

Evaluating seasonal influenza vaccine performance

The CDC highlights the key challenges of real-world observational studies of influenza vaccine performance:¹



include people with underlying medical conditions



schedules, storage and handling may not be followed precisely



have a risk of bias

An independent, ECDC-funded systematic review of influenza vaccines assessed the risk of bias using standard protocols, and the quality of evidence of included studies using the GRADE methodology²

GRADE (Grading of Recommendations, Assessment, Development and Evaluations) 'A transparent framework for developing and presenting summaries of evidence and provides a systematic approach for making clinical practice recommendations.'
Siemieniuk and Guyatt 2011³

The ECDC review provided several considerations for improving the quality of reporting on influenza vaccines²



A NACI review highlighted several factors which should be considered when interpreting influenza vaccine study data, including:⁴



Influenza seasonality



Vaccine mismatch with circulating strains

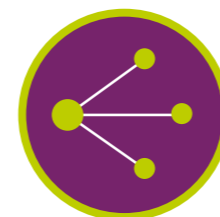


Indirect protection from vaccination

In summary, the evaluation of influenza vaccine performance is challenging because studies of VE:^{1-2,4}



often do not include RCTs



use different endpoints



have a risk of bias



may include low quality evidence



often lack key details



include diverse populations

'The use of standardised protocols would greatly aid the interpretation and comparison of effectiveness data.'
Prof. Bruno Lina
(GII co-chair)

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Abbreviations. CDC, US Centers for Disease Control and Prevention; ECDC, European Centre for Disease Prevention and Control; ICU, intensive care unit; IVY, Influenza Vaccine Effectiveness in the Critically Ill; LCI, laboratory-confirmed influenza; NACI, National Advisory Committee on Immunization of Canada; NVSN, New Vaccine Surveillance Network; RCT, randomised controlled trial; VE, vaccine effectiveness.
References. 1. CDC. How flu vaccine effectiveness and efficacy are measured. Available at: <https://www.cdc.gov/flu/vaccines-work/effectivenessqa.htm>. Accessed June 2022. 2. European Centre for Disease Prevention and Control. Systematic review of the efficacy, effectiveness and safety of newer and enhanced seasonal influenza vaccines for the prevention of laboratory-confirmed influenza in individuals aged 18 years and over. Stockholm: ECDC; 2020. Available at: [seasonal-influenza-vaccines-systematic-review-efficacy.pdf](https://ecdc.europa.eu/en/systematic-review-of-the-efficacy-effectiveness-and-safety-of-newer-and-enhanced-seasonal-influenza-vaccines-for-the-prevention-of-laboratory-confirmed-influenza-in-individuals-aged-18-years-and-over) (europa.eu). Accessed June 2022. 3. Siemieniuk R and Guyatt G. What is GRADE? BMJ Best Practice. Available at: <https://bestpractice.bmj.com/info/toolkit/learn-ebm/what-is-grade/>. Accessed June 2022. 4. National Advisory Committee on Immunization (NACI) of Canada. Literature review update on the efficacy and effectiveness of high-dose (Fluzone® High-Dose) and MF59-adjuvanted (Fluad®) trivalent inactivated influenza vaccines in adults 65 years of age and older. 1 May 2018. Available at: <https://publications.gc.ca/site/eng/9.852907/publication.html>. Accessed June 2022.