Bernalillo County Health Assessment

Prepared by the
Bernalillo County
Collective Impact for Neighborhood and County Health (CINCH)
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Acknowledgments
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CHAPTER 1: INTRODUCTION
This report compiles the most current available data related to chronic disease and social determinants of health for Bernalillo County, New Mexico. The Bernalillo County Office of Environmental Health received a Community Transformation Grant (CTG) from the Centers for Disease Control and Prevention (CDC) in September 2011 to initiate a capacity-building project. The purpose of the “Collective Impact for Neighborhood and County Health” (CINCH) project is to create healthier communities by building capacity to implement broad evidence- and practice-based policy, environmental, programmatic, and infrastructure changes in order to prevent heart disease, stroke, cancer and other leading causes of death or disability due to chronic disease. As a foundation for development of a Community Transformation Implementation Plan in Program Year 2, specific capacity-building activities have been undertaken in the first year, including this assessment. Other activities included development of a policy scan, community engagement with populations experiencing disparities, establishment of a training academy, and creation of a multi-sectoral coalition. This report summarizes existing community health data specific to population subgroups experiencing disparities in chronic disease morbidity and mortality.

The CINCH Project
"Collective impact” refers to the process of effecting social change through coordination and collaboration by change agents from multiple sectors. The CINCH project employs a collective impact approach to addressing chronic disease, and focuses on neighborhoods and sub-populations with the greatest health disparities.

All CTG awardees are required to address at least three of the following key strategic directions: (1) tobacco-free living; (2) active living and healthy eating; (3) increased use of high-impact quality clinical and other preventive services; (4) social and emotional wellness; and (5) healthy and safe physical environments. One of the required activities of the CINCH project is to collect indicator data on chronic diseases and chronic conditions, including cancer, obesity/overweight, diabetes, stroke, and heart disease.

A key aim of the CINCH project is to improve long-term chronic disease outcomes through policy change using CDC-recommended and evidence-based policy interventions. Measurable outcomes of the program must align with Healthy People 2020, and with the following performance goals (long term objectives) from the National Center for Chronic Disease Prevention and Health Promotion (NCCDPHP):
- Reduce death and disability due to **tobacco use** by 5% in the implementation area.
- Reduce the rate of **obesity** through nutrition and physical activity interventions by 5% in the implementation area.
- Reduce death and disability due to **heart disease and stroke** by 5% in the implementation area.

This health assessment is meant to provide a base-line for evaluating future changes in chronic disease, social determinants of those diseases, and clinical preventive services.

**The Problem**

Cardiovascular disease, cancer, chronic lower respiratory diseases, stroke, and diabetes rank among the leading causes of death in Bernalillo County (Table 1). Since 2006, over 70% of deaths in Bernalillo County were attributable to chronic disease.4, 5

| Table 1. Death Rates * for Five Leading Causes of Chronic Disease Death, 2006-2010 |
|---------------------------------|-----------------|-----------------|-----------------|
| **Cause of Death** **(ICD10)**  | **Rank** | **Rate** | **Rank** | **Rate** | **Rank** | **Rate** |
| Heart disease (I00-I09, I11, I13, I20-I51) | 1 | 157.4 | 1 | 157.8 | 1 | 178.5 |
| Neoplasm, malignant (C00-C97) | 2 | 153.9 | 2 | 152.6 | 2 | 172.5 |
| Chronic lower respiratory diseases (J40-J47) | 3 | 45.7 | 3 | 46.8 | 3 | 42.1 |
| Cerebrovascular diseases (I60-I69) | 4 | 39.3 | 4 | 34.9 | 4 | 39.0 |
| Diabetes mellitus (E10-E14) | 5 | 24.9 | 5 | 28.8 | 6 | 20.8 |

* Rates are per 100,000 population and are age-adjusted to 2010 U.S. standard population
** Based on the International Classification of Diseases, Tenth Revision, Second Edition, 2004

The cost in human lives from chronic disease is great. However chronic disease also results in significant economic costs due to long-term disability, hospitalization, and treatment, as well as loss of human potential. The Commonwealth Fund estimates that 2.4% of the national gross domestic product is lost because of chronic disease and disability-related factors, “from the combination of not working, sick days, and subpar productivity on the job.”6

Chronic disease has a similar economic impact in Bernalillo County. In 2007 the Milken Institute estimated that significant reductions in obesity and other chronic disease-related risk factors could save New Mexico over $6 billion in treatment-related costs as
A 2009 report from the New Mexico Department of Health (NMDOH) stated that, “an estimated $390 million was spent overall in New Mexico on healthcare services for heart disease; lost productivity amounted to an additional $780 million in New Mexico.” Roughly a third of New Mexico’s population resides in Bernalillo County. Although there are no figures for how much chronic disease costs Bernalillo County, we can extrapolate that the cost is approximately a third of the costs borne by the state.

Some populations and neighborhoods in Bernalillo County suffer disproportionately from chronic disease, with some areas of the county experiencing mortality rates that are nearly double. This assessment suggests that poverty plays an important role in susceptibility to disease. Race and ethnicity also play a role, as they interact with poverty. Related to these are access to education and other factors that will be discussed in the body of this report.

**Methods and Report Layout**

This report begins with a description of Bernalillo County and a synopsis of the nature of health disparities and social determinants of health. The remainder of the report is organized around the CDC strategic directions. Chapter Three discusses tobacco use prevalence, lung cancer, chronic lower respiratory disease, and asthma. Chapter Four discusses obesity, diabetes, and various cardiovascular diseases related to healthy eating and active living. Chapter Five discusses clinical preventive services, including screening data for various cancers, diabetes, high blood pressure, and cholesterol.

Unless otherwise noted, chronic disease rates and census data are presented for all ages and both sexes, and are age-adjusted. Mortality rates are calculated based on a per-100,000 person basis. Incidence rates are all calculated based on a per-100,000 person basis. We have not performed statistical tests of significance on most comparisons. Data are presented by multiple divisions of geography. In addition to zip codes, this report will also incorporate the use of NMDOH “small areas.”

In Bernalillo County, NMDOH has designated 32 small areas, plus Kirtland Air Force Base. The small areas are an aggregate of 2010 census tracts, each small area containing several census tracts. There are several advantages to small areas over either zip codes or census tracts. To some extent the small areas represent coherent neighborhoods. There are also instances where it was most appropriate to present data at the elementary school level or high school level. All maps are located in Appendix 1. Kirtland Air Force Base has been removed from the analysis due to its small population, its tendency to produce unstable rates due to denominator variation from year to year, and the population’s transience and lack of representativeness.
CHAPTER 2: CHRONIC DISEASE
DISPARITIES IN BERNALILLO COUNTY

Social determinants of health are factors such as income, discrimination, access to transportation, or living in a particular locality that exposes one to greater environmental risks. We speak about the social determinants to acknowledge the ways that the organization of society impacts the distribution of resources and creates living conditions which are either more or less advantageous to health. Social determinants of health are best understood as mutually reinforcing phenomena, not as separate forces of greater and lesser importance. For example, in Bernalillo County (as in the rest of the United States) people who are living in poverty are more likely to be people of color and are less likely to attain education. Although poverty is one of the most important predictors of health, it cannot be completely disentangled from the other societal forces which may cause or be caused by poverty. Each additional obstacle that a person faces decreases his/her life chances as each factor works synergistically to disadvantage that person.

A Profile of Bernalillo County

Bernalillo County (Map 1) is the geographic and economic center of New Mexico. It is bisected by the Rio Grande River, and by two major interstates, I25 and I40, which subdivide the county roughly into quadrants. Albuquerque, the largest city in New Mexico, is the seat of Bernalillo County, and comprises 545,852 of the County’s 662,564 residents (Figure 1). The remaining 116,712 residents live in the unincorporated areas of Bernalillo County. Between the 1990 and 2010 U.S. Census periods, the population of Bernalillo County grew nearly 30%. Bernalillo County’s racial and ethnic distribution is shown in Table 2.

The population of Bernalillo County is not evenly distributed by race and ethnicity. Non-Hispanic Whites tend to be clustered near the University of New Mexico (UNM) and in the Northeast Heights district of Albuquerque. American Indians are greater in number in the far Southeast Heights, the “International District” (a neighborhood in the Southeast Heights of Albuquerque), and along the south and west borders of the county where the Isleta Pueblo, Laguna Pueblo, and Tohajiilee communities are located. Hispanics tend to be clustered in the South Valley and the West Mesa (Map 2).
Figure 1. Bernalillo County Population by Year

Table 2. Bernalillo County Race/Ethnicity, 2010

<table>
<thead>
<tr>
<th>RACE</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Population</td>
<td>662,564</td>
<td>100</td>
</tr>
<tr>
<td>White</td>
<td>459,660</td>
<td>69.4</td>
</tr>
<tr>
<td>Black or African American</td>
<td>19,652</td>
<td>3.0</td>
</tr>
<tr>
<td>American Indian and Alaska Native</td>
<td>31,744</td>
<td>4.8</td>
</tr>
<tr>
<td>Asian</td>
<td>15,525</td>
<td>2.3</td>
</tr>
<tr>
<td>Some Other Race and Two or More Races</td>
<td>135,983</td>
<td>20.5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HISPANIC OR LATINO</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Population</td>
<td>662,564</td>
<td>100.0</td>
</tr>
<tr>
<td>Hispanic or Latino (of any race)</td>
<td>317,089</td>
<td>47.9</td>
</tr>
<tr>
<td>Not Hispanic or Latino</td>
<td>345,475</td>
<td>52.1</td>
</tr>
</tbody>
</table>
Bernalillo County’s economy is diverse, but has a few key drivers. The largest single employer in the county is UNM, with 20,210 employees in 2012. The county is also home to Sandia National Laboratories (a national research and development laboratory) and a number of other significant technology companies. As of December 2011, the employed workforce in Bernalillo County was 310,200, a 0.8% drop from the previous year. As of July 2012, the unemployment rate in Bernalillo County was 7.6%, compared to the U.S. rate of 8.6%. During the same time period, the average weekly wage had fallen in Bernalillo County by 2.7% to $829, while the national average was $955.

Albuquerque Public Schools (APS) is the only school district in Bernalillo County. APS includes 13 high schools, 27 middle schools, and 89 elementary schools. Additionally, the district has 33 charter schools and 11 alternative schools. A breakdown of the schools’ racial and ethnic composition demonstrates the demographics of the youth population of Bernalillo County (Figure 2).

The Roots of Health Disparities
The causes of health disparities are complicated and diverse. Poverty, and its attendant indicators such as unemployment and income, are social determinants. Poverty is unevenly distributed in Bernalillo County (Map 3). For this map, poverty is calculated at
100% of the federal poverty level, which is $23,050 annually for a family of four. The areas in darkest brown represent the areas with the greatest percentage of households living in poverty.

Map 3 shows the percentage of families living below the Federal Poverty Level (FPL) based on area of residence. The areas with the highest concentration of families below the FPL include the International District, the South Valley, and the West Mesa. Another measure of poverty is the percent of the population enrolled in the Supplemental Nutrition Assistance Program (SNAP), or food stamp program (Map 4). A comparison of Map 3 and Map 4 shows that household poverty overlaps with heavy enrollment in SNAP.

Educational attainment is a strong predictor of health. Figure 3 shows how educational attainment varies by race and ethnicity in Bernalillo County. More than 56% of Hispanics have a high school education or less, compared to only 22.6% of non-Hispanic Whites. Map 5 shows Bernalillo County residents aged 25 or older with a high school diploma or greater.
Major Health Disparities by Race and Ethnicity, Income, Education, and Geography

Having low income means having fewer options for getting and staying healthy. Map 3 of this report identifies small areas within the County with the highest poverty rate. Map 4 and Map 5 show that about 20% of residents in the International District are enrolled in SNAP and less than 75% of them have a high school diploma. The International District is also one of the areas in Bernalillo County with the highest death rate from chronic disease (Map 6). Map 7 shows the average age of death due to chronic disease, and indicates that life expectancy is lower on the West Mesa, in the South Valley, and on tribal lands.

Disparities occur in other health indicators besides mortality. Figure 4 shows results from several health status questions asked on the Behavioral Risk Factor Surveillance System (BRFSS) survey. Among BRFSS respondents from various racial and ethnic groups in Bernalillo County, non-Hispanic Whites fared better than all other ethnic groups among certain key measures, including access to care. American Indians are less likely to have health insurance, while African Americans are most likely to encounter financial barriers to obtaining health care. Overall, more than 20% of Bernalillo County’s population is uninsured. New Mexico ranks third in the nation for number of uninsured residents.

![Figure 4. Racial and Ethnic Differences in Key Health Issues, Bernalillo County, 2006-2010](image-url)
CHAPTER 3: TOBACCO-FREE LIVING

The goal of this CDC-recommended strategic direction is to prevent and reduce tobacco use. Living tobacco-free means avoiding the use of all types of tobacco products, such as cigarettes, cigars, smokeless tobacco, and hookahs, as well as living free from secondhand smoke exposure.

Commercial tobacco use (as opposed to ceremonial use of tobacco by American Indians, who comprise 4.8% of Bernalillo County’s population) is strongly associated with several leading causes of death, many of which are preventable. While the association between tobacco use and lung cancer is well known, research has established that tobacco use is also associated with nearly as many deaths from heart disease and other diseases, including chronic obstructive pulmonary disorder and stroke. Smoking-attributable mortality (SAM) is calculated using nineteen distinct diseases that include various cancers, cardiovascular diseases, and respiratory disorders.

Youth Tobacco-Use Prevalence

Tobacco use typically begins in youth. According to the CDC, over 80% of smokers started smoking before age eighteen. The best source of data for youth tobacco use is the Youth Risk and Resiliency Survey (YRRS), which is administered to high school and middle school students.

High School Population. In Bernalillo County 8,168 high school students participated in the YRRS in 2009. Smoking rates were highest among American Indian high school students in Bernalillo County followed by Hispanics, Asian/Pacific Islanders, non-Hispanic Whites, and African Americans (Figure 5).

When compared with New Mexico, Bernalillo County’s tobacco use rate among high school students was lower for almost every measure (Table 3). Results from the YRRS also reveal certain disparities by zip code within Bernalillo County.
Table 3. Percent of High School Students Responding “Yes” to Select YRHS Tobacco Questions, 2009

<table>
<thead>
<tr>
<th>Question</th>
<th>Zip Code</th>
<th>Bernalillo County</th>
<th>New Mexico</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ever tried cigarette smoking?</td>
<td>87108</td>
<td>45.4</td>
<td>53.4</td>
</tr>
<tr>
<td></td>
<td>87105</td>
<td>56.1</td>
<td>58.0</td>
</tr>
<tr>
<td></td>
<td>87121</td>
<td>64.1</td>
<td>20.9</td>
</tr>
<tr>
<td></td>
<td>87110</td>
<td>52.9</td>
<td>24.0</td>
</tr>
<tr>
<td>Smoked cigarette before age 13?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>87108</td>
<td>13.8</td>
<td>19.3</td>
</tr>
<tr>
<td></td>
<td>87105</td>
<td>15.8</td>
<td>23.5</td>
</tr>
<tr>
<td></td>
<td>87121</td>
<td>24.9</td>
<td>24.8</td>
</tr>
<tr>
<td></td>
<td>87110</td>
<td>13.5</td>
<td>20.9</td>
</tr>
<tr>
<td>Current cigarette smoker?</td>
<td>87108</td>
<td>14.6</td>
<td></td>
</tr>
<tr>
<td></td>
<td>87105</td>
<td>19.3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>87121</td>
<td>23.5</td>
<td></td>
</tr>
<tr>
<td></td>
<td>87110</td>
<td>24.8</td>
<td></td>
</tr>
</tbody>
</table>

High school students in zip code 87121 had the highest response rate to the question “have you ever tried cigarette smoking?” while students in zip code 87108 had the lowest response rate. Zip code 87121 includes Bernalillo County’s Southwest mesa and zip code 87108 encompasses Albuquerque’s “International District” (including much of the County’s urban-Indian population). High school students in zip code 87110 (Albuquerque’s Uptown area) had the highest response rates for the question, “are you a current cigarette smoker?” (24.8%). By comparison, high school students in zip code 87108 had the lowest rates for being a current smoker (14.6%).

Middle School Population. When compared with New Mexico, fewer of Bernalillo County’s middle school students reported ever trying a cigarette, smoking cigarettes before age eleven, or being a current smoker (Table 4).
Table 4. Percent of Middle School Students Responding “Yes” to Select YRRS Tobacco Questions, 2009

<table>
<thead>
<tr>
<th>Zip Code</th>
<th>87111</th>
<th>87106</th>
<th>87108</th>
<th>87105</th>
<th>87107</th>
<th>Bernalillo County</th>
<th>New Mexico</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ever tried cigarette smoking?</td>
<td>10.6</td>
<td>13.4</td>
<td>28.3</td>
<td>32.5</td>
<td>37.1</td>
<td>23.9</td>
<td>24.8</td>
</tr>
<tr>
<td>Smoked cigarette before age 11?</td>
<td>0.9</td>
<td>2.7</td>
<td>5.8</td>
<td>7.5</td>
<td>11.5</td>
<td>5.6</td>
<td>5.7</td>
</tr>
<tr>
<td>Current cigarette smoker?</td>
<td>2.1</td>
<td>2.6</td>
<td>9.8</td>
<td>9.5</td>
<td>9.4</td>
<td>5.9</td>
<td>6.8</td>
</tr>
</tbody>
</table>

Middle school students in 87107 zip code, encompassing parts of Albuquerque’s North Valley, had the highest response rate to the question “have you ever tried cigarette smoking?” (37.1%), while middle school students in zip code 87111 in Albuquerque’s Northeast Heights, had the lowest response rate (10.6%). Middle school students in the 87107 zip code had the highest response rate to the question “have you smoked cigarette before age 11?” (11.5%), while students in zip code 87111 had the lowest response rate (0.9%). Middle school students in 87108 had the highest response rate to the question “are you a current smoker?” (9.8%), while middle school students in zip code 87111 had the lowest response rate (2.1%).

**Adult Tobacco-Use Prevalence**

The best source of data for adult tobacco use is the BRFSS, a random-digit-dialed telephone survey conducted annually in New Mexico.26 Bernalillo County and New Mexico data on current cigarette smokers by race and ethnicity are presented in Figure 6.20

Within Bernalillo County, smoking rates for American Indians were higher than any other racial/ethnic group, followed by Asian/Pacific islanders, African Americans, Hispanics, and non-Hispanic Whites, respectively. In addition, American Indians in Bernalillo County had considerably higher rates of smoking than American Indians in New Mexico as a whole (24.6% and 20.5%, respectively).
Figure 6. Current Adult Cigarette Smokers by Race/Ethnicity, 2006-2010

Figure 7 shows the income disparity among smokers. Bernalillo County residents making more than $50,000 per year smoke at a rate of 12.0%, while residents making less than $15,000 per year smoke at a rate of 35.0%, suggesting that there is a positive relationship between low income and high smoking rates in Bernalillo County.

Figure 7. Adult Smoking by Income, 2006-2010
Cancer in Bernalillo County
In 2011, there were 995 cancer deaths in Bernalillo County. Roughly 2,800 cancers are newly diagnosed in Bernalillo County each year, with slightly more cases in males than females. Smoking causes 85% of all lung cancers, and is a risk factor for cancers of the lip, oral cavity, pharynx, esophagus, stomach, pancreas, larynx, trachea, lung, bronchus, cervix uteri, kidney and renal pelvis, urinary bladder, and blood. This chapter presents data for all cancers combined, and for lung cancer because of its strong association with tobacco use.

All Cancers Combined in Bernalillo County
There are significant racial/ethnic differences in overall cancer incidence in Bernalillo County, with the highest cancer rates seen in non-Hispanic Whites, followed by Hispanics, and the lowest cancer rates seen in American Indians, African Americans, and Asian/Pacific Islanders. Overall, cancer incidence rates among females have been declining for all racial/ethnic groups, with the exception of Hispanic women, where rates have increased (Figure 8).

![Figure 8. Trend in Female Incidence for All Cancers Combined by Race/Ethnicity, Bernalillo County, 2000-2009](image)

Cancer mortality rates follow patterns similar to incidence rates across population groups. However, the ratio of cancer mortality to incidence is disproportionately higher among Hispanics, American Indians, and African Americans when compared to non-Hispanic Whites (Table 5). Hispanic males have the highest overall cancer mortality rates despite incidence rates that are 20% lower than that of non-Hispanic White males.
Additionally, cancer mortality to incidence ratios (MIRs) vary by area socioeconomics, strongly increasing with increasing area level poverty. The social gradient in all cancer MIRs is most pronounced in males, where an approximate 50% difference in the MIR is seen between low and high poverty areas (Figure 9). High MIRs for all cancers combined are in the South Valley, the International District, the West Mesa, and on tribal lands (Map 8).

### Table 5. Incidence Rates, Death Rates, and Mortality-to-Incidence Ratios (MIR) for All Cancer Sites Combined by Race/Ethnicity and Gender, Bernalillo County, 2005-2009*

<table>
<thead>
<tr>
<th></th>
<th>Males</th>
<th></th>
<th>Females</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Incidence</td>
<td>Mortality</td>
<td>MIR</td>
<td>Incidence</td>
</tr>
<tr>
<td></td>
<td>Cases</td>
<td>Rate</td>
<td>Deaths</td>
<td>Rate</td>
</tr>
<tr>
<td>All Races/Ethnicities</td>
<td>6,920</td>
<td>486.9</td>
<td>2,564</td>
<td>187.1</td>
</tr>
<tr>
<td>White</td>
<td>4,480</td>
<td>524.7</td>
<td>1,598</td>
<td>187.0</td>
</tr>
<tr>
<td>Hispanic</td>
<td>1,977</td>
<td>432.8</td>
<td>823</td>
<td>193.5</td>
</tr>
<tr>
<td>American Indian</td>
<td>103</td>
<td>264.3</td>
<td>49</td>
<td>140.5</td>
</tr>
<tr>
<td>African American</td>
<td>145</td>
<td>296.1</td>
<td>64</td>
<td>175.6</td>
</tr>
<tr>
<td>Asian/Pacific Islander</td>
<td>73</td>
<td>304.0</td>
<td>19</td>
<td>72.1</td>
</tr>
</tbody>
</table>

*Rates are age-adjusted and based on 100,000 population.
**Lung Cancer in Bernalillo County**

Lung cancer accounts for roughly 10% of all newly diagnosed cancers in Bernalillo County each year, and accounts for nearly 25% of all annual cancer deaths due to its generally poor survival.\(^{28}\) Up to 85% of lung cancers are attributed to cigarette smoking, and thus considered preventable.\(^{29}\) Given a latency period of thirty to forty years, current trends in lung cancer incidence reflect historical smoking patterns within a given population. In Bernalillo County, lung cancer incidence rates have been stable or declining in males, and stable or slightly increasing in females. Regardless of gender, lung cancer incidence is the highest in non-Hispanic Whites and Blacks, and the lowest in American Indians (Table 6).\(^{27,28}\)

<table>
<thead>
<tr>
<th>Table 6. Lung Cancer Incidence and Mortality Rates by Race/Ethnicity and Gender</th>
<th>Bernalillo County, 2005-2009</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Males</td>
</tr>
<tr>
<td></td>
<td>Incidence</td>
</tr>
<tr>
<td><strong>Cases</strong></td>
<td><strong>Rate</strong></td>
</tr>
<tr>
<td>All Races/Ethnicities</td>
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</tr>
<tr>
<td>White</td>
<td>519</td>
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<tr>
<td>Hispanic</td>
<td>154</td>
</tr>
<tr>
<td>African American</td>
<td>24</td>
</tr>
<tr>
<td>Asian or /Pacific Islander</td>
<td>11</td>
</tr>
<tr>
<td>American Indian</td>
<td>6</td>
</tr>
</tbody>
</table>

Lung cancer incidence also varies by area socioeconomics, with rates that generally increase with increasing area level poverty (Figure 10).\(^{27,28}\) The social gradient in lung cancer incidence is most pronounced among non-Hispanic Whites, particularly males, where a 50% difference in incidence rates exists between the most impoverished and the most affluent areas of the county.
Chronic lower respiratory disease (including asthma and emphysema) is the third leading cause of chronic disease death in Bernalillo County (Table 1). Between 2006 and 2010, chronic lower respiratory disease caused 1,446 deaths in Bernalillo County.

Asthma is a disease that disproportionally occurs among low-income individuals and tends to strike children who live in substandard housing. There are many triggers for asthma, including dust mites, pollution, cockroaches, mold, pets, and tobacco smoke. Asthma incidence is important to this health assessment because it may be a proxy for exposure to second hand smoke in multi-unit housing. Figure 11 shows the 2006-2010 asthma hospitalizations in Bernalillo County, with 40% of hospitalizations occurring among children age 1 to 14.

Second hand tobacco smoke can contribute to asthma in multi-unit housing because as much as 65% of the air can be exchanged between housing units through ventilation, cracks and plumbing. Map 9 shows asthma hospitalizations for all ages in Bernalillo County. It also shows the location of multi-unit housing throughout the county. The map area representing the greatest number of asthma hospitalizations with the largest number of multi-unit housing parcels (and one of the county’s most impoverished areas) is the International District.
Figure 11. Asthma Hospitalizations by Age Group, Bernalillo County, 2006-2010
Chapter 4: Healthy Eating and Active Living

The goal of this CDC-recommended strategic direction is to prevent and reduce obesity, increase physical activity, and improve nutrition. Healthy eating and regular physical activity can help lower blood pressure and prevent a range of chronic diseases.  

Adult Obesity in Bernalillo County

The nation’s growing obesity epidemic is responsible for an appreciable amount of heart disease, cerebrovascular disease, diabetes, and cancer.  

Bernalillo County’s adult overweight and obesity rates are slightly lower than rates for New Mexico (57.0% and 61.5%, respectively) (Figure 12). In 2011, New Mexico ranked 16th in the nation for obesity, with 25.6% of the adult population defined as obese.  

Body Mass Index (BMI) is a figure derived from height and weight measurements to determine if a person is at a healthy weight. A BMI between 25 and 30 is considered overweight and a BMI above 30 is considered obese. The data presented in this section are for adults and are not based on actual measurements but on self-reported data through the BRFSS. Figure 12 shows that there is a positive relationship between overweight/obesity and low income.

Figure 13 shows that American Indians have the highest rates of overweight, followed by African Americans and Hispanics. African Americans have the highest rate of obesity followed by Hispanics and American Indians.
Figure 12. Overweight/Obesity by Income, Bernalillo County & New Mexico, 2006-2010

<table>
<thead>
<tr>
<th>Income Level</th>
<th>Bernalillo County BMI 25+</th>
<th>New Mexico BMI 25+</th>
</tr>
</thead>
<tbody>
<tr>
<td>$0-$14,999</td>
<td>62.10%</td>
<td>65.90%</td>
</tr>
<tr>
<td>$15,000-$24,999</td>
<td>61%</td>
<td>65%</td>
</tr>
<tr>
<td>$25,000-$34,999</td>
<td>59.30%</td>
<td>63%</td>
</tr>
<tr>
<td>$35,000-$49,999</td>
<td>58.70%</td>
<td>62.50%</td>
</tr>
<tr>
<td>$50,000 or more</td>
<td>53.80%</td>
<td>57.80%</td>
</tr>
</tbody>
</table>

Figure 13. Adult Overweight/Obesity by Race/Ethnicity, Bernalillo County, 2006-2010
Figure 14 shows the distribution of overweight and obesity by age in Bernalillo County. Obesity tends to decline above age 65. Overweight is most prevalent among adults age 50-64, while obesity is most prevalent among adults age 35-49.

Figure 14. Adult Overweight/Obesity by Age, Bernalillo County, 2006-2010

Physical activity is one of the CDC-recommended practices to reduce overweight and obesity. Figure 15 shows self-reported rates of physical inactivity by income for Bernalillo County and New Mexico. The figure shows that as income decreases, so too does physical activity.

Figure 15. Physical Activity by Income, Bernalillo County and New Mexico, 2005, 2007, 2009
**Childhood Overweight and Obesity in Bernalillo County**

Childhood overweight and obesity has become a serious public health problem in recent years. Overweight and obesity in childhood produce a variety of health consequences in the immediate and long term.\(^{36, 37}\)

The Healthy Weight Assessment Project (HWAP)\(^{38}\) measures the BMI of nearly every kindergarten, third-grade, fifth grade, and eighth-grade student in the APS district. Map 10 shows the results of the HWAP for the 2008-2009 school year for elementary schools only.

The percentage of students who are overweight or obese within a given elementary school ranges from 18.1% to 49.1%. Schools having the greatest percentages of overweight/obese children are located along the main freeways, in the International District, in the South Valley, and on Isleta Pueblo.

**Heart Disease in Bernalillo County**

Heart disease is a term for a number of related diseases that affect the heart and circulatory system, including heart attack (myocardial infarction), atherosclerotic cardiovascular disease, and congestive heart failure.

Figure 16\(^{27}\) shows Bernalillo County heart disease mortality rates by gender and ethnicity for the ten-year period from 2000 to 2009. Heart disease mortality for males is highest among Hispanics, non-Hispanic Whites, African Americans, and American Indians, respectively.

Heart disease mortality for females is highest for African Americans, non-Hispanic Whites, Hispanics and American Indians, respectively.

Map 11 shows heart disease deaths across Bernalillo County for the ten-year period from 2000 to 2009. Darker areas represent higher mortality rates. Map 12 shows how heart disease mortality rates have changed between 2000 to 2004 and 2005 to 2009. Heart disease mortality has increased in the Uptown area, the North Valley, the South Valley, the West Mesa, and on tribal lands.
Diabetes is the fifth leading cause of death due to chronic disease in Bernalillo County (Table 1). Figure 17 shows the Bernalillo County diabetes mortality rate by gender and by race/ethnicity for the ten-year period from 2000 to 2009.

Diabetes mortality for males is highest among African-Americans, Hispanics, and American Indians, respectively. Diabetes mortality for females is highest among African Americans, American Indians, and Hispanics, respectively.

Map 1 shows diabetes mortality for the ten-year period from 2000 to 2009. Darker areas represent higher mortality rates. Mortality is highest in the International District, the South Valley, on the West Mesa, and on tribal lands.

Diabetes incidence rates were collected from the Hospital Inpatient Discharge Data Surveillance (HIDDS) system. Hospitalization rates serve as a good proxy for measuring the population’s disease burden from diabetes. Diabetes hospitalization rates in Bernalillo County (10.5 per 10,000) are well below the national average (20.0 per 10,000) for the period 2000 to 2009.
Figure 17. Diabetes Death Rate by Gender & Race/Ethnicity, Bernalillo County, 2000-2009

Stroke in Bernalillo County
Stroke is the fourth leading cause of chronic disease death in Bernalillo County, New Mexico, and the United States (Table 1). Bernalillo County’s stroke related mortality rate (39.3) is greater than the rate for New Mexico (34.9) and the United States (39.0). Figure 18 shows the mortality rate for stroke in Bernalillo County between 2000 and 2009 by race and ethnicity. Stroke mortality for males is highest among Asian/Pacific Islanders, followed by African Americans, and Hispanics. Stroke mortality for females is highest among African Americans, followed by Hispanics and non-Hispanic Whites.

Figure 18. Stroke Death Rate by Gender and Race/Ethnicity, Bernalillo County, 2000-2009
The Built Environment, Healthy Eating, and Active Living in Bernalillo County

Healthy eating and active living are influenced by more than a person’s decision to either exercise or eat according to recommended guidelines. Aspects of the built environment also influence how easy it is to eat healthy and be active; for example, healthy food options need to be accessible and affordable. Similarly, places to exercise must be accessible, safe, and inviting.
Chapter 5: High-Impact Clinical Preventive Services

Clinical preventive services (including screening, disease management, and immunization) have the potential of decreasing incidence and mortality associated with chronic disease.\(^{39}\)

Bernalillo County’s health care network is comprised of five hospitals, three federally qualified community health clinics, one major private medical group, a university-based medical group, and the Albuquerque Area Indian Health Service, as well as numerous private health care providers.\(^{40}\) This network of hospitals and clinics play an important role in the delivery of preventative services to county residents.

When available, this chapter presents screening and diagnostic data from the New Mexico BRFSS for the leading causes of death in Bernalillo County. Because hypertension and elevated cholesterol levels increase the risk for heart disease and stroke (two of the top five leading causes for chronic disease related death in the county), data on these two health indicators are highlighted in this chapter.

Several Bernalillo County hospitals, health plans, and health care providers are members of the Albuquerque Coalition for Health Care Quality. The Coalition is funded through the Robert Wood Johnson Foundation’s Aligning Forces for Quality (AF4Q)\(^{40}\) initiative, which focuses on improving quality of care. Through this effort, the Coalition has gathered data on heart disease, diabetes, breast, and cervical cancer care from five medical groups.

High Blood Pressure in Bernalillo County

BRFSS hypertension diagnostic data show a higher percentage of doctor-diagnosed hypertension among African Americans and Hispanics in the county (Figure 19).\(^{20}\)
The American Heart Association recommends that all adults over the age of 20 should have a fasting lipoprotein profile, which measures total cholesterol once every five years. Cholesterol screening percentages in Bernalillo County vary according to race/ethnicity and income (Figures 20 and 21). A positive relationship exists between low cholesterol screening rates and low income. African Americans have the highest cholesterol screening percentage of any racial or ethnic group in Bernalillo County. American Indians and Hispanics have the lowest cholesterol screening percentages; 36% of American Indians and nearly 31% of Hispanics report having never been screened.
Diabetes in Bernalillo County

As highlighted in the previous chapter, Diabetes is the fifth leading cause of death due to chronic disease in Bernalillo County. For the period 2000 to 2009, diabetes hospitalization rates in Bernalillo County were 10.5 per 10,000, which is below the national average of 20.0 per 10,000. African Americans report the highest percentage of doctor-diagnosed diabetes, followed by American Indian/Alaska Natives (Figure 22).

Figure 22. Doctor-Diagnosed Diabetes by Race/Ethnicity, Bernalillo County, 2006-2010
Cancer Screening in Bernalillo County
Cancer screening can reduce mortality by detecting some of the most common types of cancer (including breast, cervical, and colorectal cancer) before symptoms appear.

Colorectal Cancer Screening. Cancer of the colon and rectum accounts for roughly 8% of all cancers newly diagnosed in Bernalillo County each year, and is the cause of roughly 9% of annual cancer deaths. Screening can detect colorectal cancers as well as non-cancerous polyps before they develop into malignancies. Colorectal cancer is more treatable when it is found at an early stage, before it has had a chance to spread.

In Bernalillo County, a declining trend in colon and rectum cancer incidence has occurred in non-Hispanic Whites, but a mixed picture is seen with other racial/ethnic groups. In particular, incidence rates have modestly declined among Hispanic males while slightly increasing in Hispanic females (Figure 23). Compared to non-Hispanic Whites, Hispanics experience a higher overall incidence of colon and rectum cancer, as well as a greater likelihood of being diagnosed with late-stage disease. Regardless of race/ethnicity, persons living in the most impoverished areas of the county appear to be at higher risk of colon and rectum cancer than their more affluent counterparts (Figure 24). The risk of late-stage diagnosis is disproportionately higher in the less affluent and more impoverished areas of the county. Map 14 shows that more late-stage tumors are found in small areas bordering the Rio Grande River, including the South Valley and the North Valley.

Figure 23. Trend in Female Colon and Rectum Cancer Incidence Rates by Race/Ethnicity, Bernalillo County, 2000-2009
Non-Hispanic White patients over age 50 report being screened (including colonoscopy, sigmoidoscopy, and FOBT) more frequently than other racial and ethnic groups (Table 7).\textsuperscript{29}

### Table 7. Colorectal Cancer Screening History Among Adults Age 50+ by Race/Ethnicity, Bernalillo County, 2006, 2008, and 2010

<table>
<thead>
<tr>
<th></th>
<th>Positive Screening History (%)</th>
<th>Lower 95% CI</th>
<th>Upper 95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>American Indian/Alaska Native</td>
<td>41.2</td>
<td>26.5</td>
<td>57.6</td>
</tr>
<tr>
<td>Hispanic</td>
<td>53.4</td>
<td>48.5</td>
<td>58.3</td>
</tr>
<tr>
<td>White</td>
<td>67.9</td>
<td>65.0</td>
<td>70.6</td>
</tr>
</tbody>
</table>
Cervical Cancer and Screening. Cervical cancer incidence rates in Bernalillo County have generally been stable or declining in recent years, with most cases occurring in non-Hispanic White or Hispanic women. Among these two groups, cervical cancer occurs more frequently in Hispanics than Whites, but relatively little difference in mortality is observed, despite a higher likelihood in Hispanic women to be diagnosed with late-stage disease (Table 8). Regardless of race/ethnicity, cervical cancer incidence rates increase with increasing area poverty, with the social disparity being most pronounced with late-stage disease. Communities with a disproportionately high percentage of late-stage cervical cancer are distributed across the county, but tend to be localized to areas in the southern portion of the county (Map 15), including the South Valley, the West Mesa, and the East Mountains.

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Incidence</th>
<th>Mortality</th>
<th>Late-Stage Tumors*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Cases</td>
<td>Rate</td>
<td>Cases</td>
</tr>
<tr>
<td>All Races/Ethnicities</td>
<td>100</td>
<td>6.2</td>
<td>33</td>
</tr>
<tr>
<td>White</td>
<td>45</td>
<td>5.7</td>
<td>19</td>
</tr>
<tr>
<td>Hispanic</td>
<td>46</td>
<td>7.5</td>
<td>12</td>
</tr>
<tr>
<td>American Indian</td>
<td>3</td>
<td>3.3</td>
<td>0</td>
</tr>
<tr>
<td>African American</td>
<td>**</td>
<td>**</td>
<td>**</td>
</tr>
<tr>
<td>Asian or /Pacific Islander</td>
<td>3</td>
<td>9.2</td>
<td>1</td>
</tr>
</tbody>
</table>

* Late-stage = tumor beyond body of cervix and/or positive lymph nodes.
** Small number of cases contributes to unstable rates.

Hospitals and clinics report cervical screening rates through HEDIS measures. Table 9 shows Bernalillo County providers for whom data is available on Papanicolaou (pap) tests. The table divides patients from each provider into payer groups. First Choice, one of the largest Federally Qualified Healthcare Centers serving Bernalillo County residents is performing pap tests at or below the national average, as is the University of New Mexico (UNM) Medical Group. First Nations (a Federally Qualified Healthcare Center primarily serving the County’s urban Indian population) and Presbyterian Health Plan are screening well above the national average.
Table 9. Cervical Cancer Screening Among Bernalillo County Providers
(women 21 to 64 years who had a Pap test to screen for cervical cancer, 2008, 2009, or 2010)

<table>
<thead>
<tr>
<th>Provider</th>
<th>Type of Health Care Coverage</th>
<th>Screened (%)</th>
<th>State Average (%)</th>
<th>National Average (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Choice Community Health Care</td>
<td>Commercial</td>
<td>69</td>
<td>72</td>
<td>76</td>
</tr>
<tr>
<td></td>
<td>Medicaid</td>
<td>67</td>
<td>54</td>
<td>67</td>
</tr>
<tr>
<td>First Nations Community Health Source</td>
<td>Medicaid</td>
<td>80</td>
<td>54</td>
<td>67</td>
</tr>
<tr>
<td>Albuquerque Area Indian Health Service Patients</td>
<td>All</td>
<td>73%</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Presbyterian Medical Group</td>
<td>Commercial</td>
<td>84</td>
<td>72</td>
<td>76</td>
</tr>
<tr>
<td></td>
<td>Medicaid</td>
<td>75</td>
<td>54</td>
<td>67</td>
</tr>
<tr>
<td></td>
<td>Medicare</td>
<td>62</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>UNM Medical Group</td>
<td>Commercial</td>
<td>74</td>
<td>72</td>
<td>76</td>
</tr>
<tr>
<td></td>
<td>Medicaid</td>
<td>66</td>
<td>54</td>
<td>67</td>
</tr>
</tbody>
</table>

**Breast Cancer Screening.** Breast cancer is the most commonly diagnosed cancer in Bernalillo County women, accounting for about one-third of all cancers newly diagnosed each year.\(^\text{28}\) Incidence rates have been relatively stable over recent time; however, as seen at both the national and state level, rates vary strongly by race/ethnicity. Figure 25\(^\text{28}\) shows a steady decline among non-Hispanic White women while the incidence trend for Hispanics is flat or trending slightly upwards. Incidence is generally highest in non-Hispanic White women, and lowest in American Indian and Asian/Pacific Islanders (Figure 26).\(^\text{28}\) Regardless of race and ethnicity, breast cancer incidence tends to increase with increasing affluence.\(^\text{28}\)
Although other racial and ethnic groups are at lower overall risk, they are more likely to be diagnosed with late-stage breast cancer, particularly African American women. Because survival is less favorable with more advanced disease, breast cancer mortality is disproportionately higher among Hispanic, American Indian, and African American women in the county compared to their non-Hispanic White counterparts. Communities with disproportionately high levels of late-stage breast cancer diagnoses tend to be located on the West Mesa, the International District, the North Valley, and on tribal lands (Map 16).

Breast cancer screening (mammography) is no longer recommended for premenopausal women. Yet, more aggressive screening can detect smaller tumors before they spread. Table 10 shows HEDIS data for mammography screening among some of the providers in Bernalillo County.

Mammography screening rates for First Choice Community Healthcare, Presbyterian Healthcare Services, and the University of New Mexico Medical Group exceed the national average. There was no comparison data available for Albuquerque Indian Health Services.
<table>
<thead>
<tr>
<th>Provider</th>
<th>Type of Health Care Coverage</th>
<th>Screened (%)</th>
<th>State Average (%)</th>
<th>National Average (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Choice Community Health Care</td>
<td>Commercial</td>
<td>71</td>
<td>64</td>
<td>69</td>
</tr>
<tr>
<td></td>
<td>Medicaid</td>
<td>53</td>
<td>42</td>
<td>51</td>
</tr>
<tr>
<td>Albuquerque Area Indian Health Service Patients</td>
<td>All</td>
<td>47</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Presbyterian Medical Group</td>
<td>Commercial</td>
<td>76</td>
<td>64</td>
<td>69</td>
</tr>
<tr>
<td></td>
<td>Medicaid</td>
<td>57</td>
<td>42</td>
<td>51</td>
</tr>
<tr>
<td></td>
<td>Medicare</td>
<td>76</td>
<td>N/A</td>
<td>68</td>
</tr>
<tr>
<td>UNM Medical Group</td>
<td>Commercial</td>
<td>81</td>
<td>64</td>
<td>69</td>
</tr>
<tr>
<td></td>
<td>Medicaid</td>
<td>67</td>
<td>42</td>
<td>51</td>
</tr>
<tr>
<td></td>
<td>Medicare</td>
<td>80</td>
<td>N/A</td>
<td>68</td>
</tr>
</tbody>
</table>
Chapter 6: Conclusions

The CINCH project aims to reduce chronic disease burden through policy, environmental, programmatic, and infrastructure changes. This health assessment was intended to document the most recent and best quality data to help inform the Community Transformation Implementation Plan that CINCH plans to write in Program Year 2.

Bernalillo County is a varied and diverse place. It is characterized by extremes of poverty and affluence, urban and rural designations, and areas lacking infrastructure contrasted with advanced development. It is unusual among metropolitan areas in the U.S. partly because of its ethnic and racial mix: Bernalillo County is home to more Hispanics than non-Hispanic Whites, while also having one of the country’s largest populations of urban American Indians.

Chronic disease affects thousands of Bernalillo County residents each year and results in millions of dollars in medical care and lost work productivity. Heart disease, stroke, cancer, and diabetes are largely preventable. These diseases do not have an equal impact on the people in Bernalillo County. Low-income communities and communities of color are often disproportionately affected by chronic diseases.

The roots of health disparities are not found merely in poor decisions that people make, but they are found in the social, economic and built environment. Policies have the power to affect each of these environments and decrease the disparities described in this report.

In Bernalillo County, the burden of chronic disease falls disproportionately on people living in low-income neighborhoods, African Americans, Hispanics, and American Indians. If you fit into one or more of these categories your life chances are less than those of people who do not share these characteristics.
References


28. New Mexico Tumor Registry National Cancer Institute Surveillance, Epidemiology, and End Results program (SEER) statewide database. University of New Mexico.


Appendix One: Maps
Percentage of Persons Reporting "Hispanic or Latino of Any Origin"
By NM DOH Small Areas Within Bernalillo County, 2010

Source: US Census American Community Survey 5 Year Estimates
Map 3

Percentage of Families Living Below Federal Poverty Level By NM DOH Small Areas Within Bernalillo County, 2010

SOURCE: NM DOH, US Census American Community Survey 5 Year Estimates

Legend
- Interstates
- Rio Grande
- Kirtland Air Force Base

Bernalillo County Small Areas
- Quintile 1 (1.6 - 5.2%)
- Quintile 2 (5.3 - 9.9%)
- Quintile 3 (10.0 - 13.2%)
- Quintile 4 (13.3 - 20.1%)
- Quintile 5 (20.2 - 31.4%)

SOURCES: USGS, ESRI, TANA, AND. Copyright © 2009 ESRI
Map 4

Percentage of Households Enrolled in SNAP Program
By NM DOH Small Areas Within Bernalillo County, 2010

Source: US Census American Community Survey 5 Year Estimates
Map 5

Percentage of Persons Over the Age of 25
With a High School Diploma or Higher Education
By NM DOH Small Areas Within Bernalillo County, 2010

Source: US Census American Community Survey 5 Year Estimates
Map 6

Death Rate per 100,000 Persons Before Age 65
Due to Listed Chronic Disease Causes
By NM DOH Small Areas Within Bernalillo County, 2005-2009

Source: NM IBIS

Legend
- Interstates
- Rio Grande River
- Kirtland Air Force Base
- Bernalillo County Small Areas

Deaths per 100,000 Persons
- 72.5 - 96.1
- 96.2 - 119.7
- 119.8 - 143.3
- 143.4 - 166.9
- 167 - 190.6
Map 8

Mortality-to-Incidence Ratios for All Cancer Sites Combined By NM DOH Small Areas Within Bernalillo County, 2005-2009

Source: New Mexico Tumor Registry

Mortality-to-Incidence Ratio
- Yellow: 0.254 - 0.372
- Orange: 0.373 - 0.457
- Red: 0.458 - 0.645

2005-2009 Bernalillo County Mortality-to-Incidence Ratio for All Cancer Sites Combined = 0.372
Map 9

Hospitalizations per 10,000; 2008-2009
Asthma, Primary Diagnosis
By Zip Codes Within Bernalillo County
With Mult-Unit Housing
Source: NMDOH, American Lung Association of New Mexico

Legend
- Multi-Unit Housing Location
- Bernalillo County Boundary
- Interstates
- Rio Grande
- Kirtland Air Force Base

Bernalillo County Zip Codes
Hospitalizations per 10,000
- 0.0 - 3.8
- 3.9 - 7.6
- 7.7 - 10.0
- 10.1 - 11.9

Sources: USGS, ESRI, TANA, AND, Copyright © 2009 ESRI
Map 10

Percent Overweight or Obese Students, 2008-2009
Albuquerque Public Schools, Grades K, 3, & 5

SOURCE: Albuquerque Public Schools,
2008-2009 Healthy Weight Assessment Project

Legend
- Interstates
- Rio Grande
- Kirtland Air Force Base
- County Boundary

Percent Overweight or Obese
- Quintile 1 (18-26%)
- Quintile 2 (26-32%)
- Quintile 3 (32-36%)
- Quintile 4 (36-39%)
- Quintile 5 (39-49%)
Map 11

Deaths per 100,000; 2000-2009
Heart Disease (ICD10: I00-I09, I11, I13, I20-I51)
By NM DOH Small Areas Within Bernalillo County

Source: NM-IBIS

Legend
- Rio Grande
- Interstates
- Kirtland Air Force Base

Bernalillo County Small Areas
Deaths per 100,000 Persons
- 108.9 - 139.9
- 140.0 - 154.8
- 154.9 - 166.1
- 166.2 - 188.9
- 189.0 - 235.9

Sources: USGS, ESRI, TANA, AND, Copyright © 2009 ESRI.
Map 12

Deaths per 100,000; 2000-2009
Heart Disease (ICD10: I00-I09, I11, I13, I20-I51)
By NM DOH Small Areas Within Bernalillo County

Source: NM-IBIS

Legend
- Interstates
- Rio Grande
- Kirtland Air Force Base
- Bernalillo County Small Areas*
  - Decrease in Death Rate
  - Increase in Death Rate

*Numbers indicate change in death rates, deaths per 100,000

Sources: USGS, ESRI, TANA, AND, Copyright © 2009 ESRI
Map 13

Deaths per 100,000; 2000-2009
Diabetes Mellitus (ICD10: E10-E14)
By NM DOH Small Areas Within Bernalillo County

Source: NM-IBIS

Legend
- Rio Grande
- Interstates
- Kirtland Air Force Base

Bernalillo County Small Areas
Deaths per 100,000 Persons
- 11.2 - 17.5
- 17.0 - 21.4
- 21.5 - 28.7
- 28.8 - 32.6
- 32.7 - 58.5
Map 14

Percent (%) Late-Stage Colon and Rectum Cancer at Diagnosis By NM DOH Small Areas Within Bernalillo County, 2005-2009

Source: New Mexico Tumor Registry

Percent Late-Stage Tumors
- 34.6% - 51.0%
- 51.1% - 61.0%
- 61.1% - 70.0%

2005-2009 Bernalillo County Percent Late-Stage Colon and Rectum Cancer Diagnosis = 51.0%
Map 15

Percent (%) Late-Stage Cervical Cancer at Diagnosis By NM DOH Small Areas Within Bernalillo County, 2005-2009

Source: New Mexico Tumor Registry

Percent Late-Stage Disease
- 0.0% - 45.0%
- 45.1% - 75.0%
- 75.1% - 100.0%

2005-2009 Bernalillo County Percent Late-Stage Cervical Cancer at Diagnosis = 45.0%
Map 16

Percent (%) Late-Stage Female Breast Cancer at Diagnosis By NM DOH Small Areas Within Bernalillo County, 2005-2009

Source: New Mexico Tumor Registry

Percent (%) Late-Stage Tumors

- Light Yellow: 29.9% - 41.4%
- Light Orange: 41.5% - 50.0%
- Dark Orange: 50.1% - 71.4%

2005-2009 Bernalillo County Percent Late-Stage Breast Cancer at Diagnosis = 41.4%