

Unmasked and vulnerable

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Donning a face mask is an easy way to boost protection from severe respiratory illnesses such as influenza and SARS, new research from the University of New South Wales (UNSW) has found, but convincing a reluctant public and health workers is proving a struggle.

In a world-first clinical trial of the efficacy of masks, researchers found adult mask wearers* in the home were four times more likely than non-wearers to be protected against respiratory viruses, including the common cold.

The findings - published this week in *Emerging Infectious Diseases*, the journal of the US Centres for Disease Control and Prevention - have global implications and are particularly relevant to efforts to combat the spread of flu pandemics and other emerging respiratory diseases such as SARS.

"In the event of a severe pandemic, demand for protection could become a law and order issue," said lead author of the paper, Raina MacIntyre, who is Professor of Infectious Diseases Epidemiology and head of UNSW's School of Public Health and Community Medicine.

"In a crisis, vaccine development is likely to be delayed and drugs may be in short supply or not available at all," she said. "Limited supplies will be directed first to front line health workers, so masks are an important means of protection for the community, who otherwise may be last in line for vaccines and drugs."

While some governments are already stockpiling masks for use in emergencies, Professor MacIntyre said these guidelines had been implemented without evidence to support them.

"We now have provided that evidence. Masks play an important role in reducing transmission if they are worn properly."

At a day-to-day level, the study is also good news for parents of toddlers and young children.

"There is no effective treatment for the 90 or so common cold viruses that make families sick each winter, but masks could provide simple and effective protection," Professor MacIntyre said.

Commissioned and funded by the Australian Department of Health and Ageing in response to an urgent policy need, the study is the first randomised controlled clinical trial of masks to be conducted internationally. Researchers at UNSW, Sydney's Westmead Hospital, Imperial College (London) and the National Centre for Immunisation Research studied more than 280 adults in 143 families in Sydney during the winter seasons of 2006 and 2007. The adults were randomly allocated masks when exposed to a sick child in the household.

Professor MacIntyre said a drawback was participants' low compliance, with less than half reporting having worn the masks often or always. However, adherence to preventative measures is known to vary depending on perception of risk and would be expected to increase during a pandemic.

The next pressing research question is the value of the use of masks among health care workers. Preliminary work in Australia in 2007 showed very low acceptance of and compliance with mask use by hospital doctors and nurses.

Professor MacIntyre and her team, along with the Beijing Centers for Disease Control and Prevention, are now running a large trial of masks in close to 2,000 health care workers in more than 20 hospitals in China, where compliance with masks is much greater.

"Results from this trial could have wide implications for not only pandemic influenza, but a range of communicable diseases spread within hospitals,' Professor MacIntyre said.

Note:

*both surgical and non-fit-tested P2 masks.

Source: University of New South Wales

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