




Interim Estimates of 2018–19 Seasonal Influenza Vaccine Effectiveness against Medically Attended Influenza from the US Flu VE Network

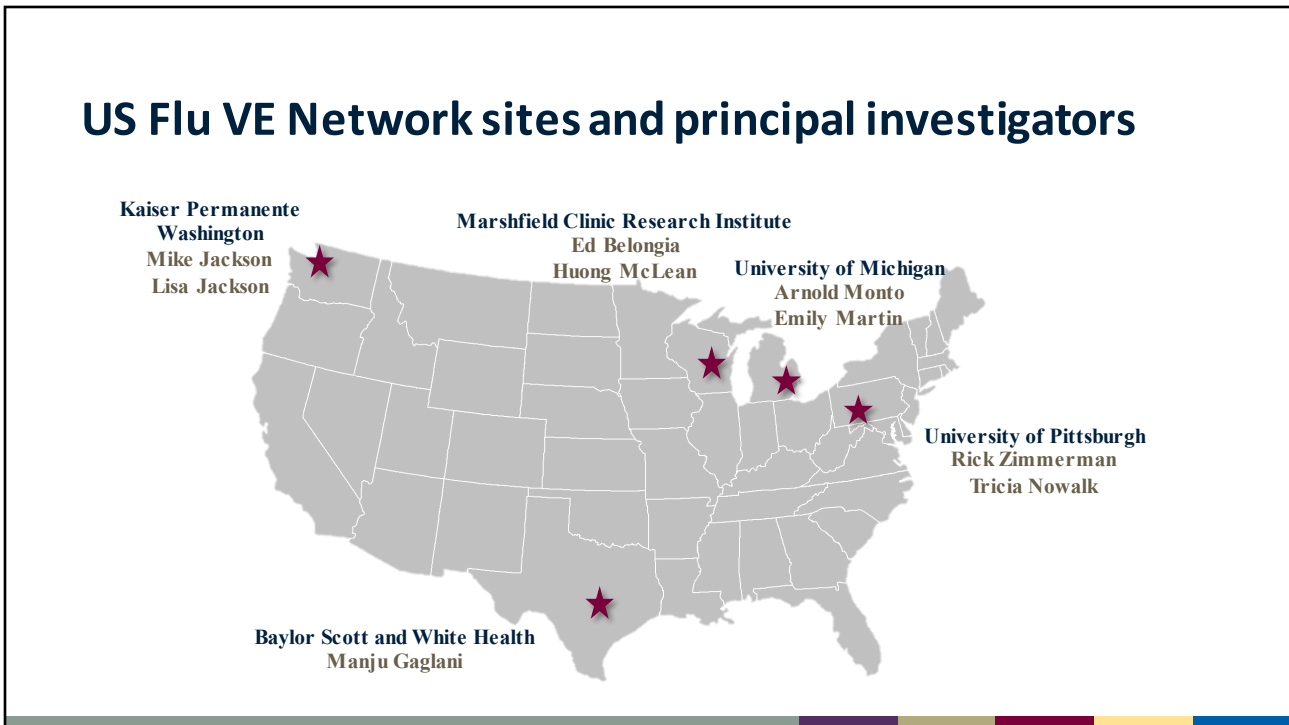
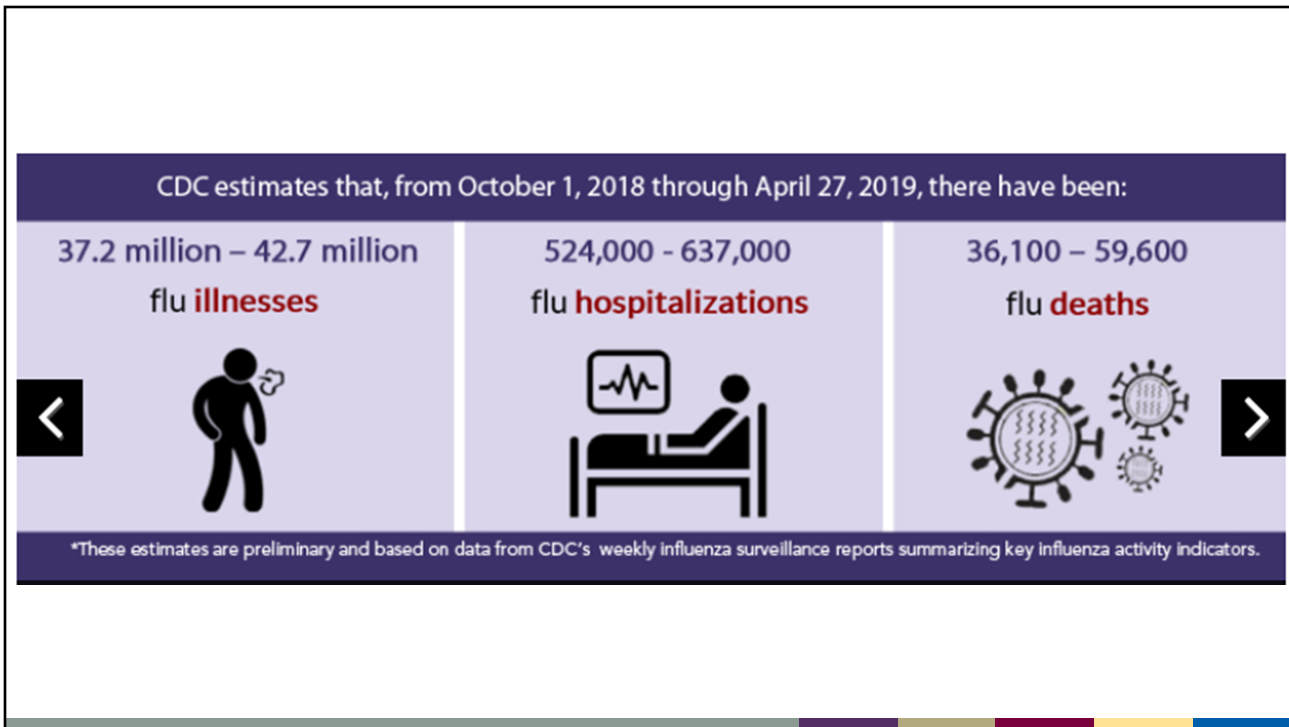
US Flu VE Network

May 16, 2019

Effects of Influenza Vaccination in the United States during the 2017–2018 Influenza Season ^{FREE}

Melissa A Rolfes , Brendan Flannery, Jessie Chung, Alissa O'Halloran, Shikha Garg, Edward A Belongia, Manjusha Gaglani, Richard Zimmerman, Michael L Jackson, Arnold S Monto, ... [Show more](#)

- In a severe influenza season, influenza vaccination prevented
 - 7.1 million illnesses
 - 3.7 million medical visits
 - 109,000 (39,000–231,000) hospitalizations
 - 8,000 (1,100–21,000) deaths



US Flu VE Network Methods

Enrollees: Outpatients aged ≥ 6 months with acute respiratory illness with cough ≤ 7 days duration

Dates of enrollment: November 23, 2018–February 2, 2019 (updated March 8, 2019)

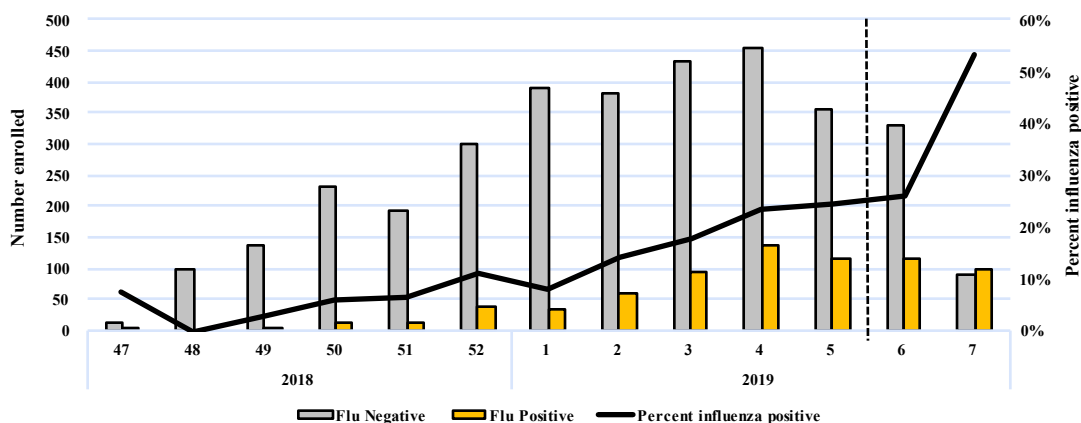
Design: Test-negative design

- Comparing vaccination odds among influenza RT-PCR positive cases and RT-PCR negative controls
- Vaccination status: receipt of at least one dose of any 2018–19 seasonal flu vaccine according to medical records, immunization registries, and/or self-report

Analysis: $VE = (1 - \text{adjusted OR}) \times 100\%$

- Adjustment for study site, sex, age, self-rated general health status, race/Hispanic ethnicity, interval from onset to enrollment, and calendar time

Number of enrolled participants by influenza RT-PCR result and percent positivity by week of onset, Nov 23, 2018–Feb 2, 2019

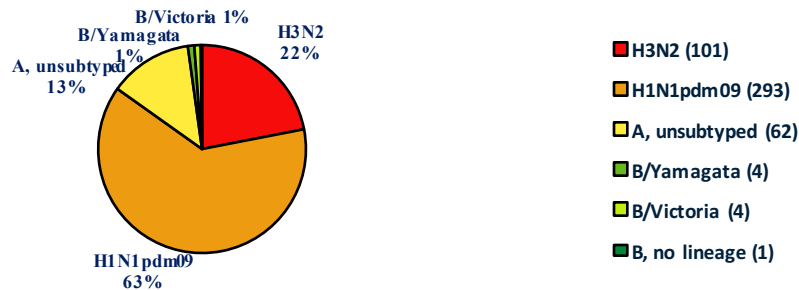


Note: Week 7 only includes patients with completed laboratory tests and thus does not reflect all enrolled patients during that week across study sites.

Interim Results (Published Feb 15, 2019 MMWR)

- 3,254 enrolled from Nov 23, 2018–Feb 2, 2019 at 5 sites
- 465 (14%) influenza RT-PCR positive
- 2,789 (86%) influenza RT-PCR negative

Cases enrolled by (sub)type, N=465



Doyle et al, MMWR 2019



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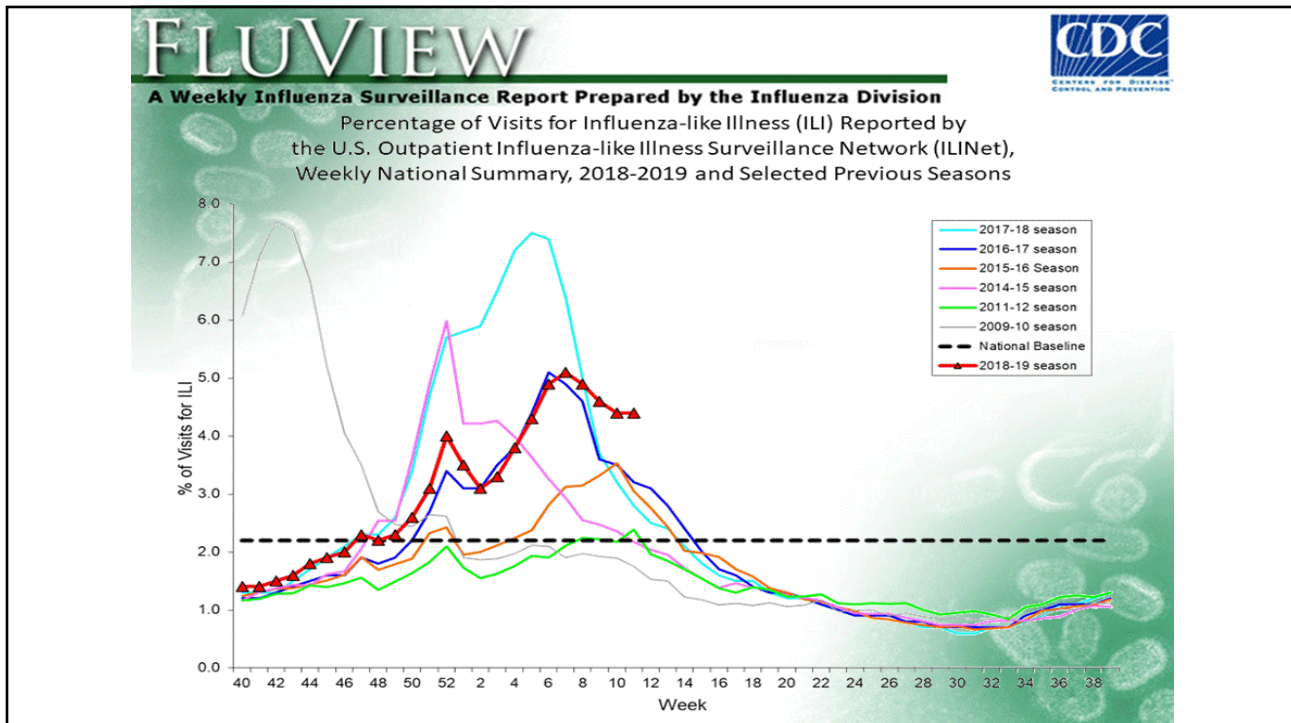
Interim Estimates of 2018–19 Seasonal Influenza Vaccine Effectiveness – United States, February 2019

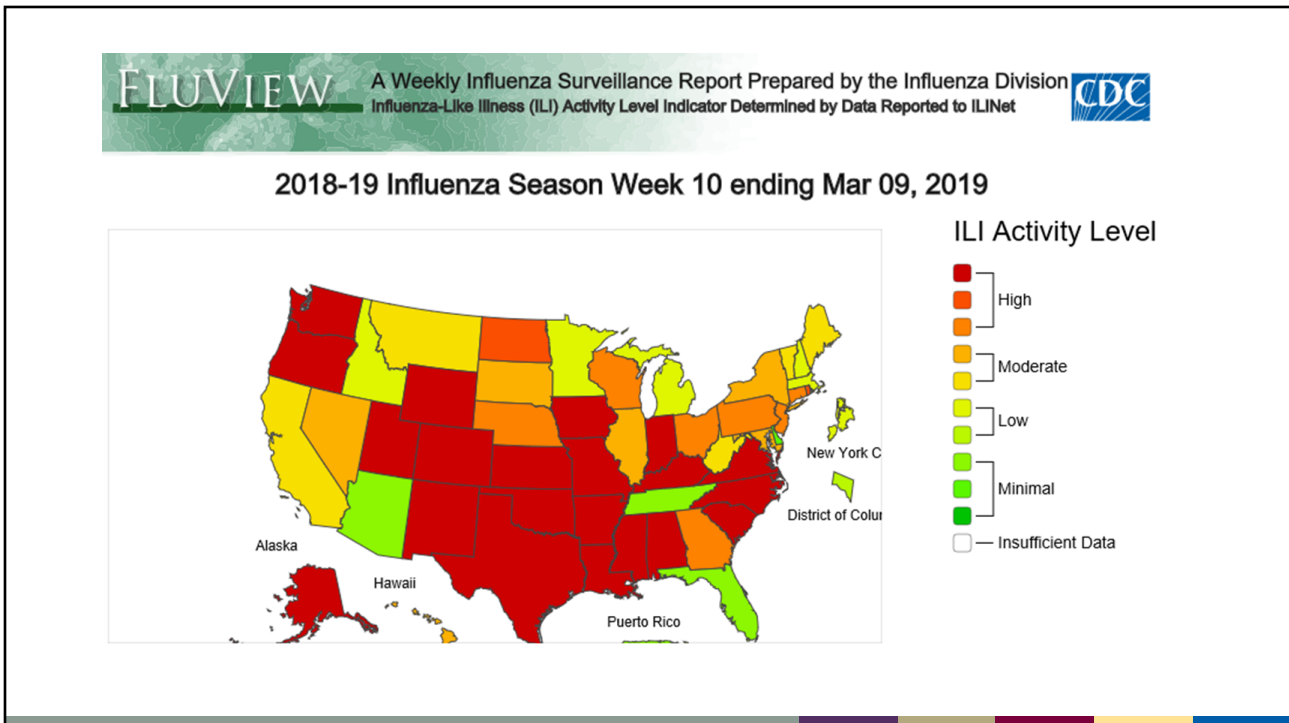
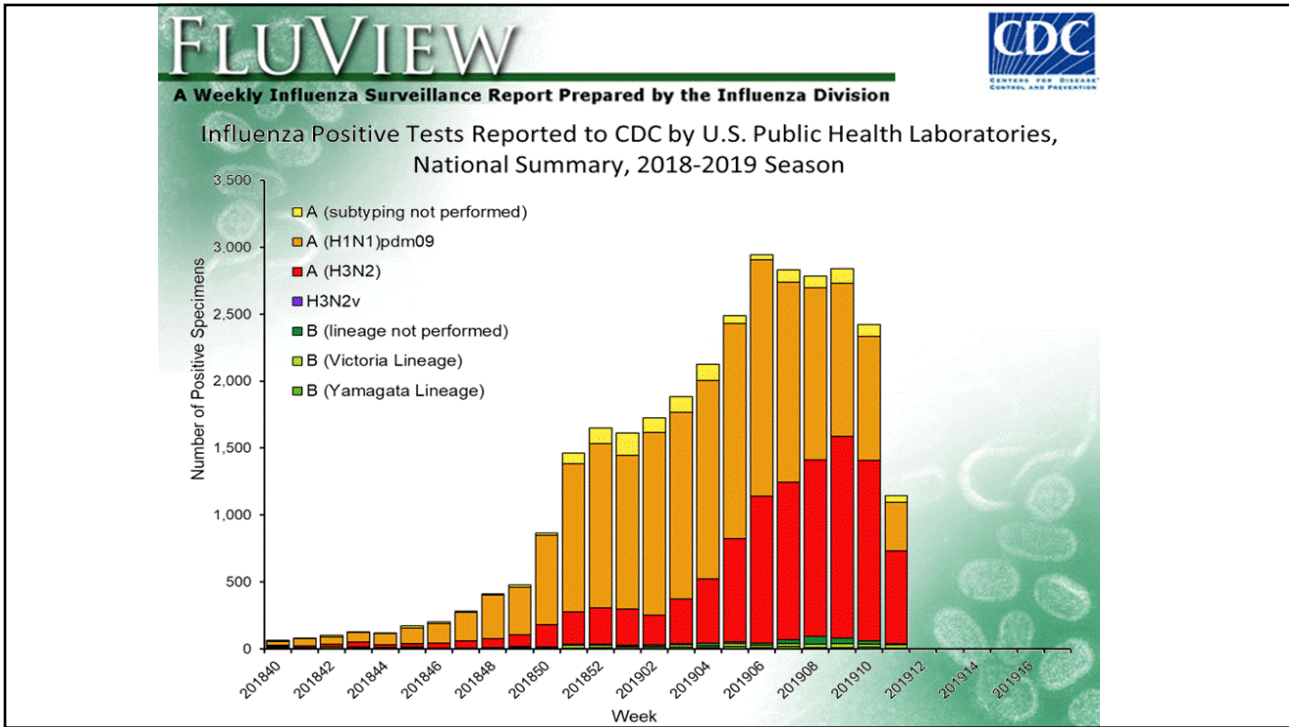
Weekly / February 15, 2019 / 68(6);135–139

- Interim results for 2018–19 season (through February 2, 2019) indicate protection against influenza
 - 47% (CI: 35, 57) vaccine effectiveness against any influenza virus
 - 46% (CI: 30, 58) against H1N1pdm09, 44% (CI: 13, 64) against H3N2

2019-2020 WHO Northern hemisphere strain selection, February 23, 2019

H1N1 pdm09	A/Brisbane/02/2018
A(H3N2)	Delayed till March 21, 2019
B Victoria	B/Colorado/06/2017
B Yamagata	B/Phuket/3073/2013





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2019

HAN00419

Influenza Season Continues with an Increase in Influenza A(H3N2) Activity

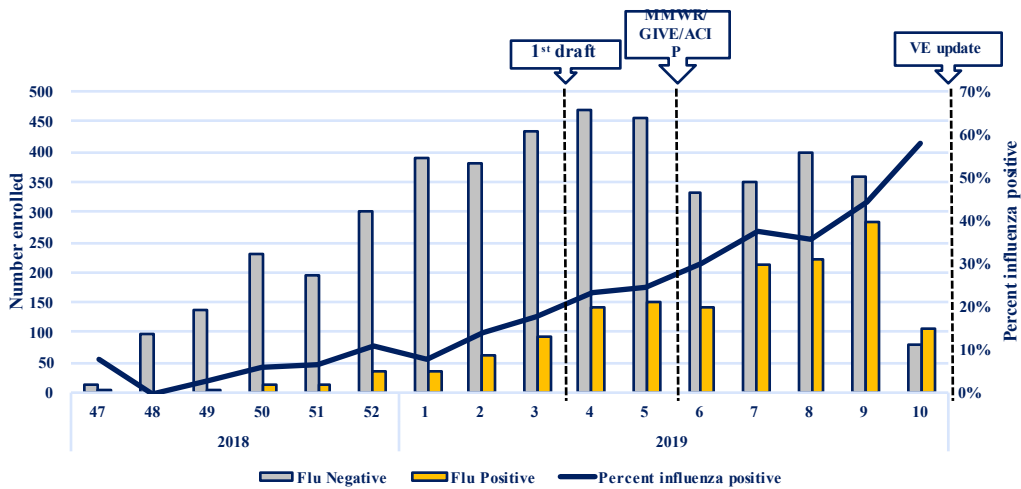


Distributed via the CDC Health Alert Network
 March 28, 2019 1415 ET (2:15 PM ET)
 CDCHAN-00419



CDC reminds clinicians to have a high suspicion for influenza and recommends rapid antiviral treatment of high-risk patients with suspected influenza.

Number of enrolled participants by influenza RT-PCR result and percent positivity by week of onset

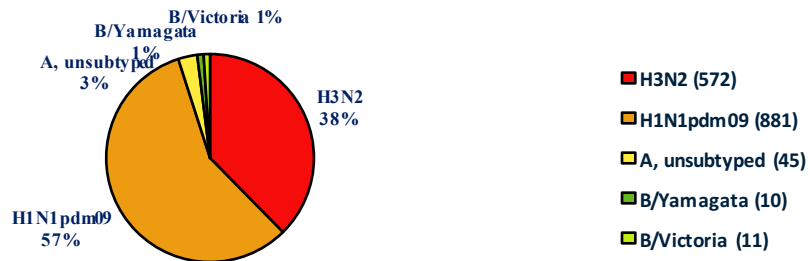


Note: Weeks 9-10 only includes patients with completed laboratory tests and thus does not reflect all enrolled patients during that week across study sites.

Updated Interim Results

- 6,128 enrolled from Nov 23, 2018–Mar 8, 2019 at 5 sites
- 1,513 (25%) influenza RT-PCR positive
- 4,615 (75%) influenza RT-PCR negative

Cases enrolled by (sub)type, N=465



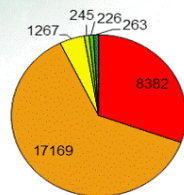
FLUVIEW

A Weekly Influenza Surveillance Report Prepared by the Influenza Division

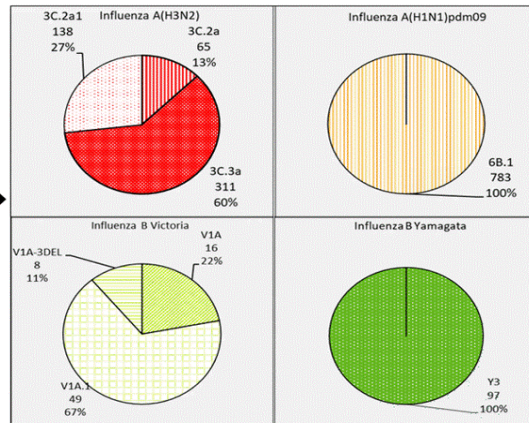


Sequence Results, by Genetic HA Clade/Subclade, of Specimens Submitted to CDC by U.S. Public Health Laboratories, Cumulative, 2018-2019 Season

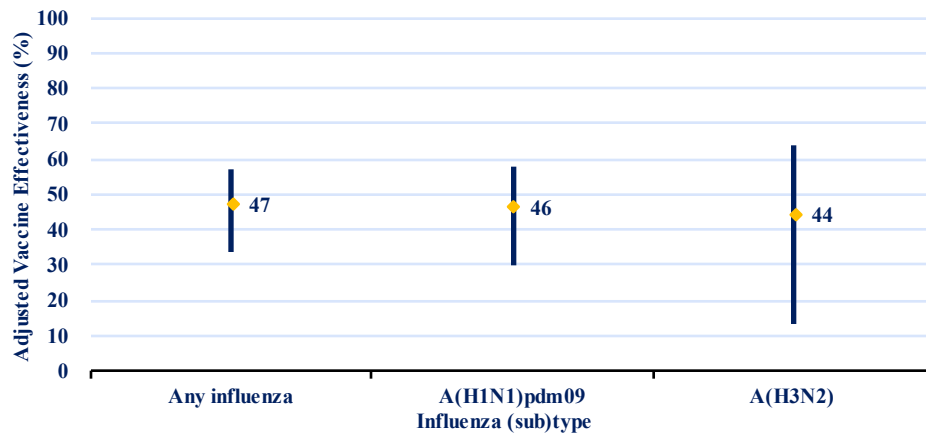
Influenza Positive Specimens Reported by U.S. Public Health Laboratories, Cumulative, 2018-2019 Season



- Influenza A(H3N2)
- Influenza A(H1N1)pdm09
- Influenza A(subtype unknown)
- Influenza B Victoria
- Influenza B Yamagata
- Influenza B (lineage not determined)

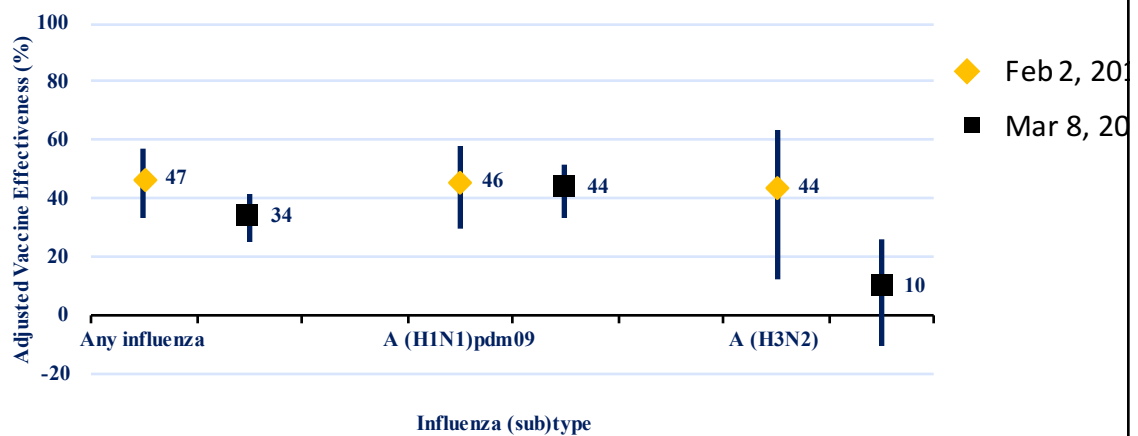


Interim estimate of vaccine effectiveness against medically attended influenza by influenza type, 2018–19 (Nov – Feb)



* Multivariate logistic regression models adjusted for site, age, sex, race/ethnicity, self-rated general health status, interval from onset to enrollment, and calendar time.

Updated interim estimate of vaccine effectiveness against medically attended influenza, 2018–19 (Nov – Mar)



* Multivariate logistic regression models adjusted for site, age, sex, race/ethnicity, self-rated general health status, interval from onset to enrollment, and calendar time.

2019-2020 WHO Northern hemisphere strain selection (updated March 21, 2019)

H1N1 pdm09	A/Brisbane/02/2018
A(H3N2)	A/Kansas/14/2017*
B Victoria	B/Colorado/06/2017
B Yamagata	B/Phuket/3073/2013

*A(H3N2) strain selected on March 21, 2019

Summary of changes since earlier interim estimate

- Increased percentage of A(H3N2) cases enrolled in US Flu VE network since 2 February (38% of all cases through 8 March vs 22% through 2 Feb)
- Updated interim results (through March 8, 2019) suggested reduced VE against A(H3N2) compared to earlier estimate (vs. no change in H1N1pdm09 estimate)
 - Circulation of antigenically drifted A(H3N2) clade 3C.3a
 - Supported decision to update A(H3N2) vaccine component
- Note: Interim estimates are preliminary; end-of-season VE estimates will include updated vaccination status and may differ from interim VE

US Flu VE Network

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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.

