Ionia Research

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Analysis and Report Community Health with selected data from community surveys, PHAN, BRFSS, Vital Statistics
Nebraska Department of Health and Human Services, and the U.S. Census

# Northeast Nebraska Public Health Department 

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(Counties: Cedar, Dixon, Thurston and Wayne)
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## Summary

## Introduction

This document has been prepared for the Northeast Nebraska Public Health Department using public source data, including Public Health Agencies of Nebraska (PHAN), the Behavior Risk Factor Surveillance System, Census Data, the County Health data from the University of Wisconsin Population Health Institute, and other studies available through the Nebraska Department of Health and Human Services.

The intent is to summarize trends in data and differences between the Health District (HD) and Nebraska. Observations about differences are based on reported differences within those documents or on the application of formulas to evaluate "dependent crude rates/ratios" (Crude Rate Analysis), comparing the HD rates or percents for an indicator with those of the state to determine whether or not those differences are significant. These observations are also placed in the context of other reports where appropriate. Whenever possible, county level data are included in the report.

## Demographics

The counties are not homogenous, not in race/ethnicity, nor distribution of age, income, or education.
For example:

- The proportion of the county populations under age 18 varies from $18 \%$ to $35 \%$.
- Per capita income ranges from $\$ 25,507$ to $\$ 33,056$.
- The percent living below $100 \%$ of poverty level ranges from $10.6 \%$ to $29.1 \%$.
- In one county $77 \%$ of the population were living in the same house for over a year, compared to another county with $90 \%$.
- In one county $16 \%$ of households with children are single parent households; in another it is 45\%.
- The percent of county population who have earned a BA ranges from $13 \%$ to $28 \%$.
- The percent of non-minority population ranges from $40 \%$ to $98 \%$.


## Access

Access to quality care is considered the key element in reducing health disparities and increasing the quality and years of healthy life. Indicators used to describe access include health care coverage, access to services with regard to cost, a regular primary care provider, a source of ongoing health care, and the use of clinical preventive services, such as early prenatal care.

The number of counties with shortages within the professional areas: family practice ( 4 counties have shortages); general surgery (4); internal medicine (4); pediatrics (4); obstetrics/gynecology (4); psychiatrics (4); dental (3); pharmacy (4); occupational therapy (2); physical therapy (1). Two of the counties have the federal designated shortages for professional primary care (Cedar and Dixon); four counties are federally designated for a shortage of mental health professionals.

Insurance. From the 2010 NNPHD BRFSS, one-fifth (2009, 19.9\%; 2010, 16.6\%) of respondents aged 18 to 64 years reported having no health insurance at the time of the survey. Of those, men in 2009 (20.8\%) were more likely than Nebraska men overall (16.6\%) to say they had no health insurance. County level data show a similar picture for the health district:

- $18 \%$ of those $18-64$ years were uninsured;
- $15.3 \%$ of those under 65 were uninsured.
- In numbers of persons, census data for the four county area show 3,265 of those age 18-64 ( $N=17,626$ ) are uninsured, and 3,878 of all under $65(N=25,371)$ are uninsured.

Figures for the state (2010) show about 16.5\% of those 18-64 are uninsured. Between 1995 and 2010 the proportion of those uninsured has increased $41 \%$. By age the proportion of uninsured decreases with age, from $36.6 \%$ for those 18-24 to 8.9\% for those 55-64.

By age the proportion of uninsured decreases with age; from 36.6\% for those 18-24 to 8.9\% for those 55-64.

In Healthy People 2020 insurance is a metric for Access to Health Care (having insurance and the proportion having a usual primary care provider). The 2020 Goal is to increase the proportion of persons with health/medical insurance to $100 \%$, from a baseline of $83.2 \%$ in 2008.

## Personal Health Care Provider

In the four counties served by NNPHD, the person primary care physician ratio (UW/RWJ) is higher than for Nebraska, with a range of 801:1 for Thurston County to 3133:1 in Dixon County.

The BRFSS report for NNPHD (BRFSS, 2008) shows that 18.3\% of adults in the area do not have a personal doctor or health care provider. PHAN data show that to be 20\% in 2010, 17\% in 2009 and 2008, and $20 \%$ in 2007. At some time, during a 12 months period (2008, BRFSS), nearly $10 \%$ who needed to see a doctor did not because of the potential cost of care. The 2010 BRFSS for the HD reports 7.9\% did not see a doctor because of cost (CI 5.2\%-10.5\%).

Routine Checkup. The BRFSS 2011 report shows that $58 \%$ in the HD have visited the doctor (health professional) for routine checkup within the past year. By gender that breaks out to $53 \%$ of males, $63 \%$ of females. State data are comparable, with $57.7 \%$ having a routine checkup in the past year. PHAN data show a decline from $63 \%$ in 2009 to $53 \%$ in 2010. The bottom line is that residents of the HD and the state show a decrease in routine checkups during the four year period from 2007 to 2010. In the case of NNPHD, that decrease was 8 percentage points and for the state 6 percentage points.

A Healthy 2020 goal for Access is to increase the proportion of persons with a usual primary care provider to $83.9 \%$ from a baseline of $76.3 \%$ of persons had a usual primary care provider in 2007. Based on the 2008 data, the HD (at $81.7 \%$ ) is just short of that goal.

## Physical Activity

For the HD, the proportion that meet the criteria for Vigorous exercise increased between 2007 and 2009, as did those in the category equal to moderate exercise. As expected, the proportion that engaged in No Vigorous Physical Activity decreased in the same time frames; however, this latter group comprises about one half of the HD adult population.

- Males are more likely to exercise than females, while females are more likely to engage in No Vigorous Physical Activity (Female, 61\%; Male, 41\%).
- Across the two exercise categories (moderate or vigorous), the proportions decrease with age. By age, one-third (33\%) of those 25-34 meet the recommendations for Vigorous Activity, but that decreases to one in five ( $20 \%$ ) for those $55-64$ and $15 \%$ for those $65+$.
- The None category, meanwhile, begins at $40 \%$ for those under 24 and increases to about twothirds of those over 55.

Nebraska and HP2020. Though there have been improvements in the proportion of HD residents who exercise, those are still below those for Nebraska. With reference to HP2020 goals, PA-1 is the easiest to apply here. The 2020 target is to reduce the proportion of adults who engage in no leisure-time physical activity to $32.6 \%$ from a 2008 baseline of $36.2 \%$. Both Nebraska ( $47 \%$ in 2009 ) and the HD ( $48 \%$ ) are well above that target.

## Weight

Throughout the past several years for the HD there is a decrease in the proportion of those Overweight, an increase in those at a Healthy Weight, and a slight increase in those who are Obese.

With respect to the Healthy People targets, the percent of obese and healthy weight may present considerable opportunities for improvement, depending on the goal and year selected. The HP 2020 goal is $30.6 \%$ from a US baseline of $34 \%$. Nebraska's proportion meets the healthy weight target of $33.9 \%$, and the HD falls short. The same is true is true for goal for obesity.

## Tobacco

Between 2007-2009, the proportion of current smokers in the HD is significantly higher than throughout Nebraska. In 2010, the reported statistic for the HD is significantly lower than for the state. The UW County Health Rankings estimate the prevalence at 21\%; of nearly 22,500 adults, about 5,000 are current smokers.

- Use of smokeless tobacco appears to be declining throughout the district. Through 2009, about one in ten male adults used smokeless tobacco. However, through 2009 the use of smokeless tobacco was significantly higher than in the state.
- The proportion of males who smoke (BRFSS, 2011) is significantly different than the proportion of females (Males, 21.7\%; Females, 15.5\%)
- Tobacco related deaths in the HD (86.7 per 100,000) and related hospitalizations
(130.1/100,000) are significantly lower than the state rate. Similarly, the rates for individual counties are also lower than the state rate.

Reduce tobacco use by adults. There are a number of age specific goals in HP 2020 with respect to tobacco use. For adults, the goal is to reduce cigarette smoking to $12 \%$ from $20.6 \%$ in adults aged 18 years and older. Most recent figures place usage in the HD at 21\%.

For adults the goal for smokeless tobacco products is to reduce usage to $0.3 \%$ from $2.3 \%$ of adults aged 18 years and older. The reported use in the HD for 2010 is $3.9 \%$, more than ten times the goal.

For NNPHD, the current prevalence of smoking is equal or greater than the benchmark identified in the cigarette goal; for smokeless tobacco it is equal or greater than the benchmark. Each of these goals, then, presents an opportunity for improvement.

HP 2020 goals for youth are to reduce the use of tobacco products (past month) to $21 \%$ and to reduce the use of cigarettes (past month) to $16 \%$. The proportions for the HD exceeds those two goals ( $6 \%$ reported smoking in the past 30 days)..

## Alcohol

For the HD, BRFSS data on Heaving Drinking show a modest decline over the four years from 20072010, beginning with a prevalence of $7.5 \%$ in 2007, decreasing to $5.5 \%$ in 2010.

Self-reported binge drinking across the district and across Nebraska is more prevalent than heavy drinking. Both binge drinking and heavy drinking are more common in men (e.g. binge drinking in the 2010 BRFSS: males, 25\%; females, 14\%). In the 2008 BRFSS report for NNPHD, binge drinking in the past month was reported by $22.9 \%$ of adults in this district, with men (32.8\%) significantly more likely than women (12.2\%) to report this pattern of alcohol consumption. In 2011, binge drinking was reported by $27.6 \%$ of respondents.

Goals for heavy/excessive drinking. The goal aims to reduce the proportion of adults who drank excessively in the previous 30 days to $25.3 \%$ from $28.1 \%$ of adults aged 18 years and older who drank excessively in the previous 30 days in 2008. Using the Excessive Drinking metric from the UW study, it appears that the HD meets this goal (22.4\%).

Goal for binge drinking. The HP 2020 goal is to reduce the proportion of adults engaging in binge drinking during the past month to $24.3 \%$ from $27 \%$ during the past month (baseline: 2008). Among the respondents in the 2011 BRFSS, the prevalence is about $27 \%$ ( $\mathrm{CI} 23.7 \%$ to $31.5 \%$ ), which appears slightly above the HP 2020 goal.

Youth and Perceived Risk. The HP 2020 goal is to increase the proportion of adolescents aged 12 to 17 years perceiving great risk associated with substance abuse-Consuming five or more alcoholic drinks at a single occasion once or twice a week to 44.6\%, Two items here are set at one metric. For youth in the HD:

- $44 \%$ perceive a Great Risk of harm in 5 or more drinks of alcoholic beverage once or twice weekly, equal the goal.
- However, $32.5 \%$ a Great Risk of harm in 1-2 alcoholic drinks nearly every day, which does not meet the targeted $44 \%$.


## Diabetes Prevalence

- One in ten, more than 2,900, are diabetic. In the 2008 BRFSS, the proportion for the HD was $6 \%$, and in 2011 it increased to 10.6\%.
- In 2010 the range per county is from $7 \%$ in Wayne to $14 \%$ in Thurston.
- Except for Wayne, all counties have a proportion of diabetes greater than that in Nebraska.

Deaths. The rate for diabetes related deaths in the HD is higher than that of the state (PHAN, 20052009: HD, 93.5 per 100,000; NE is 81.2). The state rate is $23 \%$ higher than the HP 2020 goal of 65.8 per 100,000; the HD rate is $42 \%$ higher than the goal.

## Cardiovascular

Over the six years from 2005 to 2011 Deaths have decreased across the three cardiovascular diseases. For the HD, deaths due to Heart Disease (Age Adjusted Rates) dropped from 213.9 in 2005 to 147.1 in 2010. For Coronary Heart Disease, the decrease was from 118.5 in 2005 to 85.7 in 2010. Deaths are higher for the HD when compared to the state. Though the deaths due to stroke are more variable for the HD, there is a consistent decrease in the state rate.

The HP 2020 target is to reduce coronary heart disease deaths to 100.8 deaths per 100,000 population. The baseline is 126.0 coronary heart disease deaths per 100,000 population occurred in 2007 . Both the HD and the state have better rates than the target.

A related goal is to increase the proportion of adults aged 20 years and older who are aware of, and respond to, early warning symptoms and signs of a heart attack to $46.2 \%$ from $42 \%$ (a benchmark in 2008). That is not tracked in the data available.

Stroke. The HP 2020 goal for stoke deaths is to reduce stroke deaths to 33.8 deaths per 100,000 population from 42.2 stroke deaths per 100,000 population (2007, age adjusted to the year 2000 standard population). The rates for stroke deaths for the state and the HD do not meet that target, and the HD rate is $29 \%$ over the target.

## Cholesterol Prevalence and Testing

The percent of those in the HD who have Ever had their cholesterol tested is below that of the state, both in 2007 and 2009 (significantly in 2009). Testing increases with age in the HD and the state. For those $25-34$, about half (HD, $56 \%$ ) are tested, increasing steadily across age categories and reading $93 \%$ in those 65 and older. Increases across income are more gradual, starting at $70 \%$ for those with less than \$15,000 household income to $79 \%$ (NE, $84 \%$ ) for those earning $\$ 50,000+$.

Of those Ever tested, $80 \%$ were tested within the past two years, and $95 \%$ were tested within the past five years. The HP 2020 goal, however, is to Increase the proportion of adults who have had their blood cholesterol checked within the preceding 5 years to $82.1 \%$ from $74.6 \%$ of adults aged 18 years and older. In 2009 Nebraska met that goal, but in 2011 fell short. Note that screening dropped in 2011 for both the HD and for the state.

## Blood Pressure

The HP2020 goal for blood pressure is to reduce the proportion of adults with hypertension to $26.9 \%$ from $29.9 \%$ of adults aged 18 years and older, based on the proportions measured nationally in 200508. Both the HD and the state failed to meet that goal in the years 2009 and 2011.

## Asthma

A review of PHAN data included these findings:

- Emergency room visits (Code \# 1.1.9.u) were significantly lower for the HD compared to the state, while inpatient discharges were significantly lower than the state.
- The average annual death rate due to asthma for the HD was not significantly different from that of the state.
- The average annual death rate due to COPD for the HD was not significantly different from that of the state.


## Cancer Screening

## Prostate

Vital Statistics reports for Nebraska (PHAN) show that for the years 2005 through 2008 the HD rate of deaths is below that of the state. For 2009 and 2010 the Nebraska rates were lower than those of the HD.

With respect to deaths, the HP 2020 goal is to reduce the prostate cancer death rate to 21.2 deaths per 100,000 males from 23.5 prostate cancer deaths per 100,000 males occurred in 2007. Rates for Nebraska exceeded that goal in 2010, while rates for the HD did not.

HP 2020 Goals related to screening for prostate cancer are in the developmental stage. Overall, about two-thirds of males in the HD have Ever had a digital rectal exam, lower than the proportion for Nebraska. In 2008 and 2010, fewer than half of males age 40+ reported having had a PSA in the past two years, while just over half of that group in Nebraska had the PSA in the past two years.

## Colorectal

On the 2003-2007 PHAN report, two counties fall below the state death rate of 56.2 (Cedar and Dixon, 34 each), and two are above (Wayne, 60.4; Thurston, 72.1). For individual years (Table below) the HD has a lower rate than the state between 2005 and 2008, but it is higher in 2009-2010. Both are higher than the HP 2020 goal which is to reduce the colorectal cancer death rate to 14.5 deaths per 100,000 population (baseline, 17 in 2007).

Goal. HP 2020 set a target of $70.5 \%$ for the proportion of adults who receive a colorectal cancer screening based on the most recent guidelines. The baseline is $54.2 \%$ of adults aged 50 to 75 years. This is difficult to measure with public data because of the three different types of screening available (with no set timeframe). BRFSS data show about half of men aged 50 and older have Ever had either a Sigmoidoscopy or colonoscopy. Though both the HD and the state showed increases from 2008 to 2010, the HD proportion is significantly lower than that of the state. Screenings within the HD increase with education (about $50 \%$ for those with less than a HS degree to $60 \%$ for those with a college degree).

## Pap Tests

The HP2020 goal is to increase the proportion of women who receive a cervical cancer screening based on the most recent guidelines to $93 \%$ from $84.5 \%$ of women aged 21 to 65 years (national benchmark, 2008).

In the HD, four in five ( $83 \%$ in 2010) women respondents 18 and over had a pap test within the past three years. By age that varies from $89 \%$ for those $25-34$ to $59 \%$ for those 65+.

- Of those $25-34,93 \%$ have had a pap test within the past 3 years, which meets the HP 2020 goal.

For those over thirty, the parameter shifts to every five years. For women in the HD:

- 35-44: $91.4 \%$ have had a pap test within the past five years (short of the goal).
- 45-54: $87 \%$ have had a pap test within the past five years (also short).
- 55-64: 80.4\% reported having had a pap test within the past five years (again, short of the goal).

An indicator of declining participation in screening is that the percent who reported having a test five or more years ago increased from 13.9\% in 2007 to 17.7\% in 2010.

## Mammogram

The HP2020 goal, for women aged 50 to 74, is to increase the proportion of women who receive a breast cancer screening based on the most recent guidelines to $81.1 \%$ from $73.7 \%$ of years received a breast cancer screening based on the most recent guidelines in 2008.

The proportion for Nebraska in 2010 is $71.5 \%$. It increases with education and income for women who are 50+ years and women who are 40+ years. For the HD, the proportion of women 50+ decreased from 2008 to 2010 from $74 \%$ to $69 \%$. For women $40+$ and women $50+$ the proportions that participate in breast cancer screening are not different from women throughout the state. With respect to mammograms, however, both the HD and the state are significantly lower than the target of 81.1\%.

## Infant Death

Infant Death. In HP 2020, the baseline for infant death (in the first year of life) is 6.7 per 1,000 from 2006. The new target is 6.0 infant deaths per 1,000 live births. This is higher than the 2010 MCH objectives for both Nebraska and the United States, which was to reduce the infant mortality rate to no more than 4.5 infant deaths per 1,000 live births.

- The Infant mortality rate for the HD is 6.91, higher than the HP 2020 target of 6.0 and the state rate of 5.75 .
- The percent of mothers in the HD who receive first trimester prenatal care is $70.6 \%$, which is comparable to the state percent (73.23\%) but below the HP 2020 target of $77.9 \%$.
- The percent of low birth weights (LBW) 5.61\%, which is comparable to the state rate of $7.07 \%$ and below the HP 202 target of $7.8 \%$ (NE 2010, 5\%). In 2010 alone the percent was $4.93 \%$, lower than the state percent of $7.11 \%$.
- Incidence of preterm births for the HD (7.25\%) is comparable to the state rate (9.75\%), and it is below the HP 2020 target of 11.4\%.
- The incidence of birth defects (25.8, here it is the average rate per 1,000 live births and fetal deaths) for the HD is significantly lower than that of the state (50.2). +


## Negative Comparisons

- Neural tube defects are birth defects of the brain and spinal cord, with the most common defects being spina bifida and anencephaly. The rate reported here represents the average incidence of neural defects per 1,000 live births and fetal deaths from 2004-2008. The rate for the HD (HD, 0.4; NE, 1) is comparable to the state rate. Both are higher than the target of $\mathbf{2 8}$ per 1,000.
- For SIDS, the HD rate $(1.3 / 1000)$ is more than two times the target (.5/1000).


## Teenage births

- Teenage births as a percent of total births is significantly higher for the HD (10.32\% 2005-2009) when compared to the state (8.35\%).
- On an annual basis (2005-2010), teenage births as a percentage of total births are significantly higher than the state percentage. The percent has steadily increased from 2008 (8.3\%) to 2010 (12.1\%).


## Immunizations

An analysis of PHAN data for 2007-2008, however, shows that the rate of hospitalization for pneumonia in the HD is not significantly different than that of the state (HD, 219.3; NE, 242.1). For individual counties, however, the rates vary from Cedar (76.3) and Dixon (144.7) at the low end to Wayne (289.6) and Thurston (514.3).

The rate of hospitalizations for influenza in the HD are also not significantly different from those for the state (HD, 13.3; NE, 14). Those range from Dixon (23.4) to Wayne (17.3; Cedar NA).

- Influenza Vaccinations. Over the same period (2007-2010), the HD has a lower rate of vaccinations for influenza for each of the past four years (all ages), with differences of 3\% in 2007 and $7 \%$ in 2010, an average of $6 \%$ over the period. For those 65+, about two thirds (2009, $66.6 \%$ ) are vaccinated, lower than $74 \%$ across the state. The proportions by Age for the HD range from $19 \%$ for those $18-24,33 \%$ for $25-34,43 \%$ for $55-64$, and $66 \%$ for those $65+$.
- The HP 2020 goal for adults 18-64 and for adults 65+ is $90 \%$; consequently, both the HD and the state fall far short of that goal.

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## Falls

The proportion of those injured as a result of falls in the HD (2008, 34\%; 2010, 32\%) was higher than comparable proportion in Nebraska.

Statewide:

- 2008: $18.7 \%$ of the sample reported falls. Of those who fell, $28.5 \%$ reported injury.
- 2010: 17.8\% of the sample reported falls. Of those, $29.1 \%$ reported an injury.

In the Health District.

- 2008: 19.2\% of the sample reported falls. Of those who fell, $32.7 \%$ reported injury.
- 2010: 16.5\% of the sample reported falls. Of those, $32.4 \%$ reported an injury.


## Safety Belts

HP 2020 Goals. The HP 2020 goal is to increase use of safety belts to $92.4 \%$ from $84 \%$ of motor vehicle drivers and passengers (a 2009 benchmark). In the health district the percent who used seat/safety belts increased from 82.4\% in 2008 (NE, 87.5\%) to 85.6 in 2010 (NE, 88.9\%). The HD percent is lower than that of the state and both are lower (do not meet) the 2020 target.

## Motor Vehicle Deaths

The role of Seat Belt usage and its potential to save lives in motor vehicle crashes is noted above. The HP 2020 goal is to reduce motor vehicle crash-related deaths to 12.4 deaths per 100,000 population from a baseline: 13.8 deaths per 100,000 population (2007). The adjacent table shows that Nebraska has met that goal in 2010, but that for most of the years the HD is well above that goal. Within counties (20052009), Dixon (31) and Thurston (25.5) have the highest rates, while Wayne has the lowest (10.2).

## Suicide

In 2009, suicide was ranked as the 10th leading cause of death among persons ages 10 years and older, accounting for 36,891 deaths. Using 2010 rates (PHAN Vital Statistics Report), suicide ranks $14^{\text {th }}$ as a cause of death in the HD, $15^{\text {th }}$ in Nebraska.

For Healthy Nebraska the 2010 target was to reduce the deaths due to suicide to no more than 4.8 deaths per 100,000 population. The HP 2020 Goal is 10.2 , based on a $10 \%$ improvement of the 2007 baseline of $11.3 / 100,000$. According to PHAN data, the HD rate of suicide is the statistically the same as that of the state, while the rates for inpatient and outpatient hospitalization for self-inflicted injury (2007-2008) are significantly lower than that of the state. Those data conflict with what PHAN has published online for individual years from 2005-2010; those year by year are higher. These are included here, however, because they show variation between counties, with Wayne and Thurston having higher rates and Cedar and Dixon much lower rates. Looking at the year-by-year report, however, shows that for each of the years between 2008 and 2010, the rates of suicide for the health district are about 70\% higher than those for the state.

## Quality of Life Data

PHAN reports include responses to questions about Quality of Life. In Healthy People reports, this term is described generally in relation to various health indicators, without specific data. This type of question is used by the CDC in the BRFSS and data from these responses are also used by the UW in calculating Healthy County rankings.

General Health. In the second table, one in ten respondents in the HD (approximately 2564 individuals) report a negative or risky health status. Even though the percentages for Fair/Poor are lower for three counties, the overall (with $16.7 \%$ for Thurston County) make the HD Health Status for that period significantly below/better than that of the state.

Environmental Indicators.

- Only Wayne County has better access to healthy foods when compared to the state (UW). Onethird of Dixon County has limited access to healthy foods, compared to $7 \%$ in Nebraska.
- Nitrate levels in community water systems are significantly higher than those for Nebraska.
- The percent of HD residents receiving 'optimally fluoridated water' is significantly below that of the state.
- Radon Testing. According to HD reports, just over 2250 households have been tested for Radon, $20 \%$ of the total households in the HD. In the four counties, the HD reports 21 cases where mitigation was implemented.


## Oral health

The HP 2020 goal ( $\mathrm{OH}-7$ ) is to Increase the proportion of children, adolescents, and adults who used the oral health care system (dentist or dental clinic) in the past 12 months to $49.0 \%$ from the baseline of $44.5 \%$ of persons aged 2 years and older. Though the proportions in the table for the state and the HD are significantly higher, those data are for adults only. had a dental visit in the past 12 months in 2007. Data from the 2010 YRBS show that $75 \%$ of youth in Nebraska visited a dentist within the past 12 months.

On average, the percent of adults in the HD 65 to 74 who have had all of their permanent teeth extracted is $19.7 \%$, significantly higher than for the state ( $13.5 \%, 2008$ ). Both, however, exceed the goal HP 2020 goal ( $\mathrm{OH}-4.2$ ) which is to reduce the proportion of older adults aged 65 to 74 years who have lost all of their natural teeth to $21.6 \%$ from a baseline of $24.0 \%$. Though the percent of adults age 35-44 with no extractions is not related to HP 2020 goals, PHAN includes that in its reports. For the HD 61.5\% of that age group have no extractions, which is significantly lower than the percent reported across the state (72.7\%)

## Demographics

Many of the factors included here are commonly used in 'ratings' studies and in data that are related to health (for example, the University of Wisconsin Health Institute (UW), ${ }^{1}$ or public health agencies of Nebraska). The UW annually publishes 'county health rankings' that are based on multiple sources, including a selection of demographic variables such as poverty, income, education, and household/family when observing health trends or healthy behaviors. PHAN provides
 similar data in spreadsheets and online. When the UW uses demographics, it weighs them in a formula that produces rankings: Health Behaviors (30\%), Clinical Care (20\%), Social and Economic Environment (40\%), and Physical Environment (10\%).

Throughout this report, the data sources used may vary, for example, sometimes using the US Census and at others PHAN. For example, PHAN or UW report the 2010 population at 31,206, while the most recent Census data report it at 31,387. The choice of data used depends on consistency; birth or incidence reports may be referenced to PHAN or UW, for example.

## Northeast Nebraska Public Health District

District comprises $2.67 \%$ of state land mass ( 2,049 square miles), but only $1.7 \%$ of its population. The counties are rural, with an average population density of 15 persons per square mile (Nebraska, 23.6). Some of the nearby counties nearby are more densely populated (Madison, 62; Dakota, 79.5), some less (Knox, 7.9). Cedar is the geographically largest county, $56 \%$ larger than Dixon, 89\% larger than Thurston, and $67 \%$ greater mass than Wayne.


## Population Distribution

[^1]- The population of Wayne County equals on third (31\%) of the district population, while Dixon is one fifth (19\%).
- Cedar County holds $28 \%$ of the District population and $36 \%$ of the district area ( 740 square miles). It is the least densely populated county in the district (11.3 persons per sq. mi.)


## Gender and Age

- Gender is divided equally in the district (Male, 50.1\%; Female, 49.9\%) and within each county.
- Overall, three fourths (74\%) of the population in the district is 18 and over, ranging from $65 \%$ in Thurston to $81 \%$ in Wayne.
- Thurston County has the lowest proportion 65 and older (12\%) compared to 20\% in Cedar County ((NE, 14\%).
- Wayne and Thurston County have the lowest
 median age, 29 years, compared to 44 in Cedar County (NE, 36).
- Wayne County has the largest cluster in the 15-24 group (30\%), Dixon includes $8 \%$; the health district $18 \%$, and the state $14 \%$.
- The largest cluster for Thurston is 45-64 (22\%). Similarly, for Cedar and Dixon Counties, and for the state, the largest age cluster is 45-64.
- The largest difference in proportion between the health district and the state is in the 25-44 category (HD, 20\%; NE, 26\%).
- One in twenty (4\%) of Cedar County's residents is over the age of 85.
- Nebraska population increased 6\% between 2000 and 2010. For the same period, HD Population has declined between $4.7 \%$, with a range from $-2.2 \%$ in Wayne to $-7.6 \%$ in Cedar.



Table 1. Population Distribution by Age/County.

| Age | Cedar |  | Dixon |  | Thurston |  | Wayne |  | HD |  | Nebraska |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0-4 | 610 | 6.9\% | 399 | 6.7\% | 737 | 10.6\% | 520 | 5.4\% | 2266 | 7.2\% | 131908 | 7.2\% |
| 5-14 | 1210 | 13.7\% | 860 | 14.3\% | 1368 | 19.7\% | 1001 | 10.4\% | 4439 | 14.1\% | 251634 | 13.8\% |
| 15-24 | 980 | 11.1\% | 672 | 11.2\% | 1034 | 14.9\% | 2855 | 29.8\% | 5541 | 17.7\% | 258206 | 14.1\% |
| 25-44 | 1689 | 19.1\% | 1278 | 21.3\% | 1448 | 20.9\% | 1779 | 18.5\% | 6194 | 19.7\% | 466014 | 25.5\% |
| 45-64 | 2559 | 28.9\% | 1721 | 28.7\% | 1528 | 22.0\% | 2125 | 22.1\% | 7933 | 25.3\% | 471902 | 25.8\% |
| 65-74 | 758 | 8.6\% | 499 | 8.3\% | 391 | 5.6\% | 610 | 6.4\% | 2258 | 7.2\% | 123126 | 6.7\% |
| 75-84 | 701 | 7.9\% | 371 | 6.2\% | 324 | 4.7\% | 489 | 5.1\% | 1885 | 6.0\% | 84243 | 4.6\% |
| 85+ | 345 | 3.9\% | 200 | 3.3\% | 110 | 1.6\% | 216 | 2.3\% | 871 | 2.8\% | 39308 | 2.2\% |
|  | 8852 | 100.0\% | 6000 | 100.0\% | 6940 | 100.0\% | 9595 | 100.0\% | 31387 | 100.0\% | 1826341 | 100.0\% |
| 18 yrs + | 6,602 | 74.6\% | 4,463 | 74.4\% | 4,473 | 64.5\% | 7,733 | 80.6\% | 23271 | 74.1\% | 1,367,120 | 74.9\% |
| 65 yrs + | 1,804 | 20.4\% | 1,070 | 17.8\% | 825 | 11.9\% | 1,315 | 13.7\% | 5014 | 16.0\% | 246,677 | 13.5\% |

## Income

Household and Per Capita income for throughout the counties of the HD are below that of Nebraska, as presented in PHAN data. From the data here, per capita income is highest in Cedar County, and this is consistent with other sources (Bureau of Economic Analysis, for example).



Table 2. PHAN Income Data

|  | Per capita personal <br> income (PHAN, <br> 2007) | Median household <br> income (2008) | Median <br> Household <br> Income (2010) | Pct Change |
| :--- | :---: | :---: | :---: | :---: |
| Cedar | 33,056 | 43,199 | 40,497 | $-6.3 \%$ |
| Dixon | 32,742 | 43,715 | 42,388 | $-3.0 \%$ |
| Thurston | 25,507 | 35,638 | 39,048 | $9.6 \%$ |
| Wayne | 29,370 | 44,117 | 45,000 | $2.0 \%$ |
| HD | 30,160 | 41,836 | NA | NA |
| NE | 36,372 | 49,993 | 49,342 | $-1.3 \%$ |

The adjacent household income chart shows the distribution of household income within the state and in the HD. Within those categories of income, the HD has greater proportions of its household income in the lower categories, from $\$ 10,000$ up to \$75,000. After that, Nebraska has greater proportions of income. (The table in the Appendix includes county level data.) For example, $20 \%$ of the households in the HD report income of more than $\$ 75,000$, and $22 \%$ earn between $\$ 50,000$ and $\$ 75,000$. By comparison, $29 \%$ of those in Nebraska earn more than $\$ 75,000$, and $21 \%$ earn between \$50,000 and \$75,000.

Household Income \& Benefits 2010


Table 3. How Many Hours Per Week Do You Work

| Age Group |  | $\mathbf{1 - 9}$ <br> hours | $\mathbf{1 0 - 1 9}$ <br> hours | $\mathbf{2 0 - 2 9}$ <br> hours | $\mathbf{3 0 - 3 9}$ <br> hours | $\mathbf{4 0 - 4 9}$ <br> hours | $\mathbf{5 0 +}$ <br> hours | Don't <br> know <br> Not Sure | Zero <br> (none) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $18-24$ | $\%$ | $* *$ | $* *$ | $* *$ | $* *$ | $* *$ | $* *$ | $* *$ | $* *$ |
| $25-34$ | $\%$ | . | 0.6 | 2.1 | 4.3 | $54.9 *$ | $38.1 *$ | . |  |
| $35-44$ | $\%$ | 0.7 | 1.6 | 4.3 | 10.1 | 38.6 | 43.4 | 1.2 | . |
| $45-54$ | $\%$ | 0.7 | 1 | 2.7 | 8.7 | 43.1 | 41.5 | 2.2 | . |
| $55-64$ | $\%$ | 3.5 | 1 | 6.1 | 7.7 | 33.5 | 46.4 | 1.2 | 0.6 |
| $65+$ | $\%$ | 7.6 | 13.8 | 12.7 | 8.9 | 19 | $30.8 *$ | 6.3 | 0.9 |

*Use this percentage with caution due to an exceptionally large $95 \%$ CI range (one or both sides of the CI range is greater than 10 percentage points).

BRFSS tracks work schedules for demographic purposes and as indicators of stress. From their tables, of the (HD) workers between 25 and 65 , at least two of five work more than 50 hours per week. Of those $65+, 57 \%$ work at least 40 hours per week, and one third ( $38 \%$ ) work 50 or more hours per week.
For individual counties, the median wage for female, full-time employees ranges between $73 \%$ (Cedar) and $87 \%$ (Thurston) of the male counterparts (NE, 76\%).

## Poverty Level

The adjacent chart shows the percent of selected categories which are below $100 \%$ poverty level. [The Census Bureau uses a set of money income thresholds that vary by family size and composition to determine who is in poverty. If a family's total income is less than the family's threshold, then that family and every individual in it is considered in poverty. For example, the poverty level for 2 people, no children, \$14657.].

Poverty rates for the district are higher than those for the state, with extremes of poverty in two of the counties in the district.

In 2008, The percent of population living below $100 \%$ poverty in Nebraska is $10.8 \%$. That has increased to $11.8 \%$. In the HD, the comparable figure in 2008 was $14.4 \%$ below poverty. In the individual counties that ranged from $8.6 \%$ in Cedar County to $28.2 \%$ in Thurston County.


- By age, poverty rates for children 5-17 are generally higher than for all of the population: HD, all = 14.4; children 5-17= 17.3.
- Using all families with children under 18, the percent in poverty for Nebraska is estimated to be $13 \%$; while for Cedar county the estimate is just under $10 \%$, that increases to $22 \%$ for Wayne County and 33\% for Thurston County.
- Poverty rates have increased.
- Marital status. The group with the highest poverty estimate is Families with a female head of household, with children under 18 years. In Nebraska, about one third fall into this category, and in the counties of the district, to two-thirds in Wayne County. In the four counties, poverty rates among this group are above that of the state

Table 4. Percentage of families and people whose income in the past 12 months is below the poverty level

| All Families | Cedar | Dixon | Thurston | Wayne | Nebraska |
| :--- | :---: | :---: | :---: | :---: | :---: |
|  | $6.90 \%$ | $8.00 \%$ | $21.30 \%$ | $11.30 \%$ | $7.90 \%$ |
| Married couple families | $5.30 \%$ | $3.90 \%$ | $7.20 \%$ | $2.20 \%$ | $3.70 \%$ |
| All families w/children <18 | $9.50 \%$ | $13.10 \%$ | $32.70 \%$ | $22.30 \%$ | $13.00 \%$ |
| Families with female householder, no husband <br> present, with related children under 18 years | $43.40 \%$ | $35.50 \%$ | $53.40 \%$ | $67.20 \%$ | $36.90 \%$ |
| All people | $10.60 \%$ | $10.30 \%$ | $29.10 \%$ | $15.70 \%$ | $11.80 \%$ |
| $\mathbf{1 8}$ years and over | $10.60 \%$ | $8.80 \%$ | $21.90 \%$ | $13.80 \%$ | $10.60 \%$ |
| All People Under 18 | $10.40 \%$ | $14.20 \%$ | $41.90 \%$ | $22.10 \%$ | $15.50 \%$ |
|  |  |  |  |  |  |


|  | Cedar | Dixon | Thurston | Wayne | HD | Nebraska |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| Percent of population below 100\% of poverty <br> (2008) | 8.6 | 10.1 | 28.2 | 12.1 | 14.4 | 10.8 |
| $\mathbf{1 9 9 9}$ | 9.1 | 10 | 25.6 | 14.5 | NA | 11.1 |
| Percent of children age $\mathbf{5 - 1 7}$ living below 100\% of <br> poverty (2008) | 10.6 | 11.7 | 39.7 | 10 | 17.3 | 11.7 |
| 1999 | 11.4 | 11.2 | 32.2 | 8.8 | NA | 9.7 |

## Households

In 2011 there were 724,000 households in Nebraska. The average household size was 2.5 people.

Families made up 65\% of the households in Nebraska. This figure includes both married-couple families (51\%) and other families (14\%). Of other families, $6 \%$ are female householder families with no husband present and own children under 18 years. Nonfamily households made up $35 \%$ of all households in Nebraska. Most of the nonfamily households were people living alone, but some were composed of people living in households in which no one was related to the householder.

In Nebraska, $32 \%$ of all households have one or more people under the age of $18 ; 24 \%$ of all households have one or more people 65 years and over.

In 2011, 83\% of the people at least one year old living in Nebraska were living in the same residence one year earlier.

Table 5. Household Mobility

|  | Cedar | Dixon | Thurston | Wayne | HD | NE |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Population 1 year and over | 8,800 | 5,929 | 6,808 | 9,392 | 30929 | 1,772,938 |
| Same house | 89.4\% | 90.3\% | 87.4\% | 76.6\% | 85.2\% | 82.6\% |
| Different house in the U.S. | 10.4\% | 9.7\% | 12.6\% | 22.8\% | 14.5\% | 16.9\% |
| Same county | 4.5\% | 3.9\% | 8.0\% | 9.8\% | 6.8\% | 10.3\% |
| Different county | 6.0\% | 5.8\% | 4.6\% | 13.0\% | 7.8\% | 6.6\% |
| Same state | 4.5\% | 3.4\% | 1.2\% | 10.1\% | 5.3\% | 3.7\% |
| Different state | 1.4\% | 2.4\% | 3.3\% | 2.9\% | 2.5\% | 2.9\% |
| Abroad | 0.2\% | 0.0\% | 0.0\% | 0.6\% | 0.2\% | 0.4\% |

## District Households

- 68\% are Family Households, ranging from 61\% in Wayne County to 75\% in Thurston County (NE, 65\%).
- In the district, 32\% are Nonfamily households, with 25\% in Thurston, 39\% in Wayne, 35\% in Nebraska. to .
- About one fourth (26\%) of households in the district have children under the age of 18. Of these, about 3\% are relatives (not their own children) and
 nonrelatives.
- Many family households also include children over 18 years of age. The results are a little confusing, but 29\% of the households in the district are Family Households with their own children (including those over 18), with a range of $26 \%$ in Wayne County to $36 \%$ in Thurston County.
- Husband and Wife family households constitute $56 \%$ of households in the health district, and $22 \%$ of households where a husband/wife/child are present.
- $\quad$ Single parent households with children account for $7.2 \%$ of all households.

Table 6. Children in Households (Own, Relatives, Non-relatives).

| Children in HH | Cedar |  | Dixon |  | Thurston |  | Wayne |  | District |  | Nebraska |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Tot Pop. In households | 8,708 | 98.4 | 5,919 | 98.7 | 6,882 | 99.2 | 8,333 | 86.8 | 29842 | 95.1\% | 1,775,176 | 97.2 |
| Child | 2,628 | 29.7 | 1,743 | 29.1 | 2,386 | 34.4 | 2,115 | 22 | 8872 | 28.3\% | 519,519 | 28.4 |
| Own child under 18 years | 2,167 | 24.5 | 1,407 | 23.5 | 1,790 | 25.8 | 1,778 | 18.5 | 7142 | 22.8\% | 420,081 | 23 |
| NONRELATIVES Under 18 years | 14 | 0.2 | 44 | 0.7 | 46 | 0.7 | 31 | 0.3 | 135 | 0.4\% | 8,511 | 0.5 |
| OTHER RELATIVES Under 18 years | 67 | 0.8 | 86 | 1.4 | 630 | 9.1 | 52 | 0.5 | 835 | 2.7\% | 28,316 | 1.6 |
| Children in HH | 2,248 | 26 | 1,537 | 26 | 2,466 | 36 | 1,861 | 19 | 8,112 | 0 | 456,908 | 25 |
| Number of women 15-50 years old who had a birth in the past 12 months (Census, 2010) |  |  | $\begin{gathered} \text { Cedar } \\ (\mathrm{N}=126) \end{gathered}$ |  | $\begin{gathered} \text { Dixon } \\ (\mathrm{N}=81) \\ \hline \end{gathered}$ |  | Thurston (N=79) | $\begin{aligned} & \text { Wayne } \\ & \text { (N=193) } \end{aligned}$ |  | $\begin{gathered} \begin{array}{c} H D \\ (N=479) \end{array} \end{gathered}$ | Nebraska |  |
| N |  |  | 126 |  | 81 |  | 79 | 193 |  | 479 | 28,898 |  |
| Unmarried women (widowed, divorced, and never married) who have given birth in the past 12 months |  |  | 14\% |  | 44\% |  | 57\% | 40\% |  | 37\% | 29\% |  |

- 446 grandparents are living with grandchildren of their own. Of those $70 \%$ are responsible for those grandchildren, and have been from 1-5 or more years.
- $37 \%$ of the women (ages $15-50$ ) who gave birth within the past 12 months were unmarried.


Table 7. Marital Status

| MARITAL STATUS | Cedar |  | Dixon |  | Thurston |  | Wayne |  | Health District |  | Nebraska |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Est. | Pct. | Est. | Pct. | Est. | Pct. | Est. | Pct. | Est. | Pct. | Est. | Pct. |
| Males 15 years and over | 3,525 |  | 2,304 |  | 2,399 |  | 3,987 |  | 12,215 |  | 699,157 |  |
| Never married | 1,033 | 29.3\% | 543 | 23.6\% | 991 | 41.3\% | 1,717 | 43.1\% | 4,284 | 35.1\% | 220,367 | 31.5\% |
| Now married, except separated | 2,111 | 59.9\% | 1,518 | 65.9\% | 1,088 | 45.4\% | 1,861 | 46.7\% | 6,578 | 53.9\% | 391,043 | 55.9\% |
| Separated | 27 | 0.8\% | 48 | 2.1\% | 14 | 0.6\% | 5 | 0.1\% | 94 | 0.8\% | 7,993 | 1.1\% |
| Widowed | 76 | 2.2\% | 62 | 2.7\% | 61 | 2.5\% | 86 | 2.2\% | 285 | 2.3\% | 16,830 | 2.4\% |
| Divorced | 278 | 7.9\% | 133 | 5.8\% | 245 | 10.2\% | 318 | 8.0\% | 974 | 8.0\% | 62,924 | 9.0\% |
| Females 15 years and over | 3,540 |  | 2,388 |  | 2,467 |  | 3,935 |  | 12,330 |  | 723,793 |  |
| Never married | 628 | 17.7\% | 401 | 16.8\% | 875 | 35.5\% | 1,431 | 36.4\% | 3,335 | 27.0\% | 179,706 | 24.8\% |
| Now married, except separated | 2,184 | 61.7\% | 1,467 | 61.4\% | 975 | 39.5\% | 1,910 | 48.5\% | 6,536 | 53.0\% | 385,853 | 53.3\% |
| Separated | 3 | 0.1\% | 47 | 2.0\% | 18 | 0.7\% | 8 | 0.2\% | 76 | 0.6\% | 10,479 | 1.4\% |
| Widowed | 455 | 12.9\% | 309 | 12.9\% | 311 | 12.6\% | 250 | 6.4\% | 1,325 | 10.7\% | 70,419 | 9.7\% |
| Divorced | 270 | 7.6\% | 164 | 6.9\% | 288 | 11.7\% | 336 | 8.5\% | 1,058 | 8.6\% | 77,336 | 10.7\% |

## Education

In 2011, 29\% of people 25 years and over had at least graduated from high school and $28 \%$ had a bachelor's degree or higher. Nine percent were dropouts; they were not enrolled in school and had not graduated from high school.

The total school enrollment in Nebraska was 516,000 in 2011. Nursery school and kindergarten enrollment was 60,000 and elementary or high school enrollment was 305,000 children. College or graduate school enrollment was 151,000.

Educational attainment varies widely within the various counties. Wayne (as expected) has a higher percentage who have earned a BA+, comparable to Nebraska. The remaining counties have percentages that are lower, reflecting in part their older demographic and rural nature.

Note that in Table 8 the second to last column puts the percentages into actual numbers, so that when $5.6 \%$ of HD residents (over 25 ) have less than a $9^{\text {th }}$ grade education, that translates into an estimated 1051 persons.


Pct less than HS Completion


Table 8. Educational Attainment

|  | Cedar | Dixon | Thurston | Wayne | HD | HD N= | NE |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Population 25 years and over $\mathrm{N}=$ | 6,000 | 4,022 | 3,738 | 5,094 | 18,854 |  | 1,160,884 |
| Less than 9th grade | 6.5\% | 7.7\% | 4.4\% | 3.6\% | 5.6\% | 1051 | 4.1\% |
| $9^{\text {th }}$-12th grade, no diploma | 4.0\% | 6.6\% | 11.0\% | 4.8\% | 6.1\% | 1159 | 5.9\% |
| HS grad or GED | 44.6\% | 41.2\% | 34.6\% | 31.2\% | 38.3\% | 7215 | 29.6\% |
| Some college, no degree | 19.6\% | 22.3\% | 21.2\% | 21.4\% | 21.0\% | 3957 | 23.7\% |
| Associate's degree | 10.1\% | 9.3\% | 15.5\% | 10.9\% | 11.2\% | 2120 | 9.0\% |
| Bachelor's degree | 11.1\% | 9.3\% | 8.8\% | 19.5\% | 12.5\% | 2365 | 18.9\% |
| Grad./ professional | 4.0\% | 3.6\% | 4.4\% | 8.5\% | 5.2\% | 987 | 8.8\% |
| Percent HS graduate or higher | 89.5\% | 85.8\% | 84.6\% | 91.6\% | 88.3\% | 16649 | 90.0\% |
| Percent BA or higher | 15.1\% | 13.0\% | 13.2\% | 28.0\% | 17.8\% | 3349 | 27.7\% |
| Pct less than HS | 10.5\% | 14.2\% | 15.4\% | 8.4\% | 11.7\% | 2206 | 10.0\% |



## Race/Ethnicity

The district has a lower proportion of white residents (83\%) when compared to the Nebraska (86\%). Native Americans comprise one in six (13\%) of the district residents compared to 1\% for Nebraska.
In Dixon County, one in ten (10\%) residents is Hispanic. For the district, one in twenty (4\%) is Hispanic (NE, 9\%).

Since the 2000 Census the Hispanic proportion of the HD population has increased from $1.2 \%$ to $4.2 \%$ overall (in persons, 709 to 1326).

Table 9. Race/Ethnicity

|  | Cedar |  | Dixon |  | Thurston |  | Wayne |  | HD |  | Nebraska |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $N$ | \% | $N$ | \% | $N$ | \% | $N$ | \% | $N$ | \% | $N$ | \% |
| One Race | 8,791 | 99.3 | 5,942 | 99 | 6,805 | 98.1 | 9,488 | 98.9 | 31026 | 98.8\% | 1,786,831 | 97.8 |
| White | 8,703 | 98.3 | 5,548 | 92.5 | 2,801 | 40.4 | 9,091 | 94.7 | 26143 | 83.3\% | 1,572,838 | 86.1 |
| Black/African American | 7 | 0.1 | 18 | 0.3 | 17 | 0.2 | 129 | 1.3 | 171 | 0.5\% | 82,885 | 4.5 |
| American Indian | 22 | 0.2 | 23 | 0.4 | 3,963 | 57.1 | 32 | 0.3 | 4040 | 12.9\% | 18,427 | 1 |
| Asian | 7 | 0.1 | 10 | 0.2 | 6 | 0.1 | 48 | 0.5 | 71 | 0.2\% | 32,293 | 1.8 |
| Nat. Hawaiian/Pacific Islander | 0 | 0 | 5 | 0.1 | 2 | 0 | 15 | 0.2 | 22 | 0.1\% | 1,279 | 0.1 |
| Other | 52 | 0.6 | 338 | 5.6 | 16 | 0.2 | 173 | 1.8 | 579 | 1.8\% | 79,109 | 4.3 |
| Two or More Races | 61 | 0.7 | 58 | 1 | 135 | 1.9 | 107 | 1.1 | 361 | 1.2\% | 39,510 | 2.2 |
| Hispanic or Latino (of any race) | 113 | 1.3 | 622 | 10.4 | 190 | 2.7 | 401 | 4.2 | 1326 | 4.2\% | 167,405 | 9.2 |

Race/Ethnicity 2010 Census


## Race/Ethnicity and Language

Among people at least five years old living in Nebraska in 2011, 10\% spoke a language other than English at home. Of those speaking a language other than English at home, $66 \%$ spoke Spanish and $34 \%$ spoke some other language; 46\% reported that they did not speak English "very well. For the HD:

- $5 \%$ speak a language other than English in their homes, which is lower than for Nebraska (10\%)
- $95 \%$ speak English only (NE, $90 \%$ ).
- In all, $2 \%$ of those over the age of 5 speak English less than "very well".

Table 10. Language Spoken At Home

|  | Cedar |  | Dixon |  | Thurston |  | Wayne |  | Health District |  | Nebraska |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | N | \% | N | \% | N | \% | N | \% | N | \% | N | \% |
| Population 5 years and over | 8,323 |  | 5,601 |  | 6,216 |  | 8,988 |  | 29,128 |  | 1,669,715 |  |
| English only | 8,092 | 97.2\% | 5,145 | 91.9\% | 5,831 | 93.8\% | 8,672 | 96.5\% | 27,740 | 95.2\% | 1,507,705 | 90.3\% |
| Language other than English | 231 | 2.8\% | 456 | 8.1\% | 385 | 6.2\% | 316 | 3.5\% | 1388 | 4.8\% | 162,010 | 9.7\% |
| Speak English less than "very well" | 36 | 0.4\% | 301 | 5.4\% | 73 | 1.2\% | 147 | 1.6\% | 557 | 1.9\% | 73,499 | 4.4\% |

## Health Status

Health-related quality of life measures have been included in the BRFSS studies for a number of years, and they are also factor into the UW² (Robert Wood Johnson) county health rankings. Health status questions show how persons perceive their own health and how well they function physically, psychologically, and socially during their usual daily activities. These indicators are considered important because they can assess dysfunction and disability not measured by standard data.
As a descriptive, the scale is summarized by the CDC, combining Excellent through Good into to Good or Better Health. For Nebraska, $88 \%$ of respondents fall into that category, while $12 \%$ are in Fair or Poor Health. In past years, the latter were considered to be 'at risk.' For NNPHD, $87.5 \%$ are in Good or Better Health and $12.5 \%$ in Fair or Poor Health.
Table 11. General Health Status (Would you say that in general your health is:)

| BRFSS 2010 | NNPHD | NE |
| :---: | :---: | :---: |
| Excellent | 19.5 | 19.3 |
| Very good | 35.1 | 36.9 |
| Good | 32.9 | 31.7 |
| Fair | 9.6 | 9 |
| Poor | 2.9 | 3 |

Table 12 (from the UW data) shows breaks this out into counties based on 3,492 respondents. Of those, an estimated 372 (10.7\%) are in Fair or Poor Health, with a range of $8.7 \%$ for Cedar County to $16.7 \%$ in Thurston County, ranging from 12.9 to $21.4 \%$ (confidence interval, $\pm 4.25 \%$ ).

- Historical Note: In the 2004 survey, 19.5\% reported health Fair to Poor.

[^2]Table 12. Fair or Poor Health (BRFSS, UW 2010)

|  | Sample <br> Size | \% <br> Fair/Poor | 95\% CI - <br> Low | 95\% CI - <br> High |
| :--- | ---: | :--- | ---: | ---: |
| Nebraska | 84476 | $12.0 \%$ | $11.7 \%$ | $12.4 \%$ |
| Cedar | 1143 | $8.7 \%$ | $7.1 \%$ | $10.7 \%$ |
| Dixon | 847 | $9.6 \%$ | $7.6 \%$ | $12.1 \%$ |
| Thurston | 586 | $16.7 \%$ | $12.9 \%$ | $21.4 \%$ |
| Wayne | 916 | $10.2 \%$ | $7.1 \%$ | $14.5 \%$ |
| HD | 3492 | $10.7 \%$ | $9.7 \%$ | $11.7 \%$ |
|  |  |  |  |  |
| PHAN data | 2007 | 2008 | 2009 | 2010 |
| HD by Year | $13.6 \%$ | $11.1 \%$ | $15.3 \%$ | $11.3 \%$ |

The number of 'poor physical health days' (average number in past 30 days) is a factor contributing to morbidity, which focuses on the impact health status has on quality of life. The $C D C^{3}$ has defined Health Related Quality of Life (HRQOL) as "an individual's or group's perceived physical and mental health over time."

Self-reported health and the number of physically and mentally unhealthy days per month are both widely used measures for overall health and HRQoL of a population. The "healthy days" questionsthose that ask about the number of physically and mentally unhealthy days per month-have been part of the CDC's core Behavioral Risk Factor Surveillance Survey (BRFSS) questionnaire since 1993. The CDC's "Measuring Healthy Days" report lists several tools that have been used to assess HRQoL, including several for the Medical Outcomes Study Short Forms. The report notes that although these measurement strategies have been widely used and extensively validated in clinical and population settings, their length makes them impractical to use in population surveillance.

Table 13. Poor physical health days

|  | Physically <br> Unhealthy Days | $\mathbf{9 5 \%}$ CI - Low | $\mathbf{9 5 \%} \mathbf{C l}$ - High |
| :---: | :---: | :---: | :---: |
| NE | 2.9 | 2.8 | 3.0 |
| Cedar | 2.0 | 1.5 | 2.5 |
| Dixon | 2.8 | 1.9 | 3.6 |
| Thurston | 3.1 | 2.4 | 3.8 |
| Wayne | 1.9 | 1.5 | 2.3 |
| HD | 2.4 |  |  |

[^3]
## Access

Access to quality care is considered the key element in reducing health disparities and increasing the quality and years of healthy life. Indicators used to describe access include health care coverage, access to services with regard to cost, a regular primary care provider, a source of ongoing health care, and the use of clinical preventive services, such as early prenatal care.
Persons with health insurance, for example, are more likely to have a primary care provider and to have received appropriate preventive care such as a recent pap test, immunization, or early prenatal care. Historically, adults with health insurance are twice as likely to receive a routine checkup as are adults without health insurance.

A key factor in access is the number of medical practitioners who serve an area. As might be expected, the population/practitioner ratio is higher than for Nebraska. A closer look at the number of counties with shortages within the professional areas: family practice (4 counties have shortages); general surgery (4); internal medicine (4); pediatrics (4); obstetrics/gynecology (4); psychiatrics (4); dental (3); pharmacy (4); occupational therapy (2); physical therapy (1). Two of the counties have the federal designated shortages for professional primary care (Cedar and Dixon); four counties are federally designated for a shortage of mental health professionals.

Table 14. Length of time since last routine checkup

| Year |  | Within past year | Within past 2 <br> years | Within past 5 <br> years <br> $(\mathbf{2}-5$ years ago) | 5 or more years <br> ago | Never |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 2007 | $\%$ | $64.7 \%$ | $12.0 \%$ | $11.2 \%$ | $9.3 \%$ | $2.8 \%$ |
| 2008 | $\%$ | $55.8 \%$ | $16.3 \%$ | $10.9 \%$ | $12.7 \%$ | $4.3 \%$ |
| 2009 | $\%$ | $63.2 \%$ | $14.6 \%$ | $10.1 \%$ | $9.7 \%$ | $2.3 \%$ |
| 2010 | $\%$ | $55.8 \%$ | $16.7 \%$ | $11.8 \%$ | $13.2 \%$ | $2.5 \%$ |

During this four year period, about three-fourths of the HD residents had a regular checkup within the past two years $(725-78 \%)$, while about seven of eight have done so within a five year period.

## Insurance

Census and BRFSS data for NNPHD. Data from the Census and BRFSS studies present a different set of proportions regarding health insurance. From the 2010 NNPHD BRFSS, one-fifth (2009, 19.9\%; 2010, $16.6 \%$ ) of respondents aged 18 to 64 years reported having no health insurance at the time of the survey. Of those, men in 2009 (20.8\%) were more likely than Nebraska men overall (16.6\%) to say they had no health insurance. Tables and charts here use Census data (2009; also used in the RWJ Health Rankings) to separate responses by county. Those data show a similar picture for the health district: $18 \%$ of those $18-64$ years were uninsured; $15.3 \%$ of those under 65 were uninsured. In numbers of persons, census data for the four county area show 3,265 of those age 18-64 ( $N=17,626$ ) are uninsured, and 3,878 of all under $65(N=25,371)$ are uninsured.

Figures for the state (2010) show about $16.5 \%$ of those 18 64 are uninsured. Between 1995 and 2010 the proportion of those uninsured has increased $41 \%$. By age the proportion of uninsured decreases with age, from $36.6 \%$ for those 18-24 to 8.9\% for those 55-64.

By Income. In the 2010 BRFSS for the Health District, the number of responses in several age and income categories was low, so low that proportions are not reported (18-24 age group, for example). ${ }^{4}$

Statewide BRFSS data indicate that increasing income is positively associated with having insurance. One-third (37.8\%) of those who have a household income of less than $\$ 15,000$ are uninsured, while for those with a household income above $\$ 50,000$ that decreases to 2.9\%.

## Comment

By county, the proportion uninsured ranges from $16.4 \%$ in Wayne County to $24 \%$ in Thurston County. The trend observed within the state has seen an increase in this proportion for more than a decade (since 1995). An additional factor, for which there are no current data, are the increases seen in deductibles. ${ }^{5}$

In Healthy People 2020 insurance is a metric for Access to Health Care (having insurance and the proportion having a usual primary care provider). The 2020 Goal is to increase the proportion of persons with health/medical insurance to $100 \%$, from a baseline of $83.2 \%$ in 2008 . The baseline is consistent with rates in the health district (e.g., Census, $82 \%$ insured); conversely, the proportion of uninsured in the health district is greater than in the State.

- 2004. $97 \%$ of all respondents reported some type of insurance, private or government.

[^4]
## Physicians: A Personal Doctor

The BRFSS report for NNPHD (BRFSS, 2008) shows that $18.3 \%$ of adults in the area do not have a personal doctor or health care provider. PHAN data show that to be 20\% in 2010, 17\% in 2009 and 2008, and $20 \%$ in 2007. At some time, during a 12 months period (2008, BRFSS), nearly $10 \%$ who needed to see a doctor did not because of the potential cost of care. The 2010 BRFSS for the HD reports 7.9\% did not see a doctor because of cost (CI $5.2 \%-10.5 \%$ ).

Table 16. Did not see a doctor because of cost (BRFSS)

|  | 2009 N | 2009 |  | 2010 | 2011 |
| :--- | ---: | ---: | ---: | ---: | ---: |
| Nebraska | 8724.821 | $10.30 \%$ | NE All | $10.9 \%$ | $12.5 \%$ |
| Cedar | 102.083 | $8.90 \%$ | NE Men | $9.2 \%$ | $10.7 \%$ |
| Dixon | 87.344 | $10.30 \%$ | NE Women | $13.4 \%$ | $14.2 \%$ |
| Thurston | 59.976 | $10.20 \%$ | HD Men | $6.2 \%$ | $6.0 \%$ |
| Wayne | 92.92 | $10.10 \%$ | HD Women | $9.5 \%$ | $14.4 \%$ |
| HD | 342.323 | $9.77 \%$ | HD All | $7.9 \%^{*}$ | $10.3 \%$ |

*PHAN data for 2010, 8.7\%. Their chart shows a downward trend (positive), though the significance of that improvement is questionable.

Access is related to the availability of physicians, represented by the ratio of persons to primary care physicians in the area.

In the four counties served by NNPHD, the primary care physician ratio is higher than for Nebraska, with a range of 801:1 for Thurston County to 3133:1 in Dixon County. The PCP ratio may be somewhat misleading because the measure has limitations: though physicians are classified by county, physicians living on the edge of counties or who practice in multiple locations may see patient populations that reside in surrounding
 counties. Therefore, this measure may either over- or underestimate patient access to primary care in some situations since patient-provider interaction is not restricted by county boundaries. "This suggests that while the measure provides an estimate of primary care access at the county level, it does not account for all of the barriers to access that individuals may encounter."

The BRFSS 2011 report shows that 58\% in the HD have visited the doctor (health professional) for routine checkup within the past year. By gender that breaks out to $53 \%$ of males, $63 \%$ of females. State data are comparable, with $57.7 \%$ having a routine checkup in the past year (males, $51 \%$; females, $65 \%$ ). For the HD, that is slightly lower than 2009-2010 (60\%), but the same for 2008 (58\%). (PHAN data, based on BRFSS) show a decline from $63 \%$ in 2009 to $53 \%$ in 2010. The bottom line is that residents of the HD and the state show a decrease in routine checkups during (at least) the four year period from 2007 to
2010. In the case of NNPHD, that decrease was 8 percentage points and for the state 6 percentage points.

Table 17. Had a routine checkup in past 12 months

|  | NNPHD | Nebraska |  |
| :---: | :---: | :--- | :--- |
| 2007 | 61.26 |  | 62.01 |
| 2008 | 53.98 | 60.22 |  |
| 2009 | 62.87 |  | 58.83 |
| 2010 | 53.32 | 55.94 |  |

In all years the differences between gender are significant four routine checkups. In 2008, for example, Men (52\%) in the HD were significantly less likely than Women (64\%) to have had a checkup in the past 12 months.

A Healthy 2020 goal for Access is to increase the proportion of persons with a usual primary care provider to $83.9 \%$ from a baseline of $76.3 \%$ of persons had a usual primary care provider in 2007. Based on the 2008 data, the HD ( $81.7 \%$ ) is just short of that goal.

## Eye Care and Access

A related issue is access to eye care. Normally, visits to an eye care provider are cross tabulated against various illnesses (diabetes, for example). These data, from the DHHS BRFSS website, are included here for information.

Table 18. Last time visited eye care provider - 2009

|  | Within the past <br> month (anytime <br> less than 1 <br> month ago) | Within the past <br> year (1month <br> but less than 12 <br> months ago) | Within the past <br> 2 years (1years <br> but less than 2 <br> years ago) | 2 or more <br> years ago | Never |
| :---: | :---: | :---: | :---: | :---: | :---: |
| NNPHD | 10 | 47.6 | 18.9 | 23 | 0.5 |
| NE | 11.5 | 50.2 | 16.3 | 20.2 | 1.8 |

## Physical Activity

## Background

A lifestyle lacking in regular physical activity has been associated with an increased risk for cardiovascular illness, cancer, osteoporosis, and other debilitating conditions. Despite these risks, a large proportion of people remain inactive.

The CDC website lists multiple benefits received from exercise including weight control, reducing risk for cardiovascular disease, diabetes, some cancers, improved mobility and strength, and longer life.

| Table 19. Physical Inactivity by County |  |  |  |  |  |
| :--- | :---: | :--- | :---: | :---: | :---: |
|  |  | \% Physically |  |  |  |
| Inactive | $95 \%$ CI - Low | $95 \%$ CI - High |  |  |  |
| Nebraska |  | $24.8 \%$ | 0 | 0 |  |
| Cedar | 1928 | $30.9 \%$ | $28.0 \%$ | $34.2 \%$ |  |
| Dixon | 1555 | $32.4 \%$ | $28.9 \%$ | $36.0 \%$ |  |
| Thurston | 1633 | $34.6 \%$ | $30.6 \%$ | $38.8 \%$ |  |
| Wayne | 1954 | $25.8 \%$ | $22.6 \%$ | $29.3 \%$ |  |
| HD | 7070 | $30.3 \%$ | $29.0 \%$ | $31.6 \%$ |  |

## CDC recommendations

In terms of recommended physical activity, the CDC offers a range of options combining aerobic/endurance activities with muscle strengthening activities. The difference is in the intensity of the exercise. For adults $18-64$ and adults $65+$, for example, the recommendation may be 2 hours and 30 minutes ( 150 minutes) of moderate-intensity aerobic activity every week and muscle-strengthening activities on 2 or more days a week (all major muscle groups). A second option is for 1 hour and 15 minutes ( 75 minutes) of vigorous-intensity aerobic activity (i.e., jogging or running) every week and muscle-strengthening activities on 2 or more days a week (all major muscle groups).

The CDC Without discussing strength training, the CDC recommendations per week are 75 minutes of vigorous exercise OR 150 minutes of moderate exercise. Using that as a basis, the table below estimates what amounts of exercise (without knowing if these are moderate or vigorous) are sufficient to meet the CDC guidelines.

## Prevalence

Data on exercise are presented in the table below for the HD and for Nebraska. These are available on the DHHS website (http://public-dhhs.ne.gov/Brfss/Home.aspx), but it should be noted that there are no definitions detailing the calculations, the criteria used for aerobic activity or muscle building activity, or, for that matter, the age of the respondent.

For the HD, the proportion that meet the criteria for Vigorous exercise increased between 2007 and 2009, as did those in the second category (perhaps equal to moderate exercise). As expected, the proportion that engaged in No Vigorous Physical Activity decreased in the same time frames. This latter group comprises about one half of the HD adult population.

Males are more likely to exercise (vigorous or moderate) than females, while females are more likely to engage in No Vigorous Physical Activity (Female, 61\%; Male, 41\%). Across the two exercise categories (moderate or vigorous), the proportions decrease with age. One-third (33\%) of those 25-34 meet the recommendations for Vigorous Activity, but that decreases to one in five (20\%) for those 55-64 and 15\% for those 65+. The Moderate/Insufficient Activity category begins at $32 \%$ for adults under 25 and drops to $13 \%$ for those $65+$. The None category, meanwhile, begins at $40 \%$ for those under 24 and increases to about two-thirds of those over 55 . In sum, the HD has seen an increase in the proportion who exercise (moderate and vigorous). The prevalence of Vigorous Activity, then, increases with gender (Males) and decreases with Age.

Table 20. Computed Vigorous Physical Activity Categories 2007,2009

|  | Meet recommendations for <br> vigorous physical activity |  | Insufficient activity to meet <br> vigorous recommendations |  | No vigorous physical activity |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Year | NNPHD | Nebraska | NNPHD | Nebraska | NNPHD | Nebraska |
| 2007 | $23.5 \%$ | $30.6 \%$ | $21.7 \%$ | $20.7 \%$ | $54.8 \%$ | $48.7 \%$ |
| 2009 | $27.2 \%$ | $29.7 \%$ | $24.8 \%$ | $23.4 \%$ | $48.0 \%$ | $46.9 \%$ |
| Gender |  |  |  |  |  |  |
| Male | $31.9 \%$ | $33.8 \%$ | $26.9 \%$ | $25.4 \%$ | $41.2 \%$ | $40.8 \%$ |
| Female | $19.2 \%$ | $26.6 \%$ | $19.8 \%$ | $18.8 \%$ | $61.0 \%$ | $54.6 \%$ |
| Age Group |  |  |  |  |  |  |
| $18-24$ | $27.7 \%$ | $52.1 \%$ | $31.9 \%$ | $21.1 \%$ | $40.4 \% *$ | $26.8 \%$ |
| $25-34$ | $33.3 \%$ | $37.2 \%$ | $23.0 \%$ | $24.2 \%$ | $43.6 \%$ | $38.6 \%$ |
| $35-44$ | $29.2 \%$ | $35.3 \%$ | $34.2 \%$ | $25.6 \%$ | $36.5 \%$ | $39.1 \%$ |
| $45-54$ | $27.9 \%$ | $26.7 \%$ | $23.6 \%$ | $25.1 \%$ | $48.5 \%$ | $48.2 \%$ |
| $55-64$ | $20.1 \%$ | $21.5 \%$ | $21.5 \%$ | $21.8 \%$ | $58.3 \%$ | $56.7 \%$ |
| $65+$ | $15.1 \%$ | $15.1 \%$ | $13.0 \%$ | $13.4 \%$ | $71.9 \%$ | $71.5 \%$ |

* Insufficient sample size to calculate a reliable estimate (denominator <50 respondents)

Nebraska and HP2020. Though there have been improvements in the proportion of HD residents who exercise, those are still below those for Nebraska. For example, about one in four Nebraska females engage in Vigorous Activity compare to one in five in the HD (NE, 27\%; HD, 19\%. By age, younger demographic categories (under 45) are more likely than those from the HD to engage in Vigorous Activity, while those from the HD (under 45) are more likely to engage in Moderate/Insufficient Activity.
With reference to HP2020 goals, PA-1 is the easiest to apply here. The 2020 target is to reduce the proportion of adults who engage in no leisure-time physical activity to $32.6 \%$ from a 2008 baseline of $36.2 \%$. Both Nebraska ( $47 \%$ in $2009)$ and the HD $(48 \%)$ are well above that target.

## Weight: Overweight and Obesity

The prevalence of overweight and obesity among adults, adolescents, and children has risen considerably over the past twenty years in
 the United States and in Nebraska, according to BRFSS reports. Overweight- and obesity-related conditions are the second leading cause of death in the U.S., resulting in about 300,000 lives lost each year.

Overweight and obesity are considered by some to be the most serious health problems in America today. Obesity is a condition linked to risk factors for cardiovascular disease, cancer and stroke, which are the first, second and third leading causes of death in many reports. It is associated with Type II diabetes, arteriosclerosis, gout, asthma, hypertension, and osteoarthritis

Definitions. The Body Mass Index (BMI) was developed as an instrument to represent overall weight conditions and trends in survey populations. As such, its calculations sometimes 'overlook' relative muscle mass, consequently depicting athletes as being overweight (for example). In the most recent data, the CDC also reports those are Underweight.

## Underweight <br> Normal Weight <br> Overweight <br> Obese

> (BMI 12.0-18.4)
> (BMI 18.5-24.9)
> (BMI 25.0-29.9)
> (BMI 30.0-99.8)

## Prevalence

In 2002, 23\% of Nebraskans were obese; in 2011 that proportion has increased $28 \%$ over that 10 year span. In Nebraska, the prevalence of obesity has nearly doubled between 1995 (16.3\%) and 2011 (28.4\%). Throughout the past several years for the HD there is a decrease in the proportion of those Overweight, an increase in those at a Healthy Weight, and a slight increase in those who are Obese.

Table 21. Weight Categories by Year (2007-2011)

|  | NNPHD | Nebraska |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Year | Neither <br> OW nor Obese | Overweight | Obese | Neither <br> ow nor Obese | Overweight | Obese |
| 2007 | 26.8 | 41.9 | 31.3 | 35.3 | 38.2 | 26.5 |
| 2008 | 31.6 | 37.5 | 30.9 | 35.9 | 36.9 | 27.2 |
| 2009 | 29.3 | 41.5 | 29.1 | 35.2 | 36.8 | 28.1 |
| 2010 | 31.2 | 39.7 | 29.1 | 35.1 | 37.4 | 27.5 |
| 2011 | 32.4 | 35.7 | 31.9 | 35.1 | 36.5 | 28.4 |

With respect to the Healthy People targets, the percent of obese and healthy weight may present considerable opportunities for improvement, depending on the goal and year selected. The HP 2020 goals are very different for those set for 2010. The 2010 goal, for example, was to reduce the prevalence of obesity to $15 \%$, while the 2020 goal is $30.6 \%$ from a US baseline of $34 \%$. Nebraska's proportion meets the healthy weight target of $33.9 \%$, and the HD falls short. The same is true is true for goal for obesity. However, the respective goals are within the Confidence Interval of the measure for the HD; in effect, there is no difference.

## By County

Data by county show a range for obesity from 28\% in Cedar County to 37\% in Thurston County.


## Other

For the HD, the proportion of Healthy Weight increases across levels of education, beginning with $23 \%$ for those with less than a HS education to $39 \%$ for those who have graduated college. Obesity, on the other hand, is prevalent in 40\% of those with less than a HS education, decreasing to $23 \%$ for those who have completed a college degree.

With respect to Age, Healthy Weight and Obesity both increase across most categories, but

| NE | N | \% Obese | $\begin{aligned} & 95 \% \mathrm{Cl}- \\ & \text { Low } \end{aligned}$ | $\begin{aligned} & \text { 95\% CI - } \\ & \text { High } \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: |
|  |  | 29.1\% |  |  |
| Cedar | 1715 | 27.5\% | 24.5\% | 30.6\% |
| Dixon | 1598 | 33.3\% | 29.8\% | 36.7\% |
| Thurston | 1742 | 36.9\% | 32.2\% | 41.4\% |
| Wayne | 2182 | 28.8\% | 25.3\% | 32.5\% |
| HD | 7237 | 31.0\% |  |  | decrease after 65 years of age. The proportion in the Overweight category, however, increases steadily from $39 \%$ in those under 34 years to more than half ( $51 \%$ ) of those 65 and older.

Children. Data from the CDC show some increase in the proportion of Obese children in Nebraska: 2003, 10\%; 2005, 11\%; 2011, 12\%. Data from the 2011 YRBS also show $13.6 \%$ are overweight ( $15.2 \%$ for the US), and $29 \%$ described themselves as slightly or very overweight.

## Nutrition: Fruits/Vegetables

Nutrition is an occasional topic of the BRFSS. It is related to healthy living via assertions that: healthy diets rich in fruits and vegetables may reduce the risk of cancer and other chronic diseases; they are an important source of vitamins and minerals, and fiber; and they are naturally low in fat and calories.

In 2007, for example, one-fourth (24.9\%) of adults in the HD consumed fruits/vegetables five or more times each day. In 2009 that decreased to 19.6\%; one in five adults now have a 'healthy diet,' a decrease of $21 \%$.

Within the health district, the UW study has identified zip codes in which there is access to healthy foods. They represent about one-third (35\%) of all (26) zip codes in the four counties.

| Table 23. $^{l}$ Access to healthy foods $^{\mathbf{6}}$ |  |  |  |
| :--- | ---: | ---: | ---: |
|  | Zip Codes <br> with |  |  |
| County | Healthy Foods | \# Zip Codes | \% Healthy Foods |
| Nebraska | 253 | 562 | 45 |
| Cedar | 4 | 8 | 50 |
| Dixon | 2 | 8 | 25 |
| Thurston | 1 | 6 | 17 |
| Wayne | 2 | 4 | 50 |
| HD | 9 | 26 | 35 |

## Tobacco

Tobacco use remains the single most preventable cause of disease, disability, and death in the United States. Each year, an estimated 443,000 people die prematurely from smoking or exposure to secondhand smoke, and another 8.6 million live with a serious illness caused by smoking. Despite these risks, approximately 46.6 million U.S. adults smoke cigarettes. Smokeless tobacco, cigars, and pipes also have deadly consequences, including lung, larynx, esophageal, and oral cancers.

Cigarette smoking causes about 1 of every 5 deaths in the United States each year. In 2004 the CDC asserted that on average smokers die seven years earlier than non-smokers; the current estimate is that, on average, adults who smoke cigarettes die 14 years earlier than nonsmokers.

[^5]The Nebraska Healthy People narrative adds that there is no safe alternative to tobacco, including chewing tobacco and cigar smoking. The narrative expressed the concern that an estimated 3,000 youth start smoking each day, and that most adult smokers tried their first cigarette before age 18.

Overall, rates have been constant or have shown some decline; however, in Nebraska, rates for chew tobacco tend to be higher than those nationally.

## Current Prevalence

PHAN/BRFSS DATA. Between 2007-2009, the proportion of current smokers in the HD is significantly higher than throughout Nebraska. In 2010, the reported statistic for the HD is significantly lower than for the state. The UW County Health Rankings estimate the prevalence at $21 \%$; of nearly 22,500 adults, about 5,000 are current smokers.

Use of smokeless tobacco appears to be declining throughout the district. Through 2009, about one in ten male adults used smokeless tobacco, and there is some indication (the Nebraska BRFSS website) that usage may have decreased to 4\% in 2010. However, through 2009, usage of smokeless tobacco was

Table 24. Prevalence of Smoking by County

|  |  | 95\% CI - <br> L | 95\% CI <br> High |  |
| :--- | ---: | ---: | ---: | ---: |
| NE | 446841 | $18.9 \%$ | $18.4 \%$ | $19.4 \%$ |
| Cedar | 880 | $14.1 \%$ | $10.8 \%$ | $18.2 \%$ |
| Dixon | 1012 | $21.1 \%$ | $16.5 \%$ | $26.7 \%$ |
| Thurston | 1642 | $34.8 \%$ | $28.6 \%$ | $41.6 \%$ |
| Wayne | 1341 | $17.7 \%$ | $12.9 \%$ | $23.8 \%$ |
| HD | 4875 | $20.9 \%$ | $19.7 \%$ | $22.2 \%$ | significantly higher than in the state.

Table 25. Tobacco Use 2007-2010.

|  | Current cigarette <br> smoking (PHAN) |  | Smokeless <br> (PHAN) |  | Smokeless <br> NE BRFSS |
| ---: | :---: | :---: | ---: | ---: | ---: |
|  | NNPHD | Nebraska | NNPHD | NE | NNPHD |
| 2007 | 23.39 | 20.2 |  |  |  |
| 2008 | 19.4 | 18.6 | 11.2 | 9 | 22 |
| 2009 | 22.95 | 16.9 | 13.2 | 9.1 | 7 |
| 2010 | 16.37 | 17.4 |  |  | 4 |

## Demographics and Smoking

Smoking generally declined with increasing age, education, and income. ${ }^{8}$
In the BRFSS data, for example, smoking decreased across levels of education from $27.6 \%$ for those with less than a high school diploma to $8.6 \%$ for those with a college degree; it decreased as age increased from $25.5 \%$ for those $18-24$ to $7.7 \%$ for those 65 and older; it decreased as income increased from $34 \%$ for those earning less than $\$ 15,000$ to $11.9 \%$ for those earning $\$ 50,000$ or more.

[^6]Table 26. Smokers Now: percentage within Rows NE BRFSS 2010

| Education |  | Age |  | Income |  |
| :--- | :---: | :--- | :--- | :--- | :---: |
| Less than H.S. | 27.6 | $18-24$ | 25.5 | Less than $\$ 15,000$ | 34 |
| H.S. or G.E.D. | 22.6 | $25-34$ | 21.5 | $\$ 15,000-24,999$ | 22.7 |
| Some post-H.S. | 18.7 | $35-44$ | 17.7 | $\$ 25,000-34,999$ | 22.9 |
| College graduate | 8.6 | $45-54$ | 17.7 | $\$ 35,000-49,999$ | 15.5 |
|  |  | $55-64$ | $65+$ | 15.7 | $\$ 50,000+$ |
|  |  | 7.7 |  | 11.9 |  |

- In 2008, the use of smokeless tobacco use is significantly greater in the HD compared with Nebraska. It is nearly eight times the Nebraska/US goal. Smoking prevalence and the use of smokeless tobacco decreased through for the state and may be decreasing in the HD.
- The proportion of males who smoke (BRFSS, 2011) is significantly different than the proportion of females (Males, 21.7\%; Females, 15.5\%)
- Tobacco related deaths in the HD (86.7 per 100,000) and related hospitalizations (130.1/100,000) are significantly lower than the state rate. Similarly, the rates for individual counties are also lower than the state rate.


## Youth

Data from the NRPFSS for youth in the HD show that:

- $14 \%$ of youth have used smokeless tobacco.
- $23 \%$ have smoked cigarettes.
- $6 \%$ have smoked in the past 30 days.
- $42 \%$ say that it is sort of easy or very easy to get cigarettes.
- One fourth (29\%) of those who smoked were given a cigarette by a family member of took their cigarettes at home without permission.
- One fourth (29\%) bought their cigarettes without a fake id.
- $48 \%$ gave someone else money to buy cigarettes for them.
- Lifetime use of cigarettes above the $8^{\text {th }}$ grade is $28 \%$. Any tobacco use for the same group is at 32\%.
- One third (36\%) of youth (all grades) believe there is no to moderate risk in smoking a pack or more of cigarettes per day. Three of four (73\%) believe there is no to moderate risk with second hand smoke.


## Tobacco: Goals and Comment

## Reduce tobacco use by adults

There are a number of age specific goals in the HP2020 with respect to tobacco use. For adults, the goal is to reduce cigarette smoking to $12 \%$ from $20.6 \%$ in adults aged 18 years and older. Most recent figures place usage in the HD at 21\%.

For adults the goal for smokeless tobacco products is to reduce usage to $0.3 \%$ from $2.3 \%$ of adults aged 18 years and older. The reported use in the HD for 2010 is $3.9 \%$, more than ten times the goal.

For NNPHD, the current prevalence of smoking is equal or greater than the benchmark identified in the cigarette goal; for smokeless tobacco it is equal or greater than the benchmark. Each of these goals, then, presents an opportunity for improvement.

HP 2020 goals for youth are to reduce the use of tobacco products (past month) to $21 \%$ and to reduce the use of cigarettes (past month) to $16 \%$. The proportions for the HD exceeds those two goals ( $6 \%$ reported smoking in the past 30 days)..

## Alcohol Abuse

Excessive alcohol use (including heavy drinking, underage drinking and binge drinking) can lead to increased risk of health problems such as injuries, violence, liver diseases, and cancer. The CDC's Alcohol Program works to strengthen the scientific foundation for preventing excessive alcohol use.

The current definition of binge drinking is 4 or more drinks during a single occasion for women and 5 or more drinks during a single occasion for men. Heavy drinking for women is more than 1 drink per day on average, and for men, it is more than 2 drinks per day on average.

## Heavy Drinking and Binge Drinking

UW uses Excessive Drinking to include adults who report heavy or binge drinking. Those data illustrate that whether on the county or on the HD basis, the prevalence of Excessive Drinking is significantly higher than for the state. One in five adults

Heavy drinking is defined as adult men having more than two drinks per day and adult women having more than one drink per day. The definition does not refer to frequency, whether drinking continues over one or several days per week, for example. In the BRFSS data for Nebraska, just 6\% of respondents identified themselves as heavy drinkers. In the BRFSS data, heavy drinking is most prevalent for those 18-24 (10\%) and 45-54 (8\%), and five percent or less for all other age groups. It varies little across levels of education and income.

| Table 27. Excessive Drinking BRFSS 2004-2010 |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: |
|  | $\%$ |  |  |  |
|  | District | Excessive | 95\% CI - | 95\% CI - |
|  | N | Drinking | Low | High |
| Nebraska |  | $19.1 \%$ | $18.6 \%$ | $19.7 \%$ |
| Cedar | 1460 | $23.4 \%$ | $19.3 \%$ | $28.0 \%$ |
| Dixon | 1060 | $22.1 \%$ | $17.2 \%$ | $28.0 \%$ |
| Thurston | 1142 | $24.2 \%$ | $19.0 \%$ | $30.4 \%$ |
| Wayne | 1553 | $20.5 \%$ | $15.2 \%$ | $27.0 \%$ |
| HD | 5215 | $22.4 \%$ | $21.1 \%$ | $23.6 \%$ |

For the HD, BRFSS data on Heaving Drinking show a modest decline over the four years from 20072010, beginning with a prevalence of $7.5 \%$ in 2007, decreasing to $5.5 \%$ in 2010.

Binge drinking is defined as a pattern of alcohol consumption that brings the blood alcohol concentration (BAC) level to $0.08 \%$ or more. The current definition of binge drinking is 4 or more drinks during a single occasion for women and 5 or more drinks during a single occasion for men, generally within about 2

| Table 28. Binge Drinking: Multiple Sources |  |  |  |  |
| :---: | ---: | ---: | :--- | :---: |
| Past month binge | PHAN Report |  |  |  |
| drinking | $25.4 \%$ | $18.7 \%$ |  |  |
|  | NRFSS |  |  |  |
| 2007 | $23.7 \%$ | $19.9 \%$ | $24.8 \%$ |  |
| 2008 | $26.5 \%$ | $18.4 \%$ | $21.5 \%$ |  |
| 2009 | $25.1 \%$ | $20.1 \%$ | $25.5 \%$ |  |
| 2010 |  | $22.7 \%$ | $24.0 \%$ |  |
| 2011 |  | NNPHD |  |  | hours. Data on Binge Drinking differ slightly, depending on source, but for each of the years from 2007 through 2011, Binge Drinking in the HD is more prevalent than for the state.

In addition, within the HD, it

- increases somewhat with education ( $16 \%$ for HS grads to $31 \%$ for college grads),
- decreases with age (from $53 \%$ for $25-34$ to $3.4 \%$ for those over 65 ), and
- men are more likely than women to report this pattern of drinking (BRFSS 2011: Males, 34.7\%; Females, 21.1\%).


## Comment

Self-reported binge drinking across the district and across Nebraska is more prevalent than heavy drinking. Both binge drinking and heavy drinking are more common in men (e.g. binge drinking in the 2010 BRFSS: males, 25; females, 14\%). In the 2008 BRFSS report for NNPHD, binge drinking in the past month was reported by $22.9 \%$ of adults in this district, with men ( $32.8 \%$ ) significantly more likely than women ( $12.2 \%$ ) to report this pattern of alcohol consumption. In 2011, binge drinking was reported by $27.6 \%$ of respondents.

Goals for heavy/excessive drinking. If heavy drinking is equated with 'excessive' drinking in the HP2020 goals, then NNPHD may look for some improvement in this area. The goal aims to reduce the proportion of adults who drank excessively in the previous 30 days to $25.3 \%$ from $28.1 \%$ of adults aged 18 years and older who drank excessively in the previous 30 days in 2008. Using the Excessive Drinking metric from the UW study, it appears that the HD meets this goal (22.4\%).

Goal for binge drinking. The HP 2020 goal is to reduce the proportion of adults engaging in binge drinking during the past month to $24.3 \%$ from $27 \%$ during the past month (baseline: 2008). Among the respondents in the 2011 BRFSS, the prevalence is about $27 \%$ (CI $23.7 \%$ to $31.5 \%$ ), which appears slightly above the HP 2020Goal.

## Youth and Drinking.

- 14.9\%: Any 30-day alcohol use of $5+$ drinks in a row (grades $8 / 10 / 12$ ),
- 22.3\%: 30 day alcohol use frequency.
- $49.7 \%$ of say it is Sort of Easy or Easy to get alcohol.
- In the past 30 days, $25.4 \%$ said they rode with a drunk driver. This is about the same for $6^{\text {th }}$ graders as it is for those in grades 8 through 12.
- $7.8 \%$ reported drinking and driving in the past 30 days.

Perceived Risk. The HP 2020 goal is to increase the proportion of adolescents aged 12 to 17 years perceiving great risk associated with substance abuse-Consuming five or more alcoholic drinks at a single occasion once or twice a week to $44.6 \%$, Two items here are set at one metric. For youth in the HD:

- $44 \%$ perceive a Great Risk of harm in 5 or more drinks of alcoholic beverage once or twice weekly, equal the goal.
- However, $32.5 \%$ a Great Risk of harm in 1-2 alcoholic drinks nearly every day, which does not meet the targeted $44 \%$.


## Drinking And Driving

Drinking and Driving was reported by $6.8 \%$ of adults in the 2007 BRFSS, with males (10.4\%) more likely than women ( $2.7 \%$ ) to report this pattern of behavior. Drinking and Driving decreased from 2008 to 2010 in the BRFSS reports, from $7.5 \%$ to $6.6 \%$. That change, however, is not statistically significant.

## Mental Health

Several measures are available that describe mental health. UW, for example, uses Poor Mental Health Days based on questions in the BRFSS (2004-2010). These include the Healthy Days questions and the days in which activities are limited. From this, the average of poor mental health days for Nebraskans is 2.6, and each of the counties in the district is lower than that benchmark. Of those, Dixon is

Table 29. Poor mental health days

| Nebraska | Sample Size | Mentally Unhealthy Days | $95 \% \text { CI - }$ <br> Low | $\begin{aligned} & \text { 95\% CI - } \\ & \text { High } \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: |
|  | 83337 | 2.6 | 2.6 | 2.7 |
|  | 1127 | 1.6 | 1.1 | 2.0 |
| Dixon | 834 | 2.4 | 1.7 | 3.2 |
| Thurston | 577 | 2.3 | 1.6 | 2.9 |
| Wayne | 905 | 2.1 | 1.4 | 2.8 |
|  | Poor mental health days (average number in past 30 days) |  |  |  |

the highest at 2.4, and a Confidence Interval from 1.7 to 3.2.
The entire health district is designated as a federal shortage area for mental health providers. Though Wayne County has a ratio with 9210:1, the other three counties have a ratio to zero.

Table 30. Mental health providers

| Nebraska | \# MPH | MPH Rate | MPH Ratio |
| :---: | :---: | :---: | :---: |
|  | 574 | 32 | 3104:1 |
| Cedar | 0 | 0 | 8397:0 |
| Dixon | 0 | 0 | 6265:0 |
| Thurston | 0 | 0 | 7208:0 |
| Wayne | 1 | 11 | 9210:1 |

## Diabetes

BFRSS data track the increase of diabetes in the United States, with the rise in new diabetes cases associated with increases in the prevalence of obesity. Diabetes-related death rates in Nebraska have increased.

Diabetes often results not only in a shortened life span, but also increases the probability of various complications such as progressive renal failure (kidney failure), blindness, and amputation of the lower limbs. Women with diabetes are also at greater risk of complications of pregnancy than are women who do not have this disease. In addition, infants born to mothers with diabetes are more likely than other infants to die at birth or to have birth defects.

Table 31. Percent Diagnosed as Diabetic

|  | N | \% diabetic | 95\% CI - Low | 95\% CI - High |
| :---: | :---: | :---: | :---: | :---: |
| Nebraska |  | 8.3\% | 0.0\% | 0.0\% |
| Cedar | 761 | 9.1\% | 7.6\% | 10.7\% |
| Dixon | 547 | 8.7\% | 7.2\% | 10.5\% |
| Thurston | 994 | 13.6\% | 11.4\% | 16.3\% |
| Wayne | 638 | 6.9\% | 5.6\% | 8.3\% |
| HD | 2940 | 9.4\% | 8.2\% | 10.7\% |

## Prevalence

- One in ten, more than 2,900 are diabetic. In the 2008 BRFSS, the proportion for the HD was $6 \%$, and in 2011 it has increased to $10.6 \%$.
- In 2010 the range per county is from $7 \%$ in Wayne to $14 \%$ in Thurston.
- Except for Wayne, all counties have a proportion of diabetes greater than that in Nebraska.


## Diabetes and HP2020 Goals

The 2020 Goal for diagnosis of diabetes is a target of 7.2 new cases per 1,000 population aged 18 to 84 years. During the three reporting periods, the rates of diabetes within the HD and the state have remained relatively constant.

Deaths. The rate for diabetes related deaths in the HD is higher than that of the state (PHAN, 20052009: HD, 93.5 per 100,000; NE is 81.2). The state rate is $23 \%$ higher than the HP 2020 goal of 65.8 per $\mathbf{1 0 0}, \mathbf{0 0 0}$; the HD rate is $42 \%$ higher than the goal.

In 2010 the rate of death reported for the HD is $34 \%$ above that reported for the state.
HP2020 also has goals related to Dental Care (increase the proportion receiving annual dental examination to $61.2 \%$ ); Eye Exams (increase the proportion having annual dilated eye examination to $58.7 \%)$; Blood Pressure Control (51.8\%); and Diabetes Management Classes (2.5\%), along with several others.

Table 32. PHAN. Diabetes Related Deaths/Hospitalization

|  | Cedar | Dixon | Wayne | Thurston | HD | NE |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| 1.1.9.m Diabetes related deaths (2005-2009) | 89 | 60.3 | 60.1 | 174.4 | 93.5 | 81.2 |
| 1.1.9.n. Hospitalization for uncontrolled diabetes <br> (patients), 2007-2008 | . | 8.4 | 18.8 | 35.5 | 12.7 | 24.8 |

Table 33. Diabetes Mellitus Deaths by County of Residence, 2010 and 2006-2010

|  | 2010 |  |  | $2006-2010$ |  |  |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Total Deaths | Crude Rate | Age-Adjusted Rate | Total Deaths | Crude Rate | Age-Adjusted Rate |
| STATE | 450 | 24.6 | 21.6 | 2,273 | 25.4 | 21.9 |
| Cedar | 2 | 22.6 | 12.8 | 13 | 30.3 | 17.4 |
| Dixon | 1 | 16.7 | 12.1 | 3 | 9.7 | 5.5 |
| Thurston | 8 | 115.3 | 124.6 | 31 | 86.5 | 98.1 |
| Wayne | 0 | - | - | 7 | 15 | 11.6 |
| HD |  |  | 29 |  |  |  |

* Per 100,000 estimated population. Population estimates are calculated by the U.S. Department of Commerce, Bureau of the Census. NOTE: Rates based on small numbers may not be reliable.


## Cardiovascular

Heart disease is the leading cause of death for both men and women, with the most common being coronary heart disease. In 2008, coronary heart disease accounted for 405,309 deaths (CDC, which estimates that in 2010, coronary heart disease alone was projected to cost the United States \$108.9 billion, including the cost of health care services, medications, and lost productivity.) Topics related to include stroke, blood pressure, cholesterol, heart attack, and coronary heart disease.

## Prevalence

In the five year period represented, the prevalence of related diagnoses in the HD is comparable to those in the state. For the most part, the prevalence increased through 2010, though not significantly. Occasionally, there are differences within gender. For example, in $20095 \%$ of males reported coronary heart disease, compared with $2.9 \%$ of females. In 2010, $5.4 \%$ of males reported the diagnosis of a heart attack, compared with $2.8 \%$ of females.

Table 34. BRFSS Reported Diagnoses for Cardiovascular Disease

|  |  | Ever Diagnosed <br> with Angina <br> or Coronary Heart Disease |  | Ever Diagnosed <br> with Heart Attack |  | Ever Diagnosed <br> with a Stroke |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Year |  | NNPHD | Nebraska | NNPHD | Nebraska | NNPHD | Nebraska |
| 2007 | $\%$ | $2.8 \%$ | $3.7 \%$ | $2.8 \%$ | $3.8 \%$ | $1.2 \%$ | $2.6 \%$ |
|  | Cl | $(1.4 \%-4.2 \%)$ | $(3.2 \%-4.3 \%)$ | $(1.5 \%-4.1 \%)$ | $(3.3 \%-4.3 \%)$ | $(0.5 \%-1.9 \%)$ | $(2.1 \%-3.0 \%)$ |
| 2008 | $\%$ | $3.9 \%$ | $4.1 \%$ | $3.7 \%$ | $4.1 \%$ | $2.1 \%$ | $2.2 \%$ |
|  | Cl | $(2.6 \%-5.3 \%)$ | $(3.7 \%-4.6 \%)$ | $(2.4 \%-5.1 \%)$ | $(3.6 \%-4.5 \%)$ | $(1.1 \%-3.2 \%)$ | $(1.9 \%-2.4 \%)$ |
| 2009 | $\%$ | $3.8 \%$ | $3.7 \%$ | $4.3 \%$ | $3.4 \%$ | $2.8 \%$ | $2.3 \%$ |
|  | Cl | $(2.6 \%-5.0 \%)$ | $(3.3 \%-4.1 \%)$ | $(3.0 \%-5.5 \%)$ | $(3.1 \%-3.8 \%)$ | $(1.7 \%-3.9 \%)$ | $(2.0 \%-2.6 \%)$ |
| 2010 | $\%$ | $4.0 \%$ | $4.0 \%$ | $4.9 \%$ | $3.9 \%$ | $2.3 \%$ | $2.4 \%$ |
|  | Cl | $(2.8 \%-5.3 \%)$ | $(3.5 \%-4.5 \%)$ | $(3.5 \%-6.3 \%)$ | $(3.5 \%-4.3 \%)$ | $(1.3 \%-3.2 \%)$ | $(2.1 \%-2.7 \%)$ |
| 2011 | $\%$ | $2.9 \%$ | $3.9 \%$ | $4.1 \%$ | $4.3 \%$ | $2.5 \%$ | $2.6 \%$ |
|  | Cl | $(2.1 \%-3.7 \%)$ | $(3.6 \%-4.2 \%)$ | $(3.0 \%-5.1 \%)$ | $(4.0 \%-4.6 \%)$ | $(1.7 \%-3.2 \%)$ | $(2.4 \%-2.9 \%)$ |

## Deaths

Over the six years from 2005 to 2011 Deaths have decreased across the three cardiovascular diseases represented in these tables. For the HD, deaths due to Heart Disease (Age Adjusted Rates) dropped from 213.9 in 2005 to 147.1 in 2010. For Coronary Heart Disease, the decrease was from 118.5 in 2005 to 85.7 in 2010. Deaths in the table below are higher for the HD when compared to the state. Though the deaths due to stroke are more variable for the HD, there is a consistent decrease in the state rate.

The HP 2020 target is to reduce coronary heart disease deaths to 100.8 deaths per 100,000 population. The baseline is 126.0 coronary heart disease deaths per 100,000 population occurred in 2007. Both the HD and the state exceed that target.

A related goal is to increase the proportion of adults aged 20 years and older who are aware of, and respond to, early warning symptoms and signs of a heart attack to $46.2 \%$ from $42 \%$ (a benchmark in 2008).

Stroke is a leading cause of death in the United States. Over 800,000 people die in the U.S. each year from cardiovascular disease and strokes. Improvements come with lifestyle changes and, in some cases, medication. Related medical conditions include: High blood pressure (tobacco use, a diet high in salt,
and too much alcohol can all raise your blood pressure); High blood cholesterol (Diet, exercise, and family history affect blood cholesterol levels); Diabetes (High blood sugar tends to occur with high blood pressure and high cholesterol); Overweight and obesity. Being overweight or obese can raise total cholesterol levels, increase blood pressure, and promote the development of diabetes.

The HP 2020 goal for stoke deaths is to reduce stroke deaths to 33.8 deaths per 100,000 population from 42.2 stroke deaths per 100,000 population (2007, age adjusted to the year 2000 standard population). The rates for stroke deaths for the state and the HD do not meet that target, and the HD rate is $29 \%$ over the target.

Table 35. Deaths due to Heart Disease, Coronary Heart Disease, Stroke: Age Adjusted Rates

|  | Heart Disease |  | Coronary Heart Disease |  | Stroke |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | NNPHD | Nebraska | NNPHD | Nebraska | NNPHD | Nebraska |
| 2005 | 213.9 | 178.0 | 118.5 | 102.7 | 45.9 | 48.7 |
| 2006 | 190.1 | 166.7 | 120.6 | 90.3 | 50.0 | 44.5 |
| 2007 | 149.0 | 170.0 | 80.0 | 93.4 | 54.3 | 44.0 |
| 2008 | 176.3 | 163.1 | 108.8 | 87.0 | 45.3 | 39.2 |
| 2009 | 144.6 | 152.9 | 102.8 | 83.8 | 50.7 | 40.3 |
| 2010 | 147.1 | 153.6 | 85.7 | 85 | 43.5 | 40.5 |

## Cholesterol Prevalence and Testing

Persons with elevated blood cholesterol levels double their risk of developing coronary heart disease, the leading cause of death in the U.S. The CDC estimates that one of every six adults in the U.S. has high blood cholesterol. The National Cholesterol Education Program recommends that blood cholesterol levels be checked at least once every five years in healthy

| Table 36. \% Ever Had Blood Cholesterol Checked |  |  |  |
| :---: | :---: | :---: | :---: |
| Year |  | NNPHD | NE |
| 2007 | $\%$ | 75.4 | 78.1 |
|  | Cl | $(70.7 \%-80.1 \%)$ | $(76.3 \%-80.0 \%)$ |
|  | n | 463 | 9010 |
| 2009 | $\%$ | 70.8 | 78.3 |
|  | Cl | $(65.6 \%-76.0 \%)$ | $(76.6 \%-80.0 \%)$ |
|  | n | 685 | 13677 | adults aged 20 and older. Because there are no symptoms of high cholesterol, many have never had their cholesterol checked, and they do not know they are at risk.

The percent of those in the HD who have Ever had their cholesterol tested is below that of the state, both in 2007 and 2009 (significantly in 2009). Testing increases with age in the HD and the state. For those $25-34$, about half (HD, $56 \%$ ) are tested, increasing steadily across age categories and reading $93 \%$ in those 65 and older. Increases across income are more gradual, starting at $70 \%$ for those with less than $\$ 15,000$ household income to $79 \%$ (NE, $84 \%$ ) for those earning $\$ 50,000+$.

Of those Ever tested, $80 \%$ were tested within the past two years, and $95 \%$ were tested within the past five years. The HP 2020 goal, however, is to Increase the proportion of adults who have had their blood cholesterol checked within the preceding 5 years to $82.1 \%$ from $74.6 \%$ of adults aged 18 years and older. In 2009 Nebraska met that goal, but in 2011 fell short. Note that screening dropped in 2011 for both the HD and for the state.

## Blood Pressure

High blood pressure, a condition in which blood pressure is persistently elevated, is a major risk factor included in most BRFSS studies. It is associated with heart disease and stroke, two of the leading causes of death for Nebraska and the nation. People with high blood pressure are two to four times more likely to develop coronary heart disease than persons with normal blood pressure. Hypertension is also considered the most important risk factor for stroke. Persons with uncontrolled high blood pressure are seven times more likely to have a stroke than are people with normal blood pressure.


The HP2020 Goal for Blood Pressure is to reduce the proportion of adults with hypertension to $26.9 \%$ from $29.9 \%$ of adults aged 18 years and older, based on the proportions measured nationally in 2005-08. Both the HD and the state failed to meet that goal in the years 2009 and 2011.

Table 37. Ever Told Blood Pressure High 2007,2009

| Year |  | NNPHD | Nebraska |
| :---: | :---: | :---: | :---: |
| 2007 | $\%$ | 24.5 | 26.5 |
|  | Cl | $(20.9 \%-28.2 \%)$ | $(25.0 \%-28.0 \%)$ |
|  | n | 176 | 3808 |
| 2009 | $\%$ | 28 | 27.1 |
|  | Cl | $(24.2 \%-31.8 \%)$ | $(25.9 \%-28.4 \%)$ |
|  | n | 306 | 6179 |
| 2011 |  | 28.6 | 28.5 |
|  |  | $(25.8 \%-31.4 \%)$ | $(27.8 \%-29.3 \%)$ |
|  |  | NA | NA |

## Asthma

Chronic respiratory diseases include asthma and chronic obstructive pulmonary disease (chronic bronchitis and emphysema). According to the HP2020 narrative, most of the problems caused by asthma could be averted if persons with asthma and their health care providers managed the disease according to established guidelines.

About one in ten adults in the HD have ever been told they had asthma. Children diagnosed with
 asthma are about half that, but the proportion has been increasing over the past five years.

## Other data

PHAN data for the district includes reports for pediatric hospitalizations for asthma, emergency room visits for persons with asthma, and death rates due to asthma and COPD. Asthma mortality rates are generally lowest for young children (under five years of age) and highest for adults aged 65 and older. HP2020 Goals to reduce deaths are for age groups: under 35; 35-64, and 65+. PHAN data, however, include all ages for deaths, pediatric hospitalizations (1-14 years) and so on.

A review of PHAN data included these findings:

- Emergency room visits (Code \# 1.1.9.u) were significantly lower for the HD compared to the state, while inpatient discharges were significantly lower than the state.
- The average annual death rate due to

| Table 38. Adult Asthma (Lifetime, Calculated |  |  |  |
| :---: | :---: | :---: | :---: |
| Variable). |  |  |  |
| Year |  | No | Yes |
| 2007 | $\%$ | 90.4 | 9.6 |
|  | Cl | $(87.6 \%-93.2 \%)$ | $(6.8 \%-12.4 \%)$ |
|  | n | 526 | 56 |
| 2008 | $\%$ | 91.1 | 8.9 |
|  | Cl | $(88.6 \%-93.6 \%)$ | $(6.4 \%-11.4 \%)$ |
|  | n | 718 | 72 |
| 2009 | $\%$ | 88.9 | 11.1 |
|  | Cl | $(85.1 \%-92.7 \%)$ | $(7.3 \%-14.9 \%)$ |
|  | n | 755 | 76 |
| 2010 | $\%$ | 91.6 | 8.4 |
|  | Cl | $(88.8 \%-94.5 \%)$ | $(5.5 \%-11.2 \%)$ |
|  | n | 752 | 63 | asthma for the HD was not significantly different from that of the state.

- The average annual death rate due to COPD for the HD was not significantly different from that of the state.


## Cancer Screening

## Prostate Cancer

Prostate cancer is the most common type of cancer in men (other than skin cancer) in the United States, and it is a major health concern for older men. Though the causes of prostate cancer are not well understood, studies have found that the following risk factors are associated with

Table 39. Vital Statistics Report: Deaths Due to Prostate Cancer

|  | NNPHD | Nebraska |
| :---: | :---: | :---: | :---: |
| 2005 | 20.6 | 26.9 |
| 2006 | 16.9 | 23.6 |
| 2007 | 16.9 | 25.8 |
| 2008 | 11 | 24.1 |
| 2009 | 26.9 | 23.8 |
| 2010 | 42.7 | 20 | prostate cancer: age, family history, race and diet (high in animal fat). In the United States in 2008, 214,633 men were diagnosed with prostate cancer, and 28,471 men died from it.

Prostate cancer screening tests for signs of the disease in men who consists of two main methods: the Prostate Specific Antigen (PSA) test and the digital rectal exam (DRE). As of May, 2012, the USPSTF recommends against PSA-based screening for prostate cancer. PHAN data report that across the district the incidence/rate of prostate cancer is 131.1 (NE, 158.9), and the deaths due to prostate cancer (20032007) are 18.6 in the HD (NE, 24.7). The incidence (2003-2007) varied by county, from 95.2 in Cedar County to 155.8 in Wayne County. The rate of deaths range from 16.5 in Cedar County to 24.9 in Thurston. For the time period 2003-2007, the HD rates, both for Incidence and Deaths, are not significantly different from those for Nebraska.

Vital Statistics reports for Nebraska (PHAN) show that for the years 2005 through 2008 the HD rate of deaths is below that of the state. For 2009 and 2010 the Nebraska rates were lower than those of the HD.

With respect to deaths, the HP 2020 goal is to reduce the prostate cancer death rate to 21.2 deaths per 100,000 males from 23.5 prostate cancer deaths per 100,000 males occurred in 2007. Rates for Nebraska exceeded that goal in 2010, while rates for the HD did not.

Table 40. Prostate Screening (Ever Had Digital Rectal Exam, PSA)

| Year |  | NNPHD | NE |
| :---: | :---: | :---: | :---: |
| 2008 | $\%$ | 64.6 | 71 |
|  | CI | $(57.9 \%-71.3 \%)$ | $(68.6 \%-73.3 \%)$ |
|  | n | 144 | 3530 |
| 2009 | $\%$ | $68.0 *$ | 74.1 |
|  | CI | $(57.8 \%-78.3 \%)$ | $(70.4 \%-77.8 \%)$ |
|  | n | 74 | 1251 |
| 2010 | $\%$ | 67.7 | 70.6 |
|  | CI | $(61.3 \%-74.0 \%)$ | $(68.3 \%-72.9 \%)$ |
|  | n | 185 | 3879 |

Male respondents aged 40+ that have had a PSA test in the past 2 years

| Year |  | NNPHD | NE |
| :---: | :---: | :---: | :---: |
| 2008 | $\%$ | 49 | 53.8 |
|  | CI | $(41.9 \%-56.1 \%)$ | $(51.2 \%-56.3 \%)$ |
|  | n | 106 | 2626 |
| 2010 | $\%$ | 46.4 | 51.5 |
|  | CI | $(39.9 \%-52.9 \%)$ | $(49.1 \%-54.0 \%)$ |
|  | n | 129 | 2913 |

*Use this percentage with caution due to an exceptionally large 95\% CI range (one or both sides of the CI range is greater than 10 percentage points).

HP 2020 Goals related to screening for prostate cancer are in the developmental stage. Overall, about two-thirds of males in the HD have Ever had a digital rectal exam, lower than the proportion for Nebraska. In 2008 and 2010, fewer than half of males age 40+ reported having had a PSA in the past two years, while just over half of that group in Nebraska had the PSA in the past two years.

## Colorectal Cancer \& Colorectal Cancer Screening

Colorectal cancer is the third most commonly diagnosed cancer and the third leading cause of cancer death in both men and women in the US, with about 141,210 new cases and 49,380 deaths expected in 2011. About $72 \%$ of cases arise in the colon and about $28 \%$ in the rectum.

Death \& Incidence rates. There are no significant differences between the HD and the state of Nebraska in the rates of incidence or death; however, in comparison to other states, Nebraska rates in the top tier (highest rates) in each of those categories. In the percent screened, it ranks $39^{\text {th. } 9}$


## Deaths

On the 2003-2007 PHAN report, two counties fall below the state death rate of 56.2 (Cedar and Dixon, 34 each), and two are above (Wayne, 60.4; Thurston, 72.1). For individual years (Table below) the HD has a lower rate than the state between 2005 and 2008, but it is higher in 2009-2010. Both are higher than the HP 2020 goal which is to reduce the colorectal cancer death rate to 14.5 deaths per 100,000 population (baseline, 17 in 2007).

[^7]
## Screening

Regular screening, beginning at age 50 , is the key to preventing colorectal cancer.
The U.S. Preventive Services Task Force (USPSTF) recommends screening for colorectal cancer using high-sensitivity fecal occult blood testing (yearly), Sigmoidoscopy (every 5 years), or colonoscopy (every 10 years) beginning at age 50 years and continuing until age 75 years. The colonoscopy also is used as a

Table 41. Vital Statistics Report: Deaths Due to Colorectal Cancer

|  | NNPHD | Nebraska |
| :---: | :---: | :---: |
| 2005 | 13.2 | 18.6 |
| 2006 | 29.9 | 19.4 |
| 2007 | 22 | 18.3 |
| 2008 | 14.8 | 18.4 |
| 2009 | 18.2 | 16.8 |
| 2010 | 21.5 | 17.3 | diagnostic test when a person has symptoms, and it can be used as a follow-up test when the results of another colorectal cancer screening test are unclear or abnormal.

Goal. HP 2020 set a target of $70.5 \%$ for the proportion of adults who receive a colorectal cancer screening based on the most recent guidelines. The baseline is $54.2 \%$ of adults aged 50 to 75 years. This is difficult to measure with public data because of the three different types of screening available (with no set timeframe). BRFSS data show about half of men aged 50 and older have Ever had either a Sigmoidoscopy or colonoscopy. Though both the HD and the state showed increases from 2008 to 2010, the HD proportion is significantly lower than that of the state. Screenings within the HD increase with education (about $50 \%$ for those with less than a HS degree to $60 \%$ for those with a college degree).

FOBT. About one in five (19.3\%) men 50 test in 2008, both in the HD and in the NE, 15\%) in 2010.

## Barriers

 Society summarizes results from studies that have identified Several common in these studies:and older had a FOBT state. That decreased to one in six (HD, 14\%;

The American Cancer barriers to screening ${ }^{10}$. factors have emerged

- General lack of access to health care, often as a

Table 42. Respondents aged 50 or older that have had a Sigmoidoscopy or colonoscopy

| Year |  | NNPHD | NE |
| :---: | :---: | :---: | :---: |
| 2008 | $\%$ | 46 | 58.6 |
|  | Cl | $(41.1 \%-51.0 \%)$ | $(57.0 \%-60.2 \%)$ |
|  | n | 226 | 5479 |
| 2010 | $\%$ | 50.9 | 61.8 |
|  | Cl | $(46.3 \%-55.5 \%)$ | $(60.3 \%-63.3 \%)$ |
|  | n | 293 | 6637 |

Respondents aged 50+ that have had a blood stool test within the past two years

| Year |  | NNPHD | NE |
| :--- | :--- | :---: | :---: |
| 2008 | $\%$ | 19.3 | 20.1 |
|  | Cl | $(15.4 \%-23.3 \%)$ | $(18.8 \%-21.4 \%)$ |
|  | n | 89 | 1961 |
| 2010 | $\%$ | 14.2 | 15.3 |
|  | Cl | $(11.1 \%-17.2 \%)$ | $(14.3 \%-16.3 \%)$ |
|  | n | 79 | 1795 |

result of no health insurance.

[^8]- Inadequate communication by health care providers; i.e., the absence of a physician's recommendation for screening reduces the likelihood of screening among both insured and uninsured individuals.
- The differences in patient and provider testing preferences.
- Individuals with the lowest educational attainment and income levels, who have the highest colorectal cancer burden and would thus benefit most from cancer screening, have among the lowest colorectal cancer screening rates, even among insured populations.
- Personal barriers to screening include fear and embarrassment.


## Maternal and Child Health

## Pap Tests

Pap tests are used to detect cervical cancer in women. Past reports have referred to testing recommendations from the American Cancer Society (ACS); recommendations also come from the U.S. Preventive Services Task Force (USPSTF). Briefly:

- Women between ages 21 and 29 should have a Pap test every 3 years.
- Women between the ages of 30 and 65 should have a Pap test plus an HPV test every 5 years.
- Women over age 65 who have had regular cervical cancer testing with normal results should not be tested for cervical cancer.

Because the recommendations are conditional and the length of time between tests may vary, this may in turn lead to ambiguity when interpreting question response.

The HP2020 goal is to increase the proportion of women who receive a cervical cancer screening based on the most recent guidelines to $93 \%$ from $84.5 \%$ of women aged 21 to 65 years (national benchmark, 2008).

In the HD, four in five ( $83 \%$ in 2010) women respondents 18 and over had a pap test within the past three years. By age that varies from $89 \%$ for those $25-34$ to $59 \%$ for those $65+$.

- Of those $25-34,93 \%$ have had a pap test within the past 3 years, which meets the HP 2020 goal.

For those over thirty, the parameter shifts to every five years. For women in the HD:

- 35-44: 91.4\% have had a pap test within the past five years (short of the goal).
- 45-54: $87 \%$ have had a pap test within the past five years (also short).
- 55-64: $80.4 \%$ reported having had a pap test within the past five years (again, short of the goal).

An indicator of declining participation in screening is that the percent who reported having a test five or more years ago increased from $13.9 \%$ in 2007 to $17.7 \%$ in 2010.

## Mammograms

Regular mammograms are the best tests doctors have to find breast cancer early, sometimes up to three years before it can be felt. When a breast cancer is found early, many women go on to live long and healthy lives. The CDC recommends that women should have mammograms every two years from age 50 to 74 years.

Not counting some types of skin cancer, breast cancer in the United States is-

- The most common cancer in women, with no differences by race or ethnicity.
- The most common cause of death from cancer among Hispanic women.
- The second most common cause of death from cancer among white, black, Asian/Pacific Islander, and American Indian/Alaska Native women.

In 2008 (U.S):

- 210,203 women were diagnosed with breast cancer.
- 40,589 women died from breast cancer (nationally). In Nebraska the incident rate of breast cancer ranks $9^{\text {th }}$ nationally (NE, 128.5 ; U.S. 121.9). The mortality rate for NE is below the US rate (NE, 20.8; US, 22.5). In the HD, the deaths (per 100,000) due to breast cancer (2005-2009) for the HD was 19.8, with the state at 21.2: Deaths by county are: Cedar, 13.9; Dixon, 17.1; Wayne, 22.8; Thurston, $33.2^{11}$

For the years between 2005 and 2010 the rate of deaths due to breast cancer in the HD have paralleled those of the state.

For Nebraska, just over one in four women have not had a mammogram in the past two years ( $50+, 27.5 \%$; 40+, 28.5\%). The HP2020 goal, for women aged 50 to 74, is to increase the proportion of women who receive a breast cancer screening based on the most recent guidelines to $81.1 \%$ from $73.7 \%$ of years received a breast cancer screening based

Table 43. Vital Statistics: Deaths Due to Breast Cancer

|  | NNPHD | Nebraska |
| :---: | :---: | :---: |
| 2005 | 20.0 | 24.0 |
| 2006 | 10.1 | 19.5 |
| 2007 | 29.7 | 22.1 |
| 2008 | 27.5 | 21.0 |
| 2009 | 11.8 | 19.4 |
| 2010 | 20.1 | 19.3 | on the most recent guidelines in 2008.

The proportion for Nebraska in 2010 is $71.5 \%$. It increases with education and income for women who are $50+$ years and women who are $40+$ years. For the HD, the proportion of women $50+$ decreased from 2008 to 2010 from $74 \%$ to $69 \%$. For women $40+$ and women $50+$ the proportions that participate in breast cancer screening are not different from women throughout the state. With respect to mammograms, however, both the HD and the state are significantly lower than the target of 81.1\%.

Table 44. NE BRFSS: Women aged 50+ who have had a mammogram within the past two years

| Education: | Yes | No | Income: | Yes | No |
| :--- | :---: | :---: | :--- | :---: | :---: |
| Less than H.S. | 50 | 50 | Less than $\$ 15,000$ | 53.2 | 46.8 |
| H.S. or G.E.D. | 69.5 | 30.5 | $\$ 15,000-24,999$ | 62 | 38 |
| Some post-H.S. | 72.8 | 27.2 | $\$ 25,000-34,999$ | 69.4 | 30.6 |
| College graduate | 81.4 | 18.6 | $\$ 35,000-49,999$ | 75 | 25 |
|  |  |  | $\$ 50,000+$ | 82.3 | 17.7 |
| All | $\mathbf{7 2 . 5}$ | $\mathbf{2 7 . 5}$ |  |  |  |

[^9]Table 45. NE BRFSS: Women aged 40+ who have had a mammogram within the past two years

| Education: | Yes | No | Income: | Yes | No |
| :--- | :---: | :---: | :--- | :--- | :--- |
| Less than H.S. | 51.8 | 48.2 | Less than $\$ 15,000$ | 52.4 | 47.6 |
| H.S. or G.E.D. | 68.1 | 31.9 | $\$ 15,000-24,999$ | 60.8 | 39.2 |
| Some post-H.S. | 71.5 | 28.5 | $\$ 25,000-34,999$ | 67.6 | 32.4 |
| College graduate | 78.4 | 21.6 | $\$ 35,000-49,999$ | 72.2 | 27.8 |
|  |  |  | $\$ 50,000+$ | 79.7 | 20.3 |
| All | 71.5 | 28.5 |  |  |  |

Tabular data above shows distributions by education and income for women 40+ and 50+ years of age. State data are presented because the sample data for women in these demographics when disaggregated by education and income.

## HD Prevalence

Table 46. Mammograms in the past two years

|  | Women 40+ |  | Women 50+ |  |
| :---: | :---: | :---: | :---: | :---: |
| Year | NNPHD | NE | NNPHD | NE |
| $\mathbf{2 0 0 8}$ | $\mathbf{6 9 . 5}$ | $\mathbf{7 2 . 7}$ | $\mathbf{7 4 . 4}$ | $\mathbf{7 4 . 9}$ |
|  | $(64.5 \%-74.4 \%)$ | $(71.0 \%-74.4 \%)$ | $(69.2 \%-79.5 \%)$ | $(73.1 \%-76.8 \%)$ |
|  | 266 | 5567 | 213 | 4501 |
| $\mathbf{2 0 1 0}$ | 68.4 | 71.5 | 69.2 | 72.5 |
|  | $(63.4 \%-73.5 \%)$ | $(69.9 \%-73.2 \%)$ | $(63.8 \%-74.6 \%)$ | $(70.8 \%-74.3 \%)$ |
|  | 279 | 5712 | 230 | 4788 |

## Pregnancy \& Prenatal Care

## PHAN data

In HP 2020, the baseline for infant death (in the first year of life) is 6.7 per 1,000 from 2006. The new target is 6.0 infant deaths per 1,000 live births. This is higher than the 2010 MCH objectives for both Nebraska and the United States, which was to reduce the infant mortality rate to no more than 4.5 infant deaths per 1,000 live births.


- The Infant mortality rate for the HD is 6.91 , higher than the HP 2020 target of 6.0 and the state rate of 5.75.
- The percent of mothers in the HD who receive first trimester prenatal care is $70.6 \%$, which is comparable to the state percent (73.23\%) but below the HP 2020 target of $77.9 \%$.
- The percent of low birth weights (LBW) 5.61\%, which is comparable to the state rate of $7.07 \%$ and below the HP 202 target of $7.8 \%$ (NE 2010, 5\%). In 2010 alone the percent was 4.93\%, lower than the state percent of $7.11 \%$.
- Incidence of preterm births for the HD (7.25\%) is comparable to the state rate (9.75\%), and it is below the HP 2020 target of 11.4\%.
- The incidence of birth defects (25.8, here it is the average rate per 1,000 live births and fetal deaths) for the HD is significantly lower than that of the state (50.2). +


## Negative Comparisons

- Neural tube defects are birth defects of the brain and spinal cord, with the most common defects being spina bifida and anencephaly. The rate reported here represents the average incidence of neural defects per 1,000 live births and fetal deaths from 2004-2008. The rate for the HD (HD, 0.4; NE, 1) is comparable to the state rate. Both are higher than the target of . 28 per 1,000.
- For SIDS, the HD rate (1.3/1000) is more than two times the target (.5/1000).


## Teenage Births

For Female adolescents aged 15 years and under, the HP 2020 target is that $91.2 \%$ will never have had sexual intercourse. The baseline, reported in 2006-08, was 82.9\% (female adolescents aged 15 years had never had sexual intercourse). This target is related to the goals for Maternal and Child Health, because infants born to teenage mothers, especially those younger than 15 years, are more likely to suffer from low birth weight, neonatal death, and sudden infant death syndrome. There appears to be a greater risk of child abuse, neglect, and behavioral and educational problems, not to mention the problems for the teenagers who are pregnant. Though available PHAN for the HD does not include data about sexual behaviors, the 2011 report from the YRBS for Nebraska suggests that most of the state is below that parameter.

Table 47. Ever Had Sexual Intercourse (Nebraska, High School Youth Risk Behavior Survey, 2011)

| Sex | Total | Female | Male |
| :--- | :---: | :---: | :---: |
| 9th | $18.0(14.9-21.6)$ | $17.0(12.7-22.4)$ | $19.0(15.3-23.5)$ |
| 10th | $34.1(28.5-40.1)$ | $32.9(25.6-41.1)$ | $35.0(28.6-41.9)$ |
| 11th | $47.5(43.2-51.9)$ | $51.0(44.6-57.4)$ | $43.9(38.6-49.4)$ |
| 12th | $51.7(45.2-58.2)$ | $50.0(40.8-59.2)$ | $53.4(44.8-61.8)$ |
| Total | $37.1(34.2-40.1)$ | $37.2(33.6-40.9)$ | $37.2(33.4-41.2)$ |
| N | $2,501+$ | 1304 | 1190 |

- Teenage births as a percent of total births is significantly higher for the HD (10.32\% 2005-2009) when compared to the state (8.35\%).
- On an annual basis (20052010), teenage births as a percentage of total births are significantly higher than the state percentage. The percent has steadily increased from 2008 (8.3\%) to 2010 (12.1\%).


Table 48. Low birth weight

|  | LBW <br> Births | Sample <br> Size | \% LBW | $95 \% ~ C I ~-~$ <br> Low | $95 \% \mathrm{Cl}-$ <br> High |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Nebraska | 12970 | 184368 | 7.0 | 6.9 | 7.2 |
| Cedar | 31 | 781 | 4.0 | 2.6 | 5.3 |
| Dixon | 38 | 558 | 6.8 | 4.7 | 8.9 |
| Thurston | 58 | 1120 | 5.2 | 3.9 | 6.5 |
| Wayne | 39 | 718 | 5.4 | 3.8 | 7.1 |
| HD | 166 | 3177 | 5.3 | 4.5 | 6.0 |



## Immunization and Infectious Diseases

For immunizations, the goals from HP 2020 vary by age and level of risk. For pneumonia vaccinations, the HP 2020 goal for adults aged 65 years and older is set at $90 \%$, set on the benchmark of $60 \%$ of this group who reported ever receiving a pneumococcal vaccination in 2008. For individuals $18-64$ who are at high risk, the goal is set at $60 \%$. While data are not available for this latter group, the proportions for adults $65+$ from the HD shows an increase in vaccinations over each of the four years from 2007 through 2010, beginning with $59 \%$ in 2007 and increasing to $64 \%$ in 2010. These proportions, however, are significantly less than those for Nebraska, and they are short of the 90\% HP 2020 goal (as are those for the state).

Lacking data for those 18-64 considered to be at high risk, the proportions for age groups are displayed in the adjacent table. Overall, about one in five adults in the groups has ever received an pneumonia vaccination.

An analysis of PHAN data for 2007-2008, however, shows that the rate of hospitalization for pneumonia in the HD is not significantly different than that of the state (HD, 219.3; NE, 242.1). For individual counties, however, the rates vary from Cedar (76.3) and Dixon (144.7) at the low end to Wayne (289.6) and Thurston (514.3).

The rate of hospitalizations for influenza in the HD are also not significantly different from those for the state (HD, 13.3; NE, 14). Those range from Dixon (23.4) to

Table 49. Pneumonia Shot Ever by Year for 65+

| Year | NNPHD | NE |
| :---: | :---: | :---: |
| 2007 | $59.4 \%$ | $71.8 \%$ |
|  | $(51.5 \%-67.4 \%)$ | $(69.4 \%-74.2 \%)$ |
|  | 103 | 2272 |
| 2008 | $61.2 \%$ | $70.6 \%$ |
|  | $(54.6 \%-67.8 \%)$ | $(68.6 \%-72.5 \%)$ |
|  | 162 | 3447 |
| 2009 | $60.8 \%$ | $69.1 \%$ |
|  | $(54.7 \%-67.0 \%)$ | $(67.2 \%-71.0 \%)$ |
|  | 178 | 3834 |
| 2010 | $63.7 \%$ | $70.9 \%$ |
|  | $(57.7 \%-69.7 \%)$ | $(69.0 \%-72.7 \%)$ |
|  | 192 | 4191 |

Pneumonia Shot Ever NNPHD -
2007,2008,2009,2010

| Age <br> Group | Yes | No |
| :---: | :---: | :---: |
| $18-24$ | $17.3 \%$ | $82.7 \%$ |
| $25-34$ | $17.0 \%$ | $83.0 \%$ |
| $35-44$ | $8.7 \%$ | $91.3 \%$ |
| $45-54$ | $11.0 \%$ | $89.0 \%$ |
| $55-64$ | $19.8 \%$ | $80.2 \%$ |
| $65+$ | $61.3 \%$ | $38.7 \%$ | Wayne (17.3; Cedar NA).

## Influenza Vaccinations.

Over the same period (2007 - 2010), the HD has a lower rate of vaccinations for influenza for each of the past four years (all ages), differences of $3 \%$ in 2007 and $7 \%$ in 2010, an average of $6 \%$ over the period. For those 65+, about two thirds (2009, 66.6\%) are vaccinated, lower than $74 \%$ across the state. The proportions by Age for the

Flu shot past 12 months


HD range from 19\% for those 18-24, 33\% for 25-34, 43\% for 55-64, and 66\% for those 65+.
The HP 2020 goal for adults 18-64 and for adults 65+ is 90\%; consequently, both the HD and the state fall far short of that goal.

## Injury Prevention

The CDC reports that in 2009 in the United States, injuries, including all causes of unintentional and violence-related injuries combined, accounted for $48.5 \%$ of all deaths among persons under 44 years of age-that is more deaths than noncommunicable diseases and infectious diseases combined.

## Falls

Among Americans 65 years and older, falls are the leading cause of injury death for. Each year, about $35 \%$ to $40 \%$ of adults 65 and older fall at least once. In the data from the Nebraska BRFSS website (for 2008 and 2010), falls, along with injuries resulting from falls, are reported by adults 45 and older. Further, the death rates from falls among older men and women have risen sharply over the past decade (CDC).


The types of injuries reported are moderate to severe injuries such as lacerations, hip fractures, or head traumas ( $20-30 \%$ ). These are the type of injury that affects getting around, independent living, and increase the risk of early death. Falls are the most common cause of traumatic brain injuries (TBI). 7 In 2000, TBI accounted for $46 \%$ of fatal falls among older adults.

The questions ask about the number of falls, with a range of 1-11. In Nebraska, $61 \%$ of those reported one fall, $22 \%$ reported 2 falls, and $7 \%$ reported three falls. In the HD, $55 \%$ of those with falls reported one fall, $25 \%$ reported two falls, and $7 \%$ reported three, with 5\% falling 6-10 times, and 3\% 11 or more times.

As a proportion of an age group, $18 \%$ of those 65 and older reported falls, as did $18 \%$ of those $45-54$. The proportion of the three age groups that reported falls were comparable to those for Nebraska. Of the persons reporting falls in the HD, $50 \%$ were 65 and older, and the remaining half was divided between those 45-54 and 55-64.

The proportion of those injured as a result of falls in the HD (2008, 34\%; 2010, 32\%) was higher than comparable proportion in Nebraska.

Statewide:

- 2008: $18.7 \%$ of the sample reported falls. Of those who fell, $28.5 \%$ reported injury.
- 2010: $17.8 \%$ of the sample reported falls. Of those, $29.1 \%$ reported an injury.

In the Health District.

- 2008: $19.2 \%$ of the sample reported falls. Of those who fell, $32.7 \%$ reported injury.
- 2010: $16.5 \%$ of the sample reported falls. Of those, $32.4 \%$ reported an injury.




## Seatbelt Usage

Motor vehicle crashes are the leading cause of death among those age 5-34 in the U.S.1 More than 2.3 million adult drivers and passengers were treated in emergency departments as the result of being injured in motor vehicle crashes in 2009.2 Adult seat belt use is the most effective way to save lives and reduce injuries in crashes. Yet millions of adults do not wear their seat belts on every trip.

Though air bags provide protection, they are not a substitute for seat belts. Seat belts reduce serious crash-related injuries and deaths by about $50 \%$. Nationally, adults age 18-34 are less likely to wear seat belts than adults 35 or older. Men are $10 \%$ less likely to wear seat belts than women. Adults who live in rural areas are $10 \%$ less likely to wear seat belts ( $78 \%$ use) than adults who live in urban and suburban areas ( $87 \%$ use). (CDC, 2010, unpublished data).

HP 2020 Goals. The HP 2020 goal is to increase use of safety belts to $92.4 \%$ from $84 \%$ of motor vehicle drivers and passengers (a 2009 benchmark). In the health district the percent who used seat/safety belts increased from $82.4 \%$ in 2008 ( $\mathrm{NE}, 87.5 \%$ ) to 85.6 in 2010 (NE, 88.9\%). The HD percent is lower than that of the state and both are lower (do not meet) the 2020 target.

Table 50. How often use seatbelts in car (percent) ?

| Age <br> Group |  | Always | Nearly <br> always | Sometimes | Seldom | Never | Never drive/ <br> ride in a car | Always/ <br> Nearly Always |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $18-24$ | NNPHD | $* *$ | $* *$ | $* *$ | $* *$ | $* *$ |  | 82.1 |
|  | NE | 63.2 | 18.9 | 11.2 | 4.9 | 1.8 | 0.1 | 81.3 |
| $25-34$ | NNPHD | 55.6 | 25.7 | 8.2 | 4.2 | 6.3 |  | 87.6 |
|  | NE | 68.9 | 18.7 | 6.1 | 3.8 | 2.4 | . | 82.8 |
| $35-44$ | NNPHD | 52.7 | 30.1 | 12.7 | 4.2 | 0.2 |  | 89.2 |
|  | NE | 72.5 | 16.7 | 6.8 | 2.2 | 1.8 | . | 85.8 |
| $45-54$ | NNPHD | 61.5 | 24.3 | 7 | 3.5 | 3.6 |  | 88.7 |
|  | NE | 71.4 | 17.3 | 6.2 | 2.6 | 2.4 | 0 | 85.2 |
| $55-64$ | NNPHD | 65.5 | 19.7 | 8.2 | 3.2 | 3.5 |  | 89.5 |
|  | NE | 73.1 | 16.4 | 6.2 | 2.5 | 1.8 | 0 | 91.1 |
| $65+$ | NNPHD | 67.2 | 23.9 | 4.5 | 1.8 | 2.7 |  | 90.3 |
|  | NE | 74.9 | 15.4 | 5 | 1.9 | 2.7 | 0.2 |  |

** Insufficient sample size to calculate a reliable estimate (denominator <50 respondents)

## Motor Vehicle Deaths

The role of Seat Belt usage and its potential to save lives in motor vehicle crashes is noted above. The HP 2020 goal is to reduce motor vehicle crash-related deaths to 12.4 deaths per 100,000 population from a baseline: 13.8 deaths per 100,000 population (2007). The adjacent table shows that Nebraska has met that goal in 2010, but that for most of the years the HD is well above that goal. Within counties (2005-

Table 51. Vital Statistics Report: Deaths Due to MV Accident 2009), Dixon (31) and Thurston (25.5) have the highest rates, while Wayne has the lowest (10.2).

## Suicide

In 2009, suicide was ranked as the 10th leading cause of death among persons ages 10 years and older, accounting for 36,891 deaths. Using 2010 rates (PHAN Vital Statistics Report), suicide ranks $14^{\text {th }}$ as a cause of death in the HD, $15^{\text {th }}$ in Nebraska.

For Healthy Nebraska the 2010 target was to reduce the deaths due to suicide to no more than 4.8 deaths per 100,000 population. The HP 2020 Goal is 10.2 , based on a $10 \%$ improvement of the 2007 baseline of 11.3/100,000. According to PHAN data, the HD rate of suicide is the statistically the same as that of the state, while the rates for inpatient and outpatient hospitalization for self-inflicted injury (2007-2008) are significantly lower than that of the state. Those data conflict with

Table 52. Vital Statistics Report: Deaths Due to Suicide

|  | NNPHD | Nebraska |
| :---: | :---: | :---: |
| 2005 | 10.7 | 10.6 |
| 2006 | 10.3 | 10.9 |
| 2007 | 0 | 10 |
| 2008 | 17.2 | 10.5 |
| 2009 | 16.9 | 9.2 |
| 2010 | 16.5 | 10.1 | what PHAN has published online for individual years from 2005-2010; those year by year are higher.

These are included here, however, because they show variation between counties, with Wayne and Thurston having higher rates and Cedar and Dixon much lower rates. Looking at the year-by-year report, however, shows that for each of the years between 2008 and 2010, the rates of suicide for the health district are about 70\% higher than those for the state.

Table 53. Social and Mental Health: Suicide Data (PHAN)

|  | Cedar | Dixon | Wayne | Thurston | HD | NE |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| 1.1.7.a. Suicide mortality--deaths/100,000 <br> (2005-2009) | 5.4 | 3.6 | 15.4 | 20.6 | 11.2 | 10.5 |
| Self-inflicted injury hospitalization-- <br> outpatient (2007-2008) | 16 | 20.1 | 68.2 | 14.4 | 32.7 | 74 |
| Self-inflicted injury hospitalization-- <br> inpatient (2007-2008) | 5.6 | 11.6 | 17.6 | 17.8 | 12.9 | 58.9 |

## Quality of Life Data

PHAN reports include responses to questions about Quality of Life. In Healthy People reports, this term is described generally in relation to various health indicators, without specific data. This type of question is used by the CDC in the BRFSS and data from these responses are also used by the UW in calculating Healthy County rankings.

General Health. This is presented in two tables, the first for the HD by year (20072010), and the second by county. The data here come from the Health Status question of the BRFSS, a scaled item with five possible answers. The latter two (Fair/Poor) are used as negative health indicators. By year HD has a slightly higher proportion of those not in

Table 54. General health fair/poor (PHAN)

|  | NNPHD | Nebraska |
| :---: | :---: | :---: |
| 2007 | 13.63 | 12 |
| 2008 | 11.1 | 11 |
| 2009 | 15.36 | 13 |
| 2010 | 11.25 | 12 | good health in 2007 and 2009, while in 2008 and 2010 the health status is equal to what was reported for Nebraska.

In the second table, one in ten respondents in the HD (approximately 2564 individuals) report a negative or risky health status. Even though the percentages for Fair/Poor are lower for three counties, the overall (with $16.7 \%$ for Thurston County) make the HD Health Status for that period significantly below/better than that of the state.

Table 55. Poor or fair health (UW)

|  | N | \% Fair/Poor | $\begin{aligned} & 95 \% \mathrm{Cl}- \\ & \text { Low } \end{aligned}$ | $\begin{aligned} & \text { 95\% CI - } \\ & \text { High } \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: |
| Nebraska |  | 12.0\% | 11.7\% | 12.4\% |
| Cedar | 543 | 8.7\% | 7.1\% | 10.7\% |
| Dixon | 461 | 9.6\% | 7.6\% | 12.1\% |
| Thurston | 788 | 16.7\% | 12.9\% | 21.4\% |
| Wayne | 773 | 10.2\% | 7.1\% | 14.5\% |
| HD | 2564 | 11.0\% | 9.7\% | 11.7\% |

These data are contradicted, at least for the purposes of comparison by PHAN data (from the current website) with answers to the same question put in a slightly different framework (Physical health not good on 14 or more of past 30 days) in which fewer NNPHD residents report not good health on fewer days than do residents from across Nebraska. With this

Poor physical health days in past $\mathbf{3 0}$ is included in here because it is an average number for all respondents from BRFSS data 2004-2010. It allows for county level comparisons. Cedar County residents have fewer poor health days (2.0) compared to Dixon (2.8) and Thurston (3.1). The average days for the HD (2.4) is lower than for the state (2.9).

Table 56. Physical health not good on 14 or more of past 30 days (PHAN)

|  | NNPHD | Nebraska |
| :---: | :---: | :---: |
| 2007 | 4.24 | 8.12 |
| 2008 | 6.67 | 7.69 |
| 2009 | 6.9 | 8.28 |
| 2010 | 6.37 | 8.33 |

Table 57. Poor physical health days in past 30 (UW)

|  |  |  |  |
| :---: | :---: | :---: | :---: |
| Physically Unhealthy Days | $95 \% \mathrm{CI}$ - Low | $95 \% \mathrm{CI}$ - High |  |
| Cedar | 2.9 | 2.8 | 3.0 |
| Dixon | 2.0 | 1.5 | 2.5 |
| Thurston | 2.8 | 1.9 | 3.6 |
| Wayne | 3.1 | 2.4 | 3.8 |
| HD | 1.9 | 1.5 | 2.3 |

Table 58. Limited access to healthy foods

|  | \# Limited Access | \% Limited Access |
| :--- | :---: | :---: |
| Nebraska | 127387 | $7.4 \%$ |
| Cedar | 1271 | $13.5 \%$ |
| Dixon | 1900 | $31.7 \%$ |
| Thurston | 697 | $10.0 \%$ |
| Wayne | 273 | $3.0 \%$ |
| NNPHD | 4141 | $13.3 \%$ |

Table 59. Quality of Life: Environmental Health

|  | Cedar | Dixon | Wayne | Thurston | NNPHD | NE | $\mu^{*}$ |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| 1.1.6.c. Percent of population served by <br> community water (2009) | 83.1 | 72.5 | 71.6 | 78.3 | 76.4 | 83.1 | -12.96 |
| 1.1.6.d. Childhood Blood Lead Levels (2007-2008)- <br> \# Elevated | 2 | 0 | 1 | 1 | 4 | 857 |  |
| \# of Children Tested | 55 | 46 | 60 | 49 | 210 | 48444 |  |
| \% with Elevated Blood Lead Levels | 3.6 | 0 | 1.7 | 2 | 1.9 | 1.8 |  |
| 1.1.6.e. Nitrate levels in community water system <br> (2005-2009) | 3.6 | 2.8 | 5.3 | 3.4 | 3.8 | 2.9 | 9.34 |
| 1.1.6.f. Percent of population receiving optimally <br> fluoridated water (2007) | 75.2 | 26.8 | 84.1 | 51.9 | 62.9 | 68.2 | -11.25 |

## Environmental Indicators.

- Only Wayne County has better access to healthy foods when compared to the state (UW). Onethird of Dixon County has limited access to healthy foods, compared to 7\% in Nebraska.
- The percent of children tested in 2007-2008 for lead is not different from the state, but note that the N is so small as to make the data unreliable.
- Nitrate levels in community water systems are significantly higher than those for Nebraska.
- The percent of HD residents receiving 'optimally fluoridated water' is significantly below that of the state.
- Radon Testing. According to HD reports, just over 2250 households have been tested for Radon, $20 \%$ of the total households in the HD. In the four counties, the HD reports 21 cases where mitigation was implemented.


## Dental

Oral diseases ranging from dental caries (cavities) to oral cancers cause pain and disability for millions of Americans. The impact of these diseases does not stop at the mouth and teeth. A growing body of evidence has linked oral health, particularly periodontal (gum) disease, to several chronic diseases, including diabetes, heart disease, and stroke. In pregnant women, poor oral health has also been associated with premature births and low birth weight. These conditions may be prevented in part with regular visits to the dentist. Nationally (2007), only $44.5 \%$ of people age 2 and older had a dental visit in the past 12 months, a rate that has remained essentially unchanged over the past decade.

Table 60. Last Visited Dentist or Dental Clinic - 2008,2010

|  | Within the past <br> year | Within the past 2 <br> years | Within the past 5 <br> years | 5 or more years <br> ago | Never |
| :---: | :---: | :---: | :---: | :---: | :---: |
| NNPHD- <br> 2008 | 64.6 | 12.2 | 9.1 | 13.9 | 0.3 |
| NE-2008 | 70.4 | 11.5 | 9.3 | 8.5 | 0.3 |
| NNPHD- <br> 2010 | 63.8 | 9.8 | 11.8 | 14.4 | 0.2 |
| NE-2010 | 68.4 | 11.2 | 10.8 | 8.7 | 0.8 |

The HP 2020 goal ( $\mathbf{O H}-7$ ) is to Increase the proportion of children, adolescents, and adults who used the oral health care system (dentist or dental clinic) in the past 12 months to $49.0 \%$ from the baseline of $44.5 \%$ of persons aged 2 years and older. Though the proportions in the table for the state and the HD are significantly higher, those data are for adults only. had a dental visit in the past 12 months in 2007. Data from the 2010 YRBS show that $75 \%$ of youth in Nebraska visited a dentist within the past 12 months.

On average, the percent of adults in the HD 65 to 74 who have had all of their permanent teeth extracted is $19.7 \%$, significantly higher than for the state ( $13.5 \%, 2008$ ). Both, however, exceed the goal HP 2020 goal ( $\mathrm{OH}-4.2$ ) which is to reduce the proportion of older adults aged 65 to 74 years who have lost all of their natural teeth to $21.6 \%$ from a baseline of $24.0 \%$. Though the percent of adults age 35-44 with no extractions is not related to HP 2020 goals, PHAN includes that in its reports. For the HD 61.5\% of that age group have no extractions, which is significantly lower than the percent reported across the state (72.7\%)


## Minority Population Data

PHAN includes tables with data specific to health behaviors among minority populations. Though those data may fit in other sections, they are included here. Some of the data reported may fluctuate with sample size and appear inconsistent. Obesity, for example, is reported as not different from HD to NE in 2008 (158), but it is reported as significantly lower in 2009 (-6.48). Except for that an No Leisure Activity in 2009, all other differences are significant using crude rate analysis.*

Table 61. Minority Health

| Minority Populations | Cedar | Dixon | Wayne | Thurston | HD | NE | $\mu^{*}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1.1.5.z. Obesity - 2008 | 39.1 | 39.1 | 39.1 | 39.1 | 39.1 | 37.3 | 1.584 |
| 1.1.5.z. Obesity - 2009 | 25.8 | 25.8 | 25.8 | 25.8 | 25.8 | 32.7 | -6.484 |
| 1.1.5.aa. No leisure activity - 2008 | 35.5 | 35.5 | 35.5 | 35.5 | 35.5 | 33 | 2.339 |
| 1.1.5.aa. No leisure activity - 2009 | 38.9 | 38.9 | 38.9 | 38.9 | 38.9 | 37 | 1.679 |
| 1.1.5.bb. Percent currently smoking cigarettes - 2008 | 41.8 | 41.8 | 41.8 | 41.8 | 41.8 | 22.3 | 22.191 |
| 1.1.5.bb. Percent currently smoking cigarettes - 2009 | 49 | 49 | 49 | 49 | 49 | 23.2 | 28.786 |
| 1.1.5.cc. Health good to excellent 2008 | 79.1 | 79.1 | 79.1 | 79.1 | 79.1 | 74.8 | 2.672 |
| 1.1.5.cc. Health good to excellent 2009 | 70.3 | 70.3 | 70.3 | 70.3 | 70.3 | 78.2 | -4.801 |
| Percent with no health insurance 2008 | 44.3 | 44.3 | 44.3 | 44.3 | 44.3 | 31.9 | 11.798 |
| Percent with no health insurance 2009 | 46.7 | 46.7 | 46.7 | 46.7 | 46.7 | 31.5 | 14.554 |
| 1.1.5.dd. Couldn't afford to see M.D. - $2008$ | 11.6 | 11.6 | 11.6 | 11.6 | 11.6 | 20.1 | -10.189 |
| 1.1.5.dd. Couldn't afford to see M.D. - $2009$ | 21.6 | 21.6 | 21.6 | 21.6 | 21.6 | 23.4 | -2.000 |

*This column contains the parameter from an analysis comparing Crude Rates or Ratios, indicating significance. If the value of $\mu$ is greater than $\pm 1.96$, the local rate differs at the $95 \%$ Confidence Interval (CI); if greater than $\pm 2.33$, it is at the $98 \%$ Cl; If at $\pm 2.58$, it is at the $99 \%$ Cl.

## Death Rates

The Appendix contains a table for incidence/death rates for a variety of illnesses. The table includes a comparison of HD to state rates using crude rate analysis, which shows no significant difference between HD rates and those of the state. Most of those data are based on 2003-2007 or 2005-2009 data; however, additional tables appear here with death rates 2010 and 2006-2010 data.

- Diabetes Mellitus. For 2010 and 2006-2010, the rate for Thurston County is four times that of the state.
- Alzheimer's Disease. Over time (2006-2010), Cedar County has the highest crude rate (32.6), slightly above that for the state.
- Accidental Death. For either timeframe in the table, the four counties have relatively high rates of accidental death.
- Cerebrovascular. Cedar, Dixon, and Thurston have high Crude Rates and Age Adjusted Rates when compared to the state. The rate for Wayne is very low.
- Chronic Lung Disease. Thurston County's rates are generally higher than those for the state and for the counties in the HD.
- Heart Disease. The Age Adjusted and Crude Rates for Cedar, Dixon, and Thurston, are generally higher than that of the state.
- Cancer. Using the timeframe of 2006-2010, the Age-Adjusted and Crude Rates of Thurston and Dixon are higher than that of the state.

Table 62. Death Rates

| TABLE: Diabetes Mellitus Deaths by County of Residence, 2010 and 2006-2010 |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 2010 |  |  | $\begin{aligned} & 2006- \\ & 2010 \end{aligned}$ |  |  |
|  | Total Deaths | Crude <br> Rate | Age-Adjusted Rate | Total Deaths | Crude <br> Rate | Age-Adjusted Rate |
| STATE | 450 | 24.6 | 21.6 | 2,273 | 25.4 | 21.9 |
| Cedar | 2 | 22.6 | 12.8 | 13 | 30.3 | 17.4 |
| Dixon | 1 | 16.7 | 12.1 | 3 | 9.7 | 5.5 |
| Thurston | 8 | 115.3 | 124.6 | 31 | 86.5 | 98.1 |
| Wayne | 0 | - | - | 7 | 15 | 11.6 |
| TABLE: Alzheimer's Disease Deaths by County of Residence, 2010 and 2006-2010 |  |  |  |  |  |  |
|  | 2010 |  |  | $\begin{aligned} & 2006- \\ & 2010 \end{aligned}$ |  |  |
|  | Total Deaths | Crude <br> Rate | Age-Adjusted Rate | Total Deaths | Crude <br> Rate | Age-Adjusted Rate |
| STATE | 565 | 30.9 | 24.9 | 2,757 | 30.8 | 24.3 |
| Cedar | 2 | 22.6 | 9 | 14 | 32.6 | 14.1 |
| Dixon | 3 | 50 | 31.9 | 9 | 29 | 17.4 |
| Thurston | 2 | 28.8 | 28.2 | 7 | 19.5 | 19.7 |
| Wayne | 0 | - | - | 3 | 6.4 | 5.8 |
| TABLE: Accidental Deaths by County of Residence, 2010 and 2006-2010 |  |  |  |  |  |  |
|  | 2010 |  |  | $\begin{aligned} & 2006- \\ & 2010 \end{aligned}$ |  |  |
|  | Total Deaths | Crude Rate | Age-Adjusted Rate | Total Deaths | Crude <br> Rate | Age-Adjusted Rate |
| STATE | 696 | 38.1 | 35.5 | 3,450 | 38.6 | 35.6 |
| Cedar | 8 | 90.4 | 77.4 | 23 | 53.5 | 39.8 |
| Dixon | 2 | 33.3 | 24.7 | 16 | 51.6 | 41.1 |
| Thurston | 3 | 43.2 | 51 | 19 | 53 | 61.9 |
| Wayne | 4 | 41.7 | 34.5 | 22 | 47.2 | 37.4 |


| TABLE: Cerebrovascular Disease Deaths by County of Residence, 2010 and 2006-2010 |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 2010 |  |  | $\begin{aligned} & 2006- \\ & 2010 \end{aligned}$ |  |
|  | Total Deaths | Crude <br> Rate | Age-Adjusted Rate | Total Deaths | Crude <br> Rate | Age-Adjusted Rate |
| STATE | 877 | 48 | 40.5 | 4,400 | 49.2 | 40.7 |
| Cedar | 12 | 135.6 | 65.4 | 61 | 142 | 66.3 |
| Dixon | 3 | 50 | 36.3 | 21 | 67.8 | 40.1 |
| Thurston | 4 | 57.6 | 54.9 | 28 | 78.1 | 80.4 |
| Wayne | 1 | 10.4 | 7.2 | 12 | 25.7 | 18.7 |
| TABLE: Chronic Lung Disease Deaths by County of Residence, 2010 and 2006-2010 |  |  |  |  |  |  |
|  |  | 2010 |  |  | $\begin{aligned} & 2006- \\ & 2010 \end{aligned}$ |  |
|  | Total Deaths | Crude <br> Rate | Age-Adjusted Rate | Total Deaths | Crude <br> Rate | Age-Adjusted Rate |
| STATE | 903 | 49.4 | 43.8 | 4,294 | 48 | 41.6 |
| Cedar | 5 | 56.5 | 28.2 | 19 | 44.2 | 23.1 |
| Dixon | 2 | 33.3 | 24.2 | 17 | 54.8 | 34.6 |
| Thurston | 5 | 72 | 74.6 | 15 | 41.9 | 43.4 |
| Wayne | 7 | 73 | 61.7 | 20 | 42.9 | 35 |
| TABLE: Heart Disease Deaths by County of Residence, 2010 and 2006-2010 |  |  |  |  |  |  |
|  | 2010 |  |  | $\begin{aligned} & 2006- \\ & 2010 \end{aligned}$ |  |  |
|  | Total Deaths | Crude <br> Rate | Age-Adjusted Rate | Total Deaths | Crude Rate | Age-Adjusted Rate |
| STATE | 3,344 | 183.1 | 153.6 | 17,075 | 190.8 | 157.7 |
| Cedar | 21 | 237.2 | 123.4 | 150 | 349.1 | 169.7 |
| Dixon | 17 | 283.3 | 176.8 | 85 | 274.2 | 172.2 |
| Thurston | 13 | 187.3 | 187.2 | 70 | 195.4 | 205.0 |
| Wayne | 15 | 156.3 | 117.3 | 80 | 171.6 | 131.6 |
| TABLE: Cancer Deaths by County of Residence, 2010 and 2006-2010 |  |  |  |  |  |  |
|  | 2010 |  |  | $\begin{aligned} & 2006- \\ & 2010 \end{aligned}$ |  |  |
|  | Total Deaths | Crude <br> Rate | Age-Adjusted Rate | Total Deaths | Crude <br> Rate | Age-Adjusted Rate |
| STATE | 3,437 | 188.2 | 167.4 | 17,053 | 190.6 | 166.8 |
| Cedar | 25 | 282.4 | 151.7 | 97 | 225.7 | 131.4 |
| Dixon | 21 | 350 | 220.1 | 76 | 245.2 | 172 |
| Thurston | 10 | 144.1 | 142.8 | 72 | 201 | 212.1 |
| Wayne | 14 | 145.9 | 141.8 | 70 | 150.1 | 131.9 |

Table 63. Age Adjusted Deaths 2005 through 2010

| AGE-ADJUSTED RATES | 2010 |  | 2009 |  | 2008 |  | 2007 |  | 2006 |  | 2005 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Sorted by NNPHD 2010 | NNPHD | Nebraska | NNPHD | Nebraska | NNPHD | Nebraska | NNPHD | Nebraska | NNPHD | Nebraska | NNPHD | Nebraska |
| Cancer | 164.4 | 167.4 | 149.5 | 167.7 | 152.8 | 171.9 | 161.9 | 178.2 | 142.6 | 177.2 | 173.5 | 175.6 |
| Heart Disease | 147.1 | 153.6 | 144.6 | 152.9 | 176.3 | 163.1 | 149 | 170 | 190.1 | 166.7 | 213.9 | 178.0 |
| Coronary Heart Disease | 85.7 | 85.0 | 102.8 | 83.8 | 108.8 | 87.0 | 80.0 | 93.4 | 120.6 | 90.3 | 118.5 | 102.7 |
| Unintentional Injury | 48.6 | 35.5 | 36.8 | 35.8 | 28.6 | 36.7 | 32.6 | 35.8 | 72.3 | 36.3 | 40.8 | 36.7 |
| Stroke | 43.5 | 40.5 | 50.7 | 40.3 | 45.3 | 39.2 | 54.3 | 44.0 | 50.0 | 44.5 | 45.9 | 48.7 |
| Chronic Lung Disease | 43.5 | 43.8 | 17.2 | 43.5 | 53.7 | 45.5 | 19.3 | 40.7 | 20.2 | 39.3 | 25.7 | 42.1 |
| COPD | 43.5 | 48.8 | 21.9 | 48.6 | 57.5 | 51.2 | 22.4 | 46.2 | 20.2 | 44 | 25.7 | 48.9 |
| Prostate Cancer | 42.7 | 20 | 26.9 | 23.8 | 11 | 24.1 | 16.9 | 25.8 | 16.9 | 23.6 | 20.6 | 26.9 |
| Diabetes | 29.0 | 21.6 |  |  |  |  |  |  |  |  |  |  |
| Lung Cancer | 27.8 | 46 | 46.9 | 45.2 | 39.6 | 45.5 | 12.5 | 49.3 | 24.2 | 47.6 | 45.5 | 48.6 |
| Colorectal Cancer | 21.5 | 17.3 | 18.2 | 16.8 | 14.8 | 18.4 | 22 | 18.3 | 29.9 | 19.4 | 13.2 | 18.6 |
| Breast Cancer | 20.1 | 19.3 | 11.8 | 19.4 | 27.5 | 21 | 29.7 | 22.1 | 10.1 | 19.5 | 20.0 | 24.0 |
| MV Accident | 19.4 | 11.2 | 13.2 | 13.8 | 13.3 | 13 | 6.2 | 15.5 | 40.6 | 14.9 | 28.0 | 15.4 |
| Suicide | 16.5 | 10.1 | 16.9 | 9.2 | 17.2 | 10.5 | 0 | 10 | 10.3 | 10.9 | 10.7 | 10.6 |
| Alzheimer Disease | 13.7 | 24.9 |  |  |  |  |  |  |  |  |  |  |
| Cervical Cancer | 6.3 | 2.6 | 0 | 1.2 | 0 | 1.9 | 0 | 1.5 | 0 | 1.6 | 0 | 1.7 |
| Homicide | 0 | 3.3 | 0 | 2.8 | 4.3 | 4.3 | 10 | 4 | 5.4 | 3.1 | 10.9 | 2.6 |


[^0]:    7
    Ionia Research

[^1]:    ${ }^{1}$ University of Wisconsin Population Health Institute. County Health Rankings 2012.

[^2]:    ${ }^{2}$ University of Wisconsin Population Health Institute. County Health Rankings 2012.
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[^3]:    ${ }^{3}$ Centers for Disease Control and Prevention. Measuring Healthy Days: Population Assessment of Health-related Quality of Life. Atlanta, GA: Centers for Disease Control and Prevention; 2000.

[^4]:    ${ }^{4}$ It should also be noted that proportions for questions in the BRFSS (2010) may vary depending on the date drawn.
    ${ }^{5}$ The 'Nebraska Option' calls for a $\$ 4,000$ annual deductible for individuals and $\$ 8,000$ for families, if they choose health care providers in their insurer's networks.

[^5]:    ${ }^{6}$ Healthy Counties Note: Healthy food outlets include grocery stores (NAICS 445110) with $>4$ employees and produce stands/farmers' markets (NAICS 445230).

[^6]:    ${ }^{7}$ This precipitous drop here should be viewed cautiously.
    ${ }^{8}$ When examined for the health district, the data become too thin and percentages are not reported at the DHHS BRFSS site. Consequently, the state data are used to describe these trends.

[^7]:    ${ }^{9}$ http://www.cancer.org/acs/groups/content/@epidemiologysurveilance/documents/document/acspc-028323.pdf, p. 16.

[^8]:    ${ }^{10}$ Op. Cit.

[^9]:    ${ }^{11}$ Cf., http://dhhs.ne.gov/publichealth/Documents/fbrst dth07.pdf.

