2017 Update on Influenza Disease and Vaccine

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We are getting into influenza (flu) season, and this one is likely to be a heavy one. Most flu cases occur between December and March, with A strains causing the overwhelming majority of cases in the first two months, and B strains becoming more common in the last one or two months. Light seasons frequently alternate with heavy seasons. The last two seasons have been relatively light.1

Each season, a number of children die with influenza infections. The heaviest seasons in the past 10 years have been 2009, with over 300 reported pediatric deaths (mostly occurring in September through November of 2009 with the new pandemic H1N1 swine flu strain), 2012-13 (149 deaths – mostly from B strains), and 2014-15 (141 deaths, mostly A stains with a newer H3N2 strain predominating). There was no vaccine available that contained the new strain when most of the 2009 pandemic struck, and the 2014 vaccine was inadequately matched to the emerging “Switzerland” H3N2 strain.1 We may be in for a new H3N2 strain this season.

Prior to 2013, influenza vaccines contained no more than 1 B strain, and most contained 2 A strains (thus were trivalent – contained 3 strains). Up to that year, most studies comparing the live attenuated influenza vaccine (LAIV), FluMist®, with inactivated flu shots found the LAIV to be more effective in children.2 In the next 3 seasons (starting 2013), the LAIV containing 2 A and 2 B strains (quadrivalent) performed poorly, so CDC essentially took LAIV off the market for last year and again this year. The poor performance of the quadrivalent LAIV may have been due to interference between vaccine stains, but that remains to be determined.3

Most people who do not get their children vaccinated against flu don’t think the vaccine is needed. There may be some truth to that for a number of individuals who have a record of never getting flu while never getting vaccinated against it. Those individuals may have a genetic resistance to flu. On the other hand, individuals who demonstrate genetic susceptibility by having previous flu infections are most likely to get flu again and are most likely to benefit from vaccination.2 With young children, such demonstrated susceptibility or resistance is unknowable other than what might be guessed from the parents’ histories of flu infections. Even though the flu vaccine is perhaps the least effective of vaccines given to children, it is generally at least partially effective and can prevent infections and save lives of our children.4 So if your children have not been immunized against flu, please consider it as soon as possible.

References:

1. Centers for Disease Control and Prevention. Influenza Activity yearly *MMWR* reports 2006 through 2016.
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3. Jackson ML, Chung JR, Jackson LA, et al. Influenza vaccine effectiveness in the United States during the 2015-2016 season. *N Engl J Med*. 2017;377(6):534-543.
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