

DSEN ABSTRACT

Systematic Review on the Cost-Effectiveness of Seasonal Influenza Vaccines in Older Adults

Summary

- We conducted a systematic review to assess the relative cost-effectiveness of various influenza vaccine options for older adults. We identified 27 eligible studies and 40 pairwise vaccine comparisons. The evidence indicates that QIV, TIV-HD, and TIV-ADJ are cost-effective compared to TIV at a WTP threshold of \$50,000 per QALY.

Key messages

- Future studies should evaluate the cost-effectiveness of both new and existing vaccine options across diverse age groups, employing robust methodologies to address uncertainties in methodology, structure, and parameters.
- From a public health perspective, the results of this review support the vaccination of older adults with QIV, TIV-HD, and TIV-ADJ.

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What is the issue?

- Influenza impacts older adults substantially through high mortality, healthcare demands, and productivity losses; vaccines reduce these effects but vary in effectiveness, often below 60%, due to age-related immune changes.
- Various vaccine types, such as trivalent (TIV) and quadrivalent (QIV), including high-dose (TIV-HD) and adjuvant versions (TIV-ADJ), are designed to improve protection for older adults, with availability differing across countries.
- While vaccination programs are supported by cost-effectiveness reviews, evidence for recommending specific vaccine options for older adults remains limited.

What was the aim of the study?

- The purpose of the systematic review was to collect, synthesize, and assess the best available evidence on relative cost-effectiveness of all influenza vaccine options for older adults.

How was the study conducted?

- We followed the Cochrane Handbook, International Society for Pharmacoeconomics and Outcomes Research (ISPOR) guidelines, and JBI guide for systematic reviews with cost-effectiveness outcomes to inform the review. We reported the review using Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines (PRISMA 2020).
- We searched MEDLINE, JBI evidence-based practice, Embase, PsycINFO, and Cochrane Central registry of RCTs from inception to October 29, 2020, supplemented by grey literature per Canada's Drug Agency guidelines.
- We included studies on older adults or general populations with stratified data for older adults, focusing on approved influenza vaccines in Canada/US and all economic valuation types (cost-effectiveness, cost-utility, and cost-benefit analyses).
- Costs were converted to 2019 Canadian and cost-effectiveness results were reported using the JBI dominance classification table. We evaluated study quality using the JBI Critical Appraisal Checklist and assessed generalizability with Heyland's checklist.

What did the study find?

- After screening 2015 citations, 27 unique studies were included. 40 pairwise comparisons and four vaccine types (QIV, TIV-HD, TIV-ADJ, and TIV) were assessed. The evidence suggests QIV, TIV-HD, and TIV-ADJ are cost-effective against TIV for a willingness-to-pay (WTP) threshold of \$50,000 per quality-adjusted life year (QALY).
- Although the methodological quality varied across studies, the direction of cost-effectiveness results was consistent.

This research was funded by CIHR – Drug Safety and Effectiveness Network and conducted by investigators affiliated with the following institutions:



Link to publication: <https://pubmed.ncbi.nlm.nih.gov/35659487/>; PMID: 35659487