**What We Do:** The Center for American Indian Health (CAIH) actively monitors serious diseases caused by the bacteria *Streptococcus pneumoniae*, *Haemophilus influenzae*, *Neisseria meningitidis*, and *Staphylococcus aureus* in people living on and around the Navajo and White Mountain Apache (WMA) tribal lands. American Indians have higher rates of disease caused by these bacteria compared to the general US population. In this issue of the newsletter, we discuss the challenges associated with identifying the causes of pneumonia and list the potential benefits of a new study that investigates the causes of pneumonia in American Indian adults.

**Community Acquired Pneumonia:** Community acquired pneumonia (CAP) is a leading cause of morbidity and mortality among American Indian adults. CAP refers to the type of pneumonia that occurs in individuals who have not had prolonged contact with a healthcare facility. Bacteria and viruses are the most common causes of CAP. However, the pneumonia-causing pathogen is identified in less than 50% of CAP cases (figure 1). There are several reasons for this: (1) the causes of pneumonia are typically determined by testing blood rather than testing a sample from the site of infection (i.e., the lungs), (2) detection of a pathogen in the blood can be difficult if antibiotics were initiated before blood collection or (3) because traditional microbiologic techniques lack sensitivity. This can make it difficult to treat the infection. Identifying the causes of CAP can help focus prevention and treatment efforts and reduce the number of people suffering from this illness.

**Vaccinations Against Pneumonia:** Vaccines are an effective and readily available strategy to prevent adults from getting CAP caused by influenza (“the flu”) and *Streptococcus pneumoniae*, a common bacterial cause of CAP. The CDC recommends that everyone 6 months and older should get a flu vaccine every season. The 23-valent pneumococcal polysaccharide vaccine (PPV23) is recommended for American Indians and Alaska Natives aged 50-64 years living in high-risk areas and all adults over 65. The 13-valent pneumococcal conjugate vaccine (PCV13), originally used only in children, is now recommended for all US adults aged ≥65 years. Despite access to these vaccines, our surveillance shows that invasive pneumococcal disease (IPD) among American Indian adults is 2-4 times higher than adults of the general US population. Pneumonia is the most common syndrome among American Indian adults with IPD (figure 2). In order to further reduce cases of CAP, it is important to determine the causes of pneumonia in the era of PCV13 use among children and older adults.

**Adult Pneumonia Study:** Johns Hopkins is currently working with IHS facilities to study the causes of CAP among Navajo and White Mountain Apache adults who are hospitalized with pneumonia. Information from the ABS system about invasive bacterial disease, along with testing on upper respiratory tract and urine specimens, will lead to an improved understanding of the bacterial and viral causes of pneumonia. This will help us to:

- Decrease CAP morbidity and mortality
- Tailor treatment regimens (e.g., minimize antibiotic overuse for treating viral pneumonia)
- Focus prevention efforts (e.g., optimize vaccine policy, guide development of new vaccines)

*Please contact a Johns Hopkins Project office for more information (see reverse for contact details)*
The mission of Johns Hopkins Center for American Indian Health is:

To work in partnership with American Indian and Alaska Native communities to raise health status, self-sufficiency, and health leadership to the highest possible level.

This mission is accomplished through three core activities:

- Research
- Training/Education
- Service

Navajo Nation
- Population: ~300,000 tribal members
- Area: ~25,000 sq. miles
- Birth cohort: ~4,400/year
- Represented by 20+ laboratories

White Mountain Apache
- Population: ~16,000 tribal members
- Area: ~2,500 sq. miles
- Birth cohort: ~300/year
- Represented by 3 laboratories

Many Thanks to our laboratory partners

New Faculty: CAIH welcomed two new faculty members to the infectious disease team. Jessica Atwell, PhD, MPH has focused her career on the epidemiology and control of respiratory disease, particularly pertussis and RSV. Erin Vigil, MHS is a member of the Jicarilla Apache tribe and is excited to work towards improving the lives of American Indians.

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

Center for American Indian Health: Johns Hopkins University
415 N. Washington Street
Baltimore, MD 21231
Phone: 410-955-6931
Fax: 410-955-2010
Director of Infectious Disease Programs: Laura Hammitt, MD
Active Bacterial Surveillance Coordinator: Grace Douglass, MPH

Chinle Field Office
Hwy 191, P.O. Box 1140
Chinle, AZ 86503
Phone: 928-674-5051
Fax: 928-674-3370
Site Manager: Jennifer Nibo, MPH

Fort Defiance Field Office
1001 Bonito Drive
Fort Defiance, AZ 86504
Phone: 928-729-2435
Fax: 928-729-5280
Site Coordinator: Vikky Donaldson, RN

Gallup/Crownpoint Field Office
501 E. Nizhoni Blvd, Suite B
Gallup, NM 87301
Phone: 505-722-6865
Fax: 505-722-7134
Site Manager: Carol Tso, RN

Shiprock Field Office
3 Cottonwood Street
Shiprock, NM 87420
Phone: 505-368-4030
Fax: 505-368-4893
Site Manager: Kirstin Howell, RN

Tuba City Field Office
167 Main Street
Tuba City, AZ 86045
Phone: 928-283-8221
Fax: 928-283-5985
Site Manager: Kirstin Howell, RN

Whiteriver/Winslow Field Office
308 Kuper Street
Whiteriver, AZ 85941
Phone: 928-338-5215
Fax: 928-338-4293
Site Coordinator: Laura Brown, MD

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