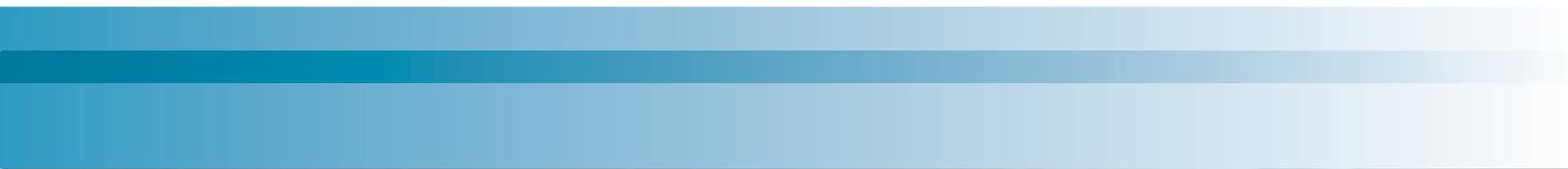




The Penobscot Nation Health Needs Assessment Summary Report





COMMUNITY HEALTH NEEDS ASSESSMENT REPORT

Completed in 2012, the Waponahki Tribal Health Needs Assessment was a comprehensive health survey of Tribal members of the four federally recognized Tribes of Maine: The Aroostook Band of Micmacs, The Houlton Band of Maliseet Indians, The Passamaquoddy Tribe - Indian Township and Pleasant Point, and The Penobscot Nation. Tribal Health Directors from each participating community in partnership with the University of Nebraska Medical Center, College of Public Health conducted the health needs assessment. The purpose of this report which focuses on Penobscot Nation Tribal members is to inform Tribal members and other interested parties of key results of the Waponahki Tribal Health Needs Assessment. The Penobscot Nation Health Department hopes that this report will raise awareness of and stimulate discussion, follow-up, and planning among Penobscot Nation Tribal members on the community's health needs and priorities.

Prepared by

University of Nebraska Medical Center
College of Public Health
519 S. 40th Plaza Circle
Omaha, NE 68198

Contents

Background	4
Map.....	5
Methods in Brief.....	6
Community Profile.....	9
Community Identified Strengths and Concerns	9
Historical Loss/Response	11
Health Status Indicators	13
Health Screening and Prevention.....	14
Selected Outcomes of Chronic Conditions	17
Mental Health and Substance Abuse	19
Final Thoughts	20
Acknowledgements	22



Background

“The oldest continuous government in the world.”

The Penobscot Nation is a North American Indian Tribe located in the United States in north central Maine adjacent to the city of Old Town. The Penobscots, along with their sister tribes, the Maliseet, Mi'kmaq, and Passamaquoddy are collectively called Wabanaki. “Wabanaki” is a Algonquian term that mean “people of the dawn.”

The Penobscot people have occupied Maine since time immemorial. The ancestral home of the Penobscot is believed to be from Cape Ann, in Massachusetts, to the Machias River in Maine. The ancestors of the Penobscot Nation came from this large area. The earliest recorded contact with Europeans occurred in the spring of 1524 when the Italian mariner Giovanni da Verrazzano, sailed along the Maine coast under the flag of France. Verrazzano discovered a place on Penobscot Bay which was called Oranbega or Aranbega, from which the Norumbega of later maps was derived; and observed the beautiful forests from Virginia to Cape Cod, to which country he gave the name Arcadia. The latter was moved northward on later maps, and the “r” dropped, becoming Acadia.

The Penobscot were semi-agricultural and cultivated maize, squash, beans and pumpkins. Mnemonic pictographs were employed in art, design, and on birch bark, wood, and wampum belts, and an ideographic writing system was used although there was no true alphabet.

European contact devastated the Penobscot people. Disease, warfare and cultural genocide reduced the population significantly. In 1617, the Indian population along the New England coast from Maine to Cape Cod was decimated by an epidemic disease introduced by Europeans, which appears to have been smallpox. With no natural immunity to a disease to which they had never been exposed before, the mortality among the Indians must have been at least 70%. Most of the survivors were those who fled to some isolated spot in the interior to escape exposure to the disease. By 1690 the population of the Penobscots was about 1,500. As a result of new diseases and all the wars, by about 1770 the Penobscot population declined to about 500. By 1822, there were only 277 Penobscots, the smallest number in history.

According to the 2014 Penobscot Tribal Census, the total population of the Penobscot Nation is 2398 members with 414 residing on the Penobscot Nation Reservation and 1,395 residing in the State of



Maine. A large percentage of the Tribal population lives with-in a radius of 50 miles from the reservation, Indian Island.

Indian Island is the home of the Penobscot Nation's Tribal headquarters. The Penobscot Nation Reservation totals 4,865.88 acres and owns trust and fee lands totaling 114,361.52 acres. The governmental infrastructure is located on the eastern shore of Indian Island adjacent to the main channel of the Penobscot River. The Penobscot Nation is led by an elected Chief, Vice Chief, and a twelve member Tribal Council. The Chief and Vice Chief have terms of four years. The Tribal Council has 4-year terms with elections every two years. During such elections, 6 seats are available to fill. This is to ensure that no new council has all new members.

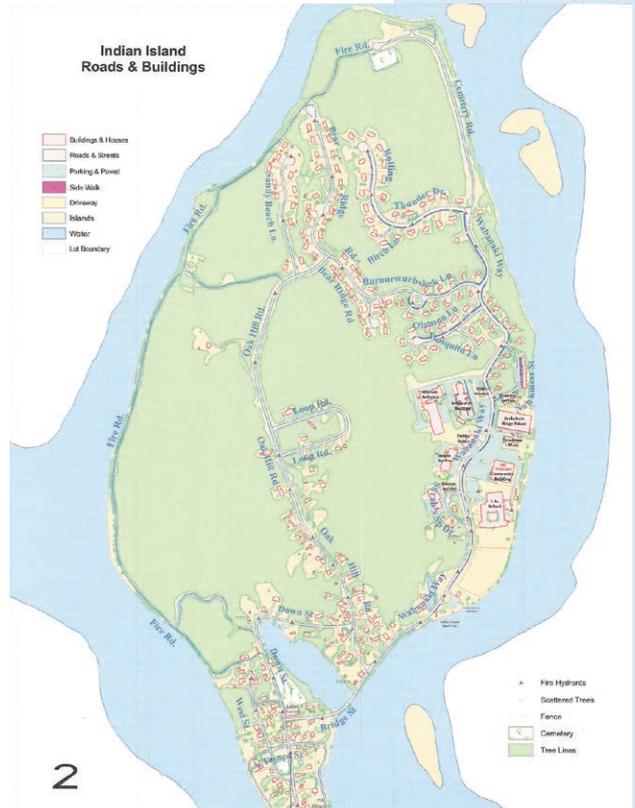
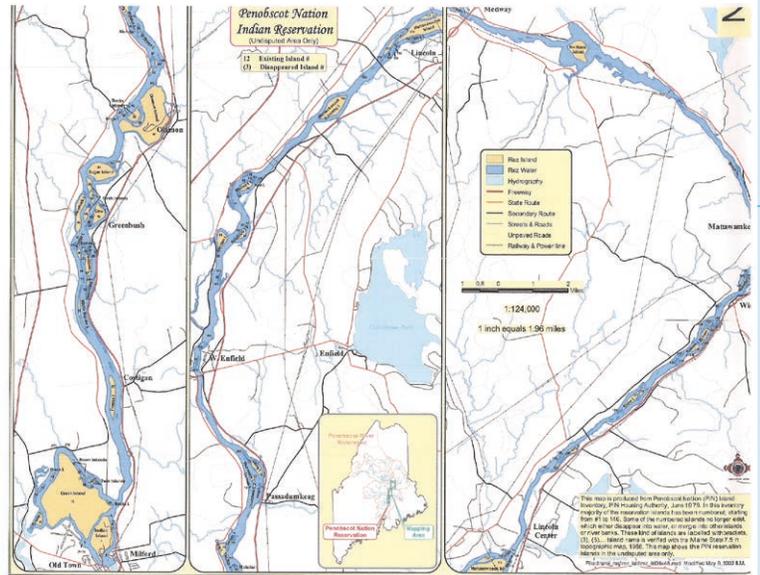
This information was taken from the Penobscot Nation Brochure written by James Eric Francis, Penobscot Nation Tribal Historian.

According to the 2010 census, 1.4% of Maine's population, or 18,482 individuals identified themselves as American Indian or Alaska Native (AI/AN) alone or in combination with another race.^{1,2} National data indicate that AI/AN experience worse health outcomes in comparison to White Americans, reflected in higher death rates from diabetes, suicide, unintentional injuries, sudden infant death syndrome, and alcohol related injuries.^{3,4}

The relatively small number of AI/AN who participate in state-wide surveys such as the behavioral risk factors surveillance system (BRFSS) prevents the analysis of data at individual Tribal levels that will provide meaningful results. The BRFSS, the nation's leading telephone survey, allows states to identify emerging health problems, establish and track health objectives, and develop and evaluate public health policies and programs.⁵

In order to address the lack of existing data on the health of members of Maine Tribes, the Maine Tribal Health Directors of the four federally recognized Tribes of Maine: the Aroostook Band of Micmacs, the Houlton Band of Maliseet Indians, the Passamaquoddy Tribe - Indian Township and Pleasant Point, and the Penobscot Nation, identified the need for a multi-Tribal health assessment based on the Behavioral Risk Factors Surveillance System. In collaboration with researchers from the University of Nebraska Medical Center (UNMC) College of Public Health, the Maine Tribal Health Departments completed the 2010 Waponahki Tribal Health Needs Assessment, the first-ever multi Tribal health assessment in the state of Maine. The results of the survey are anticipated to provide guidance for:

- Health program planning
- Development of health services
- Education
- Research
- Seeking future funding





Methods in Brief

Approval Process

The UNMC Institutional Review Board and the Tribal Councils of the Aroostook Band of Micmacs, the Houlton Band of Maliseet Indians, the Passamaquoddy Tribe Indian Township, the Passamaquoddy Tribe Pleasant Point, and the Penobscot Nation approved the study.

Data Ownership

From the project's beginning, the Tribal Health Directors stated a need for Tribal ownership of the data. Tribal Health Directors made the deliberate decision that each tribe must maintain ownership of their respective Tribal data and no data be shared for use or publication without express written permission from a designated Tribal authority.

Participant Selection

The Waponahki Tribal Health Needs Assessment participants included randomly selected male and female Tribal members 18 years and above, who lived within each Tribe's respective health service delivery area. Using Tribal rolls, all eligible participants were assigned a number, and these numbers were randomly selected to obtain the participant roster. Tribal Health Directors contacted potential participants in order of their selection until the target number was achieved or until the list of eligible participants was completed.

1127 Waponahki Tribal members 18 years and older completed the health needs assessment.

Waponahki participants include Tribal members from The Aroostook Band of Micmacs, The Houlton Band of Maliseet Indians, The Passamaquoddy Tribe - Indian Township, The Passamaquoddy Tribe - Pleasant Point, and the Penobscot Nation. On the basis of the high number of participants who were randomly selected to take part in the survey, we believe the data presented in this report are generally representative of Tribal members residing in each health service delivery area.

Recruitment

Several methods were used to notify the Tribal members that the Health Departments would be doing a survey:

- The Tribal Health Directors placed notices regarding the survey in the bi-monthly joint community news letter.
- The Tribal Public Health District developed and placed large posters in the waiting areas of each Health Department to advertise the survey.
- Tribal Health Departments promoted the survey at health fairs.
- The Tribal Chief or Tribal Health Director sent a recruitment letter to participants randomly selected to take part in the survey.
- Interviewers contacted prospective participants up to three times before contacting the next participant.
- Word-of-mouth played an important role in promoting the survey. Participants who completed the survey received a \$25 Walmart gift-card. In addition, participants received gas cards if they had to travel 30 or more miles roundtrip to complete the interview.

Conducting the survey

Trained Tribal members and Tribal employees served as survey interviewers and conducted the laptop-assisted face-to-face survey. Participants had the option of completing the sensitive sections of the survey by themselves.

Survey questions

Community-specific Questions

Tribal Health Directors and researchers from the UNMC, College of Public Health developed community specific open-ended questions to examine Tribal members' views on:

- health problems facing the community
- health areas Tribal health programs should focus their efforts on
- areas of elder care to improve
- services to add first to elders
- greatest strengths of the community
- greatest sources of community pride
- Tribal health priorities
- needed elder services
- community sources of strength and pride

Historical Loss Questions

In recent years a growing number of people from Native American communities have sought to understand the effects of: 400 years of European colonization, oppression, racism, forced relocation, loss of land, separation of parents and children, loss of culture, and loss of language, on the health of Tribal communities. Maria Yellow-Horse Braveheart, Hunkpapa, Oglala Lakota, PhD, does research in this field which she calls historical trauma. Dr. Yellow-Horse Braveheart defines historical trauma as "The cumulative and collective emotional and psychological injury over the lifespan and across generations resulting from a cataclysmic history of genocide."⁶ Work by Les Whitbeck, PhD, with two Tribal communities in the upper Midwest indicates that Tribal members' perceptions of historical grief/losses may lead to emotional responses typically associated with anger/avoidance and anxiety/depression.⁷

To examine historical trauma we used the questions developed by Dr. Whitbeck that measure historical loss. The first set of questions describes historical grief losses and how frequently the people think about these losses. The second set of questions focus on feelings associated with historical grief losses. The questions in the Waponahki Tribal Health Needs Assessment have been adapted from Dr. Whitbeck's questionnaire through input from the Maine Tribal Health Directors. Tribal Health Directors included questions on historical loss to examine: historical grief losses, how frequently people think about these losses, and the feelings associated with these losses.⁷ Survey interviewers asked participants how often they thought about:

- Loss of Tribal lands
- Loss of traditional spiritual ways
- Loss of family ties because of boarding/residential schools
- Loss of families from the reservation/reserve to government relocation
- Loss of respect from poor treatment by state and federal officials
- Loss of respect from poor treatment by Tribal government officials
- Loss of trust in Whites from broken treaties
- Loss of cultural and language
- Loss from the effects of alcoholism
- Loss of respect by children and grandchildren for elders
- Loss of people through early death
- Loss of respect by children for traditional ways

In follow-up to these questions survey interviewers asked participants how they felt when thinking about these losses, including feelings of: sadness or depression, anger or rage, anxiety or nervousness, uncomfortable around white people, shame, weakness or helplessness, loss of concentration, bad dreams or nightmares, isolation or distance from other people, loss of sleep, need to drink or take drugs, fearful or distrustful of the intentions of white people, no point in thinking about the future, and like the losses are happening again.



Sensitive Topics

The survey included questions on sensitive topics such as: racism and discrimination, domestic violence, substance abuse, childhood trauma and HIV/AIDS. Due to the sensitive nature of these questions the results from these questions are not included in this report.

Health Risk Questions

The Tribal Health Directors selected questions from the 2010 Behavioral Risk Factors Surveillance System (BRFSS) survey in the Waponahki Tribal Health Needs Assessment. Examples of BRFSS questions include questions about diabetes, heart disease, cigarette smoking, cancer, diet and exercise, asthma, HIV risk factors, depression and anxiety.

Analysis

The University of Nebraska Medical Center, College of Public Health, Department of Biostatistics completed the secondary data analyses of the Waponahki Tribal Health Needs Assessment data which included 1,127 men and women 18 years and older from the five participating communities. Potential respondents were selected via a simple random sample using a list of members residing within each Tribal Health Department service delivery area. All results for individual Tribes and for total Waponahki presented in this report are the raw survey results, except as noted (See page 20, Final Thoughts, chronic disease rates). In this report we use data from the US Census 2010, the State of Maine 2010 and 2011 BRFSS, and the One Maine Community Health Needs Assessment 2010 for comparison purposes.

It should be noted that the average age of Waponahki survey respondents is lower than the average age of the all Maine residents estimated by the Maine BRFSS which we use as a comparison population throughout most of this report. As we have not age-adjusted our estimates of chronic disease rates among the Waponahki, except as noted (See page 20, Final Thoughts, chronic disease rates) the differences in rates of diabetes, hypertension, and heart disease between Waponahki participants and Maine residents may be even greater than those documented in this report.

While not listing American Indian/Alaska Native representation, the 2010 Maine BRFSS had the following racial/ethnic breakdown: 95.7% White, 1.5% Black, 1.5% Hispanic, 1.5% Other, and 1.0% Multiracial.

Limitations of the Study

- The inability to accommodate Tribal members who were unable to travel to the areas designated confidential and secure areas to partake in the survey.
- Elders were not familiar/comfortable with using the computer during the self-administered portions of the computer.
- In selecting participants 18 years and older we did not obtain substance abuse data on the youth population. Based on patient visit data and referrals to substance abuse treatment programs, the Tribal Health Directors felt this age group appears to have the highest prevalence of substance abuse among all age cohorts.
- Using computer-assisted face-to-face interviews does not allow for an exact comparison with the BRFSS which is a random-digit dial survey.

Format of the Report

We based the format of the Penobscot Nation Health Needs Assessment Summary Report on the format of the "Passamaquoddy Health Needs Assessment Summary Report for Motahkomiqewiyik naka Sipayikewiyik."⁸

Findings

Community Profile

To better understand the help of a population it is important to recognize that: income, education, and employment play important roles in affecting the health of individuals. Studies have shown that people higher levels of income and education may live healthier lives.⁹

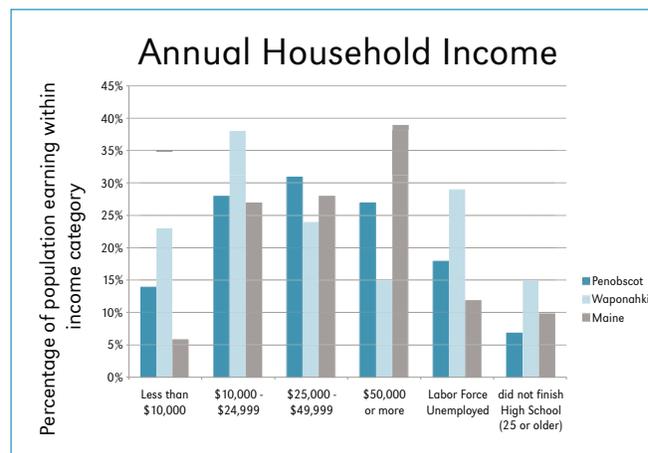
SOCIAL AND ECONOMIC INDICATORS

Demographics	Penobscot	Waponahki	Maine
Total Population Adults	729 ^a	3014 ^a	1,053,828 ^b
Waponahki Survey Participants			
Male		450	
Female		677	
Total		1127	
Annual Household Income			
% Less than \$10,000	14%	23%	6%
% \$10,000-\$24,999	28%	38%	27%
% \$25,000-\$49,999	31%	24%	28%
% \$50,000 or more	27%	15%	39%
% Labor Force Unemployed	18%	29%	12%
% did not finish High School (25 or older)	7%	15%	10%

a - Residing within Tribal Health Center self-defined area - includes Tribal Health Center and non-Tribal Health Center users.

b - 2010 Census count.

On average, most Penobscot Nation Tribal members appear to be poorer, have less education, and have higher unemployment rates than other Maine residents. 14% of Penobscot Nation Tribal members and 23% of Waponahki earned less than \$10,000 per year compared to 6% of Maine residents. Furthermore, a higher proportion of Penobscot Nation Tribal members, 18%, are unemployed in comparison to Maine, 12%. At 7%, the proportion of Penobscot Nation Tribal members who did not complete high school appears lower than the percentage Maine residents overall, where 10% did not finish high school.



Community Identified Strengths and Concerns

The survey interviewers asked participants open-ended questions about major strengths of the community, sources of pride, and biggest health problems.

Community Strengths

Penobscot Nation and Waponahki participants generally identified similar community strengths. Among Penobscot Nation and Waponahki participants, “Sense of Community, Solidarity & Shared Values” and “Culture” represented the two most common answers. However, Penobscot Nation participants ranked “Health Care” and “Family/Family Ties” third and fourth respectively, while Waponahki participants ranked “Family/Family Ties” and “Health Care” third and fourth.



TOP 5 MAJOR STRENGTHS OF YOUR COMMUNITY

Rank	Penobscot Nation	Waponahki
1	Sense of Community, Solidarity & Shared Values (count = 105)	Sense of Community, Solidarity & Shared Values (count = 325)
2	Culture ^a (count = 24)	Culture ^a (count = 92)
3	Health Care (count = 17)	Family/Family Ties (count = 87)
4	Family/Family Ties (count = 14)	Health Care (count = 58)
5	The School (count = 12)	Language (count = 56)

^a - This category includes responses about culture, heritage/history, customs, and traditions as well as Tribal/cultural activities. Count refers to the number of survey participants who listed a specific topic in their response to the question.

Greatest Source of Community Pride

When asked to identify major sources of pride responses between Penobscot Nation and Waponahki participants remained similar. Among Penobscot Nation and Waponahki participants “Culture” and “Children” represented the two most common responses. For Penobscot Nation participants “Sense of Community, Solidarity, and Shared Values;” and “Native and Tribal Identity” ranked third and fourth, respectively. For Waponahki participants “Language” and “Native and Tribal Identity” ranked third and fourth.

TOP 5 GREATEST SOURCES OF PRIDE IN YOUR COMMUNITY

Rank	Penobscot Nation	Waponahki
1	Culture ^a (count = 101)	Culture ^a (count = 400)
2	The Children (count = 43)	The Children (count = 149)
3	Sense of Community, Solidarity & Shared Values (count = 20)	Language (count = 129)
4	Native & Tribal Identity (count = 19)	Native & Tribal Identity (count = 93)
5	Language (count = 17)	The Elders (count = 62)

^a - This category includes responses about culture, heritage/history, customs, and traditions as well as Tribal/cultural activities. Count refers to the number of survey participants who listed a specific topic in their response to the question.

Biggest Health Problems Facing the Penobscot Community

Penobscot Nation and Waponahki participants all identified the same top five biggest health problems facing communities: diabetes, drug/substance problems, alcohol problems, obesity/overweight, and cancer; however Penobscot Nation participants ranked “Diabetes” first and “Drug/Substance Problems” second while Waponahki participants ranked “Drug/Substance Problems” first and “Diabetes” second.

TOP 5 BIGGEST HEALTH PROBLEMS FACING YOUR COMMUNITY

Rank	Penobscot Nation	Waponahki
1	Diabetes (count = 117)	Drug/Substance Problems (count = 584)
2	Drug/Substance Problems (count = 95)	Diabetes (count = 460)
3	Alcohol Problems (count = 66)	Alcohol Problems (count = 363)
4	Obesity / Overweight a (count = 54)	Obesity / Overweight ^a (count = 185)
5	Cancer (count = 39)	Cancer (count = 184)

^a - This category also includes weight management issues. Count refers to the number of survey participants who listed a specific topic in their response to the question.



Historical Loss/Response

Many Penobscot Nation Tribal members think about losses daily or multiple times a day. Tribal members thought most frequently about the “Loss of our traditional and spiritual ways,” followed by “loss of our culture and language” and “loss of respect by our children and grandchildren for elders,” which tied for second.

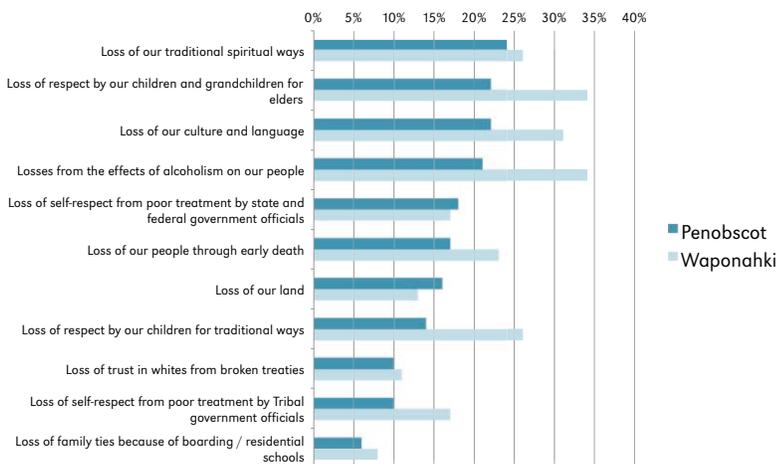
HISTORICAL LOSS: “I THINK OF THE LOSS OF...”

Percentage of participants reporting thinking about loss at least once per day

Historical Losses - think of at least daily	Penobscot	Waponahki
Loss of our traditional spiritual ways	24%	26%
Loss of our culture and language	22%	31%
Loss of respect by our children and grandchildren for elders	22%	34%
Losses from the effects of alcoholism on our people	21%	34%
Loss of self-respect from poor treatment by state and federal government officials	18%	17%
Loss of our people through early death	17%	23%
Loss of our land	16%	13%
Loss of respect by our children for traditional ways	14%	26%
Loss of self-respect from poor treatment by Tribal government officials	10%	17%
Loss of trust in whites from broken treaties	10%	11%
Loss of family ties because of boarding / residential schools	6%	8%
Loss of families from the reservation / reserve to government relocation	5%	8%

Historical loss: “I Think Of The Loss Of...”

Percentage Reporting Think of Loss at Least Once Per Day





The most common responses by Penobscot Nation Tribal members to historical loss questions include “feel sadness and depression,” “feel anxiety or nervousness,” and “experience a loss of sleep.”

RESPONSES TO HISTORICAL LOSS: “HOW OFTEN DO YOU...”

Percentage of participants reporting these feelings often or almost always

Reactions to historical losses - often or almost always	Penobscot	Waponahki
Feel sadness or depression	21%	22%
Feel anxiety or nervousness	19%	22%
Experience a loss of sleep	19%	23%
Feel fearful or distrustful of the intentions of white people	12%	10%
Feel like the losses are happening again	12%	14%
Feel like you are remembering these losses when you don't want to	11%	14%
Experience a loss of concentration	11%	17%
Feel anger or rage	9%	12%
Feel a sense of weakness or helplessness	9%	11%
Feel isolated or distant from other people when you think of these losses	9%	10%
Feel uncomfortable around white people when you think of these losses	8%	8%
Have bad dreams or nightmares	4%	8%
Feel like there is no point in thinking about the future	4%	6%
Feel shame when you think of these losses	3%	6%
Feel you need to drink or take drugs when you think of these losses	3%	3%

Health Status Indicators



25% of Penobscot Nation Tribal members perceived their health as fair or poor, which is similar to what Waponahki participants reported. Among adult Maine residents 16% reported their health as fair or poor.

PERCEIVED HEALTH STATUS

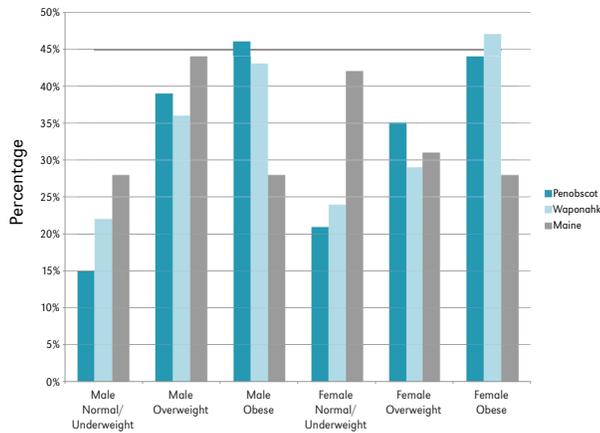
Outcomes	Penobscot	Waponahki	Maine
% who perceived health excellent, very good, or good	75%	73%	84%
% who perceived health fair or poor	25%	27%	16%
% with 11+ days in the past month where their physical health was not good	20%	22%	14%
% with 11+ days in the past month where their mental health was not good	21%	24%	13%
% with 11+ days in the past month where their physical or mental health kept them from doing usual activities	15%	15%	17%

RISK FACTORS FOR HEART DISEASE AND SEAT BELT USE

Outcomes	Penobscot	Waponahki	Maine
Percent of Population by BMI categories			
Normal weight/underweight	18%	23%	35%
Overweight	37%	32%	37%
Obese	45%	45%	28%
% who exercise – at least 60 minutes of vigorous exercise or 150 minutes of moderate exercise each week*	42%	34%	57%
% who exercise – at least 75 minutes of vigorous exercise or 150 minutes of moderate exercise each week*	41%	33%	N/A
% who had any physical activity in the past month	69%	59%	77%
Females	71%	57%	77%
Males	66%	62%	77%
18-34 years old	85%	65%	85%
35-54 years old	69%	57%	77%
55+ years old	54%	53%	72%
% who had no physical activity in the past month	31%	41%	23%
% who consume 5 or more cups of fruits and vegetables everyday	10%	8%	19%
% who are current smokers	31%	43%	23%
% who always wear seatbelts	83%	74%	84%



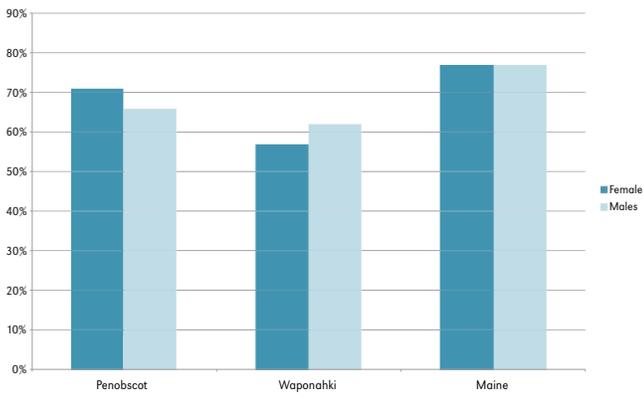
Percent of Population Overweight or Obese



OVERWEIGHT & OBESITY

Being overweight or obese is associated with: increased risks for high blood pressure, heart disease, type 2 diabetes, chronic back pain, degenerative joint disease, gallbladder problems, and certain cancers. Data from the Waponahki Tribal Health Needs Assessment indicate that 45% of Penobscot Nation Tribal members and 45% of Waponahki are obese. These numbers appear relatively high in comparison to Maine where 28% of the population was obese.

Past Month Participation in Any Physical Activities or Exercise

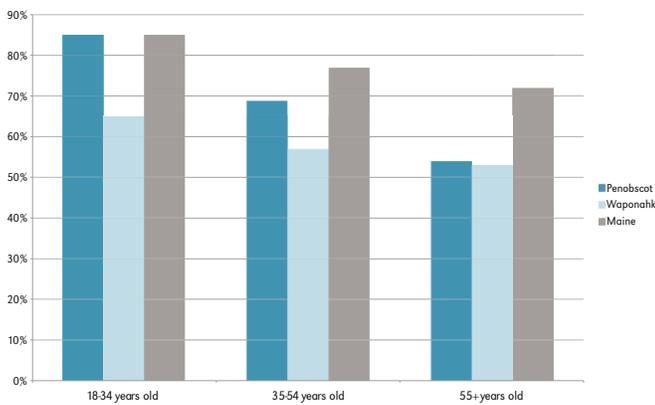


PHYSICAL ACTIVITY

The Centers for Disease Control and Prevention, US Department of Health and Human Services (CDC) indicate that adults need at least 2 hours and 30 minutes of moderate intensity aerobic activity such as brisk walking every week and muscle-strengthening activities on 2 or more days a week that work all major muscle groups (legs hips, back abdomen, chest shoulders, and arms) to see benefits.¹⁰ Benefits of regular exercise include:

- reducing risk of heart disease, type 2 diabetes, and certain cancers
- strengthening bones and muscles
- improving mood
- increasing chances of living longer

Past Month Participation in Any Physical Activities or Exercise by Age Group



A large percentage of Penobscot Nation Tribal members (31%) and Waponahki (41%) were not physically active in the last month, which is higher than the proportion of Maine adults (23%).

FRUIT AND VEGETABLE CONSUMPTION

Studies show that healthy diets rich in fruits and vegetables may reduce the risk of cancer and other chronic diseases such as type 2 diabetes and heart disease. Survey results showed that only 10% of Penobscot Nation Tribal members and 8% of Waponahki participants reported eating enough fruits and vegetables to meet the current standards of a healthy diet.

TOBACCO USE

Cigarette smoking represents the single most preventable cause of disease and death and is associated with increased risks for: asthma, emphysema, lung cancer, cervical cancer, prostate cancer, low birth weight babies, high blood pressure and heart disease. Secondhand smoke from cigarettes also can lead to similar health effects; however, children and infants are particularly vulnerable to the effects of secondhand smoke. The percentage of smokers among Penobscot Nation Tribal members (31%) and Waponahki participants (43%) appears to be significantly higher than among all Maine residents (23%).

SEAT BELT USE

Motor vehicle crashes represent the leading cause of death in individuals aged 5-34 years old in the US. While adult seat belt use is the most effective way to save lives and reduce injuries, millions of adults do not wear their seat belts on every trip. 83% of Penobscot Nation Tribal members reportedly use seatbelts and 73% of Waponahki wear seatbelts. 84% of Maine residents wear seatbelts.

ORAL HEALTH

To maintain optimal oral health, the American Dental Association (ADA) recommends regular dental visits, at intervals determined by a dentist. Penobscot Nation (69%) reported comparable rates of dental visits in the past year to Waponahki (67%) and Maine (68%).

ORAL HEALTH

Oral health	Penobscot	Waponahki	Maine
% with a dental visit in the past year	69%	67%	68% ^a

^a - Not available in 2011 Maine BRFSS; 2010 data used instead.

VACCINATIONS

A large proportion of Penobscot Nation (75%) and Waponahki (81%) participants 65 years and older had received a flu vaccination in the past year, which appears to be high compared to 62% of Maine adults who received the immunization.

The pneumococcal polysaccharide vaccine, also known as the pneumonia shot, is recommended for all adults 65 years and older and for anyone who is 2 years and older at high risk for disease. The pneumonia shot is also recommended for adults 19 through 64 years of age who smoke cigarettes or who have asthma. 60% of Penobscot Nation and 75% of Waponahki adults, 65 years and older, reported having a pneumonia vaccination.

VACCINATIONS

Outcomes	Penobscot	Waponahki	Maine
% who received a flu vaccination in the past year (65 years and older)	75%	81%	62%
% who have ever received a pneumonia vaccination (65 years and older)	60%	75%	73%



CANCER SCREENING AND PREVENTION

35% of Penobscot Nation and 30% of Waponahki adults 50 years and older had undergone a colonoscopy in the past two years which appears to be lower than the proportion of Maine residents (42%).

76% of Penobscot Nation women and 73% of Waponahki women 40 years and older have received a mammogram in the past two years while 86% of Maine women in this age group have received a mammogram.

Survey results indicate that Penobscot Nation and Waponahki females have comparable rates of cervical cancer screening rates compared to women in Maine. 85% of Penobscot Nation women have received a pap smear in the past three years, while 83% of Waponahki women, and 81% of Maine women received a pap smear in the past three years. 8% of Penobscot Nation women reported being vaccinated against HPV, in comparison to 45% of Waponahki women.

CANCER SCREENING AND PREVENTION

Outcome	Penobscot	Waponahki	Maine
Colonoscopy past 2 years (Age 40+)	27%	25%	NA ^a
Colonoscopy past 2 years (Age 50+)	35%	30%	42%
Digital rectal exam past year (Age 40+)	17%	23%	54%
Home blood stool test past year (Age 40+)	17%	12%	27%
PSA test past 2 years (Age 40+)	38%	39%	80%
Mammogram past 2 years (Age 40+)	76%	73%	86%
Pap smear past 3 years (Age 18+)	85%	83%	81%
Ever received HPV Vaccine (Age 18-26)	8%	45%	NA

a - Only asked of those 50+ in Maine BRFS.

MATERNAL AND CHILD HEALTH

Prenatal care refers to the regular health care recommended for pregnant women. Through regular check-ups, prenatal care allow doctors or midwives to treat and prevent potential health problems throughout the course of the pregnancy while promoting healthy lifestyles that benefit both mother and child. The availability of routine prenatal care has played an important role in reducing miscarriages and maternal death rates, as well as birth defects, low birth weight, and other preventable health problems that can affect mother and child. Most of Penobscot Nation (89%) and Waponahki (95%) mothers received prenatal care as early as they wanted. However, a high percentage of Penobscot Nation (35%) and Waponahki (39%) women smoked during pregnancy. Smoking during pregnancy puts mother and child at risk for: premature birth (being born too early), low birth weight baby, birth defects, and sudden infant death.

MATERNAL AND CHILD HEALTH

Outcome	Penobscot	Waponahki	Maine
% of women who received prenatal care as early as they wanted to (women who gave birth within the last 5 years)	89%	95%	NA
% of women who used cigarettes at any time during their last pregnancy a child)	35%	39%	NA
% who said children under the age of 18 Always use a child safety seat, booster seat or seat belt when riding with them in the past 30 days (Among those who rode with	99%	93%	NA



Selected Health Outcomes and Chronic Conditions

CARDIOVASCULAR DISEASE

Heart and blood vessel disease – cardiovascular disease – includes numerous problems such as: stroke, heart attack, coronary heart disease, arrhythmias, and angina. Many of these conditions can be prevented through avoiding cigarette smoking, eating healthy, and exercising. Additional risk factors for cardiovascular disease include: high cholesterol, high blood pressure, and type 2 diabetes. The percentage of Penobscot Nation and Waponahki adults who report having a heart attack (8% and 6%, respectively) or report being diagnosed with coronary artery disease (8% and 6%, respectively) is similar to the adults in Maine.

CARDIOVASCULAR DISEASE

Outcomes	Penobscot	Waponahki	Maine
% Diagnosed with heart attack	8%	6%	5%
% Diagnosed with angina or coronary artery disease	8%	6%	5%
% Diagnosed with congestive heart failure	4%	2%	NA

HIGH BLOOD PRESSURE

High blood pressure represents a leading risk factor for cardiovascular diseases such as strokes, heart attacks, and kidney disease. The percentage of Penobscot Nation and Waponahki adults who report hypertension (40% for both) appears higher than the percentage of Maine residents who report having high blood pressure (32%).

HIGH BLOOD PRESSURE

High blood pressure	Penobscot	Waponahki	Maine
% Diagnosed with high blood pressure	40%	40%	32%

HIGH CHOLESTEROL

High cholesterol significantly increases the risk of cardiovascular diseases such as heart attacks and strokes. The US Preventive Services Task Force recommends screening men aged 35 and older for cholesterol and women aged 45 years and older at increased risk for coronary heart disease.¹¹

The survey indicates that Penobscot Nation (43%) and Waponahki (47%) have a higher proportion of adults with high cholesterol than Maine (41%).

HIGH CHOLESTEROL

High cholesterol	Penobscot	Waponahki	Maine
% Diagnosed with high cholesterol	43%	47%	41%





DIABETES

Having diabetes or pre-diabetes puts a person at increased risk for heart disease and stroke. A person with diabetes can lower their risks for these conditions by keeping the blood glucose (also called blood sugar), blood pressure, and blood cholesterol close to the target numbers recommended by health care providers. Strategies for reaching targets include:

- choosing foods wisely
- being physically active
- taking medications if needed

The survey indicates that Penobscot Nation (19%) and Waponahki (17%) may have a higher proportion of adults who report having diabetes in comparison with Maine (10%). Of the Penobscot Nation and Waponahki adults who report having diabetes the majority (89% and 94%, respectively) reported that they had had their hemoglobin A1C checked at least once in the past year. 89% of Maine residents with diabetes had had their hemoglobin A1C checked in the last year. Similarly, a large proportion of Penobscot Nation and Waponahki adults with diabetes also report having a pupil dilation eye exam and foot exam in the past year. However, the percentage of Penobscot Nation (40%) and Waponahki (43%) adults with diabetes who have taken a course or a class on how to self-manage their diabetes appears to be relatively low in comparison to other Maine residents (54%).

DIABETES

Outcomes	Penobscot	Waponahki	Maine
% Diagnosed with diabetes	19%	17%	10%
% Among those diagnosed with diabetes:			
% Ever taken a course or class on how to self-manage diabetes	40%	43%	54% ^a
% Had A1C checked at least once in past year	89%	94%	89% ^a
% Had pupil dilation eye exam in past year	87%	78%	76% ^a
% Had foot examination in past year	73%	79%	78% ^a

^a - Data from One Maine Community Health Needs Assessment 2010.

ASTHMA

Asthma is a chronic (long-term) lung disease that inflames and narrows the airways. Asthma causes recurring periods of wheezing, chest tightness, shortness of breath, and coughing. Cigarette smoking, mold, and other environmental factors can worsen the asthma. The proportion of Penobscot Nation (25%) and Waponahki adults (23%) reporting an asthma diagnosis appears to be higher than the percentage of Maine residents (17%) who report an asthma diagnosis.

ASTHMA

Outcomes	Penobscot	Waponahki	Maine
% Ever diagnosed with asthma	25%	23%	17%

Mental Health and Substance Use

ALCOHOL CONSUMPTION

Binge drinking is defined as males having five or more drinks on one occasion and females having four or more drinks on one occasion. Binge drinking is associated with many health problems, including:

- Unintentional injuries (e.g., car crashes, falls, burns, drowning)
- Intentional injuries (e.g., firearm injuries, sexual assault, domestic violence)
- Alcohol poisoning
- High blood pressure, stroke, and other cardiovascular diseases
- Liver disease
- Neurological damage
- Sexual dysfunction
- Poor control of diabetes

Binge drinking appears to be more common among Penobscot Nation and Waponahki adults in comparison to all adult Maine residents. Roughly 26% of Penobscot Nation adult Tribal members engage in binge drinking in comparison to 17% of other Maine residents.

MENTAL HEALTH

36% of Penobscot Nation and 35% of Waponahki Tribal members reported by ever diagnosed with depression which appears to be significantly higher than the prevalence of depression among all Maine residents which is 15%.

MENTAL HEALTH

Outcomes	Penobscot	Waponahki	Maine
% Binge drinking in the past month (5+ drinks for males, 4+ drinks for females)	26%	35%	17%
Female	18%	32%	12%
Male	36%	40%	23%
% Currently depressed (CESD-10 \geq 10)	36%	36%	15% ^a
Female	38%	38%	NA
Male	34%	33%	NA
% Ever diagnosed with depression	36%	35%	24%
% Ever diagnosed with anxiety	35%	32%	NA
% Felt so sad or hopeless almost every day for two weeks that you stopped doing usual activities in the last 12 months	18%	20%	NA
% Considered attempting suicide in the last 12 months	10%	8%	NA

^a - Data from One Maine Community Health Needs Assessment 2010.



Final Thoughts

Maine Tribal Health Directors believe that the development, implementation, and analysis of the Waponahki Assessment 2010 should be considered a major accomplishment for the five Maine Tribal Health Programs. The health assessment represents one of the largest documented Tribal health surveys completed east of the Mississippi River. This is the first time that the Maine Tribal Health Programs have had access to data regarding Maine Tribal populations that is accurate and meaningful to them.

Findings from the survey suggest that the five Tribal Health Department are implementing preventive care activities that result in rates that approximate or exceed the United States' health targets described by Healthy People 2020 for:

- dental visits
- mammograms
- eye and foot exams for diabetics
- and colorectal cancer screening

Also, 95.4% of women who were pregnant within the past five years received prenatal care as early in their care as they wanted.

However, rates of chronic diseases and risk factors for chronic diseases remain higher among Waponahki Tribal members in comparison to other Maine residents. In comparison to all Maine residents survey results indicate that Waponahki Tribal members are:

- 2.5 times as likely to have been told they have diabetes
- 1.5 times as likely to report they have been told they have high blood pressure
- 1.6 times as likely to report they have been told they had a heart attack
- 1.7 times as likely to report that they have been told by a provider that they have a depressive disorder
- 2.0 times as likely to report they have been told by a provider that they have an anxiety disorder
- 1.6 times as likely to be obese
- 2.8 times as likely to smoke
- 0.4 times as likely to exercise an adequate amount

For the eight comparisons above, Waponahki and Maine BRFSS data were both age adjusted prior to comparison. Age adjusting gives us a more accurate picture of how Waponahki tribal members compare to their neighbors in the rest of Maine. This is the only use of age-adjustment in this report.

Tackling these differences in health between Waponahki Tribal members and Maine residents will require the collaboration of many partners, including those outside of the health clinic or health department.

Results from the survey indicate that Tribal health programs reinforce prevention activities and play a critical role in keeping Tribal members healthy. However, improving the health of Tribal members will also require dealing with matters such as: nutrition, physical activity, obesity, cigarette smoking, substance abuse, and high school graduation rates. Tackling these issues will involve developing partnerships between different Tribal departments and other stakeholders who can play a role in promoting community health.

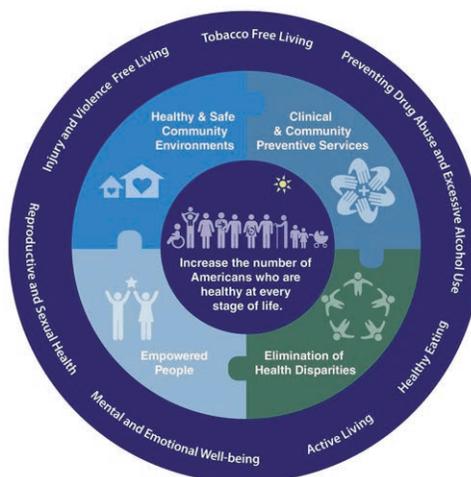
It is the hope that the results highlighted in this report will spark collaboration between different organizations that serve Tribal members and promote the establishment of a Wabanaki Public Health District Community Health Plan. A community health plan can play an important role in developing partnerships between different departments. The Maine Tribes have the Wabanaki Public Health District that could lead the development of such a plan and the development of strategies that could ultimately improve the health of Tribal members. Developing a community health plan will require planning and the transition of the assessment data from the Health Programs to the Wabanaki Public Health District. The ultimate goal of the Community Health Plan will be to improve the health and well-being of Waponahki Tribal members.

According to survey results, the Penobscot Nation Health Department and other Waponahki Health Departments enjoy recognition as a source of community strength. In addition, they successfully deliver clinical and community and preventive services to Tribal members. Access to clinical and community preventive services provided by Tribal Health Departments can reduce tobacco and drug abuse, improve screening for colon and breast cancer, prevent heart disease through more timely treatment for high blood pressure, and reduce obesity and diabetes through more active living and healthy eating.

However, in addition to clinical and community preventive services there are several factors outside of the health care system that can lead to “good” health throughout all stages of life. Key factors that shape the health of people are not just medical treatments or lifestyle choices but the living conditions they experience, the social determinants of health. In fact the health of an individual is often influenced more by factors outside of the health care system, such as education level, income, occupation, and housing. This finding underscores the need for different departments and agencies to work together to address these social determinants of health that impact the health of Tribal communities.

Called for by the Affordable Care Act, The National Prevention Strategy provides actions and examples that different Tribal departments can take to promote community wellness. In this model, increasing the number of people who are healthy involves tackling social determinant of health, changing conditions in communities such as educational and job opportunities, safe and affordable housing, accessible transportation and parks, and the absence of toxic substances. The strategy also outlines four strategic directions that provide a foundation for improving community health. Those four strategic directions are:

- **Building Healthy and Safe Community Environments:** Prevention of disease starts in our communities and at home; not just in the doctor’s office.
- **Empowering People to Make Healthy Choices:** When people have access to actionable and easy-to-understand information and resources, they are empowered to make healthier choices.
- **Eliminating Health Disparities:** By eliminating disparities in achieving and maintaining health, we can help improve quality of life for all Waponahki Tribal members.
- **Expanding Quality Preventive Services in Both Clinical and Community Settings:** When people receive preventive care, such as immunizations and cancer screenings, they have better health and lower health care costs.¹²



A Wabanaki Public Health District Community Health Plan that builds on the four strategic directions of the National Prevention Strategy provides opportunities for different organizations to work together. In addition to Tribal health departments and the Wabanaki Public Health District, partners could include: education, housing, workplaces, government, environmental services, and other partners.

By working together through a community health plan each department has the opportunity to play an important part in improving the health of Waponahki Tribal members.



ACKNOWLEDGMENTS

WAPONAHKI TRIBAL HEALTH DIRECTORS:

Theresa Cochran, Health Systems Administrator, Micmac Service Unit
Nakia Dana, Health Director, Passamaquoddy Tribe, Indian Township
Andrea Hanson, former Health Director, Passamaquoddy Tribe, Indian Township
Patricia Knox-Nicola, former Health Director, Penobscot Nation & Co-Principal Investigator
Jill MacDougall, Health Director, Penobscot Nation
John Ouellette, former Health Systems Administrator, Micmac Service Unit
Ann Stevens, former Health Director, Houlton Band of Maliseet Indians
Patricia Sponzo-Bechard, Health Director, Houlton Band of Maliseet Indians
Sandra Yarmal, Health Director, Passamaquoddy Tribe, Pleasant Point

WAPONAHKI TRIBAL EMPLOYEES:

Tribal IT staff
Tribal Public Health Liaisons
Tribal Survey Interviewers

UNIVERSITY OF NEBRASKA MEDICAL CENTER, COLLEGE OF PUBLIC HEALTH

Matthew Anderson, Center for Collaboration on Research, Design, and Analysis
Sergio Costa, PhD, Director, Distance Learning
Ashley Frear-Cooper, Graduate Research Assistant
Patrik Johansson, Associate Professor, Department of Health Promotion, Social and Behavioral Health
Sonja Russell, MPH, Rural Health Education Network
Harlan Sayles, MS, Statistical Coordinator, Department of Biostatistics
Kendra Schmid, PhD, Associate Professor, Department of Biostatistics

WAPONAHKI HEALTH NEEDS ASSESSMENT ADVISORS

Jacinda Goodwin, Prevention Specialist, Office of Substance Abuse, Maine Department of Health and Human Services
Jerolyn Ireland, former Tribal Health District Liaison
Elizabeth Neptune, Tribal Council, Passamaquoddy Tribe Indian Township
Lisa Sockabasin, Director, Office of Minority Health, Maine Center for Disease Control and Prevention, Maine Department of Health and Human Services
Kim Crichton, Maine Health Access Foundation
David Pied, Maine Center for Disease Control and Prevention, Maine Department of Health and Human Services

ORGANIZATIONAL SUPPORT

Aroostook Band of Micmacs, Tribal Chief, Vice Chief, and Council
Houlton Band of Maliseet Indians Tribal Chief and Council
Passamaquoddy Joint Tribal Council
Penobscot Nation, Tribal Chief, Vice Chief, and Council
Wabanaki Public Health District
Maine Office of Health Equity
University of Nebraska Medical Center, College of Public Health

INDIVIDUAL SUPPORT

Co-Principal Investigators
Patrik Johansson, MD MPH
Patricia Knox-Nicola, former Health Director, Penobscot Nation

REFERENCES

1. Norris T, Vines PL, Hoeffel EM. The American Indian and Alaska Native population 2010: Census brief. 2012.
2. U.S. Census Bureau. American factfinder: Profile of general population and housing characteristics: 2010 demographic data (Maine). Accessed 9/5, 2011.
3. U.S. Department of Health and Human Services, Indian Health Service. Indian Health Service: Facts on Indian health disparities. <http://info.ihs.gov/Files/DisparitiesFacts-Jan2006.pdf>. Accessed 12/31, 2007.
4. US Department of Health and Human Services, Indian Health Service. Trends in Indian health, 2002-2003 edition. 2009.
5. Centers for Disease Control and Prevention, US Department of Health and Human Services. About the BRFSS. <http://www.cdc.gov/brfss/about.htm>. Accessed 7/12, 2011.
6. Braveheart M. Gender differences in historical trauma response among the Lakota. *Journal of health & social policy*. 1999;10(4):1-21.
7. Whitbeck LB, Adams GW, Hoyt DR, Chen X. Conceptualizing and measuring historical trauma among American Indian people. *Am J Community Psychol*. 2004;33(3-4):119-130.
8. The School of Community and Population Health, University of New England. Passamaquoddy health needs assessment summary report for Motahtomikewiyik naka Sipayikewiyik. 2013.
9. Kelly MP. The axes of social differentiation and the evidence base on health equity. *J R Soc Med*. 2010;103(7):266-272.
10. Centers for Disease Control and Prevention. Physical activity: how much physical activity do adults need? <http://www.cdc.gov/physicalactivity/everyone/guidelines/adults.html>. Accessed 6/14, 2014.
11. US Preventive Services Task Force. Screening for lipid disorders in adults. Recommendation statement: June 2008. <http://www.uspreventiveservicestaskforce.org/uspstf08/lipid/lipidsr.htm>. Accessed 6/7, 2014.
12. National Prevention Council, National Prevention Strategy, Washington DC: US Department of Health and Human Services, Office of the Surgeon General, 2011.

