

# Cost-Effectiveness of Influenza Vaccination Compared to Other Adult Preventive Measures: A Structured Literature Review of Published Evidence

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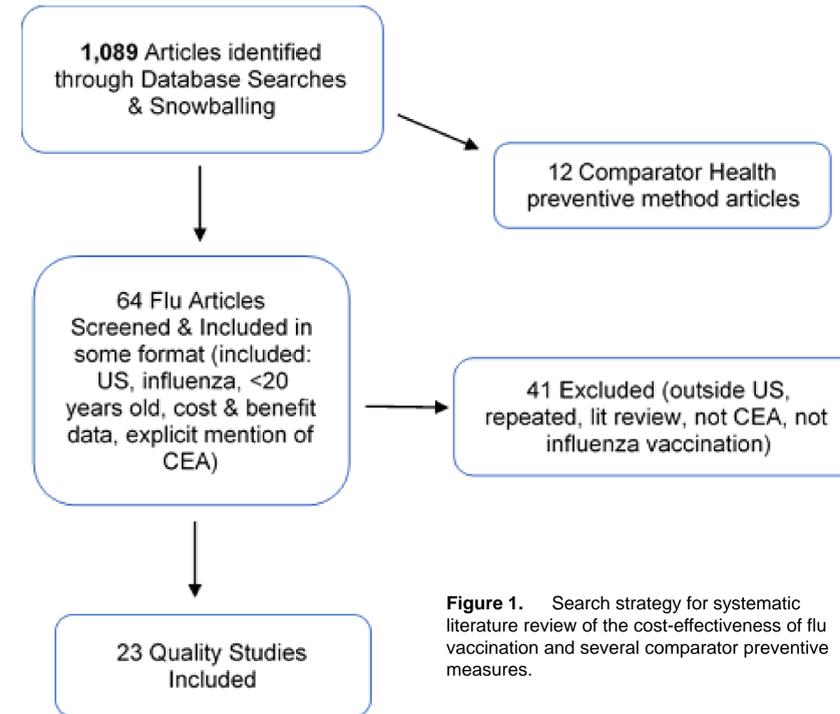
**Adult influenza vaccination is a highly cost-effective public health intervention/investment as measured by cost per QALYs saved.**

## BACKGROUND & GOALS

- The Centers for Disease Control and Prevention (CDC) recommends that all people over 6 months of age receive an influenza (flu) vaccine yearly.
- Only 40.6% of adults received the flu vaccine in 2016.<sup>1</sup>
- 69% of women ≥45 years underwent mammography.<sup>2</sup>
- 59.1% of adults ≥50 years underwent colorectal cancer screening.<sup>3</sup>
- 51% adults ≥20 years meeting ADA and USPSTF-2008 criteria reported being tested for type 2 diabetes.<sup>4</sup>
- Incomplete vaccination coverage and other evidence suggests that some providers are not aware of its cost-effectiveness (CE) profile.
- This structured literature review aims to compare the cost-effectiveness of flu vaccination relative to other adult preventive health interventions.

## METHODS

- We searched the published literature on cost-effectiveness of flu vaccination and other health interventions recommended by the U.S. Preventive Services Task Force.<sup>5</sup>
- We utilized all major databases (e.g., Pubmed, ProQuest, EBSCO) and used a snowball approach to expand article list
- Interventions included flu vaccination, colorectal cancer (CRC) screening, diabetes screening, breast cancer screening.
- Cost-effectiveness papers using a societal perspective were chosen.
- QALYs (Quality Adjusted Life Year) were used as the CE measure
- Study quality was assessed using a checklist developed by Drummond and low quality studies excluded.<sup>6</sup>
- The cost-effectiveness of all interventions were extracted from the papers chosen for review.
- The comparator for each intervention is status quo i.e. no intervention
- All cost-effectiveness outcomes were adjusted to 2015 U.S. dollars.
- Point estimates of the CE of flu vaccination and for other preventive services were plotted to show relative cost-effectiveness.



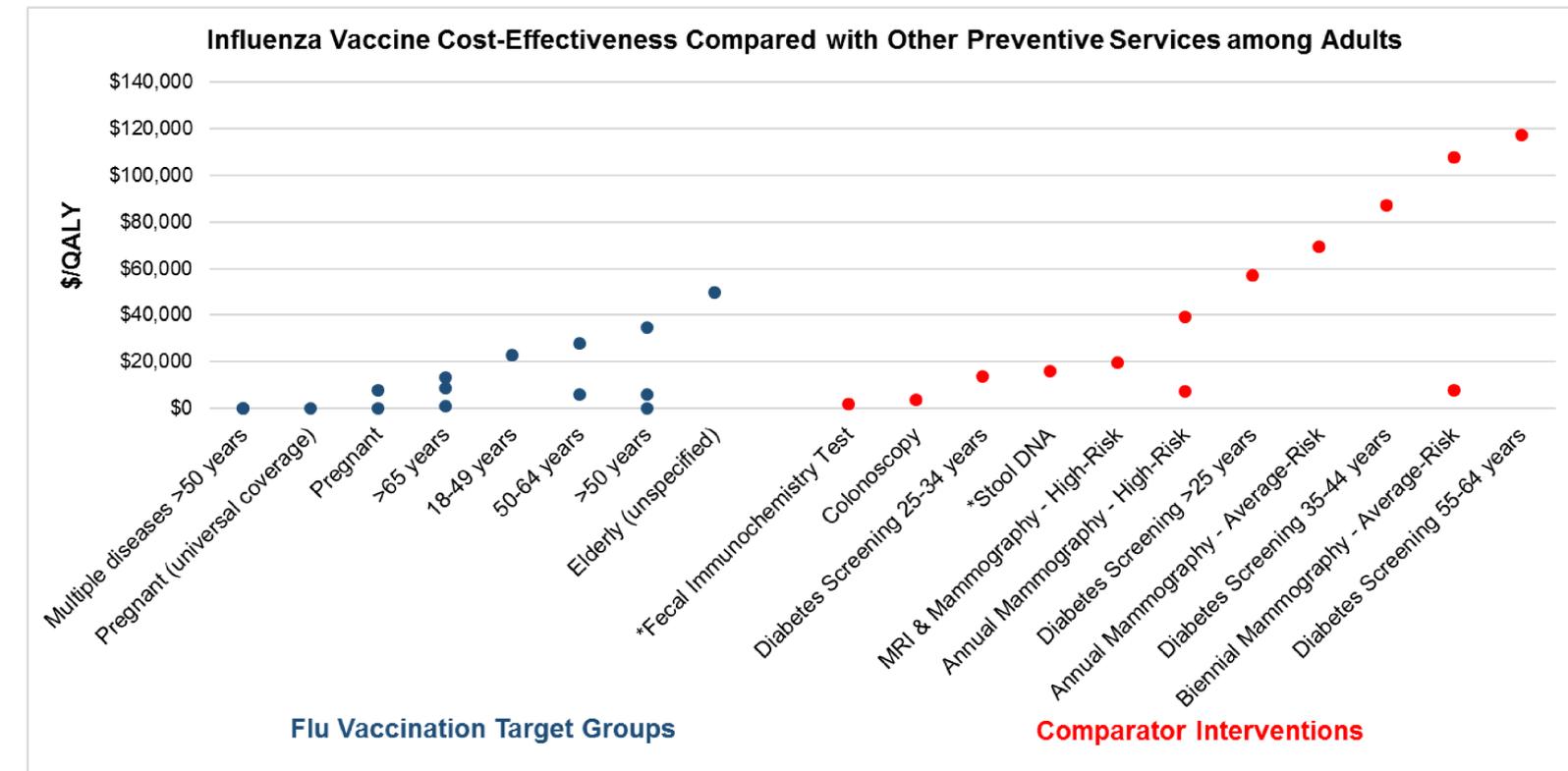
**Figure 1.** Search strategy for systematic literature review of the cost-effectiveness of flu vaccination and several comparator preventive measures.

## RESULTS

- 23 high quality CE studies of flu vaccination, and 12 high quality studies of CE of comparator preventive measures were identified.
- Flu vaccination CE range is \$0 to \$50,000 per QALY saved among adults – and is oftentimes *cost saving*.
- Colorectal cancer screening: \$1,579 to \$15,762 per QALY saved
- Type 2 diabetes screening: \$13,376 to \$116,908 per QALY saved
- Breast cancer screening: \$7,227 to \$107,677 per QALY saved
- No tobacco cessation articles were included due to lack of eligible and comparable resources.

## DISCUSSION / CONCLUSIONS

- We found a number of high quality studies of the CE of flu vaccination in different target populations.
- We found fewer but sufficient numbers of high quality studies of the CE of several comparison interventions.
- The CE of flu vaccination compares very favorably with those of other common preventive measures.
- The cost-effectiveness of flu vaccination in adults as a preventive health intervention, in light of current levels of vaccination coverage, suggests there are opportunities for increased investment of time and resources to improve vaccination rates in adult populations.



**Figure 2.** The chart plots in blue (●) the cost (\$) per QALY saved for each flu vaccination target populations we studied (e.g., pregnant women, those with multiple chronic diseases, older adults). The chart also plots in red (●) the cost (\$) per QALY saved for each of several common preventive measures.  
 \*Common colorectal cancer screening methods  
 Note: Each point refers to an article.