Nonpharmaceutical Interventions, US CDC, February 2007 (http://pandemicflu.gov/professional/community/community_mitigation.pdf); Influenza Pandemic Planning: Business Continuity Planning Guide, Government of New Zealand, December 2009 (www.med.govt.nz/upload/27552/Business-Continuity-Planning.pdf); & Overview, Pandemic Influenza, CIDRAP, Univ. of Minn. (Regularly updated. www.cidrap.umn.edu/cidrap/content/influenza/panflu/biofacts/panflu.html).