

## Questions & Answers

### Presentation to Range Medical Society “Mesothelioma in NE Minnesota” September 26, 2008

#### 1. How many people with mesothelioma never worked in the mines?

For the period 1988 - 2007, Minnesota Cancer Surveillance System (MCSS) data and the 72,000 miner cohort data provides the following distribution for the mesothelioma cases:

All Minnesota		NE Minnesota	
<u>Mining</u>	<u>Non-mining</u>	<u>Mining</u>	<u>Non-mining</u>
58	1016	43	116

Note that 15 cases of mesothelioma known to have occurred in former miners were diagnosed when the miner resided outside northeastern Minnesota.

#### 2. How many cases of mesothelioma were discovered before taconite was mined?

There are no reliable data on mesothelioma occurrence (incidence or mortality) in Minnesota prior to the advent of the MCSS in 1988. Since taconite operations started in the mid 1950s (before the MCSS), there is no definitive way to address this question. Until 1999 when the new ICD-10 included a specific code for mesothelioma, mortality data would miss nearly 90 percent of mesothelioma deaths as they were usually coded to cancer of the lung. There is one published study (*Journal of Occupational Medicine* 27: 507 - 517, 1985) of the mortality experience of underground miners (hematite). This study found no evidence of an increased risk of lung cancer and no mesotheliomas were documented. However, since the follow-up occurred before 1999, the lack of mesothelioma mortality findings may be a function of inadequate latency or inability to identify these cancers because of the above ICD coding deficiency.

#### 3. Where else can asbestos be found on the Range, excluding any possible exposure from taconite?

Asbestos-cement, flooring products, friction products (e.g., brake and clutch linings), packing and gaskets, coatings, and roofing products have incorporated asbestos. In 1982, these products accounted for 90 percent of all U.S. consumption of asbestos. In this regard, the Iron Range was no different than other parts of Minnesota and the U.S., except for the concentration of heavy industry that utilized these products. Although OSHA promulgated the first standard for regulating workplace exposure in 1972, many of these asbestos-containing products are still used today on the Iron Range and elsewhere. The association between commercial asbestos exposure in the mining industry for many of the mesothelioma cases was documented by the Minnesota Department of Health (MDH) in 2003:

<http://www.health.state.mn.us/divs/hpcd/cdee/occhealth/reports.html>. This work was not accompanied by a formal exposure assessment of the mining operations.

One experience does set northeastern Minnesota apart. During the period 1958 -1974, 60 to 120 tons of asbestos per month (amosite and later chrysotile) were used at the Conwed plant in Cloquet. A MDH study documented significant morbidity in the thousands of workers that were exposed at the Conwed plant. These workers resided in Carlton County and in many Iron Range communities.

#### **4. Is radon higher in homes or employment places on the Range?**

There is a detailed map on the internet of indoor radon concentrations in Minnesota based on 32,000 measurements: <http://www.csbsju.edu/MNradon/maps/ziprn.html>.

For the most part, indoor air radon concentrations in northeastern Minnesota are not elevated compared to other Minnesota communities.

In the early 1980s, Dr. Chuck McJilton of the University of Minnesota measured radon levels in underground mining operations. He found that the levels were not elevated above what was considered normal background for that area.

#### **5. Will work exposure (shaft mines vs. open pit mines) be taken into consideration in the study?**

The three taconite miner health studies will be focusing exclusively on above ground mining (taconite operations). Some of the miners that worked in below ground (shaft mining – hematite operations) will be included in the studies but only if they were also employed as taconite miners. Thus, the studies are focused on open pit miners. A great deal of effort is being applied to developing both current and historical measures of occupational exposures for the taconite miners.

#### **6. Are prostate cancer rates higher in Northeastern Minnesota?**

No. For the period 1988 - 2006, 5,642 prostate cancers were diagnosed in male residents of northeastern Minnesota and 6,241.6 were expected based on statewide rates. This is nearly a 10 percent decrease, which is statistically significant ( $p < 0.01$ ). For the most recent five years (2002 - 2006), 1,699 were diagnosed while 1,735.8 were expected.

Also, the most recent report for the MCSS can be found at:

<http://www.health.state.mn.us/divs/hpcd/cdee/mcss/documents/092208mcssreport.pdf>

This report contains a great amount of recent data on cancer incidence in Minnesota. Specifically on page 240 of the pdf version is the detailed cancer profile of northeastern Minnesota.

#### **7. Was asbestos ever used in cigarettes?**

Yes. Crocidolite, an amphibole form of asbestos, was documented to have been used in Kent cigarette filters during the period 1952 through mid -1956. These filters were considered a significant source of non-commercial asbestos exposure (*Cancer Research* 55: 2232-2235, 1995).

#### **8. What is the incidence of mesothelioma in the upper peninsula of Michigan (where similar mining is done)?**

According to the state of Michigan's Cancer Registry, 2 mesotheliomas were diagnosed in the Upper Peninsula and 101 in the rest of the state during 2004. This translates into a crude rate of 6.3 and 10.5 per million in the Upper Peninsula and rest of Michigan respectively. For the same year, the crude rate of mesothelioma incidence for the entire state of Minnesota was 12.9 per million.