

Health Risks in Pennsylvania from Oil and Gas Air Pollution

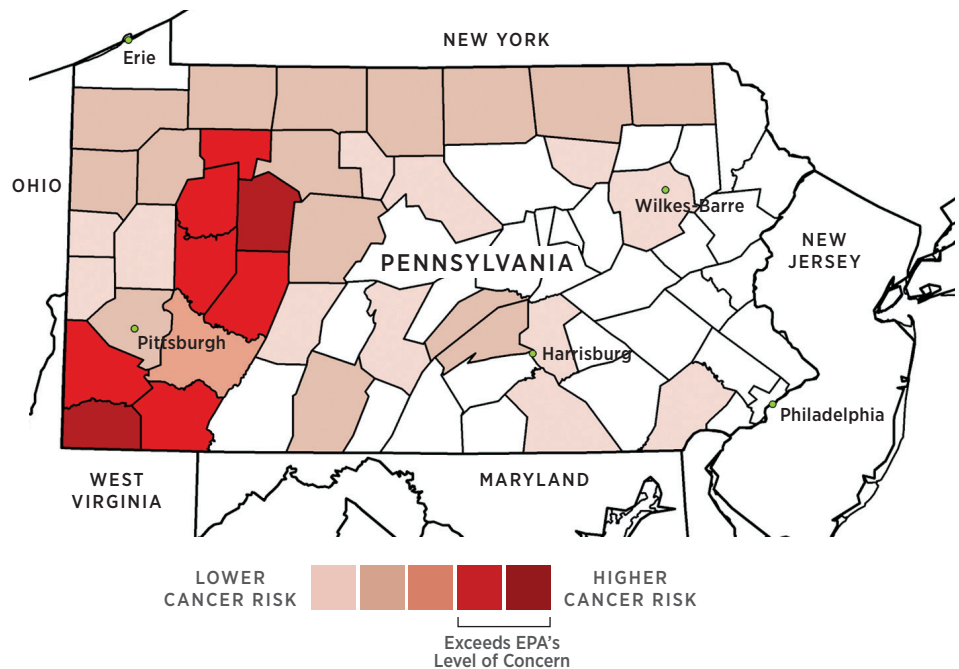
In the United States the oil and gas industry dumps millions of tons of air pollutants into our air each year. This mix of pollutants includes methane, a very potent climate pollutant, and enormous amounts of toxic air pollutants and pollutants that cause ozone smog pollution. Toxic air pollutants cause cancer and other diseases, while ozone smog can cause a variety of health problems, such as asthma attacks and worsening the effects of bronchitis and emphysema.

With nearly 10% of the nation's oil and gas wells, compressors and processing plants located in the State, Pennsylvanians bear much of the health risks caused by oil and natural gas industry air pollution.

According to EPA's data for 2011, over **1,300 tons** of hazardous toxic air pollution—benzene, formaldehyde, and acetaldehyde and other compounds—were emitted by oil and gas companies in Pennsylvania. Between 2011 and 2015, production of oil and gas increased by **112 percent** and **264 percent**, respectively, in Pennsylvania, so this pollution has likely increased as well. Western Pennsylvania is most directly affected by these toxic gases:

- **1.5 million people in Pennsylvania live within a half-mile of active oil and gas operations.** Toxic air pollution emissions can directly affect the health of individuals living adjacent to sources.
- Residents of eight counties surrounding Pittsburgh face cancer risk that exceeds EPA's level of concern due to exposure to toxic gases spewed by the oil and gas industry (see Figure 1).

FIGURE 1
Cancer Risk from Oil and Gas Toxic Air Emissions



- Children are especially vulnerable to air pollution exposure and **over 1,300 schools in Pennsylvania are located within a half-mile of oil and gas operations.**
- Along these lines, a number of recent independent peer-reviewed research studies on Pennsylvania communities have reported that negative health outcomes are more likely for those living near oil and gas wells in the state (see box, page 2).

Citizens across Pennsylvania are exposed to harmful ozone smog:

- **Over 30,000 Pennsylvania children per year will suffer asthma attacks** due to ozone from this industry.
- 25% of those children live in the Pittsburgh metropolitan area, and just over 20% live on the other side of the

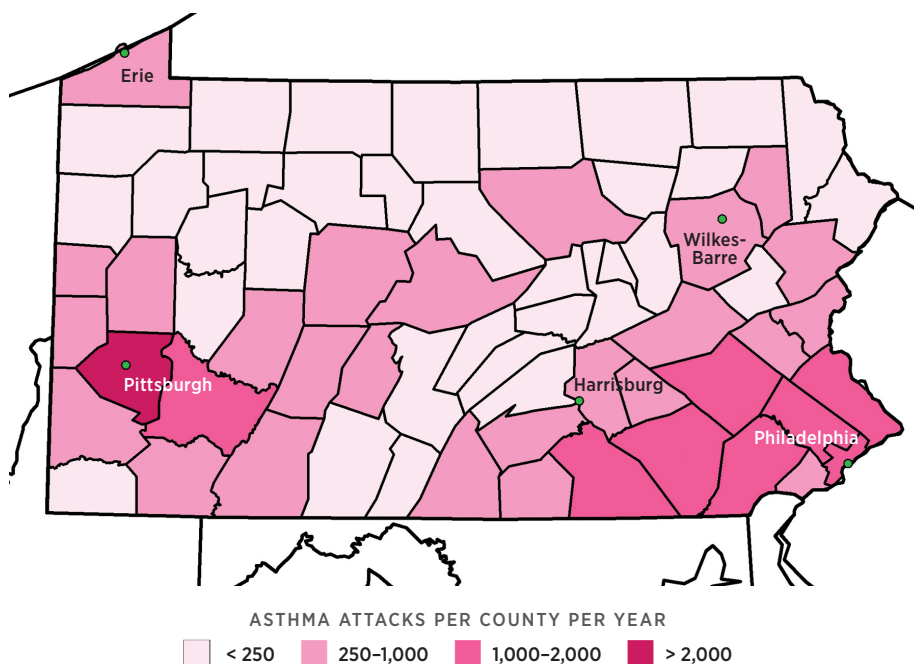
state in the Philadelphia metro area (see Figure 2, page 2).

- Unfortunately, no county in the state escapes from the ozone pollution produced by the oil and gas industry.
- Adults are also harmed by ozone exposure, with **67,000 person-days of restricted activity** in Pennsylvania linked to breathing higher levels of pollution from this industry.

The bottom line: air pollution from the oil and gas industry affects young and old and those living near and far from industry activities. **Pennsylvania must act to reduce these impacts by issuing air pollution standards that control emissions of harmful air pollution from the industry to the greatest extent possible.**

FIGURE 2

Ozone-induced Childhood Asthma Attacks Attributed to Oil and Gas Emissions in Pennsylvania Counties



Peer-reviewed studies on the health impacts for those living near oil and gas operations

A number of very recent studies have found that those living in areas of Pennsylvania with dense gas drilling experience more negative health effects, such as asthma attacks and hospitalizations than those living further away. These reports include:

- T. Jemielita *et al.*, (2015) "Unconventional Gas and Oil Drilling Is Associated with Increased Hospital Utilization Rates," *PLoS ONE* **10**, e0131093. [doi:10.1371/journal.pone.0131093](https://doi.org/10.1371/journal.pone.0131093).
- S. G. Rasmussen *et al.*, (2016) "Association Between Unconventional Natural Gas Development in the Marcellus Shale and Asthma Exacerbations," *JAMA Intern. Med.* **176**, 1334. [doi:10.1001/jamainternmed.2016.2436](https://doi.org/10.1001/jamainternmed.2016.2436).
- S. L. Stacy *et al.*, (2015) "Perinatal Outcomes and Unconventional Natural Gas Operations in Southwest Pennsylvania," *PLoS ONE* **10**, e0126425. [doi:10.1371/journal.pone.0126425](https://doi.org/10.1371/journal.pone.0126425).