

What next for the 2009 H1N1 influenza pandemic?

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Now that the H1N1 influenza pandemic is officially over, what will happen to the virus? In a perspective article published today in the online open-access journal *mBio*, scientists from the National Institutes of Health delve into history and explore the fates of other pandemic influenza viruses in order to speculate on the future of the most recent pandemic virus.

"While human [influenza](#) viruses have often surprised us, available evidence leads to the hope that the current pandemic virus will continue to cause low or moderate mortality rates if it does not become extinct," write Anthony Fauci, Director of the National Institute of Allergy and [Infectious Diseases](#) (NIAID) and his NIAID coauthors, Jeffery Taubenberger and David Morens.

The impact of the virus in the upcoming influenza season will depend directly on the degree of existing immunity in the population, provided the virus does not undergo any changes. The authors currently estimate that approximately 59% of the United States population has some level of immunity due to either exposure to the pandemic H1N1 (pH1N1) virus, vaccination or exposure to a closely related [influenza virus](#). That number will continue to increase through immunization with the 2010-2011 seasonal influenza vaccines, which will contain the pH1N1 strain.

In order to continue to survive in a population with such a high immunity, the pH1N1 virus must undergo either an abrupt or a gradual

change. In the article, the authors look at the last six influenza pandemics, going back over 163 years, and examine how those viruses adapted. While some died out for reasons not entirely understood, others, like the 1889 and 1918 pandemics, experienced an explosive recurrence. Explosive recurrence of pH1N1 is not very likely because of the already high and increasing population immunity.

"Past history and current understanding suggest cautious optimism that pH1N1 will eventually adapt to stable circulation via [genetic changes](#) resulting in continuing moderate or low mortality rates or possibly even disappear entirely," the NIAID scientists write .

Despite their cautious optimism, the authors warn against complacency. Other post-pandemic viruses have continued to cause various rates of excess mortality among younger persons for years after the pandemic appearance and the bulk of the still susceptible population spans the under-50 age group. For that reason they recommend infants older than six months, children, teens and young adults be aggressively targeted for seasonal influenza vaccination for not only their own protection, but to increase the overall population immunity.

More information: DM Morens et al. The 2009 H1N1 pandemic influenza virus: What next? *mBio* DOI:10.1128/mBio.00211-10 (2010).

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