Montana Chronic Disease Prevention & Health Promotion Bureau

January 2017

Work-Related Asthma in Montana

Report Highlights

- **Over 20% of adults in Montana with current asthma report that it was caused by a current or previous job.**
- **1 in 2 adults with current asthma report that it is aggravated by their current or previous job.**
- **Statistically, there are no differences in the age, gender, income, or educational level of those affected by work-related asthma.**

Upcoming Events

- Big Sky Pulmonary Conference
  -March 16-18, Fairmont Hot Springs
- Becoming an Asthma Educator and Care Manager Course
  -April 7th, Fairmont Hot Springs
- Montana Asthma Advisory Group Meeting
  -May 19th, location TBD

Montana Asthma Control Program

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Occupational and Work-Exacerbated Asthma

Work-related asthma (WRA) refers to asthma that is caused or exacerbated by triggers in the workplace, and it is the most prevalent occupational lung disease.[1] In fact, 25% of adult-onset asthma cases are due to occupational exposures.[1] WRA is further divided into two categories: occupational asthma (OA) and work-exacerbated asthma (WEA). OA with a latency period is called sensitizer-induced OA, and OA without latency is known as irritant-induced OA.[2] Both types of OA occur in individuals who develop asthma as a result of exposures in the workplace, while WEA is preexisting asthma that is worsened by exposures in the workplace.[1]

It is important to distinguish between the two types of WRA because the treatment of OA and WEA are different.[1] Due to the difficulty of identifying OA, this type of WRA is likely more common than reported.[1] This report looks at the prevalence of WRA in Montana through the Asthma Call-back Survey and workers' compensation claims.

More than 400 agents in the work environment are potentially responsible for work-related asthma[5]

Quantifying Work-Related Asthma

The Montana Asthma Call-back Survey (ACBS) is a telephone survey of non-institutionalized adults aged 18 years and older. Participants are recruited from the Behavioral Risk Factor Surveillance System (BRFSS) survey if they indicate that they previously had or currently have asthma. These individuals are then called again and asked more in-depth questions about their experiences with asthma.

The ACBS includes several questions about if a person's asthma was caused or exacerbated by a previous or current job, and if it was ever diagnosed by a health care provider. Other questions include if the person ever quit or changed jobs because of an occupational cause or exacerbation of their asthma, and if the person ever told their health care provider that their asthma was caused or exacerbated by exposures in the workplace. The data used in this report are from responses collected from 2012-2014, and only include people who were currently or previously employed.

Workers Compensation Data

Workers compensation data were also analyzed to determine the incidence of work-related asthma in Montana. A search was performed on workers' compensation claims from 2005-2015 with lungs, soft tissue, or nose as the affected part of body to find claims with "asthma" in the incident description. This produced 37 claims. However, this was an insufficient number of claims for statistical analysis, and the inability to determine if these were physician diagnosed cases of WRA meant that no conclusions could be drawn about WRA in Montana through these data. Out of the 37 claims with "asthma" in the incident description, 70.3% were filed by women. The most common industries with a claim were public administration and health care and social assistance.

Diagnosing Work-Related Asthma: A Guide for Clinicians

These are the steps recommended by the Occupational Health and Safety Administration for diagnosing work-related asthma.[3]

1. Consider work-related asthma in ALL adults with new-onset asthma or aggravation of previously controlled asthma.
2. Obtain a detailed medical history that documents the patient's asthma symptoms, allergies, and the relationship of the frequency or severity of symptoms to being at work (onset, timing, severity).
3. Document a history of occupational exposures.
4. Perform pulmonary function testing (PFT) in accord with the Asthma Clinical Guidelines.[8]
5. Consider referral to an occupational medicine, pulmonary and/or allergy specialist for supplemental testing and assistance with determining work-relatedness, reducing exposures and protecting the worker's employment status.

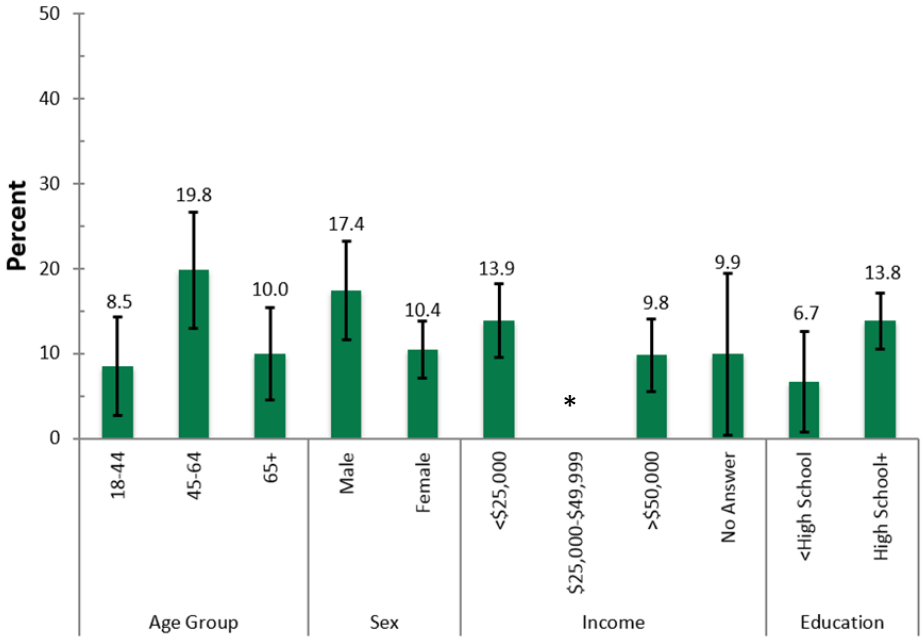
Work-related asthma has become the most common occupational lung disease so awareness and proper diagnosis are crucial.[6] The effects of work-related asthma, besides the immediate health effects, are numerous and include persistence of asthma symptoms and airway inflammation even after the exposure has been removed, a higher risk of developing certain psychiatric disorders such as anxiety and dysthymia, and a financial burden on the patient due to lost wages and potential unemployment after their diagnosis.[6]

It is estimated that in the United States, adults miss 14 million days of work per year due to asthma.[7]

Demographics of Work-Related Asthma in Montana

- There were no statistical differences between work-related asthma between age groups, sex, and income group (Figure).
- In Montana there were no differences in work-related asthma between education levels (Figure).
- In the United States there are higher frequencies of work-related asthma among people with less than a high school education.[4]

Figure. Percentage of adults with current asthma diagnosed with work-related asthma by a health care provider by selected characteristics



Data source: Montana ACBS, 2012-2014

* The percent is statistically unreliable.

Work-Related Asthma in Montana

Table. Self-reported work-related asthma among adults with current asthma		
	Percent	95% Confidence Interval
Caused by current or previous job	21.5	17.1-25.8
Aggravated by current or previous job	54.5	49.1-59.9
Caused or aggravated by current job	23.4	18.5-28.4
Caused or aggravated by previous job	42.3	37.1-47.5
Quit or changed job because it caused or made asthma worse	6.9	4.9-8.9
Ever told by/to a health care provider that asthma is work related	18.7	14.9-22.5
Answered "yes" to any question about work-related asthma	57.1	51.7-62.5
Missed at least 1 day of work due to asthma	30.8	25.7-36.0

Data source: Montana ACBS, 2012-2014

- 1 out of 5 people (22%) with current asthma reported that their disease was caused by a current or previous job (Table).
- Over half of people with current asthma reported that their asthma was aggravated by a previous or current job (Table).
- Almost 7% of people with current asthma reported that they quit or changed jobs because of their asthma (Table).
- Over half (57%) of people with current asthma reported that their asthma was potentially linked to their work (Table).
- Almost a third (31%) of adults with asthma reported missing at least 1 day of work in the last year due to their asthma (Table).

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Clinical Recommendations

- Take thorough history of temporal trends of asthma symptoms for patients with asthma and consider OA for adult onset asthma.
- No test for OA has been shown to be definitive, therefore consider using a combination of tests to diagnose OA.
- Collaborate with patients to identify the triggers causing or exacerbating their asthma and work with patients to identify ways to reduce or remove exposures at work.
- Refer to a pulmonary or allergy specialist if necessary.

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