

BACKGROUND

The B. Braun Medical facility (the site) in Allentown uses ethylene oxide (EtO) to sterilize medical equipment. The site location and nearby demographic information are given in Figure 1. Occupational exposure to EtO can cause cancer. Residents living near the site and U.S. Representative Susan Wild raised concerns about cancer risks associated with the site's EtO emissions. The Pennsylvania Department of Health (PA DOH) prepared a report analyzing historical cancer incidence data (1985 to 2017) from the Pennsylvania Cancer Registry for the population living within a two-mile radius of the site. The report is available on PA DOH's [website](#). This fact sheet provides a summary of our analysis, findings, and recommendations.

HOW WAS THE CANCER DATA ANALYZED?

Cancer records were divided into three time periods: 1985-1994, 1995-2004, and 2005-2017 to identify any trends in cancer incidence rates. All cancer cases within a two-mile radius were geocoded. Age-adjusted standardized incidence ratios for the three time periods were used to examine the incidence of cancer types (lymphohematopoietic cancers, adult female breast cancer, and all childhood/pediatric cancers) often associated with EtO exposure. Rates were compared for the population living within a two-mile radius of the site relative to a reference population living outside of the two-mile radius within Lehigh and Northampton Counties.

WHAT DOES THE CANCER DATA REVEAL?

PA DOH did not observe a consistent pattern of cancer incidence rates among adults or children living within a two-mile radius of the site relative to adults and children living outside the two-mile radius. The difference in cancer rates indicates that the finding is more likely to have occurred by chance or by other potential cancer risk factors that were not available/included in the analyses. The cancer registry lacks information on other potential causes of cancer, such as residential/occupational history, lifestyle behaviors, genetic predisposition, and past exposure to harmful environmental contaminants, etc. Therefore, this cancer analysis cannot determine whether cancer incidence rates near the B. Braun facility were influenced by EtO exposure.

IS THE COMMUNITY NEAR THE SITE SAFE?

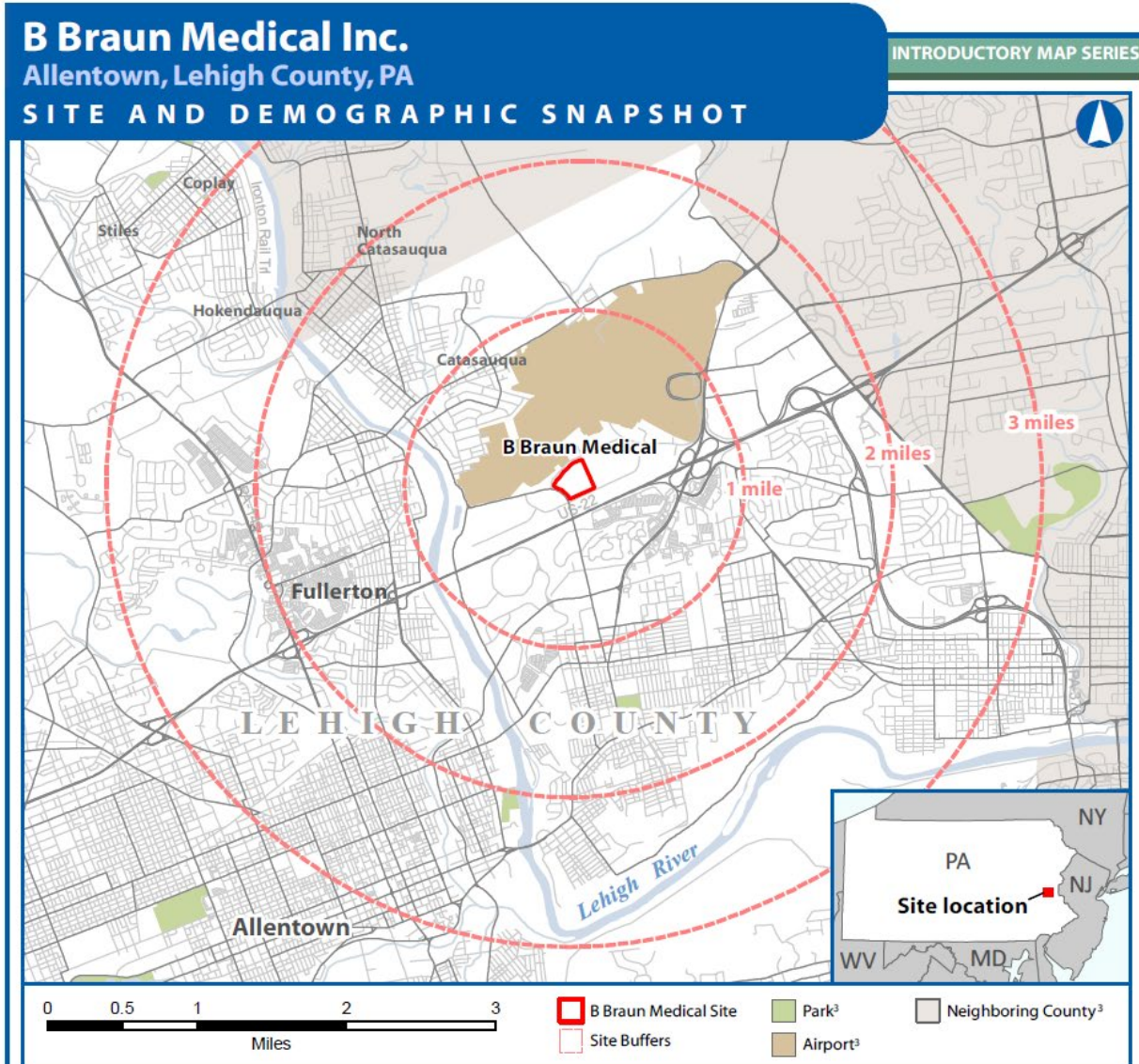
Currently, there is no real-time EtO air monitoring data to evaluate human health risks; there are a few limitations in measuring low levels of EtO in ambient air. Without air monitoring data, PA DOH cannot determine the levels of EtO and the associated human health risks. The risk depends on how much EtO is in the air and how long and often people are exposed to it. The risk decreases with decreased exposure. The risks also depend on age, lifestyle, residential/occupational history, etc. PA DOH acknowledges that in July 2020, a new emission control system was installed by the facility, which achieved a 99.9 percent EtO emission reduction, thus reducing potential exposure.

WHAT ARE THE RECOMMENDATIONS?

PA DOH recommended the Pennsylvania Department of Environmental Protection, the U.S. Environmental Protection Agency or B. Braun facility perform ambient air monitoring near the facility and in the surrounding community located downwind from the facility, when advanced technology is feasible to precisely measure ambient EtO levels. In the meantime, PA DOH recommends using the most refined air dispersion modeling possible to identify or reduce potential EtO emissions and to evaluate human health risks.

**If you have any
questions, contact us**
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Figure 1: Site Location and Demographics



Demographic Statistics^{4,5}
Within 2 Miles buffer of site boundary

Measure	2000	2010	Change	Measure	2000	2010	Change
Total Population	38,114	38,633	+1%	Two or More Races	954	1,377	+44%
White Alone	32,888	30,209	-8%	Hispanic or Latino ⁶	4,145	7,903	+90%
Black Alone	1,461	2,543	+74%	Children Aged 2 and Younger	1,184	1,344	+13%
Am. Indian & AK Native Alone	80	107	+33%	Children Aged 3 - 17 years	5,939	6,525	+10%
Asian Alone	812	812	+0%	Adults 18 - 34 years	7,335	8,203	+12%
Native Hawaiian & Other Pacific Islander Alone	26	23	-11%	Adults Aged 65 and Older	7,648	6,912	-9%
Some Other Race Alone	1,893	3,565	+88%	Females Aged 15 to 44	7,723	7,665	+0%

Data Sources: ¹ATSDR GRASP Hazardous Waste Site Database. ²ATSDR GRASP. ³TomTom 2019Q1. ⁴PUMS NHGIS, Univ of Minnesota, www.nhgis.org
Notes: ⁵Calculated using area-proportion spatial analysis method. ⁶Individuals identifying origin as Hispanic or Latino may be of any race.
Projection: NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet.