

American Indian Elders in the Aberdeen IHS Area: Prevalence of Chronic Disease and Functional Limitations



Kyle Muus, PhD, & Leander R. McDonald, PhD
UND Center for Rural Health
National Resource Center on Native American Aging

Dakota Conference on Rural & Public Health

March 8, 2005
Bismarck, ND



Center for
Rural Health

University of North Dakota
School of Medicine and Health Sciences

Where: Grand Forks, ND

When: Established over 20 years ago

Focused on Access, Financing and Quality Through:

- Health services research
- Health policy
- Education
- State and community health services development
- Information Resource

How: Through partnerships

NRCNAA



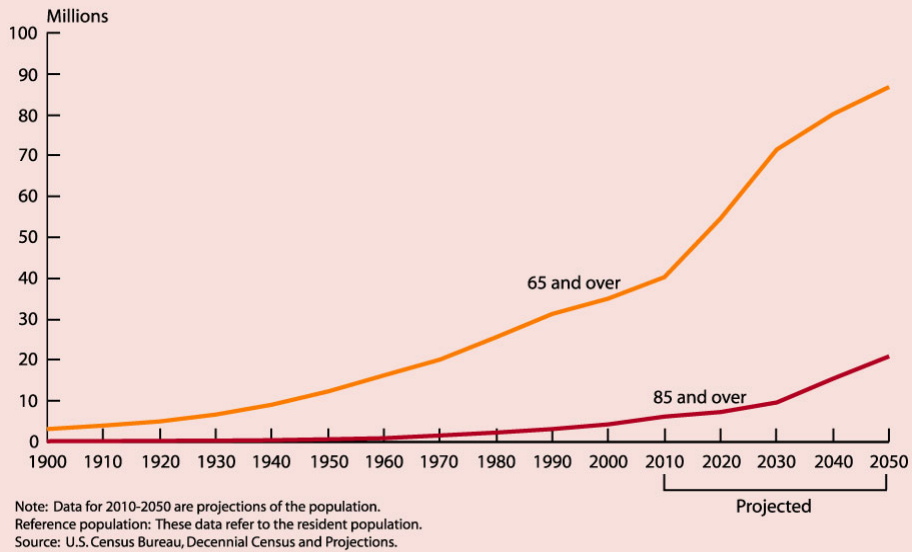
2

Overview

- U.S. Aging and Health Trends
- Native American Aging and Health
- Survey of 1,939 Aberdeen Area Native elders
 - Health Status
 - Health Risk Behaviors
 - Functional limitations
- Focus on Arthritis and Diabetes
- Policy Recommendations

U.S. Aging and Health Trends

Number of people age 65 and over, by age group, selected years 1900-2000 and projected 2010-2050

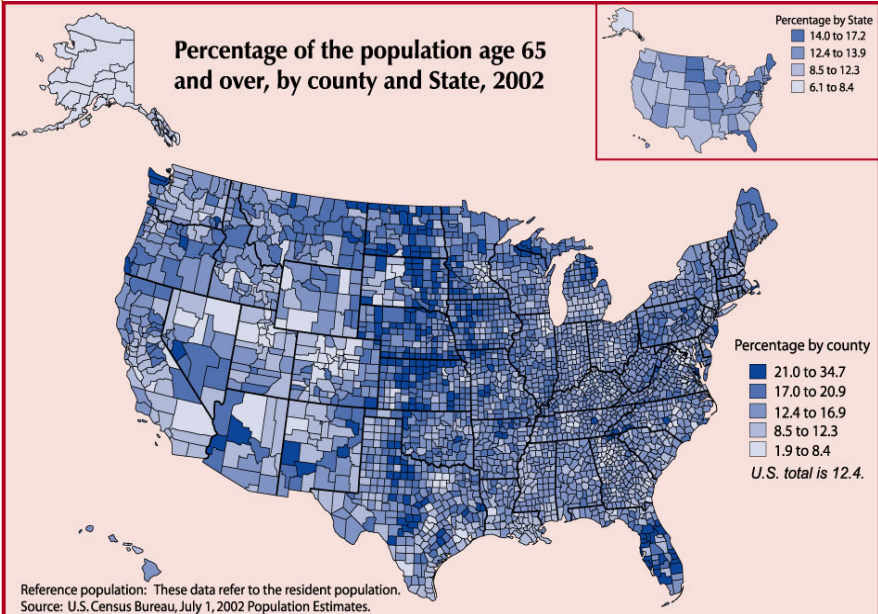


NRCNAA



5

Percentage of the population age 65 and over, by county and State, 2002

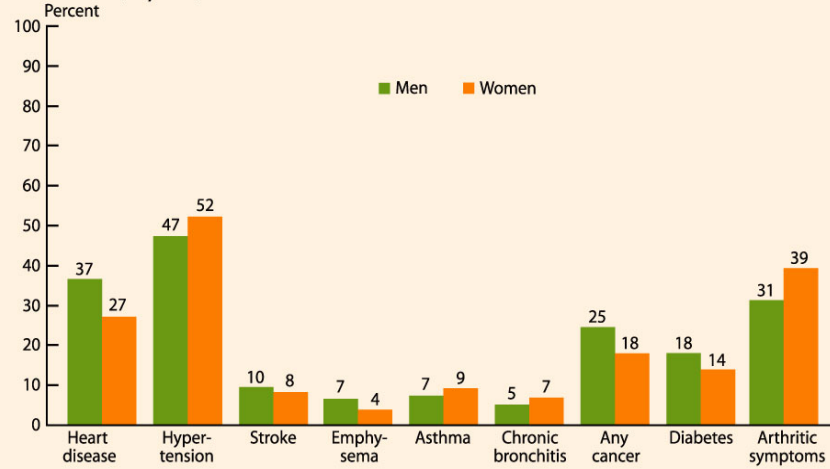


NRCNAA



6

Percentage of people age 65 and over who reported having selected chronic conditions, by sex, 2001-2002



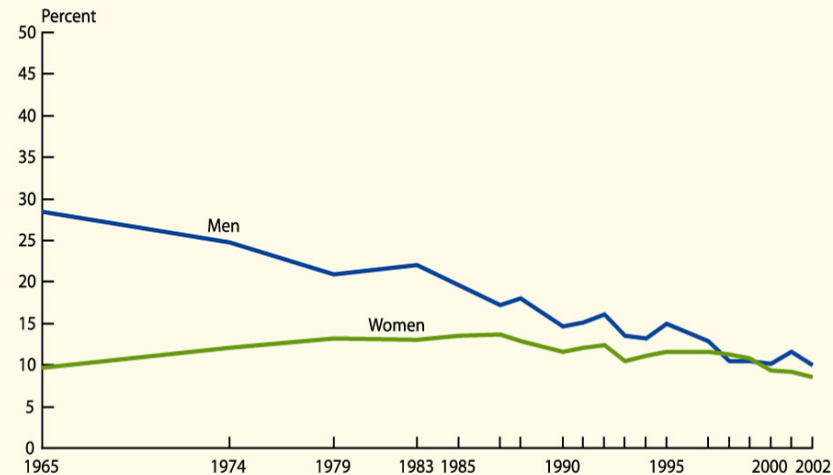
Note: Data are based on a 2-year average from 2001-2002. Data for arthritic symptoms are from 2000-2001.
Reference population: These data refer to the civilian noninstitutionalized population.
Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey.

NRCNAA



7

Percentage of people age 65 and over who are current cigarette smokers, by sex, selected years 1965-2002



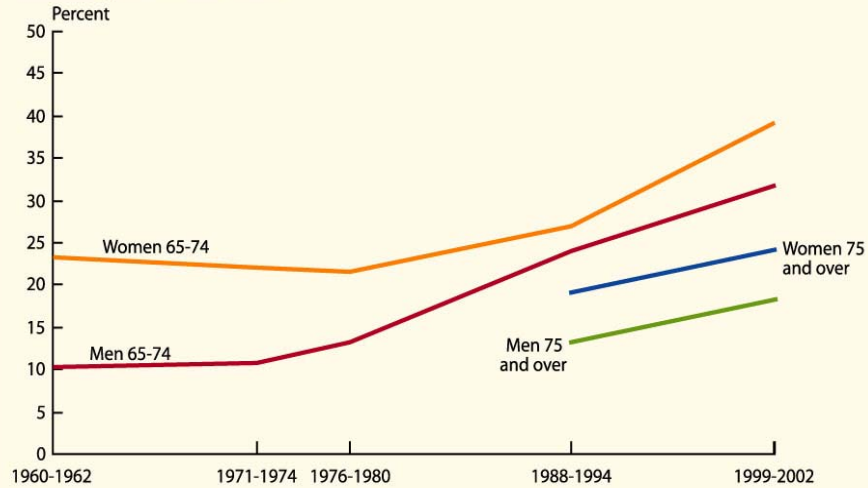
Reference population: These data refer to the civilian noninstitutionalized population.
Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey.

NRCNAA



8

Percentage of people age 65 and over who are obese, by sex and age group, selected years 1960-2002



Reference population: These data refer to the civilian noninstitutionalized population.

Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health and Nutrition Examination Survey.

NRCNAA



9

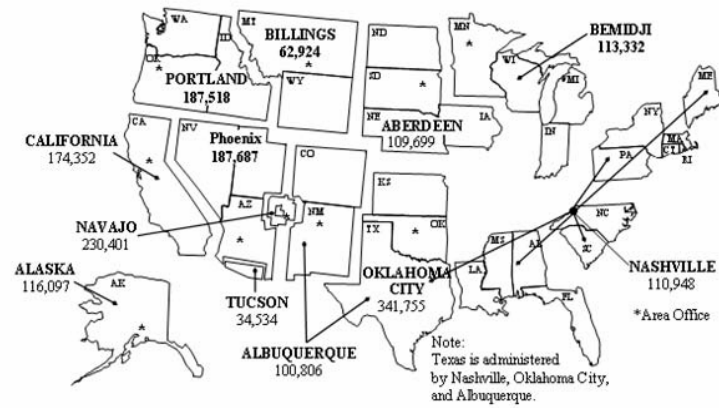
Native American Aging and Health

NRCNAA



10

INDIAN HEALTH SERVICE REGIONS



Projections are Based on Bridged 2000
Census Data

NRCNAA



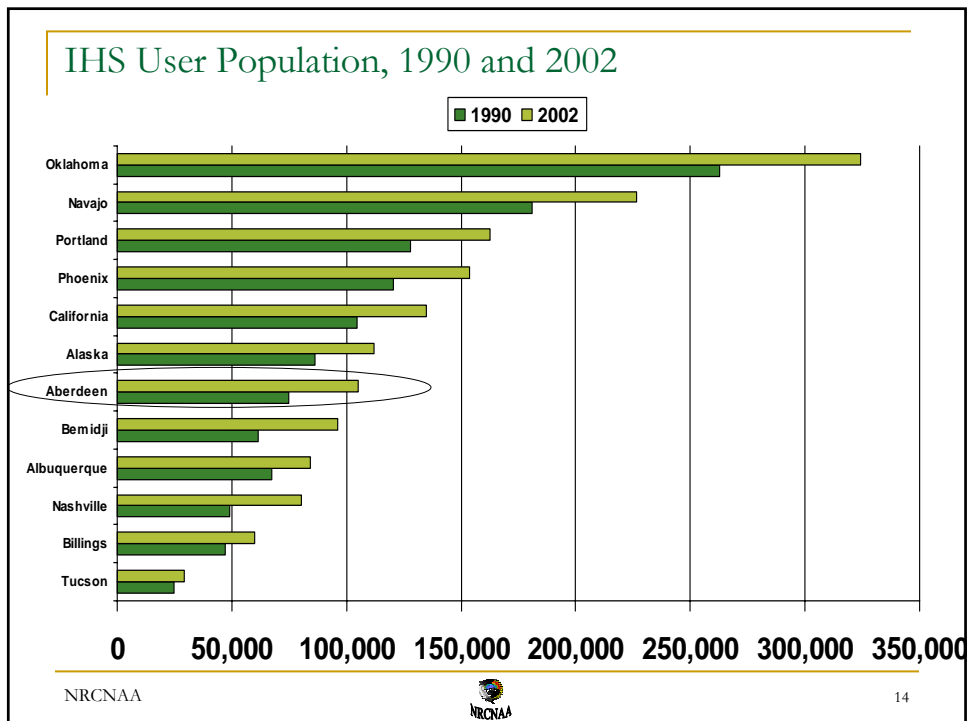
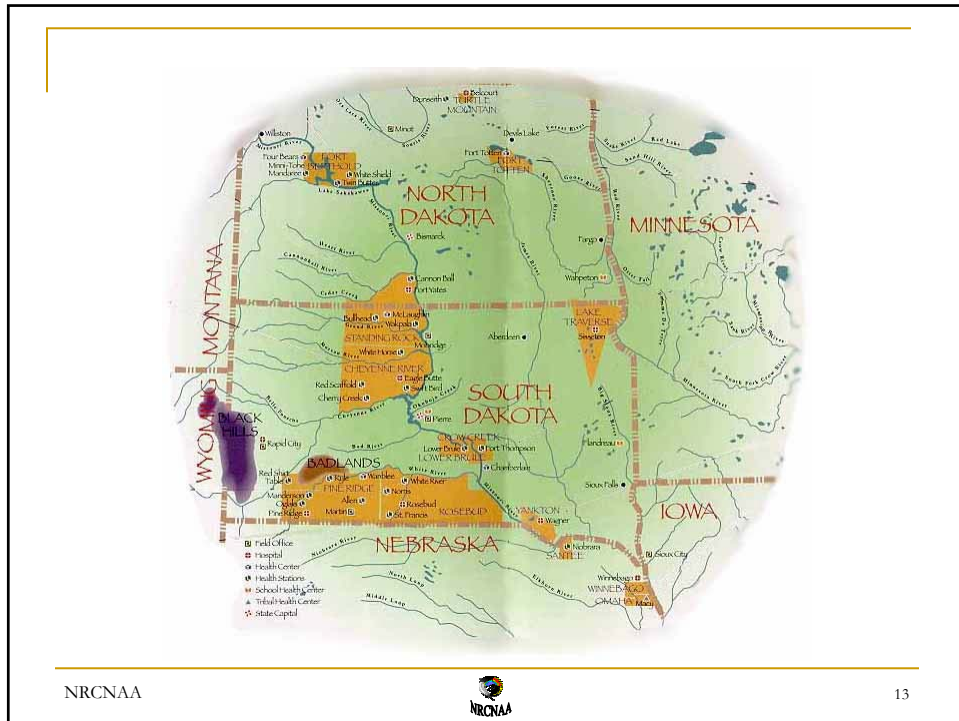
11



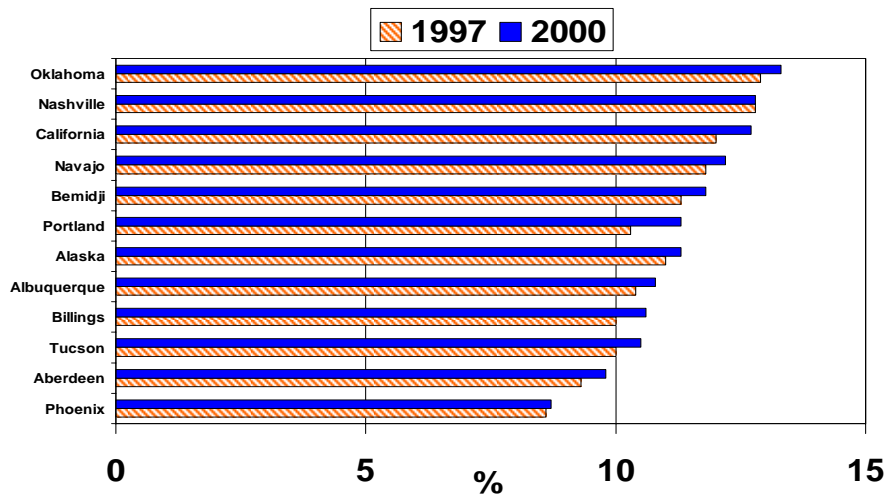
NRCNAA



12



Percent of User Population Age 55+, by IHS Area

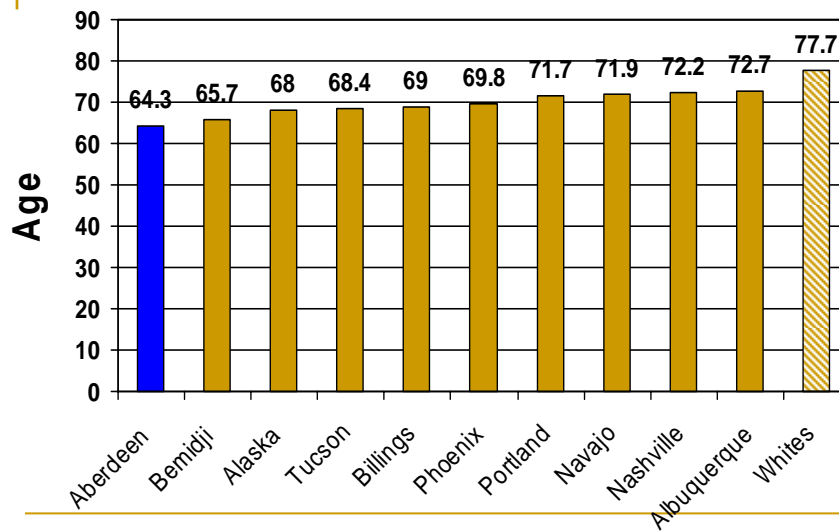


NRCNAA

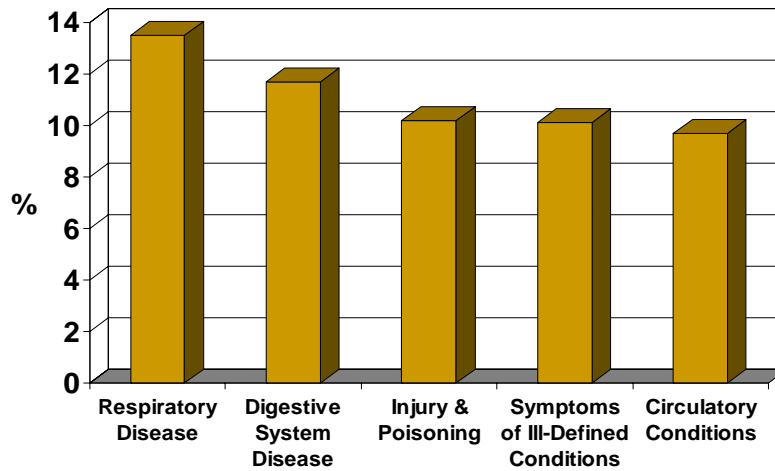


15

Life Expectancy at Birth, by IHS Area



Leading Causes of Hospitalization, Aberdeen Area, 2001 (N=9,248)

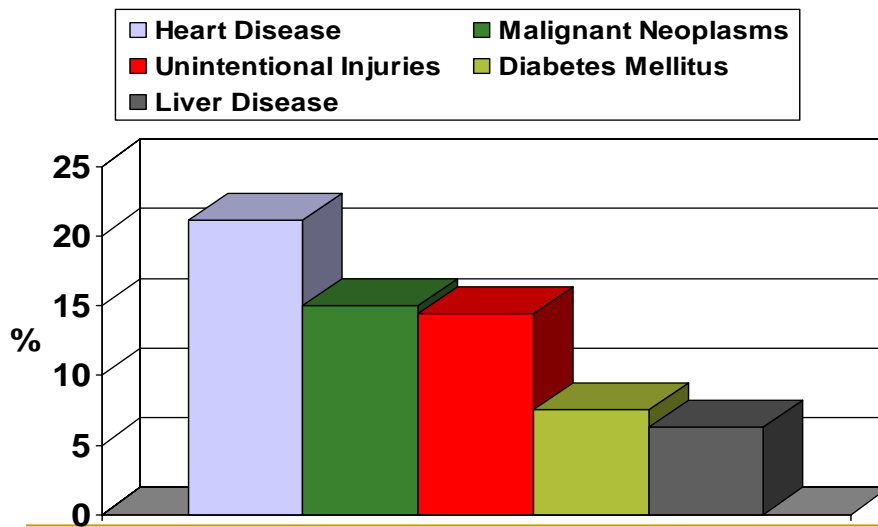


NRCNAA



17

Leading Causes of Death, Aberdeen Area, 1996-1998 (N=2,113)



NRCNAA



18

National Resource Center on Native American Aging

The only national resource center in the nation focusing on American Indian, Native Hawaiian, and Alaska Native elder issues. Primary focus is health care.

- Research
- Training
- Technical Assistance

Purpose of the Project

- The purpose of this project is to assist tribes in collecting data they can use to build infrastructure in their communities.
- Multiple methods are used throughout the study, but the main method of data collection is the survey instrument (administered face-to-face with the elders).

Population

- Native American elders residing primarily on reservations
- Individuals age 55 and over living on or around Indian areas.
- Age 55 is considered comparable to 65 and over in the general population

Sampling Design

- Get everyone in small populations
- Sample in large populations
- Systematic random sampling
 - Use a list of names or addresses
 - Determine proportion
 - Select every nth name based on the proportion

Data is collected on:

- General health status
- Activities of Daily Living (ADL's)
- Instrumental Activities of Daily Living (IADL's)
- Indicators of chronic disease
- Indicators of vision and hearing
- Tobacco and alcohol use
- Diet and exercise
- Weight and weight control
- Social supports

National Resource Center Provides:

- Survey instruments – a standardized tool
- Assistance with sampling
- Training on data collection
- Technical support
- Data entry
- Data analysis
- Statistical profiles of your elders
- Comparisons with national norms

Aberdeen Area Tribal Data (N=1,939) & National Data Source Comparisons

Question	Response (s)	Tribal Data (55 and over)	Aberdeen Area (55 and over)	94' NLTCs (65 and over)
4. Because of a health or physical problem, do you have difficulty --	a. Bathing or showering?		14.7%	36.8%
	b. Dressing?		9.6%	15.8%
	c. Eating?		6.9%	8.1%
	d. Getting in or out of bed?		12.6%	22.1%
	e. Walking?		28.7%	33.7%
	f. Using the toilet, including getting to the toilet?		6.1%	22.8%
5. Because of a health or physical problem, do you have difficulty--	a. Preparing your own meals?		14.8%	19.7%
	b. Shopping for personal items (such as toilet items or medicines)?		13.3%	34.8%
	c. Managing your money (such as keeping track of expenses or paying your bills)?		7.4%	17.9%
	d. Using the telephone?		5.9%	9.6%
	e. Doing heavy housework (like scrubbing floors, or washing windows)?		34.3%	51.6%
	f. Doing light housework, (like doing dishes, straightening up, or light cleaning)?		14.0%	17.0%
	g. Getting outside?		13.9%	44.2%

NRCNAA



25

Local Communities Provide:

- Locating a list and selecting names for the sample
- Data collection
- Receiving the findings and getting them to the right people
- Local implementation and coordination
- Tribal data warehouse

NRCNAA



26

Reasons for Conducting Needs Assessment

- Grant proposals
 - Meets Title VI Elder Nutrition Grant Renewal Requirements
 - Provides local numbers for the strengthening of state, federal, and foundation grants
- Advocating for resources
 - Tribal level
 - State level
 - Federal level
- Provides direction to long-term care services
 - Specifies the most appropriate long-term care facility or service for your community
 - Determines where resources should be directed in addressing needs

Current Status of the Study

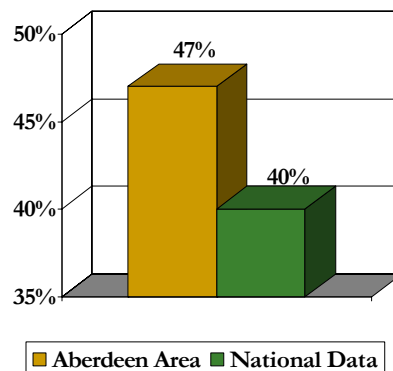
- 132 tribes from 88 different sites are represented in national file
- 9,403 Native elder participants
- Additional tribes are now collecting data for Cycle II
- At least one tribe from 11 of the 12 I.H.S. regional areas are represented
- 9 of the tribes and 1,939 Native elders are from the Aberdeen Area

The Health of American Indian and Alaskan Native Elders



Chronic Diseases – Arthritis (N=1,939)

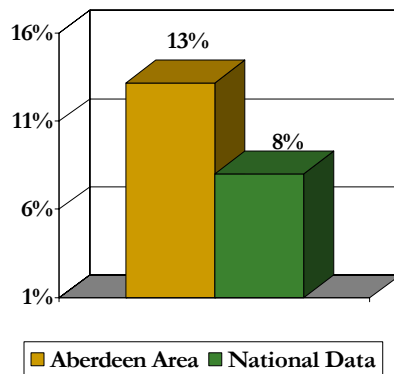
Arthritis



- Aberdeen Area Native elders were 18% more likely to experience arthritis than the U.S. general population.

Chronic Diseases – Congestive Heart Failure (N=1,939)

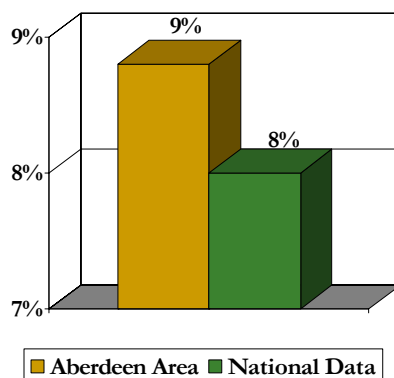
Congestive Heart Failure



- Aberdeen Area Native elders were 65% more likely to experience congestive heart failure than the general U.S. population.

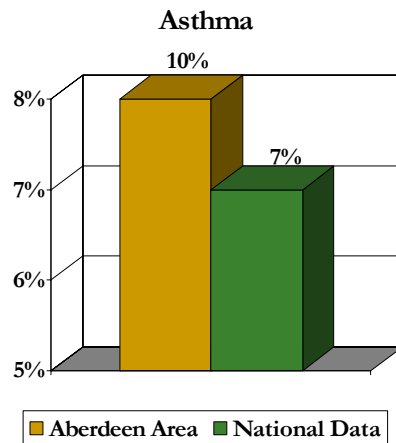
Chronic Diseases – Stroke (N=1,939)

Stroke



- Aberdeen Area Native elders were 10% more likely to experience a stroke than the general population.

Chronic Diseases – Asthma (N=1,939)



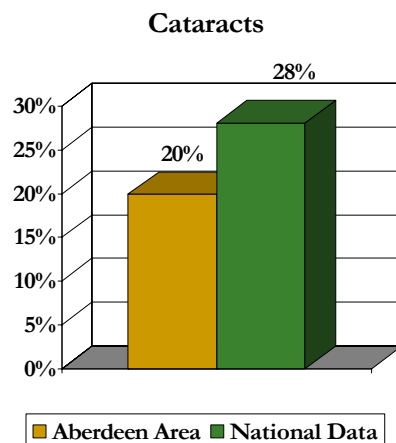
- Aberdeen Area Native elders were 29% more likely to experience asthma than the U.S. general population.

NRCNAA



33

Chronic Diseases – Cataracts (N=1,939)



- Aberdeen Area Native elders were 29% less likely to experience cataracts than the general population.

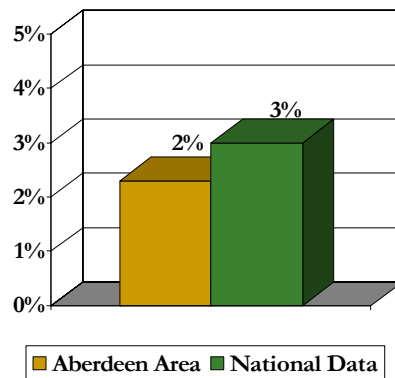
NRCNAA



34

Chronic Diseases – Breast Cancer (N=1,939)

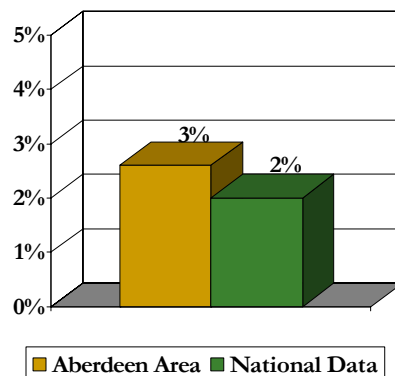
Breast Cancer



- Aberdeen Area Native elders were 23% less likely to experience breast cancer than the U.S. general population.

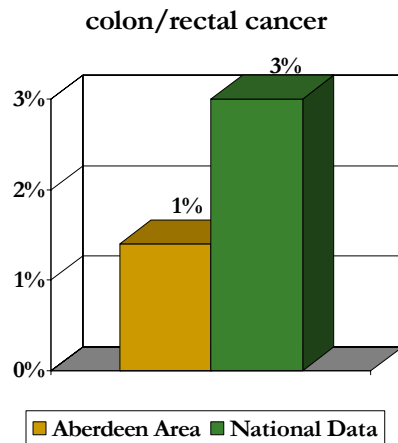
Chronic Diseases – Prostate Cancer (N=1,939)

Prostate Cancer



- Aberdeen Area Native elder men were 30% more likely to experience prostate cancer than the U.S. general population.

Chronic Diseases – Colon/Rectal Cancer (N=1,939)



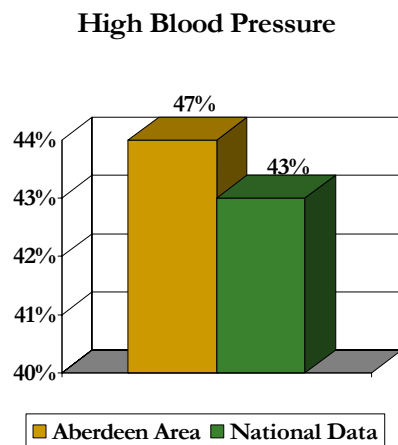
- Aberdeen Area Native elders were 53% less likely to experience colon/rectal cancer than the U.S. general population.

NRCNAA



37

Chronic Diseases – High Blood Pressure (N=1,939)



- Aberdeen Area Native elders were 9% more likely to experience high blood pressure than the U.S. general population.

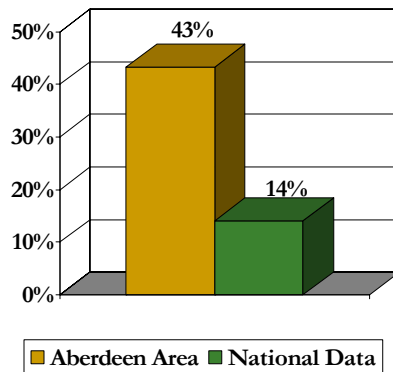
NRCNAA



38

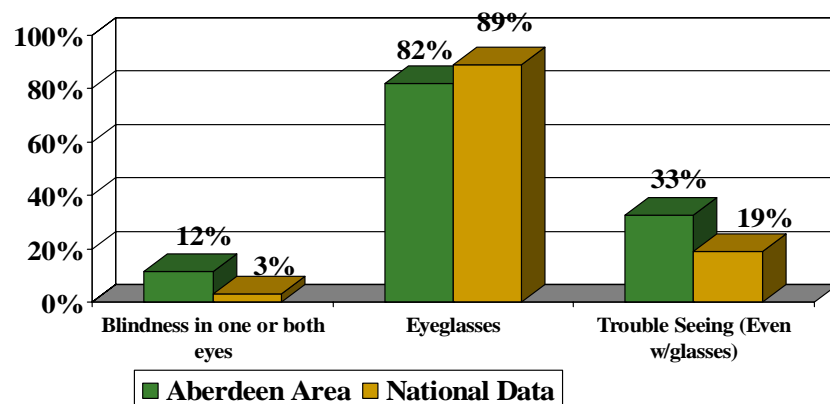
Chronic Diseases – Diabetes (N=1,939)

Diabetes

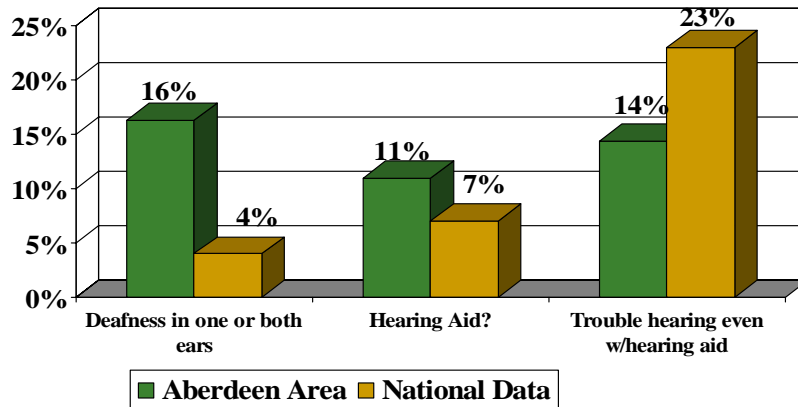


- Aberdeen Area Native elders were 210% more likely to experience diabetes than the U.S. general population.

Vision (N=1,939)



Hearing (N=1,939)

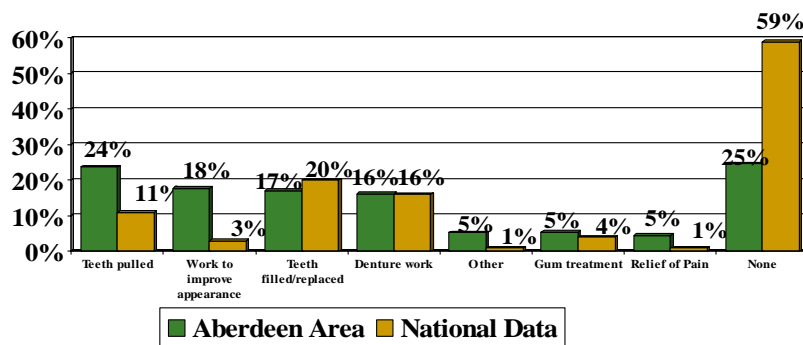


NRCNAA



41

Dental Services Needed (N=1,939)



NRCNAA

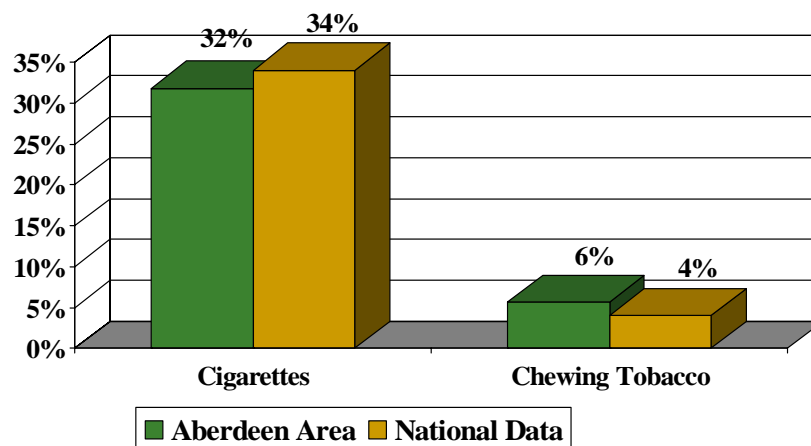


42

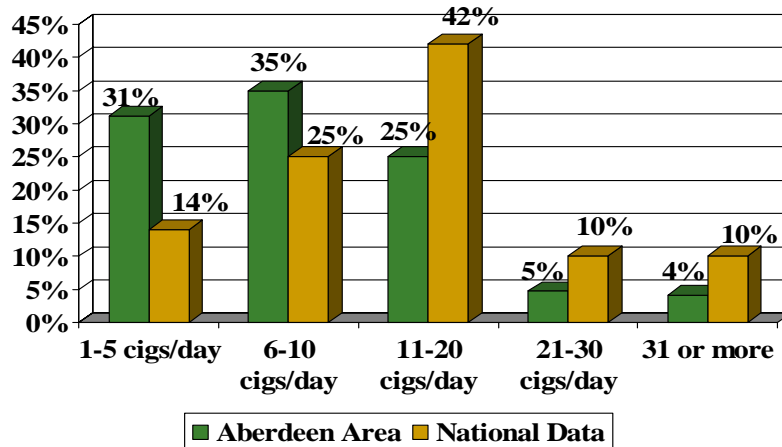
Behavioral Risk Factors



Tobacco Usage (N=1,939)



Cigarettes Smoked a Day (N=1,939)

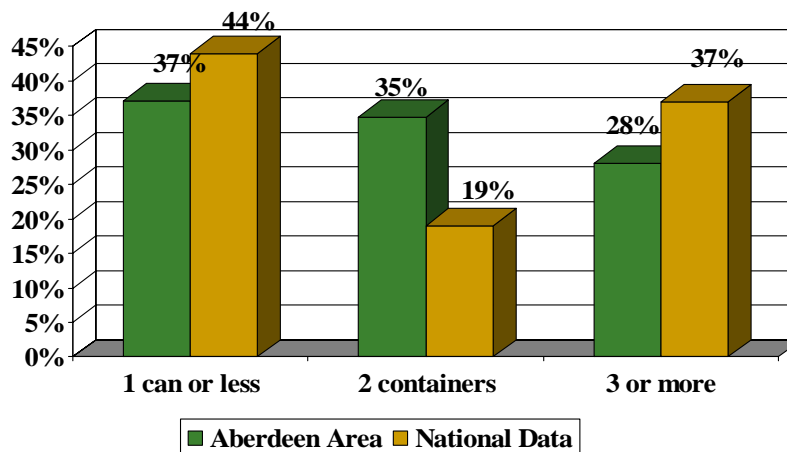


NRCNAA



45

Chewing Tobacco (N=1,939)

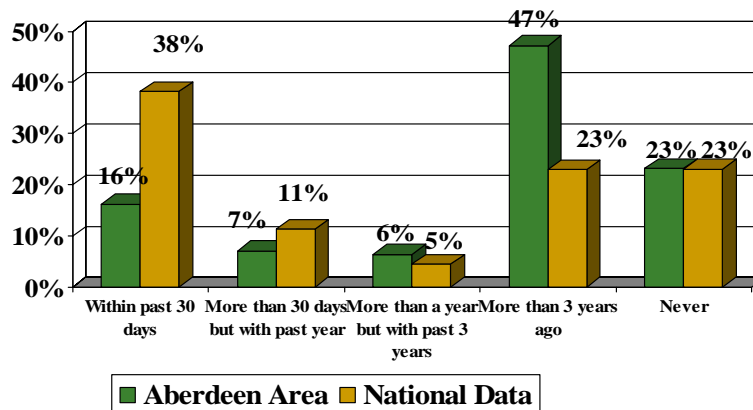


NRCNAA



46

How long since last drink of alcoholic beverage? (N=1,939)

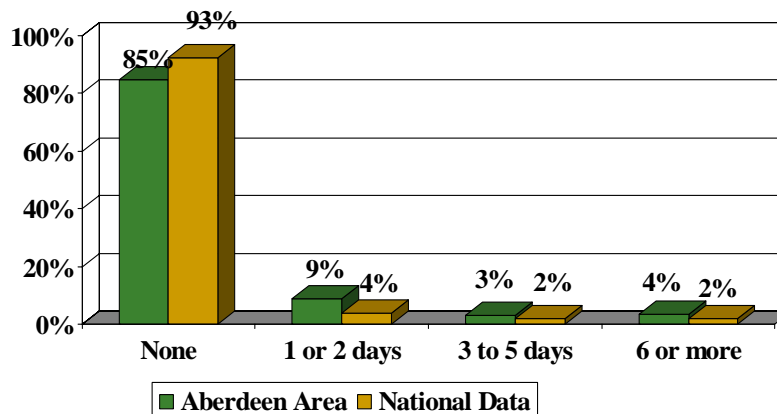


NRCNAA



47

Binge Drinking (N=1,939) (5 or more drinks on one occasion)

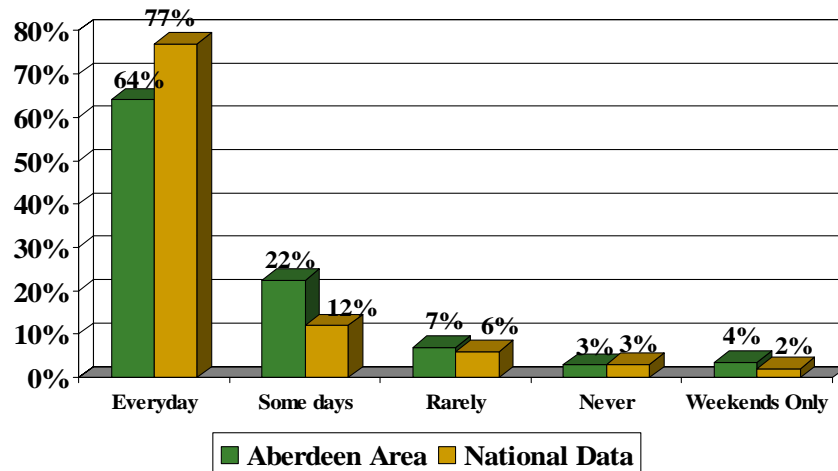


NRCNAA



48

Breakfast (N=1,939)

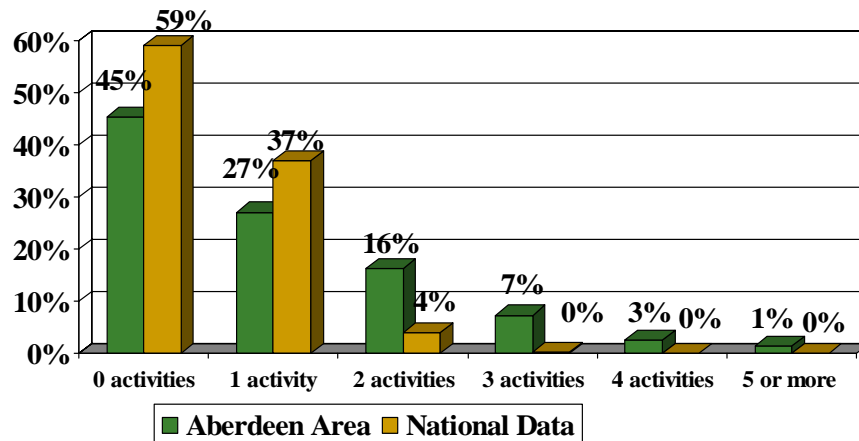


NRCNAA



49

Exercise (N=1,939)

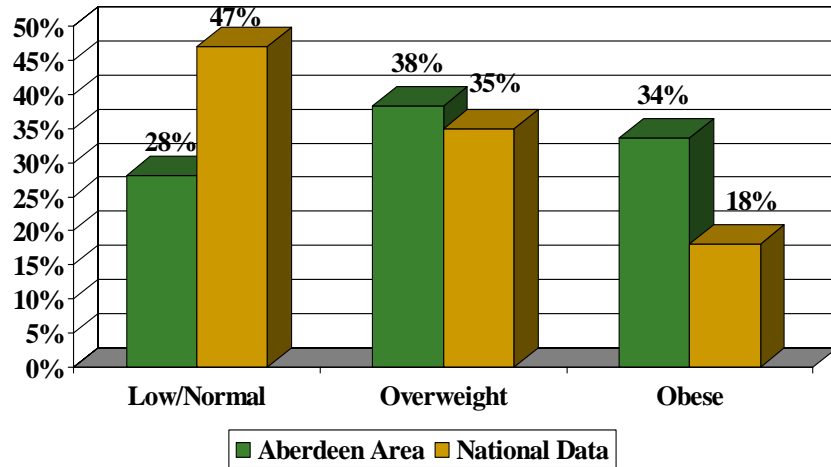


NRCNAA



50

Body Mass Index (N=1,939)



NRCNAA



51

Functional Limitations



Functional Limitations

- The majority of definitions concerning functional limitations or disability refer to activities of daily living (ADL's) and instrumental activities of daily living (IADL's) as indicators of functionality.

Activities of Daily Living (ADL's)

- Eating
- Walking
- Using the toilet
- Dressing
- Bathing
- Getting in/out of bed

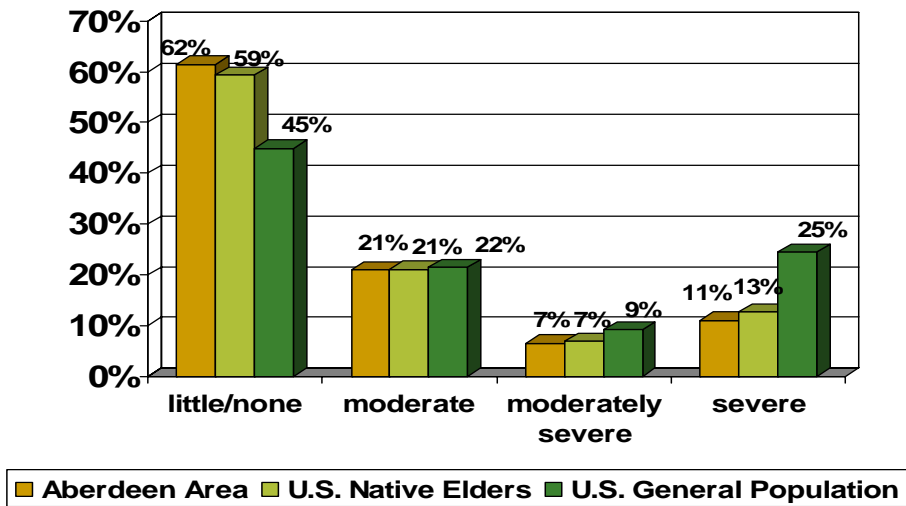
Instrumental Activities of Daily Living (IADL's)

- Cooking
- Shopping
- Managing money
- Using a telephone
- Light housework
- Heavy housework
- Getting outside

Functional Limitation Categories

Categories	Limitations	Recommended Services
Little or none	No ADL limitations, up to one IADL limitation	No Services Required
Moderate	One ADL limitation with fewer than IADLs	Home and Community Based Services
Moderately Severe	2 ADL limitations	Assisted Living
Severe	3 or more ADL limitations	Skilled Nursing Facility

Rates of Functional Limitation (N=1,939)



NRCNAA



57

Rates of Functional Limitation: Aberdeen Area Native Elderly and U.S. by Age

Functional Limitation	65-74		75-84		85 and over	
	Native American	U.S.	Native American	U.S.	Native American	U.S.
Little or none	61.5%	61.4%	49.4%	46.7%	31.0%	20.8%
Moderate	21.2%	16.6%	26.3%	23.2%	27.8%	23.5%
Moderately Severe	5.9%	6.6%	8.4%	8.5%	12.5%	13.8%
Severe	11.4%	15.4%	15.8%	21.6%	28.8%	41.9%

U.S. Data Source: 1994 National Long Term Care Study

NRCNAA



58

Life Expectancy at Birth, ages 55, 65 and 75 by IHS Area

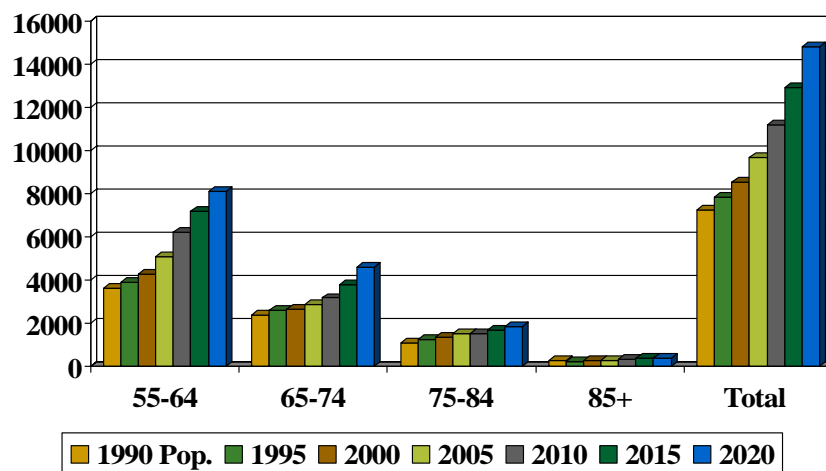
IHS Area	At Birth	At Age 55	At Age 65	At Age 75
Aberdeen	64.3	18.9	13.2	8.5
Bemidji	65.7	18.7	12.7	10.1
Billings	67.0	20.2	13.9	8.9
Alaska	68.0	21.3	14.7	9.2
Tucson	68.4	22.2	15.8	10.0
Phoenix	69.8	22.6	16.1	10.6
Portland	71.7	23.1	16.0	10.1
Navajo	71.9	24.9	17.7	11.7
Nashville	72.2	22.8	16.3	10.5
Albuquerque	72.7	25.4	19.6	12.2
Oklahoma	74.2	25.7	18.2	13.1
California	76.3	26.9	19.4	13.3
All Indians	71.1	23.5	16.7	11.2

NRCNAA



59

Aberdeen Area Native Elder Population Projections 1990-2020



NRCNAA



60

Combining Data with Population Projections

- According to our last assessment, 43% of Native Elders in the Aberdeen Area have diabetes
- 2000 Aberdeen Area Native Elders = 8,525
 $.43 \times 8,525 = 3,667$
- 2020 Aberdeen Area Native Elders = 14,838
 $.43 \times 14,838 = 6,381$

Functional Limitation Levels Applied to Services and Personnel

Level Functional Limitation	Service Goals	Services with best fit	Personnel required
Little or none (62%)	Health promotion, preventive care, maintaining vitality	No caregiver services required Health Promotion/Prevention	Health educators, physical trainers, therapists
Moderate (21%) This category represents entry level functional limitations and requires assistance usually consistent with remaining in one's home.	Supportive services to aid persons in remaining in own domicile. Train and support informal providers and buffer them with respite and contact services for a range of possible tasks.	Informal care – w/supports Chronic Disease Management Home & community based <ul style="list-style-type: none"> •Day/night care* •Durable medical* equipment •Home health care* •Homemaker services* •Physical therapy •Occupational therapy •Medication assistance* •Speech therapy •Mental health services •Transportation services* •Nutritional services* •Personal care* •Respite care* * Require local providers	Family and friends Trainer for skills Facility staff – LPN/CNA Rental source RN, LPN, CNA, PT, OT... Cleaning and chore assts. PT, PT aides, tele-health OT, OT aids, tele-health Medication aide Speech therapist Psychologist, Psychiatrist, Psych. Social Worker, Van driver Dietician, aide Trained attendants Trained respite providers or institutional site

Functional Limitation Levels Applied to Services and Personnel Cont...

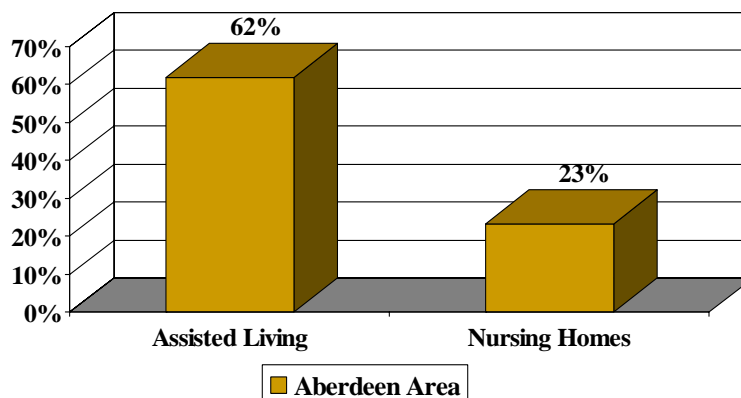
Level Functional Limitation	Service Goals	Services with best fit	Personnel required
Moderately Severe (7%)	The goal for this level of care is to provide housekeeping and meals along with a modest level of oversight. People may contact for services from the home and community based services in addition to the basic services found in these settings. Assisted living establishes the goal for this cluster in that it seeks to maintain resident control over services.	Congregate care Basic care facilities Assisted Living	Institutional staff as required by state regulations
Severe (11%) With 3 or more ADLs, this level tends to become prime candidates for skilled nursing care. They represent care needs with relatively high levels of acuity.	Skilled nursing care is the most fully institutional and is reserved for those with medical needs necessitating this level of care.	Skilled Nursing Care	Institutional staff as required by state regulations
Terminal as special category	End of life care occurs at all points on the above continuum, but is concentrated at the higher levels of limitation. The goal is physical and emotional comfort.	Hospice Care	*Hospice volunteers and coordinator

NRCNAA



63

Acceptance of Nursing Homes & Assisted Living (N=1,939)

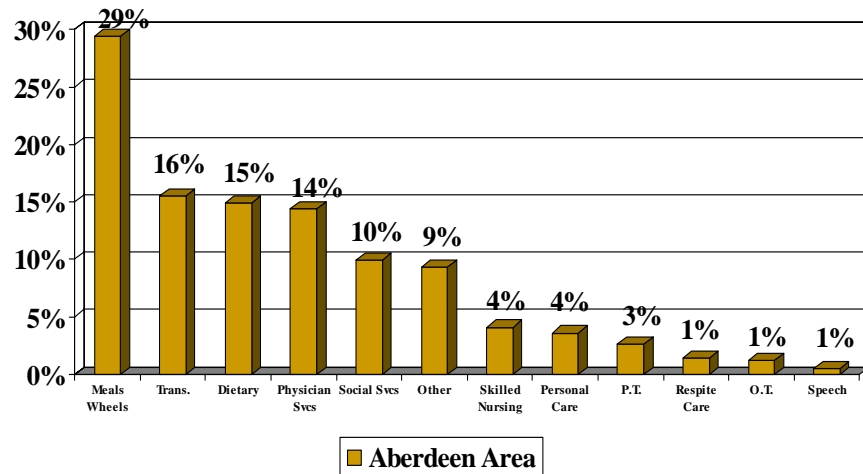


NRCNAA



64

Type of Services Utilized (N=1,939)

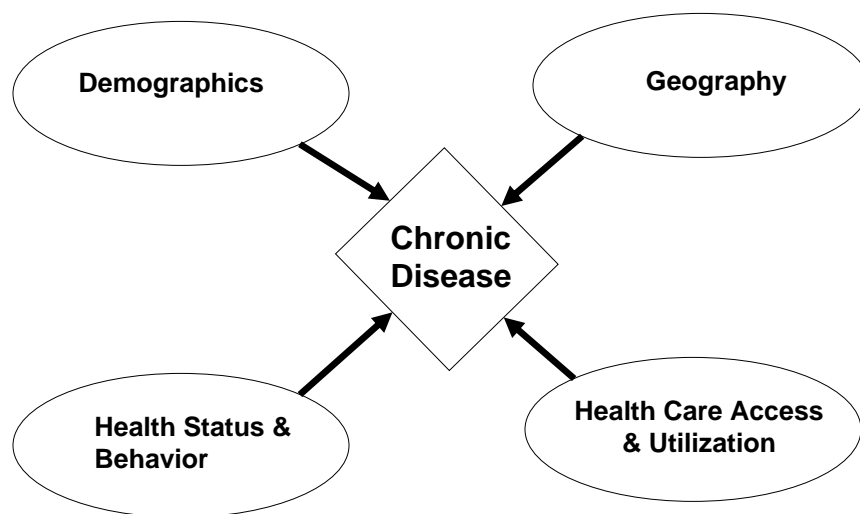


NRCNAA



65

Chronic Disease Model



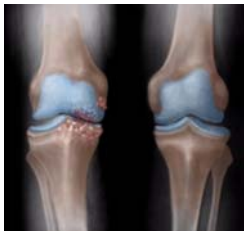
NRCNAA



66



ARTHRITIS



NRCNAA



67

ARTHRITIS

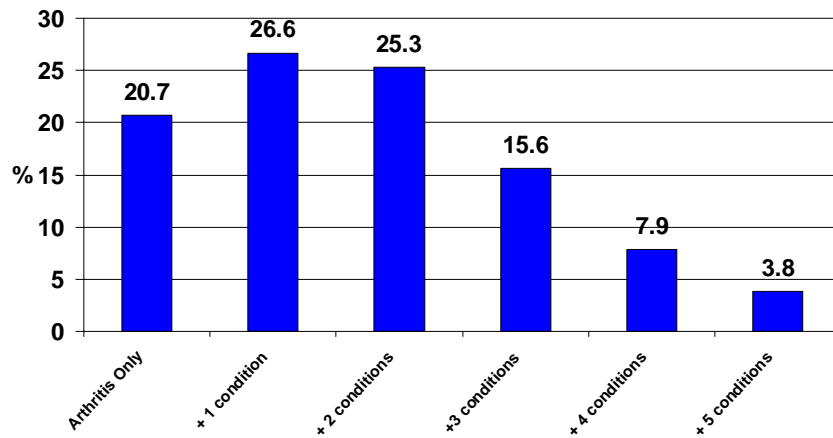
- comprising more than one-hundred different diseases and conditions
- affects nearly 70 million Americans (1 in 3 adults)
- leading cause of disability in the U.S.
- Annually, arthritis is associated with 44 million clinic visits, 744,000 hospitalizations, and 4 million days of hospital care (CDC, 2004).

NRCNAA



68

Aberdeen Elders with Arthritis & Co-morbidities (N=762)

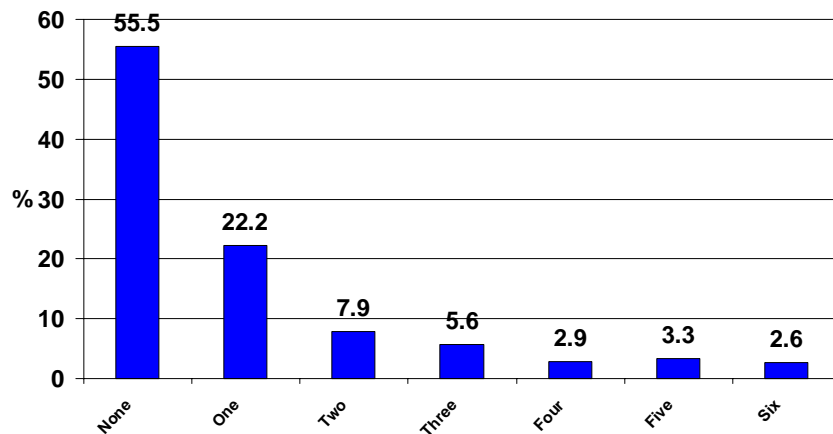


NRCNAA



69

Aberdeen Elders with Arthritis & ADL Limitations (N=762)



NRCNAA



70

Arthritis among Aberdeen Area Native Elders was most closely associated with:

- Having had a stroke
- Having asthma
- Having cataracts



DIABETES



DIABETES

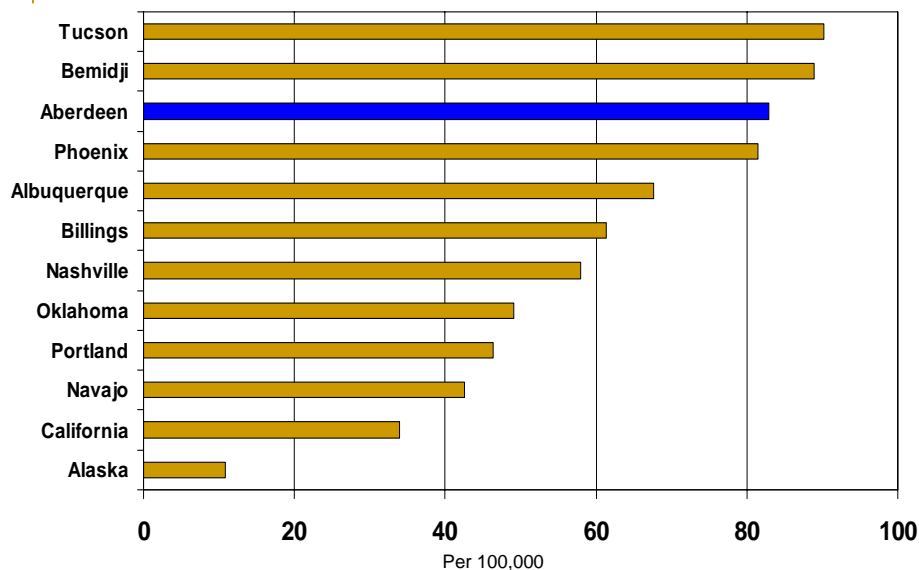
- More than 18 million Americans have diabetes
- Now the sixth leading cause of death in US
- Afflicts 1 in 5 persons over age 65
- Accounts for approx. 11% of annual U.S. health care expenditures
- Native Americans – 2-3 more likely than whites to have diabetes (CDC, 2004).

NRCNAA



73

Age-Adjusted Diabetes Mellitus Death Rates

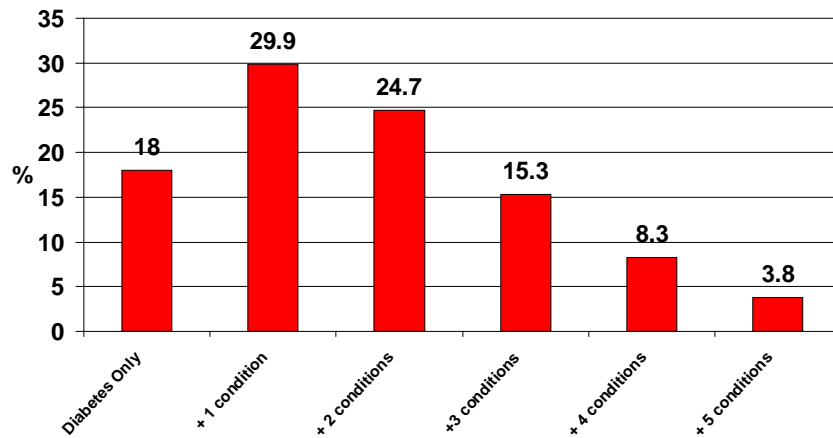


NRCNAA



74

Aberdeen Elders with Diabetes & Co-morbidities (N=712)

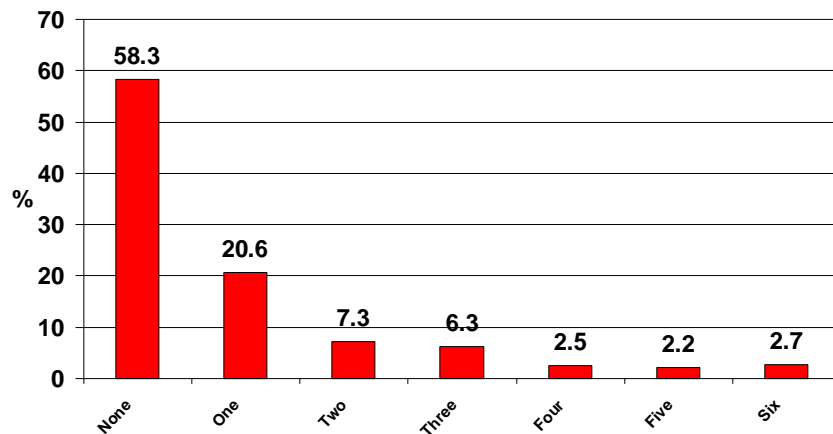


NRCNAA



75

Aberdeen Elders with Diabetes & ADL Limitations (N=712)



NRCNAA



76

Diabetes among Aberdeen Area Native Elders was most closely associated with:

- Being raised on a Reservation
- Living in a rural area
- Having congestive heart failure
- Having hypertension
- Not a current tobacco user
- Being obese

Policy Recommendations

- increase **prevention** efforts, including health promotion, screening and wellness programs
- increase **disease management** programs, including access to services and a focus on preventing co-morbidity
- increase availability of **home/community-based long term care** services in rural areas
- increase **local availability of health care** and other services in rural areas
- increase Native elders' **access to health insurance** programs, such as Medicare

Arthritis Control and Prevention

- **Increase public awareness** of arthritis as the leading cause of disability and an important public health issue
- Prevent arthritis - maintenance of good bone health through **regular exercise and proper nutrition** (calcium and vitamin D)
- Promote **early diagnosis** and **appropriate health care management** of arthritis (including pain control)
- Maintaining an **appropriate body weight** and avoiding joint injuries reduces the risk of developing arthritis and may decrease disease progression
- Ensure that elders with arthritis receive physical, mental, and emotional **support**

NRCNAA



79

Diabetes Control and Prevention

- **Increase public awareness** of diabetes as an important public health issue
- Prevent diabetes - **regular exercise, proper nutrition** and maintaining an **appropriate body weight**
- Promote **early diagnosis** and **appropriate health care management** of diabetes
- Preventable complications of diabetes include: eye disease, kidney disease, amputations, cardiovascular disease, pregnancy complications, flu/pneumonia (CDC, 2004)
- Ensure that elders with diabetes receive physical, mental, and emotional **support**

NRCNAA



80



Kyle Muus klmuus@medicine.nodak.edu
Leander R. McDonald rmcdonal@medicine.nodak.edu

National Resource Center on Native American Aging

Tel: 701-777-6780/800-896-7628

Fax: 701-777-6779

Website: <http://medicine.nodak.edu/crh>