Favorable tolerability and willingness for repeat vaccination with recombinant influenza vaccine: patient-reported experience from working-age adults vaccinated in US retail settings

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By leveraging Patient-Reported Outcomes among US working-age adults, this study found that positive post-vaccination experience with minimal symptoms associates with a high intent to revaccinate—underscoring the vital role of patient experience in sustaining seasonal immunization coverage.

BACKGROUND

- Seasonal influenza vaccination coverage remains suboptimal and is declining, particularly among working-age adults in the US, underscoring the need to address drivers of repeat vaccination[1].
- Real-world data on patient experience following seasonal influenza vaccination, particularly post-vaccination tolerability and willingness to vaccinate in subsequent seasons, are limited[2].
- Understanding patient experience following routine RIV vaccination is essential to sustaining repeat vaccination, supporting a healthy workforce, and reducing seasonal pressure on healthcare systems.

OBJECTIVE

This study aimed to assess tolerability and patient experience among working-age adults 18 to 64 years vaccinated with recombinant influenza vaccine (RIV), as these factors are key drivers of vaccine uptake and essential for workforce protection.

METHODS

- Participants, stratified by two age groups 50 to 64 and 18 to 49 years, receiving routine seasonal influenza vaccination were recruited across US retail settings in the 2025-2026 influenza season.
- Eligible adults had received RIV 2 to 21 days prior to study participation, allowing collection of post-vaccination experience while minimizing recall bias; no other vaccines were received in the prior 3 weeks.
- Participants completed a 30-minute online survey to provide self-reported data on socio-demographic characteristics, medical and vaccination history, and recent vaccination experiences.
- Vaccination experiences were evaluated using two distinct instruments:
  - i. VAPI 2.0: The second version of the Vaccinees' Perception of Injection questionnaire, a 29-item fit-for-purpose instrument scored on a 5-point scale.
  - ii. Factors Driving Vaccine Choice: A tailored 7-item questionnaire assessing vaccination attitudes, motives for vaccine selection, and future preferences and intent.
- The primary endpoint was defined as the self-reported incidence and severity of reactions (local and systemic), vaccine acceptability/tolerability, and impact on daily life activities using VAPI 2.0.
  - → Conceptually similar questions were grouped into aggregated domains. Four key domains are reported: (a) Local Reactions Symptom Burden, (b) Local Reactions Tolerability, (c) Systemic Reactions Symptom Burden, and (d) Systemic Reactions Tolerability.
- A secondary endpoint measured the frequencies and proportions of factors driving the choice of RIV.

Table 1. Baseline Patient Characteristics and Vaccine History

Variable	18 to 49 years *(N = 203) n (43.5%)*	50 to 64 years *(N = 236) n (50.5%)*
Gender female	132 (65.0%)	151 (64.0%)
Ethnicity/race		
White/Caucasian	142 (70.0%)	187 (79.2%)
Black/African American	4 (2.0%)	7 (3.0%)
Asian	22 (10.8%)	25 (10.6%)
Hispanic or Latino	23 (11.3%)	9 (3.8%)
Others	12 (5.9%)	8 (3.4%)
Number of chronic medical conditions of interest		
0 condition	133 (65.5%)	113 (47.9%)
≥1conditions	70 (34.5%)	123 (52.1%)
≥2 conditions	28 (13.8%)	51 (21.6%)
Mean days between vaccination to survey completion		
Less than 5 days	198 (97.5%)	227 (96.2%)
Days 6 to 10	2 (1.0%)	5 (2.1%)
Days 11 to 21	3 (1.5%)	4 (1.7%)
Received another vaccine after flu this season	7 (3.5%)	8 (3.4%)
Received a flu vaccine last season	177 (87.2%)	210 (89.0%)
Frequency of flu vaccination in the past 4 seasons		
Every season	151 (74.4%)	192 (81.4%)
Some seasons	44 (21.7%)	38 (16.1%)
No vaccination	6 (3.0%)	4 (1.7%)
Don't remember	2 (1.0%)	2 (0.9%)

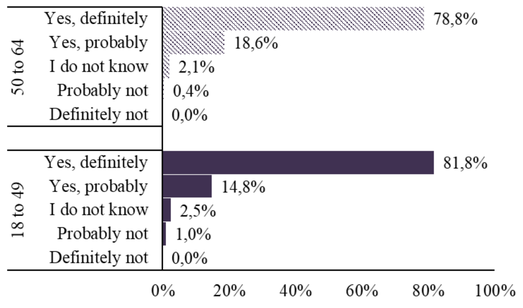

Figure 3. Average response to the question, 'Overall, how willing are you to receive the same vaccine again next year?' Total N=439 (18–49: n=203; 50–64: n=236)

STRENGTHS AND LIMITATIONS

- First descriptive, real-world study assessing patient-reported experience following routine RIV vaccination in a sizable working-age adult population.
- As no comparator was included, tolerability was assessed descriptively and cannot be evaluated relative to alternative influenza vaccines.

RESULTS

- From September to December 2025, the study recruited 439 adults across 22 US states, consisting of 236 participants aged 50–64 and 203 aged 18–49.
- The study population was predominantly female and white/Caucasian, with a high proportion of participants reporting influenza vaccination in the previous season. The study survey was answered within the 5 days following vaccination by the vast majority of participants (*Table 1*).

Patient-Reported experiences after RIV vaccination

- VAPI 2.0 results showed high patient-reported tolerability to local and systemic symptoms, with mean domain scores ≥4.5 on a 5-point scale (5 = Totally tolerable) (*Figure 1*).
- The burden of local and systemic symptoms was rated very low, with scores remaining ≤1.7 across both age groups (1 = No burden at all) (*Figure 2*).
- This positive experience associated with high future intent, as over 96% of participants expressed a willingness to receive the same vaccine next season (responding "Yes definitely" or "Yes probably") (*Figure 3*).

Factors Driving Vaccine Choice

- Overall confidence in the efficacy and safety of current flu vaccines was high (≥84%).
- 79% of adults aged 18–49 and 82% of those aged 50–64 reported a "very easy" experience from the time of decision through to injection.
- Top drivers for selecting RIV this season differed by age group; adults 50–64 were primarily motivated by age-specific recommendations (36.8%) and pharmacist advice (31.6%). In contrast, the 18–49 group was most influenced by pharmacist recommendations (56%) and specific brand or manufacturer preference (35%).
- Intent to receive the same vaccine brand next year was driven primarily by insurance coverage (18–49: 56%; 50–64: 52%) and a positive tolerability profile with fewer or no symptoms (18–49: 54%; 50–64: 60%).

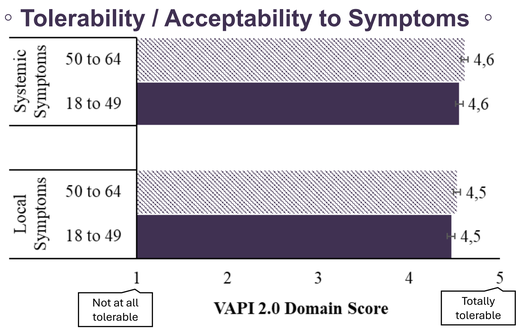

Figure 1. Tolerability to Systemic and Local Symptoms Domain Scores
Note: Each domain combines 4 questions on duration acceptability [2], ability to cope [1] and to manage symptoms [1]

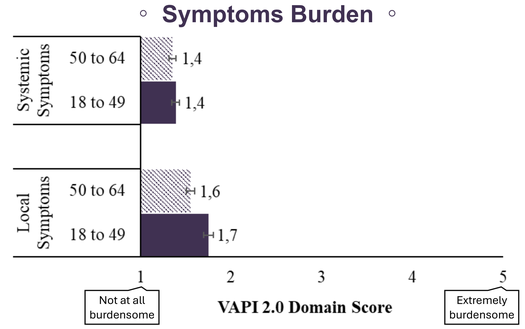

Figure 2. Systemic and Local Symptom Burden Domain Scores
Note: Domain combines questions on intensity [1], duration [2] and bothersome [1]

CONCLUSIONS

RIV was well tolerated among working age adults, with minimal symptoms burden, impact on daily life activities, and a consistently positive patient reported experience regardless of age groups.

These findings support its value in reinforcing annual influenza vaccination, strengthening workforce protection, and reducing seasonal pressure on healthcare systems

REFERENCES: 1. Centers for Disease Control and Prevention. (2024, September 20). Flu vaccination coverage, United States, 2023–24 influenza season. FluVaxView. https://www.cdc.gov/fluvaxview/coverage-by-season/2023-2024.html. 2. Meda-Monzón, E. et al. Raising the patient's voice in influenza research and care: a systematic review of patient-reported outcomes. BMC Infect Dis 26, 652 (2026). https://doi.org/10.1186/s12879-026-12821-w

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