ASTHMA SEVERITY DETERMINANTS AND NEEDS ASSESSMENT IN CHILDREN LIVING ON THE NAVAJO NATION: A PILOT STUDY

ASHLEY A. LOWE, PHD STUDENT | UNIVERSITY OF ARIZONA
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WHAT WE WILL DISCUSS TODAY

- **Background**
  - Childhood asthma on the Navajo Nation
  - Asthma basics

- **Discussions with families living on the reservation [NNR-16-247]**
  - Semi-structured interviews (i.e., Standardized questionnaires & Qualitative discussions)
  - Tuba City, AZ ($n=13$)

- **Future directions**
  - Collaboration with Navajo Nation, National Jewish Health & University of Arizona
WHY ASTHMA ON NAVAJO?

“I feel helpless...I ask, why us? I try to understand it and just deal with it. There’s a process...with dealing with it.”

~Navajo Mother~
ASTHMA’S IMPACT ON NAVAJO FAMILIES LIVING ON THE RESERVATION

- **Asthma Prevalence**
  - 10% of U.S. children
  - Approximately 20% of Navajo children living on the reservation

- **Asthma Severity**
  - ↑ Emergency Department (ED) visits
  - ↑ Overnight hospitalizations
WHAT IS ASTHMA?

- **Chronic**, inflammatory lung disease that often begins during childhood
ASTHMA SIGNS & SYMPTOMS

- May include ANY of the following:
  - Coughing
  - Chest tightness / Chest retractions
  - Wheezing / Whistling in the chest
  - Shortness of breath / Struggling-to-breathe / Shallow breathing
  - Difficulty speaking
  - Noisy breathing / Breathing hard or fast
  - Nasal flaring
  - Blueness around the lips or fingernails
COMMON ASTHMA TRIGGERS

- Dust Mites
- Pets
- Pollen
- Smoking
- Pollution
- Mold
- Cold Air
- Viral Infections
- Chemical Fumes
- Exercise
LITERATURE REVIEW

- Environmental concerns for children with asthma on the Navajo Nation
  - Systematic Integrative Literature Review
  - Primary search terms included “Asthma” AND “Navajo” OR “Navaho” OR “Diné” or “Dineh”
  - 7 Environmental Risk Domains:
    1. Wood burning stove
    2. Indoor stove heating
    3. Commercial tobacco smoke OR Mountain smoke
    4. Indoor allergens
    5. Coal-fired power plants AND mining
    6. Desertification, Desert dust storm events OR Wildfire severity
    7. Diesel exhaust exposure
  - Only 4 articles were specific to the Navajo Nation

- Findings
  - Environmental injustices have historically, disproportionately and systematically affected First Nation populations including Navajo
  - Some exposures are well recognized (i.e., wood burning stoves, coal, dust storms, & wildfires)
  - Other exposures are less recognized but easily modifiable (e.g., diesel exhaust from schools busses)
DISCUSSIONS WITH FAMILIES LIVING ON THE NAVAJO RESERVATION

- **Tuba City, AZ**
  - Tuba City Regional Health Care Center
  - October 2016

- **Interviewed 13 families with children with asthma**
  - Recruited by primary care physicians (PCP)
  - 11 Navajo families & 2 Hopi families ($n=13$)

- **Conducted semi-structured interviews**
  - Standardized asthma questionnaires
  - Qualitative questions
ASTHMA SURVEYS

- **Childhood asthma questionnaires**
  - Pediatric Asthma Caregiver’s Quality of Life Questionnaire
  - Childhood Asthma Control Test for Children 4-11 years

- **Additional questions regarding asthma severity**

- **Findings**
  - Children’s age range (7-16 years)
  - 47% male
  - Parents reported good asthma control (mean Childhood Asthma Control Test score = 21.6)
  - 58.8% of children had an asthma episode during past year
  - 47% of children had been hospitalized during past year
“The health care providers need to explain to me – why is prednisone bad? I need to know why.”

~Navajo Parent~
PRIMARY ASTHMA CARE

- **Health care needs**
  - Asthma medications are difficult to refill
  - Health care providers need to explain the disease process & options
  - Parents requested more asthma education & community awareness
“We burn coal inside and there is a tamarack grove behind our house – the pollen is bad. But, then you drive and see pollution.”

~Navajo/Hopi Parent~
ENVIRONMENT

- Environmental concerns
  - Burning wood & coal inside the house
  - Blowing dust, dirt, fine sand & wildfires
  - Uranium & coal mining / Coal-burning power plants
  - Animals
  - Mold

- Suggestions by parents
  - Air purifiers/filters in the home
“My daughter couldn’t carry her inhaler because the nurse locked it away. But then she couldn’t breathe and the nurse was at lunch. The nurse was the only person with a key to that cabinet.”

~Navajo Mother~
Families expressed many needs for their child at school:

- More awareness / asthma education for school principals, teachers & coaches
- Asthma protocol for emergencies
- Access to asthma medications
- Asthma triggers
**NEXT STEPS**

- **Reduce childhood asthma disparities**
  - 6-year NIH-funded partnership with the Navajo Nation, National Jewish Health & University of Arizona
  - Work with 3 Navajo communities: Tuba City, AZ; Chinle, AZ; & Fort Defiance, AZ
  - IHS facilities, Navajo Epidemiology Center, Schools & Chapter Houses
AN ASTHMA COLLABORATION TO REDUCE CHILDHOOD ASTHMA DISPARITIES ON THE NAVAJO NATION

- **Research Team**
  - Hanna Phan, PharmD, FCCP
  - Wayne Morgan, M.D.
  - Lynn B. Gerald, Ph.D., M.S.P.H
  - Bruce Bender, Ph.D.
  - Peter Nez, Navajo Nation
  - Teshia Solomon, Ph.D.
  - Aaron Kobernick, M.D., M.P.H.
  - Andy Liu, M.D.
QUESTIONS?