

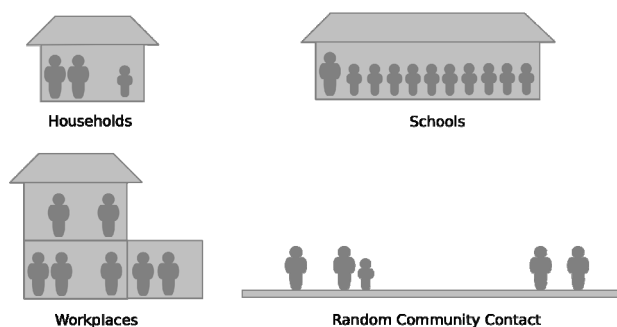


Simulating Public Health Interventions used during the H1N1 2009 Influenza Pandemic

Following the emergence of the 2009 H1N1 influenza pandemic, various public health interventions were activated to lessen its potential impact.

As it is infeasible to conduct experiments by deliberately starting epidemics, we have developed computer models to simulate the spread of infectious diseases and the impact of interventions. By constructing a virtual world populated by individuals, complete with families, schools and workplaces to simulate the person-to-person spread of infection, we can then investigate different types of public health interventions used to combat the pandemic.

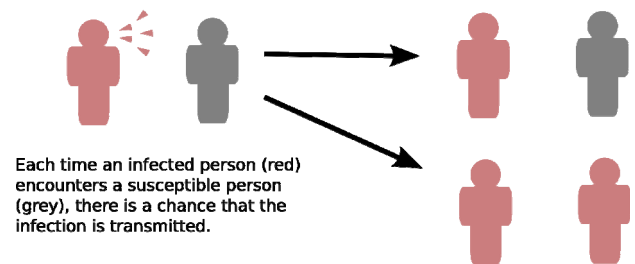
Sources of Interpersonal Contact



We have simulated epidemics with characteristics determined from the initial outbreak in Mexico, and investigated the effects and costs of inter-

ventions used in the initial stages of the 2009 pandemic, namely school closure and antiviral strategies.

Outcome of a Potential Infection Event



We found that aggressive use of anti-viral drugs together with extended school closure may substantially slow the rate of influenza epidemic development. These strategies are more rigorous than those actually used during the early stages of the relatively mild 2009 pandemic, and are appropriate for future more deadly pandemics.

Contact and links

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Contact Networks

Because individuals can belong to more than one contact group, the entire community is connected in a network structure, allowing a single infection to eventually spread to large numbers of people.

