



Global Burden of Infectious Diseases

Worldwide, there are approximately 56 million deaths annually, and approximately 6.6 million of those deaths occur among children less than five. Ninety-nine percent of childhood deaths worldwide occur in children living in developing countries (middle and low-income countries). In low-income countries, nearly 4 in every 10 deaths are among children under 15 years, and only 2 in every 10 deaths are among people aged 70 years and older. People predominantly die of infectious diseases: lower respiratory infections, HIV/AIDS, diarrheal diseases, malaria and tuberculosis collectively account for almost one third of all deaths in these countries.

Many notable public health achievements have occurred in the United States, which have dramatically increased the life expectancy for U.S. citizens. One of the greatest public health achievements is the invention and utilization of vaccination in reducing and eradicating diseases. Since 1900, vaccination has helped to eradicate smallpox around the world; eliminate polio in the Americas; and control measles, rubella, tetanus, diphtheria, *Haemophilus influenzae* type b, as well as many others. Control of infectious disease is another achievement in U.S. public health and can be directly attributed to improved sanitation and cleaner water, safer foods with less microbial contamination, and the discovery and use of antibiotics to cure bacterial infections. These advancements in infectious disease control have contributed to a reduction of infectious diseases among the top 10 causes of death in the U.S. Influenza and pneumonia are the only infectious diseases among the top 10 causes of death.

Listed below is a summary of the occurrence of several infectious diseases worldwide, in the U.S., and Oklahoma.

- Tuberculosis: One third of the world's population is infected with tuberculosis (TB).
 - ◇ Worldwide: Each year approximately 8.6 million people get sick with TB and almost 1.3 million people die from TB-related causes.
 - ◇ United States: The number of TB cases has declined dramatically since 1980 with 9,945 cases reported in 2012. Of those cases reported in 2012, 63% of the cases were not born in the U.S.
 - ◇ Oklahoma: The number of TB cases in Oklahoma has also declined over the past several years with only 70 cases reported in 2013; approximately 30% of the cases were not born in the U.S.
- Diarrheal Disease:
 - ◇ Worldwide: Every year, there are approximately 1.7 billion cases of diarrheal disease worldwide. Diarrheal disease is the second leading cause of death in children under five years old worldwide, and is responsible for killing 760,000 children each year.
 - ◇ United States: Approximately 76 million cases and 5,000 deaths associated with food-borne illness occur in the U.S. each year.
 - ◇ Oklahoma: Based on national estimates of diarrheal illness, approximately 912,000 cases and 60 deaths associated with food-borne illness occur in Oklahoma each year.
- Malaria: Half of the world's population is at risk for malaria infection (3.4 billion people).
 - ◇ Worldwide: In 2012, there were an estimated 219 million malaria infections, and among those individuals infected, approximately 660,000 deaths occurred. Ninety-one percent of malaria deaths worldwide occur in Africa.
 - ◇ United States: On average, 1,500-2,000 cases of malaria are reported in the U.S. each year even though it has been eradicated from the U.S. since the early 1950's. This is due to international travel to countries where the disease naturally occurs.
 - ◇ Oklahoma: In Oklahoma, an average of 11 cases of malaria were reported from 2009 to 2013; all cases were infected while traveling to countries where malaria is still endemic.
- Measles: Measles remains among the top 10 causes of death among young children despite the availability of a safe and cost-effective vaccine.
 - ◇ Worldwide: There are approximately 20 million cases of measles and 164,000 deaths from measles infection each year. The majority of those deaths were among children under five years of age.
 - ◇ United States: Measles is uncommon in the U.S. because vaccination coverage is high. However, the U.S. has experienced a resurgence of measles since 2013, with the majority of cases occurring in unvaccinated individuals. From January 1 through August 8, 2014, 593 cases of measles occurred in the U.S.
 - ◇ Oklahoma: The last case of measles in Oklahoma occurred in 1997.