

The *Navajo Nation Health Survey*: Results of the  
Navajo Behavioral Risk Factor Surveillance Survey  
(NNR-11.348)

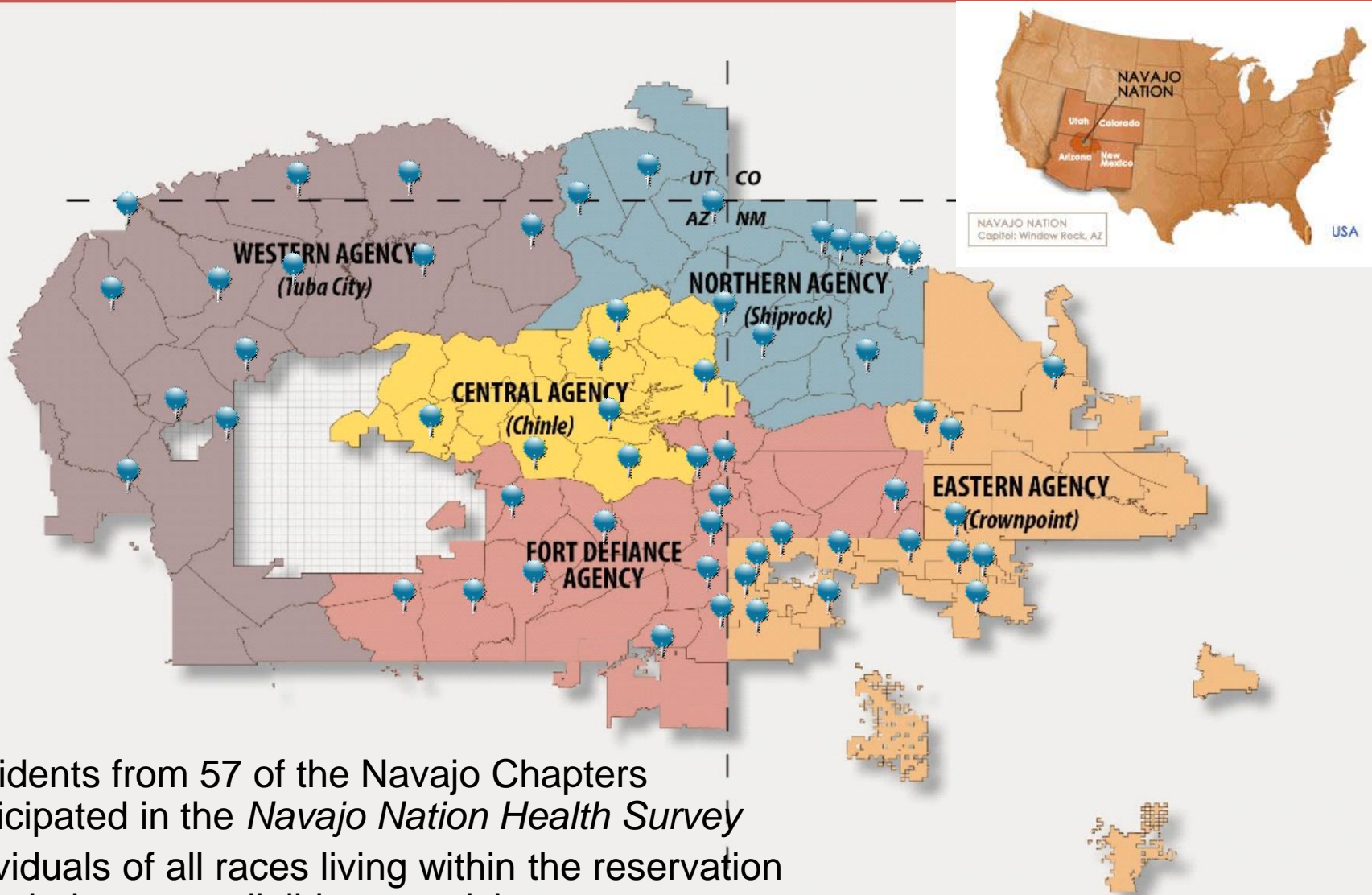
Simental R Francisco, BS  
Project Manager/Principal Investigator  
Navajo Department of Health  
Navajo Epidemiology Center

# Presentation Outline

- Navajo BRFSS Study
- Methods
- Mortality on the Navajo Nation
- Highlights of the Data Finding
- Lessons Learned
- Public Health Implications
- Conclusions



# The Navajo Nation

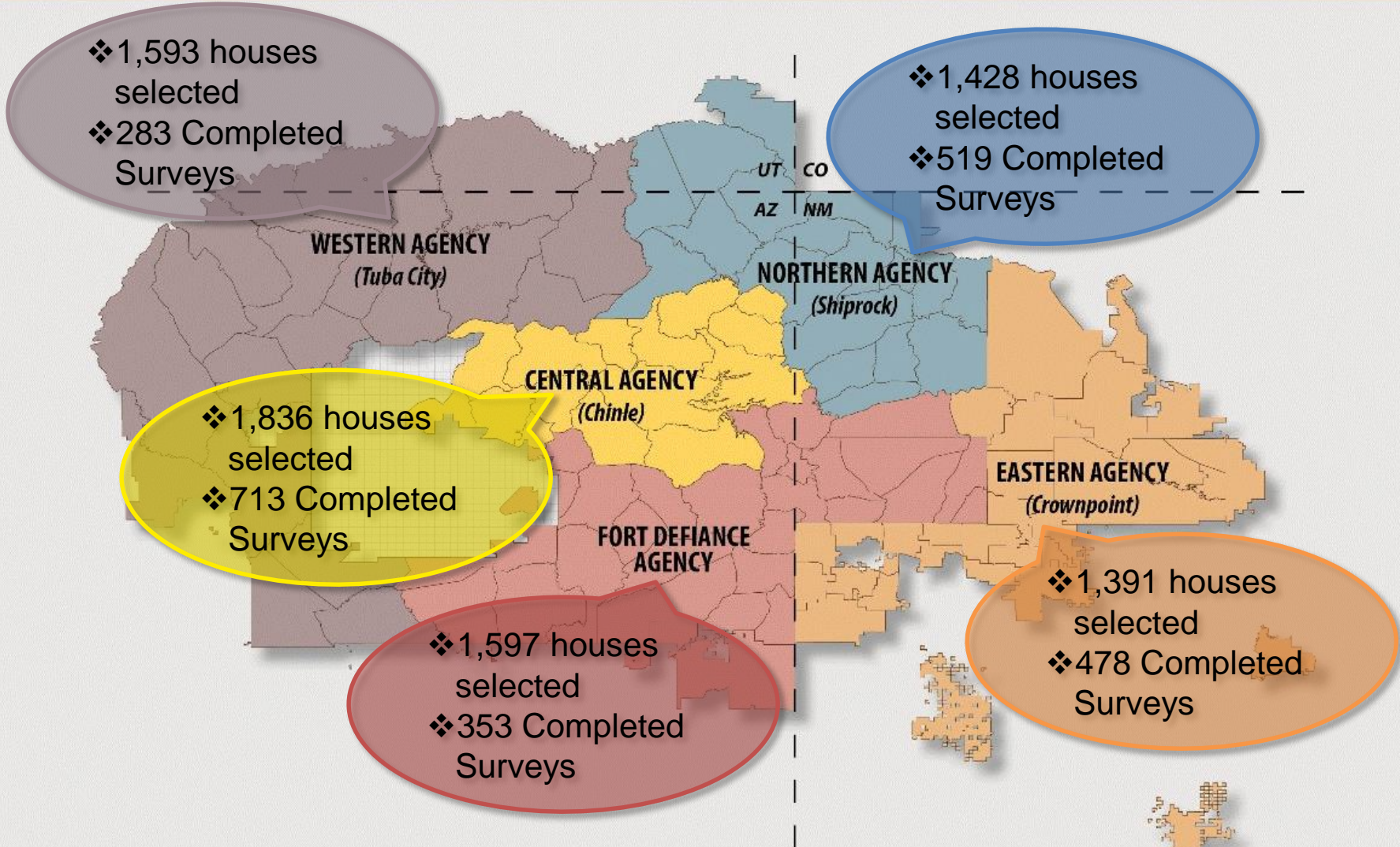


- Residents from 57 of the Navajo Chapters participated in the *Navajo Nation Health Survey*
- Individuals of all races living within the reservation boundaries were eligible to participate
- Visits were made to over 7,800 selected structures





# The Navajo Nation



Total House Selections	Total Competed Surveys	Total Attempts
7,845	2,346	12,998

# NNHS Key Milestones



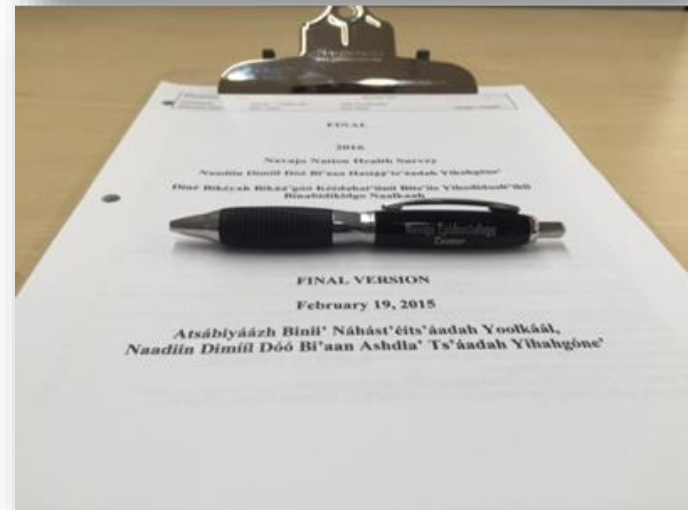
**2013**

## Phase I

- Chinle Agency
- ✓ Pilot Test Questionnaire
- ✓ Agency Council Support Resolution
- ✓ Training/Orientation/Mobilize
- ✓ Data Collection/Data Entry

**2012**

- ✓ Study Protocol Approval
- ✓ Population Sample Design
- ✓ Questionnaire Development







**2015**

## **Phase II**

- Northern Navajo Agency
- ✓ Agency Council Support Resolution
- ✓ Training/Orientation/Mobilize
- ✓ Data Collection/Data Entry



**2017**

- ✓ Data Analyses of Phase I, II, III
- ✓ Report Data Finding of Results
- Dissemination

**2016**

## **Phase III**

- Eastern Agency
- Fort Defiance Agency
- Western Agency
- ✓ Agency Council Support Resolution
- ✓ Training/Orientation/Mobilize
- ✓ Data Collection/Data Entry

# Methods

**Data Source:** US, AZ, NM, UT BRFSS, CDC

**Study Population:** All adult (18 years and older) individuals residing on the Navajo Nation reservation

**Years:** 2013, 2015, 2016

**Questionnaire:** Comprised of a variety of health topics adapted from the CDC BRFSS

## Core Components:

Alcohol Consumption

Chronic Health Conditions\*\*

Demographics

Disability

Drinking and Driving

Exercise

General Health

Fruit and Vegetable Consumptions

Health Status\*

Healthy Days – Health-Related Quality of Life\*

Health Care Access

HIV/AIDS

Oral Health

Physical Activity

Seatbelt Use

Tobacco Use

## Optional Modules:

Breast and Cervical Cancer Screening

Colorectal Cancer Screening

Pre-Diabetes & Diabetes (modules from 2009 BRFSS)

Prostate Cancer Screening

General Preparedness

Heart Attack and Stroke

Mental Illness and Stigma

Reactions to Race

Social Context

Sugar Sweetened Beverages and Menu Labeling

Visual Impairment and Access to Eye Care

Added Questions not a BRFSS topic include:

Intimate Partner Violence

Sexual Violence

Substance Abuse (adapted from Youth Behavior Risk Survey, YRBS)

Weight Control

## Ten Leading Causes of Death, Navajo Mortality Report, 2006-2009

Rank	Cause of Death	Count	Rate per 100,00	Percent of all deaths <sup>1</sup>
1	Unintentional Injury	752	107.73	18.9
2	Cancer	506	72.49	12.7
3	Heart Disease <sup>2</sup>	485	69.48	12.2
4	Diabetes	228	32.66	5.7
5	Chronic Liver Disease & Cirrhosis	224	32.09	5.6
6	Influenza & Pneumonia	181	25.93	4.6
7	Suicide	119	17.05	3.0
8	Stroke	107	15.33	2.7
9	Septicemia	90	12.89	2.3
10	Dementia	84	12.03	2.1

**Source:** Vital Statistics Data, AZ Department of Health Services, NM Department of Health

<sup>1</sup> Percent based on known cause (n=3,975)

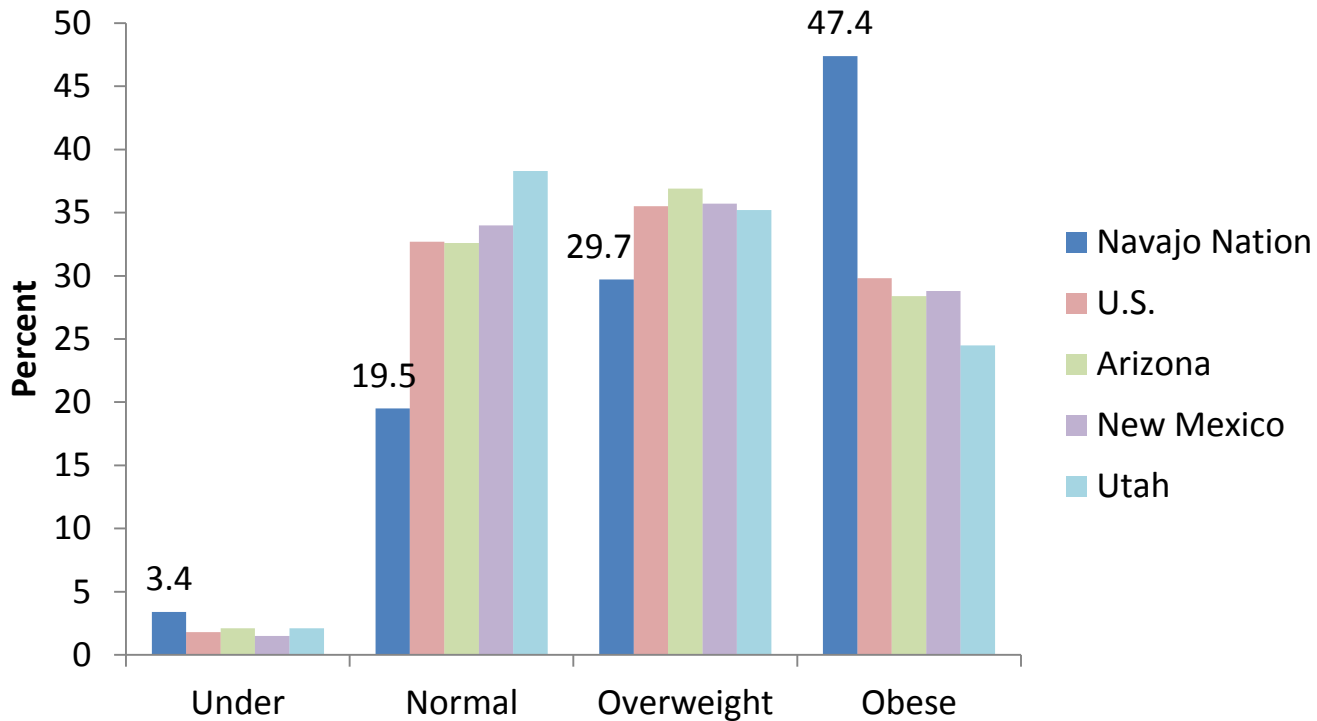
<sup>2</sup> Heart disease includes: Chronic rheumatic heart disease, ischemic heart disease, pulmonary heart disease, and ICD-10 classifications of “other forms of heart disease”



# Demographic Characteristics

Characteristic	Point	Lower Estimate	Upper Estimate	N
Age: Average	44.4	43.1	45.6	2,346
Gender: Female	51.50%	46.50%	56.5%	1,520
Race/Ethnicity: Navajo	94.40%	91.80%	96.2%	2,346
Navajo Language spoken in the home	45.10%	39.40%	50.9%	1,622
Traditional Native Healer/Medicine	58.80%	53.20%	64.2%	2,296
Household Income: <\$15,000	45.30%	39.60%	51.10%	1,927
Education: College Education	4.60%	3.20%	6.50%	2,335
Marital Status: Married	35.80%	31.60%	40.20%	2,330
Employment: Employed for wages or self-employed	36.00%	31.30%	41.10%	2,207

# Obesity & BMI, Navajo Nation, US and State BRFSS

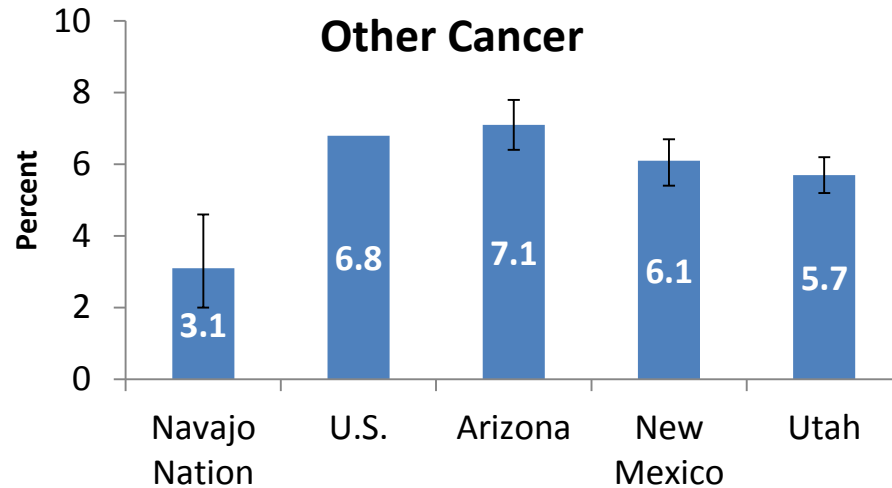


## Body Mass Index (BMI) Category (calculated from reported weigh and height)

BMI Category	Total	Male (N=790)	Female (1,407)
Underweight	3.3% (2.1%, 5.1%)	5.0% (3.0%, 8.0%)	2.0% (1.2%, 3.1%)
Normal	19.5% (16.6%, 22.8%)	19.5% (35.7%, 49.4%)	19.5% (15.2%, 24.8%)
Overweight	30.1% (26.2%, 34.4%)	33.2% (27.1%, 39.9%)	26.4% (21.6%, 31.7%)
Obese	<b>47.1%</b> (43.2%, 50.9%)	42.4% (35.7%, 49.4%)	52.2% (48.2%, 56.1%)

The average BMI was 30.11

# Chronic Health Conditions, Navajo Nation, US and State BRFSS

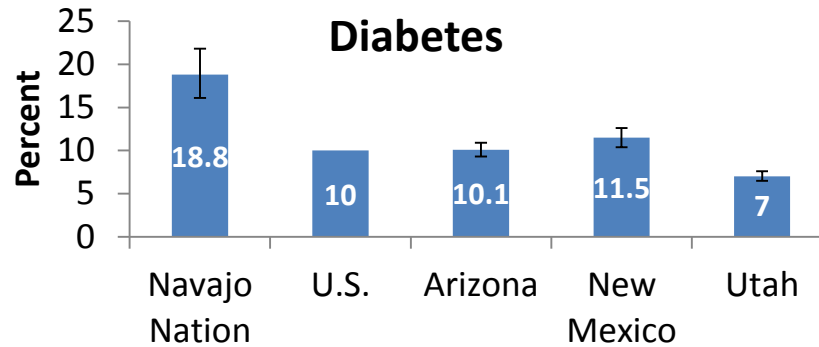


*Has a doctor, nurse, or other health professional EVER told you that you have any other types of cancer?*

EVER told you had **Other Cancer**, Response, NBRFSS

	Percent	Lower Estimate	Upper Estimate	N
<b>Other cancer</b>	<b>3.0%</b>	2.0%	4.3%	2,304
<b>Male</b>	3.1%	1.5%	6.5%	811
<b>Female</b>	3.0%	2.1%	4.2%	1,493

# Chronic Health Conditions, Navajo Nation, US and State BRFSS



Ever been told you have **Pre-Diabetes or Borderline Diabetes**, Response Result, Navajo BRFSS

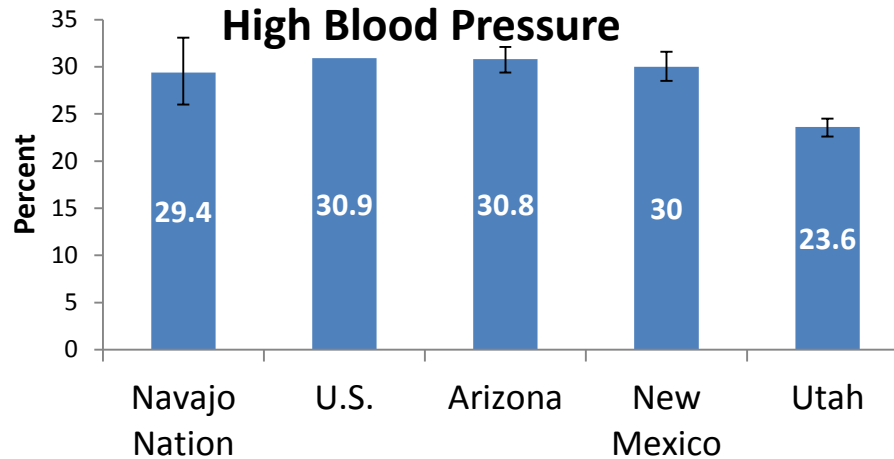
	Total	Male	Female
Yes	11.3% (8.1%, 15.7%)	12.5% (7.1%, 20.9%)	11.8% (8.1%, 16.9%)
Yes, during pregnancy	2.8% (1.7%, 4.8%)	NA	3.8% (2.1%, 6.6%)
No	85.8% (81.6%, 89.2%)	87.5% (79.1%, 92.9%)	84.4% (79.1%, 88.5%)
N	1,565	553	1,006

Ever been told you have **Diabetes**, Response Result, Navajo BRFSS

	Total	Male	Female
Yes	18.7% (15.9%, 21.8%)	18.5% (13.8%, 24.4%)	19.4% (16.1%, 23.1%)
Yes, during pregnancy	1.7% (1.0%, 3.0%)	NA	2.2% (1.2%, 4.0%)
No	75.7% (72.2%, 79.0%)	76.7% (70.3%, 82.0%)	74.9% (71.1%, 78.3%)
Borderline or pre-diabetes	3.9% (2.4%, 6.4%)	4.8% (2.1%, 10.5%)	3.5% (2.1%, 5.9%)
N	2,291	801	1,487



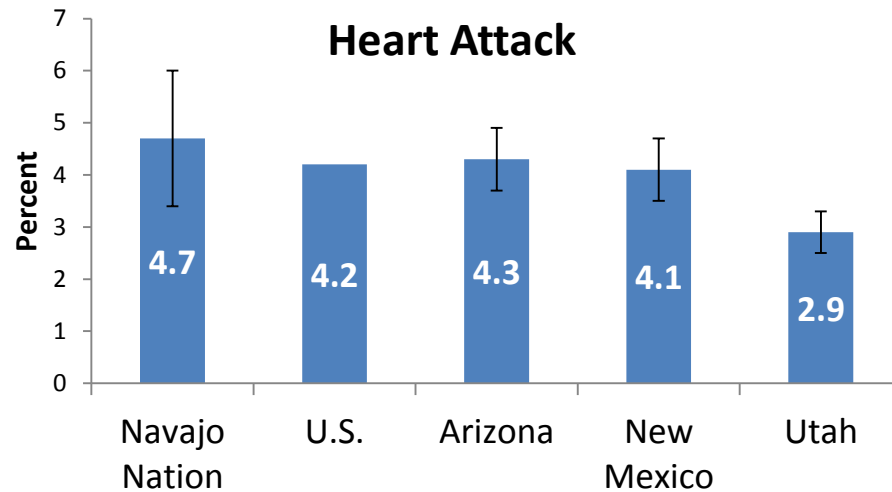
# Chronic Health Conditions, Navajo Nation, US and State BRFSS



EVER been told you have **High Blood Pressure**, Response Result, Navajo BRFSS

	Percent	Lower Estimate	Upper Estimate
Yes	28.8% (25.1%, 32.9%)	32.8% (26.1%, 40.4%)	26.6% (22.3%, 31.5%)
Only during pregnancy	2.5% (1.6%, 4.0%)	NA	3.7% (2.2%, 5.9%)
No	66.2% (62.2%, 70.1%)	64.3% (57.1%, 70.9%)	67.9% (63.2%, 72.3%)
Borderline or pre-hypertensive	2.4% (1.5%, 3.9%)	2.9% (1.5%, 5.6%)	1.8% (0.8%, 3.9%)
N	2,301	794	1,495

# Chronic Health Conditions, Navajo Nation, US and State BRFSS



EVER told you had a **Heart Attack**, Response, NBRFSS

	Percent	Lower Estimate	Upper Estimate	N
<b>Heart Attack</b>	<b>4.5%</b>	3.3%	6.2%	2,304
<b>Male</b>	6.0%	3.7%	9.7%	812
<b>Female</b>	3.4%	2.4%	4.9%	1,492

# Highlights of Data Finding

## ***Alcohol Consumption***

- In past 30 days, 1 in 5 adults drink alcohol (34.5%, males; 9.8%, females)
- While 1 out of 7 adults binge drink in past 30 days, among those who drank, approx. 6 out 7 reported binge drinking.
- In past 30 days, less than 1% reported drinking and driving, but a total of 27.9% reported that they had been a passenger with a driver who had too much alcohol.

***Disability*** Almost a quarter (23.3%) reported being limited because of a physical, mental or emotional problem.

- Almost 1 in 8 adult NN adults have health problems that require use of special equipment

***Injury Prevention*** 9 out of 10 adults reported always wearing their seat belt.

***Chewing or Smokeless Tobacco Use*** There are more Navajo Nation adults who currently use chewing tobacco than who smoke tobacco.

# Highlights of Data Finding

## ***Health Care Access***

- 42.3% reported having one person as their doctor or health care provider, significantly lower than all 4 comparison groups (72% US avg.)
- 22.3% less than one doctor or health care provider
- Approx. 3 out of 5 (58.8%) use a traditional healer or native medicine

## ***Health Status***

- Significantly less likely to report “very good health”
- Significantly more likely to report “fair health”



# Lessons Learned

- Resolve issue(s) with questionnaire
- Recommend debrief meetings with PI, interview team, NEC staff, and subject matter experts
- Re-assess sample structure for household selection
- Transition from paper questionnaire to e-questionnaire
- Apply culturally appropriate survey methods for a tribal BRFSS
- Interviewers: teamwork is critical; requires specialized, strong people skills
- Funding is required to sustain and maintain a public health surveillance system

# Public Health Implications

- Recognize the prevalence of health risk behaviors among a specific tribal population
- Allow for comparisons with other populations to identify health disparities
- Evaluate the impact of preventative services at all levels of health care sectors
- Provide information for tribal leaders to support tribal epidemiology
- Tribal epidemiology and surveillance
  - ❑ Define measures, e.g., Healthy People -2020 -2030, but, for Navajo People
  - ❑ Monitor and evaluate identified health disparities
  - ❑ ***Implementation Results of the Health Diné Nation Act, 2016-2018***
  - ❑ ***Navajo Mortality Report, 2006-2009***
  - ❑ ***Cancer Among the Navajo, 2005-2013***
  - ❑ Good Health and Wellness in Indian Country (GHWIC)
- Tribal BRFSS process: 5-Year vs. Annual

# Conclusions

- Key data finding of results provides a starting point of BRFSS data estimates on the Navajo adult population
- Tribal BRFSS data:
  - Navajo specific behavioral risk factors
  - identify measurable baseline data
  - strengthen and support continual tracking, measurement, and evaluation of health status progress
  - help tribal programs build evidence-based prevention programs
- Navajo Nation's first experience is an approach to develop a tribal BRFSS representative and exclusive to AI/AN population-based health
- Funding for public health surveillance systems is critical for tribal epidemiology

# A'hxe'hee' (Thank You)

## Navajo Epidemiology Center Colleagues

Ramona Antone Nez, David Foley, Del Yazzie, JB Kinlacheeny

## NNHS Partners

Navajo Nation Human Research Review Board

NNHS Steering Committee

Navajo Chapters

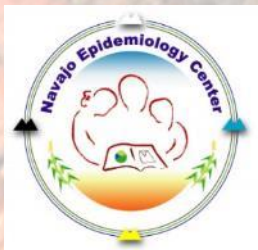
## State Partners

Arizona Department of Health Services

New Mexico Department of Health

Utah Department of Health

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## **Navajo Epidemiology Center**

(928) 871-6539 Website: [www.nec.navajo-nsn.gov](http://www.nec.navajo-nsn.gov)

