



PREVENTION OPPORTUNITIES UNDER THE BIG SKY

The Burden of Smoking-attributable Cancers in Montana

Tobacco use is the leading cause of preventable death and disease in Montana. Tobacco use causes many deadly diseases, including cardiovascular disease and cancer, the leading causes of death in Montana and the United States. An estimated 1,400 Montanans die from diseases caused by tobacco use every year.¹

A relationship between smoking and lung cancer was proposed one hundred years ago this year.² Evidence accumulated during the 20th Century firmly established that smoking causes lung cancer. But lung cancer is not the only cancer caused by smoking. Cigarette smoking causes at least ten different types of cancer located throughout the body.³ Smoking-related cancers include: acute myeloid leukemia, bladder, cervix, esophagus, kidney, larynx, lung, oral, pancreas, and stomach.

This issue of *Montana Public Health* quantifies the cancer incidence attributable to cigarette smoking, and assesses the incidence trends of smoking-related cancers over the past 30 years.

Annual Number of Smoking-attributable Cancers The percentage of cancer cases that could be attributable to cigarette smoking varies by cancer site and by sex (Table).

From 2005 through 2009, an average of 911 cancer cases each year could be attributed to smoking. Smoking-attributable cancers account for approximately 18% (n=911) of the 5,000 cancer cases diagnosed in Montana each year. This burden is estimated to be 580 cases among men and 331 cases among women.

Lung cancer is the second most common cancer diagnosed among both men and women in Montana (behind prostate and breast cancers, respectively). However, lung cancer is responsible for a greater proportion of smoking-attributable cancer cases among women compared to men in Montana (77% and 56%, respectively).

Change in Smoking-related Cancers Over Time Cancer caused by cigarette smoking requires decades to develop. Therefore, decreases in the prevalence of cigarette smoking will take decades to realize decreases in the incidence of smoking-related cancers. Smoking prevalence peaked in Montana in 1978 with approximately 127 cigarette packs sold per person.⁴ Historically, there was a gender gap in smoking prevalence. In 1965, 52% of U.S. men were current smokers while 34% of U.S. women smoked.⁵ This gender gap has since closed. In 2010, 19% of Montana adults were current smokers, with no statistical difference between men and women (20% and 18%, respectively).⁶

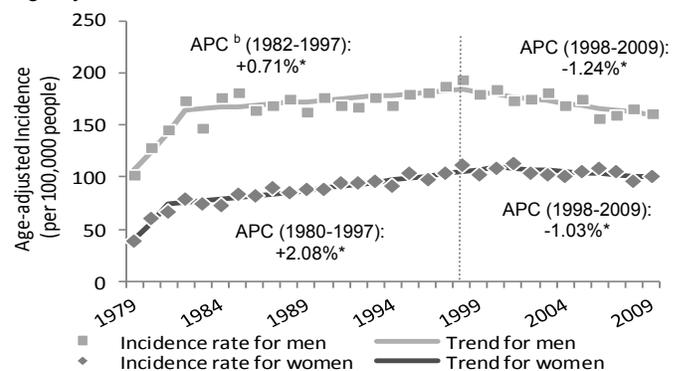
The age-adjusted incidence rate of smoking-related cancers has decreased by 1.24% per year among men and by 1.03% per year among women from 1998 to 2009 (Figure 1).

Table. Percent^a of cancer cases in Montana that could be caused by smoking by cancer site and sex, 2005-2009

Cancer Site	Men	Women
Acute Myeloid Leukemia	21	11
Bladder	43	31
Cervix	--	12
Esophagus	69	62
Kidney	35	6
Larynx	81	76
Lung	87	74
Oral	71	51
Pancreas	21	26
Stomach	25	13

^a Derived following SAMMEC methodology using sex-specific relative risk (RR) of death estimates for current and former smokers for each primary site and sex-specific current and former smoking prevalence from the Montana Behavioral Risk Factor Surveillance System.

Figure 1. Trends in the incidence of smoking-related cancers^a among Montana residents, 1979-2009, Montana Central Tumor Registry



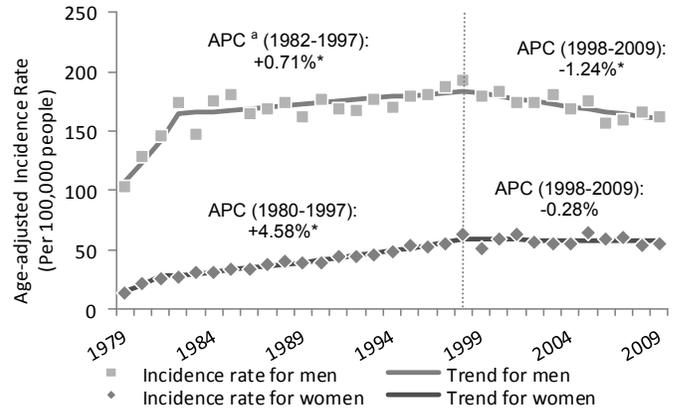
^a Acute Myeloid Leukemia, Bladder, Cervix, Esophagus, Kidney, Larynx, Lung, Oral, Pancreas, and Stomach

^b Annual Percent Change (APC)

* Statistically significantly different than a rate of change of 0%

Change in Lung Cancer Incidence Over Time Among men in Montana, lung cancer incidence decreased by 1.24% per year from 1998 to 2009 (Figure 2). During this same time period, lung cancer incidence among women in Montana did not significantly decrease (Figure 2). These trends in Montana are similar to those in the United States (data not shown).⁷

Figure 2. Trends in age-adjusted incidence rate of lung cancer among Montana residents, 1979-2009, Montana Central Tumor Registry



^a Annual Percent Change (APC)
* Statistically significantly different than a rate of change of 0%

Recommendations for Clinicians

Ask all patients about tobacco use
Advise to quit
Assess willingness to quit
Assist with quitting
Arrange for follow-up

- Refer patients who want to quit to the Montana Tobacco Quit Line (1-800-QUIT-NOW) and use the fax referral system.
- Health care providers should recommend cancer screening to eligible patients at every visit.
- Free or reduced cost cancer screening tests are available to eligible adults who meet certain age and financial guidelines from the Montana Cancer Screening Program.

For more information, contact Leah Merchant, MT Cancer Screening Program, www.cancer.mt.gov, 406-444-4599 or Simon Habegger, Montana Tobacco Use Prevention Program, tobaccofree.mt.gov, 406-444-5687

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