

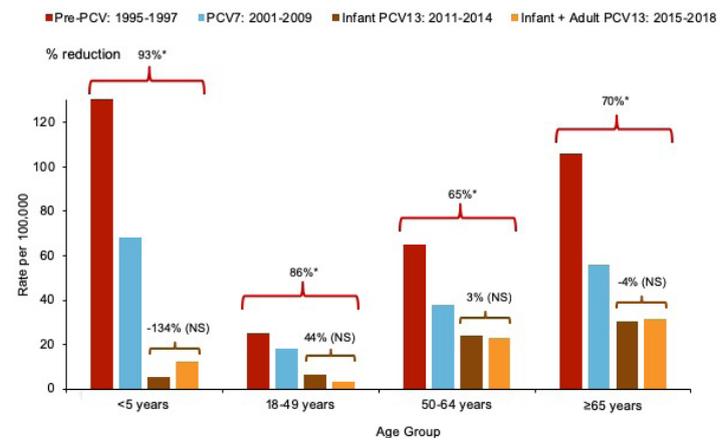


What We Do: The Center for American Indian Health (CAIH) actively monitors serious diseases caused by the bacteria *Streptococcus pneumoniae* (pneumococcus), *Haemophilus influenzae*, *Neisseria meningitidis*, and *Staphylococcus aureus* in people living on and around the Navajo and White Mountain Apache (WMA) tribal lands. American Indian individuals living on reservations have higher rates of disease caused by these bacteria compared to the general US population. In this issue of the newsletter, we provide an update on surveillance for invasive disease caused by *S. pneumoniae*.

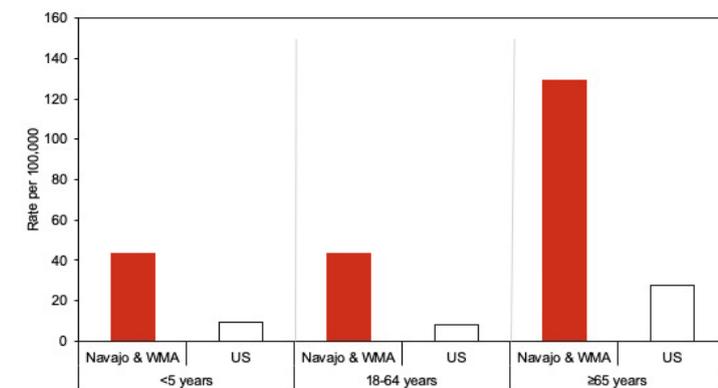
Vaccine Impact:

For over 20 years, the CAIH has conducted surveillance for *S. pneumoniae*, a cause of serious invasive diseases including pneumonia, meningitis and blood stream infections. Routine use of pneumococcal conjugate vaccines (PCV7 and PCV13) as part of the routine infant immunization schedule has led to a dramatic reduction in invasive disease caused by the serotypes contained in these vaccines (Figure 1). Because PCV vaccination also reduces nasopharyngeal carriage of vaccine-type pneumococci, vaccinated children are less likely to transmit the bacteria to others and this has led to indirect protection and decreased rates of disease in unvaccinated members of the population (e.g., older children and adults). PCV13 (Pneumovax 13), which replaced PCV7 for use in children in 2010, was recommended for adults 65 years and older in late 2014.

Figure 1: Comparison of *S. pneumoniae* PCV13-type invasive disease rates in Navajo and White Mountain Apache children and adults in the Pre-PCV, Post-PCV7, and Post-PCV13 era



*Statistically significant p-value <0.05; NS: non-statistically significant



*Navajo/White Mountain Apache data from CAIH ABS; CDC data from ABCs surveillance reports

Comparison to the General US Population:

While PCV use has resulted in a marked decline in invasive *S. pneumoniae* disease, rates among the Navajo and White Mountain Apache populations remain four times higher than the general US population* (Figure 2). Most remaining disease (approximately 70%) is caused by serotypes not currently covered by the vaccine. Other interventions (e.g. reducing risk factors, vaccines covering additional serotypes) may be necessary to address the disparity.

Figure 2: Invasive pneumococcal disease among Navajo and White Mountain Apache children and adults and in the general US population, 2011-2017

Update to vaccination recommendations:

The Advisory Committee on Immunization Practices (ACIP) develops recommendations on the use of vaccines in the United States. During the June 2019 meeting, the ACIP discussed the current recommendation for routine use of PCV13 among adults ≥65 years of age. Use of PCV13 in children has resulted in substantial indirect effects and additional reductions in disease in adults were not observed after introduction of routine PCV13 use among adults ≥65 years. A similar pattern was observed among Native American adults in the Southwest United States (Figure 1; no difference in incidence between brown bars and gold bars for adults ≥65 years). Given this evidence, the ACIP voted to change their recommendation. PCV13 is no longer recommended for routine administration among adults ≥65 years. Instead, the ACIP recommends using shared clinical decision making – the decision to administer PCV13 should be made jointly by patients and their providers, with consideration given to the patient's risk of exposure to PCV13 serotypes and to any underlying conditions that may place the individual at increased risk of pneumococcal disease.

Many thanks to our community partners

Navajo Nation

- Represented by 20+ laboratories
- Navajo Epidemiology Center
- Navajo Area Indian Health Service

White Mountain Apache

- Represented by 3 laboratories
- White Mountain Apache Tribal Council
- Phoenix Area Indian Health Service



What bacterial isolates do we look for?

Streptococcus pneumoniae
Haemophilus influenzae
Neisseria meningitidis
Staphylococcus aureus

Isolated from normally sterile body sites such as:

- Blood
- Cerebrospinal Fluid (CSF)
- Joint Fluid (Synovial Fluid)
- Middle Ear (*S. pneumo* only)
- Bone
- Pleural Fluid
- Peritoneal Fluid
- Pericardial Fluid

We request ONE slant of the *S. pneumoniae*, *H. influenzae*, *N. meningitidis*, or *S. aureus* isolate.

CAIH will provide the chocolate agar slants upon request. Isolates are sent to our reference labs for additional testing.

Please maintain the isolate in your lab until you receive confirmation from us that the isolate was viable.

If you have any questions about Active Bacterial Surveillance, please contact us

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**CENTER FOR AMERICAN
 INDIAN HEALTH**

The *mission* of Johns Hopkins Center for American Indian Health is:

to work in partnership with American Indian and Alaska Native communities to improve the health status, self-sufficiency, and health leadership of Native people. This mission is accomplished through three core activities:

Research Training/Education Service