McMaster University | Health Forum

Living Evidence Synthesis appendices

Effectiveness of trivalent and quadrivalent influenza vaccines in preventing infection, hospitalization, and severe outcomes in the 2024–2025 season onwards

21 May 2026

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Appendices

Appendix 1: Detailed search strategy

Databases searched:
- MEDLINE+ PUBMED via OVID
- Clinical trials registry: https://clinicaltrials.gov/

Search limits: 2023–current

Database retrieval: Effectiveness

Databases	03/03/2026
MEDLINE+ EMBASE via OVID	7,294
Preprint Citation Index	109
Clinical trials	199

MEDLINE+ EMBASE via OVID search:

#1	Influenza.mp. [mp=ti, ab, hw, tn, ot, dm, mf, dv, kf, fx, dq, bt, nm, ox, px, rx, ui, sy, ux, mx]
#2	exp Influenza/
#3	exp vaccine/
#4	exp vaccination/
#5	vaccin*.mp.
#6	trivalent.mp.
#7	quadrivalent.mp.
#8	1 or 2
#9	3 or 4 or 5 or 6 or 7
#10	exp influenza vaccine/
#11	8 and 9
#12	10 or 11
#13	(effectiveness or efficacy or protection*).mp.
#14	12 and 13
#15	limit 14 to humans

#16	limit 15 to yr="2023 -Current"
#17	remove duplicates from 16

Preprint Citation search:

#1	(TS=(Influenza)) AND TS=(vaccin* OR trivalent OR quadrivalent)) AND TS=((effectiveness OR efficacy OR protection))

Appendix 2: Summary of studies reporting on the effectiveness of trivalent and quadrivalent influenza vaccines in preventing infection, hospitalization, and severe outcomes

Reference (author year), with URL	Clinical features	Study characteristics (type of publication, vaccine effectiveness analysis methods, setting and country)	Sample description and intervention	Summary of key findings in relation to the outcome

Frutos 2025 (1)	• Population studied
	  ○ General population (all ages)
	  ○ Older adults (aged ≥65 years)
	  ○ Children and adolescents aged 6 months to 17 years
	• Type of vaccine
	  ○ Trivalent inactivated influenza vaccine (IIV3)
	  ○ Trivalent live attenuated vaccine (LAIV3)
	  ○ Other (trivalent recombinant influenza vaccine)
	• Comparator
	  ○ Unvaccinated individuals
	• Testing
	  ○ Nucleic acid testing (RT-PCR)
	• Outcome measures
	  ○ Vaccine effectiveness
	• Influenza-related outcome
	  ○ Medically attended acute respiratory illness
	  ○ Hospitalization
	• Timeframe (specimens collected)
	  ○ End of season 2024/25 (between 1 October 2024 and 31 March 2025)
		Type of publication: Peer reviewed
		
		Study design: Test-negative case-control
		
		Analysis: Multivariable logistic regression adjusted for geographic region, age, calendar time of illness was used; VE was calculated using the following equation: VE = (1 – adjusted odds ratio) x 100%
		
		Setting and country: Four CDC-affiliated vaccine effectiveness networks (Investigating Respiratory Viruses in the Acutely Ill Network (IVY); New Vaccine Surveillance Network (NVSN); U.S. Flu Vaccine Effectiveness (U.S. Flu VE); Virtual SARS-CoV-2, Influenza, and Other respiratory viruses Network (VISION)) in the United States
			• 3,175 adult participants were included from the IVY network
			• 4,611 participants <18 years were included from NVSN; 2,969 were outpatients and 1,642 were hospitalized
			• 3,344 participants were included from the U.S. Flu VE network; 1,134 were <18 years and 2,210 were adults
			• 139,558 outpatients were included from the VISION network; 36, 919 were patients <18 years and 102,639 were adults
			• 32,671 hospitalized patients were included from the VISION network; 1,638 were <18 years and 31,033 were adults
			• Among control patients <18 years proportion of outpatients vaccinated against influenza ranged from 22% in the VISION network to 34% in the NVSN network; in hospitalized patients 27% (VISION) to 40% (NVSN) were vaccinated
				• Influenza VE against medically attended influenza infection in outpatients by network:
				  ○ VISION: 56% (95% CI: 54–58%)
				  ○ U.S. Flu VE: 42% (95% CI: 29–54%)
				• VE against medically attended influenza infection in outpatients <18 years old by network:
				  ○ NVSN: 59% (95% CI: 47–68%)
				  ○ U.S. Flu VE: 32% (95% CI: 1–54%)
				  ○ VISION: 60% (95% CI: 56–63%)
				• VE against influenza hospitalization in patients <18 years old by network:
				  ○ NVSN: 63% (95% CI: 41–76%)
				  ○ VISION: 78% (95% CI: 60–89%)
				• VE against medically attended outpatient influenza A(H1N1)pdm09 infection in patients <18 years by network:
				  ○ NVSN: 72% (95% CI: 59–81%)
				  ○ U.S. Flu VE: 53% (95% CI: 3–79%)
				• VE against influenza A(H1N1)pdm09 hospitalization in patients <18 years in the NVSN network: 63% (95% CI: 30–81%)
				• VE against medically attended outpatient influenza A(H3N2) infection in patients <18 years by network:
				  ○ NVSN: 42% (95% CI: 19–58%)
				  ○ U.S. Flu VE: 16% (95% CI: –34–49%)
				• VE against influenza A(H3N2) hospitalization in patients <18 years in the NVSN network: 55% (95% CI: 14–77%)
				• VE against medically attended outpatient influenza infection in adults by network:
				  ○ U.S. Flu VE: 36% (95% CI: 16–51%)
				  ○ VISION: 54% (95% CI: 52–56%)
				• VE against influenza hospitalization in adults by network:
				  ○ IVY: 41% (95% CI: 28–52%)

Reference (author year), with URL	Clinical features	Study characteristics (type of publication, vaccine effectiveness analysis methods, setting and country)	Sample description and intervention	Summary of key findings in relation to the outcome
			• Among adult controls 34% of outpatients were vaccinated against influenza; 35% (IVY) to 39% (VISION) of hospitalized patients were vaccinated • Among controls 65 years or older 54% (VISION) to 59% (U.S. Flu VE) of outpatients were vaccinated against influenza; 45% (IVY) to 46% (VISION) of hospitalized patients were vaccinated	○ VISION: 55% (95% CI: 51–59%) • VE against medically attended outpatient influenza A(H1N1)pdm09 infection in adults in the U.S. Flu VE network: 42% (95% CI: 8–64%) • VE against influenza A(H1N1)pdm09 hospitalization in adults in the IVY network: 39% (95% CI: –14–67%) • VE against medically attended outpatient influenza A(H3N2) infection in adults in the U.S. Flu VE network: 25% (95% CI: –6–48%) • VE against influenza A(H3N2) hospitalization in adult patients in the IVY network: 51% (95% CI: 22–69%) • VE against medically attended outpatient influenza in adults aged 18–64 years by network: ○ U.S. Flu VE: 37% (95% CI: 16–53%) ○ VISION: 56% (95% CI: 53–58%) • VE against influenza hospitalization in adults aged 18–64 years by network: ○ IVY: 48% (95% CI: 28–63%) ○ VISION: 51% (95% CI: 41–59%) • VE against medically attended outpatient influenza infection in adults aged ≥65 years by network: ○ U.S. Flu VE: 18% (95% CI: –69–60%) ○ VISION: 51% (95% CI: 47–54%) • VE against influenza hospitalization in adults aged ≥65 years by network: ○ IVY: 38% (95% CI: 19–52%) ○ VISION: 57% (595% CI: 52–61%)
Separovic 2025 (2)	• Population studied ○ General population (all ages) • Type of vaccine ○ Other (inactivated and egg-based) • Comparator ○ Unvaccinated individuals (never vaccinated individuals in the studied seasons) • Testing	Study design: Test-negative design Analysis: No analysis section provided Setting and country: Community-based sentinel practitioners in Alberta,	• 4,421 participants were included; 609 (14%) were positive for influenza A and 3,812 (86%) were controls • 1,004 (23%) of participants were vaccinated for influenza including 101 (17%) cases and 903 (24%) controls	• Overall influenza A: VE of 54% (95% CI: 41–64%) • Influenza vaccine effectiveness against ARI with influenza A by age: ○ 1–64 years: 53% (95% CI: 37–64%) ○ ≥65 years: 59% (95% CI: 29–76%) • Adjusted vaccine effectiveness for A(H1N1) pdm09: 53% (95% CI: 36–65%) against ARI • Influenza vaccine effectiveness against ARI with Influenza A(H1N1)pdm09 by age: ○ 1–64 years: 50% (95% CI: 31–65%)

Reference (author year), with URL	Clinical features	Study characteristics (type of publication, vaccine effectiveness analysis methods, setting and country)	Sample description and intervention	Summary of key findings in relation to the outcome
	○ Nucleic acid testing RT-PCR ○ Other (multiplex assays) • Outcome measures ○ Vaccine effectiveness • Influenza-related outcome ○ Medically attended acute respiratory illness • Timeframe (specimens collected) ○ Mid-season 2024/25 (between 1 October 2024 and 31 January 2025)	British Columbia, Ontario, and Quebec, Canada		○ ≥65 years: 57% (95% CI: 16–78%) • Adjusted vaccine effectiveness for A(H3N2): 54% (95% CI: 29–70%) against ARI
Blanquart 2025 (3)	• Population studied ○ General population (all ages) • Type of vaccine ○ Quadrivalent inactivated influenza vaccine (IIV4) • Comparator ○ Unvaccinated individuals (never vaccinated individuals in the studied seasons) • Testing ○ Nucleic acid testing (RT-PCR) • Outcome measures ○ Vaccine effectiveness • Influenza-related outcome ○ Infection • Timeframe (specimens collected) ○ End of season 2024/25 (between 1 October 2024 and 31 March 2025)	Study design: Test-negative Analysis: A logistic (binomial) linear model was fitted to the test result as a function of sex, age category, PCR technique, week, and vaccination status; VE was estimated using the odds ratio of the vaccine effect on testing positive for influenza Setting and country: RELAB community laboratories (1,600), France	• 59,472 patients presented at RELAB community laboratories; 44,420 were influenza-negative and 15,052 were influenza-positive • Among influenza-negative patients 10,875 (24%) were vaccinated; among influenza-positive patients, 1,916 (13%) were vaccinated	• Vaccine effectiveness against influenza infection by influenza type and age: ○ Overall: 42% (95% CI: 37–46%) ○ Influenza A: ▪ Overall: 26% (95% CI: 18–34%) ▪ Age 0–64: 33% (95% CI: 22–43%) ▪ Age ≥ 65: 20% (95% CI: 6.9–32%) ○ Influenza B: ▪ Overall: 75% (95% CI: 66–82%) ▪ Age 0–64: 82% (95% CI: 74–88%) ▪ Age ≥ 65: 64% (95% CI: 27–82%) • Influenza vaccine effectiveness against influenza infection by age group: ○ Age 0–64: 60% (95% CI: 56–64%) ○ Age ≥65: 22% (95% CI: 13–30%) • Influenza vaccine effectiveness against influenza infection at the end of the period (January to February/weeks 1–5) by influenza type: ○ Overall: 40% (95% CI: 35–46%) ○ Influenza A: 22% (95% CI: 11–31%) • Influenza vaccine effectiveness against influenza infection over the school holiday (weeks 52–1) in individuals aged ≥65: 15% (95% CI: –6.7–33%) • Influenza vaccine effectiveness against influenza infection by type of symptoms and age: ○ Respiratory symptoms: ▪ Overall: 41% (95% CI: 36–46%)

Reference (author year), with URL	Clinical features	Study characteristics (type of publication, vaccine effectiveness analysis methods, setting and country)	Sample description and intervention	Summary of key findings in relation to the outcome
				▪ Age ≥65: 23% (95% CI: 13–32%) ○ Fever: ▪ Overall: 41% (95% CI: 35–47%) ▪ Age ≥65: 22% (95% CI: 9.1–33%)
Sun 2025 (4)	• Population studied ○ General population (all ages) • Type of vaccine ○ Trivalent inactivated influenza vaccine (IIV3) ○ Quadrivalent inactivated influenza vaccine (IIV4) • Comparator ○ Unvaccinated individuals (never vaccinated individuals in the studied seasons) • Testing ○ Nucleic acid testing (RT-PCR) • Outcome measures ○ Vaccine effectiveness • Influenza-related outcome ○ Infection • Timeframe (specimens collected) ○ Mid-season 2024/25 (between 1 October 2024 and 31 January 2025)	Study design: Test-negative Analysis: Logistic regression was used to estimate odds ratios for vaccination status; VE was calculated with the following formula: (1 – OR) x 100% Setting and country: Influenza Surveillance system with 40 sentinel hospitals and 19 network laboratories in Beijing, China	• 8,775 patients were included; 6,741 (76.8%) were influenza-negative and 2,034 (23.2%) were influenza-positive • Of 8,442 patients with available immunization information, 6.2% of cases (124/1,998) and 15.5% (1,000/6,444) were vaccinated against influenza	• Influenza vaccine effectiveness against infection by influenza type: ○ Overall: 48.5% (95% CI: 34.8–59.5%) ○ Influenza A(H1N1)pdm09: 48.7% (95% CI: 35.1–59.7%) • Influenza vaccine effectiveness against infection by age: ○ Age 0–5: 57.9% (95% CI: 15.2–80.6%) ○ Age 6–17: 34.9% (95% CI: 11.9–52.1%) ○ Age 18–59: 83.9% (95% CI: 64.1–94.0%) ○ Age ≥60: 52.9% (95% CI: 7.6–76.8%) • Influenza vaccine effectiveness against infection in people with or without comorbidities: ○ With comorbidities: 77.4% (95% CI: 24.8–95.1%) ○ Without comorbidities: 47.2% (95% CI: 32.9–58.7%) • Influenza vaccine effectiveness against infection in people by pneumonia status: ○ With pneumonia: 65.3% (95% CI: –41.3–94.9%) ○ Without pneumonia: 47.8% (95% CI: 33.7–59.1%) • Influenza vaccine effectiveness against infection by season of vaccination: ○ Vaccinated in the current season and the previous one: 54.9% (95% CI: 40.1–66.3%) ○ Vaccinated in the current season only: 52.5% (95% CI: 32.2–67.3%) ○ Vaccinated in the previous season only: 53.3% (95% CI: 36.6–66.0%)
Rose 2025 (5)	• Population studied ○ General population (all ages) • Type of vaccine ○ Trivalent inactivated influenza virus (IIV3) ○ Quadrivalent inactivated influenza virus (IIV4) • Comparator	Study design: Test-negative case-control Analysis: VE was calculated using the formula (1 – OR) x 100; logistic regression adjusted for measured	• Participants presenting ILI or ARI had specimens collected • Vaccinated participants were defined as having received the 2024/25 influenza vaccine at least	• VE against all laboratory-confirmed influenza in primary care for all ages: ○ Denmark: 53% (95% CI: 47–58%) ○ EU: 40% (95% CI: 26–52%) ○ U.K.: 44% (95% CI: 37–51%) • VE against all laboratory-confirmed influenza in hospital for all ages: ○ Denmark: 52% (95% CI: 45–58%)

Reference (author year), with URL	Clinical features	Study characteristics (type of publication, vaccine effectiveness analysis methods, setting and country)	Sample description and intervention	Summary of key findings in relation to the outcome
	○ Individuals who tested negative for Influenza but presented with similar symptoms • Testing ○ Nucleic acid testing (RT-PCR) • Outcome Measures ○ Vaccine effectiveness • Influenza-related outcome ○ Infection • Timeframe (specimens collected) ○ Mid-season 2024/25 (between 1 October 2024 and 31 January 2025	potential cofounding variables was used. Setting and country: Five single country studies and three multi-country studies across both primary care and hospital settings; primary care settings in Denmark, the United Kingdom, and the European Union; hospital settings in Denmark, England, Northern Ireland, Scotland, and European Union multi-country hospitals	14 days before symptom onset • Number of participants was not reported	○ England: 51% (95% CI: 48–55%) ○ EU: 52% (95% CI: 40–62%) ○ Northern Ireland: 60% (95% CI: 39–74%) ○ Scotland: 34% (95% CI: 28–39) • VE against Influenza A(H1N1)pdm09 in primary care for all ages: ○ Denmark: 72% (95% CI: 60–81%) ○ EU: 30% (95% CI: 7–47%) ○ U.K.: 44% (95% CI: 36–51%) • VE against Influenza A(H1N1)pdm09 in hospital for all ages: ○ England: 53% (95% CI: 44–61%) ○ EU: 50% (95% CI: 27–67%) ○ Scotland: 46% (95% CI: 33–56%) • VE against influenza A(H3N2) in primary care for all ages: ○ Denmark: 47% (95% CI: 20–65%) ○ EU: 29% (95% CI: –22–60%) ○ U.K.: 47% (95% CI: 24–63%) • VE against influenza A(H3N2) in hospital for all ages: ○ England: 31% (95% CI: –13–58%) ○ EU: 38% (95% CI: –11–66%) ○ Scotland: 49% (95% CI: –15–78%) • VE against influenza B in primary care for all ages: ○ Denmark: 74% (95% CI: 59–83%) ○ EU: 61% (95% CI: 38–76%) ○ U.K.: 58% (95% CI: 27–76%) • VE against influenza B in hospital for all ages: ○ England: 74% (95% CI: 63–82%) ○ EU: 82% (95% CI: 66–91%) ○ Northern Ireland: 88% (95% CI: 21–99%) ○ Scotland: 73% (95% CI: 45–87%)
2026 April (Round 3 included)				
Choi 2026 (6)	• Population studied ○ General population (all ages) ○ Older adults (aged ≥65 years) • Type of vaccine	Type of publication: Published study Study design: Test-negative case control	• A total of 3,954 patients from eight university hospitals in South Korea were included between November 2024 and April	• VE against influenza overall: ○ 20.4% (95% CI: 8.2-30.9) ○ 19-49 years: 5.9% (95% CI: -18.4-25.2) ○ 50-64 years: 46.8% (95% CI: 25.6-62.0) ○ ≥65 years: 18.8% (95% CI: -1.1-34.9)

Reference (author year), with URL	Clinical features	Study characteristics (type of publication, vaccine effectiveness analysis methods, setting and country)	Sample description and intervention	Summary of key findings in relation to the outcome
	○ Quadrivalent inactivated influenza vaccine (IIV4) ○ Cell-based/recombinant Influenza vaccines • Comparator ○ Unvaccinated • Testing ○ Nucleic acid testing-RT-PCR • Outcome measures ○ Vaccine effectiveness ○ Odds ratio • Influenza related outcome ○ Infection ○ Hospitalization • Timeframe (Specimens collected) ○ End of season 2024/25 (between 1 October 2024 and March 31, 2025) – Nov 2024 to April 2025	Analysis: Vaccine effectiveness (VE) was estimated by age, gender and date of diagnosis using logistic regression modeling; VE was adjusted for age, gender and underlying health conditions Setting and country: South Korea	2025, with 1,977 patients as influenza-positive cases and 1,977 patients as test-negative controls ○ Individuals aged ≥65 years made up 42.4% of the study population • Influenza was identified according to standard procedures using either RAT or RT-qPCR, with patient samples collected within symptoms days of symptom onset • South Korea introduced the MF59- adjuvanted quadrivalent influenza vaccine (Fluad® Quad) in 2023, followed by the introduction of the high-dose influenza vaccine (Eflueldа®) in 2024	• VE by influenza type ○ Influenza A (overall): 19.7% (95% CI: 7.2-30.5) ▪ 19-49 years: 5.7% (95% CI: -19.5-25.6) ▪ 50-64 years: 46.6% (95% CI: 24.8-62.0) ▪ ≥65 years: 17.9% (95% CI: -2.5-34.2) ○ Influenza A (H_1N_1) overall:18.4% (-22.6-45.7) ▪ 19-49 years: 79.1% (95% CI: -66.1-97.4) ▪ 50-64 years: 59.1% (95% CI: 30.5-87.2) ▪ ≥65 years: -4.9% (95% CI: -72.5-36.2) ○ Influenza A (H_3N_2) overall: 45.7% (95% CI: 2.3-69.8) ▪ 19-49 years: N/A ▪ 50-64 years: 29.9% (95% CI: -175.3-82.2) ▪ ≥65 years: 41.8% (95% CI: -14.5-70.4) ○ Influenza B (overall): 51.3% (-12.2-78.9 not statistically significant) ▪ 19-49 years: 34.5% (95% CI: -86.2-76.9) ▪ 50-64 years: 67.8% (95% CI: -2.536-97.1) ▪ ≥65 years: 18.8% (95% CI: -1.1-34.9) • VE against influenza-associated hospitalization ○ Overall: 17.3% (95% CI: -9.3-37.4) ○ 19-49 years: 7.1% (95% CI: -121.5-89.4) ○ 50-64 years: 48.3% (95% CI: -0.2-73.3) ○ ≥65 years: 10.1% (95% CI: -26.6-36.1)
Clercq 2025 (7)	• Population studied ○ All age groups from 0-≥65 years • Type of vaccine ○ Quadrivalent inactivated influenza vaccine (IIV4) • Comparator ○ Unvaccinated individuals = Never vaccinated individuals in the studied seasons • Testing ○ Nucleic acid testing-RT-PCR • Outcome measures ○ Vaccine effectiveness • Influenza related outcome	Type of publication: Peer-reviewed Study design: Test-negative design study Analysis: Vaccine effectiveness was measured as (1 – odds ratio) with 95% confidence intervals (CIs) Setting and country: RELAB network of private community-based laboratories, France	• 77,704 patients met the inclusion criteria of the VE analysis including test-positive (n = 20,650; 27%) and test-negative individuals (n = 57,054; 73%) • The ages of patients ranged from 0- ≥65 years with the majority being 18–64 years (n = 11,996; 58%) • 12,541 patients received vaccination within 15 days-3 months	• Overall Vaccine VE: ○ Overall December 2024 VE: 45.2% (95% CI: 36.7-52.5) ○ Overall Interim (February 2025) VE: 43% (95% CI: 38.9-46.8) ○ Overall end-of-season VE: 44.5% (95% CI: 41.2-47.6) • VE by Influenza type: ○ Influenza A (end-of-season): 32.1% (95% CI: 26.5-37.3) ○ Influenza B (end-of-season): 77.6% (95% CI: 73-81.5) • VE by age group: ○ 0-64 years: 56.4% (95% CI: 52.8-59.8) ○ ≥65 years: 25.1% (95% CI: 18.2-31.5) • VE by vaccination timing:

Reference (author year), with URL	Clinical features	Study characteristics (type of publication, vaccine effectiveness analysis methods, setting and country)	Sample description and intervention	Summary of key findings in relation to the outcome
	○ Infection • Timeframe (Specimens collected) ○ End of season 2024/25 (between 1 October 2024 and 28 February 2025)		• Of the PCR-positive samples that underwent typing (n = 12,295; 60%), influenza A was more frequently detected (n = 7,967; 65%) than influenza B (n = 4,272; 35%)	○ Overall 15 days-3 months VE: 43.9% (95% CI: 40-47.6) ○ Overall 3 months-6months VE: 45.5% (95% CI: 40.5-50.2) ○ Influenza A 15 days-3 months VE: 34.1% (95% CI: 27.7-40) ○ Influenza A 3 months-6months VE: 40.6% (95% CI: 28.8-50.5) ○ Influenza B 15 days-3 months VE: 78.9% (95% CI: 72.8-83.6) ○ Influenza B 3 months-6months VE: 76% (95% CI: 68.4-81.7)
Clercq 2026 (8)	• Population studied ○ All age groups from 0-≥65 years • Type of vaccine ○ Quadrivalent inactivated influenza vaccine (IIV4) • Comparator ○ Unvaccinated individuals = Never vaccinated individuals in the studied seasons • Testing ○ Nucleic acid testing-RT-PCR • Outcome measures ○ Vaccine effectiveness • Influenza related outcome ○ Infection • Timeframe (Specimens collected) ○ Mid-season 2025/26 (between 1 October 2025 and 31 January 2026)	Type of publication: Rapid communication Study design: Test-negative design study Analysis: Vaccine effectiveness was measured as (1 – odds ratio) with 95% confidence intervals (CIs) Setting and country: RELAB network of private community-based laboratories, France	• The study included 24,267 individuals (n = 11,045 positives; 11.2%) tested between 1 September 2025–4 January 2026 • 3,834 individuals had vaccination within 15 days-3 months • Tests for influenza virus were positive for 5,451 (22.5%) patients	• Overall Vaccine VE: ○ Interim (week 44/2025-1/2026) VE: 36.42% (95% CI: 29.67-42.52) • VE by Influenza type: ○ Influenza A: 36.84% (95% CI: 28.36-44.31) • VE by age group: ○ 0-17 years: 57.18% (95% CI: 29.45-74.01) ○ 18-64 years: 45.05% (95% CI: 35.64-53.08) ○ ≥65 years: 27.74% (95% CI:16.68-37.34) • VE by symptoms: ○ Any symptom: 33.64% (95% CI: 26.26-40.28) ○ Respiratory symptom: 30.22% (95% CI: 22.04-37.54) ○ Fever symptom: 37.07% (95% CI: 29.23-44.04)
Domnich 2025 (9)	• Population studied ○ All age groups from 18-to ≥65 years • Type of vaccine ○ Quadrivalent inactivated influenza vaccine (IIV4)	Type of publication: Peer-reviewed Study design: Retrospective case-control test-negative study	• 1339 participants were included with a mean age of 75.0 years • 12.9 % (173/1339) of patients tested positive for ≥1 influenza virus.	• Overall Vaccine VE: ○ In the entire population aged ≥18 years: 47% (95% CI: 22-63) • VE by Influenza Type ○ Influenza A: 43% (95% CI:18-60) ○ Influenza B: 89% (95% CI:12-99)

Reference (author year), with URL	Clinical features	Study characteristics (type of publication, vaccine effectiveness analysis methods, setting and country)	Sample description and intervention	Summary of key findings in relation to the outcome

	• Comparator
	  ○ Unvaccinated for the current seasonal vaccine, but vaccinated in the previous season
	• Testing
	  ○ Nucleic acid testing-RT-PCR
	• Outcome measures
	  ○ Vaccine effectiveness
	• Influenza related outcome
	  ○ Hospitalization
	• Timeframe (Specimens collected)
	  ○ End of season 2024/25 (between 4 November 2024 and 27 April 2025)
		Analysis: VE was estimated by means of the conditional logistic regression (CLR) stratified by the week of swab and defined as (1–OR) × 100 %, where OR is odds ratio of IIV among cases compared to controls
		
		Setting and country: regional hospital in City of Genoa, Liguria, Italy
			• 538 participants received current season IIV4 (2024/2025) (58 from case group)
			• 627 participants received previous season IIV4 (2023/2024) (59 from case group)
				• VE by age group
				  ○ 18-64 years: 69% (95% CI: -14-91)
				  ○ ≥65 years: 43% (95% CI: 15-61)
				• VE in preventing hospitalization for influenza in ≥65 years by vaccine type
				  ○ sdIIV4 (standard): 33% (95% CI: -26-64)
				  ○ aIIV4 (adjuvanted): 47% (95% CI: 0-72)
				• hdIIV4 (high): 47% (95% CI: 13-68)

Emborg 2025 (10)	• Population studied
	  ○ Older adults (aged ≥65 years)
	• Type of vaccine
	  ○ Quadrivalent inactivated influenza vaccine (IIV4)
	• Comparator
	  ○ People who tested negative for influenza (controls)
	• Testing
	  ○ Nucleic acid testing-RT-PCR
	• Outcome measures
	  ○ Vaccine effectiveness
	  ○ Odds ratio
	• Influenza related outcome
	  ○ Hospitalization
	  ○ Medically attended acute respiratory illness
	• Timeframe (Specimens collected)
	  ○ End of season 2024/25 (between 1 October 2024 and 31 March 2025)
		Study design: Test-negative case-control
		
		Analysis: Vaccine effectiveness was estimated by comparing vaccination odds between people who tested positive and negative, using adjusted logistic regression, and converting the resulting odds ratio into VE as (1 − OR) × 100
		
		Setting and country: Denmark
			• Among patients aged 65 and older, there were 11,006 non-hospitalised individuals (1,403 influenza A cases [12.7%] and 9,603 controls [87.3%]) and 21,937 hospitalised individuals (1,937 influenza A cases [8.8%] and 20,000 controls [91.2%])
			• Among 20,615 vaccinated individuals, 73.7% received Fluad Tetra, 19.5% received standard-dose QIV (Influvac Tetra or Vaxigrip Tetra), and 6.8% received the high-dose Efluelda Tetra
			• Patients were considered vaccinated if they recieved the vaccine atleast 14 days before the sample date
				• VE against influenza infection overall:
				  ○ Efluelda Tetra (High-dose QIV): 50% (95% CI: 38-59)
				  ○ Fluad Tetra (Adjuvanted QIV): 48% (95% CI: 42-52)
				  ○ Influvac Tetra/Vaxigrip Tetra (Standard-dose QIV): 33% (95% CI: 24-41)
				• VE against influenza infection (non-hospitalised individuals):
				  ○ Efluelda Tetra (High-dose QIV): 50% (95% CI: 35–62)
				  ○ Fluad Tetra (Adjuvanted QIV): 49% (95% CI: 40–57)
				  ○ Influvac Tetra/Vaxigrip Tetra (Standard-dose QIV): 31% (95% CI: 17–42)
				• VE against influenza infection (hospitalised individuals):
				  ○ Efluelda Tetra (High-dose QIV): 53% (95% CI: 35–66)
				  ○ Fluad Tetra (Adjuvanted QIV): 47% (95% CI: 41–53)
				• Influvac Tetra/Vaxigrip Tetra (Standard-dose QIV): 36% (95% CI: 23–47)

Reference (author year), with URL	Clinical features	Study characteristics (type of publication, vaccine effectiveness analysis methods, setting and country)	Sample description and intervention	Summary of key findings in relation to the outcome

Erdwiens 2025 (11)	• Population studied
	  ○ General population (all ages)
	• Type of vaccine
	  ○ Quadrivalent inactivated influenza vaccine (IIV4)
	• Comparator
	  ○ People who tested negative for influenza (controls)
	• Testing
	  ○ Nucleic acid testing-RT-PCR
	• Outcome measures
	  ○ Vaccine effectiveness
	  ○ Odds ratio
	• Influenza related outcome
	  ○ Infection
	  ○ Medically attended acute respiratory illness
	• Timeframe (Specimens collected)
	  ○ End of season 2024/25 (between October 2024 to February 2025)
		Study design: Test-negative case-control
		
		Analysis: Adjusted logistic regression was used to compare vaccination odds between cases and controls, accounting for factors like age, sex, underlying conditions, and symptom onset date, and then derived VE as 1 − OR × 100, both overall and by age group and virus type where possible
		
		Setting and country: Germany
			• In primary care, 2,808 ARI patients were included in the analysis, of whom 926 (33%) tested positive for influenza virus
			• Among influenza-positive primary care cases, 413 (45%) were influenza A(H1N1)pdm09, 76 (8%) were influenza A(H3N2), and 447 (48%) were influenza B
			• In primary care, physicians and pediatricians recruited patients presenting with acute respiratory infection (ARI) symptoms such as cough, sore throat, runny nose, or fever, and systematically collected respiratory samples
			• In secondary care, patients were enrolled if they had been hospitalized within the previous 48 hours with severe acute respiratory infection (SARI) symptoms
			• In secondary care, 1,031 SARI patients were initially recruited, but 495 were excluded due to missing or implausible data, leaving 536 patients for analysis
			• Among these, 102 (19%) tested positive for influenza virus and of the influenza-positive secondary care cases, 65 (64%) were
				• VE against influenza infection in primary care setting (Influenza A and B):
				  ○ All ages: 31% (95% CI: 1-52)
				  ○ 0-17 years: 58% (95% CI: 13-80)
				  ○ 18-59 years: 6% (95% CI: -65-46)
				  ○ ≥ 60 years: 35% (95% CI: -31-68)
				  ○ < 60 years + chronic diseases: 24% (95% CI: -55-63)
				• VE against influenza infection in primary care setting (Influenza A):
				  ○ All ages: -1% (95% CI: -49-31)
				  ○ 0-17 years: 24% (95% CI: -65-65)
				  ○ 18-59 years: -44% (95% CI: -159-20)
				  ○ ≥ 60 years: 28% (95% CI: -48-65)
				  ○ < 60 years + chronic diseases: -26% (95% CI: -165-40)
				• VE against influenza infection in primary care setting (Influenza A(H1N1) pdm09):
				  ○ All ages: 2% (95% CI: -48-35)
				  ○ 0-17 years: 28% (95% CI: -66-60)
				  ○ 18-59 years: -49% (95% CI: -175-19)
				  ○ ≥ 60 years: 33% (95% CI: -43-69)
				  ○ < 60 years + chronic diseases: -32% (95% CI: -188-39)
				• VE against influenza infection in primary care setting (Influenza A(H3N2)):
				  ○ All ages: -27% (95% CI: -177-41)
				• VE against influenza infection in primary care setting (Influenza B):
				  ○ All ages: 70% (95% CI: 40-85)
				• VE against influenza infection in secondary care setting (Influenza A and B):
				  ○ All ages: 69% (95% CI: 21-88)
				  ○ ≥ 60 years: 76% (95% CI: 27-92)
				• VE against influenza infection in secondary care setting (Influenza A(H1N1) pdm09):
				  ○ All ages: 57% (95% CI: -10-83)
				  ○ ≥ 60 years: 69% (95% CI: 4-90)

Reference (author year), with URL	Clinical features	Study characteristics (type of publication, vaccine effectiveness analysis methods, setting and country)	Sample description and intervention	Summary of key findings in relation to the outcome
			influenza A(H1N1)pdm09, 10 (10%) were influenza A(H3N2), and 26 (26%) were influenza B	

Faksova 2026 (12)	• Population studied
	  ○ Older adults (aged ≥65 years)
	• Type of vaccine
	  ○ Quadrivalent inactivated influenza vaccine (IIV4)
	• Comparator
	  ○ Unvaccinated individuals = Never vaccinated individuals in the studied seasons
	• Testing
	  ○ Nucleic acid testing-RT-PCR
	• Outcome measures
	  ○ Vaccine effectiveness
	  ○ Risk ratio
	  ○ Odds ratio
	• Influenza related outcome
	  ○ Infection
	  ○ Hospitalization
	  ○ Death
	• Timeframe (Specimens collected)
	  ○ End of season 2024/25 (between 1 October 2024 to 21 March 2025)
		Study design: Target trial emulation (primary), Test-negative, case-control (secondary)
		
		Analysis: The Aalen-Johansen estimator was used to identify cumulative incidence to calculate vaccine effectiveness based on risk measures, including relative effectiveness (1 − risk ratio) and absolute risk differences at 18 weeks, with results pooled across countries. In a supplementary analysis, vaccine effectiveness was also estimated using odds ratios, calculated as 1 − odds ratio (OR) from adjusted logistic regression models
		
		Setting and country: Denmark, Finland, Sweden
			• Before matching, the study included over 1,611,962 influenza vaccine recipients across Denmark, Finland, and Sweden, with the largest group from Denmark (826,766) followed by Finland (752,350)
			• After matching vaccinated and unvaccinated individuals aged ≥65 years, a substantial number of pairs were censored before follow-up due to rapid vaccine uptake among comparison individuals
			• Individuals were classified as vaccinated if they received the influenza vaccine at least 14 days before testing, while those who were unvaccinated or vaccinated within 14 days were considered unvaccinated
			• Participants were excluded if they were tested within 14 days after vaccination or more than 18 weeks after receiving the vaccine
			• 4 different vaccines were compared including Vaxigrip Tetra (SV-SD),
				• VE against laboratory confirmed influenza A infection (all vaccines):
				  ○ Overall: 38.1% (95% CI: 31.3-44.8)
				  ▪ Age <75 years: 39.6% (95% CI: 33.7-45.4)
				  ▪ Age ≥75 years: 37.7% (95% CI: 26.5-48.8)
				  ○ Finland: 34.5% (95% CI: 29.0-40.0)
				  ▪ Age <75 years: 40.2% (95% CI: 30.9-49.4)
				  ▪ Age ≥75 years: 31.9% (95% CI: 25.1-38.7)
				  ○ Denmark: 41.4% (95% CI: 36.5-46.3)
				  ▪ Age <75 years: 39.1% (95% CI: 31.5-46.8)
				  ▪ Age ≥75 years: 43.3% (95% CI: 36.8-49.7)
				• VE against laboratory confirmed influenza A infection (Elfluedla Tetra):
				  ○ Overall: 49.9% (95% CI: 26.4-73.4)
				  ○ Finland: -24.5% (95% CI: -100.0-100.0)
				  ○ Denmark: 51.5% (95% CI: 27.7-75.2)
				• VE against laboratory confirmed influenza A infection (Fluad Tetra):
				  ○ Overall: 40.5% (95% CI: 31.7-49.2)
				  ○ Finland: 34.1% (95% CI: 21.8-46.4)
				  ○ Denmark: 43.6% (95% CI: 37.9-49.3)
				• VE against laboratory confirmed influenza A infection (Influvac Tetra):
				  ○ Overall: 33.0% (95% CI: -10.8-76.8)
				  ○ Finland: 64.1% (95% CI: 5.0-100.0)
				  ○ Denmark: 16.9% (95% CI: -10.8-44.7)
				• VE against laboratory confirmed influenza A infection (Vaxigrip Tetra):
				  ○ Overall: 36.9% (95% CI: 30.1-43.8)
				  ○ Finland: 34.6% (95% CI: 28.4-40.8)
				  ○ Denmark: 42.1% (95% CI: 31.2-52.9)
				• VE against laboratory confirmed influenza B infection (all vaccines):
				  ○ Overall: 63.7% (95% CI: 44.2-83.1)

Reference (author year), with URL	Clinical features	Study characteristics (type of publication, vaccine effectiveness analysis methods, setting and country)	Sample description and intervention	Summary of key findings in relation to the outcome
			Fluad Tetra (SU-SD-Adj), Efluelda Tetra (SV-HD), and Influvac Tetra (SU-SD)	▪ Age <75 years: 73.2% (95% CI: 49.1-97.3) ▪ Age ≥75 years: 57.9% (95% CI: 25.8-90.1) o Finland: 68.9% (95% CI: 43.2-94.7) ▪ Age <75 years: 81.3% (95% CI: 57.3-100.0) ▪ Age ≥75 years: 53.8% (95% CI: 2.6-100.0) o Denmark: 56.6% (95% CI: 27.1-86.2) ▪ Age <75 years: 54.5% (95% CI: 13.5-95.4) ▪ Age ≥75 years: 60.6% (95% CI: 19.3-100.0) • VE against laboratory confirmed influenza B infection (Fluad Tetra): o Finland: 0.5% (95% CI: -8.0-9.1) o Denmark: -3.3% (95% CI: -8.3-1.6) • VE against laboratory confirmed influenza B infection (Vaxigrip Tetra): o Finland: -4.9% (95% CI: -7.9-(-1.8)) o Denmark: -7.4% (95% CI: -15.7-0.9) • VE against influenza associated hospitalization (all vaccines): o Overall: 46.8% (95% CI: 40.8-52.9) ▪ Age <75 years: 43.6% (95% CI: 32.8-54.3) ▪ Age ≥75 years: 49.0% (95% CI: 41.8-56.3) o Finland: 49.6% (95% CI: 37.1-62.0) ▪ Age <75 years: 52.3% (95% CI: 31.1-73.4) ▪ Age ≥75 years: 48.6% (95% CI: 33.3-63.9) o Denmark: 46.0% (95% CI: 39.1-52.9) ▪ Age <75 years: 40.5% (95% CI: 28.0-53.0) ▪ Age ≥75 years: 49.2% (95% CI: 41.0-57.3) • VE against influenza associated hospitalization (Elfluedla Tetra): o Overall: 63.4% (95% CI: 38.1-88.7) o Denmark: 63.4% (95% CI: 38.1-88.7) • VE against influenza associated hospitalization (Fluad Tetra): o Overall: 48.2% (95% CI: 40.8-55.6) o Finland: 38.5% (95% CI: 1.7-75.2) o Denmark: 48.6% (95% CI: 41.0-56.2) • VE against influenza associated hospitalization (Influvac Tetra):

Reference (author year), with URL	Clinical features	Study characteristics (type of publication, vaccine effectiveness analysis methods, setting and country)	Sample description and intervention	Summary of key findings in relation to the outcome
				○ Overall: 30.6% (95% CI: -7.8-69.1) ○ Denmark: 30.6% (95% CI: -7.8-69.1) • VE against influenza associated hospitalization (Vaxigrip Tetra): ○ Overall: 43.6% (95% CI: 23.7-63.6) ○ Finland: 51.9% (95% CI: 38.8-65.1) ○ Denmark: 31.2% (95% CI: 8.7-53.6) • VE against influenza associated death (all vaccines): ○ Overall: 63.2% (95% CI: 53.6-72.8) ▪ Age <75 years: 45.3% (95% CI: 19.1-71.6) ▪ Age ≥75 years: 68.5% (95% CI: 58.7-78.3) ○ Finland: 64.1% (95% CI: 49.1-79.1) ▪ Age <75 years: 46.4% (95% CI: 1.9-91.0) ▪ Age ≥75 years: 68.8% (95% CI: 53.7-83.9) ○ Denmark: 62.6% (95% CI: 50.1-75.0) ▪ Age <75 years: 44.8% (95% CI: 12.2-77.3) ▪ Age ≥75 years: 68.3% (95% CI: 55.4-81.1) • VE against influenza associated death (Fluad Tetra): ○ Overall: 65.8% (95% CI: 54.6-76.9) ○ Finland: 63.1% (95% CI: 36.9-89.2) ○ Denmark: 66.4% (95% CI: 54.0-78.7) • VE against influenza associated death (Vaxigrip Tetra): ○ Overall: 45.2% (95% CI: -13.9-100.0) ○ Finland: 63.6% (95% CI: 44.6-82.6) ○ Denmark: -4.0% (95% CI: -95.2-87.3)
Kirsebom 2025 (13)	• Population studied ○ Children and adolescents aged six months to 12 years ○ Older adults (aged ≥65 years) • Type of vaccine ○ aIIV: adjuvanted inactivated influenza vaccine ○ IIV-HD: high-dose inactivated influenza vaccine ○ IIVc: cell-based inactivated influenza vaccine ○ IIVe: egg-based inactivated influenza vaccine	Study design: Test-negative case–control Analysis: VE was estimated using multivariable logistic regression with test result as the outcome and vaccination status as the exposure, adjusting for week, age, region, and clinical risk, and stratified by age group and influenza type/subtype. The	• The study sample: Candidates were patients attending the ED or admitted to hospital who had a PCR test for influenza from 14 days before to 2 days after their visit Ages from 2 to 65+. • England mainly uses enhanced vaccines; standard-dose egg-based ones are only used if other options aren't available:	• VE by age ○ Age 2-17 (aggregated) ▪ Influenza A (ED attendance): 74.8% (95% CI: 66.3-81.4) ▪ A(H3N2) (ED attendance):: 74.7% (95% CI: 52.3-87.9) ▪ Influenza A (hospital admission): 73.8% (95% CI: 62.8-82.1) ▪ A(H3N2) (hospital admission): 72.8% (95% CI: 48.3-87.1) ○ Ages ≥65 ▪ Influenza A (ED attendance): 34.7% (95% CI: 22.2-45.3)

Reference (author year), with URL	Clinical features	Study characteristics (type of publication, vaccine effectiveness analysis methods, setting and country)	Sample description and intervention	Summary of key findings in relation to the outcome
	○ IIVr: recombinant influenza vaccine ○ LAIV: live attenuated influenza vaccine • Comparator ○ Unvaccinated for the current seasonal vaccine, but vaccinated in the previous season • Testing ○ Antigen detection ○ RT-PCR • Outcome measures ○ Vaccine effectiveness • Influenza related outcome ○ ED encounter ○ Hospitalization • Timeframe (Specimens collected) ○ Early-season 2025/26 (between 1 October 2025 and 31 December 2025)	main analysis covered tests conducted between 29 September and 2 November 2025 Setting and country: National reference laboratory, regional public health laboratories and sentinel hospital laboratories in England	• Vaccine uptake reached 34% in 2–3-year-olds, 29% in clinically at-risk individuals aged 6 months to <65 years, and 62% in adults ≥65 years by 2 November; data were not available for school-aged children and adolescents not in risk groups. • Whole-genome sequencing of viruses from primary care and secondary-care referrals (weeks 10–43) showed a dominant A(H3N2) subclade K pattern, with 156 of 179 viruses (87%) identified since week 35 • Cases were PCR-positive and controls were PCR-negative. Individuals were classified as vaccinated if their PCR test occurred ≥14 days after vaccination • Haemagglutination inhibition (HAI) testing of 41 A(H3N2) viruses collected March–October 2025 showed declining reactivity over time, matching ongoing genetic diversification.	▪ A(H3N2) (ED attendance): 34.8% (95% CI: −9.1-62.9) ▪ Influenza A (hospital admission) 39.0% (95% CI: 26.4-49.7) ▪ A(H3N2) (hospital admission): 31.7% (95% CI: −14.4-61.2)
Kwaah 2025 (14)	• Population studied ○ Children and adolescents aged six months to 17 years • Comparator	Study design: test-negative case-control	• Study sample: Military Health System (MHS) beneficiaries who sought outpatient care between	• VE by influenza type ○ Influenza A (any subtype) adjusted and for all beneficiaries: 25% (95% CI: −1-44)

Reference (author year), with URL	Clinical features	Study characteristics (type of publication, vaccine effectiveness analysis methods, setting and country)	Sample description and intervention	Summary of key findings in relation to the outcome
	○ Unvaccinated for the current seasonal vaccine, but vaccinated in the previous season • Testing ○ Nucleic acid testing-RT-PCR ○ Viral culture • Outcome measures ○ Vaccine effectiveness • Influenza related outcome ○ Medically attended acute respiratory illness • Timeframe (Specimens collected) ○ End of season 2024/25 • (between 1 October 2024 and 31 March 2025)	Analysis: VE was estimated for influenza A (any subtype), A(H1N1)pdm09, and A(H3N2) in adults and children, adjusting for age group, month of illness, and region to estimate the Influenza VE against symptomatic laboratory-confirmed influenza. Service members, children <6 months, and those with unknown vaccination status were excluded Setting and country: The DoD Global Respiratory Pathogen Surveillance Program, based at the Defense Centers for Public Health–Dayton at Wright-Patterson Air Force Base. U.S.A.	November 24, 2024 and March 15, 2025 and met the influenza-like illness case definition • Cases were ILI patients who tested positive for any influenza virus (sub)type (n=295); controls were ILI patients who tested negative for influenza (n=965) • Patients were considered vaccinated if they had received the 2024–2025 influenza vaccine at least 14 days before symptom onset. • Specimens were tested at using RT-PCR, with viral culture	○ A(H1N1)pdm09 adjusted and for all beneficiaries: 58% (95% CI: 31-74) ○ A(H3N2)adjusted and for all beneficiaries: 42% (95% CI: 14-62) • VE for children (6 months to 17 years-data shown aggregated) ○ Influenza A (any subtype) adjusted: 27% (95% CI: −5-50) ○ A(H1N1)pdm09 adjusted: 69% (95% CI: 43-83) • A(H3N2) adjusted: 36% (95% CI: −5-61)
Murphy 2025 (15)	• Population studied ○ Children and adolescents aged six months to 17 years • Type of vaccine ○ Quadrivalent inactivated influenza vaccine (IIV4) • Comparator ○ Unvaccinated for the current seasonal vaccine, but vaccinated in the previous season • Testing ○ Nucleic acid testing-RT-PCR • Outcome measures ○ Vaccine effectiveness ○ Odds ratio	Study design: Prospective test negative study Analysis: Influenza VE was estimated using the odds ratio comparing vaccinated versus unvaccinated children (partially vaccinated children under 9 years and those younger than 9 months were excluded). Logistic regression included age (linear and quadratic), sex, underlying conditions, prior-season vaccination, and biweekly	• The study sample included 947 Children aged 9 months to 17 years (163 cases and 784 controls) hospitalized at Queen Mary or Princess Margaret Hospitals in Hong Kong between December 2024 and March 2025 with febrile acute respiratory illness (fever ≥38 °C plus a respiratory symptom within 72 hours). • Vaccination status was obtained from parents or guardians. Children were	• VE by influenza A and sub-types: ○ Influenza A: 64.0% (95% CI: 39.3-79.0) ○ Influenza A(H1N1): 64.8% (95% CI: 38.1-80.3%) ○ Influenza A(H3N2): 59.9% (95% CI: 42.0-89.6%) • As very few controls tested positive for SARS-CoV-2, VE estimates were essentially unchanged when including or excluding these patients • Vaccination appeared to provide greater protection in children aged 9 months to 4 years than in older children

Reference (author year), with URL	Clinical features	Study characteristics (type of publication, vaccine effectiveness analysis methods, setting and country)	Sample description and intervention	Summary of key findings in relation to the outcome

	• Influenza related outcome
	  ○ Hospitalization
	• Timeframe (Specimens collected)
	  ○ End of season 2024/25
	  • (between 1 October 2024 and 31 March 2025)
		calendar time. Firth's penalized estimator addressed sparse data. VE was calculated as (1 − adjusted OR) × 100. VE against influenza A hospitalization was estimated overall, by subtype, and by age group when possible. Analyses were conducted in R 4.2.3.
		
		Setting and country: Queen Mary and Princess Margaret Hospitals in Hong Kong. China
			considered vaccinated if they received a dose after August 2024 and >14 days before admission; first-time vaccinees under 9 years required two doses.
			• Most vaccinations occurred in November 2024, and 97.5% received the quadrivalent inactivated influenza vaccine
			• Nasopharyngeal swabs were collected and tested for influenza and other respiratory viruses using an in-house multiplex PCR and the FilmArray Respiratory Panel (BioFire/bioMérieux)	

Russ 2025 (16)	• Population studied
	  ○ General population (all ages)
	  ○ Older adults (aged ≥65 years)
	  ○ Children and adolescents aged six months to 17 years
	  ○ Immunocompromised individuals (e.g., solid organ transplant recipients)
	  ○ Other – comorbidities
	• Type of vaccine
	  ○ Trivalent inactivated influenza vaccine (IIV3)
	  ○ Quadrivalent inactivated influenza vaccine (IIV4)
	  ○ Trivalent live attenuated vaccine (LAIV3)
	  ○ Cell-based/recombinant Influenza vaccines
	• Comparator
		Type of publication: Published report (U.S. CDC)
		
		Study design: Test-negative case control
		
		Analysis: Interim vaccine effectiveness (VE) against influenza-associated outpatient visits and hospitalization was estimated by comparing the odds ratio of influenza vaccination between case- and control patients; data from influenza-like illness (ILI) and severe acute respiratory infection (SARI) sentinel surveillance networks was used. All
			• Between March and September 2025, 2,554 patients with ILI and 181,566 patients with SARI were identified through the surveillance networks, and of these, 2,122 patients with ILI were included and 42,752 patients with SARI were included
			• Patients were tested for influenza by reverse transcription–polymerase chain reaction (RT-PCR)
			• Patients in the eight countries with ILI were examined in an outpatient setting and patients with
				Patients with ILI
				• VE against influenza overall: 50.4% (95% CI: 33.2-63.2)
				  ○ Priority vaccination groups: 51.8% (95% CI: 27.9-67.7)
				• VE by influenza type
				  ○ Influenza A (overall): 45.4% (95% CI: 24.4-60.5)
				  ▪ Priority vaccination groups: 45.7% (95% CI: 17.5-64.3)
				  ○ Influenza A (H1N1): 53.3% (95% CI: 29.3-69.1)
				  ▪ Priority vaccination groups: 55.5 (95% CI: 25.4-73.5)
				  ○ Influenza A (H3N2): not reported
				  ○ Influenza B (overall): 62.3% (95% CI: 28.8-80.0)
				  ▪ Priority vaccination groups: 77.7% (95% CI: 19.7-93.8)
				Patients with SARI
				• VE against influenza overall: 49.7% (95% CI: 46.3-52.8)
				  ○ Priority vaccination groups: 45.7% (95% CI: 41.8-49.3)
				  ○ Young children: 51.3% (95% CI: 44.5-57.3)

Reference (author year), with URL	Clinical features	Study characteristics (type of publication, vaccine effectiveness analysis methods, setting and country)	Sample description and intervention	Summary of key findings in relation to the outcome
	○ Unvaccinated individuals = Never vaccinated individuals in the studied seasons • Testing ○ Nucleic acid testing-RT-PCR • Outcome measures ○ Vaccine effectiveness ○ Odds ratio • Influenza related outcome ○ Outpatient visit • Timeframe (Specimens collected) ○ Other (March to September 2025)	countries used WHO-recommended egg-based, inactivated Southern Hemisphere influenza vaccine formulation, including trivalent, quadrivalent and adjuvanted vaccines Setting and country: Eight Southern Hemisphere countries (Argentina, Australia, Brazil, Chile, New Zealand, Paraguay, South Africa, and Uruguay)	SARI were admitted to a hospital ○ Six countries (Argentina, Brazil, Chile, New Zealand, Paraguay, and Uruguay) contributed only SARI surveillance data ○ South Africa was the only country that contributed only ILI data	○ Persons with comorbidities: 51.9% (95% CI: 43.2-59.3) ○ Older adults: 37.7% (95% CI: 31.7-43.1) • VE by influenza type ○ Influenza A (overall): 46.1% (95% CI: 42.4-49.6) ▪ Priority vaccination groups: 43.4% (95% CI: 39.3-47.2) ▪ Young children: 51.1% (95% CI: 44.0-57.3) ▪ Persons with comorbidities: 48.9% (95% CI: 39.4-56.9) ▪ Older adults: 35.0% (95% CI: 28.7-40.7) ○ Influenza A (H1N1): 41.6% (95% CI: 36.7-46.0) ▪ Priority vaccination groups: 38.8 (95% CI: 33.5-43.8) ▪ Young children: 53.4% (95% CI: 43.5-61.6) ▪ Persons with comorbidities: 44.6 (95% CI: 31.9-54.9) ▪ Older adults: 29.7% (95% CI: 21.9-36.7) ○ Influenza A (H3N2): 37.2% (95% CI: 29.7-43.9) ▪ Priority vaccination groups: 34.7 (95% CI: 26.5-42.0) ▪ Young children: 30.3% (95% CI: 13.3-43.9) ▪ Persons with comorbidities: 58.4% (95% CI: 40.4-70.9) ▪ Older adults: 28.8% (95% CI: 17.4-38.6) ○ Influenza B (overall): 77.6% (95% CI: 70.0-83.3) ▪ Priority vaccination groups: 74.8% (95% CI: 64.9-81.9) ▪ Young children: 64.4 (95% CI: 40.6-78.7) ▪ Persons with comorbidities: 71.8% (95% CI: 50.0-84.1) ▪ Older adults: 82.3% (67.1-90.4)
Shen 2026 (17)	• Population studied ○ General population (all ages) • Type of vaccine ○ Trivalent inactivated influenza vaccine (IIV3)	Study design: Test-negative, case-control Analysis: The study estimated how well the vaccine worked by using a	• Among the 10,848 participants, 8.7% were aged ≤5 years (n=909), 26.1% were 6–17 years (n=2,737), 53.1% were 18–59 years (n=5,569), and	• VE against influenza infection (overall): 23.5% (95% CI: 11.7-33.7) ○ ≤ 5 years: 19.6% (95% CI: - 44.3-55.2) ○ 6–17 years: 19.5% (95% CI: 3.3-33.0) ○ 18–59 years: 41.1% (95% CI: 12.7-60.2) ○ ≥ 60 years: 13.4% (95% CI: -27.5-41.2)

Reference (author year), with URL	Clinical features	Study characteristics (type of publication, vaccine effectiveness analysis methods, setting and country)	Sample description and intervention	Summary of key findings in relation to the outcome
	○ Quadrivalent inactivated influenza vaccine (IIV4) ○ Trivalent live attenuated vaccine (LAIV3) • Comparator ○ Unvaccinated individuals = Never vaccinated individuals in the studied seasons ○ Unvaccinated for the current seasonal vaccine, but vaccinated in the previous season • Testing ○ Nucleic acid testing-RT-PCR • Outcome measures ○ Vaccine effectiveness ○ Odds ratio • Influenza related outcome ○ Infection • Timeframe (Specimens collected) ○ Mid-seaspn of season 2025/26 (between October 2025-January 2026)	statistical model (logistic regression) to compare the odds of infection between vaccinated and unvaccinated people, then converting that into a percentage with the formula (1 − odds ratio) × 100%. The model accounted for factors like age, sex, underlying health conditions, where people lived, and the time period Setting and country: Beijing, China	12.1% were ≥60 years (n=1,269), with a median age of 27.0 years (IQR 14.0–41.0); 93.3% (n=9,784) had no comorbidities, 14.0% (n=1,463) were vaccinated • Among those vaccinated, 99.9% received inactivated influenza vaccines, primarily trivalent split-virus (85.7%), followed by quadrivalent split-virus (11.4%) and quadrivalent subunit (2.8%), while only 0.1% received a live attenuated influenza vaccine • Throat swabs were taken from patients and tested for influenza using RT-PCR • To keep the sample of influenza-like illness (ILI) cases consistent, about five patients per day were enrolled at each sentinel hospital year-round • For the main analysis, individuals were counted as vaccinated for the current season only if they received the vaccine at least 14 days before symptoms began; those vaccinated within 0–14 days before symptom onset were excluded	• VE against influenza A(H3N2) infection (overall): 23.3% (95% CI: 11.5-33.5)

Reference (author year), with URL	Clinical features	Study characteristics (type of publication, vaccine effectiveness analysis methods, setting and country)	Sample description and intervention	Summary of key findings in relation to the outcome

Shinjoh 2025 (18)	• Population studied
	  ○ Children and adolescents aged six months to 17 years
	• Type of vaccine
	  ○ Trivalent inactivated influenza vaccine (IIV3)
	  ○ Quadrivalent inactivated influenza vaccine (IIV4)
	  ○ Trivalent live attenuated vaccine (LAIV3)
	  ○ Cell-based/recombinant Influenza vaccines
	• Comparator
	  ○ Unvaccinated individuals = Never vaccinated individuals in the studied seasons
	  ○ Unvaccinated for the current seasonal vaccine, but vaccinated in the previous season
	• Testing
	  ○ Antigen
	  ○ Nucleic acid testing-RT-PCR
	• Outcome measures
	  ○ Vaccine effectiveness
	  ○ Odds ratio
	• Influenza related outcome
	  ○ Hospitalization
	  ○ Outpatient visit
	• Timeframe (Specimens collected)
	  ○ Mid-season of season 2024/25 (between November 2024-March 2025)
		Study design: Test-negative, case-control
		
		Analysis: Vaccine coverage in children was calculated as the percentage of vaccinated individuals among all patients (including both influenza-positive and negative cases). Vaccine effectiveness (VE) was estimated using a test-negative case–control design, defined as 100%×(1−adjusted odds ratio). The odds ratio compared infection rates between vaccinated and unvaccinated groups based on positive and negative test results
		
		Setting and country: Japan
			• Among children who tested negative for influenza, IIV uptake was 40% (307/760) in hospitalized patients and 43% (118/277) in outpatients, while LAIV use was very low at 0.8% and 1.8%, respectively
			• Overall, out of 1,351 children, 35% (479) received IIV and only 1.2% (16) received LAIV. Of those given LAIV, 5 later developed influenza A (all confirmed by rapid testing), with symptom onset ranging from 2 weeks to under 3 months after vaccination, while the remaining 11 did not become infected
			• For the 2024-2025 season, the quadrivalent inactivated influenza vaccine (IIV) included four strains: A/Victoria/4897/2022 (H1N1)pdm09, A/California/122/2022 (H3N2), B/Austria/1359417/2021 from the Victoria lineage, and B/Phuket/3073/2013 from the Yamagata lineage
				• VE-inactivated against influenza infection (overall crude in hospitalized setting): 75% (95% CI: 62-84)
				• VE-inactivated against influenza infection (overall adjusted crude in hospitalized setting): 73% (95% CI: 57-83)
				  ○ 6-11 months: 23% (95% CI: -359-87)
				  ○ 1-2 years: 80% (95% CI: 52-91)
				  ○ 6-2 years: 73% (95% CI: 43-88)
				  ○ 3-5 years: 92% (95% CI: 65-98)
				  ○ 5-12 years: 62% (95% CI: 20-82)
				  ○ 13-15 years: NA
				• VE against influenza infection for individuals with underlying disease in hospitalized setting:
				  ○ Without: 82% (95% CI: 68-90)
				  ○ With: -18% (95% CI: -264-62)
				• VE against influenza infection for individuals with neurological underlying disease in hospitalized setting:
				  ○ Without: 76% (95% CI: 62-86)
				  ○ With: 31% (95% CI: -4445-99)
				• VE against influenza infection for individuals with respiratory underlying disease in hospitalized setting:
				  ○ Without: 74% (95% CI: 57-84)
				  ○ With: 70% (95% CI: -242-97)
				• VE against influenza infection by epidemic period crude in hospitalized setting:
				  ○ By period for influenza A (Nov-Jan): 79% (95% CI: 65-87)
				  ○ By period for influenza B (Jan-Mar): NA
				
				• VE against influenza infection (overall crude in outpatient setting): 64% (95% CI: 42-78)
				• VE against influenza infection (overall adjusted crude in outpatient setting): 57% (95% CI: 24-75)
				  ○ 6-11 months: NA
				  ○ 1-2 years: NA
				  ○ 6-2 years: 89% (95% CI: 3-99)
				  ○ 3-5 years: 85% (95% CI: 41-96)

Reference (author year), with URL	Clinical features	Study characteristics (type of publication, vaccine effectiveness analysis methods, setting and country)	Sample description and intervention	Summary of key findings in relation to the outcome
			• In Japan, the standard schedule is one dose, though children between 6 months and 12 years are advised to receive two doses • The intranasal live attenuated influenza vaccine (LAIV) contained three strains: A/Norway/31694/2022 (H1N1)pdm09, A/Thailand/8/2022 (H3N2), and B/Austria/1359417/2021. In Japan, this vaccine is approved as a single dose for children aged 2 to 18 years	○ 5-12 years: 19% (95% CI: -74-62) ○ 13-15 years: NA • VE against influenza infection for individuals with underlying disease in outpatient setting: ○ Without: 53% (95% CI: 5-76) ○ With: 63% (95% CI: 0-86) • VE against influenza infection for individuals with neurological underlying disease in outpatient setting: ○ Without: 56% (95% CI: 24-75) ○ With: NA • VE against influenza infection for individuals with respiratory underlying disease in outpatient setting: ○ Without: 55% (95% CI: 14-76) ○ With: 63% (95% CI: -16-88) • VE against influenza infection by epidemic period crude in outpatient setting: ○ By period for influenza A (Nov-Jan): 63% (95% CI: 33-80) ○ By period for influenza B (Jan-Mar): NA
Separovic 2026 (19)	• Population studied ○ General population (all ages) • Type of vaccine ○ Trivalent inactivated influenza vaccine (IIV3) ○ Trivalent live attenuated vaccine (LAIV3) ○ Cell-based/recombinant Influenza vaccines • Comparator ○ Unvaccinated individuals = Never vaccinated individuals in the studied seasons ○ Unvaccinated for the current seasonal vaccine, but vaccinated in the previous season • Testing	Study design: Test-negative, case-control Analysis: VE against medically attended acute respiratory illness (ARI) involved comparing the odds of testing positive for influenza (cases) versus testing negative (controls) between vaccinated and unvaccinated individuals, while accounting for potential confounding factors. VE was then calculated using the formula: (1 − odds ratio) × 100%	• Out of 4,448 individuals with acute respiratory illness, 784 (18%) were aged 1–8 years, 602 (14%) were 9–17, 1,604 (36%) were 18–49, 665 (15%) were 50–64, and 793 (18%) were 65 or older. The median age was 35 years (IQR: 13–58) • Among all participants, 1,696 (38%) tested positive for influenza A(H3N2), while 2,752 (62%) tested negative and served as controls. Of the influenza A(H3N2) cases, 303 (18%) had received the	• VE against influenza A infection (overall): 38% (95% CI: 27-47) ○ 0-17 years: 35% (95% CI: 10-54) ○ 18-64 years: 46% (95% CI: 32-57) ○ ≥65 years: 21% (95% CI: -8-42) • VE against influenza A(H3N2) infection (overall): 40% (95% CI: 28-49) ○ 0-17 years: 36% (95% CI: 10-55) ○ 18-64 years: 48% (95% CI: 33-60) ○ 18-29 years: 63% (95% CI: 32-80) ○ 30-49 years: 30% (95% CI: 0-51) ○ 50-64 years: 56% (95% CI: 29-73) ○ ≥65 years: 25% (95% CI: -7-48) • VE against influenza A(H3N2), subclade K infection (overall): 37% (95% CI: 20-50) ○ 0-17 years: 32% (95% CI: -3-56) ○ 18-64 years: 44% (95% CI: 20-61) ○ ≥65 years: 26% (95% CI: -21-55)

Reference (author year), with URL	Clinical features	Study characteristics (type of publication, vaccine effectiveness analysis methods, setting and country)	Sample description and intervention	Summary of key findings in relation to the outcome
	○ Nucleic acid testing-RT-PCR • Outcome measures ○ Vaccine effectiveness ○ Odds ratio • Influenza related outcome ○ Medically attended acute respiratory illness • Timeframe (Specimens collected) ○ Mid-seaspn of season 2025/26 (between 26 October 2025–10 January 2026)	Setting and country: Canada (Alberta, British Columbia, Ontario, Quebec)	2025/2026 seasonal influenza vaccine • In Canada, only trivalent influenza vaccines were administered. Nearly all publicly funded vaccines in SPSN provinces were inactivated (at least 99% overall, with fewer than 5% being live-attenuated in British Columbia and Quebec) and mostly produced using egg-based methods (over 90% overall, with less than 30% cell-based in Alberta and under 5% in Ontario)	• VE against influenza A(H3N2), subclade K-like J.2.4 infection (overall): 32% (95% CI: -25-63) • VE against influenza A(H1N1)pdm09 (overall): 31% (95% CI: 3-50) ○ 0-17 years: 55% (95% CI: -19-83) ○ 18-64 years: 32% (95% CI: -9-58) ○ ≥65 years: 6% (95% CI: -71-48)
Yoon 2026 (20)	• Population studied ○ Children and adolescents aged six months to 17 years • Type of vaccine ○ Quadrivalent inactivated influenza vaccine (IIV4) ○ Cell-based/recombinant Influenza vaccines • Comparator ○ Unvaccinated individuals = Never vaccinated individuals in the studied seasons • Testing ○ Antigen ○ Nucleic acid testing-RT-PCR • Outcome measures ○ Vaccine effectiveness ○ Odds ratio • Influenza related outcome ○ Infection	Study design: Test-negative case-control Analysis: Crude vaccine effectiveness (VE) was determined using the formula (1 − odds ratio) × 100, along with 95% confidence intervals. Adjusted VE was calculated through logistic regression, accounting for factors like age, sex, location, existing health conditions, and when the sample was collected Setting and country: Korea	• Among a total of 1476 participants, in participants aged 6 months to 13 years, there were 585 cases (77.90%) and 597 controls (82.34%); within this group, ages 6–35 months included 28 cases (3.73%) and 150 controls (20.69%), while ages 36 months to 13 years included 557 cases (74.17%) and 447 controls (61.66%). Among those aged 14–18 years, there were 166 cases (22.10%) and 128 controls (17.66%) • This multicenter study was conducted at 25 sites in Korea during the 2024-2025 influenza season and included children and	• VE against influenza infection overall (crude): 50.30% (95% CI: 38.85-59.61) • VE against influenza infection overall (adjusted): 45.57% (95% CI: 29.38-58.04) • VE against influenza infection stratified by age group: ○ 6 months–13 years (crude): 55.98% (95% CI: 44.30-65.21) ○ 6 months–13 years (adjusted): 57.64% (95% CI: 44.41- 67.73) ○ 6 months–35 months (crude): 74.60% (95% CI: 41.44-88.98) ○ 6 months–35 months (adjusted): 88.55% (95% CI: 66.30-96.11) ○ 36 months–13 years (crude): 48.53% (95% CI: 33.63-60.09) ○ 36 months–13 years (adjusted): 46.98% (95% CI: 28.90-88.98) ○ 14–18 years (crude): −35.15% (95% CI: −179.92-34.75) ○ 14–18 years (adjusted): −61.66% (95% CI: −270.51-29.47)

Reference (author year), with URL	Clinical features	Study characteristics (type of publication, vaccine effectiveness analysis methods, setting and country)	Sample description and intervention	Summary of key findings in relation to the outcome

	• Timeframe (Specimens collected)
	  ○ End of season 2024/25 (between October 2024 to May 2025)
			adolescents aged 6 months to 18 years who presented with influenza-like illness within 7 days of symptom onset using either rapid antigen test or PCR to confirm cases
			• Participants were classified as cases or controls based on influenza test results, and as vaccinated or unvaccinated depending on whether they received the SKYCellflu® QIV during the season
				• VE against influenza infection A stratified by age group:
				  ○ All ages (crude): 45.23% (95% CI: 31.98-55.89)
				  ○ All ages (adjusted): 41.63% (95% CI: 22.55-56.01)
				  ○ 6 months–13 years (crude): 52.52% (95% CI: 39.35-62.84)
				  ○ 6 months–13 years (adjusted): 55.89% (95% CI: 40.89- 67.08)
				  ○ 14–18 years (crude): −47.44% (95% CI: −215.32-31.06)
				  ○ 14–18 years (adjusted): −197.23% (95% CI: −779.27-−0.48)
				• VE against influenza infection B stratified by age group:
				  ○ All ages (crude): 69.77% (95% CI: 54.53-79.91)
				  ○ All ages (adjusted): 61.28% (95% CI: 36.75-76.30)
				  ○ 6 months–13 years (crude): 71.27% (95% CI: 54.43-81.89)
				  ○ 6 months–13 years (adjusted): 66.95% (95% CI: 45.35- 80.01)
				  ○ 14–18 years (crude): 1.70% (95% CI: −220.37-69.84)
				  ○ 14–18 years (adjusted): 45.62% (95% CI: −128.92-87.08)

Yu 2026 (21)	• Population studied
	  ○ Children and adolescents aged six months to 17 years
	• Type of vaccine
	  ○ Trivalent inactivated influenza vaccine (IIV3)
	  ○ Quadrivalent inactivated influenza vaccine (IIV4)
	  ○ Trivalent live attenuated vaccine (LAIV3)
	• Comparator
	  ○ Unvaccinated individuals = Never vaccinated individuals in the studied seasons
	  ○ Unvaccinated for the current seasonal vaccine, but
		Study design: Test-negative, case-control
		
		Analysis: Vaccine effectiveness (VE) for each of the three vaccinated groups was calculated as (1−adjusted odds ratio)×100%, using individuals who were never vaccinated as the reference group. VE was also analyzed overall and by specific influenza types and subtypes through stratified analyses
			• Between October 1, 2015, and July 31, 2025, a total of 34,919 children hospitalized with fever and acute respiratory symptoms were enrolled. Among those who tested negative for influenza, 682 were positive for SARS-CoV-2 and excluded
			• This left 34,237 children aged 1-17 years for analysis. Of these, 5,245 (15.3%) had influenza: 41.0% were A(H1N1)pdm09, 31.9% A(H3N2), 24.1% influenza
				• VE against influenza infection (2024/2025): -0.97 (95% CI: -3.09-0.05)
				• VE against influenza (H1N1)pdm09 infection (2024/2025): -1.22% (95% CI: -5.06-0.8)
				• VE against influenza A(H3N2) infection (2024/2025): -0.96% (95% CI: -2.76-(-0.22))
				• VE against influenza B infection (2024/2025): 0.07% (95% CI: -3.16-0.79)

Reference (author year), with URL	Clinical features	Study characteristics (type of publication, vaccine effectiveness analysis methods, setting and country)	Sample description and intervention	Summary of key findings in relation to the outcome

	vaccinated in the previous season
	• Testing
	  ○ Antigen
	• Outcome measures
	  ○ Vaccine effectiveness
	  ○ Odds ratio
	• Influenza related outcome
	  ○ Infection
	  ○ Hospitalization
	• Timeframe (Specimens collected)
	  ○ Mid-season of season 2025/26 (Not specified start date, likely end date is July 2025)
		Setting and country: Hong Kong, China	B, and fewer than 3% were of unknown subtype
			• Overall, 12,071 children (35.3%) had been vaccinated against influenza. Most received quadrivalent vaccines (94.0%), while 3.3% received trivalent vaccines and 2.7% received vaccines of unknown type
			• Among vaccinated children, 71.8% had also been vaccinated in the previous season. In contrast, among the 22,166 unvaccinated children (64.7%), only 6.3% had been vaccinated the year before	

Zhang 2025 (22)	• Population studied
	  ○ General population (all ages)
	• Type of vaccine
	  ○ Trivalent inactivated influenza vaccine (IIV3)
	  ○ Quadrivalent inactivated influenza vaccine (IIV4)
	  ○ Trivalent live attenuated vaccine (LAIV3)
	• Comparator
	  ○ Unvaccinated individuals = Never vaccinated individuals in the studied seasons
	  ○ Unvaccinated for the current seasonal vaccine, but vaccinated in the previous season
	• Testing
	  ○ Nucleic acid testing-RT-PCR
		Study design: Test-negative, case-control
		
		Analysis: Multivariable logistic regression models were used, adjusting for potential confounders such as age, sex, geographic region, epidemic period, underlying chronic conditions, pneumonia status, and the time between symptom onset and sample collection. Vaccine effectiveness (VE) and its 95% confidence interval (CI) were calculated as follows: unadjusted and adjusted VE = (1 − unadjusted or adjusted odds
			• A total of 18,405 patients were enrolled into the study, consisting of 1850 (10.1%) individuals between the ages of 0-5 years, 4024 (21.9%) between the ages of 6-17 years, 10,563 (57.4%) between the ages of 18-59 years, 1968 (10.7%) that are ≥60 years
			• From this group, 295 (15.9%) 0-5 years old, 467 (11.6%) 6-17 years old, 2334 (22.1%) 18-59 years old, and 594 (30.2%) ≥60 years tested positive for influenza
				• VE against influenza infection (overall): 48.3% (95% CI: 40.4-55.3
				• VE against influenza A(H1N1)pdm09 infection: 48.2% (95% CI: 40.3-55.1)
				• VE against influenza A(H3N2) infection: 32.3% (95% CI: -191.2-84.3)
				• VE against influenza infection stratified by age:
				  ○ 0-5 years old: 40.5% (95% CI: 1.8-63.9)
				  ○ 6-17 years old: 33.1% (95% CI: 17.9-45.5)
				  ○ 18-59 years old: 79.0% (95% CI: 63.2-88.0)
				  ○ ≥60 years old: 31.5% (95% CI: 4.9-50.7)
				• VE against influenza infection stratified by vaccination season:
				  ○ Vaccinated for both 2023/2024 and 2024/2025 season: 50.8% (95% CI: 41.8-58.5)
				  ○ Vaccinated for 2023/2024 season only: 53.1% (95% CI: 42.0-62.1)

Reference (author year), with URL	Clinical features	Study characteristics (type of publication, vaccine effectiveness analysis methods, setting and country)	Sample description and intervention	Summary of key findings in relation to the outcome

	• Outcome measures
	  ○ Vaccine effectiveness
	  ○ Odds ratio
	• Influenza related outcome
	  ○ Infection
	• Timeframe (Specimens collected)
	  ○ End of season 2024/25 (between 28 October 2024 to 6 April 2025)
		ratio) × 100%, and the 95% CI for VE = (1 − CI of the odds ratio) × 100%
		
		Setting and country: Outpatient sentinel hospitals in Beijing, China
			• Samples from ILI patients within three days of symptom onset were collected and tested for influenza via RT-qPCR, and selected A(H1N1)pdm09 strains were sequenced and analyzed
			• According to China's 2023–2024 immunization schedule, influenza vaccines approved for use include trivalent and quadrivalent inactivated vaccines (IIV3/IIV4) as well as the trivalent live attenuated vaccine (LAIV3)
				○ Vaccinated for 2024/2025 season only: 48.5% (95% CI: 34.1-59.7)
				• VE against influenza infection stratified by epidemic period:
				  ○ Pre-epidemic: 48.1% (95% CI: 12.3-69.3)
				  ○ Epidemic: 52.5% (95% CI: 43.4-60.2)
				  ○ Post-epidemic: 35.3% (95% CI: 10.2-53.5)

Appendix 3: Documents excluded at the final stage of reviewing

Author and year of publication with hyperlink	Title	Reason for exclusion
Murphy et al. 2024	Influenza vaccine effectiveness against hospitalizations associated with influenza A(H3N2) in Hong Kong children aged 9 months to 17 years, June-November 2023	Wrong timeline
Prasert et al. 2023	Influenza virus circulation and vaccine effectiveness during June 2021–May 2023 in Thailand	Duplicate study
Broad et al. 2023	Adapting COVID-19 research infrastructure to capture influenza and respiratory syncytial virus alongside SARS-CoV-2 in UK healthcare workers Winter 2022/23 and beyond: Protocol for a pragmatic sub-study	Wrong study design
Ma et al. 2024	Association between influenza vaccination and one-year all-cause and cardiovascular mortality risk: A self-controlled case series and matched case-control study	Wrong outcomes
Maurel et al. 2024	Exploring the effect of clinical case definitions on influenza vaccine effectiveness estimation at primary care level: Results from the end-of-season 2022–23 VEBIS multicentre study in Europe	Wrong intervention
Stein et al. 2024	Relative vaccine effectiveness of cell- vs egg-based quadrivalent influenza vaccine against test-confirmed influenza over 3 seasons between 2017 and 2020 in the United States	Wrong comparator
McLean et al. 2023	Comparison of influenza vaccine effectiveness estimates from the US influenza vaccine effectiveness network and electronic health record source population data, 2021–2022	Wrong study design
Noble et al. 2023	Effectiveness of influenza vaccination against influenza-associated emergency department (ED) visits and hospitalizations among children with and without underlying medical conditions, new vaccine surveillance network (NVSN), 2015–2016 through 2019–2020	Wrong study design
Zemlianskaia et al. 2023	Substantially elevated influenza risk in vaccinated immunocompromised adults and high-risk patients relative to all vaccinated	Wrong comparator
Imran et al. 2024	Relative effectiveness of the MF59-adjuvanted influenza vaccine versus high-dose and non-adjuvanted influenza vaccines in preventing cardiorespiratory hospitalizations during the 2019–2020 US influenza season	Wrong comparator
Platas-Abenza et al. 2024	Effectiveness of influenza vaccine in preventing severe cases of influenza: Season 2022/2023	Wrong timeline
Johansen et al. 2024	Effectiveness of high-dose versus standard-dose quadrivalent influenza vaccine against recurrent hospitalizations and mortality in relation to influenza circulation: A post-hoc analysis of the DANFLU-1 randomized clinical trial	Wrong comparator
Sui et al. 2023	Research progress of influenza vaccination, pneumococcal vaccination and COVID-19 vaccination among cancer patients	Wrong study design
Levin et al. 2024	A clinical and economic assessment of adjuvanted trivalent versus standard egg-derived quadrivalent influenza vaccines among older adults in the United States during the 2018–19 and 2019–20 influenza seasons	Wrong comparator
Akhtar et al. 2023	Optimal timing of influenza vaccination among patients with acute myocardial infarction – Findings from the IAMI trial	Wrong outcomes
Music et al. 2023	Perspectives of older adults on COVID-19 and influenza vaccination in Ontario, Canada	Wrong interventions
Brennan et al. 2023	Influenza vaccination: Simple, safe, and effective for patients with ischaemic heart disease and heart failure	Wrong outcomes
Zysman et al. 2023	Impact of pharmacological and non-pharmacological interventions on mortality in chronic obstructive pulmonary disease (COPD) patients	Wrong study design
Sookaromdee et al. 2023	Concurrent administration of COVID-19 vaccine and seasonal influenza vaccine: No increased estimated vaccine-related mortality rate	Wrong study design
Liu et al. 2023	Timing and sequence of vaccination against COVID-19 and influenza	Wrong study design
Shinjoh et al. 2023	Effectiveness of inactivated influenza and COVID-19 vaccines in hospitalized children in 2022/23 season in Japan – The first season of co-circulation of influenza and COVID-19	Wrong patient population

Author and year of publication with hyperlink	Title	Reason for exclusion
Imran et al. 2023	Relative effectiveness of the cell-based quadrivalent influenza vaccine in preventing cardiorespiratory hospitalizations in adults aged 18–64 years during the 2019–2020 US influenza season	Wrong comparator
Biering-Sorensen et al. 2023	DANFLU-1: Feasibility of a pragmatic randomised trial to assess the relative effectiveness of high-dose (QIV-HD) vs standard-dose quadrivalent influenza vaccine (QIV-SD) on severe cardio-respiratory outcomes in elderly adults	Wrong study design
Mazagatos et al. 2023	Impact of influenza vaccination on the burden of severe influenza in the elderly: Spain, 2017–2020	Wrong outcomes
Fruhwein et al. 2023	Enhanced targeted influenza vaccines – New evidence shows higher effectiveness in older adults	Wrong study design
Zeevat et al. 2023	Reducing hospital capacity needs for seasonal respiratory infections: The case of switching to high-dose influenza vaccine for Dutch older adults	Wrong comparator
Escandell et al. 2023	Effectiveness of the influenza vaccine in the prevention of influenza in people over 65 years of age	Wrong interventions
Andrejko et al. 2023	Receipt of COVID-19 and seasonal influenza vaccines in California (USA) during the 2021–2022 influenza season	Wrong outcomes
Johansen et al. 2023	A pragmatic randomized feasibility trial of influenza vaccines	Wrong comparator
Shrestha et al. 2024	Influenza epidemiology and vaccine effectiveness following funded influenza vaccine in Queensland, Australia, 2022	Wrong timeline
Chatzilena et al. 2024	Winter 2022–23 influenza vaccine effectiveness against influenza-related hospitalised aLRTD: A test-negative, case-control study	Wrong timeline
Laniece et al. 2024	Corrigendum to “Effectiveness of COVID-19 vaccines administered in the 2023 autumnal campaigns in Europe: results from the VEBIS primary care test-negative design study, September 2023–January 2024” [Vaccine 42(19) 2024]	Wrong interventions
Tenforde et al. 2024	Influenza vaccine effectiveness against Influenza A-Associated emergency department, urgent care, and hospitalization encounters among US adults, 2022–2023	Wrong timeline
Tenforde et al. 2023	Vaccine effectiveness against influenza-associated urgent care, emergency department, and hospital encounters during the 2021–2022 season, VISION network	Wrong timeline
Shinjoh et al. 2022	Trends in effectiveness of inactivated influenza vaccine in children by age groups in seven seasons immediately before the COVID-19 era	Wrong timeline
Yildirim et al. 2021	A retrospective test-negative case-control study to evaluate influenza vaccine effectiveness in preventing hospitalizations in children	Wrong timeline
Grijalva et al. 2021	Influenza vaccine effectiveness for prevention of severe influenza-associated illness among adults in the United States, 2019–2020: A test-negative study	Wrong timeline
Chung et al. 2021	Influenza vaccine effectiveness against all-cause mortality following laboratory-confirmed influenza in older adults, 2010–2011 to 2015–2016 seasons in Ontario, Canada	Wrong comparator
Rao et al. 2021	Evaluation of influenza vaccine effectiveness among young children receiving consecutive versus nonconsecutive vaccination during Influenza A(H3N2)-predominant season	Wrong timeline
Gershon et al. 2020	Influenza vaccine effectiveness in preventing hospitalizations in older patients with chronic obstructive pulmonary disease	Wrong timeline
Feng et al. 2018	Effectiveness of influenza vaccination on influenza-associated hospitalisations over time among children in Hong Kong: A test-negative case-control study	Wrong timeline
Flannery et al. 2017	Interim estimates of 2016–17 seasonal influenza vaccine effectiveness – United States, February 2017	Wrong timeline

Author and year of publication with hyperlink	Title	Reason for exclusion
Kurečić et al. 2015	Influenza vaccine effectiveness estimates in Croatia in 2010–2011: A season with predominant circulation of A(H1N1)pdm09 influenza virus	Wrong timeline
Hélène et al. 2023	The relative effectiveness of a high-dose quadrivalent influenza vaccine vs standard-dose quadrivalent influenza vaccines in older adults in France: A retrospective cohort study during the 2021–22 influenza season	Wrong timeline
Bi et al. 2024	**Evaluating reduced effectiveness after repeat influenza vaccination while accounting for confounding by recent infection and within-season waning**	Wrong timeline
Bi et al. 2023	Reduced effectiveness of repeat influenza vaccination: Distinguishing among within-season waning, recent clinical infection, and subclinical infection	Wrong timeline
Graham et al. 2024	Quantifying and adjusting for confounding from health-seeking behaviour and healthcare access in observational research	Wrong timeline
Nakafero et al. 2024	Uptake, safety, and effectiveness of inactivated influenza vaccine in patients with inflammatory bowel disease: a nationwide study in the UK using data from the clinical practice research datalink	Wrong timeline
McGovern et al. 2024	Relative vaccine effectiveness of MF59-adjuvanted vs high-dose trivalent inactivated influenza vaccines for prevention of test-confirmed influenza hospitalizations during the 2017–2020 influenza seasons	Wrong timeline
Nakayama et al. 2024	The efficacy and safety of a quadrivalent live attenuated influenza nasal vaccine in Japanese children: A phase 3, randomized, placebo-controlled study	Wrong timeline
Chung et al. 2024	Late-season influenza vaccine effectiveness against medically attended outpatient illness, United States, December 2022–April 2023	Wrong timeline
Yang et al. 2024	Repeated vaccination does not appear to significantly weaken the protective effect of influenza vaccine in the elderly: A test-negative case-control study in China	Wrong timeline
Whitaker et al. 2024	End of 2022/23 season influenza vaccine effectiveness in primary care in Great Britain	Wrong timeline
Yang et al. 2024	Effectiveness of inactivated influenza vaccine against laboratory-confirmed influenza among Chinese elderly: A test-negative design	Wrong timeline
Mangas-Moro et al. 2024	Influenza vaccination mitigates severe complications in hospitalized patients: A ten-year observational study, Spain, 2009–2019	Wrong timeline
Tippett et al. 2024	Influenza vaccine effectiveness pre-pandemic among adults hospitalized with congestive heart failure or chronic obstructive pulmonary disease and older adults	Wrong timeline
Lewis et al. 2024	Vaccine effectiveness against Influenza A-associated hospitalization, organ failure, and death: United States, 2022–2023	Wrong timeline
Domnich et al. 2024	Waning intra-season vaccine effectiveness against influenza A(H3N2) underlines the need for more durable protection	Wrong timeline
Whitaker et al. 2024	Influenza vaccination during the 2021/22 season: A data-linkage test-negative case-control study of effectiveness against influenza requiring emergency care in England and serological analysis of primary care patients	Wrong timeline
Rose et al. 2024	Vaccine effectiveness against influenza hospitalisation in adults during the 2022/2023 mixed season of influenza A(H1N1)pdm09, A(H3N2) and B circulation, Europe: VEBIS SARI VE hospital network	Wrong timeline
Al Kharusi et al. 2024	Frequency of asthma exacerbations and upper respiratory tract infections among adults with asthma according to vaccination status: Does the annual influenza vaccine have a protective effect?	Wrong timeline
Pang et al. 2024	Corrigendum to “Effectiveness of influenza vaccination on in-hospital death and recurrent hospitalization in older adults with cardiovascular diseases”	Wrong timeline

Author and year of publication with hyperlink	Title	Reason for exclusion
Olson et al. 2024	Effectiveness of maternal influenza vaccination during pregnancy against influenza-associated emergency department visits and hospitalizations in infants <6 months of age	Wrong timeline
Glenn et al. 2024	Influenza vaccine administration and effectiveness among children and adults with glomerular disease	Wrong timeline
Tsuzuki et al. 2023	Association between seasonal influenza vaccination and antimicrobial use in Japan from the 2015–16 to 2020–21 seasons: from the VENUS study	Wrong timeline
Maurel et al. 2024	Influenza vaccine effectiveness in Europe: Results from the 2022–2023 VEBIS (Vaccine Effectiveness, Burden and Impact Studies) primary care multicentre study	Wrong timeline
Kramer et al. 2023	Effectiveness of the influenza vaccine for preventing laboratory-confirmed influenza infections in outpatient immunocompromised adults, 2017–2018	Wrong timeline
Prevot et al. 2023	Influenza vaccine effectiveness among children: 2011–2020	Wrong timeline
Hsiao et al. 2023	Recombinant or standard-dose influenza vaccine in adults under 65 years of age	Wrong timeline
Wicke et al. 2023	Schatzung der wirksamkeit der grippeimpfung anhand von sekundardaten: Eine kohortenstudie und propensity-score-matching-analyse von leistungsdaten aus Baden-Wurttemberg (Translate title: Estimation of Influenza Vaccine Effectiveness using Secondary Data: A Cohort Study and Propensity Score-Matched Analysis of Claims Data from Baden-Wuerttemberg)	Wrong timeline
Cowling et al. 2023	Influenza vaccine effectiveness against influenza-associated hospitalization in Hong Kong children aged 9 months to 17 years, March–June 2023	Wrong timeline
Tenforde et al. 2023	Influenza vaccine effectiveness against influenza-A-associated emergency department, urgent care, and hospitalization encounters among U.S. adults, 2022–2023	Wrong timeline
Fell et al. 2023	Effectiveness of maternal influenza vaccination during pregnancy against laboratory-confirmed seasonal influenza among infants under 6 months of age in Ontario, Canada	Wrong timeline
Kildegaard et al. 2023	Effectiveness of the quadrivalent live attenuated influenza vaccine against influenza-related hospitalisations and morbidity among children aged 2 to 6 years in Denmark: a nationwide cohort study emulating a target trial	Wrong timeline
Su et al. 2023	Influenza vaccine effectiveness against influenza A during the delayed 2022/23 epidemic in Shihezi, China	Wrong timeline
Kislaya et al. 2023	End of season 2022/2023 quadrivalent influenza vaccine effectiveness in preventing influenza in primary care in Portugal	Wrong timeline
Glenn et al. 2023	Influenza vaccine administration and effectiveness among patients with glomerular disease	Wrong timeline
Chaves et al. 2023	High-dose influenza vaccine is associated with reduced mortality among older adults with breakthrough influenza even when there is poor vaccine-strain match	Wrong timeline
Pott et al. 2023	Vaccine effectiveness of non-adjuvanted and adjuvanted trivalent inactivated influenza vaccines in the prevention of influenza-related hospitalization in older adults: A pooled analysis from the Serious Outcomes Surveillance (SOS) Network of the Canadian	Wrong timeline
Fornaguera et al. 2023	Influenza vaccine effectiveness against hospitalization, season 2021/22: A test-negative design study in Barcelona	Wrong timeline
Martínez-Baz et al. 2023	Influenza vaccine effectiveness in preventing laboratory-confirmed influenza cases and hospitalizations in Navarre, Spain, 2022–2023	Wrong timeline
Li et al. 2023	Effect of influenza vaccination on rate of influenza virus infection in Chinese military personnel, 2015–2016: A cluster randomized trial	Wrong timeline
Zimmerman et al. 2023	Vaccine effectiveness of recombinant and standard dose influenza vaccines against influenza related hospitalization using a retrospective test-negative design	Wrong timeline

Author and year of publication with hyperlink	Title	Reason for exclusion
Fowlkes et al. 2023	Interim effectiveness estimates of 2023 Southern Hemisphere influenza vaccines in preventing influenza-associated hospitalizations – REVELAC-i Network, March–July 2023	Wrong timeline
Domnich et al. 2023	Influenza vaccine effectiveness in preventing hospital encounters for laboratory-confirmed infection among Italian adults, 2022/23 season	Wrong timeline
Sominina et al. 2023	Assessing the intense Influenza A(H1N1)pdm09 epidemic and vaccine effectiveness in the post-COVID season in the Russian Federation	Wrong timeline
Saadatian-Elahi et al. 2023	Patient influenza vaccination reduces the risk of hospital-acquired influenza: An incident test negative-case control study in Lyon university hospital, France (2004–2020)	Wrong timeline
Chung et al. 2023	Evaluating the impact of statin use on influenza vaccine effectiveness and influenza infection in older adults	Wrong timeline
Tenforde et al. 2023	Vaccine effectiveness against influenza-associated urgent care, emergency department, and hospital encounters during the 2021–2022 season, VISION network	Wrong timeline
Stuurman et al. 2023	Brand-specific estimates of influenza vaccine effectiveness for the 2021–2022 season in Europe: results from the DRIVE multi-stakeholder study platform	Wrong timeline
Wagner et al. 2023	Single-dose vaccination among infants and toddlers provides modest protection against influenza illness, which wanes after 5 months	Wrong timeline
Yokomichi et al. 2023	Association of influenza vaccination or influenza virus infection history with subsequent infection risk among children: The Japan Environment and Children's Study (JECS)	Wrong timeline
Uemura et al. 2023	Duration of influenza vaccine effectiveness in the elderly in Japan: A retrospective cohort study using large-scale population-based registry data	Wrong timeline
Chard et al. 2023	End-of-season influenza vaccine effectiveness during the Southern Hemisphere 2022 influenza season – Chile, Paraguay, and Uruguay	Wrong timeline
Awadalla et al. 2023	Moderately low effectiveness of the influenza quadrivalent vaccine: Potential mismatch between circulating strains and vaccine strains	Wrong timeline
Price et al. 2023	Influenza vaccine effectiveness against Influenza A(H3N2)-related illness in the United States during the 2021–2022 influenza season	Wrong timeline
Owusu et al. 2023	Effectiveness of maternal influenza vaccination in Peru PRIME cohort	Wrong timeline
Vaikutyte et al. 2023	Influenza vaccine effectiveness in patients hospitalized with severe acute respiratory infection in Lithuania during the 2019–2020 influenza season: A test negative case – control study	Wrong timeline
Aso et al. 2023	Effectiveness of vaccination on influenza-related critical illnesses in the elderly population	Wrong timeline
Sahni et al. 2023	Sustained within-season vaccine effectiveness against influenza-associated hospitalization in children: Evidence from the new vaccine surveillance network, 2015–2016 through 2019–2020	Wrong timeline
Zimmerman et al. 2023	Vaccine effectiveness of recombinant and standard dose influenza vaccines against outpatient illness during 2018–2019 and 2019–2020 calculated using a retrospective test-negative design	Wrong timeline
Regan et al. 2023	Severity of influenza illness by seasonal influenza vaccination status among hospitalised patients in four South American countries, 2013–19: A surveillance-based cohort study	Wrong timeline
Panatto et al. 2023	Surveillance of severe acute respiratory infection and influenza vaccine effectiveness among hospitalized Italian adults, 2021/22 season	Wrong timeline
Skowronski et al. 2023	Vaccine effectiveness estimates from an early-season influenza A(H3N2) epidemic, including unique genetic diversity with reassortment, Canada, 2022/23	Wrong timeline

Author and year of publication with hyperlink	Title	Reason for exclusion
Kissling et al. 2023	Influenza vaccine effectiveness against influenza A subtypes in Europe: Results from the 2021–2022 I-MOVE primary care multicentre study	Wrong timeline
Acevedo-Rodriguez et al. 2024	Influenza incidence, lineages, and vaccine effectiveness estimates in Lima, Peru, 2023	Wrong timeline
Donzelli 2024	Re: 'the relative effectiveness of a high-dose quadrivalent influenza vaccine versus standard-dose quadrivalent influenza vaccines in older adults in France' by Bricout et al.	Wrong study design
Branagan et al. (2015)	Fluzone high-dose influenza vaccine with a booster is associated with low rates of influenza infection in patients with plasma cell disorders	No full text
Sanz-Muñoz et al. 2024	Are we serologically prepared against an avian influenza pandemic and could seasonal flu vaccines help us?	Wrong outcomes
Morris et al. 2024	Estimating historical disease burden and the impact of vaccination by influenza type and subtype in the United States, 2016–2020	Wrong setting
Pendrey et al. 2024	Hospitalizations and emergency attendance averted by influenza vaccination in Victoria, Australia, 2017 – 2019	Wrong setting
McHugh et al. 2019	Baseline incidence of adverse birth outcomes and infant influenza and pertussis hospitalisations prior to the introduction of influenza and pertussis vaccination in pregnancy: a data linkage study of 78 382 mother-infant pairs, Northern Territory, Australia, 1994–2015	Wrong setting
Martín Ramos et al. 2025	Evolution of hospitalized patients with influenza during 2016–2020 according to their vaccination status	Wrong timeline
Hammerton et al. 2024	Estimating standard-dose and high-dose Fluzone vaccine efficacies for influenza A based on HAI titers	Wrong timeline
Lei et al. 2024	Influenza vaccine effectiveness against hospital-attended influenza infection in 2023/24 season in Hangzhou, China	Duplicate study
Rigamonti et al. 2025	Real-world effectiveness of live attenuated vs. inactivated influenza vaccines in children	Duplicate study
AbouChakra et al. 2025	Vaccine effectiveness dynamics against influenza and SARS-CoV-2 in community-tested patients in France 2023-2024	Wrong timeline
Bartholdy et al. 2025	High-Dose vs Standard-Dose Influenza Vaccine in Chronic Kidney Disease: The DANFLU-2 Trial Subgroup Analysis	Wrong comparator
Bucholc et al. 2025	Influenza Vaccine Effectiveness During the 2023/2024 Season: A Test-Negative Case-Control Study Among Emergency Hospital Admissions With Respiratory Conditions in Northern Ireland	Wrong timeline
Choi et al. 2025	Interim Vaccine Effectiveness Against Influenza and Hospitalization, Republic of Korea, 2024-2025 (HIMM Network)	Wrong timeline
Chung et al. 2025	Influenza Vaccine Effectiveness Against Medically Attended Outpatients Illness, United States, 2023-2024 Season	Wrong timeline
Diaz-Estevez et al. 2025	Effectiveness of high-dose versus standard-dose influenza vaccines against severe respiratory and cardiovascular outcomes in adults aged >=80 years, Andalusia, Spain, 2024-2025 season	Wrong study design
Domnich et al. 2025	Relative effectiveness of the high-dose versus standard-dose influenza vaccines for the prevention of laboratory-confirmed influenza among Italian older adults during three recent seasons	Wrong study design
Domnich et al. 2025	Effect of Influenza Vaccination on the Disease Severity and Viral Load Among Adult Outpatients and Inpatients	Wrong study design
Harker et al. 2026	Differences in influenza vaccine effectiveness by sex among adults hospitalized with acute respiratory illness-IVY network, January 24, 2022-September 1, 2024	Wrong timeline
Jiang et al. 2025	Influenza vaccine effectiveness among primary and secondary school students in Shenzhen during the 2023/24 influenza season	Wrong timeline
Johansen et al. 2025	High-Dose Influenza Vaccine Effectiveness against Hospitalization in Older Adults	Wrong study design

Author and year of publication with hyperlink	Title	Reason for exclusion
Johansen et al. 2025	Effectiveness of high-dose influenza vaccine against hospitalisations in older adults (FLUNITY-HD): an individual-level pooled analysis	Wrong study design
Johansen et al. 2025	High-Dose vs Standard-Dose Influenza Vaccine and Cardiovascular Outcomes in Older Adults: A Prespecified Secondary Analysis of the DANFLU-2 Randomized Clinical Trial	Wrong study design
Johansen et al. 2025	High-Dose vs. Standard-Dose Influenza Vaccine and Cardiovascular Outcomes in Older Adults: The FLUNITY-HD Prespecified Pooled Analysis	Wrong study design
Kissling et al. 2025	Influenza vaccine effectiveness in Europe and the birth cohort effect against influenza A(H1N1)pdm09: VEBIS primary care multicentre study, 2023/24	Wrong timeline
Kitano et al. 2026	Effectiveness of live-attenuated and inactivated influenza vaccines against influenza in 2-17-y-old children, United States, 2022-2025	Wrong study design
Lee et al. 2025	Safety and Influenza Infections in Children Aged 6-35 Months Receiving Cell Culture-Derived Inactivated Quadrivalent Influenza Vaccine During the 2023-2024 Influenza Season in South Korea	Wrong timeline
Lewis et al. 2025	Vaccine Effectiveness Against Influenza A(H1N1), A(H3N2), and B-Associated Hospitalizations, United States, 1 September 2023 to 31 May 2024	Wrong timeline
McGeoch et al. 2025	Effectiveness of influenza vaccination against infection in UK healthcare workers during winter 2023-24: the SIREN cohort study	Wrong timeline
Nguyen et al. 2025	Effectiveness of Cell Culture-Based Influenza Vaccine, 2023-2024	Wrong timeline
Nielsen et al. 2026	High-Dose vs Standard-Dose Influenza Vaccine in Older Adults With Diabetes: A Secondary Analysis of the DANFLU-2 Randomized Clinical Trial	Wrong study design
Palmu et al. 2024	High-Dose Quadrivalent Influenza Vaccine for Prevention of Cardiovascular and Respiratory Hospitalizations in Older Adults.	Wrong timeline
Poukka et al. 2025	Bias in control selection associated with the use of rapid tests in influenza vaccine effectiveness studies	Wrong timeline
Prins et al. 2025	A Retrospective Test-Negative Case-Control Study to Evaluate Influenza Vaccine Effectiveness in Preventing Influenza Among Immunocompromised Adults With a Solid Organ Transplant	Wrong timeline
Reeves et al. 2025	Effectiveness of 2023-2024 seasonal influenza vaccine against influenza-associated emergency department and urgent care encounters among pregnant and non-pregnant women of reproductive age	Wrong timeline
Regan et al. 2025	Effectiveness of the 2023 Southern Hemisphere Influenza Vaccine Against Outpatient Influenza-Like Illness: A Multi-Country Test-Negative Design Study	Wrong timeline
Rice et al. 2025	Influenza Epidemiology, Treatment and Prevention in Australian Children: Trends from 6 Years of PAEDS-FluCAN Influenza Surveillance (2019-2024)	Wrong timeline
Shrestha et al. 2025	Effectiveness of the Influenza Vaccine During the 2024-2025 Respiratory Viral Season: A Prospective Cohort Study	Wrong population
Stein et al. 2025	Superior Effectiveness and Estimated Public Health Impact of Cell- Versus Egg-Based Influenza Vaccines in Children and Adults During the US 2023-2024 Season	Wrong timeline
Tian et al. 2025	Effectiveness and safety of a novel intranasal influenza vaccine in Chinese children: A phase IV multi-Center, randomized, double-blind, placebo-controlled clinical trial	Wrong timeline
Tsou et al. 2025	Assessment of Influenza Vaccine Effectiveness Among the Elderly in Taiwan Using Population-Based Registry Data for the 2023-2024 Season	Wrong timeline
Wee et al. 2025	Real-world effectiveness of influenza vaccination and subsequent waning in a tropical setting: a retrospective cohort study	Wrong timeline

Author and year of publication with hyperlink	Title	Reason for exclusion
Whitaker et al. 2025	Effectiveness of Influenza Vaccines and Duration of Protection Against Hospitalisation in England: 2022/2023 and 2023/2024 Seasons	Wrong timeline
Yu et al. 2025	Influenza vaccine effectiveness among adults aged >=60years in northeastern Zhejiang Province, China, 2021-2024	Wrong timeline
Zhu et al. 2025	Estimating Influenza Vaccine Effectiveness Against Laboratory-Confirmed Influenza Using Linked Public Health Information Systems, California, 2023-2024 Season	Wrong timeline
Rigamonti et al. 2025	Real-world effectiveness of influenza vaccination in preventing influenza and influenza-like illness in children	Wrong timeline
Shen et al. 2026	Moderate protection from vaccination against influenza A(H3N2) subclade K in Beijing, China, September to December 2025	Wrong study design
Skaarup et al. 2025	High-Dose Versus Standard-Dose Influenza Vaccine in Heart Failure: A Prespecified Analysis of the DANFLU-2 Trial	Wrong comparator
Wang et al. 2025	Effect of influenza vaccination on influenza cluster epidemic in primary and secondary schools in Beijing in surveillance during 2023-2024	Wrong timeline
Imran et al. 2024	Relative Effectiveness of the MF59 R-Adjuvanted Influenza Vaccine Versus High-Dose and Non-Adjuvanted Influenza Vaccines in Preventing Cardiorespiratory Hospitalizations During the 2019-2020 US Influenza Season.	Wrong timeline
Leroux-Roels et al. 2023	Immunogenicity, safety, and preliminary efficacy evaluation of OVX836, a nucleoprotein-based universal influenza A vaccine candidate: a randomised, double-blind, placebo-controlled, phase 2a trial.	Wrong timeline
Hsiao et al. 2023	Recombinant or Standard-Dose Influenza Vaccine in Adults under 65 Years of Age.	Wrong timeline
Kissling et al. 2023	Interim 2022/23 influenza vaccine effectiveness: six European studies, October 2022 to January 2023.	Wrong timeline
Tenforde et al. 2023	Vaccine Effectiveness Against Influenza A(H3N2)-Associated Hospitalized Illness: United States, 2022.	Wrong timeline
Hood et al. 2023	Influenza Vaccine Effectiveness Among Children: 2011-2020.	Wrong timeline
Jackson et al. 2022	Burden of medically attended influenza infection and cases averted by vaccination - United States, 2016/17 through 2018/19 influenza seasons.	Wrong timeline
Kim et al. 2022	Vaccine Effectiveness Against Influenza Hospitalization and Emergency Department Visits in 2 A(H3N2) Dominant Influenza Seasons Among Children <18 Years Old-New Vaccine Surveillance Network 2016-2017 and 2017-2018.	Wrong timeline
Hollingsworth et al. 2021	Effectiveness of the quadrivalent high-dose influenza vaccine for prevention of cardiovascular and respiratory events in people aged 65 years and above: Rationale and design of a real-world pragmatic randomized clinical trial.	Wrong timeline
Rao et al. 2021	Evaluation of Influenza Vaccine Effectiveness Among Young Children Receiving Consecutive Versus Nonconsecutive Vaccination During Influenza A(H3N2)-Predominant Seasons.	Wrong timeline
Kim et al. 2021	Effects of Prior Season Vaccination on Current Season Vaccine Effectiveness in the United States Flu Vaccine Effectiveness Network, 2012-2013 Through 2017-2018.	Wrong timeline
Tenforde et al. 2021	Influenza Vaccine Effectiveness in Inpatient and Outpatient Settings in the United States, 2015-2018.	Wrong timeline
Lindsey et al. 2019	Effect of a Russian-backbone live-attenuated influenza vaccine with an updated pandemic H1N1 strain on shedding and immunogenicity among children in The Gambia: an open-label, observational, phase 4 study.	Wrong timeline
Monamele et al. 2019	Molecular characterization of influenza A(H1N1)pdm09 in Cameroon during the 2014-2016 influenza seasons.	Wrong timeline
Poehling et al. 2018	2015-2016 Vaccine Effectiveness of Live Attenuated and Inactivated Influenza Vaccines in Children in the United States.	Wrong timeline

Author and year of publication with hyperlink	Title	Reason for exclusion
Shang et al. 2018	Influenza vaccine effectiveness among patients with high-risk medical conditions in the United States, 2012-2016.	Wrong timeline
VanDerMeeren et al. 2018	Phase 2b Controlled Trial of M72/AS01E Vaccine to Prevent Tuberculosis.	Wrong timeline
Segaloff et al. 2018	Severe morbidity among hospitalised adults with acute influenza and other respiratory infections: 2014-2015 and 2015-2016.	Wrong timeline
Rondy et al. 2018	Interim 2017/18 influenza seasonal vaccine effectiveness: combined results from five European studies.	Wrong timeline
Russell et al. 2018	Influenza vaccine effectiveness in older adults compared with younger adults over five seasons.	Wrong timeline
Russell et al. 2018	Evaluating interest in an influenza A(H5N1) vaccine among laboratory workers who work with highly-pathogenic avian influenza viruses in the United States.	Wrong timeline
Jackson et al. 2017	Influenza Vaccine Effectiveness in the United States during the 2015-2016 Season.	Wrong timeline
Nunes et al. 2017	Efficacy of Maternal Influenza Vaccination Against All-Cause Lower Respiratory Tract Infection Hospitalizations in Young Infants: Results From a Randomized Controlled Trial.	Wrong timeline
Vamos et al. 2016	Effectiveness of the influenza vaccine in preventing admission to hospital and death in people with type 2 diabetes.	Wrong timeline
Kittikraisak et al. 2016	Effectiveness of the 2013 and 2014 Southern Hemisphere Influenza Vaccines Against Laboratory-confirmed Influenza in Young Children Using a Test-negative Design, Bangkok, Thailand.	Wrong timeline
Wang et al. 2016	Seasonal influenza vaccine effectiveness against medically attended influenza illness among children aged 6-59 months, October 2011-September 2012: A matched test-negative case-control study in Suzhou, China.	Wrong timeline
Thompson et al. 2016	Influenza Vaccine Effectiveness for Fully and Partially Vaccinated Children 6 Months to 8 Years Old During 2011-2012 and 2012-2013: The Importance of Two Priming Doses.	Wrong timeline
Simpson et al. 2015	Trivalent inactivated seasonal influenza vaccine effectiveness for the prevention of laboratory-confirmed influenza in a Scottish population 2000 to 2009.	Wrong timeline
Izurieta et al. 2015	Comparative effectiveness of high-dose versus standard-dose influenza vaccines in US residents aged 65 years and older from 2012 to 2013 using Medicare data: a retrospective cohort analysis.	Wrong timeline
Turner et al. 2014	Effectiveness of seasonal trivalent inactivated influenza vaccine in preventing influenza hospitalisations and primary care visits in Auckland, New Zealand, in 2013.	Wrong timeline
Turner et al. 2014	The effectiveness of seasonal trivalent inactivated influenza vaccine in preventing laboratory confirmed influenza hospitalisations in Auckland, New Zealand in 2012.	Wrong timeline
Ntshoe et al. 2014	Influenza epidemiology and vaccine effectiveness among patients with influenza-like illness, viral watch sentinel sites, South Africa, 2005-2009.	Wrong timeline
Kafatos et al. 2013	Effectiveness of seasonal influenza vaccine in preventing medically attended influenza infection in England and Wales during the 2010/2011 season: a primary care-based cohort study.	Wrong timeline
Simpson et al. 2012	Effectiveness of H1N1 vaccine for the prevention of pandemic influenza in Scotland, UK: a retrospective observational cohort study.	Wrong timeline
Simpson et al. 2010	Vaccine effectiveness in pandemic influenza - primary care reporting (VIPER): an observational study to assess the effectiveness of the pandemic influenza A (H1N1)v vaccine.	Wrong timeline

Author and year of publication with hyperlink	Title	Reason for exclusion
Ohmit et al. 2008	Prevention of symptomatic seasonal influenza in 2005-2006 by inactivated and live attenuated vaccines.	Wrong timeline
Ohmit et al. 2006	Prevention of antigenically drifted influenza by inactivated and live attenuated vaccines.	Wrong timeline
Anonymous et al. 2025	Effectiveness of the 2024-2025 Influenza Vaccine in Korean Children: A Test-Negative Case-Control Study	Wrong study design
Lucaccioni et al. 2026	Influenza vaccine effectiveness from nine studies during drifted A(H3N2) subclade K predominance, Europe, September 2025 to January 2026	Wrong study design
Guiomar et al. 2026	Cross-sectional study on protective antibodies against influenza A virus subtypes and cross-protection against influenza A(H3N2) subclade K, Portugal, August 2025	Wrong outcomes
Espersen et al. 2025	High-Dose vs Standard-Dose Influenza Vaccine in Older Adults With Atrial Fibrillation: A Prespecified Analysis of the DANFLU-2 Trial	Wrong outcomes
Fallucca et al. 2025	Effectiveness of an Active Offer of Influenza Vaccination to Hospitalized Frail Patients	Wrong outcomes
Chilver et al. 2026	Evaluating the role of self-collected home swab data in enhancing influenza vaccine effectiveness estimates in general practice	Wrong timeline
Mallah et al. 2025	Operational Framework and Feasibility of the GALFLU Study: A Pragmatic Individually Randomized Controlled Trial Evaluating High-Dose Versus Standard-Dose Influenza Vaccination in Older Adults	Wrong study design
vanLeeuwen et al. 2025	Influenza hospital admissions prevented by vaccination: a transmission dynamic analysis of the 2022/2023 and 2023/2024 programmes in England	Wrong study design
Anonymous et al. 2023	A Phase 3/3b, Randomized, Observer-blind, Multicenter Clinical Study to Evaluate the Efficacy, Safety and Immunogenicity of an MF59-Adjuvanted Subunit Inactivated Influenza Vaccine Compared to a Non-adjuvanted Influenza Vaccine in Adults >=65 Years of Age	Wrong timeline
Anonymous et al. 2024	Effectiveness of Trivalent Influenza Vaccine (TIV) in Type 2 Diabetes Mellitus (T2DM) Patients With and Without Complications of Chronic Kidney Disease (CKD): A Clinical Observational Study on Antibody Titers and Dynamic Changes in IL-2 and IL-6 Cytokines	Wrong outcomes
Anonymous et al. 2023	Relative Vaccine Effectiveness of Adjuvanted Quadrivalent Inactivated Influenza Vaccine vs High-Dose Quadrivalent Inactivated Influenza Vaccine Among Adults >=65 Years for the 2023-24 and 2024-25 Seasons	Wrong timeline
Anonymous et al. 2000	Study of the Influenza Virus Vaccine, Trivalent, Types A & B, Live Cold-Adapted (CAIV-T) in a Community-Based, Non-Randomized, Open-Label Trial in Children to Assess Safety and Herd Immunity for the Control of Epidemic Influenza	Wrong timeline
Attwaters et al. 2025	Predicting vaccine effectiveness	Wrong study design
Anonymous et al. 2025	Influenza Vaccines for 2025-2026	Wrong study design
Anonymous et al. 2025	Antiviral drugs for seasonal influenza for 2025-2026	Wrong study design
Johansen et al. 2026	A pragmatic individually randomized trial to evaluate the effectiveness of high-dose vs standard-dose influenza vaccine in older adults: Rationale and design of the DANFLU-2 trial	Wrong outcomes
Barisano et al. 2025	Influenza Vaccine Effectiveness and Disease Burden in Children and Adolescents with Solid Organ Transplant: 2018-2024	Wrong study design
Hsiao et al. 2025	Effectiveness of Adjuvanted Inactivated Influenza Vaccine versus High-Dose Inactivated Influenza Vaccine -Confirmed Influenza among Adults >=65 years: A Pragmatic Randomized Study	Wrong study design
Reeves et al. 2025	Influenza Vaccine Effectiveness in Ambulatory Care Settings among Pregnant Persons in the 2023-2024 Influenza Season	Wrong study design
Zhu et al. 2025	Estimates of Waning Influenza Vaccine Effectiveness Against Laboratory-Confirmed Influenza in California, October 2023-March 2024	Wrong study design

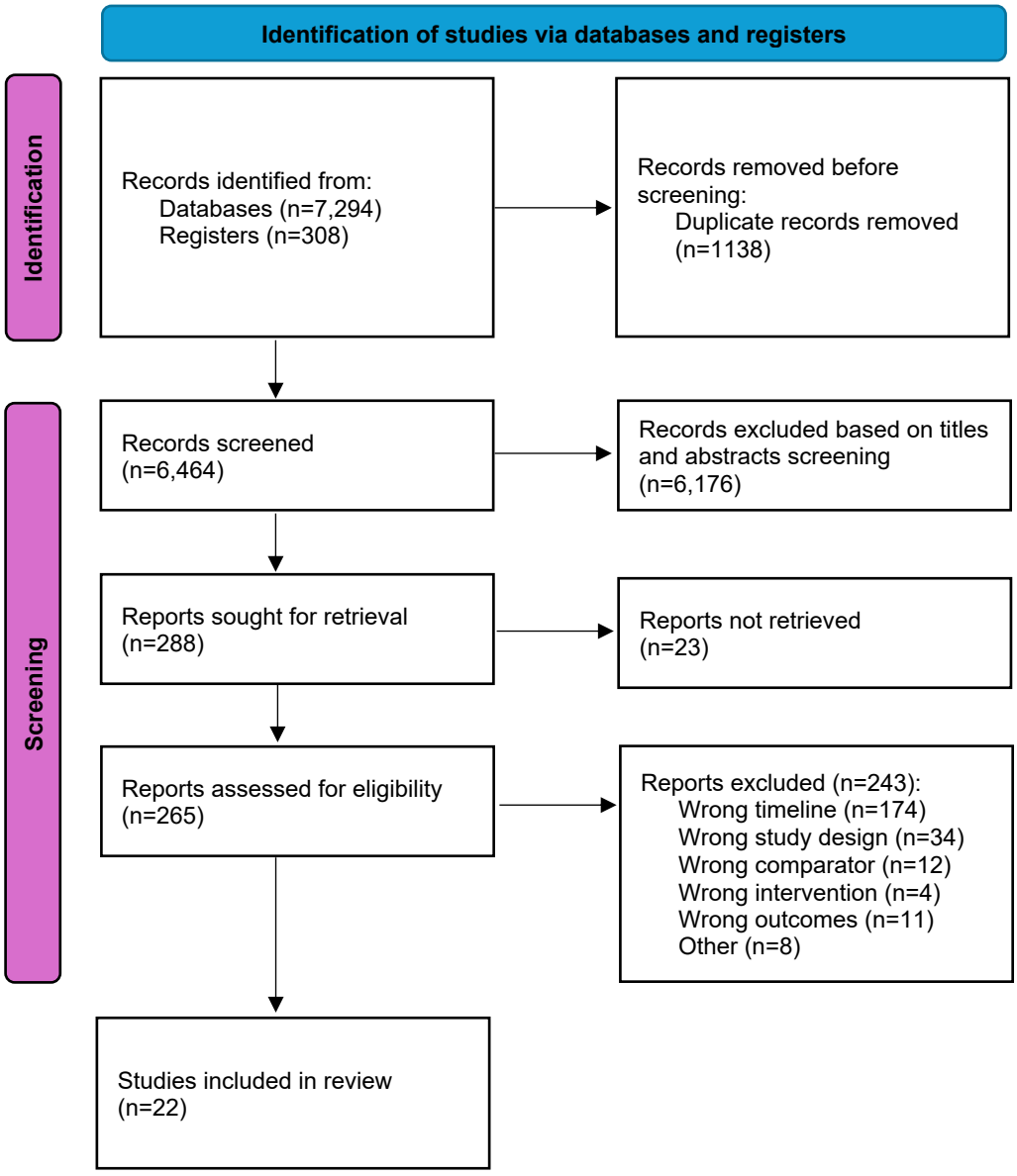
Author and year of publication with hyperlink	Title	Reason for exclusion
Bandell et al. 2025	Effectiveness of Live Attenuated and Inactivated Influenza Vaccines in Children: Data from the 2023/24 Influenza Season	Wrong study design
Kandinov et al. 2025	An mRNA-based seasonal influenza vaccine in adults: Results of two phase 3 randomized clinical trials and correlate of protection analysis of hemagglutination inhibition titers	Wrong timeline
Zawiasa-Bryszewska et al. 2025	Safety and Efficacy of Influenza Vaccination in Kidney Graft Recipients in Late Period After Kidney Transplantation	Wrong timeline
Grijalva et al. 2024	Estimated Effectiveness of Influenza Vaccines in Preventing Secondary Infections in Households	Wrong timeline
Anonymous et al. 2024	Antiviral Drugs for Seasonal Influenza for 2024-2025	Wrong study design
Lindert et al. 2025	Human Challenge Trial of a Nucleoside-Modified Messenger Ribonucleic Acid Influenza Vaccine	Wrong study design
Choi et al. 2024	Interim Estimates of 2023-2024 Seasonal Influenza Vaccine Effectiveness Among Adults in Korea	Wrong timeline
Costantino et al. 2024	Mid-Term Estimates of Influenza Vaccine Effectiveness against the A(H1N1)pdm09 Prevalent Circulating Subtype in the 2023/24 Season: Data from the Sicilian RespiVirNet Surveillance System	Wrong timeline
Domnich et al. 2024	Influenza epidemiology and vaccine effectiveness during the 2023/2024 season in Italy: A test-negative case-control study	Wrong timeline
Frutos et al. 2024	Interim Estimates of 2023-24 Seasonal Influenza Vaccine Effectiveness - United States	Wrong timeline
Gào et al. 2024	Population-Based Influenza Vaccine Effectiveness Against Laboratory-Confirmed Influenza Infection in Southern China, 2023–2024 Season	Wrong timeline
Maurel et al. 2024	Interim 2023/24 influenza A vaccine effectiveness: VEBIS European primary care and hospital multicentre studies, September 2023 to January 2024	Wrong timeline
Mi et al. 2024	Real-world effectiveness of influenza vaccine against medical-attended influenza infection during 2023/24 season in Ili Kazakh Autonomous Prefecture, China: A test-negative, case-control study	Wrong timeline
Pérez-Gimeno et al. 2024	Effectiveness of influenza vaccines in children aged 6 to 59 months: a test-negative case-control study at primary care and hospital level, Spain 2023/24.	Wrong timeline
Shinjoh et al. 2024	Effectiveness of inactivated influenza vaccine in children during the 2023/24 season: The first season after relaxation of intensive COVID-19 measures	Wrong timeline
Skowronski et al. 2024	2023/24 mid-season influenza and Omicron XBB.1.5 vaccine effectiveness estimates from the Canadian Sentinel Practitioner Surveillance Network (SPSN)	Wrong timeline
Whitaker et al. 2024	Interim 2023/2024 Season Influenza Vaccine Effectiveness in Primary and Secondary Care in the United Kingdom	Wrong timeline
Zeno et al. 2024	Interim Effectiveness Estimates of 2024 Southern Hemisphere Influenza Vaccines in Preventing Influenza-Associated Hospitalization - REVELAC-i Network, Five South American Countries, March-July 2024.	Wrong timeline
Lee et al. 2024	Influenza vaccine effectiveness against influenza-associated hospitalizations in children, Hong Kong, November 2023 to June 2024	Wrong timeline
Yaron et al. 2025	Incremental benefit of high dose compared to standard dose influenza vaccine in reducing hospitalizations	Wrong timeline
Gharpure et al. 2025	Effectiveness of 2023 southern hemisphere influenza vaccines against severe influenza-associated illness: pooled estimates from eight countries using the test-negative design	Wrong timeline

Author and year of publication with hyperlink	Title	Reason for exclusion
Choi et al. 2025	Early and Late Influenza Vaccine Effectiveness in South Korea During the 2023-2024 Season	Wrong timeline
Zhu et al. 2025	Evaluation of Influenza Vaccine Effectiveness from 2021 to 2024: A Guangdong-Based Test-Negative Case-Control Study	Wrong timeline
Martinez-Baz et al. 2025	Effectiveness of influenza vaccination in preventing confirmed influenza cases and hospitalizations in Northern Spain, 2023/24 season: A population-based test-negative case-control study	Wrong timeline
Zhang et al. 2025	Moderate effectiveness of influenza vaccine in outpatient settings: A test-negative study in Beijing, China, 2023/24 season	Wrong timeline
Lei et al. 2025	Influenza vaccine effectiveness against medically-attended influenza infection in 2023/24 season in Hangzhou, China	Wrong timeline
Tenforde et al. 2024	Influenza Vaccine Effectiveness Against Hospitalizations and Emergency Department or Urgent Care Encounters for Children, Adolescents, and Adults During the 2023–2024 Season, United States	Wrong timeline
Marron et al. 2024	Influenza Vaccine Effectiveness Against Symptomatic Influenza in Primary Care: A Test Negative Case Control Study Over Two Influenza Seasons 2022/2023 and 2023/2024 in Ireland	Wrong timeline
Tian et al. 2025	Protective Impact of Influenza Vaccination on Healthcare Workers	Wrong timeline
Rufafa et al. 2024	Vaccine effectiveness in patients admitted for influenza during the 2023-2024 season	Wrong timeline
Pardo-Seco et al. 2025	High-Dose Influenza Vaccine to Reduce Hospitalizations	Wrong timeline
Zhu et al. 2024	Interim Influenza vaccine effectiveness against laboratory-confirmed influenza—California, October 2023–January 2024	Wrong comparator

Appendix 4: The ROBINS-I Version 2 assessment included in the synthesis

First author and published year	Due to confounding	Selection of participants	Classification of interventions	Missing data	Measurement of outcomes	Selection of reported result	Overall bias
Choi 2026	Moderate risk	Low risk	Low risk	Low risk	Moderate risk	Low risk	Moderate risk
Clercq 2025	Moderate risk	Low risk	Moderate risk	Moderate risk	Low risk	Low risk	Moderate risk
Clercq 2026	Moderate risk	Low risk	Moderate risk	Low risk	Low risk	Low risk	Moderate risk
Domnich 2025	Low risk	Serious risk	Low risk	Low risk	Low risk	Low risk	Serious risk
Emborg 2025	Moderate risk	Serious risk	Low risk	Low risk	Low risk	Low risk	Serious risk
Erdwiens 2025	Low risk	Serious risk	Moderate risk	Moderate risk	Low risk	Low risk	Serious risk
Faksova 2026	Moderate risk	Moderate risk	Low risk	Low risk	Low risk	Low risk	Moderate risk
Kirsebom 2025	Low risk	Serious risk	Low risk	Low risk	Low risk	Low risk	Serious risk
Kwaah 2025	Moderate risk	Low risk	Moderate risk	Moderate risk	Low risk	Low risk	Moderate risk
Murphy 2025	Low risk	Serious risk	Moderate risk	Moderate risk	Low risk	Low risk	Serious risk
Russ 2025	Moderate risk	Serious risk	Moderate risk	Moderate risk	Low risk	Low risk	Serious risk
Shen 2026	Low risk	Low risk	Low risk	Moderate risk	Low risk	Low risk	Moderate risk
Shinjoh 2025	Low risk	Serious risk	Moderate risk	Moderate risk	Low risk	Low risk	Serious risk
Separovic 2026	Moderate risk	Low risk	Moderate risk	Low risk	Low risk	Low risk	Moderate risk
Separovic 2026	Moderate risk	Low risk	Moderate risk	Low risk	Low risk	Low risk	Moderate risk
Yoon 2026	Low risk	Low risk	Low risk	Low risk	Low risk	Low risk	Moderate risk
Yu 2026	Moderate risk	Serious risk	Moderate risk	Low risk	Low risk	Low risk	Serious risk
Zhang 2025	Low risk	Low risk	Low risk	Low risk	Low risk	Low risk	Moderate risk
Blanquart 2025	Moderate risk	Low risk	Moderate risk	Low risk	Low risk	Low risk	Moderate risk
Sun 2025	Low risk	Low risk	Low risk	Low risk	Low risk	Low risk	Moderate risk
Rose 2025	Moderate risk	Serious risk	Moderate risk	Low risk	Low risk	Low risk	Serious risk
Frutos 2025	Moderate risk	Serious risk	Moderate risk	Low risk	Low risk	Low risk	Serious risk

Appendix 5: PRISMA flow diagram



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