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Economic Burden due to Seasonal Influenza in Subjects Aged 50-64 in the USA

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INTRODUCTION



- Seasonal influenza can cause significant strain on hospitals, healthcare systems and unsustainable demand for medical resources (HCP time, hospital beds, ventilators, etc.)
- Even though prevention measures exist, low risk perception, particularly in working age populations, remains one of the main drivers for low VCRs¹
- Several studies have quantified in the past the economic burden caused by seasonal influenza in the USA^{2,3,4}
- However, up-to-date economic data are currently needed, with a focus on working age populations



OBJECTIVE

To estimate the economic burden caused by seasonal influenza in subjects aged 50-64 in the USA, from a societal perspective

METHODS

- This retrospective analysis was conducted covering the seasons from 2012-13 through 2022-23, excluding the 2020-21 (SARS-CoV-2 pandemic)
- We have used CDC estimates for⁵
 - Influenza illness rates
 - Medical visit rates
 - Hospitalization rates
 - Mortality rates

- Unitary costs were based on a published systematic literature review⁶ and its later update
- Key parameters used for quantifying the economic burden in 2024 are:
 - Demographic profile: yr. 2024
 - Life expectancy: 79.9 yrs.
 - Currency: 2024 US\$
 - Discount rate: 3%



Age Group
50 – 64 Years



Study Period
10 influenza seasons, 2012-13 through 2022-23 excluding 2020-21



Study Location
USA

RESULTS

- We estimated the current seasonal influenza burden for subjects aged 50-64, in the USA, at

Disease Burden



- 3.2 million outpatient visits/yr. [2.3, 5.2]
- 78 thousand hospitalizations/yr. [61, 126]
- 4.4 thousand fatal cases/yr. [3.0, 8.2]

Economic Burden



Direct Medical costs

- Total cost: US\$ 3.5 billion/yr. [0.2, 25.3]
- Highest contributor is hospitalization; US\$ 2.4 billion/yr. [0.16, 16.7]

Indirect Medical Costs

- US\$ 2.9 billion/yr. [2.2, 4.8] due to work absenteeism associated with influenza-related symptomatic illness cases, medical visits and hospitalizations

Societal Impact

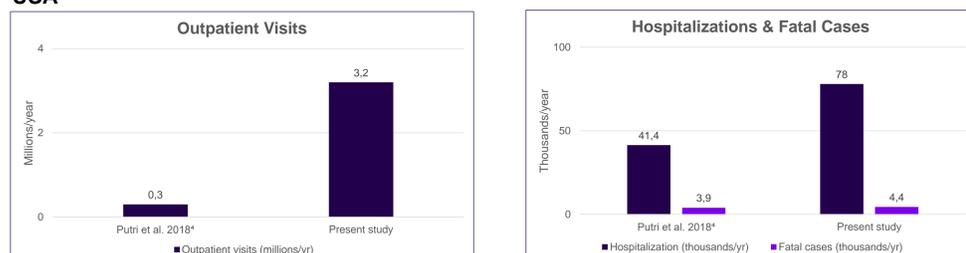


- 69 thousand [48, 129] discounted YLLs[#]
- US\$ 5.9 billion/yr. [4.1, 11.1] caused by influenza related mortality[†]

[#]By considering a life expectancy of 79.9 yr. and a discount rate of 3%

[†]By considering the aforementioned discounted YLLs and a GDP/capita at US\$ 85 thousand/yr

Figure 1: Outpatient Visits and Hospitalizations & Fatal Cases in the 50-64 Population in the USA



- The present study estimates **3.2 million outpatient visits, 78,000 hospitalizations, and 4,400 fatal** cases per year for the 50-64 population in the USA which was 10.67, 1.88 and 1.13 times higher respectively, compared to the Putri *et al.* study

CONCLUSIONS



- The total economic burden of seasonal influenza for individuals aged 50-64 in the USA is estimated to be **\$6.4 billion per year**, with significant contributions from both hospitalization-related direct medical costs and absenteeism-related indirect costs
- Burden is currently underestimated in the literature
- Wider and stronger prevention measures are required

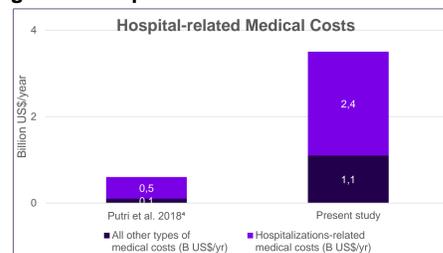
ABBREVIATIONS

CDC: USA centers for disease control and prevention; GDP: gross domestic product; HCP: healthcare professional; SARS-CoV-2: severe acute respiratory syndrome coronavirus 2; USA: United States of America; VCR: vaccination coverage rate; YLL: years of life lost; yr: year.

REFERENCES

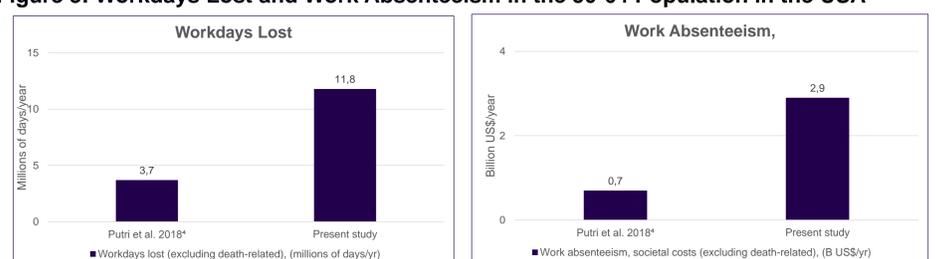
- PLoS One. 2017;12:e0170550.
- Vaccine. 2007;25:5086–5096.
- Health Aff (Millwood). 2016;35:2124–2132.
- Vaccine. 2018;36:3960–3966.
- U.S. Influenza Surveillance: Purpose and Methods. Available at: [U.S. Influenza Surveillance: Purpose and Methods | FluView | CDC](#). Accessed on October 21, 2024.
- Influenza Other Respir Viruses. 2022;16:376–385.

Figure 2: Hospital-related Medical Costs in the 50-64 Population in the USA



Hospitalization-related medical costs and all other types of medical expenses are higher in the present study compared to the Putri *et al.* study (**\$2.4 vs \$0.5 billion/yr**) and (**\$0.1 vs \$0.1 billion/yr**) respectively

Figure 3: Workdays Lost and Work Absenteeism in the 50-64 Population in the USA



- The present study estimates are approximately **3.19 and 4.14 times higher** for work absenteeism (days lost) and societal costs, respectively, compared to the Putri *et al.* study

This shows that the **economic burden** caused by seasonal influenza in the USA is **heavily underestimated** in the literature, and the **present study is providing the data/evidence to demonstrate it**

Strengths



- Comprehensive and up-to-date analysis of economic burden
- Fully calibrated using CDC data
- Based on a systematic review of the literature for unitary costs
- Utilizes straightforward annotated calculations for traceability and comparability

Limitations



- Natural levels of uncertainty remain, as CDC data rely on in-hospital surveillance systems that cover 9% of the total population in the USA

CONFLICTS OF INTEREST

AD, JBH, GO and MT are Sanofi employees and may hold shares in the company

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