Human seasonal influenza under COVID-19 and the potential consequences of influenza lineage elimination

An infographic representation of the publication by Dhanasekaran V, *et al. Nat Commun* 2022;13(1):1721.

Global Influenza Initiative

COVID-19 control measures caused an unprecedented global drop in influenza cases

99.8%

decrease in influenza cases in the **northern hemisphere** (Feb 2020 – May 2020)[1]

<12

influenza positive cases per week in the **southern hemisphere** (May 2020 – July 2021)[1]

The COVID-19 pandemic has also led to a reduction in influenza virus diversity

Influenza virus clades that were not circulating in 2021:

3 out of 8

A(H3N2) subclades (April 2020 – mid-2021)[1]

2

B/Victoria clades (April 2020 – mid-2021)[1]

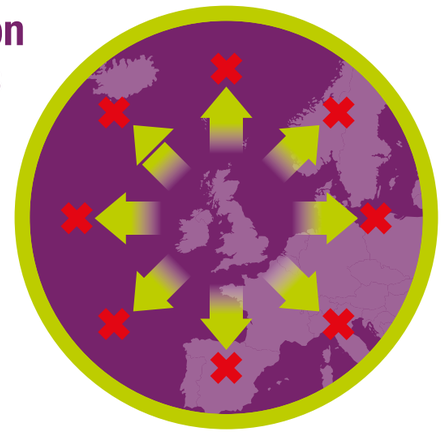
B/Yamagata lineage[2]

(March 2020 – Feb 2022) Potential elimination?[1]

Impact of potential B/Yamagata elimination:[1]

- increased susceptibility to influenza B viruses
- faster B/Victoria antigenic evolution
- possible future re-emergence

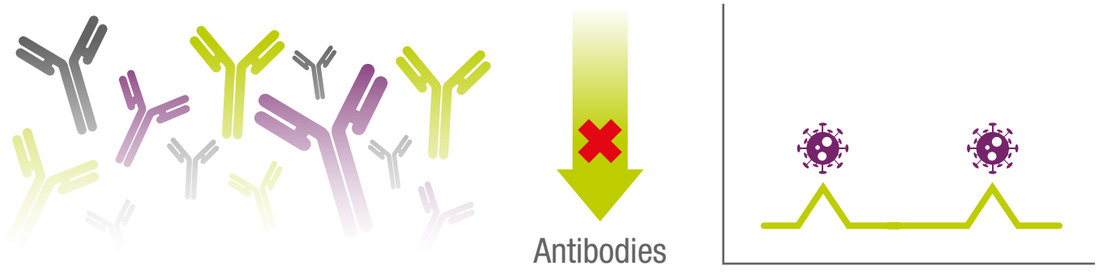
Global dissemination of influenza viruses was prevented during the pandemic[1]



Once influenza begins to circulate again:[1]

Divergent influenza lineages + waning immunity may lead to more severe influenza seasons

A small study from the Netherlands (n=165) suggests that antibody waning has been negligible so that future influenza epidemics will be similar to those before COVID-19:[3]



Global influenza activity rose steeply in February and March of 2022,[4] which may alter the course of influenza activity described by Dhanasekaran V, *et al.* and lead to an increase in genetic diversity[5]

"This further highlights the need for ongoing vigilance around influenza, as well as SARS-CoV-2" GII

Published May 2022. For further information on this topic see the April 2022 edition of InFluNews which can be found on the new GII LinkedIn page

MAT-ES-2201577 v1 Mayo 2022

References. 1. Dhanasekaran V, *et al.* Human seasonal influenza under COVID-19 and the potential consequences of influenza lineage elimination. *Nat Commun* 2022;13(1):1721. doi: 10.1038/s41467-022-29402-5. **2.** WHO. Recommended composition of influenza virus vaccines for use in the 2022-2023 northern hemisphere influenza season. 25 February 2022. Meeting Report. Available at: https://www.who.int/publications/m/item/recommended-composition-of-influenza-virus-vaccines-for-use-in-the-2022-2023-northern-hemisphere-influenza-season. **3.** Garza, Z.C.F *et al.* Impacts of the COVID-19 pandemic on future seasonal influenza epidemics. Preprint. doi: 10.1101/2022.02.05.22270494. Available at: https://www.medrxiv.org/content/10.1101/2022.02.05.22270494v1. **4.** WHO. FluNet. Global circulation of influenza viruses. Available at: https://apps.who.int/flumart/Default?ReportNo=6. **5.** Nivel/GII. FluCov Epi-Bulletin March 2022. Available at: https://www.nivel.nl/en/flucov.