

AMBLER, PA**MESOTHELIOMA DATA REVIEW**

Human exposure to asbestos can cause harmful health effects, including the conditions asbestosis and mesothelioma, an asbestos-related cancer. The Pennsylvania Department of Health (DOH) evaluated asbestos-related cancer trends in Ambler, PA, zip code 19002 for three time periods: 1985–1994, 1995–2004 and 2005–2014. Most of the mesothelioma cases were diagnosed in males. The mesothelioma incidence rate decreased over the three time periods. See Figure 1 for an explanation of incidence rates.

BACKGROUND

From the early 1900s to the 1970s, asbestos companies in Ambler, PA disposed of contaminated production waste at what are now the Ambler Asbestos Piles and BoRit Asbestos Superfund Sites. This action exposed workers and the community to asbestos-contaminated air, soil and surface water for decades. Exposures were drastically reduced when the companies closed in the 1970s and 1980s. An area of what is now the BoRit Asbestos site was used as a park and playground until the mid-1980s when it was closed due to asbestos contamination. As of 2018, EPA has completed all cleanup and remediation work. Long-term operation and maintenance of the sites is ongoing.

METHODS

Data on asbestos-related cancers (mesothelioma, stomach, ovarian, lung and kidney cancer) that were newly diagnosed from 1985 to 2014 were obtained from the Pennsylvania Cancer Registry. The mesothelioma cases were divided into sub-groups: mesothelioma in the chest cavity, mesothelioma in the abdomen and mesothelioma in “other area.” All cancer cases were grouped into three time periods: 1985–1994, 1995–2004 and 2005–2014 because of the low number of cancer cases in zip code 19002. Descriptive analyses of asbestos-related cancers were performed by sex and age group, comparing zip code 19002 with the rest of the state.

RESULTS

- The mesothelioma incidence rate decreased over the three time periods in zip code 19002 and the rest of the state, though the decrease was greater in zip code 19002 when compared to the rest of the state.
- There were no statistically significant differences in age group distribution between Ambler and the state for mesothelioma, laryngeal and stomach cancer incidences. In zip code 19002 and the rest of the state, the mesothelioma cases diagnosed were in younger age groups during 1985–1994 but shifted to older age groups during 1995–2004 and 2005–2014 (see Table 1).
- About 80 percent of all mesothelioma cases were diagnosed in males in both zip code 19002 and the rest of the state during all three time periods except for zip code 19002 during 2005–2014 when 44.4 percent were male (Table 1).
- While mesothelioma in the chest cavity was the most common type of mesothelioma in both study areas during all time periods, the percentage of mesothelioma in the abdomen cases was much higher in zip code 19002 (about 30 percent) than it was in the rest of the state (about 8.5 percent) over the three time periods.

CONCLUSION

The decrease in mesothelioma incidence in zip code 19002 is consistent with the end of asbestos-containing material manufacturing in the area and the remediation efforts by EPA. A higher percentage of mesothelioma in males can be explained by workplace exposure; the main risk factor for mesothelioma in the chest is exposure to asbestos and males were more likely to work in asbestos-related industries. The high rates of mesothelioma in the abdomen could be caused by high levels of workplace exposure. Further evaluation on the unexpectedly high proportion of mesothelioma

in the abdomen cases is needed. The percentage of all mesothelioma cases among males decreased drastically to only 44.4 percent during 2005–2014 (Table 1)—further evaluation to identify the cause of this is also needed.

LIMITATIONS

- Pennsylvania’s cancer registry does not collect information on social, behavioral and occupational risk factors associated with cancer and could not be addressed in this analysis.
- People who live or lived in Pennsylvania but were residents of another state at the time of their cancer diagnosis are not included in Pennsylvania’s cancer registry for that cancer. People who moved from zip code 19002 before their diagnosis were not included in the cancer data for that zip code 19002.
- Because people often move from one place to another, and most cancers can take a long time to develop, environmental exposure history is difficult to determine with only cancer registry data.
- Complete historical contamination data were not available for this analysis.

Figure 1: Understanding incidence rates

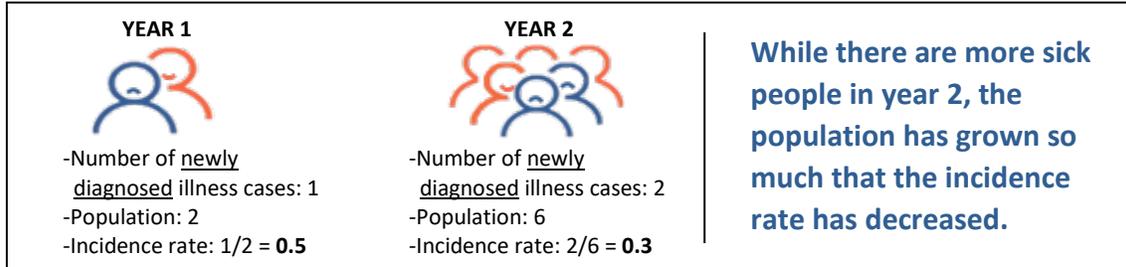


Table 1: Mesothelioma cases by age group and sex (all ages) for zip code 19002 and the rest of the state during three-time periods 1985-1994, 1995-2004 and 2005-2014

Area	Age group	Time period		
		1985-1994	1995-2004	2005-2014
Zip code 19002	< 40	0 (0.0%)	0 (0.0%)	0 (0.0%)
	40-49	2 (10.0%)	0 (0.0%)	0 (0.0%)
	50-59	3 (15.0%)	1 (8.3%)	0 (0.0%)
	60-69	6 (30.0%)	1 (8.3%)	0 (0.0%)
	70-79	7 (35.0%)	7 (58.3%)	5 (55.6%)
	>=80	2 (10.0%)	3 (25.0%)	4 (44.4%)
	Total	20 (100%)	12 (100%)	9 (100%)
Rest of the state	< 40	23 (1.4%)	15 (0.7%)	15 (0.7%)
	40-49	63 (3.8%)	65 (3.2%)	41 (2.0%)
	50-59	198 (11.9%)	151 (7.4%)	155 (7.6%)
	60-69	557 (33.5%)	436 (21.5%)	417 (20.5%)
	70-79	607 (36.5%)	838 (41.3%)	696 (34.2%)
	>=80	214 (12.9%)	522 (25.8%)	710 (34.9%)
	Total	1662 (100%)	2027 (100%)	2034 (100%)
Zip code 19002	Male	16 (80.0%)	10 (83.3%)	4 (44.4%)
	Female	4 (20.0%)	2 (16.7%)	5 (55.6%)
Rest of the state	Male	1312 (78.9%)	1643 (81.1%)	1588 (78.1%)
	Female	350 (21.1%)	384 (78.1%)	446 (21.9%)

If you have any questions, contact us at env.health.concern@pa.gov.