

# Indirect costs due to influenza and influenza-like illness in Switzerland: results of the Swiss Sentinel Surveillance Network in a non-pandemic era.

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## Abstract

### *Background*

The incidence of influenza and influenza-like-illnesses in Switzerland is generally high. Although related direct medical costs can be substantial, especially if hospitalisations occur, several studies suggested that indirect costs due to the loss of productivity may represent an even higher economic burden. The aim of this study was to assess the costs arising from lost productivity due to influenza and influenza-like illnesses in Switzerland.

### *Methods*

Analyses were based on data collected in 2016 and 2017 by the Swiss Sentinel Surveillance Network of the Swiss Federal Office of Public Health (SFOPH). The available information covered details on the physicians collecting the data, patients' characteristics, symptoms, treatments, and inability to work (in terms of physician-recorded workdays lost for own sickness or caregiving). The cost of lost productivity, estimated using the human capital approach, was calculated as the number of workdays lost due to ILI multiplied with the mean salary for one working day. Salary differences across sex, age, and regions were considered. Extrapolation to the national level was performed by adjusting for the size of the Swiss population, the age and sex distribution, the regional distribution, the number of Sentinel general physician contacts, and the specialization of the physician.

### *Results*

At the Swiss national level, the estimated total yearly number of cases of inability to work due to influenza and ILIs was 101,287 in 2016 and 86,373 in 2017. In subgroups defined by year, gender, region, and age class, numbers of cases per 100,000 inhabitants ranged from 12 to 2,396. The total number of workdays lost in Switzerland, considering degree of employment and visit day, were estimated to be 324,118 in 2016 and 278,121 in 2017. The number of workdays lost was generally higher in men (53.7% of the total in 2016 and 55.6% of the total in 2017) than women. The estimated total costs due to inability to work, calculated using a human capital approach and including the caregiving costs, were CHF 115 million in 2016 and CHF 103 million in 2017, equivalent to CHF 1.4 million per 100,000 inhabitants.

### *Conclusion*

The costs of lost productivity due to influenza and influenza-like-illnesses in Switzerland are substantial and may vary considerably between different years, regions, and age classes. As the present analyses could not consider all causes of lost productivity (e.g. short-term inability to work not requiring a physician consultation, hospitalisations, early retirement, premature death), the total indirect costs due to influenza or influenza-like-illnesses can be expected to be higher than the presented estimates.