From Data to Decisions:
Updated Evidence for 2025-2026 Covid-19, RSV, and Influenza Immunizations

Summary of Findings

Key Findings

- Covid-19, RSV, and influenza continue to cause substantial morbidity and mortality across all age groups in the United States
- This systematic review synthesized 511 studies published since the most recent ACIP Evidence-to-Recommendation reviews (2023-2024), examining vaccine effectiveness and safety data for U.S.-licensed immunizations
- Current evidence continues to demonstrate that immunizations are associated with meaningful reductions in hospitalization and severe outcomes across populations, with reassuring safety profiles consistent with prior evaluations

Background and Methods

Healthcare providers and the public deserve current, evidence-based information to guide respiratory immunization decisions.

The Vaccine Integrity Project assembled a national team of doctors, researchers, and public health experts to independently review vaccine safety and effectiveness data for Covid-19, RSV, and influenza immunizations. The search focused on U.S.-licensed immunizations and included studies published since the 2023-24 ACIP respiratory immunization recommendations. In total, 17,263 abstracts were initially screened; 1,406 full-text articles reviewed, and data were extracted from 511 studies—each independently assessed by at least two reviewers at every step. Before project initiation, the protocol was registered with PROSPERO (July 10, 2025).

Results

Pregnancy

Covid-19 vaccination during pregnancy was not associated with adverse outcomes across multiple studies, with some evidence suggesting vaccination is associated with reduced preterm birth risk. Maternal RSV vaccination showed high effectiveness against infant hospitalization. When RSVPreF is administered at the recommended timing of 32-36 weeks' gestation, no increased risk of preterm birth was observed. Influenza vaccination during pregnancy was associated with reduced emergency department and urgent care visits, with generally reassuring safety findings regarding pregnancy complications.

Infants and Children

Covid-19 vaccines were associated with reduced hospitalizations and emergency visits in children aged 5-17 years, with limited evidence also suggesting associations with reduced long-term symptoms. Nirsevimab showed strong effectiveness against RSV-associated hospitalization across multiple studies. Following nirsevimab implementation in Spain, RSV hospitalization rates declined substantially in infants under 6 months. Influenza vaccines were associated with reduced pediatric hospitalizations. Notably, there were several new studies about children with severe influenza-associated encephalopathy; the vast majority of cases and deaths occurred in unvaccinated children, with most having no underlying medical conditions. Covid-19 vaccine-associated myocarditis remains a rare side effect in adolescent males, occurring more frequently after second doses but much less frequently when doses are spaced further apart. No increased myocarditis risk was observed in children under 12 years.

Adults (18-64 years)

Updated Covid-19 vaccines were associated with approximately 50% lower hospitalization rates, though effectiveness was lower when certain variants were predominant. The newest vaccine formulations showed improved effectiveness against hospitalization. Limited new RSV vaccine data were available for this age group. Influenza vaccines were associated with meaningful reductions in hospitalization. Covid-19 vaccine-associated myocarditis risk remained elevated for mRNA vaccines but was lower with extended intervals between doses and was not observed with the newest vaccine formulations.

Older Adults

Covid-19 vaccines were associated with reduced hospitalizations in this high-risk group, with current formulations showing similar effectiveness. RSV vaccines in adults aged 60 and older were associated with substantially lower hospitalization rates. One RSV vaccine formulation was associated with a very small increased risk of Guillain-Barré syndrome, while that higher risk was not demonstrated with the other formulation. Influenza vaccines were associated with reduced hospitalizations, with enhanced formulations (high-dose and adjuvanted) showing better effectiveness than standard vaccines.

Immunocompromised

Covid-19 vaccines showed reduced but still meaningful effectiveness against hospitalization in immunocompromised adults, with better effectiveness against death in patients with end-stage renal disease. RSV vaccines were associated with substantial reductions in hospitalization overall, though effectiveness varied markedly by transplant type—higher in solid organ transplant recipients and lower in hematopoietic stem cell transplant recipients. Influenza vaccines showed modest effectiveness against hospitalization. Safety data from a large UK study did not demonstrate an increased risk of stroke or ITP with Covid-19 vaccination in immunocompromised individuals.

Conclusions

This systematic review synthesized 511 studies to provide current evidence on Covid-19, RSV, and influenza immunization effectiveness and safety for the 2025-26 respiratory virus season. The data extend across diverse evidence bases—well established for influenza, rapidly accumulated for COVID-19, and still emerging for RSV. The breadth of evidence corresponds to both product maturity and the pace of response to information needs. While the newest data demonstrate that the effectiveness varies by population and vaccine type, all demonstrated meaningful associations with reduced severe outcomes, with favorable benefit-risk profiles supporting vaccination across studied populations. The findings have informed recommendations from multiple medical societies for the upcoming respiratory season.

The complete dataset is publicly available through an interactive web application at cidrap.umn.edu/vaccine-integrity-project/data-visualization, allowing healthcare providers and policymakers to explore specific outcomes by population and vaccine type. The full manuscript has been accepted at the *New England Journal of Medicine,* and the accepted version can be accessed here. Additional resources, including recorded presentations and implementation guidance, are also available on the Vaccine Integrity Project website at cidrap.umn.edu/vaccine-integrity-project.