

# El Dorado County Morbidity Report 2010

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EL DORADO COUNTY HEALTH SERVICES DEPARTMENT  
DIVISION OF PUBLIC HEALTH

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CREATED BY OLIVIA BYRON-COOPER, MPH  
EPIDEMIOLOGIST



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## **Executive Summary**

### *Introduction*

The primary purpose of a surveillance system is to collect data on the health status and/or risk factors for a disease in a population and to analyze and interpret the data that will lead to prevention and control of a disease or behaviors that influence health. Routine surveillance is also critical to evaluating vaccines, interventions, and other public health prevention programs. In order to monitor change, and focus efforts in the most appropriate areas, a review of disease rates for our county is required.

Health providers are required by law to notify the Public Health Department of any diagnosed reportable communicable disease through submission of a Confidential Morbidity Report (CMR). Some diseases require laboratory confirmation for diagnosis, regardless of clinical symptoms, whereas others are diagnosed based solely on clinical diagnosis. Laboratories are required, by law, to inform the Public Health Department of any positive diagnosis of a reportable disease. If the Public Health Department receives notification of a reportable disease by a laboratory, and has not received a CMR from the provider, public health staff actively seeks this information from the appropriate provider. After data is gathered, it is entered into a secure database and analyzed.

The CDC has published a set of attributes and criteria by which to evaluate a surveillance system. The attributes were as follows: Sensitivity, Timeliness, Representativeness, Predictive Value Positive, Simplicity, Acceptability, and Flexibility. It is the Public Health Departments longer term goal to more thoroughly evaluate each of these attributes in our surveillance systems and make recommendations to improve them where needed.

This report describes the health status of county residents by examining a wide range of social, demographic and health indicators including leading causes of chronic diseases, maternal and child health, and communicable diseases. Data sources include birth, hospitalization, cancer and communicable disease incidence, in addition to the census. Our ability to effectively and efficiently manage the health of our county is directly related to the information contained within our surveillance system databases.

### *The findings*

#### Social factors:

Inequities in income and education level persist in El Dorado County. 30% of the population has some college background, and 22% are without a high school diploma. Approximately 10% of El Dorado County children under 18 live in poverty. Approximately 3% of households receive some sort of public assistance. The income distribution is becoming more skewed than in the past, with the rich having much more income than the poor. 29% of owner-occupied households in El Dorado County spend more than 30% of their income on housing, and 24% of renters spent 50% or more of their income on rent.

#### Infectious disease:

Chlamydia continues to be the communicable disease most commonly reported to the Health Services Department. The burden remains highest among Hispanic females. El Dorado County rates of Chlamydia (120.56/100,000 persons) remain lower than both Sacramento county (448.69/100,000 persons) and the state of California (336.86/100,000 persons).

Chronic Hepatitis B and C rates continue to climb in El Dorado County. According to the Centers of Disease Control, the overall prevalence of HBV infection in the United States is 0.4% however, estimates of prevalence range from 5% to 15% in Asian American populations, and are as high as 20% in some Pacific Rim populations. The majority of cases in El Dorado County are among individuals born in Pacific Rim Countries. Hepatitis C rates are highest among Hispanic El Dorado County residents.

Gender inequities also exist in El Dorado County. Females have significantly higher rates of illness for Cancer, High Cholesterol, and High Blood Pressure. Men have higher rates of illness for ADD/ADHD and Diabetes. Females have significantly higher rates of High Blood Pressure in El Dorado County compared to the State of California.

The most common injuries that send children, adults, and seniors to the emergency room are falls, being struck by an object, motor vehicle accidents, and injuries due to cutting and/or piercing.

The number of births in El Dorado County has been declining since 2006. The births among 15 to 19 year olds has been steady over the past five years however, the rate among 20-24 year olds has been declining. Approximately 32% of women in El Dorado County received no prenatal care during their pregnancy compared with approximately 18% in the state of California. Late prenatal care in the last trimester or not at all has historically run below the state average.

*What do we need to do?*

While we continue to provide important services and interventions to address health and disease, we need to employ community capacity building efforts to support changing those broad health conditions beyond individual behavior or control. Community capacity-building involves viewing communities and residents as potential resources for change, rather than as passive recipients of services. Residents possess many skills and strengths that they can use to improve the quality of life in their neighborhoods.

Public health departments across the country are faced with rising demand for health care services, limited resources, and increasing inequalities in health among their population. The first step in fulfilling public health's responsibility to allocate limited resources wisely is to acknowledge the importance of deliberate decision-making by setting clear priorities.

The diseases mentioned in this report are among the most common in El Dorado County, most are also very preventable. Prevention encompasses health promotion activities that encourage healthy living. Prevention also embraces early detection efforts, such as screening at-risk populations, as well as strategies for appropriate management of existing diseases. To realize the potential of prevention we must take action in the following key areas as stated by the Center of Disease Control<sup>6</sup>:

Well Being

Evidence indicates that with education, social support, and healthy policy and environments, people take charge of their health. Strategies are needed to facilitate and support individual responsibility and behavior change, such as:

- \* School-based strategies that promote healthy eating, physical activity, and drug and sex education.
- \* Outreach strategies and coordination to ensure that residents have access to programs with documented successes.
- \* Environmental changes to help support individuals health

Policy Promotion

Policy changes can affect large segments of the population simultaneously. Adopting health behaviors is much easier if we establish supportive community norms. These include:

- \* Urban design and land-use strategies that lead to healthy behaviors.
- \* Low-fat and high-fruit-and-vegetable menu selections.
- \* Requirements for daily physical education in schools.

### Health Equity

Health equity is achieved when every person has the opportunity to attain his or her full health potential. Health inequities are reflected in differences in length of life, quality of life, and access to treatment. In order to ensure health equity, we must:

- \* Increase health promotion efforts targeting social determinants of health.
- \* Create equitable access to effective screening and diagnostic tools.
- \* Implement programs that foster healthy living across life stages among disadvantaged groups.

### Research Translation

Promising research findings are relevant only when they reach the people they are designed to serve. We must:

- \* Support community-based prevention research to identify the causes of health inequities.
- \* Accelerate the translation of scientific findings into community and school practices.
- \* Apply scientific approaches to social marketing, and health education.

### Workforce development

A skilled, diverse, and dynamic public health workforce and network of partners is crucial to promote health and prevent disease. We must work for the day when:

- \* Every health entity has a strong, adequately funded prevention program.
- \* Communities have the capacity to deliver prevention and self-management programs.
- \* Partnering agencies are working collaboratively to focus their respective strengths on strategic priorities.

In order to reduce disease burden in El Dorado County, we must have a coordinated, strategic approach that promotes healthy behaviors, expands early detection of disease, supports people of every age, and eliminates health disparities. With community-based public health efforts that embrace prevention, we will become a healthier community.

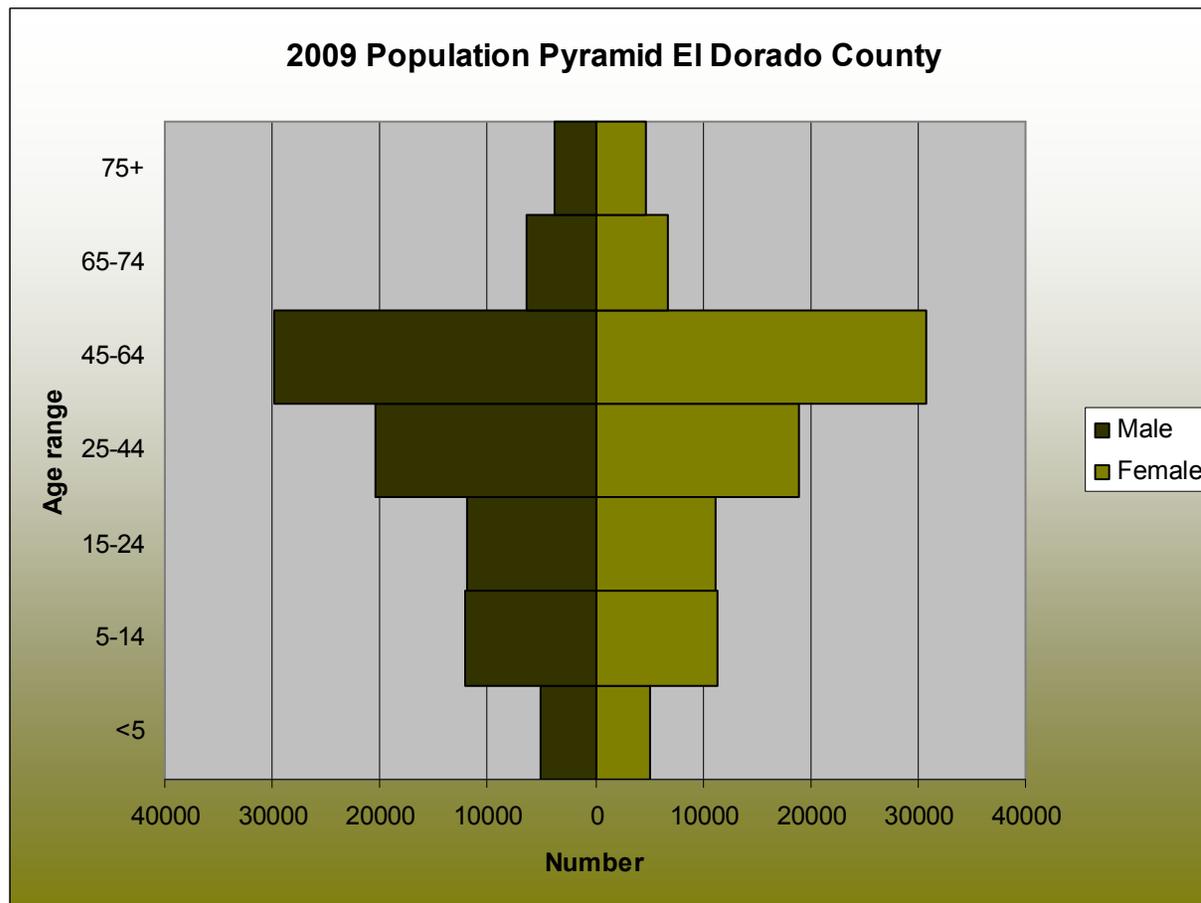
### Demographic Information

Demographic and social indicators are important for understanding the health status of a community. These indicators can be used to identify population groups that may be at a higher risk for morbidity and mortality, and they can assist in identifying causal or contributing factors to a health condition. The following demographic and social information is based on estimates from the United States Census Bureau. The latest statistics available from the census are for the year 2009. A population density map can be found on page 7.

Category	Number	Percent of Total Population	
<b>Total Population</b>	178,447	100%	
<b>Age:</b>			
Population Age <5	9,274	5.21%	
Population Ages 5-14	21,554	12.10%	* The majority of the population in El Dorado County are between the ages of 25 and 64.
Population Ages 15-24	25,853	14.52%	
Population Ages 25-44	48,232	27.09%	
Population Ages 45-64	53,142	29.84%	
Population Ages 65-74	11,070	6.22%	* Approximately 92% of individuals in El Dorado County are White non Hispanic.
Population Age 75+	8,941	5.02%	
<b>Gender:</b>			
Male	88,785	49.86%	
Female	89,281	50.14%	* The second most common race in El Dorado County is Asian.
<b>Race:</b>			
White	163,697	91.93%	* Approximately 90.5% of El Dorado County residents speak English and 6.5% Spanish as their first language.
Black or African American	1,720	0.97%	
American Indian and Alaska Native	2,014	1.13%	* The population density of El Dorado County is approximately 91 people per square mile (35/km <sup>2</sup> )
Asian	5,944	3.34%	
Native Hawaiian and Other Pacific Islander	308	0.17%	* The median household income for El Dorado County is approximately \$67,019
Two or more races	4,383	2.46%	
<b>Hispanic or Latino and Race:</b>			
Hispanic or Latino (of any race)	18,658	10.48%	
Not Hispanic or Latino Total	159,408	89.52%	* 37% of the population lives in a rural area.
White alone	146,270	82.14%	

*Age*

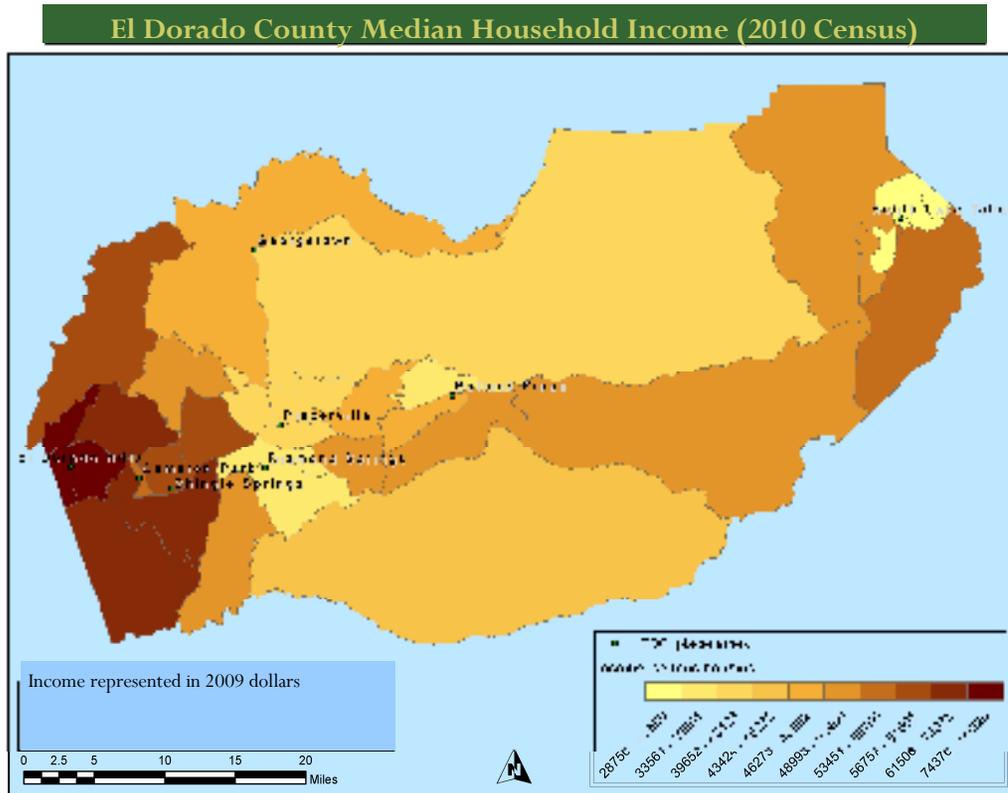
Age influences patterns of morbidity, mortality, and utilization of health services. The distribution of age plays an important role in public health planning because age is a significant indicator of specific disease prevalence and the overall health of a community. Current age distribution can be used to plan for anticipated age-related population health burdens. The following population pyramid shows the distribution of age for males and females in El Dorado County.



- \* The population pyramid for El dorado County can be considered constrictive because there are low numbers of younger people.
- \* A Constrictive pyramid suggests a graying population with a relatively low birth rate.
- \* A constrictive pyramid is typical of a very developed population.
- \* The bulge seen in the 45 to 64 year olds can partially be attributed to the baby boom which occurred post World War II.

*Socioeconomic Factors*

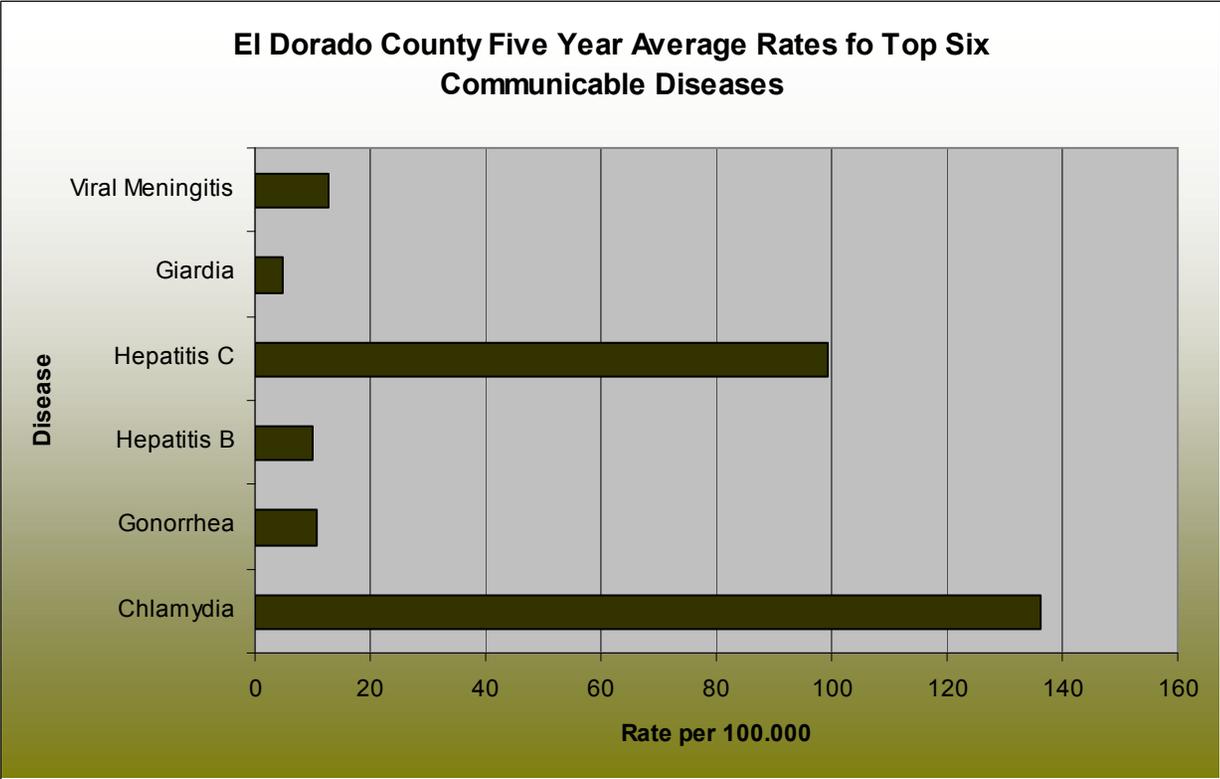
Differences in health status are often related more to differences in social and economic status than race. Unfortunately there is still a relationship between socioeconomic status and race. Low income is often correlated with higher rates of disease. Poverty creates an environment that makes a healthy lifestyle unobtainable. Problems accessing health care, obtaining and using health insurance, depression, and hopelessness are detrimental in themselves, and they often lead to risky behaviors that compound the situation. The following figure illustrates the household income disparity across the County.



- \* El Dorado Hills, Cameron Park, Shingle Springs, and the Southern South Lake Tahoe areas have the highest household income in the County.
- \* The more rural areas of the County correspond with lower household income with the exception of Placerville and Diamond Springs.
- \* The average freshman graduation rate in El Dorado County is 85% which is higher than the state rate of 71%.
- \* 10% of El Dorado County children under the age of 18 live in poverty.
- \* The violent crime rate in El Dorado County is 291 per 100,000 population compared to a state rate of 520 per 100,000.
- \* In 2009, the percentage of the population in El Dorado County aged 16 and over who were unemployed but looking for work was 11.3%, nearly equivalent to the state (11.4%).
- \* Northern El Dorado County, South Lake Tahoe and Pollock Pines are designated as Medically Underserved Areas.

**Communicable Diseases**

Communicable diseases are caused by pathogenic microorganisms, such as bacteria, viruses, parasites or fungi. Transmission of a disease can occur in various ways including physical contact, contaminated food, body fluids, objects, airborne inhalation, or through vector organisms. The top six communicable diseases for El Dorado County are shown in the graph below.



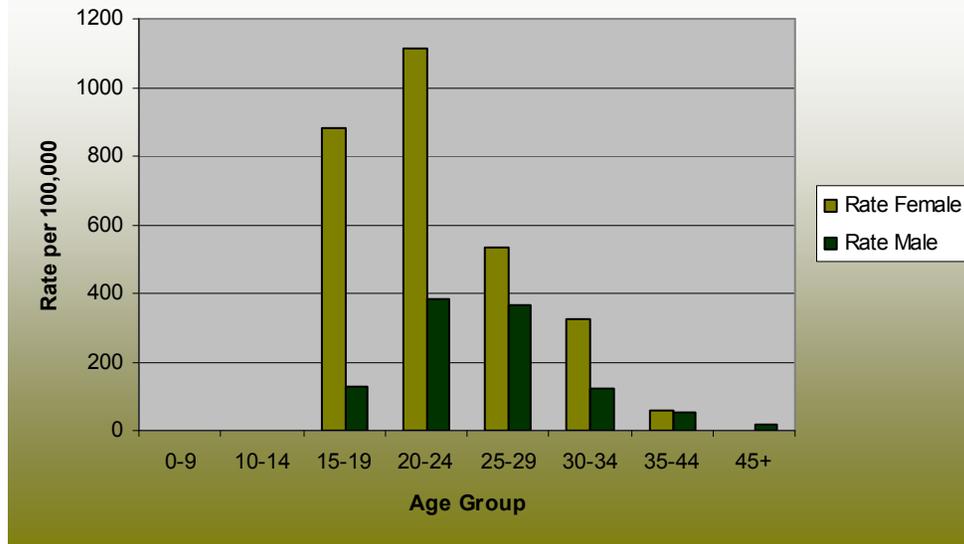
- \* Hepatitis C and Chlamydia are the two most common reportable diseases in El Dorado County.
- \* The average giardiasis rate during the surveillance period was highest among 1-4 year olds (15.1/100,000).
- \* The hepatitis C and B rates displayed include both chronic and acute cases.

### *Chlamydia trachomatis*

*Chlamydia* infections, caused by the bacterium *Chlamydia trachomatis*, are the most commonly-reported notifiable disease in the United States. In 2006, there were 1,030,911 chlamydial infections reported to CDC from 50 states and the District of Columbia. This case count corresponds to a rate of 347.8 cases per 100,000 population, an increase of 5.6% compared with the rate of 329.4 in 2005 <sup>3</sup>. In women, chlamydial infections, which are usually asymptomatic, may result in pelvic inflammatory disease (PID), which is a major cause of infertility, ectopic pregnancy, and chronic pelvic pain. As with other inflammatory sexually transmitted infections (STIs), chlamydial infection can facilitate the transmission of HIV infection and individuals. In addition, pregnant women infected with chlamydia can pass the infection to their infants during delivery, potentially resulting in neonatal ophthalmia and pneumonia <sup>5</sup>.

Paralleling the United States' rates, Chlamydia is among the top diseases reported in El Dorado County. Rates of infection may be used as a proxy measure for risky sexual behavior which in turn puts individuals at risk for other sexually transmitted infections. The statistics may suggest that increased education, improved access to screening facilities, and proper management of cases and their partners are needed to decrease risk.

**El Dorado County 2010 Chlamydia Rates**



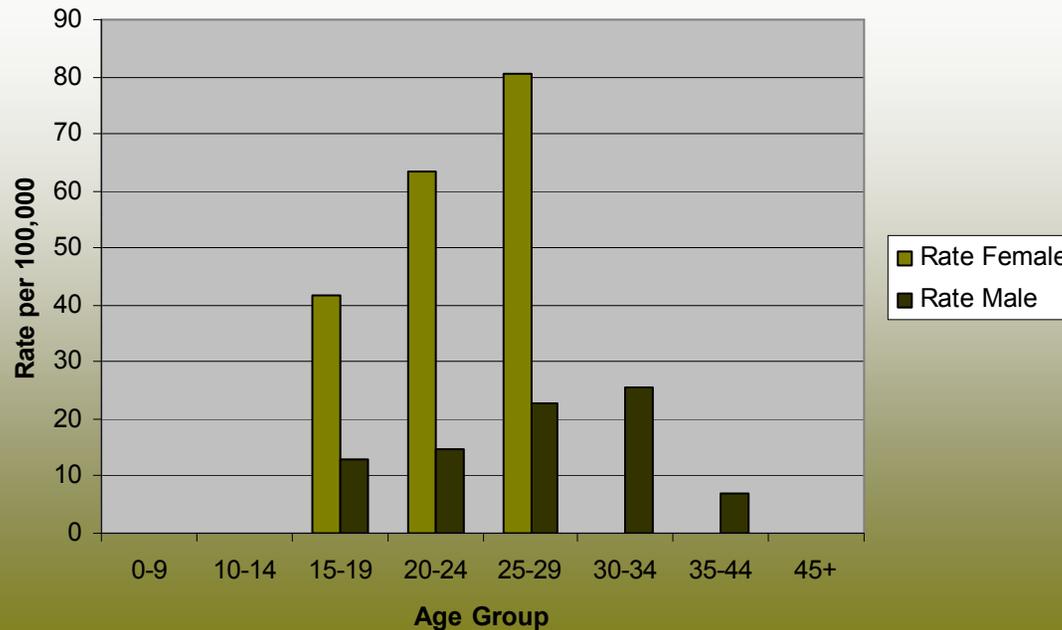
- \* Although chlamydia is the top disease reported in El Dorado County (131 cases per 100,000), rates are lower than that of most neighboring counties and California as a whole (380.6 cases per 100,000).
- \* Chlamydia rates are highest among females in El Dorado County throughout all ages, Most likely because a greater number of women are screened for sexually transmitted diseases than men.
- \* The highest rates of chlamydia occur between the ages of 15 and 29 for both sexes.
- \* The disease burden for chlamydia is higher among minority groups compared to Whites.

### *Neisseria gonorrhoeae*

Gonorrhea is caused by *Neisseria gonorrhoeae*, a bacterium that can grow and multiply easily in the warm, moist areas of the reproductive tract, including the cervix, uterus, and fallopian tubes in women, and in the urethra in women and men. The bacterium can also grow in the mouth, throat, eyes, and anus. Gonorrhea is a very common infectious disease. CDC estimates that more than 700,000 persons in the U.S. get new gonorrheal infections each year<sup>5</sup>.

In women, gonorrhea is a common cause of pelvic inflammatory disease (PID) . About one million women each year in the United States develop PID. The symptoms may be quite mild or can be very severe and can include abdominal pain and fever. PID can lead to internal abscesses and chronic pelvic pain. PID can damage the fallopian tubes enough to cause infertility or increase the risk of ectopic pregnancy<sup>5</sup>.

**El Dorado County 2010 Gonorrhea Rates**



\* In the younger age groups, females experience a higher disease burden from gonorrhea. After age 30, men carry the disease burden.

\* In 2009, the overall gonorrhea rate for females was 10.7/ 100,000 and 9.7/100,000 for males.

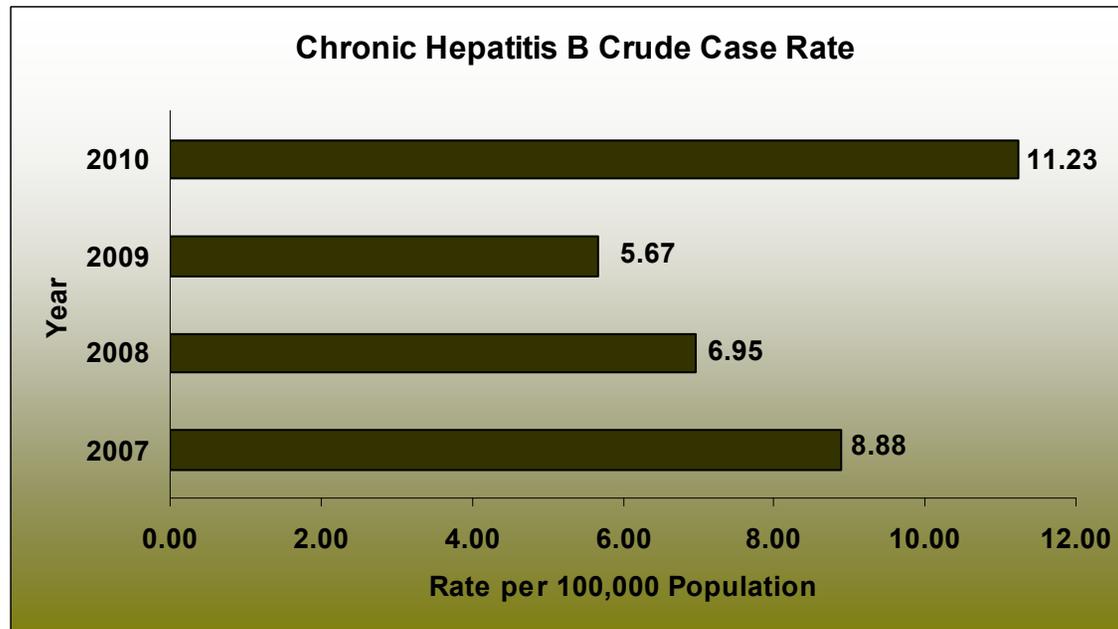
### *Hepatitis B*

Hepatitis B, (HBV), is one of the most commonly reported vaccine preventable diseases in the United States. Because most newly infected persons are asymptomatic and because even symptomatic persons are underreported, reported hepatitis B cases most likely underestimate the incidence of HBV infection. Data from a national seroprevalence survey indicate that approximately 1.3 million persons in the United States are living with chronic HBV infection<sup>8</sup>.

The clinical features of Hepatitis B virus infection are similar to those of other hepatitis viruses and range from asymptomatic infection to jaundice following flu like illness. A direct relationship exists between the age of the patient and the likelihood that an acute HBV infection will be symptomatic. Infections in infants and children are usually asymptomatic, whereas children over six and adults are more likely to present with symptoms. Chronic HBV infection is a cause of liver cancer in patients<sup>6</sup>.

Hepatitis B virus can be transmitted by blood exposure through a break in the skin, sexual intercourse, and from a mother to her infant. Transmission in the United States is related to prevalence of injection drug users, increase in the population with multiple sex partners, increased immigration from countries with endemic rates, and transmission in the health care setting.

The following figures illustrate the chronic infection rate in El Dorado County. Because chronic Hepatitis B infection often presents without symptoms, rates are most likely underestimated.



\* 82% of the hepatitis B cases in El Dorado County occur among Asian residents.

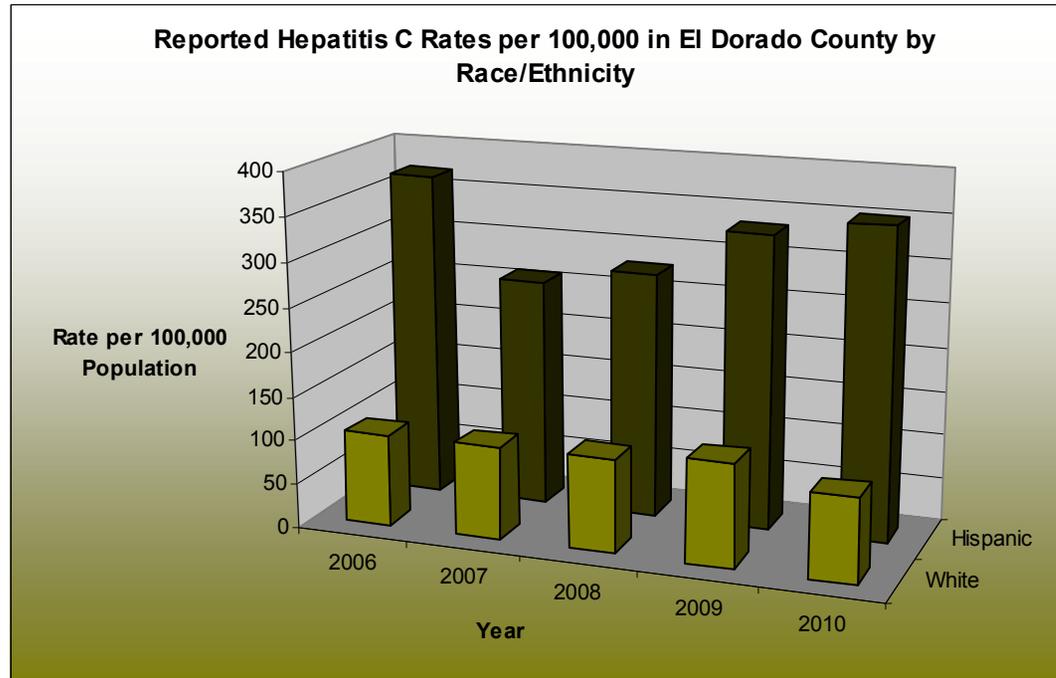
\* Despite the availability of the hepatitis B vaccine, vaccination rates outside the U.S. are low and hepatitis B remains a global health problem.

### *Hepatitis C*

Surveillance for hepatitis C is complicated by the absence of a laboratory test that can differentiate newly acquired infections from infections acquired in the past <sup>5</sup>. In our county anyone over the age of thirty, who is diagnosed with Hepatitis C, is considered to be a chronic case. No comparisons to other counties or the state have been made because of the lack of standard data measurements.

Prior to screening blood donations for HCV antibodies and surrogate markers, approximately 17% of HCV infections in the United States were a result of transfusion. Blood transfusion now accounts for less than 4% of HCV infections in the United States <sup>2</sup>. HCV can be transmitted by needle sticks both by illicit injection drug users and inadvertently in the practice of medicine. HCV is probably infrequently transmitted by sexual intercourse but perinatal transmission occurs between 2% and 8% of the time <sup>2</sup>.

With no effective vaccine or post-exposure prophylaxis, reducing the burden of HCV infection and HCV-related disease in the United States requires implementation of primary prevention activities to reduce the risk of contracting the infection and secondary prevention activities to reduce the risk of liver disease, spread to contacts, and other HCV-related chronic diseases among HCV-infected persons.



\* Rates of Hepatitis C are approximately three times higher among Hispanics (330/100,000 persons) compared to Whites (106/100,000 persons).

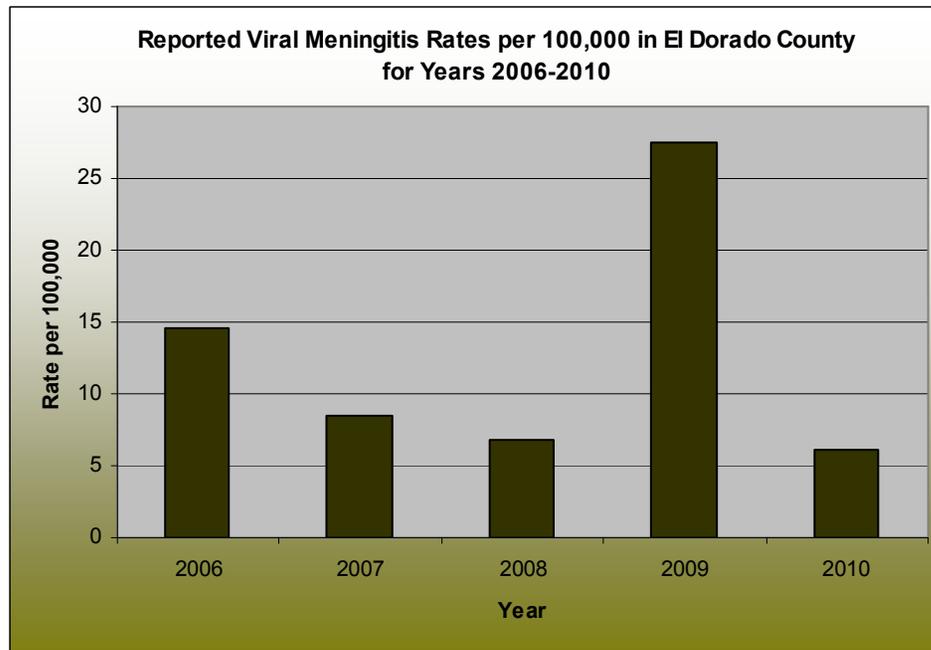
\* The rates of Hepatitis C have remained relatively steady among Whites, but have been rising steadily among Hispanics since 2007.

### *Viral Meningitis*

Meningitis is a disease caused by the inflammation of the protective membranes covering the brain and the spinal cord known as the meninges. The inflammation is usually caused by an infection of the fluid surrounding the brain and spinal cord. Meningitis is also referred to as spinal meningitis. Meningitis may develop in response to a number of causes, usually bacteria or viruses, but meningitis can also be caused by physical injury, cancer or certain drugs. The most common kind of meningitis in El Dorado County is caused by a virus.

Viral meningitis is generally less severe and resolves without specific treatment. Most viral meningitis cases in the United States, especially during the summer months, are caused by enteroviruses; however, only a small number of people with enterovirus infections actually develop meningitis. Other viral infections that can lead to meningitis include:

- \* Mumps
- \* Herpesvirus, including Epstein-Barr virus, herpes simplex viruses, varicella-zoster virus (which also causes chicken pox and shingles), measles, and influenza
- \* Viruses spread through mosquitoes and other insects (arboviruses) In rare cases LCMV (lymphocytic choriomeningitis virus), which is spread by rodents, can cause viral meningitis

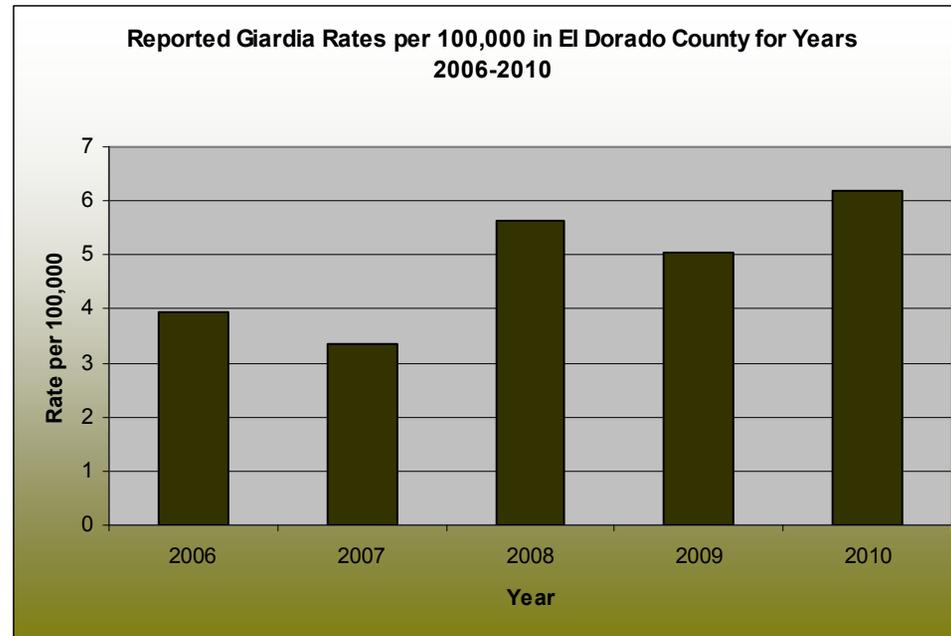


- \* The majority of viral meningitis cases (86%) are reported during June through September.
- \* In 2009 the rate for viral meningitis was 27.53 per 100,000 population. There were 49 cases that year, far higher than baseline levels.
- \* Bacterial meningitis rates are very small in El Dorado County and therefore are not included in this report.

### *Giardia*

Giardiasis is an infection of the small intestine caused by a microscopic organism (protozoa), *Giardia lamblia*. Giardiasis outbreaks can occur in communities in both developed and developing countries where water supplies become contaminated with raw sewage. It can be contracted by drinking water from lakes or streams where water-dwelling animals such as beavers and muskrats, or domestic animals such as sheep, have caused contamination. It is also spread by direct person-to-person contact, which has caused outbreaks in institutions such as day care centers.

*Giardia* is found throughout the United States and the world. In the United States, *Giardia* is one of the most common causes of waterborne diseases in people. Outbreaks have been associated with contaminated municipal and recreational waters, day care centers, and among men who have sex with men. In California, 2,000 to 4,000 cases of giardiasis are reported each year; however, it is likely that there are many more cases each year that go undiagnosed.

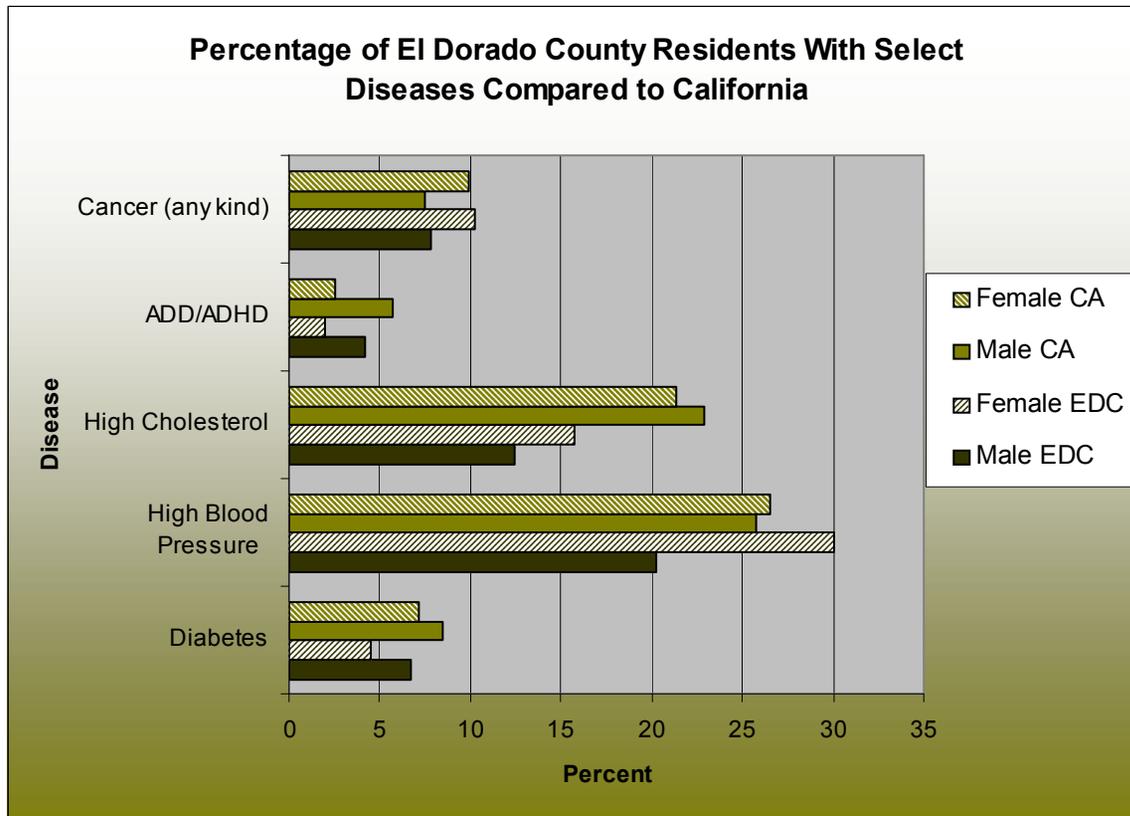


- \* In El Dorado County the most common cause of Giardia is from drinking water from lakes or streams.
- \* The rates of Giardia have been fairly consistent over the years. The average rate over the five years was 4.26 cases per 100,000 population.

**Chronic Diseases**

Chronic diseases—such as heart disease, cancer, and diabetes—are the leading causes of death and disability in the United States. Chronic diseases account for 70% of all deaths in the U.S.. Four modifiable health risk behaviors—lack of physical activity, poor nutrition, tobacco use, and excessive alcohol consumption—are responsible for much of the illness, suffering, and early death related to chronic diseases.

Chronic diseases are not mandatorily reportable. This causes difficulty in obtaining accurate statistics to represent disease burden in El Dorado County. National and state surveys such as The California Health Interview Survey (CHIS) and The Behavioral Risk Factor Surveillance System (BRFSS) are often not comprehensive nor are they representative of our County. Mortality data are available and mortality attributed to chronic disease in El Dorado County has been depicted in the 2010 Mortality Report created by the El Dorado County Health Services Department. The graph below illustrates the chronic disease burden of El Dorado County residents.



Data from CHIS, 2009

- \* Almost 1 out of every 2 adults has at least one chronic illness.
- \* Females have a high rate of high blood pressure (30.1/100,000) compared with males in El Dorado County (20.2/100,000) and the state (25.1/100,000).
- \* Approximately 7,514 adults in El Dorado County have diabetes. Approximately 43.8% of the adult African American population in El Dorado County has diabetes.
- \* About one-fourth of people with chronic conditions have one or more daily activity limitations.

*Common Causes of Chronic Disease*

Health-related behavior is one of the most important elements in people's health and well-being. Its importance has grown as sanitation has improved and medicine has advanced. Diseases that were once incurable or fatal can now be prevented or successfully treated, and health-related behavior has become an important component of public health. Behavioral factors play a role in each of the twelve leading causes of death, including chronic diseases such as heart disease, cancer, and stroke, which are the major causes of death in the United States and other developed countries. Four modifiable health risk behaviors—lack of physical activity, poor nutrition, tobacco use, and excessive alcohol consumption are responsible for much of the illness, suffering, and early death related to chronic diseases<sup>6</sup>.

- \* In El Dorado County both teens and adults are less obese than residents in the state of California. This success can at least be partially attributed to the amount of physical activity children receive. 75.3% of children in El Dorado County stated that they receive at least 3 days of vigorous activity per week, this can be compared to a statewide percentage of 66.1%.
- \* The percentage of residents that drink excessively exceed that of the state and national benchmark provided by Healthy People 2020. 19% of El Dorado County residents drink excessively, a far cry from the 8% goal set by the national benchmark.
- \* Liver disease is the 3rd leading cause of premature death in El Dorado County. There is strong evidence that drinking alcohol is a risk factor for primary liver cancer, breast cancer, and colorectal (colon) cancer.
- \* The percentage of El Dorado County adults who smoke is equivalent to that of the state level and national benchmark of 15%.
- \* As a nation, more than 75% of our health care spending is on people with chronic conditions. In 2006, our health care expenditure was over \$7,000 per person.

**Injuries**

In El Dorado County, Injuries are the fifth leading cause of death among all age groups. Most of these deaths are preventable through proper education, policy changes, and environmental design. The following table illustrates the top five injuries resulting in emergency room visits for residents in El Dorado County.

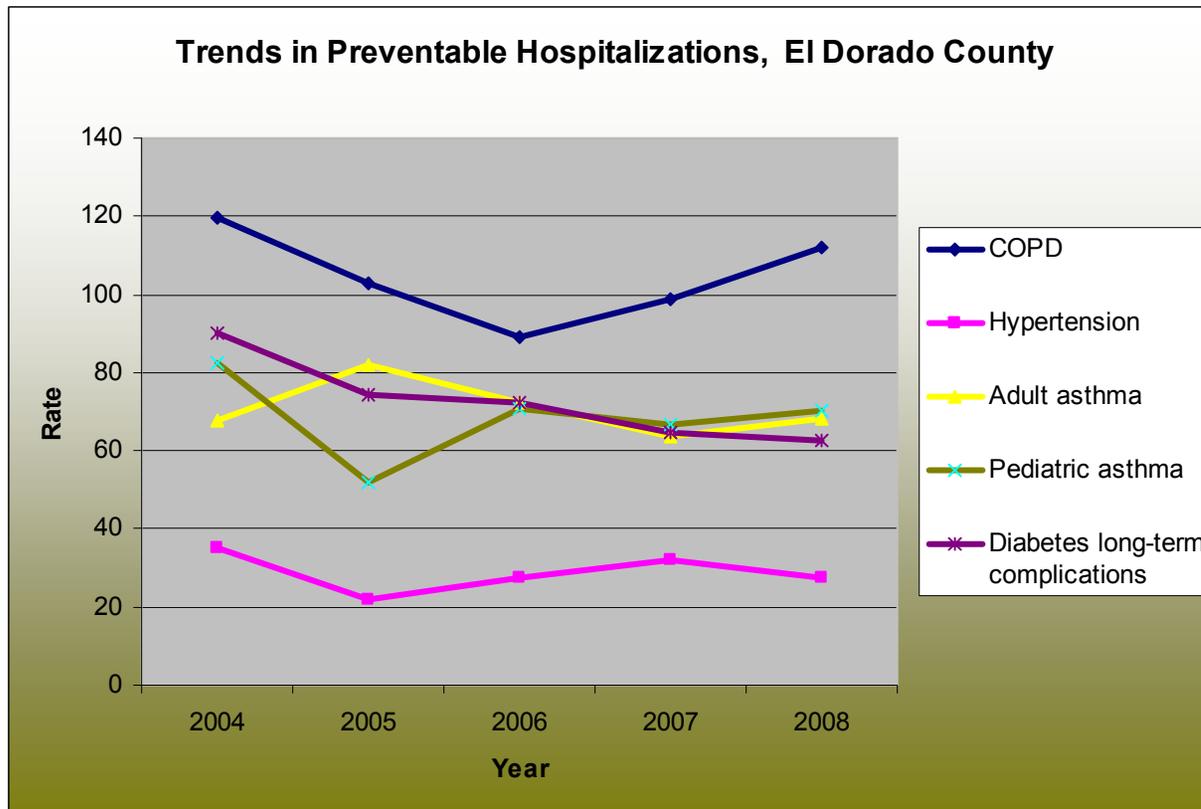
CHILDREN AGES 0-19		ADULTS AGES 20-64		SENIORS 65+	
Injury	Rate/100,000	Injury	Rate/100,000	Injury	Rate/100,000
1 Unintentional fall	2914.7	1 Unintentional fall	1566.5	1 Unintentional fall	3976.6
2 Overexertion	1726.2	2 Overexertion	607.8	2 Struck by object	445.6
3 Struck by object	539.8	3 Struck by object	601.6	3 Natural/environmental	322.0
4 MVT, Occupant	485.4	4 Cut, pierce	594.6	4 Cut/pierce	299.6
5 Cut, Pierce	431.0	5 MVT, occupant	530.4	5 MVT, occupant	284.6

- \* The top five injuries resulting in death for children are (1) motor vehicle accidents, (2) drowning, (3) firearms, (4) poisoning, and (5) suicide.
- \* The top five injuries resulting in death for adults are (1) poisoning, (2) suicide, (3) motor vehicle accident, (4) homicide, (5) fall, natural causes, and pedestrian in a motor vehicle accident.
- \* The top five injuries resulting in death for seniors are (1) fall, (2) suicide, (3) suffocation, (4) burn, drowning, motor vehicle accident, (5) natural causes.

**Preventable hospitalizations**

High quality preventive and primary care are essential to decreasing rates of preventable hospitalizations. Higher rates of preventable hospitalizations may pinpoint areas where potential improvements can be made in our health care system. State researchers tracked 15 medical conditions for which hospitalizations are considered preventable and found hospitalizations decreased for 10 of them from 1999 to 2008, most notably chest pain, down more than 60%, and pediatric gastroenteritis and chronic obstructive pulmonary disease, down more than 45%.

However, hospitalizations increased for three other conditions in the state of California: long-term complications associated with diabetes, urinary tract infections and hypertension, which increased sharply during the last two years of the study. The rates of hospitalizations for two other diabetes-related conditions remained relatively unchanged. In general most trends seen by the state are not the same trends we saw in El Dorado County.

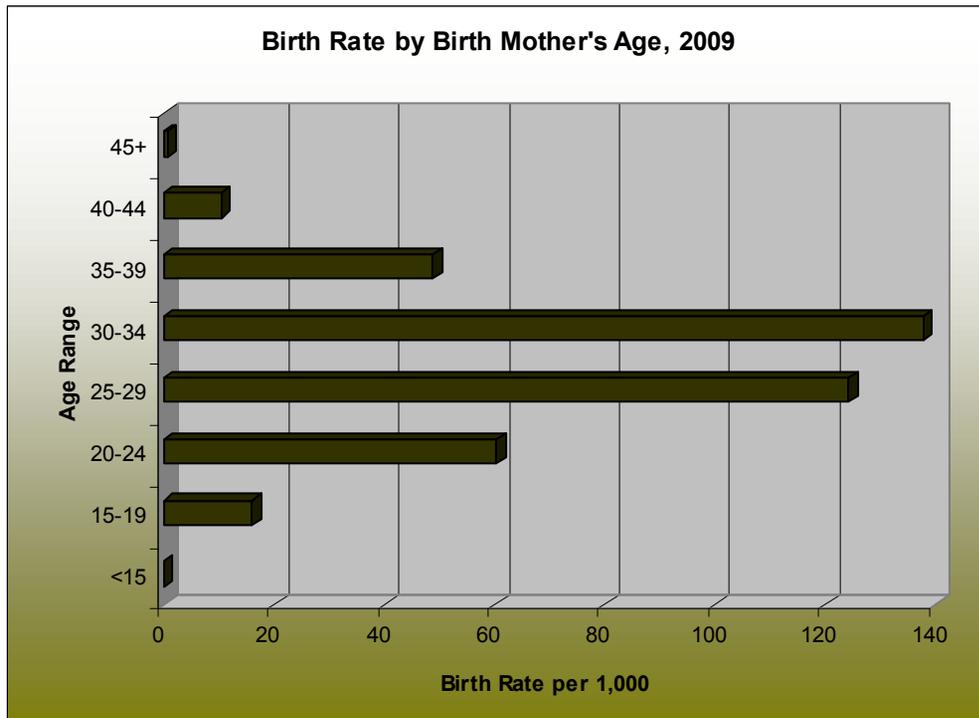


\* Long term complications due to diabetes has been on the decline with the 2008 rate being 62.7 far lower than the state rate of 105.2 per 100,000.

\* Unfortunately COPD has been on the rise in El Dorado County since 2006. The 2008 county specific rate was 112.1 compared to a state rate of 127.7 per 100,000.

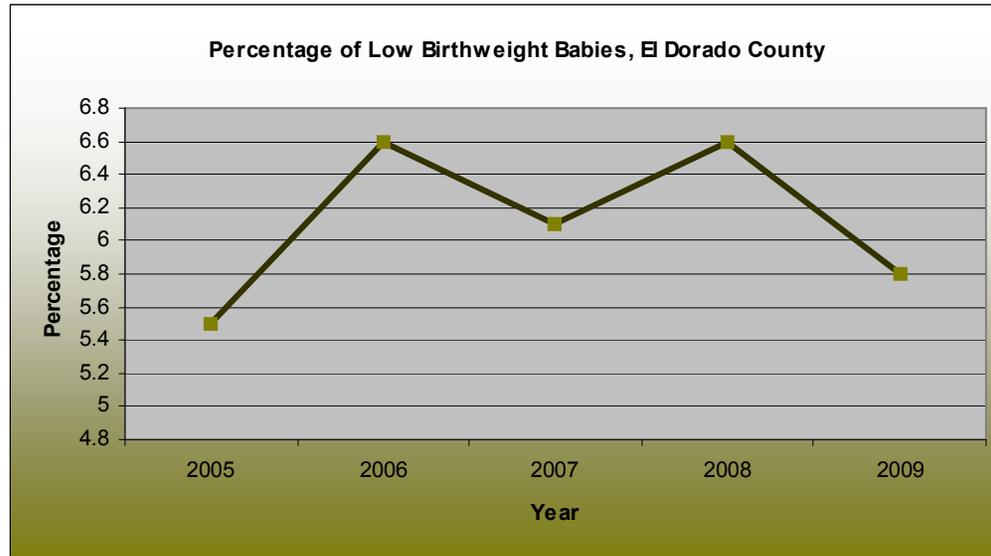
**Maternal and Child Health**

This section of the report focuses on the complex public health problems affecting women, children, and their families in El Dorado County. The health indicators in this section represent the health care access and availability of financial, emotional and community resources for mother and baby.



- \* The number of births in El Dorado County has been declining since 2006 despite the steady increase in population. In 2009, there were 1719 live births compared with 2036 in 2006. The population in 2009 was estimated at 178,447 compared with the 2006 estimated population of 144,144.
- \* The birth rate for women between the ages of 20 and 24 has remained steady over the last three years. There was a major decline in births among this age group between 2006 and 2007.
- \* The birth rate for women between the ages of 15 and 19 has remained relatively steady over the past five years at approximately 15 per 1,000 births.
- \* The rate of mothers who were under 18 at the time of delivery is lower in El Dorado County compared to the state (1.9/100,000 vs. 3.2/100,000).
- \* The rate of mothers who were older than 34 at the time of delivery is lower in El Dorado County compared to the state (12.2/100,000 vs. 17.4/100,000).
- \* Research has documented that teenage mothers are at high risk for poor birth outcomes: Babies born to teenagers are more likely than those born to women in their 20s to be born early, to weigh less than 2,500 g at birth or to die before age one. These risks vary by age even among teenage mothers, with those younger than 15 having the worst outcomes.

*Low Birthweight*



- \* Low-birth-weight, premature babies are more likely to have underdeveloped lungs, liver problems, anemia and breathing problems.
- \* Low birthweight babies are defined as being born less than 2,500 grams.
- \* The percentage of low birthweight babies in 2009 dropped approximately ten percentage points compared with 2008 data.

*Breastfeeding*

- \* breast milk has disease-fighting antibodies that can help protect infants from several types of illnesses. And mothers who breastfeed have a lower risk of some health problems, including breast cancer and type 2 diabetes.
- \* California in-hospital infant feeding practices are monitored using data collected by the Newborn Screening Program (NBS). All non-military hospitals providing maternity services are required to complete the Newborn Screening Test Form. In addition to tracking genetic diseases and metabolic disorders, the NBS program gathers data on all infant feedings from birth to time of specimen collection, usually 24 to 48 hours since birth.
- \* The percentage of mothers who provided any breast milk was fairly independent of race. Woman provided at least some breast milk approximately 90% of the time regardless of race.
- \* The percentage of mothers who exclusively breastfed was lower than that of mothers who provided any breast milk.
- \* A lower percentage of minority woman exclusively breastfed compared with other race/ethnicities.

## *Prenatal Care*

Prenatal care refers to the health services that a pregnant woman receives before a baby's birth. The aim of good prenatal care is to detect any potential problems early, to prevent them if possible (through recommendations on adequate nutrition, exercise, vitamin intake etc.), and to direct the woman to appropriate specialists, hospitals, etc. if necessary. The availability of routine prenatal care has played a part in reducing maternal death rates and miscarriages as well as birth defects, low birth weight, and other preventable infant problems. Animal studies indicate that mothers' (and possibly fathers') diet, vitamin intake, and glucose levels *prior* to ovulation and conception have long-term effects on fetal growth and adolescent and adult disease.

Physician shortages notwithstanding, myriad factors affect the use of prenatal care services. Serious efforts to understand and reduce barriers to the use of prenatal care services are especially important for low-income women because poverty status is linked to the risk of pregnancy-related complications and poor birth outcomes. Other common barriers include inadequate child care, positive healthy previous birth, depression, and lack of transportation. The following bullet points are intended to provide information for select factors relating to prenatal care in El Dorado County.

- \* The percentage of women getting adequate care in the pregnancy (77%) is below the HP 2010 objective of 90%. The Kotelchuck Index, also called the Adequacy of Prenatal Care Utilization (APNCU) Index, uses two crucial elements obtained from birth certificate data-when prenatal care began (initiation) and the number of prenatal visits from when prenatal care began until delivery (received services).
- \* The percentage of mothers who receive no first trimester prenatal care is approximately two times higher in El Dorado County than for the state of California (30.8% vs. 17.6%).
- \* There are more deliveries paid by Medi-Cal in El Dorado County (60%) compared to deliveries in California (47%).
- \* The percentage of births to mothers with no high school degree is lower (14%) in El Dorado County compared with the state (27.8%).

## *Inter-pregnancy interval*

Having pregnancies too close together is thought to lead to several negative outcomes. Short inter-pregnancy (intervals between pregnancies of less than six months) are associated with preterm birth, low birthweight, and small-for-gestational-age births. They may be associated with increased risks of uterine rupture in women attempting a vaginal birth after cesarean delivery, and placental abruption and placenta previa in women with intervals less than one year. Some researchers have described adverse effects from intervals shorter than 18-24 months. Preventing short inter-pregnancy intervals is another reason why access to contraception and family planning information is important.

- \* Conceiving shortly after giving birth is independently associated with preterm birth and neonatal death. Short Inter-Pregnancy Interval was defined as less than 18 months for the purpose of this report. The Healthy People 2010 objective is 6% and El Dorado County mothers overshot this goal. 13% of woman aged 15-44 had a short inter-pregnancy interval.

## Technical Notes

### *Data Sources*

Data are limited by small sample sizes, representativeness of surveillance systems, and availability of current data. Where appropriate, these limitations are addressed in the text of the report. The data included in this report come from various sources. The demographic and population estimates come from the United States Census (2009, (<http://factfinder.census.gov/>)). Data for Chlamydia, and Hepatitis B and C come from data downloaded from AVSS. The Public Health Department enters all reportable diseases into AVSS from Confidential Morbidity Reports. It is important to note that the quality of data coming out of AVSS is directly linked to the quality of data the Public Health Department puts in, which in turn is related to the quality of our surveillance systems.

### *Rates*

Rates used in this report were obtained by dividing the total number of events during a defined time period by the total population during that same time period. Data for morbidity were not age adjusted because some data were not available by age groups. Although age adjustment is important when comparing subpopulations, figure X shows that the age distribution of comparison regions are similar. Inconsistent, loose terminology is a concern when showing statistics. Historically there has been misuse of epidemiological principles, in particular, incidence, prevalence, and rates. I have tried to keep the terminology consistent with past publications for comparison purposes however this concern will be addressed in future documents.

### *GIS*

All GIS Mapping is preformed in ESRI's Arc GIS 9.2 ([www.esri.com](http://www.esri.com)). Data is geocoded by ZIP code and aggregated in to these geographic units by reported ZIP code. This assumes that cases reside in the ZIP code of their mailing address. This technique yields 99% effectiveness of spatial representation. All breaks of rate representation are preformed using the geometric interval method and displayed accordingly.

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