

Preventable Deaths in Montana: Chronic Lower Respiratory Disease Deaths by County

Key Messages

Chronic Lower Respiratory Disease Deaths can be prevented by:

- protecting air quality through tobacco-free policies and banning idling vehicles near doors, windows, and the air intakes of buildings;
- preventing tobacco use and helping current tobacco users to quit; and
- supporting health care professionals to improve the quality of their CLDR care.

Background

Chronic lower respiratory diseases (CLRD) are serious illnesses that affect the lungs and airways. They are the fourth leading cause of premature death in Montana.¹ Three major diseases are included in the definition of CLRD: asthma, bronchiectasis, and chronic obstructive pulmonary disease (COPD), which also includes emphysema and chronic bronchitis. These diseases differ in many ways, but all obstruct the airways via scarring, inflammation, and the overproduction of mucus. They cause shortness of breath and can be accompanied by other symptoms such as wheezing, coughing, and a feeling of tightness in the chest.

Although all of the reasons a person develops CLRD are still unclear, a major preventable risk is exposure to tobacco smoke, either as a current or former smoker or from secondhand smoke. According to the Centers for Disease Control and Prevention (CDC), “air pollutants in the home and workplace, genetic factors, and respiratory infections also play a role” in the development and progression of these diseases.²

This report describes the rate of premature death due to CLRD at the county level. Comparing these rates across the state allows communities to identify potentially preventable deaths in their area and take steps to reduce the burden of CLRD for their population.

Methods

Ten years of Montana death certificate data (from 2003 to 2012) were compiled to obtain sufficient data for county-specific CLRD death rates. Very rural counties were grouped with neighboring counties to ensure there was sufficient data in each area to produce stable rates (≥ 20 events). County groupings were kept as small as possible. Only deaths of Montana residents under the age of 80 years were included in this analysis. Deaths before the age of 80 years were considered premature to be consistent

with the average life expectancy for the total US population.³ Montanans with an underlying cause of death coded as ICD-10 codes J40 to J47 were included as deaths due to CLRD.⁴ All rates were age adjusted to the 2000 US standard population.⁵ A benchmark was set by taking the average of the three lowest rates among counties or county groupings. This benchmark can serve as an attainable goal for other counties in Montana.

Results

On average, 322 Montanans under the age of 80 die of CLRD each year (age-adjusted death rate of 27.8 [26.8 – 28.9] per 100,000 people). The three lowest rates of CLRD deaths in Montana counties or county groupings were in Gallatin, Valley and McCone, and Carbon counties. This set the benchmark for CLRD death rate at 19.6 deaths per 100,000 people. The majority of counties and county groupings had CLRD death rates similar to the statewide rate. Eight counties or county groupings (Silver Bow, Deer Lodge, Mineral, Yellowstone, Roosevelt, Toole and Liberty, Lewis & Clark, and Cascade) had rates that were significantly higher than the state rate.

Age-adjusted chronic lower respiratory disease death rate per 100,000 people
among Montanans aged 0 to 79 years, 2003-2012

| County or County Grouping | Rate per 100,000 people | 95% Confidence Interval |
|--|-------------------------|-------------------------|
| Silver Bow | 51.0 | 44.2 - 58.8 |
| Deer Lodge | 40.8 | 30.5 - 54.9 |
| Mineral | 38.6 | 25.3 - 61.4 |
| Yellowstone | 37.0 | 34.0 - 40.3 |
| Roosevelt | 36.0 | 24.5 - 51.5 |
| Toole and Liberty | 35.9 | 24.2 - 52.3 |
| Lewis & Clark | 35.0 | 30.4 - 40.1 |
| Cascade | 33.5 | 29.8 - 37.6 |
| Chouteau | 33.0 | 21.1 - 52.0 |
| Custer, Powder River, Carter, and Fallon | 32.9 | 25.9 - 41.9 |
| Glacier | 32.6 | 22.7 - 45.7 |
| Hill | 32.2 | 23.8 - 42.9 |
| Beaverhead | 31.7 | 22.2 - 45.5 |
| Missoula | 31.5 | 27.9 - 35.6 |
| Blaine and Phillips | 31.0 | 22.0 - 43.6 |
| Central MT Health District | 30.8 | 25.0 - 38.3 |
| Granite and Powell | 30.7 | 21.9 - 43.4 |
| Dawson, Prairie, and Wibaux | 30.4 | 22.1 - 42.0 |
| Lincoln | 29.8 | 23.9 - 37.7 |
| Flathead | 29.4 | 26.0 - 33.3 |
| Big Horn | 29.2 | 19.5 - 42.3 |
| Lake | 28.5 | 23.2 - 35.0 |
| Stillwater and Sweet Grass | 28.3 | 20.4 - 39.5 |
| Daniels and Sheridan | 27.4 | 17.4 - 45.7 |

| County or County Grouping | Rate per 100,000 people | 95% Confidence Interval |
|------------------------------------|-------------------------|-------------------------|
| Pondera and Teton | 27.0 | 19.3 - 37.7 |
| Meagher, Jefferson, and Broadwater | 25.4 | 19.0 - 34.1 |
| Park | 25.1 | 18.4 - 34.2 |
| Richland | 24.4 | 16.1 - 36.6 |
| Ravalli | 23.8 | 19.8 - 28.6 |
| Garfield, Rosebud, and Treasure | 22.9 | 14.7 - 34.5 |
| Sanders | 22.3 | 15.6 - 32.5 |
| Madison | 21.3 | 13.4 - 34.5 |
| Carbon | 21.2 | 13.6 - 33.3 |
| Valley and McCone | 19.2 | 12.5 - 30.2 |
| Gallatin | 18.4 | 15.1 - 22.3 |

Steps for Prevention

The Montana Asthma Control Program (MACP) and the Montana Tobacco Use Prevention Program (MTUPP) have several initiatives in place designed to prevent CLRD. These initiatives can be grouped into three main categories, including 1) policy development, 2) health care initiatives, and 3) community-based partnerships.

Policy development

Since a primary component of preventing asthma-related mortality is identifying and removing asthma triggers, MACP emphasizes the importance of adopting asthma-friendly policies throughout the state. Examples include “no idling” policies for vehicles within a certain distance of buildings, as well as policies allowing children to self-carry their inhalers at school. MTUPP also encourages policy development to reduce smoking prevalence and to prevent secondhand smoke exposure. The Clean Indoor Air Act, implemented in 2009, protects all Montanans from secondhand smoke exposure in work places and public buildings. Other policies encouraged by MTUPP include comprehensive tobacco-free schools, tobacco-free hospitals, worksite wellness, and smoke-free multi-unit housing. Reducing the exposure to secondhand smoke is an essential part in reducing exacerbation of CLRD symptoms and ultimately a reduction in death from this disease. People can participate in this initiative by becoming advocates for policies like these in their communities and workplaces.

Health care initiatives

In order to increase the number of people living with asthma who report that their disease is well-controlled, the MACP emphasizes the importance of training health care professionals on current guidelines for asthma care. This is achieved through our emergency department discharge program, the AHEAD Protocol, in which providers in emergency departments are taught how to care for patients presenting with an asthma exacerbation according to the most recent National Heart, Lung, and Blood Institute (NHLBI) Expert Panel Report-3 (EPR-3) guidelines and provide patients with necessary self-management education upon discharge (2007). The MACP also coordinates the annual Big Sky

Pulmonary Conference (BSPC) to provide up-to-date information on CLRD. The MACP offers several continuing education opportunities throughout the year, including webinars and an annual course from the Association of Asthma Educators. People across the state can become involved in this work by contacting the MACP for information about educational sessions, becoming a certified asthma educator, and encouraging their local emergency departments and health care providers to receive training on up-to-date recommendations for the care of people living with asthma.

MTUPP also works with healthcare providers to help their patients quit using tobacco products by training them on the services provided by the Montana Tobacco Quit Line. Over 80,000 Montanans have called the Quit Line since 2004. In fiscal year 2014, 836 enrolled Quit Line callers had asthma and 712 enrolled callers had COPD. A total of 1313 enrolled callers said they had at least one person in their home with an asthma diagnosis. The Quit Line has collaborated with Montana Health Research Institute to refer callers with COPD for a clinical trial for treatment of persistent cough and trouble breathing. The Quit Line is planning to launch a new electronic referral system and would like to collaborate with COPD departments in hospitals to make it easier to enroll patients who are ready to quit. Providing tobacco cessation services for these populations can be an important step in improving the health of the caller and those living with them.

Community-based partnerships

MTUPP administers over 50 contracts for tobacco prevention efforts at the local level. Partnerships with local health departments, tribal health centers, and community organizations are an essential component of the program. Tobacco Prevention Specialists help build invaluable relationships within their community with other health programs and healthcare facilities to educate and distribute support materials about the Quit Line. Several communities have taken the initiative to partner with organizations that work on reducing environmental pollutant exposure such as asbestos and radon. Cross-promotion of programs that have an impact on respiratory health can increase the number of people reached by local MTUPP programs.

Current guidelines for asthma care emphasize the importance of focusing on the home and school environments as well as the health care setting. In order to address the environmental components of asthma, the MACP partners with local health departments to conduct the Montana Asthma Home Visiting Program (MAP). The MAP utilizes home visiting nurses to work with children who have uncontrolled asthma and their families by teaching asthma self-management education and how to create an asthma-friendly home. The MACP also partners with the Montana Association of School Nurses and certified asthma educators across the state to conduct trainings in schools with coaches, teachers, administrators, students, and parents. This is achieved by offering mini-grants to school nurses and certified asthma educators to accomplish projects addressing asthma awareness and the development of asthma-friendly school policies. Lastly, the MACP offers free trainings to early childcare providers across the state in an effort to ensure that schools, daycares, and homes can become healthy environments where children with asthma can learn, work, and play safely. Health care providers and public health practitioners can become involved with these initiatives by referring children with uncontrolled asthma to the MAP program, encouraging school and daycare faculty and staff to contact

the MACP regarding training opportunities, and considering applying for the mini-grant program, if applicable.

More tips for how you can be involved

Regardless of training or workplace setting, anyone in Montana can participate in reducing the burden of CLRD in the following additional ways:

- Consider using asthma-friendly cleaning supplies such as baking soda, borax, and vinegar, among others;
- Implement no-smoking and no-idling policies at your place of work or in your community;
- Utilize the services of the free Montana Tobacco Quit Line, 1-800-QUIT-NOW or www.QuitNowMontana.com
- Encourage your teachers, coaches, and health care providers to become more educated about asthma care;
- Know what to do in case of an asthma attack;
- Contact the Montana Asthma Control Program for educational resources to build asthma awareness at www.dphhs.mt.gov/asthma; and
- Contact the Montana Tobacco Use Prevention Program for information on quitting tobacco, or how to implement smoke-free and tobacco-free policies, at www.tobaccofree.mt.gov.

Citations

- 1) Paula W. Yoon, ScD, et al., (2014). *Potentially Preventable Deaths from the Five Leading Causes of Death – United States, 2008-2010*. Morbidity and Mortality Weekly Report 63(17);369-374.
- 2) Centers for Disease Control and Prevention, (2013). *What is COPD?*. Retrieved from <http://www.cdc.gov/copd/>
- 3) Murphy SL, Xu JQ, Kochanek KD. (2013). *Deaths: final data for 2010*. Natl Vital Stat Rep, 61(4).
- 4) World Health Organization. *International Statistical Classification of Diseases and Related Health Problems 10th Revision*. Retrieved from <http://apps.who.int/classifications/icd10/browse/2010/en>
- 5) Centers for Disease Control and Prevention.(2001, January) *Age Adjustment Using the 2000 Projected U.S. Population*. Statistical Notes, 20. Retrieved from <http://www.cdc.gov/nchs/data/statnt/statnt20.pdf>