

# IMMUNIZATION UPDATE FOR PHARMACY

*JESSE RUE, PHARMD, BCPS  
CLINICAL COORDINATOR  
ND PHARMACY SERVICE CORPORATION*



# DISCLOSURES

Dr. Rue has no relevant financial relationships with any ineligible companies to disclose.

The off-label use of medications will not be discussed during this presentation.



# LEARNING OBJECTIVES

*At the completion of this activity, the learner will be able to:*

1. Discuss the role of recently approved vaccines within clinical practice.
2. Identify recent updates to ACIP recommended vaccines for pediatric and adult populations.
3. Review regularly updated and published information about vaccine use in North Dakota.
4. Summarize preliminary data for a novel method of disseminating immunization opportunities in North Dakota community pharmacies.



# HELLO!

- CDC estimates up to 27,000 annual hospitalizations for flu in children <5.
- Midseason 2023-24 flu vax rate in North Dakota for 6 months to 4 years old...

- <https://www.cdc.gov/flu/highrisk/infantcare.htm>



# HELLO!

- ...which county performed best?



# WORK TO BE DONE

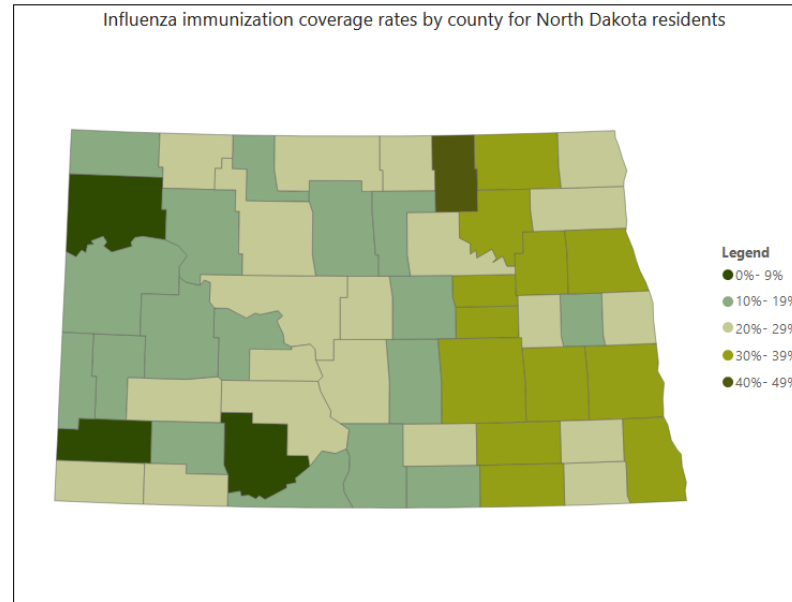
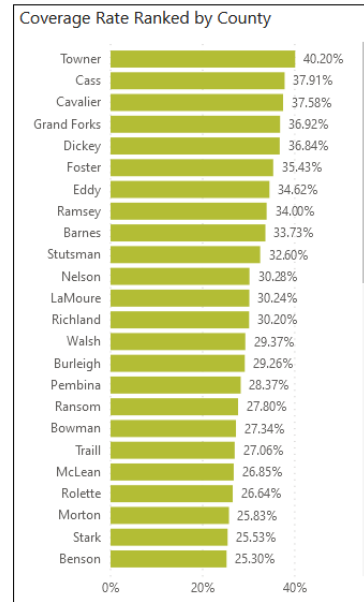


Methodology State-wide Coverage County Coverage Vaccine Information

### County-level Influenza Immunization Coverage Rates

**Age Group**: 6 months - 4 years  
**Year**: 2023-2024  
**Season**: mid season  
**Coverage Rate Range**: All

**Statewide Coverage Rate**  
 6 months - 4 years  
 2023-2024 mid season  
**27.6%**



# LAUNCHES + REVISIONS

- **PCV20**--20-valent pneumococcal conjugate vaccine
- **Jynneos**--Mpox vaccine
- **Nirsevimab**--RSV monoclonal antibody
- **Abrysvo**--RSV vaccine
- **Penbraya**--Meningococcal groups A, B, C, W, Y vaccine



# LAUNCHES + REVISIONS

- **PCV20--pneumococcal conjugate vaccine**

- FDA Approval: Not a new agent, but PCV20 was approved for peds in June 2023. [PCV 13 retired](#).
- Rationale: The development of PCV20 follows the need for broader protection against pneumococcal disease, given the emergence of non-PCV13 serotypes. PCV20 offers extended coverage against additional pneumococcal serotypes compared to its predecessor, PCV13.
- Dosing:
  - CDC recommends routine administration of pneumococcal conjugate vaccine (PCV15 or PCV20) for all children <5 years
  - Give PCV15 or PCV20 to infants as a series of 4 doses, one dose at each of these ages: 2 months, 4 months, 6 months, and 12 through 15 months.
  - Children younger than 5 years of age who miss their shots or start the series later should still get vaccinated. The number of doses recommended and the intervals between doses will depend on the child's age when vaccination begins.
- Storage/Administration Requirements: PCV20 is typically stored refrigerated and administered via intramuscular injection.

- <https://www.cdc.gov/vaccines/acip/recs/grade/PCV20-child.html#:~:text=On%20June%202022%2C%202023%2C%20the%20ACIP%20recommended%20use%20of%20PCV20,certain%20underlying%20medical%20conditions%20at>





# LAUNCHES + REVISIONS

- **Jynneos--Mpox vaccine**

- FDA Approval: Approved 2019, EUA for ID + <18yo approved 2022
- Clinical Indications: Jynneos is indicated for active immunization against monkeypox and smallpox in adults aged 18 years and older; EUA for <18yo
- Target Populations: The vaccine is recommended for individuals at high risk of exposure to monkeypox or smallpox.
- Dosing: 2 doses 0.5ml subcut, 28 days apart; 0.1ml ID, 28 days apart (new 2022, >18)
- Storage/Administration Requirements: Jynneos is typically provided in a freeze-dried formulation and requires reconstitution prior to subcutaneous administration.



# LAUNCHES + REVISIONS

- **Nirsevimab (Beyfortus)--RSV monoclonal antibody**
  - FDA approval: July 2023
- **Infants born October – March in most of the continental United States\***
  - Mother did not receive RSV vaccine OR mother's RSV vaccination status is unknown: administer 1 dose nirsevimab within 1 week of birth in hospital or outpatient setting
  - Mother received RSV vaccine **less than 14 days** prior to delivery: administer 1 dose nirsevimab within 1 week of birth in hospital or outpatient setting
  - Mother received RSV vaccine **at least 14 days** prior to delivery: nirsevimab not needed but can be considered in rare circumstances at the discretion of healthcare providers
- **Infants born April–September in most of the continental United States\***
  - Mother did not receive RSV vaccine OR mother's RSV vaccination status is unknown: administer 1 dose nirsevimab shortly before start of RSV season\*
  - Mother received RSV vaccine **less than 14 days** prior to delivery: administer 1 dose nirsevimab shortly before start of RSV season\*
  - Mother received RSV vaccine **at least 14 days** prior to delivery: nirsevimab not needed but can be considered in rare circumstances at the discretion of healthcare providers (see special populations and situations at [cdc.gov/vaccines/vpd/rsv/hcp/child-faqs.html](https://www.cdc.gov/vaccines/vpd/rsv/hcp/child-faqs.html))
- Infants with prolonged birth hospitalization\*\* (e.g., for prematurity) discharged October through March should be immunized shortly before or promptly after discharge.

• <https://www.cdc.gov/vaccines/schedules/hcp/imz/child-schedule-notes.html#note-rsv-nirsevimab>



# QUESTION STOP

- **QUICK COMPREHENSION QUESTION**
  - **Beyfortus...what's the recommendation?**
  - **Infant born Oct-March...**
  - **Mother did not receive RSV vaccine**



# LAUNCHES + REVISIONS

- **Abrysvo--RSV vaccine**
  - FDA Approval: May 2023
  - Clinical Indications: Abrysvo is indicated for the prevention of RSV infection in adults aged 60 years and older...**the only RSV vaccine recommended for use during pregnancy**
  - Target Populations: The vaccine is recommended for adults at increased risk of severe RSV disease, including older adults and individuals with chronic heart or lung disease.
- **Pregnant at 32 weeks 0 days through 36 weeks and 6 days gestation from September through January in most of the continental United States\***: 1 dose RSV vaccine (Abrysvo™). Administer RSV vaccine regardless of previous RSV infection.
  - Either maternal RSV vaccination or infant immunization with nirsevimab (RSV monoclonal antibody) is recommended to prevent respiratory syncytial virus lower respiratory tract infection in infants.
- **All other pregnant persons:** RSV vaccine not recommended.
- There is currently no ACIP recommendation for RSV vaccination in subsequent pregnancies. No data are available to inform whether additional doses are needed in later pregnancies.



# LAUNCHES + REVISIONS

- **Abrysvo**--RSV vaccine
- **Arexvy**—RSV vaccine
  - Both approved 2023
  - Clinical Indications: Abrysvo and Arexvy indicated for the prevention of RSV infection in adults aged 60 years and older; Abrysvo is only RSV vax recommended for use during pregnancy
  - Target Populations: The vaccine is recommended for adults at increased risk of severe RSV disease, including older adults and individuals with chronic heart or lung disease.



# QUESTION STOP

- **QUICK COMPREHENSION QUESTION**
  - **Which RSV vax is recommended for use during pregnancy?**



# LAUNCHES + REVISIONS

## Do they work?

- One dose of Arexvy was 83% effective in preventing lung infections due to RSV during the first RSV season after vaccination and 56% in the second season.
- One dose of Abrysvo was 89% effective in preventing lung infections due to RSV during the first RSV season after vaccination; second season results have not been released.

## Timing

- Ideal timing is in late summer or early fall, before RSV season

- <https://www.cdc.gov/vaccines/vpd/rsv/public/older-adults.html>



# LAUNCHES + REVISIONS

- **Penbraya--Meningococcal groups A, B, C, W, Y vaccine**
  - FDA approval: October 2023
  - Rationale: Penbraya addresses the need for broader protection against meningococcal disease by offering coverage against serogroups A, B, C, W, and Y in a single vaccine.
  - Target Populations: The vaccine is recommended for adolescents and adults at increased risk of meningococcal infections, including college students living in dormitories and military recruits, **ages 10-25 years**
  - Dosing: 2 doses, 6 months apart
- <https://www.fda.gov/vaccines-blood-biologics/vaccines/penbraya>





# ACIP UPDATES--ADULT

- Changes or additions to ACIP recommendations
  - Addition of PCV20, Jynneos, RSV vaccines (Abrysvo, Arexvy), and Meningococcal groups A, B, C, W, Y vaccine (Penbraya)
  - Deletion of bivalent mRNA COVID-19 vaccines, DT, PCV13, and MenACWY-D (Menactra)
- Updated immunization schedules for pediatric and adult populations



# ACIP UPDATES--ADULT

- **Added Agents:**

- Mpox vaccine (Jynneos)
- RSV (Abrysvo and Arexvy)
- Meningococcal groups A, B, C, W, Y vaccine (Penbraya)

- **Deleted Agents:**

- Bivalent mRNA COVID-19 vaccines
- Meningococcal groups A, C, W, Y polysaccharide diphtheria toxoid conjugate vaccine (MenACWY-D, Menactra)



# ACIP UPDATES--ADULT

## Selected updates

- Revision of the influenza note, including the removal of recommendations for persons with a history of egg allergy.
- Removal of MenACWY-D (Menactra) and addition of information on the newly licensed meningococcal A, B, C, W, Y vaccine.
- Clarification of guidance and minimum intervals between pneumococcal vaccine doses.
- Addition of details on the use of RSV vaccine during pregnancy and in adults.



# ACIP UPDATES--PEDS

- **Added Agents:**

- 20-valent pneumococcal conjugate vaccine (PCV20) (new peds indication)
- Mpox vaccine (Jynneos)
- RSV monoclonal antibody (nirsevimab)
- RSV vaccine (Abrysvo) during pregnancy
- Meningococcal groups A, B, C, W, Y vaccine (Penbraya)

- **Deleted Agents:**

- Bivalent mRNA COVID-19 vaccines
- Diphtheria and tetanus Toxoid Adsorbed vaccine (DT)
- 13-valent pneumococcal conjugate vaccine (PCV13)
- Meningococcal groups A, C, W, Y polysaccharide diphtheria toxoid conjugate vaccine (MenACWY-D, Menactra)



# ACIP UPDATES--PEDS

## Selected updates

- Updates to the routine vaccination section for clarity on additional doses for HPV vaccination.
- Revision of the influenza note, including the removal of recommendations for persons with a history of egg allergy.
- Removal of MenACWY-D (Menactra) and addition of information on the newly licensed meningococcal A, B, C, W, Y vaccine.
- Addition of details on the use of nirsevimab in infants and young children.
- Addition of details on the use of RSV vaccine during pregnancy and in adults.



# NORTH DAKOTA RESOURCES

- Exploration of county/state level immunization resources
- Practical tips for utilizing these sources in pharmacy practice



# NORTH DAKOTA RESOURCES

- North Dakota HHS publishes a wealth of immunization coverage information via NDIIS data.
- Dashboards
  - Infant Vaccination
  - Adolescent Vaccination
  - Adult Vaccination
  - Influenza Vaccination



# NORTH DAKOTA RESOURCES

- Slices via MS Power BI
  - Statewide
  - Countywide
  - Demographics
  - Doses administered
  - Historical lookbacks and midseason for flu vax
  - Specific vaccines





# NORTH DAKOTA RESOURCES

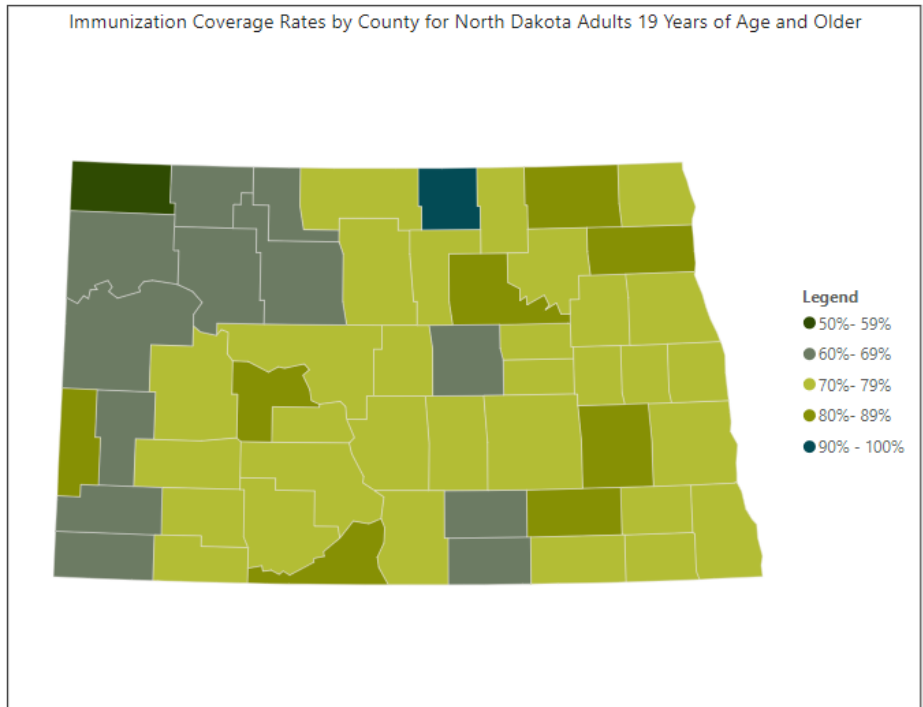
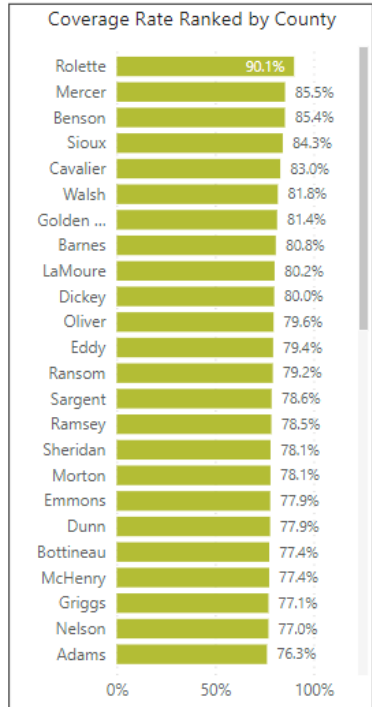
## Adult Immunization Data Dashboard



- Methodology
- State-wide Coverage
- County Coverage
- Demographics
- Doses Administered
- Vaccine Information

### County-level Adult Immunization Coverage Rates

**Quarter:** Q4 2023  
**Vaccine:** Tdap after 19 years  
**Coverage Rate Range:** All  
**Statewide Coverage Rate Tdap after 19 years:** 73.7%



# NORTH DAKOTA RESOURCES

Methodology

State-wide Coverage

County Coverage

Demographics

Doses Administered

Vaccine Information

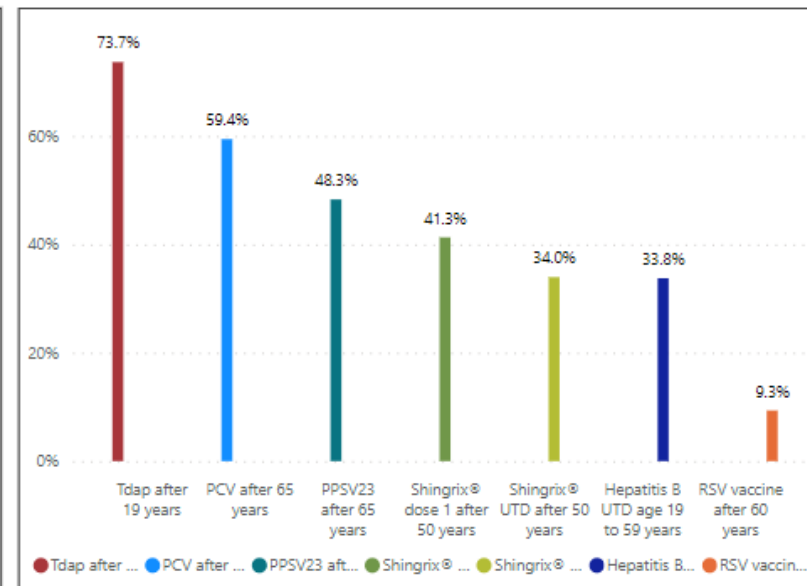
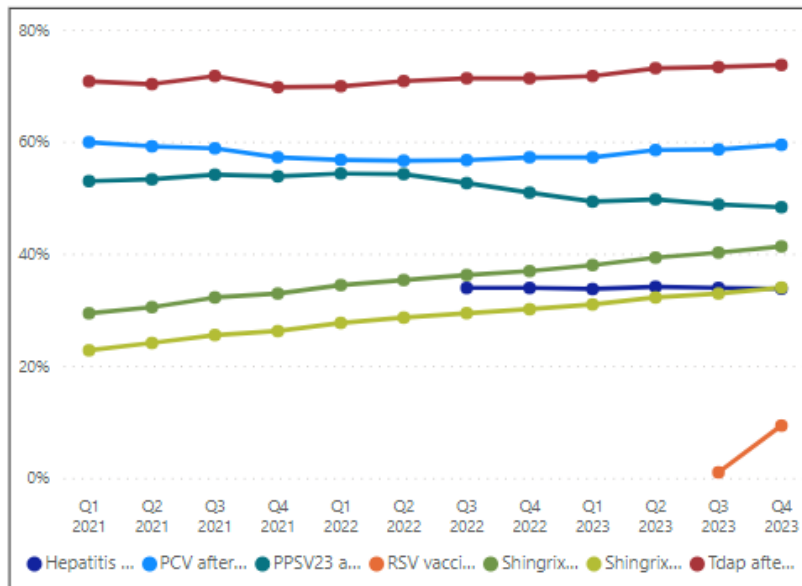
## State-wide Adult Immunization Coverage Rates

Vaccine

All

Quarter

Q4 2023



# NORTH DAKOTA RESOURCES

- Utilizing these sources in pharmacy practice
  - Identify the needs in your service area
  - Inform your business estimates
  - Are there specific needs that justify expanding the menu offered?
  - Can you really say that children are well covered in your area?



# NORTH DAKOTA RESOURCES

Efforts underway to bring specific + actionable data to pharmacies

- NDIIS forecaster data can be delivered for a pharmacy's specific patient roster—patient level data reportable en masse rather than searching one at a time
- Enables specific evaluation of needs serviceable by pharmacy
  - How many Tdap opportunities? How many HepB?
  - What are the peds needs at the pharmacy?
  - Financial models are easily made



# NORTH DAKOTA RESOURCES

- Interesting initial data from pilot sites
  - Removing flu vaccine, we are witnessing 0.5-1 opportunity per patient file
- Eight new pharmacy vaccination sites in 2023-24
- Two new pharmacy VFC sites in 2023-24



# WORK TO BE DONE

## Influenza Immunization Data Dashboard



Methodology

State-wide Coverage

County Coverage

Vaccine Information

### County-level Influenza Immunization Coverage Rates

Age Group

6 months - 4 years

Year

2023-2024

Season

mid season

Coverage Rate Range

All

Statewide Coverage Rate  
6 months - 4 years  
2023-2024 mid season

27.6%



# REFERENCES

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2. North Dakota Health and Human Services. (2024). *ND County Immunization Rates*. <https://www.hhs.nd.gov/health/diseases-conditions-and-immunization/immunizations/coverage-rates>
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5. Centers for Disease Control and Prevention. (2024). *Adult Immunization Schedule by Age*. <https://www.cdc.gov/vaccines/schedules/hcp/imz/adult.html>
6. Centers for Disease Control and Prevention. (2024). *Frequently Asked Questions About RSV Immunization with Monoclonal Antibody for Children 19 Months and Younger*. <https://www.cdc.gov/vaccines/vpd/rsv/hcp/child-faqs.html>
7. Centers for Disease Control and Prevention. (2024). *Child Immunization Schedule Notes*. <https://www.cdc.gov/vaccines/schedules/hcp/imz/child-schedule-notes.html#note-rsv-nirsevimab>
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Thank you!!

