

## Influenza in Singapore: Assessing the Burden of Illness in the Community

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### Abstract

**Introduction:** Influenza infection has significant morbidity and mortality. The social and economic costs from work absence in the working population and from hospitalisations in the elderly are considerable. Meta-analyses of cohort and randomised controlled studies indicate that influenza vaccination is effective in preventing respiratory illness, hospitalisation, pneumonia and death in 50% to 68% of cases. In Singapore, data on the disease burden from influenza are sparse and no official recommendation on influenza vaccination exists. **Method:** We estimated the disease burden of influenza-like illness (ILI), influenza infection in the general adult population, and hospitalisations and deaths from pneumonia and influenza, from routine official and published sources, ad hoc community sample surveys, national virological surveillance, hospitalisation and mortality data. **Results:** In a resident population of 3 million people, there were 4.2 million cases of ILI in a typical non-epidemic year, 3.5 million visits to the doctor and 2.1 million days of work absence due to ILI. Data from the National Influenza Surveillance Programme indicated that about 15% of patients with ILI were positive for influenza isolates. We therefore estimated 630,000 cases of influenza virus infection cases a year, giving rise to 520,000 sick visits and 315,000 days of sick absence from work. About 4200 elderly (65+) persons were hospitalised for pneumonia and influenza, resulting in about 1450 deaths every year. The literature suggests a vaccine efficacy of about 50% of preventing influenza and its complications, including hospitalisations and deaths. This indicates that at least 315,000 cases of influenza virus infection, 258,000 sick visits, and 157,000 lost days from work in the whole population, and 2100 hospitalisations and 600 deaths from pneumonia in the elderly are potentially preventable by vaccination each year. **Conclusion:** Influenza poses a considerable burden of illness in the community and the potential benefits from influenza vaccination are substantial.

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**Key words:** Hospitalisation, Influenza-like illness, Influenza infection cases, Mortality, Sick visits, Work absence

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