

NCEZID

Tribal Health in Action



What we do in Tribal Health

- ▶ Reduce and prevent infectious diseases that disproportionately affect American Indian and Alaska Native people
- ▶ Carry out interventions in tribal communities affected by infectious diseases such as the Rocky Mountain spotted fever response in Arizona
- ▶ Work with partners such as the Indian Health Services (IHS) to implement antibiotic stewardship in American healthcare facilities in an effort to prevent healthcare-associated infections and combat antibiotic resistance
- ▶ Participate in campaigns to increase public awareness of deadly diseases such as hantavirus disease that have infected people in tribal communities



The **National Center for Emerging and Zoonotic Infectious Diseases (NCEZID)**

works to improve public health at home and around the world by protecting people from

- ▶ Outbreaks of infectious disease, like a group of people who get sick from contaminated food or a cluster of hospitalized patients acquiring an infection. Since we've started using Advanced Molecular Detection, we can identify outbreaks sooner and respond faster.
- ▶ Deadly diseases like Ebola and anthrax. Our world-class scientists excel at solving medical mysteries, diagnosing more than 600 cases of unexplained illness or death each year.
- ▶ Illnesses spread in healthcare settings and drug-resistant threats. We combat antibiotic resistance (AR) using multiple tools: surveillance, laboratory work, outbreak response, educational campaigns, and partnerships with state agencies and national organizations.
- ▶ Infections like rabies, Lyme disease, and Zika that spread between people, animals, and bugs. Because six out of ten infectious diseases spread from animals, we utilize a One Health approach to achieve the best health for people, animals, and our environment.
- ▶ Illnesses that cross borders and affect travelers and people entering the country. In today's interconnected world, a sick person can travel anywhere in under 24 hours. We focus on preventing the introduction and spread of disease through targeted interventions and regulatory action at borders.



NCEZID's Impact in Tribal Communities

NCEZID's work includes promoting the health and wellness of individual American Indian/Alaska Native communities:

HANTAVIRUS – Infection with hantavirus can be fatal in about one third of cases. People become infected through contact with hantavirus-infected rodents, particularly deer mice, or their urine and droppings. The virus and disease first came to national attention in 1993, with cases among Navajo in the Four Corners area of the US.

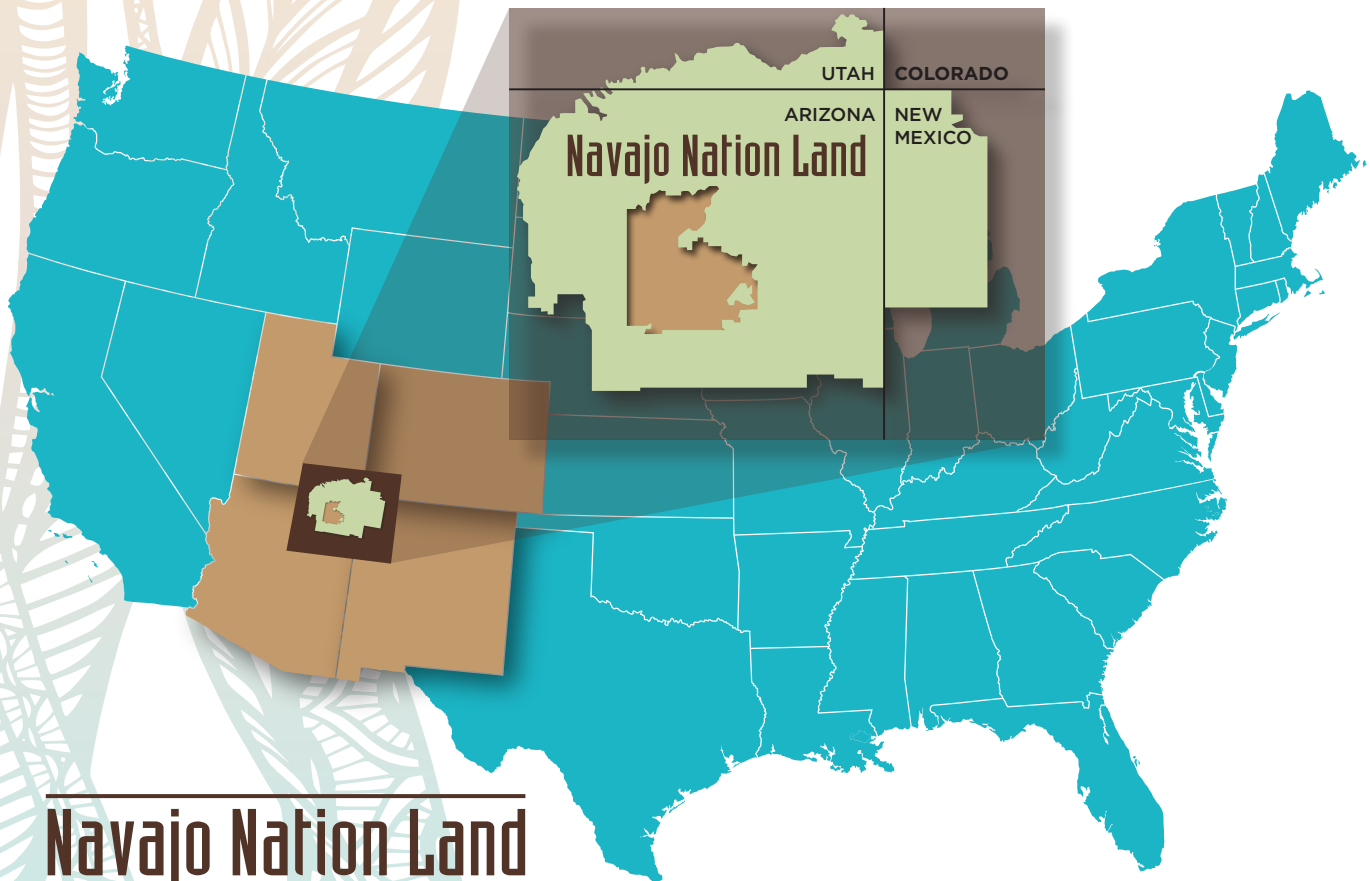
In January 2016, a girl from Cameron, Arizona, died from complications from hantavirus, prompting Navajo officials to consult NCEZID about public outreach, awareness, and prevention of hantavirus.

NCEZID sent experts to Navajo Nation to support a radio-based communications effort, developing messages in Navajo that ran daily for about a month, as well as a live call-in program with tribal leaders and experts.

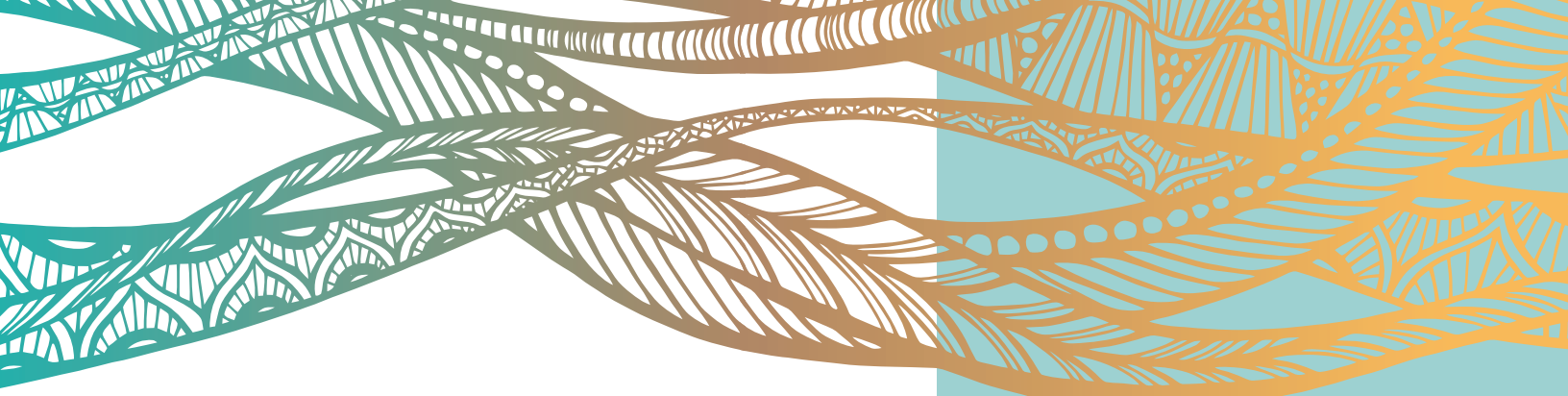
As our partnership continues to mature, NCEZID is preparing to engage further with the Navajo Nation on a project to keep unwanted pests out of homes by providing exclusion materials—expanding foam and mesh—to residents within the Navajo Nation.

“I am from western Navajo. When I say people are scared, they are scared, especially after someone has died from the hantavirus. We are working with the experts and our dialogue in Atlanta will go a long way toward these prevention efforts.”

—Navajo Nation Vice President Jonathan Nez



Navajo Nation Land



ROCKY MOUNTAIN SPOTTED FEVER INTERVENTION – Rocky Mountain

spotted fever (RMSF) is a potentially fatal tickborne disease caused by the bite of an infected tick species. Between 2003 and 2016, more than 360 cases of RMSF (including 21 deaths, approximately half of which were children) were reported from tribal communities in Arizona. The rate of RMSF on the three most highly impacted American Indian reservations in rural Arizona is more than 150 times the national rate. An unchecked dog population plays an important role in RMSF transmission since dogs serve as hosts to infected ticks.

NCEZID began working with one highly impacted American Indian community in 2012 on a prevention project, the RMSF Rodeo. The project involved federal, state, tribal, and private partners who worked to reduce RMSF in the community by:

- Applying pesticide sprays around yards,
- Placing long-acting tick collars on every dog in the study area, and
- Offering free spay and neuter services to curb the dog population.

At the end of the first year of the project, only 1% of dogs in the study area had ticks, while 63% of dogs outside the study area had ticks. Today, several Arizona tribes are at various stages of implementing RMSF prevention programs modeled on the RMSF Rodeo.

CDC Health Communication Specialist, Craig Manning, participating in a radio forum on hantavirus and Zika virus on KTNN AM radio which broadcasts daily in Navajo across much of the Navajo Nation.



Home treatment kits are ready for distribution as part of the “RMSF Rodeo,” a project targeted at reducing Rocky Mountain spotted fever in a large Indian reservation in eastern Arizona.



Arctic Investigations Program

For more than 40 years, CDC's Arctic Investigations Program (AIP) has collaborated with the Alaska Native Tribal Health Consortium, the state of Alaska, and other partners to tackle infectious diseases threatening American Indian and Alaska Native people using:

- State-of-the-art laboratory diagnostics
- Epidemiology
- Outbreak investigations
- Targeted research

By focusing on reducing and preventing infectious diseases that disproportionately affect American Indian and Alaska Native people, AIP helps everyone living in Alaska enjoy healthier and longer lives.

Historically, for example, Alaska Native children have suffered from severe bacterial infections—meningitis, pneumonia, and bloodstream—caused by *Haemophilus influenzae* type B (HIB) and pneumococcus. Laboratory-based surveillance by AIP showed rates of these infections among Alaska Native children to be close to the highest worldwide—up to 10-times higher than non-Alaska Native children.

After the introduction of effective childhood vaccines, AIP researchers documented a more than 95% decline in these vaccine-preventable cases. However, AIP surveillance also detected the emergence of new types of bacteria not covered by the vaccine. In 2009, AIP researchers introduced a more effective vaccine in rural Alaska. Today with routine use of these vaccines, infection rates are lower than they have ever been and the disparity in illness between Alaska Natives and other state residents has been substantially reduced.

AIP staff investigating a meningitis outbreak in northwestern Alaska.



Approximately **20%** of rural Alaska homes lack running water and sanitation services, making handwashing, bathing, and cooking practices a challenge. AIP studies showed that running water and sanitation in homes prevent the spread of infectious diseases like bloodstream infections, pneumonia, and skin infections. This work resulted in policy changes at the US Department of Agriculture that have made it easier to get water and sewer grants, which can help to provide more homes with running water.