

Disease severity in H1N1 patients

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A new study published in CMAJ (*Canadian Medical Association Journal*) concerning the severity of H1N1 influenza has found that admissions to an intensive care unit (ICU) were associated with a longer interval between symptom onset and treatment with antivirals and with presence of an underlying medical condition. People of First Nations ethnicity were also found to be at higher risk of severe H1N1 infection compared to people of other ethnic origins.

"Predicting disease and mitigating hazard in at-risk populations is an important aim of public health epidemiology, and in preparation for future waves of H1N1, determining the correlates of [disease severity](#) is incredibly important," write Dr. Ryan Zarychanski, University of Manitoba and coauthors.

The highest incidence of severe H1N1 occurred in Manitoba, where 45 residents of the province were admitted to an ICU. As of September 5, 2009, there had been 795 laboratory confirmed cases of H1N1 in the province where location of treatment could be determined. Seventy-two percent (569) of patients remained in the community, 23% (181) were admitted to hospital but not the ICU and 6% (45) were admitted to the ICU. The mean age of people with H1N1 was 25.3 years old.

In this study, which included all confirmed H1N1 cases in Manitoba, the authors found that longer intervals from symptom onset to eventual treatment with antivirals ([Tamiflu](#)) were strongly associated with more severe disease necessitating admission to an [intensive care unit](#). Those who had untreated symptoms the longest required more life support,

compared to people who were treated within 48 hours.

"Of course not everyone with H1N1 symptoms requires treatment, but this finding underscores the importance of prompt medical therapy for those experiencing serious symptoms, such as shortness of breath, in patients with underlying medical conditions, and among First Nations people," states lead researcher Dr. Ryan Zarychanski.

In the study, Dr. Zarychanski and colleagues also found that First Nations ethnicity was associated with severe H1N1 disease requiring ICU admission. The proportion of First Nations people increased as the severity of disease increased; 28% of confirmed [H1N1](#) cases in the community occurred in First Nations people, compared with 54% of hospital admissions and 60% of admissions to the ICU. Similar trends have been observed in Aboriginal communities in Australia and New Zealand. This is "consistent with historical records from the 1918 Spanish [influenza](#) pandemic, during which mortality in Aboriginal communities was far higher than in non-Aboriginal communities," write the authors.

While the authors note that a genetic predisposition hypothesis is interesting, Aboriginal peoples in Canada, Australia and the Torres Strait do not share common ancestry. "What they do have in common is a history of colonization, combined with historic and continuing social inequities that have led to significant health disparities," write the authors. They also suggest the increased risk for First Nations peoples may be because of substandard living conditions, low income, diet, additional health issues or lack of access to health care.

These findings may have implications for public, and health care provider education, as well as for future public health planning and community outreach programs in the face of the current, or future outbreaks.

More information: <http://www.cmaj.ca/cgi/doi/10.1503/cmaj.091884>

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