

Assessing the Impact of Pandemic School Closure on the Workforce

By Charles J. Vukotich, Jr.



Many hospitals reported being swamped with patients from the A(H1N1) pandemic, especially in the fall of 2009. While it is clear that A(H1N1) was milder than many people expected from a pandemic, there will be more pandemics in the future. It is now time to take the lessons learned from it to prepare for the next pandemic which is certain to come.

School closure was a leading pandemic influenza mitigation strategy from the US Centers for Disease Control and prevention (CDC). During the spring and fall 2009 flu waves, CDC reported that 3,298 schools closed affecting 1,448,612 students. Closures were based on the 2007 CDC guidance document "Community Strategy for Pandemic Influenza Mitigation" and subsequent updates.

While there is not a lot of hard data on the effectiveness of school closure in reducing influenza, there are indications that school closure would have a negative impact on the workforce, especially the health care workforce. Parents/caregivers in the healthcare industry could be lost to the needs of childcare if schools are closed.

A number of investigators have estimated healthcare workforce absenteeism. Sadique¹ estimated that 30% of the health care workforce (UK) would be affected by a school closure. Dalton² surveyed 87 health care staff in Australia in 2008; 38% may be absent from work due to the impact of childcare and school closure, although 73% of these staff would be able to work from home with Internet access. Lempel³ estimated 6–19% of health care workers (US) would be affected by school closure, depending on assumptions.

CDC guidance suggests that "School and health officials should work closely to balance the risks of flu in their community with the disruption dismissals will cause in both education and the wider community..." This should consider "critical infrastructure."

The School Closure Game was created as a way for schools, hospitals, health care providers, etc., to assess the impact of school closure on their specific situation.

METHODS

The School Closure Game is a structured, interactive survey. The format has people stand in response to series of questions and scenarios that relate to work situations and the impact on these if a school is closed and parents/caregivers have to consider alternates for their children. This provides a quick and visual representation. In the workplace setting, the game provides a simple tool for policy and decision makers to assess the impact of school closure on their workforce. It is designed as a quick and simple way to get results, make them readily apparent to everyone present and stimulate discussion.

Game materials are available at www.pipp.pitt.edu/images/School-Closure-Game.pptx.

RESULTS

The game has been formally tested, with results for four venues are shown below (venue, number in sample, percentage who would be unable to work in order to care for children):

1. National Association of County & City Health Officials (NACCHO) Preparedness Summit 2009, 96 (12%)
 2. NACCHO Preparedness Summit 2010, 48 (33%)
 3. University of Pittsburgh Medical Center (UPMC) clinical trials methods course 2010 (residents, fellows, and junior faculty), 12 (42%)
 4. Pennsylvania Association of School Nurses and Practitioners 2010, 245 (8.9%)
- Taken together, this sample of healthcare providers and responders suggests that 55 of 401 (13.7%) would not be able to work in a school closure.

The NACCHO groups were comprised of people who work in preparedness and are likely to be involved in the response to pandemic influenza. The UPMC group was all young doctors. The school nurse group skewed older with an average age around 50, with only 27% with children in school.

Playing the game provoked discussion on how old is old enough to stay home alone, alternatives (or lack of them) for child care, and the general impact of school closure on family and work life.

CONCLUSIONS

The School Closure Game is meant as a discussion provoking tool for policy-makers, and as a simple assessment of the impact on the population in a specific community. It is not meant to be a comprehensive, scientific survey of the effect of school closure on families and workforces. The game is simple. The early versions were more comprehensive, but this led to some confusion. The game needs to move quickly from data gathering to discussion. Simplicity and clarity outweighed additional granularity of the data collected.

The game is recommended for use by hospitals with their staff. It provides planning data for flu pandemics, and gives hospital administrator's valuable data to be part of a dialogue with school districts when school closure would be discussed, as CDC has recommended. †

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To download the script for the game, visit <http://www.pipp.pitt.edu/pdf/tb11-school-closure-game.pdf>.

¹Sadique MZ, Adams EJ, and Edmunds WJ: Estimating the Costs of School Closure for Mitigating an Influenza Pandemic. BMC Public Health 2008, 8:135.

²Dalton CB, Durrheim DN, Conroy MA. Likely impact of school and childcare closures on public health workforce during an influenza pandemic: a survey. Commun Dis Intell 2008; 32: 261-62

³Lempel H, Epstein JM, Hammond RA. Economic cost and health care workforce effects of school closures in the u.s., PLoS Curr Influenza. 2009 Oct 5:RRN1051.

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