

### Summary

- Influenza-related complications can lead to hospitalizations and death in seniors
- Influenza vaccine immunogenicity (antibody response) is lower in seniors vs. those younger
- Determining the most effective vaccine in seniors could potentially lower hospitalization risks for influenza and/or pneumonia
- We compared hospitalizations and ER visits for influenza and/or pneumonia in seniors
- We selected 6 study periods covering 6 influenza seasons from MarketScan Medicare data (USA, 2011-2018)
- High-dose trivalent vaccines were associated with lower risk of hospitalization/ER visits for flu and pneumonia, compared to standard-dose trivalent and quadrivalent vaccines

### What is the current situation?

Influenza-related complications disproportionately affect seniors, thus effective influenza vaccination strategies are crucial. This is particularly important in the post-COVID era. As more influenza vaccine formulations become available, there is a great need for comparative studies that allow regulators to make evidence-based decisions regarding influenza vaccination, especially in seniors.

### What was the aim of the study?

Our aim was to determine which available influenza vaccines are most effective for adults 65+.

### How was the study conducted?

We used MarketScan Medicare Supplemental data (2011-2018) that contain longitudinal information on inpatient and outpatient medical services, including vaccination, hospital stays and emergency room (ER) visits. We compared the effectiveness of standard-dose (SD) trivalent, high-dose (HD) trivalent, SD quadrivalent, and adjuvanted trivalent influenza vaccines in adults aged 65+ in the United States over six influenza seasons (2012/2013–2017/2018).

Primary outcomes:

- 1) hospitalization or ER visit with a diagnosis of influenza
- 2) hospitalization or ER visit with a diagnosis of pneumonia (a complication of influenza)

### What did the study find?

- Seniors vaccinated with an HD-trivalent influenza vaccine were less likely to visit the ER or be hospitalized for influenza and/or pneumonia than those receiving SD-formulations.
- We were unable to demonstrate clear differences comparing the adjuvanted trivalent to the other vaccines.

**Our findings provide real-world evidence that, in seniors, HD-trivalent vaccination is associated with fewer ER visits and/or hospitalizations for influenza and/or pneumonia.**

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