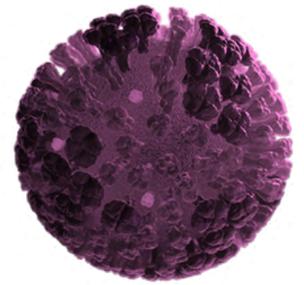




# InFluNews



The monthly newsletter from the Global Influenza Initiative (GII)

JUNE 2021 | ISSUE 3

Welcome to the latest issue of InFluNews. This edition is guest edited by Raina MacIntyre.

The last issue of InFluNews\* (April 2021) considered the implications of SARS-CoV-2 control measures, such as non-pharmaceutical interventions (NPIs), on future influenza seasons and vaccination campaigns. The nature and stringency with which the measures have been disseminated has varied widely between countries and geographical regions.

It is perhaps still too early to predict with confidence what effect NPIs might have on future influenza transmission and incidence. However, there is a potential for future influenza vaccination campaigns to become more widely accepted following the introduction of COVID-19 immunisation programmes.

This issue of InFluNews considers the broader burden of seasonal influenza for people with specific risk factors, such as cardiovascular disease and/or diabetes.

## Understanding the broader burden of seasonal influenza – overview

While most cases of influenza resolve spontaneously, illness can be severe, resulting in hospitalisation and sometimes death.<sup>1</sup> Most severe cases occur in high-risk patient groups: it is estimated that 99% of deaths in children under the age of five with influenza-related lower respiratory tract infections occur in developing countries.<sup>2</sup>

Estimating the annual burden of influenza can help health authorities prepare for seasonal outbreaks and implement prevention strategies to prepare for a pandemic outbreak.<sup>3</sup> However, many countries still do not have the resources and infrastructure to undertake these estimates.

## FOCUS THIS MONTH

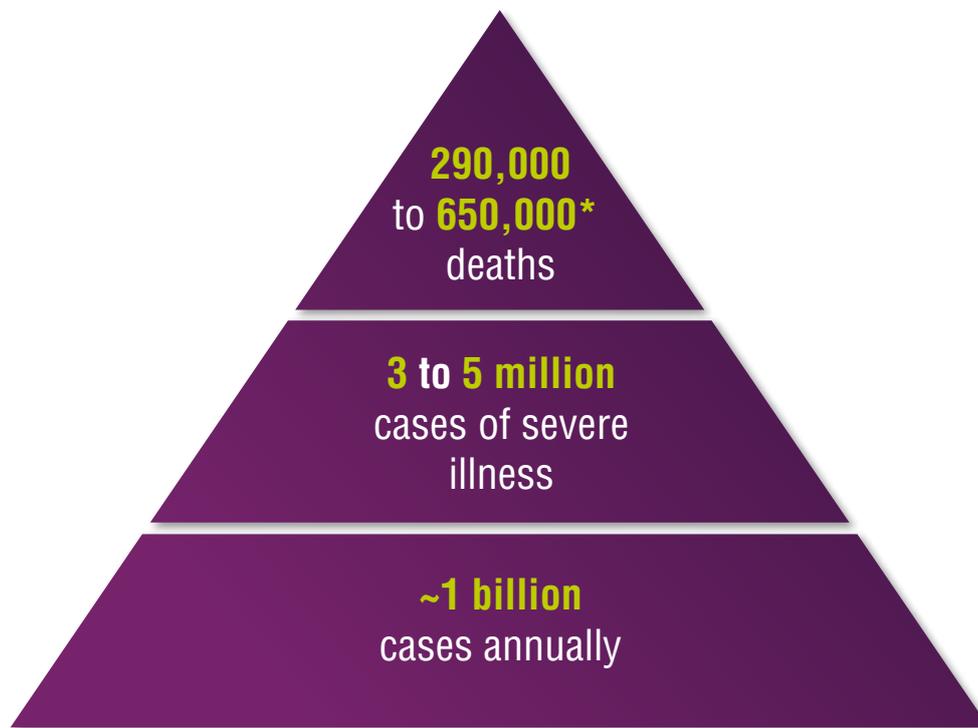
### THE BROADER BURDEN OF SEASONAL INFLUENZA

What are the wider effects of influenza infection on individuals with specific risk factors?

Influenza virus image from CDC/Douglas Jordan.

\*Previous newsletters may be requested from one of the GII co-chairs, John Paget or Bruno Lina.

## Latest estimates of the worldwide burden of influenza



Source: WHO Global Influenza Strategy 2019-2030.<sup>4</sup>

\*Influenza-related respiratory deaths: WHO estimate at December 2017.<sup>5</sup>

## High-risk groups: cardiovascular disease

An association between influenza and cardiovascular (CV) events was observed more than 80 years ago.<sup>6</sup>

*The following are highlights of a presentation which focused on influenza and CV events, made by Professor Ann Falsey (University of Rochester, New York) at the IKEEP webinar on April 27th 2021: Seasonal influenza updates: global burden, prevention & the impact of COVID-19 on surveillance and transmission.<sup>7</sup>*

A substantial body of subsequent evidence indicates that influenza infection may act as a trigger for myocardial infarction and cardiovascular deaths:

- Between 3.1% and 3.4% of MI-related deaths in England and Wales as well as 3.9% to 5.6% in Hong Kong were attributed to influenza<sup>8</sup>
- Influenza-like illness may double the risk of a MI<sup>9</sup>
- Additional evidence from Canada, Scotland and Denmark indicates increased rates of MI and stroke in people recently experiencing influenza infections<sup>10-12</sup>

Influenza vaccination appears to reduce these risks: one meta-analysis found that vaccination was associated with a 36% reduction in major cardiovascular events.<sup>13</sup> The greatest benefit seemed to be derived by patients at highest risk.<sup>13</sup>

## Diabetes doubles the risk of death from influenza infection

Diabetes is associated with increased health risks from influenza infection. Diabetes doubles the risk of death from influenza infection compared with healthy people. People with diabetes also appear to be at increased risk of severe influenza infection:<sup>14</sup>

  
**2x** risk of influenza hospitalisation

  
**4x** risk of intensive care admission

  
**2x** risk of fatal infection

Although the underlying causative mechanisms are currently unknown, variations in glycaemic levels may be a contributing factor.<sup>15</sup>

Vaccination against influenza viruses may be able to reduce the risk of infection severity:

- Influenza vaccination reduced hospitalisations during two influenza epidemics (1989-90 and 1993) by 79% in a UK case control study of 80 working-age people with diabetes and 160 controls<sup>15,16</sup>
- In people of working age with diabetes, hospitalisations for influenza or pneumonia were reduced by 43% and all-cause mortality by 28% in those who had received an influenza vaccination in a Canadian population-based cohort study<sup>20</sup>
- In elderly patients with diabetes, various studies have found reductions in the complications of influenza infections:
  - 12% reduction in hospitalisations (vs. 23% in those who were not vaccinated) in a large cohort study of patients from an Israeli health maintenance company's diabetes registry<sup>17</sup>
  - 56% overall reduction in complications, 54% reduction in hospitalisations and a 58% reduction in mortality in a case-control study: evidence from the PRISMA study of primary care patients recommended for influenza vaccination during the 1999-2000 influenza A epidemic<sup>18</sup>
  - All-cause mortality was reduced by 33% in a Spanish population-based cohort study during the influenza seasons of 2002 to 2005<sup>19</sup>

Influenza vaccination is currently recommended by the WHO and various national health bodies for high-risk people, including elderly people and those with long-term health conditions.<sup>1</sup>

## GII guest editor Raina MacIntyre comments:

*“The greatest burden of chronic disease in the world is from cardiovascular disease. Any ability of influenza vaccines to prevent this will be beneficial. The COVID-19 pandemic has had many lessons for us, including about control of influenza. The non-pharmaceutical measures such as social distancing, face masks and lockdowns have also reduced the incidence of influenza.<sup>21,22</sup> The observations, especially around masks, also suggest airborne transmission of influenza, which has been shown previously by many researchers<sup>23</sup>, but is largely unaddressed in infection control guidelines. Influenza vaccination is now more important than ever because of the low incidence and waning immunity.”*

## GII summary statement

It is well documented that people with chronic conditions, such as cardiovascular disease and diabetes, are at greater risk of serious disease and death as a result of influenza infections. Despite this, influenza vaccination remains greatly underutilized as a preventative measure in these high-risk groups. As these are some of the same high-risk groups that are being prioritised for COVID-19 vaccination across the globe, we should not overlook the additional benefits that influenza vaccination can bring to these individuals. Influenza vaccination is also our best form of protection from a potential resurgence of influenza as COVID-control measures start to be eased in some countries.

## About the GII

The GII is a global expert scientific forum that includes international scientists, researchers and clinicians with expertise in epidemiology, virology, infectious diseases, immunology, health economics, public health, primary care and geriatrics.

The GII receives financial support from Sanofi Pasteur which covers the involvement of Ogilvy Health, a medical communications agency which acts as a secretariat for the GII as well as coordinating logistics for the annual meeting, managing other GII projects and offering strategic counsel.

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