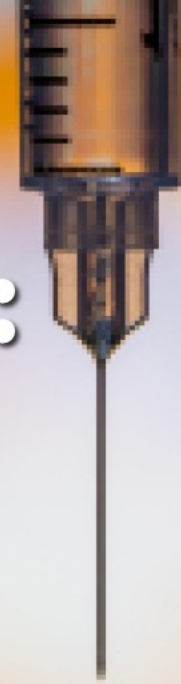


# Moving the Needle in Vaccinations of Older Adults:

Impact of Prevention:

Updates in Vaccine Development





Myron J. Levin, MD

Professor of Pediatrics and Medicine  
University of Colorado School of Medicine  
Aurora, CO, USA



Pamela G. Rockwell, DO, FAAFP

Professor of Family Medicine  
University of Michigan Medical School  
Ann Arbor, MI, USA

# Patient Case



You are treating 75-year-old male with a history of hypertension. After a recent outbreak in his community, he receives the RSV vaccine.

# Vaccine Science – RSV



## • CDC Recommendation

- Age  $\geq 60$  years old: Based on shared clinical decision-making, 1 dose RSV vaccine (Respiratory Syncytial Virus Vaccine, Adjuvanted (Arexvy®) or Respiratory Syncytial Virus Vaccine (Abrysvo™)
- *As of June 7, 2024, Respiratory Syncytial Virus Vaccine, Adjuvanted (Arexvy®) is indicated in adults 50–59 at increased risk for LRTD caused by RSV, in addition to adults  $>60$  years old*

## • Efficacy

- Respiratory Syncytial Virus Vaccine, Adjuvanted: AReSVi-006 trial demonstrated a **82.6%** reduced risk of developing RSV-associated lower respiratory tract disease (LRTD) among participants  $>60$  years old
- Respiratory Syncytial Virus Vaccine (ABRYSVO): RENOIR trial demonstrated an **86%** efficacy in reduced risk of first episode of RSV-associated LRTD with more than 3 symptoms among adults  $\geq 60$  years of age

## • Completion

- As of May 16, 2024, **24.4%** of adults  $>60$  years of age tracked and surveyed by the CDC reported receiving an RSV vaccine

## • Side Effects

- Pain at the injection site
- Fatigue
- Myalgia
- Headache
- Potential for increased risk of Guillain-Barre syndrome

Bonten, MJM, et al. *N Engl J Med*. 2015;372:1114–1125. doi: 10.1056/NEJMoa1408544; CDC. Healthcare Providers: RSV Vaccination for Adults 60 Years of Age and Over. cdc.gov. March 1, 2024. <https://www.cdc.gov/vaccines/vpd/rsv/hcp/older-adults.html>. Accessed May 16, 2024; CDC. Vaccination Trends – Adults RSV. <https://www.cdc.gov/respiratory-viruses/data-research/dashboard/vaccination-trends-adults.html>. Accessed May 22, 2024; Respiratory Syncytial Virus Vaccine. Package insert. Pfizer; 2023; Respiratory Syncytial Virus Vaccine, Adjuvanted. Package insert. GlaxoSmithKline; 2023.

# Vaccine Science – Shingles (Zoster)



## Adverse Events

- 1 of 6 people had symptoms severe enough to prevent them from performing regular activities
  - Patients should plan to avoid strenuous activities, such as yardwork or swimming, for a few days after vaccination
- Providers should strongly recommend patients get the second dose of the vaccine, even if they experience these side effects, to ensure maximum protection from shingles
- Reaction to the first dose does not necessarily mean a reaction to the second dose.
- No reaction to the first dose, might or might not be an indicator for reaction to the second dose.

- Most side effects are mild to moderate, lasting 2 to 3 days
  - Pain, redness, and swelling at the injection site
  - Muscle pain
  - Tiredness
  - Headache
  - Shivering
  - Fever
  - Upset stomach
  - Pain from shingles can last a lifetime, and these side effects should only last 2 to 3 days

KEY  
POINT

CDC. Shingles (Herpes Zoster) Vaccines. cdc.gov. September 9, 2020. <https://www.cdc.gov/vaccinesafety/vaccines/shingles-herpes-vaccine.html>. Accessed May 16, 2024; CDC. Vaccination Coverage Among Adults. cdc.gov. Last reviewed May 13, 2021. <https://www.cdc.gov/vaccines/imz-managers/coverage/adultvaxview/data-reports/general-population/index.html>. Accessed May 22, 2024; Zoster Vaccine Recombinant, Adjuvanted. Package Insert. GlaxoSmithKline. 2017.

# Case Variation #1



Your patient returns with mild side effects following his shingles vaccination. You must counsel him, addressing his concerns and managing the side effects appropriately.

# Vaccine Science – Pneumonia



## Efficacy of Pneumococcal Conjugate Vaccines (PCV)

- **PCV15** (Vaxneuvance) and **PCV20** (Prennar20)
  - Approved by the FDA for adults >65 years old
  - Inactivated vaccines that contain polysaccharide antigens bound to protein carrier CRM197
  - CaPiTA trial among 85,000 adults >65 years old in the Netherlands from 2008–2013 evaluating clinical benefit of PCV13
    - **46%** efficacy against vaccine-type **pneumococcal pneumonia**
    - **45%** efficacy against vaccine-type **non-bacteremic pneumococcal pneumonia**
    - **75%** efficacy against vaccine-type **invasive pneumococcal disease** (IPD)
- **PCV21** (Pneumococcal 21-valent conjugate vaccine)
  - As of June 17, 2024, approved by the FDA for adults  $\geq 18$  years of age
  - STRIDE-3 and STRIDE-6 trials among pneumococcal vaccine-naïve adults and adults  $\geq 50$  years of age who previously received a pneumococcal vaccination at least 1 year prior to study enrollment
    - Robust immune response, comparable immune responses to PCV15 and PPSV23
- **Completion**
  - For the latest reported year of 2022, **70.0%** of adults >65 years old tracked and surveyed by the CDC reported received a Pneumococcal vaccine

CDC. About Pneumococcal Vaccine. cdc.gov. September 21, 2023. <https://www.cdc.gov/vaccines/vpd/pneumo/hcp/about-vaccine.html>. Accessed May 16, 2024; CDC. Vaccination Coverage Among Adults. cdc.gov. Last reviewed May 13, 2021. <https://www.cdc.gov/vaccines/imz-managers/coverage/adultvaxview/data-reports/general-population/index.html>. Accessed May 22, 2024; Pneumococcal 20-valent Conjugate Vaccine. Package insert. Pfizer; 2021. Pneumococcal 21-valent conjugate vaccine. Package insert. Merck; 2024

# Latest Update on Vaccine Development and Emerging Vaccine Science – Pneumonia



## • Side Effects

- Pain, redness, and swelling at the injection site
- Muscle pain
- Tiredness
- Headache
- Shivering Fever
- Upset stomach
- Most side effects are mild to moderate, lasting 2 to 3 days

CDC. About Pneumococcal Vaccine. cdc.gov. September 21, 2023. <https://www.cdc.gov/vaccines/vpd/pneumo/hcp/about-vaccine.html>. Accessed May 16, 2024; CDC. Vaccination Coverage Among Adults. cdc.gov. Last reviewed May 13, 2021. <https://www.cdc.gov/vaccines/imz-managers/coverage/adultvaxview/data-reports/general-population/index.html>. Accessed May 22, 2024; Pneumococcal 20-valent Conjugate Vaccine (PREVNAR 20). Package insert. Pfizer; 2021.



# Latest Update on Vaccine Development and Emerging Vaccine Science – Pneumonia



Contraindications to pneumococcal conjugate vaccine:

- History of a severe allergic reaction (e.g., anaphylaxis) after a previous dose of PCV7, PCV13, PCV15, or PCV20, or to any vaccine containing diphtheria toxoid
- History of a severe allergy to any component of the vaccine

Contraindications to PPSV23 to:

- History of a severe allergic reaction (e.g., anaphylaxis) after a previous dose
- History of a severe allergy to any component of the vaccine

Precaution: moderate or severe acute illness with or without fever

CDC. About Pneumococcal Vaccine. cdc.gov. September 21, 2023. <https://www.cdc.gov/vaccines/vpd/pneumo/hcp/about-vaccine.html>. Accessed May 16, 2024; CDC. Vaccination Coverage Among Adults. cdc.gov. Last reviewed May 13, 2021. <https://www.cdc.gov/vaccines/imz-managers/coverage/adultvaxview/data-reports/general-population/index.html>. Accessed May 22, 2024; Pneumococcal 20-valent Conjugate Vaccine (PREVNAR 20). Package insert. Pfizer; 2021.

# Latest Update on Vaccine Development and Emerging Vaccine Science



## Vaccine Administration Strategies: Opportunities and Challenges Around Coadministration

As of June 7, 2024, Respiratory Syncytial Virus Vaccine, Adjuvanted is indicated in adults 50–59 at increased risk for LRTD caused by RSV, in addition to adults ≥60 years old

As of June 17, 2024, PCV21 (Pneumococcal 21-valent conjugate vaccine) is approved for adults ≥18 years old

Vaccine-Preventable Disease	Symptoms	CDC Vaccination Recommendation	Vaccine Received	Date Received
RSV (RSVPreF3 OA, RSVpreF, mRNA-1345)	Runny nose, cough, decreased appetite, sneezing, wheezing, fever	1 dose for adults ≥60 years old	_____	___/___/___
Shingles (Herpes Zoster)	Rash in a stripe on one side of body	2 doses (2–6 months apart) for adults ≥50 years old	_____ _____	___/___/___ ___/___/___
Pneumococcal (PCV15, PCV20, PPSV23)	Fever, cough, shortness of breath, chest pain, confusion, increased sensitivity to light, stiff neck	1 dose PCV15 followed by PPSV23 (1 year later) OR 1 dose PCV20 for adults ≥65	_____ _____ _____	___/___/___ ___/___/___



RZV = recombinant zoster vaccine (Shingrix®); PCV15 = Pneumococcal conjugate vaccine 15 (Vaxneuvance®); PCV13 = Pneumococcal conjugate vaccine 20 (Prevnar 20®); PPSV23 = Pneumococcal polysaccharide vaccine 23 (Pneumovax23®); RSV = Respiratory Syncytial Virus Vaccines (RSVPreF3 OA = Abrexvy®; RSVpreF = Abrysvo®; mRNA-1345=mRESVIA)

LRTD, lower respiratory tract disease

## Case Variation #2



The same patient later inquires about the RSV and pneumococcal vaccines. You must navigate the patient's existing vaccination schedule and co-administration guidelines to recommend the most appropriate course of action.

# Manage Vaccine-Associated Side Effects



## Co-administration of vaccines

- Significant advantages in ensuring optimal vaccine coverage and compliance
- Can result in higher reactogenicity overall, although this is not a general rule

# Integration of Recommended Vaccines in Clinical Workflows



- **Stay current with ACIP and CDC guideline recommendation while developing and implementing a practical workflow that facilitates vaccine uptake and completion**
  - Screening protocols for contraindications
  - Electronic medical records for efficient vaccine scheduling and tracking
- **Immunization Quality Improvement Programs (IQIP)**
  - Helps providers improve vaccination rates through strategies
  - Scheduling immunization visits, leveraging immunization information systems, and giving strong vaccine recommendations
- **Immunization Information Systems (IIS)**
  - Electronic databases to help consolidate immunization records, support effective interventions, manage vaccine inventory, and improve vaccination coverage

Bjork, A and Morelli, V. *Immunization Strategies for Healthcare Practices and Providers*. CDC. August 18, 2021. <https://www.cdc.gov/vaccines/pubs/pinkbook/downloads/strat.pdf>. Accessed May, 2024.

# Integration of Recommended Vaccines in Clinical Workflows



- **Patient-Focused Strategies:**

- Strong vaccination recommendations from providers
- Answering patient questions
- Addressing concerns effectively
- Using a presumptive approach to vaccine discussions

- **Practice-Focused Strategies**

- Addressing physical and psychological barriers
- Reducing missed opportunities for vaccination
- Ensuring consistent, supportive communication within the practice are important

- **Reminder systems**

- Accurate immunization records are vital for healthcare and compliance.
  - Up-to-date, easily interpretable, and reflect current patients
  - IIS
- Bulk query functionality
  - Query multiple patient records at once, scheduling these queries to run automatically
  - Reduces manual effort and helps ensure accurate, up-to-date records

Bjork, A and Morelli, V. *Immunization Strategies for Healthcare Practices and Providers*. CDC. August 18, 2021. <https://www.cdc.gov/vaccines/pubs/pinkbook/downloads/strat.pdf>. Accessed May, 2024. Weinberg, ST. *Improving Immunization Workflow for Providers - Bulk Query Functionality*. HIMSS. March 23, 2023. <https://www.himss.org/resources/improving-immunization-workflow-providers-bulk-query-functionality>. Accessed May 16, 2024

# Case Variation #3



Upon reviewing the patient's electronic medical records, it is discovered this patient missed his second dose of the herpes zoster vaccine. You need to adjust the workflow to accommodate.



Thank You!