Masks, hand washing, prevent spread of flu-like symptoms by up to 50 percent

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Wearing masks and using alcohol-based hand sanitizers may prevent the spread of flu symptoms by as much as 50 percent, a landmark new study suggests.

In a first-of-its-kind look at the efficacy of non-pharmaceutical interventions in controlling the spread of the flu virus in a community setting, researchers at the University of Michigan School of Public Health studied more than 1,000 student subjects from seven U-M residence halls during last year's flu season.

"The first-year results (2006-2007) indicate that mask use and alcohol-based hand sanitizer help reduce influenza- like illness rates, ranging from 10 to 50 percent over the study period," said Allison Aiello, co-principal investigator and assistant professor of epidemiology at the U-M SPH. Dr. Arnold Monto, professor of epidemiology, is also a principal investigator of the study.

Aiello stressed the first year of the two-year project, called M-Flu, was a very mild flu season and only a few cases were positive for flu, so results should be interpreted cautiously. Ongoing studies will test for other viruses that may be responsible for the influenza-like illness symptoms observed, she said.

"Nevertheless, these initial results are encouraging since masks and hand hygiene may be effective for preventing a range of respiratory illnesses," Aiello said.

The findings, "Mask Use Reduces Seasonal Influenza-like Illness In The Community Setting," was presented Sunday at The Interscience Conference on Antimicrobial Agents and Chemotherapy and the Infectious Diseases Society of America annual meeting in Washington, D.C.

At the start of flu season in the last two years, participants were randomly assigned to six weeks of wearing a standard medical procedure mask alone, mask use and hand sanitizer use, or a control group with no intervention. Researchers followed students for incidence of influenza like illness symptoms, defined as cough with at least one other characteristic symptom such as fever, chills or body aches, Monto said.

From the third week on, both the mask only and mask/hand sanitizer interventions showed a significant or nearly significant reduction in the rate of influenza-like illness symptoms in comparison to the control group. The observed reduction in rate of flu-like symptoms remained even after adjusting for gender, race/ethnicity, hand washing practices, sleep quality, and flu vaccination.

Non-pharmaceutical interventions such as hand washing and masks---especially in a pandemic flu outbreak---are critical to study because pharmaceutical interventions such as vaccinations and antivirals may not be available in sufficient quantity for preventing and controlling pandemic influenza outbreaks.

In February 2007, the Centers for Disease Control and Prevention and the U.S. Department of Health and Human Services in collaboration with other federal agencies, education, businesses, healthcare and private sectors developed an interim planning guide on the use of Non-Pharmaceutical Interventions (NPIs) to mitigate an influenza pandemic.

The measures include voluntary home quarantine, isolation and

treatment of cases, social distancing, personal protection such as face masks and hand hygiene, and school dismissal.

"Although a few of these measures can be evaluated during seasonal influenza outbreaks, many are difficult or impossible to evaluate in advance of a pandemic," Monto said. "However, use of face masks and hand hygiene interventions can be evaluated now, during seasonal influenza outbreaks, which can provide concrete evidence for decision makers."

Further studies are needed to confirm whether mask use may be an effective means of reducing influenza in shared living settings. Since it was not possible to blind subjects, knowledge of the intervention may have influenced influenza-like symptom reporting and therefore the results of this study should be interpreted with caution, Aiello said.

"During year two of the study (2007-2008) a major outbreak of influenza took place," Aiello said. "Forthcoming studies will examine whether results observed during this more severe outbreak mirror those observed during the milder year one influenza season. Influenza virus identification will also be examined as an additional outcome."

Source: University of Michigan