

How flu virus spreads to college community: Major implications for control

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Many different strains of the H1N1 influenza virus were represented among 57 students at the University of California, San Diego (UCSD) who were infected during the epidemic in the fall of 2009, according to a paper in the July *Journal of Virology*. The findings have major implications in the controversy over how best to reduce the virus' spread.

The investigators had planned the study in the spring of 2009, after a new strain of H1N1 was identified in San Diego, and spread rapidly around the world, says coauthor Robert T. Schooley of UCSD. "We reasoned that the [epidemic](#) would resume in the fall and that the college-age population would be particularly at risk since people under age 50 had lower levels of immunity to the new strain."

The investigators theorized that if they found a single strain, or a very limited number of [strains](#), that would indicate that spread between the campus and the general community might be reduced by quarantines, says Schooley. "But if multiple strains of virus were circulating, that would suggest multiple introductions of the virus into the college community, that would be unlikely to be interdicted by efforts at quarantine." So they set up a prospective study to collect viral isolates from students presenting with influenza-like symptoms "when the epidemic returned in the fall," says Schooley.

The investigators identified at least 21, and possibly as many as 33, different viral strains from among the 57 students. Those results suggested that the virus had been introduced repeatedly into the college

population within a very short period of time, suggesting that “quarantine efforts in the college population would have a minimal effect on limiting spread of the newly emerging strain,” says Schooley. More generally, he says that quarantine, class cancellation, distribution of respiratory isolation equipment, and other isolation measures “within susceptible socially active populations such as those found on college campuses is unlikely to be effective, and that other approaches such as vaccination, focused use of antiviral drugs among those with underlying illnesses predisposing to more severe illness should be emphasized instead.”

More information: E.C. Holmes, E. Ghedin, R.A. Halpin, et al. Extensive geographical mixing of 2009 human H1N1 influenza A virus in a single university community. *J. Virol.* 85:6923-6929.

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