



# Interim Estimates of 2024–25 Seasonal Influenza Vaccine Effectiveness

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On behalf of CDC Influenza Vaccine Effectiveness Collaborators

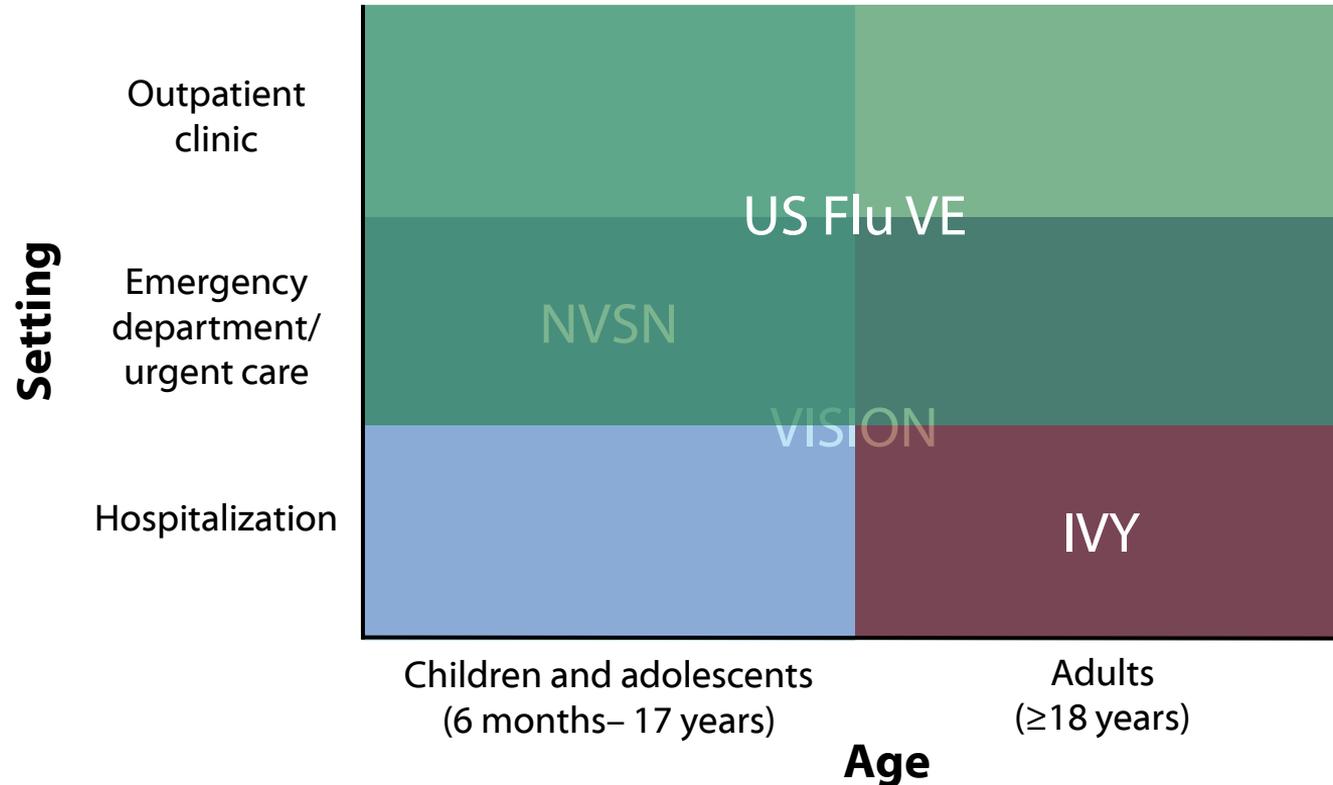
# CDC Influenza Vaccine Effectiveness Networks

Four networks to evaluate vaccine effectiveness (VE) against laboratory-confirmed influenza for children and adolescents and adults in the outpatient and inpatient settings

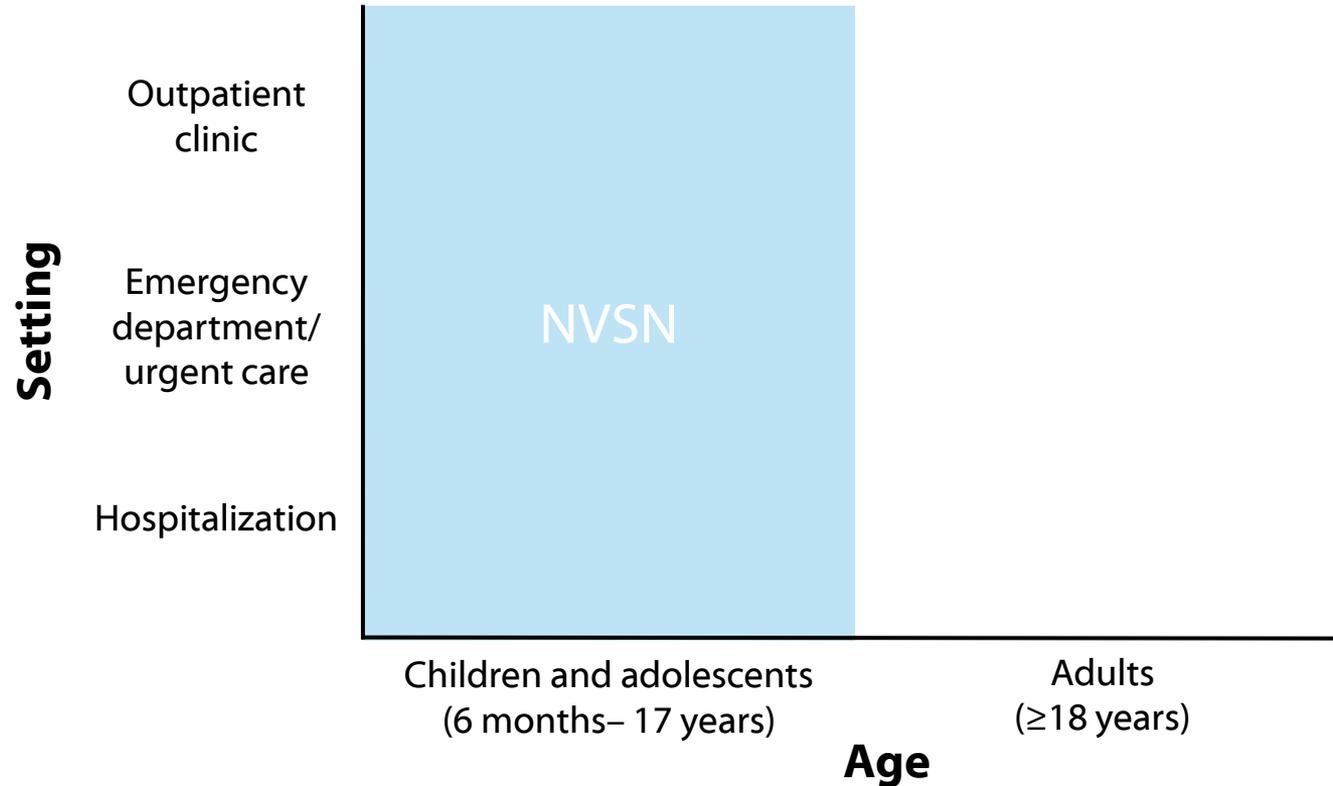
# CDC Influenza Vaccine Effectiveness Networks

- **Investigating Respiratory Viruses in the Acutely Ill (IVY)**
- **New Vaccine Surveillance Network (NVSN)**
- **U.S. Flu Vaccine Effectiveness Network (US Flu VE)**
- **Virtual SARS-CoV-2, Influenza, and Other respiratory viruses Network (VISION)**

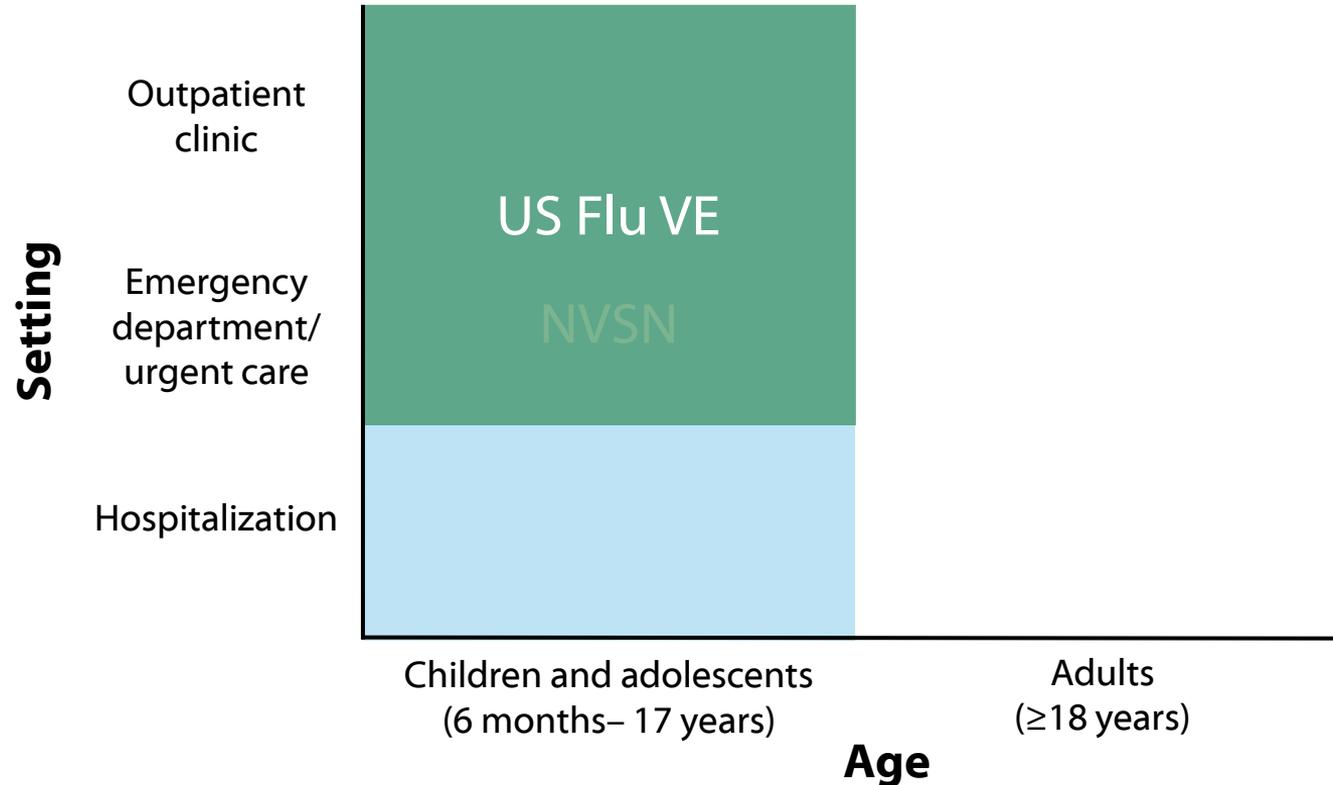
# These networks include all ages across settings



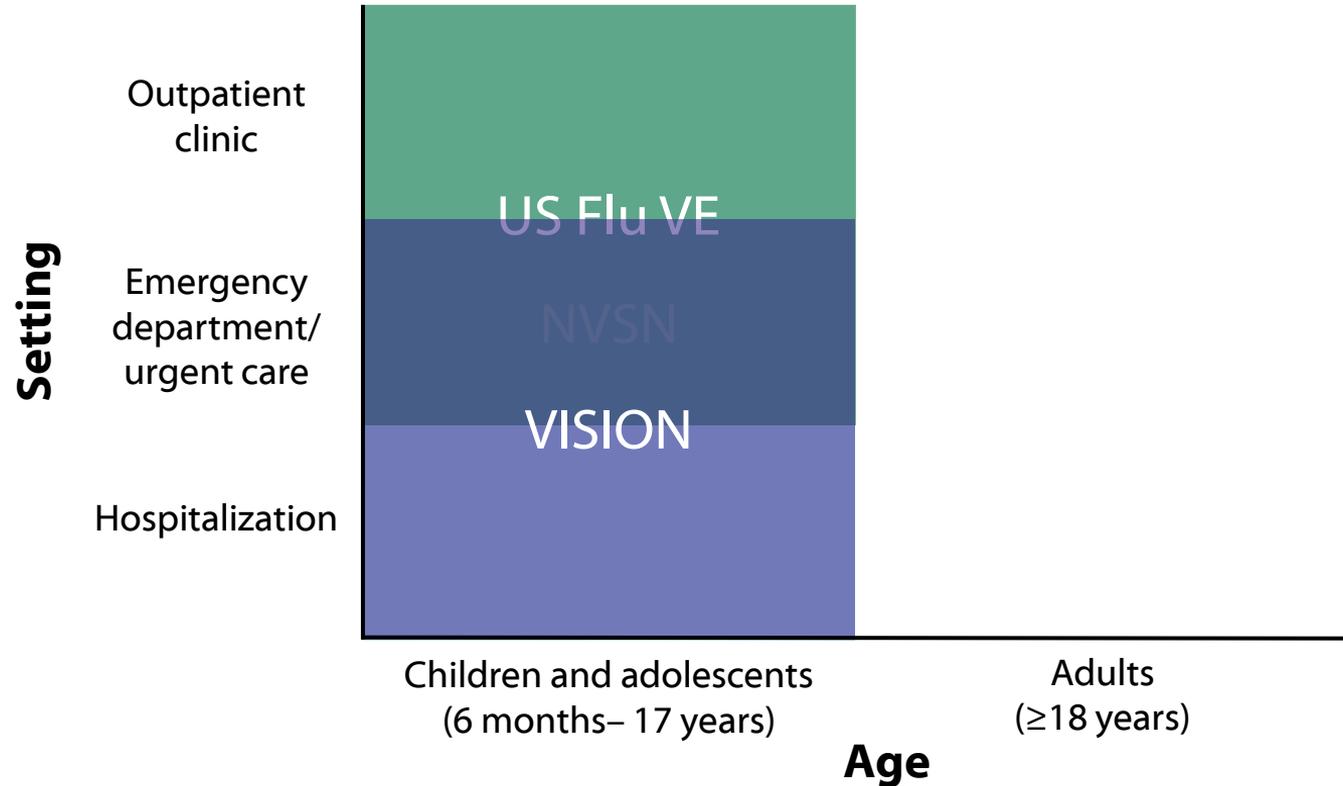
# NVSN: all settings



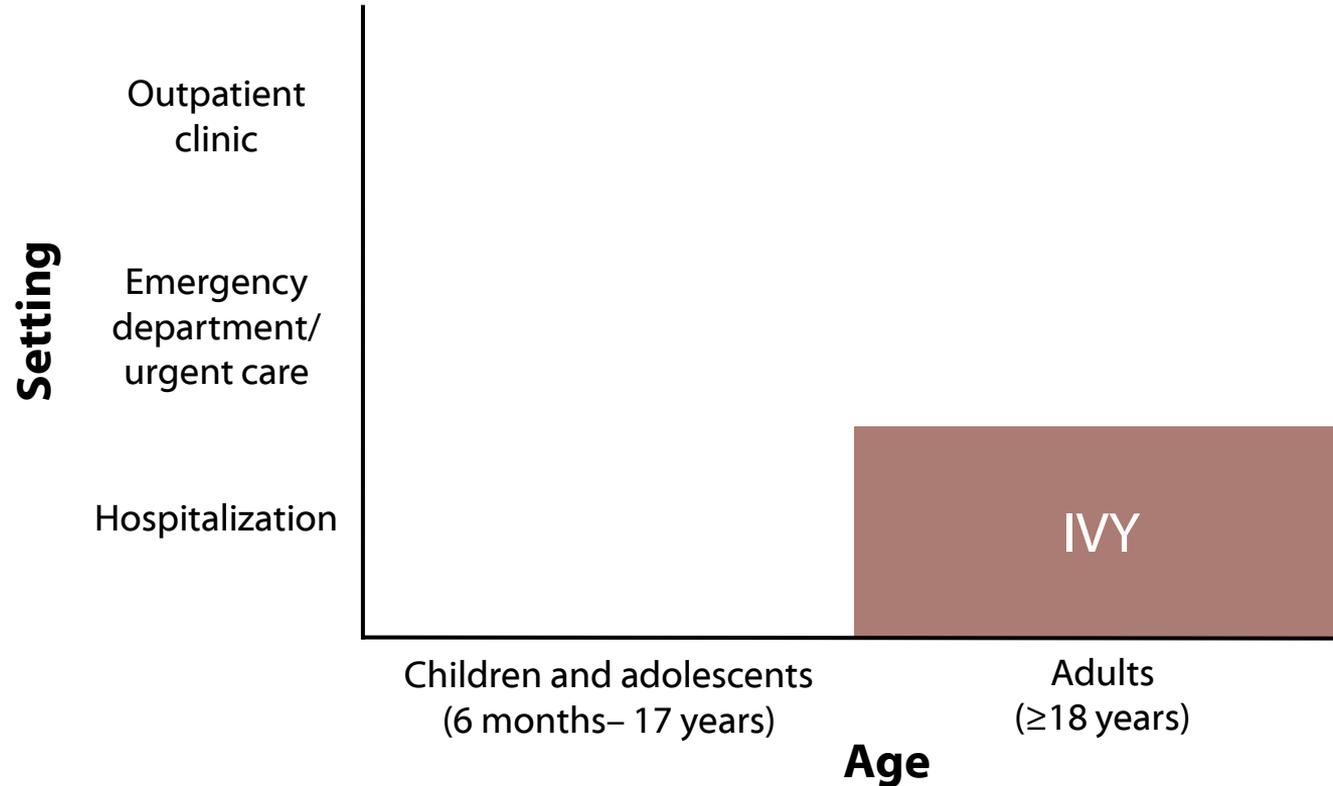
# US Flu VE: Outpatient clinic and ED/UC



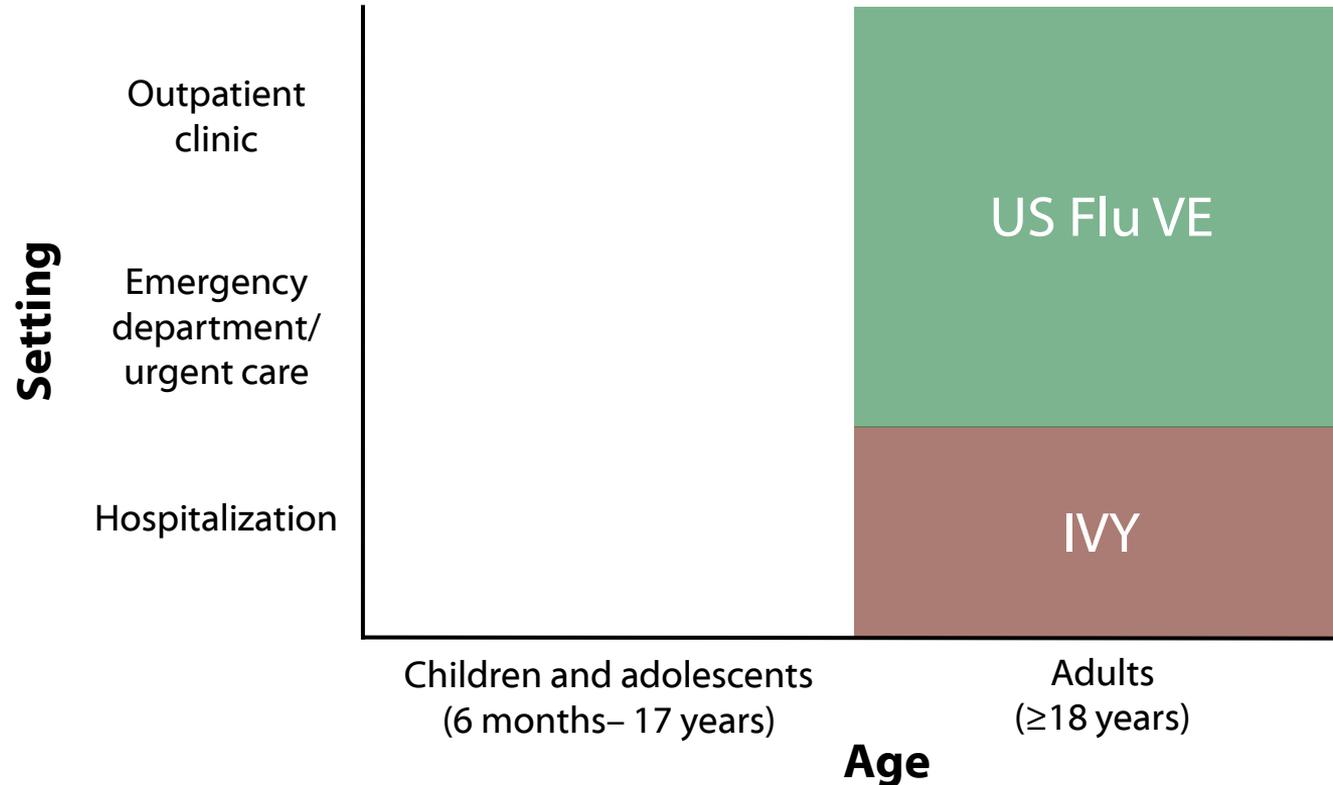
# VISION: ED/UC & hospitalization



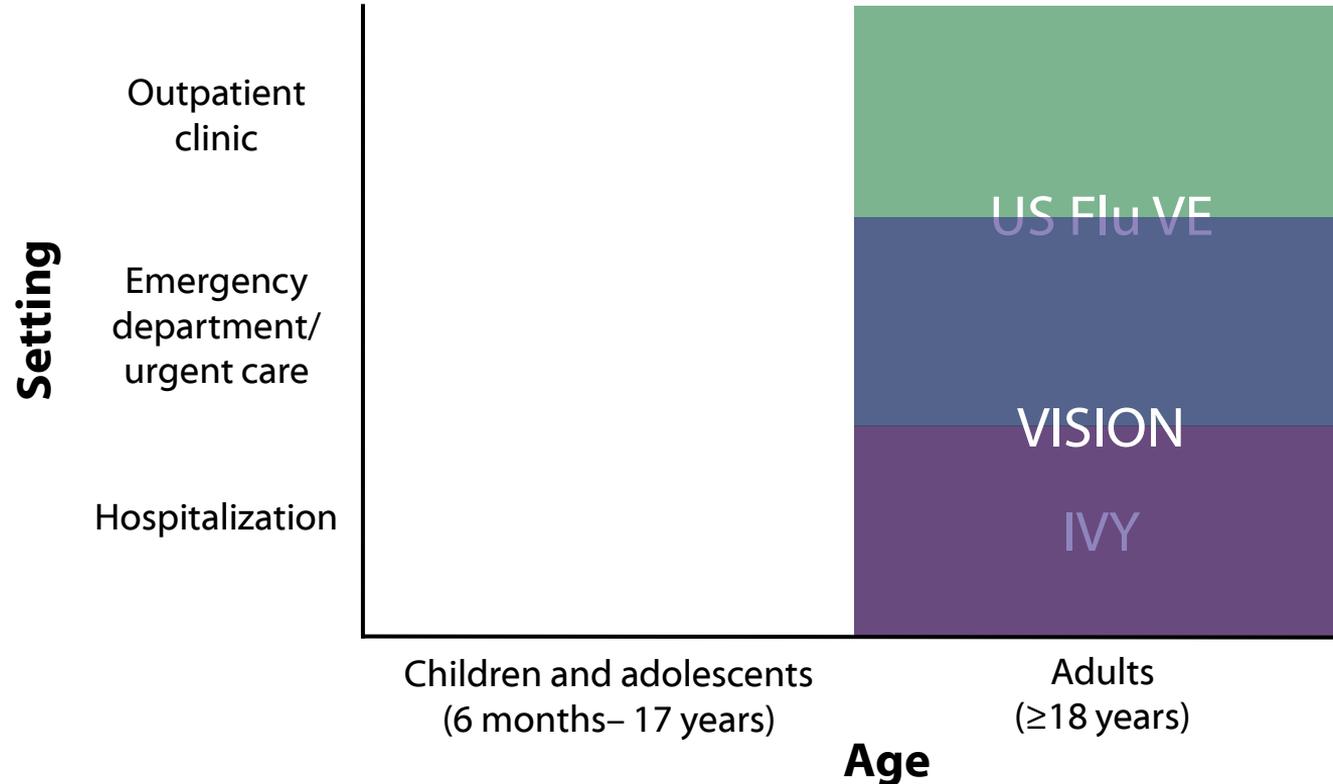
# IVY: hospitalization



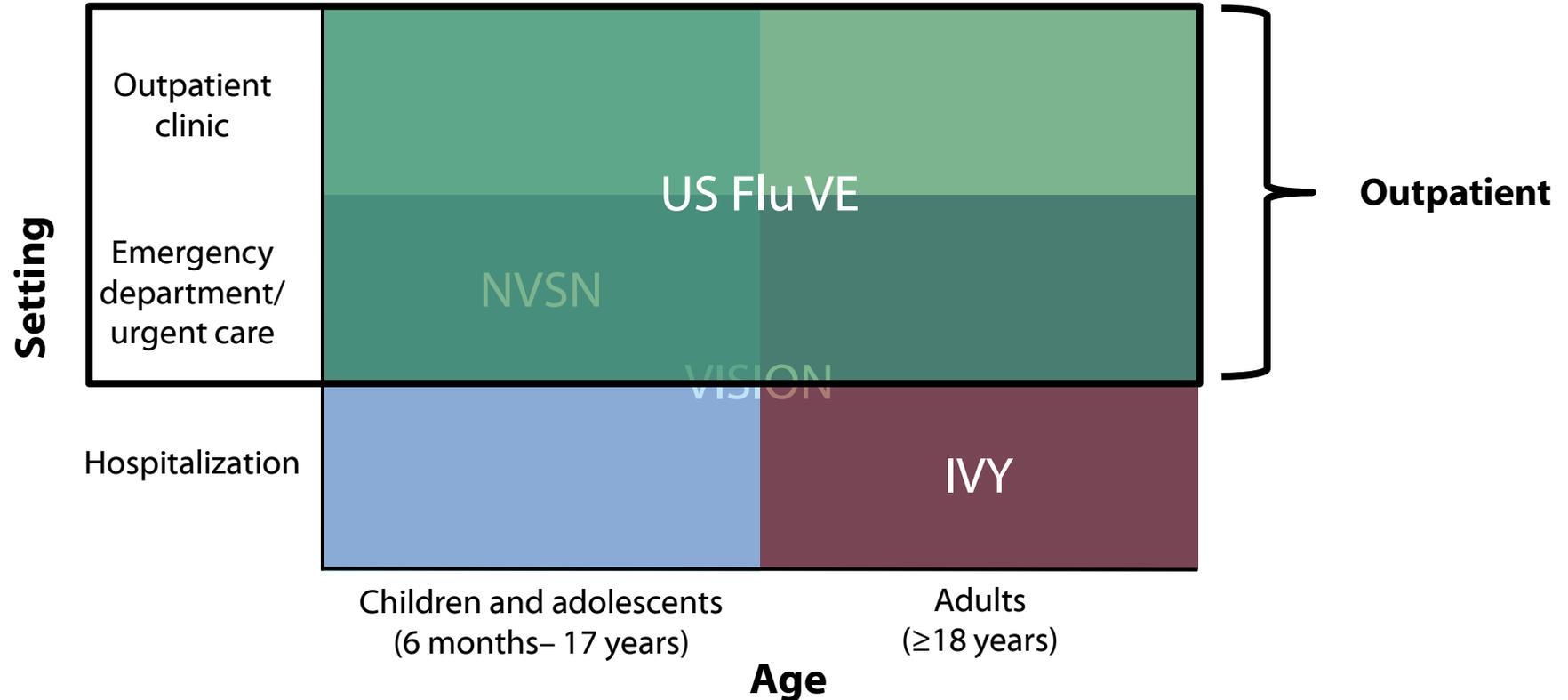
# US Flu VE: Outpatient clinic and ED/UC



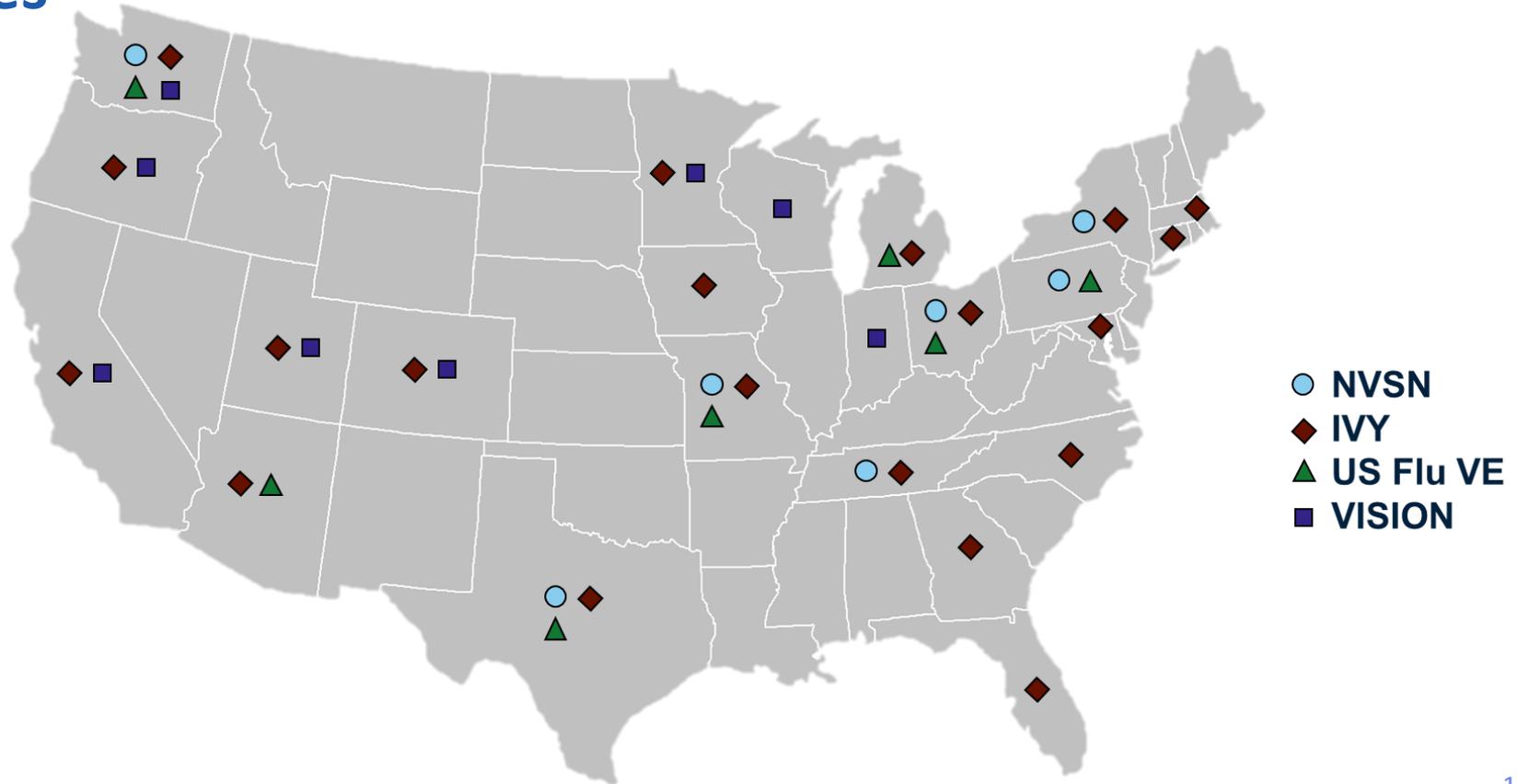
# VISION: ED/UC & hospitalization



# These networks include all ages across settings



# CDC influenza VE networks include patients from 23 states



# 2024–2025 Influenza VE Methods

- **Enrollees:** Received medical care for an acute respiratory illness
- **Dates of enrollment:** Fall 2024– Early 2025
- **Design:** Test-negative design
  - Comparing vaccination odds among case patients with influenza confirmed by molecular assay versus control patients testing negative for influenza and SARS-CoV-2
  - Vaccination status: receipt of any 2024–25 seasonal flu vaccine according to medical records, immunization registries, claims data, and/or self-report

# 2024–2025 Influenza VE Methods

- **Analysis:**  $VE = (1 - \text{adjusted OR}) \times 100\%$ 
  - Adjusted for geographic region, age, calendar time of illness
    - » US Flu VE, and VISION also adjusted for sex and race and ethnicity
  - VE estimates were calculated for influenza A subtypes A(H1N1)pdm09 and A(H3N2) when possible
    - » Influenza A subtype estimates were not calculated for VISION because of limited subtype data
  - VE was not estimated for some age groups and settings when sample size was small or when models did not converge

**Influenza A subtype by network**

# Influenza A subtype by network

Influenza A subtype by network, total (%)

	Influenza A(H1N1)pdm09	Influenza A(H3N2)
IVY	50 (31)	110 (69)
NVSN	284 (52)	262 (48)
US Flu VE	168 (33)	337 (67)

# Pediatric VE

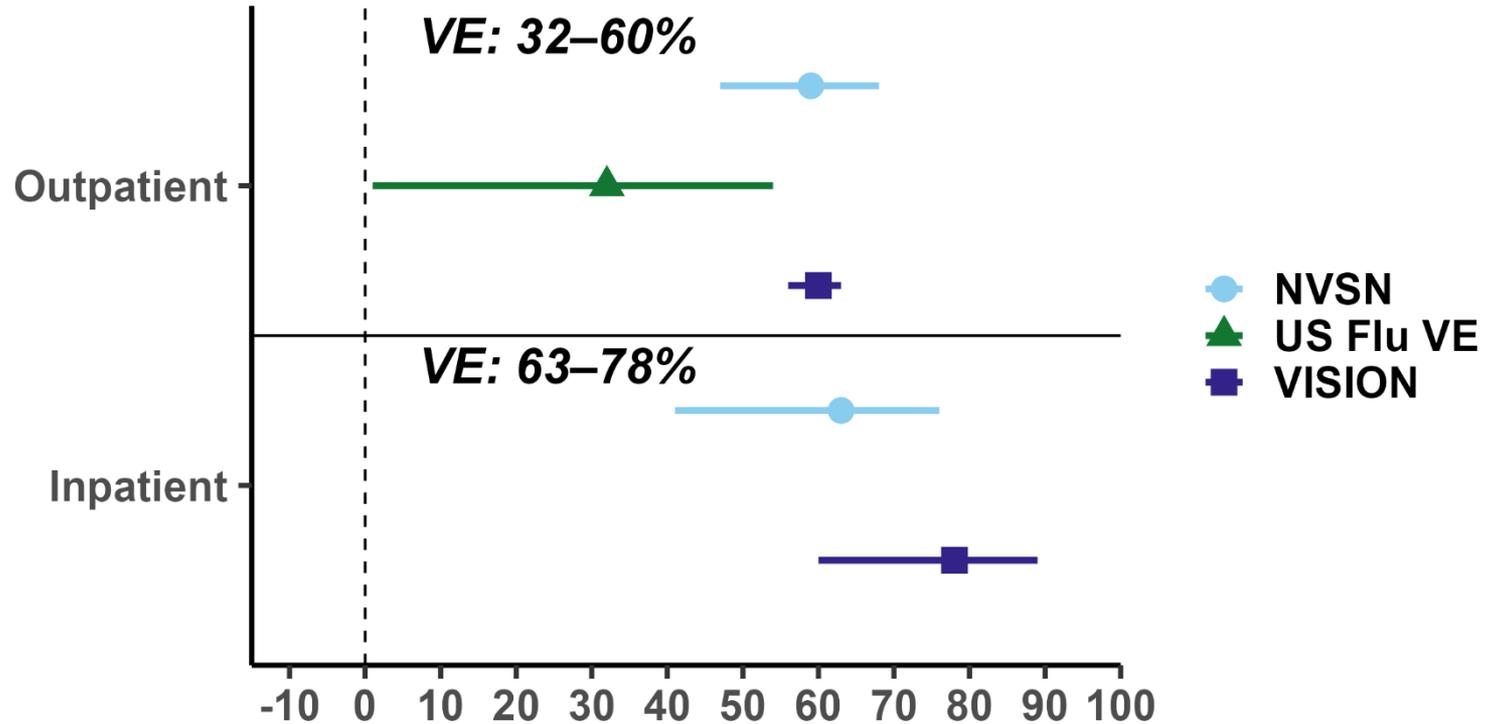
(aged 6 months–17 years)

# Pediatric VE against any influenza

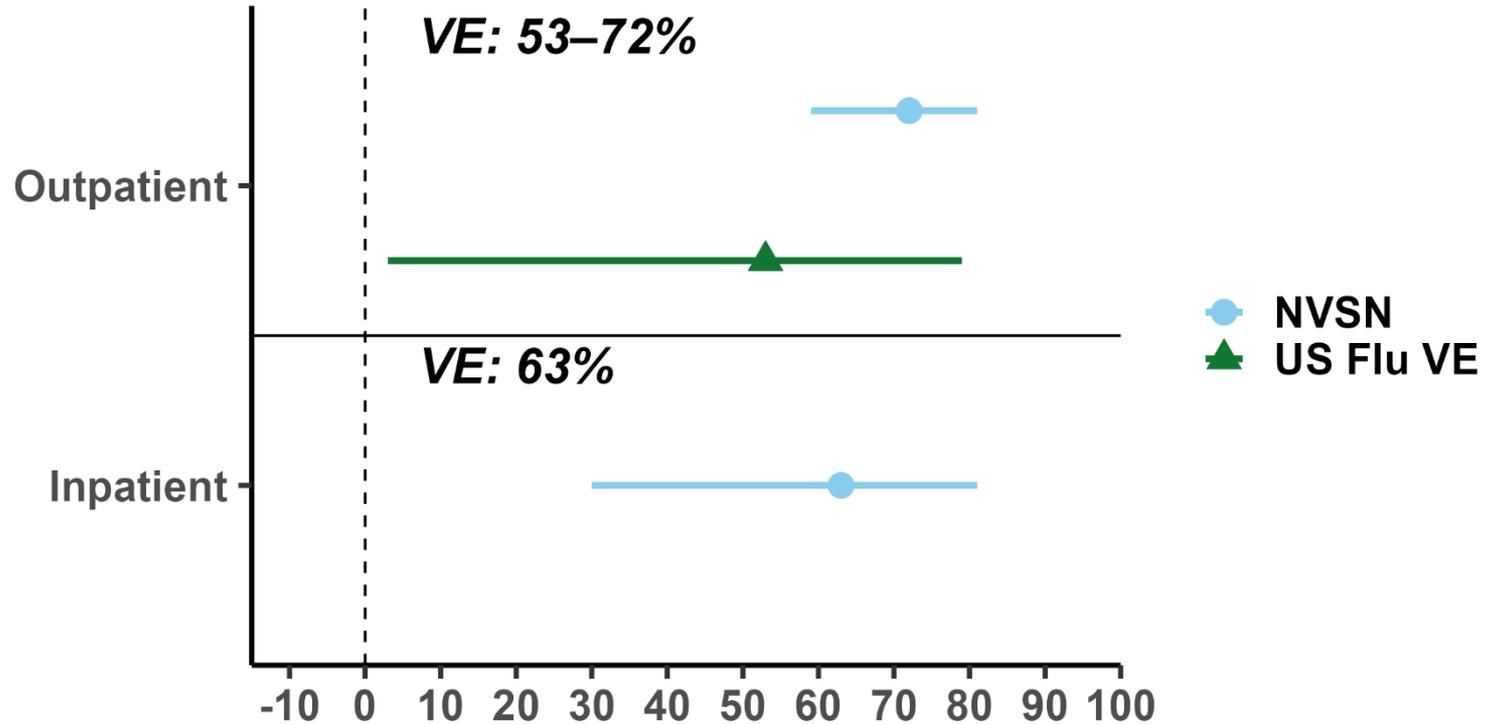
Influenza test result by influenza vaccination status, no. vaccinated/Total (%)

	Influenza-positive	Influenza-negative	VE (95% CI)
NVSN (Outpatient)	100/482 (21)	855/2,487 (34)	59 (47–68)
US Flu VE (Outpatient)	54/217 (25)	256/917 (28)	32 (1–54)
VISION (Outpatient)	1,322/9,563 (14)	5,943/27,356 (22)	60 (56–63)
NVSN (Inpatient)	28/119 (24)	613/1,523 (40)	63 (41–76)
VISION (Inpatient)	16/157 (10)	406/1,481 (27)	78 (60–89)

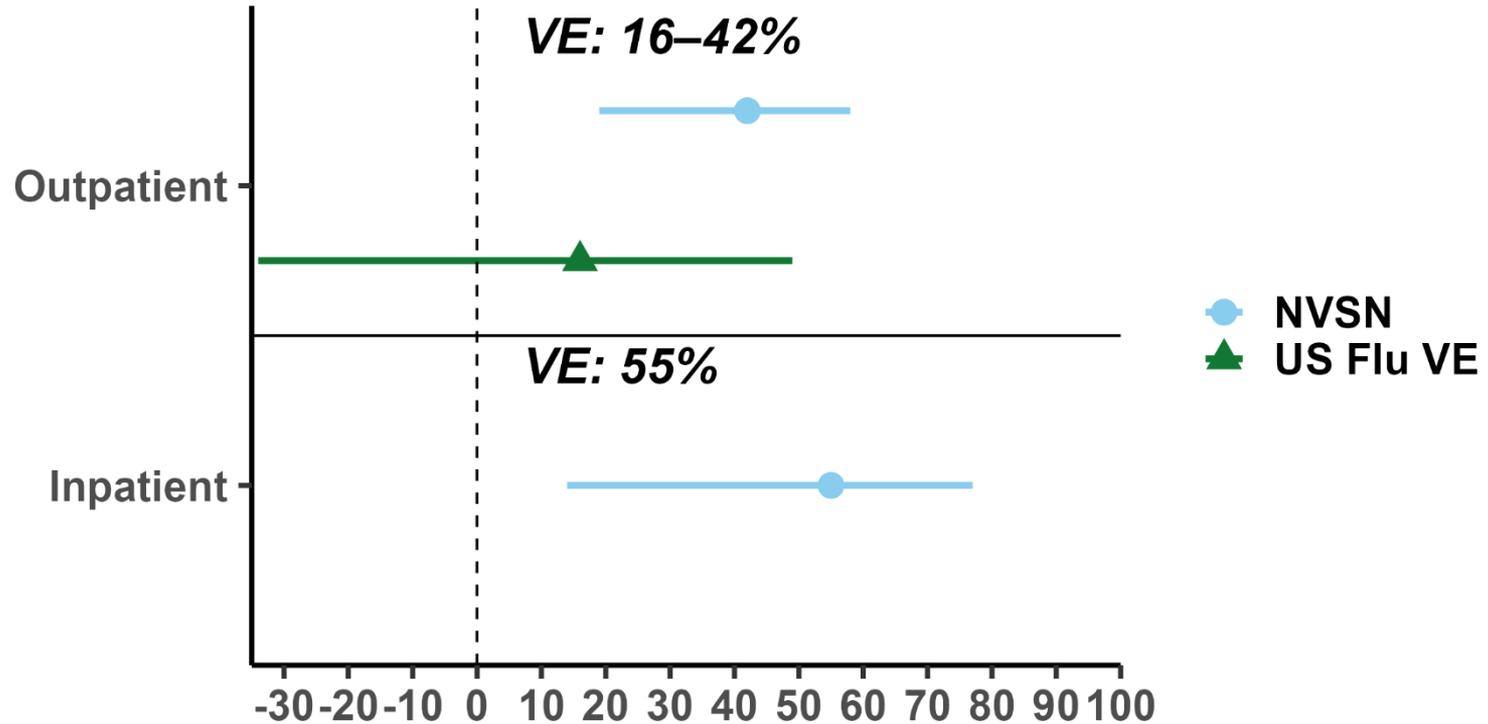
# Pediatric VE against any influenza



# Pediatric VE against influenza A(H1N1)pdm09



# Pediatric VE against influenza A(H3N2)



# Adult VE

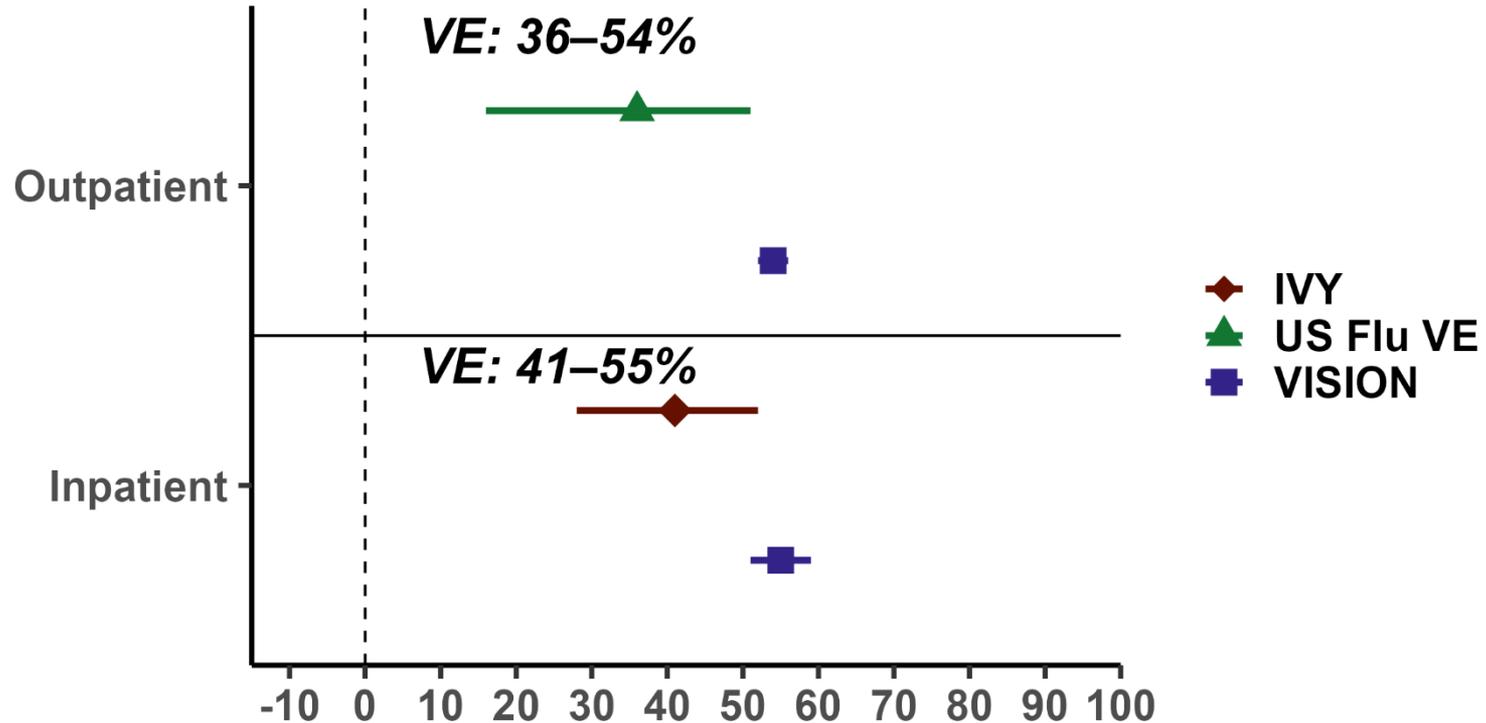
(aged  $\geq 18$  years)

# Adult VE against any influenza

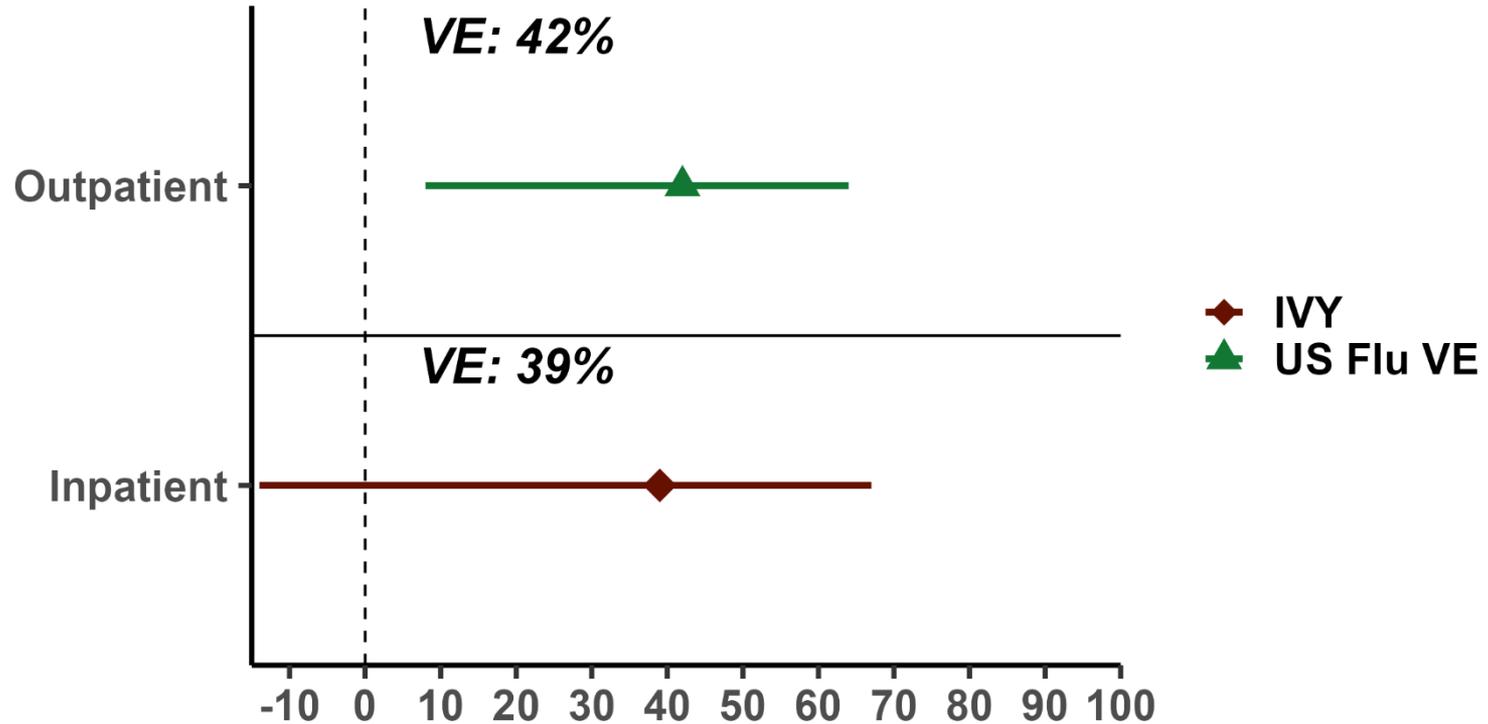
Influenza test result by influenza vaccination status, no. vaccinated/Total (%)

	Influenza-positive	Influenza-negative	VE (95% CI)
US Flu VE (Outpatient)	112/475 (24)	592/1,735 (34)	34 (16–51)
VISION (Outpatient)	5,631/26,011 (22)	25,842/76,628 (34)	54 (52–56)
IVY (Inpatient)	211/675 (31)	873/2,500 (35)	41 (28–52)
VISION (Inpatient)	905/2,959 (31)	10,869/28,074 (39)	55 (51–59)

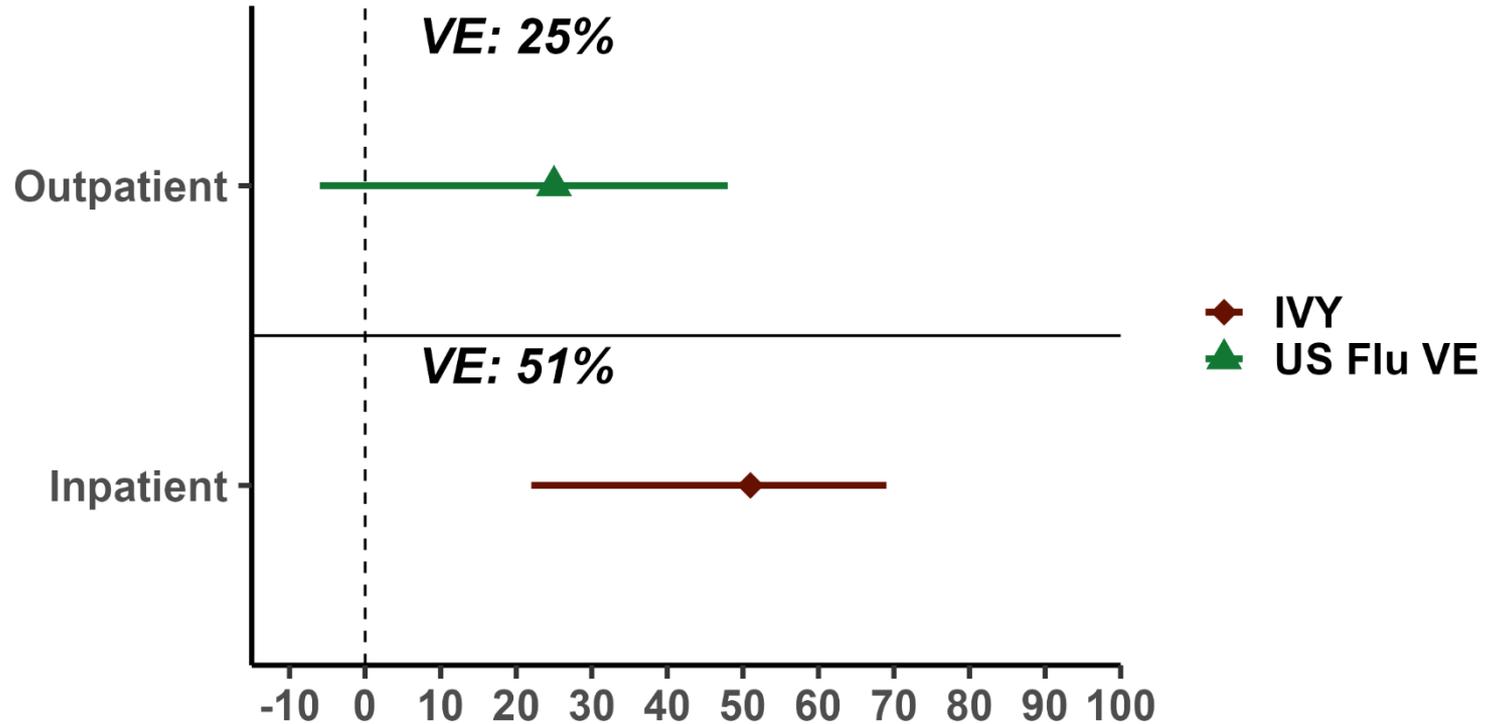
# Adult VE against any influenza



# Adult VE against influenza A(H1N1)pdm09



# Adult VE against influenza A(H3N2)



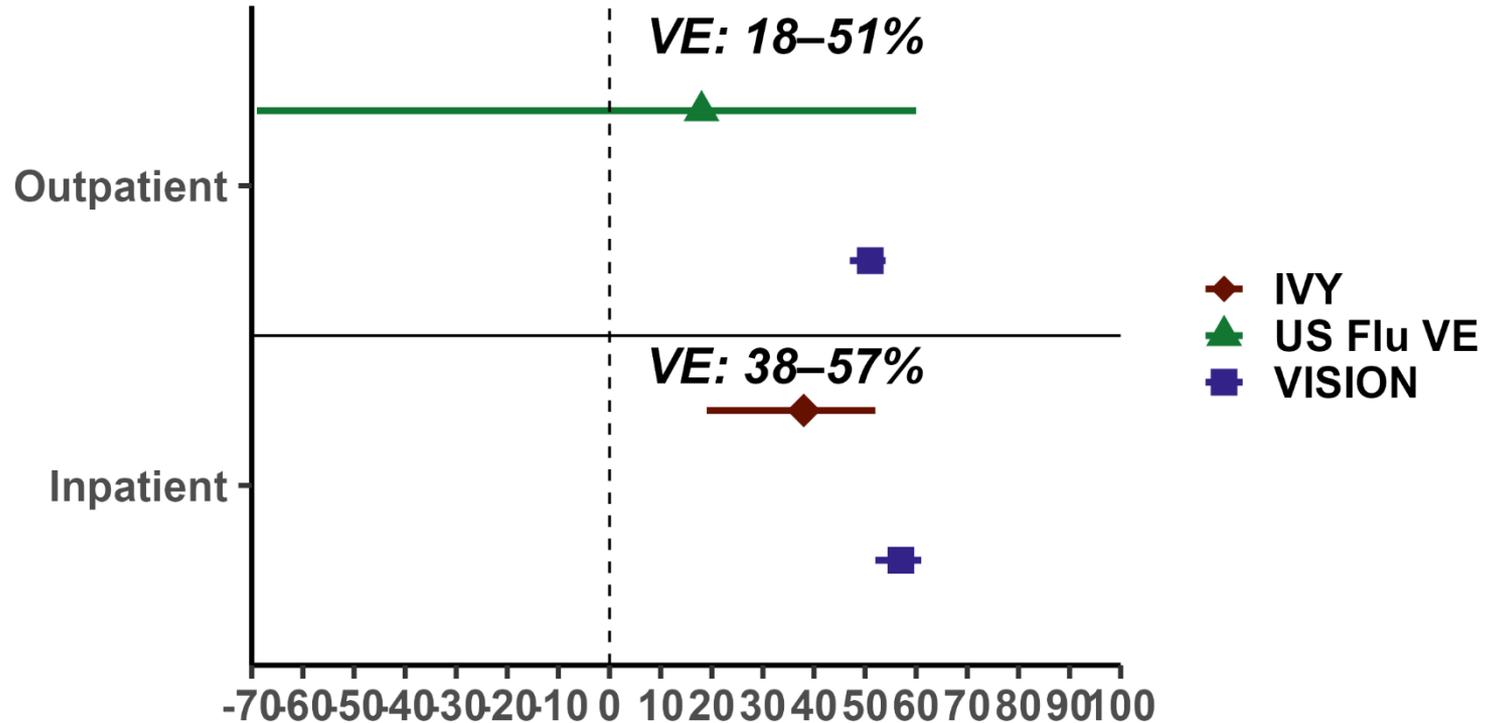
**Adult (aged  $\geq 65$ ) VE**

# Adult (aged $\geq 65$ ) VE against any influenza

Influenza test result by influenza vaccination status, no. vaccinated/Total (%)

	Influenza-positive	Influenza-negative	VE (95% CI)
US Flu VE (Outpatient)	28/56 (50)	195/332 (59)	18 (-69–60)
VISION (Outpatient)	2,575/5,731 (45)	14,978/27,525 (54)	51 (47–54)
IVY (Inpatient)	150/341 (44)	591/1,313 (45)	38 (19–52)
VISION (Inpatient)	693/1,897 (37)	8,903/19,271 (46)	57 (52–61)

# Adult (aged $\geq 65$ ) VE against any influenza



# Discussion

# Summary of four CDC influenza VE networks

- Vaccination with a 2024–25 influenza vaccine **reduced the risk for** medically attended influenza **outpatient visits** and **hospitalizations** among **children and adolescents and adults across 23 US states**
- Influenza vaccination was effective against **influenza A viruses** with variation by subtype across networks
- [Interim Estimates of 2024–2025 Seasonal Influenza Vaccine Effectiveness — Four Vaccine Effectiveness Networks, United States, October 2024–February 2025 | MMWR](#)

# Thank you

We'd like to thank our many collaborators from CDC, IVY, NVSN, US Flu VE, and VISION

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The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.



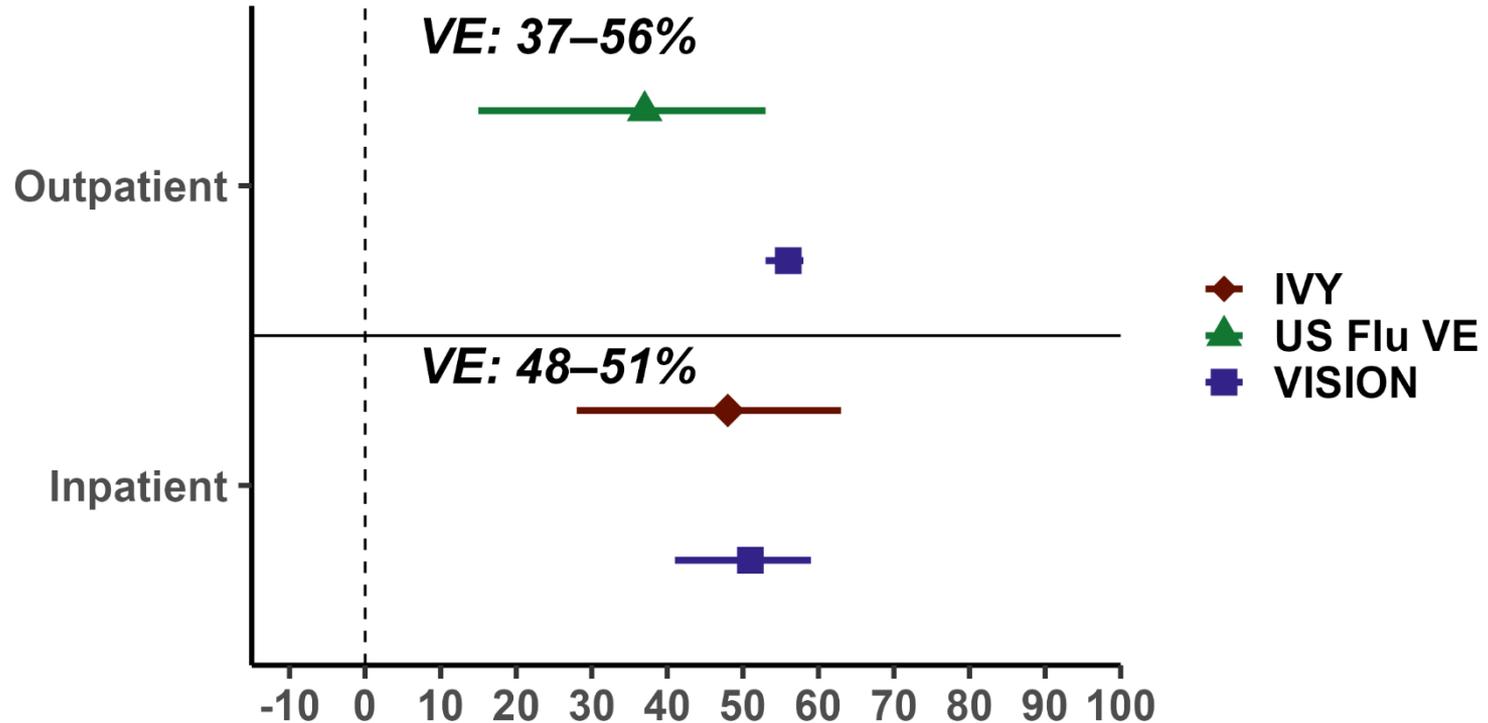
**Adult (aged 18–64) VE**

# Adult (aged 18–64) VE against any influenza

Influenza test result by influenza vaccination status, no. vaccinated/Total (%)

	Influenza-positive	Influenza-negative	VE (95% CI)
US Flu VE (Outpatient)	84/419 (20)	397/1,403 (28)	37 (15–53)
VISION (Outpatient)	3,056/20,280 (15)	10,864/49,103 (22)	56 (53–58)
IVY (Inpatient)	61/334 (18)	282/1187 (24)	48 (28–63)
VISION (Inpatient)	212/1,062 (20)	1,966/8,803 (22)	51 (41–59)

# Adult (aged 18–64) VE against any influenza



# Pediatric VE Tables

# Pediatric VE against Influenza A(H1N1)pdm09

**Influenza test result by influenza vaccination status, no. vaccinated/Total (%)**

	<b>Influenza-positive</b>	<b>Influenza-negative</b>	<b>VE (95% CI)</b>
NVSN (Outpatient)	32/224 (14)	855/2,487 (34)	72 (59–81)
US Flu VE (Outpatient)	9/50 (18)	256/917 (28)	53 (3–79)
NVSN (Inpatient)	13/60 (22)	613/1,523 (40)	63 (30–81)

# Pediatric VE against Influenza A(H3N2)

**Influenza test result by influenza vaccination status, no. vaccinated/Total (%)**

	<b>Influenza-positive</b>	<b>Influenza-negative</b>	<b>VE (95% CI)</b>
NVSN (Outpatient)	62/218 (28)	855/2,487 (34)	42 (19–58)
US Flu VE (Outpatient)	29/107 (27)	256/917 (28)	16 (-34–49)
NVSN (Inpatient)	12/44 (27)	613/1,523 (40)	55 (14–77)

# Adult VE Tables

(aged  $\geq 18$  years)

# Adult VE against Influenza A(H1N1)pdm09

**Influenza test result by influenza vaccination status, no. vaccinated/Total (%)**

	<b>Influenza-positive</b>	<b>Influenza-negative</b>	<b>VE (95% CI)</b>
US Flu VE (Outpatient)	36/118 (31)	592/1,735 (34)	42 (8–64)
IVY (Inpatient)	12/50 (24)	873/2,500 (35)	39 (-14–67)

# Adult VE against Influenza A(H3N2)

**Influenza test result by influenza vaccination status, no. vaccinated/Total (%)**

	<b>Influenza-positive</b>	<b>Influenza-negative</b>	<b>VE (95% CI)</b>
US Flu VE (Outpatient)	56/230 (24)	592/1,735 (34)	25 (-6–48)
IVY (Inpatient)	8/110 (26)	873/2,500 (35)	51 (22–69)