



Improving the Respiratory Health of Alaska Native People Through Home-Based Inventions

Groundbreaking new study suggests simple home modifications reduce respiratory disease in Alaska Native youth

Alaska Native children have some of the highest rates of respiratory illness ever documented.

Acute respiratory disease is arguably the leading health challenge for Alaska Native children. Diseases such as pneumonia and respiratory syncytial virus account for approximately two-thirds of child hospitalizations in rural Alaska. In one region about 1 in 4 infants are hospitalized ever year for these diseases.

Simple home modifications to improve indoor air quality can prevent these diseases.

Early results from an ANTHC study of eight participating villages in southwest Alaska suggest that these diseases can be prevented through simple home modifications. The research is based on the generally accepted principle that improving air quality inside the home, where children spend most of their time, would improve lung function and reduce respiratory disease symptoms. Modifications to improve air quality in the home include:

- New and/or improved air vents: Improved air circulation reduces particulate matter and moisture that leads to mold and mildew
- Woodstove replacement: Cleaner-burning, more efficient woodstoves reduce carbon dioxide and carbon monoxide
- New cooking stove exhaust vents: Range hoods are another source of air ventilation that reduces particulate matter in the air
- Preventative and home care education: Families participate in improvement projects to reinforce healthy behaviors

What evidence suggests the approach is working?

Since 2011, data was collected from 63 households, 211 children and 125 adults participating in the study. While data collection and data analysis continues, findings to date include:

- Improved indoor air quality
- Fewer clinic visits
- Fewer incidents of hospitalization
- Fewer days of missed school and work

Next steps: Bringing the benefits of clean indoor air to more families

The findings of this study suggest that home interventions are improving respiratory health – one of the greatest health challenges facing Alaskans. The next step is to develop a program to offer the benefits of improved air quality and better respiratory health to a larger number of homes and families.

Our plan for expansion includes:

- Hospital consultation: During hospital or clinic visits, partner with health care providers to educate and distribute materials on the benefits of clean indoor air
- At-home toolkits and training: Provide materials and resources for residents to improve their own indoor air quality
- Housing authority partnerships: Referral process for residents to access ventilation improvement programs
- Statewide reach: Expand our in-person work beyond Southwest Alaska
- Analyze health impact: Aggregate data from medical records to measure overall health impact for Alaska Native people and continue to follow up with study participant families

