

Interim Estimates of 2013–14 Seasonal Influenza Vaccine Effectiveness

**Data from the U.S. Flu VE Network
December 2, 2013 – January 23, 2014**

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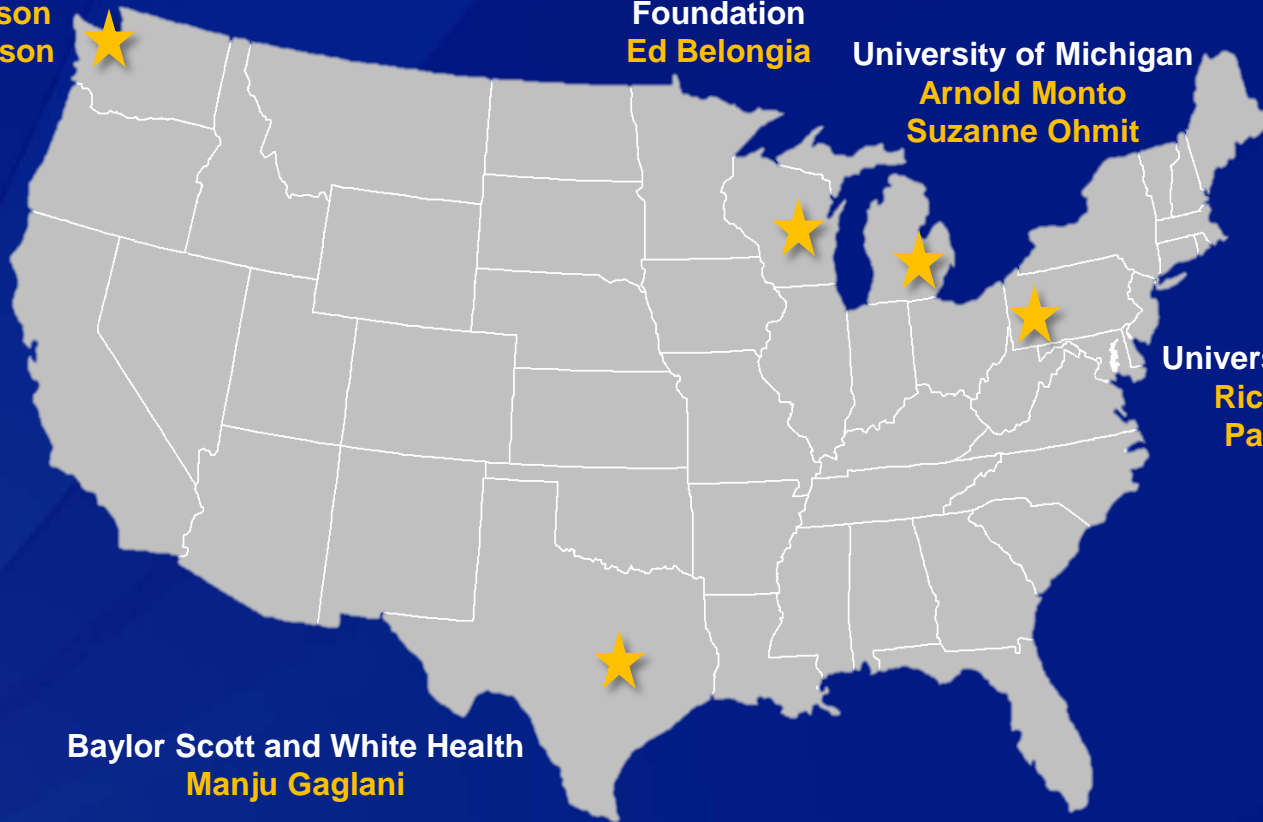
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US Flu VE Network: Methods

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

Dates of enrollment: December 2, 2013–January 23, 2014

Methods: Prospective case-control study (test-negative design)

- ❑ All enrolled outpatients tested for influenza by RT-PCR
 - Cases: Outpatients with confirmed influenza (PCR-positive)
 - Controls: Outpatients without influenza (PCR-negative)
- ❑ Vaccination status: receipt of at least one dose of any 2013-14 seasonal flu vaccine confirmed by medical records and registries (2 sites) and self-report and medical records (3 sites)

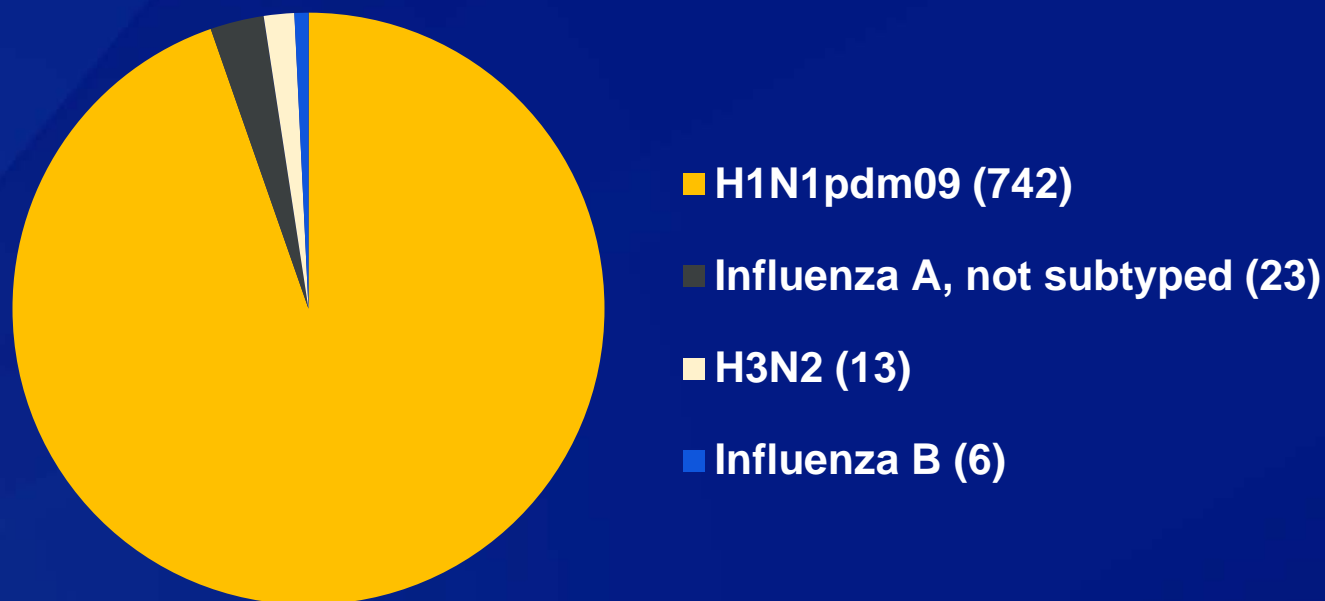
Analysis: $VE = (1 - \text{adjusted OR}) \times 100\%$

- Adjustment for study site, age, sex, race/Hispanic ethnicity, self-rated health, and days from illness onset to enrollment

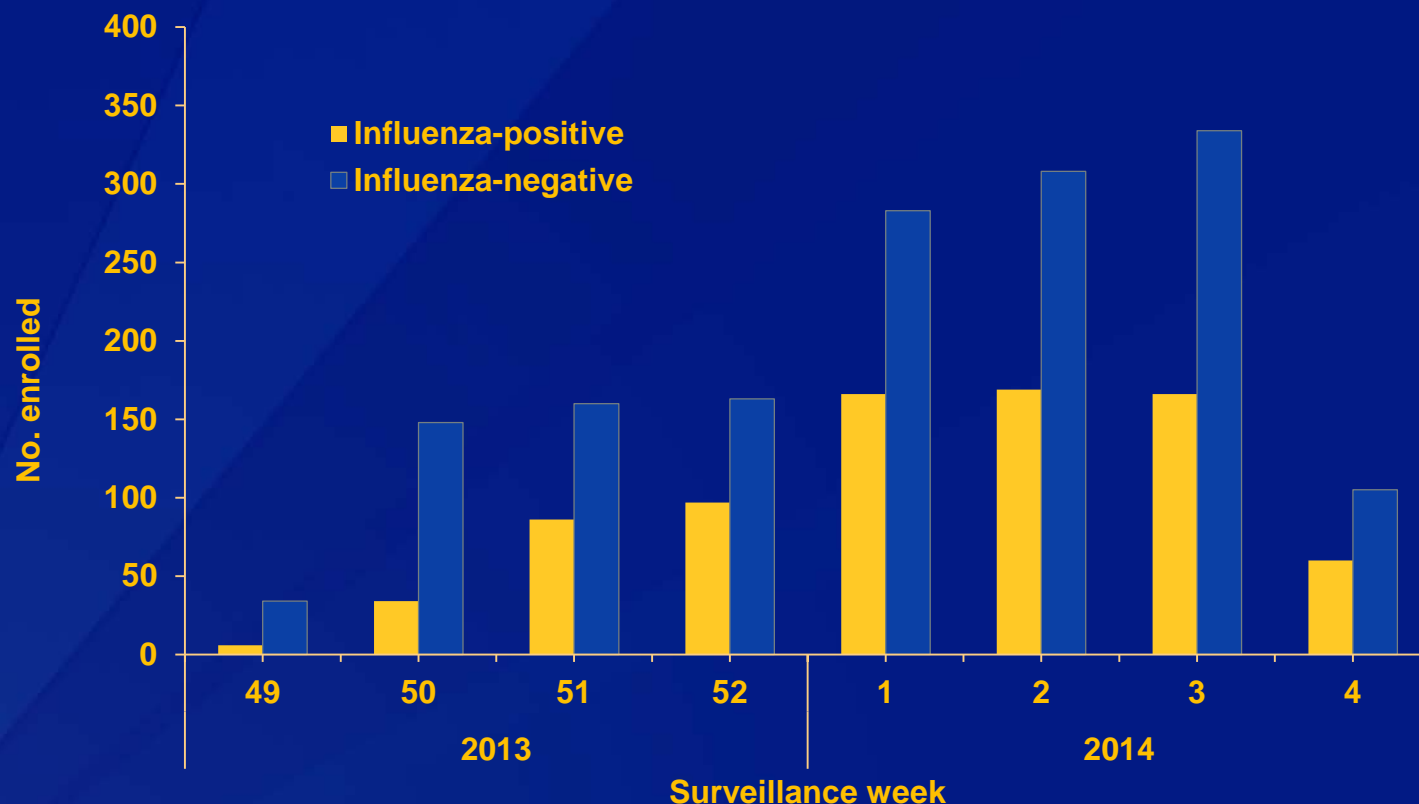
US Flu VE Network: Results

- ❑ 2,319 enrolled from Dec 2, 2013–Jan 23, 2014
- ❑ 1,535 (66%) influenza RT-PCR negative
- ❑ 784 (34%) influenza RT-PCR positive

Cases enrolled by (sub)type



Number of participants with ARI enrolled at 5 US Flu VE Network sites according to influenza RT-PCR result, by week of onset



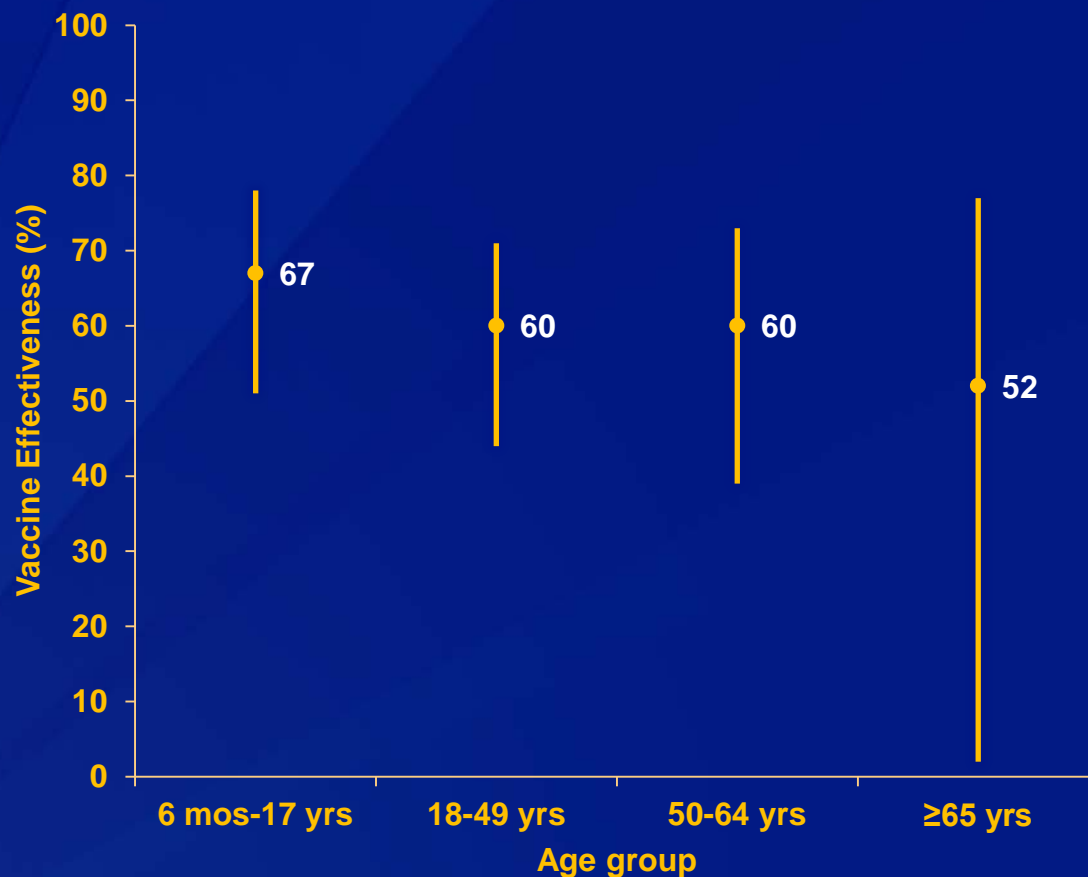
Note: Week 4 only includes patients with completed laboratory tests and thus does not reflect all enrolled patients during that week across study sites.

Interim adjusted VE estimates for ≥ 1 dose of 2013-14 seasonal influenza vaccine

	Flu pos	% vaccinated	Flu neg	% vaccinated	Adjusted VE	(95% CI)
Influenza A and B						
All ages	784	29%	1535	50%	61%	(52 to 68)
Age group (yrs)						
6 mos–17	172	24%	528	48%	67%	(51 to 78)
18–49	360	21%	536	38%	60%	(44 to 71)
50–64	195	37%	286	59%	60%	(39 to 73)
≥ 65	57	61%	185	79%	52%	(2 to 77)
Influenza A (H1N1pdm09)						
All ages	742	28%	1535	50%	62%	(53 to 69)
Age group (yrs)						
6 mos–17	168	24%	528	48%	67%	(51 to 78)
18–49	339	21%	536	38%	61%	(45 to 72)
50–64	184	36%	286	59%	62%	(42 to 75)
≥ 65	51	59%	185	79%	56%	(7 to 79)

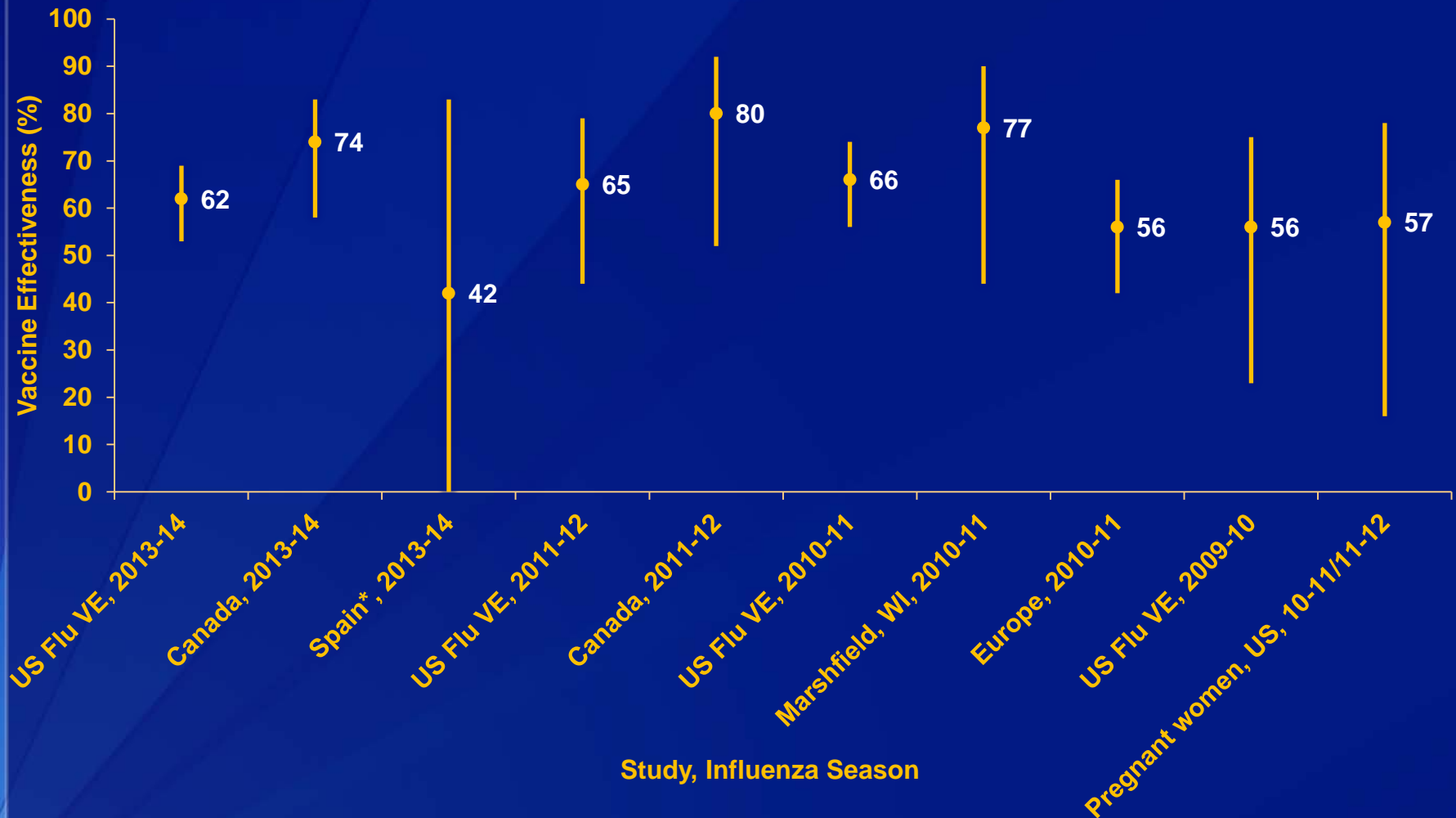
* Vaccine effectiveness was estimated as $100\% \times (1 - \text{odds ratio [ratio of odds of vaccination among flu-positive cases to odds of vaccination among flu-negative controls]})$ using logistic regression. Multivariate models adjusted for study site, age, sex, race/Hispanic ethnicity, self-rated health status, and days from illness onset to enrollment. Models for “all ages” include age as a categorical variable; age-specific models include age in years as a continuous variable.

Adjusted VE* and 95% CIs against influenza A and B for ≥1 dose of 2013–14 seasonal influenza vaccine, by age group



* Vaccine effectiveness was estimated as $100\% \times (1 - \text{odds ratio})$ [ratio of odds of vaccination among flu-positive cases to odds of vaccination among flu-negative controls] using multivariable logistic regression including study site, age, sex, race/Hispanic ethnicity, self-rated health status, and days from illness onset to enrollment.

Comparison of adjusted VE estimates against H1N1pdm09 associated outpatient ARI over several influenza seasons



* Adjusted VE and 95% CI for primary healthcare patients: 42% (-97%-83%). Source: Castilla J, Eurosurveillance 2014 .

Conclusions

- ❑ **2009 H1N1pdm virus predominated among influenza viruses identified from Dec 2, 2013-Jan 23, 2014 in U.S.**
- ❑ **Interim adjusted VE against H1N1pdm09 associated medically attended ARI = 62% (95% CI: 53-69)**
 - Similar for all age groups
 - Similar to VE estimates for H1N1pdm09 from previous seasons
 - Consistent with laboratory data for current season
- ❑ **Final analyses for 2013-14 season will investigate effects of prior vaccination**
- ❑ **Ability to estimate VE for H3N2 or B infections will depend upon final sample size**

US Flu VE Network

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