



### The Lung Association's misleading air quality scare for the Pittsburgh region

**Summary:** Once again, on April 24 the American Lung Association (ALA) launched its annual fear-mongering assault on the Pittsburgh region with dire warnings about the health risks of the region's air pollution. As we have noted in previous *Policy Briefs*, the ALA is more than a little disingenuous in several respects. This *Policy Brief* reviews in depth major problems with the ALA's latest report.

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The ALA report on the Pittsburgh region comes up short in several ways. First, it fails to mention that readings in all but one of the region's air quality monitors measuring particulate matter (pm2.5) concentrations are below the Environmental Protection Agency's (EPA) maximum annual average guidelines with many well below. Second, it fails to mention that the EPA limits on pm2.5 have declined massively over the years, dropping from an annual average of 60 micrograms per cubic meter (mcg/m<sup>3</sup>) of air in 1970 to 15 in 1997 to 12 in 2012. Meanwhile, Pittsburgh's air has seen equally large declines in pm2.5 concentrations.

And most telling is that the ALA violates EPA rules in calling the region's air some of the worst in the nation based on monitor readings near known generators of particulate matter. Monitors are located specifically in such areas.

Here is the EPA guidance from their Air Quality Survey reports on monitor readings. "The values shown are the highest among the sites in each area. Data from exceptional events are included. This summary is not adequate in itself to numerically rank CBSAs (core-based statistical area) according to their air quality. *The EPA monitoring data represent the quality of air in the vicinity of the monitoring site and, for some pollutants, may not necessarily represent urban-wide air quality* (emphasis added)."

Consider that the region is being maligned primarily for measurements in Allegheny County where 14 EPA air quality monitors average 9.1 mcg/m<sup>3</sup> in the 2018 readings. While three monitors in the county posted readings just under the 12 mcg/m<sup>3</sup> limit, only one registered a reading over the maximum at 13.2 mcg/m<sup>3</sup> and that occurred at one of three monitors located in Liberty Borough near the coke works.

One of the three Allegheny County monitors with a reading of just under 12 was in Lawrenceville while two others in Lawrenceville were under 9, well below the EPA guidelines for annual average concentration. Meanwhile, measurements in Allison Park (7.2) and McDonald (8.1) were

well under the EPA guideline. Further north in Armstrong two monitors at the same county location averaged 7.4 mcg/m<sup>3</sup>, a far cry from the maximum guideline.

Then, too, in Westmoreland County two Greensburg monitors averaged 5.3 mcg/m<sup>3</sup>. No other air quality monitors are sited in the large county. In Washington there are seven monitors, four at the Charleroi waste treatment plant. Only one monitor at the treatment facility registered a reading close to 12 at 11.7. Three other monitors away from the plant in other parts of the county averaged 7.3 mcg/m<sup>3</sup>. One monitor in Fayette County posted a measurement of 8.1. There are no monitors in Butler County. However, given the readings at Allison Park, and at the one location in Armstrong County, it seems very likely Butler would show quite good measurements as well. Beaver County has four monitors all at the exact same location in Beaver Falls that averaged 10 mcg/m<sup>3</sup> with one monitor at 11.8 and the other three below 10.

Even more disturbing is that New Castle and Weirton are included in the ALA's 7<sup>th</sup> worst regional air quality ranking. Lawrence County has no monitors and Brooke County, home of Weirton's two monitors, posted measurements between 8 and 9 mcg/m<sup>3</sup>.

In short, neighborhoods in Allegheny County and other surrounding counties are being tarred with the brush of measurements at a handful of monitors with readings above an annual average of 11 mcg/m<sup>3</sup> and only one out of compliance (above 12) in Liberty Borough. This unfair maligning of areas away from the offending monitors, by lumping them in with the areas in proximity to those monitors, is detrimental because of the taint it puts on them and almost certainly hurts their ability to recruit new businesses.

What's worse, the ALA is on notice by the EPA not to do what they are doing in maligning the whole region based on monitors located in areas likely to have heavier concentrations. This is especially unwarranted when it is very easy to look at monitors in other nearby neighborhoods to see that the EPA is well justified in the warning against assigning bad air quality to areas not being monitored or to areas that are monitored but have good readings simply because they happen to be in the same metro area or CBSA as the monitors with near maximum guideline measurements.

But it gets worse. Consider the comments reported on the accompanying April 24 release of the ALA's diatribe against the Pittsburgh-New Castle-Weirton region.

Quoting from the Post-Gazette article of that date, the writer of the story led with, "The Pittsburgh region's bad air history isn't history after all, according to the American Lung Association's 20th annual "State of the Air" report released Wednesday."

Kevin Stewart, the ALA's director of environmental health for advocacy and public policy said:

"Residents of Pittsburgh and the metro area should be aware that we're breathing unhealthy air, driven by local emissions, upwind sources, and extreme heat as a result of climate change, placing our health and lives at risk."

The article went further to include the following: "According to the Lung Association, both ozone and particle pollution are dangerous to public health and can increase the risk of premature death and serious health effects such as lung cancer, asthma, cardiovascular damage, and developmental and reproductive harm."

The problem for the ALA is that the health experience in states with widely disparate pollution levels does not match up with its rhetoric. Nor do the health statistics and pollution levels match up in Pennsylvania.

According to statistics from the latest Centers for Disease Control (CDC) data, the U.S. death rate from lung cancer was 41 deaths per 100,000 people; for Pennsylvania, the statewide rate at 43 was very close to the national rate. Within Pennsylvania the age-adjusted (adjusted to account for age distribution in the county) deaths per 100,000 population ranged widely from 32 in Snyder County to a high of 59.5 in Forest County, followed closely by Potter County at 58. None of these counties has air quality monitors that are usually placed in areas with known or suspected pollution problems.

Allegheny County, with its all-monitor average of 9.1 mcg/m<sup>3</sup>, had a lung cancer death rate of 48 per 100,000. Across the state in Philadelphia, the eight-monitor average was 8.6 mcg/m<sup>3</sup> and the age adjusted lung cancer death was 55.7 per 100,000.

Surprising and shocking perhaps to the ALA, California, with six of the nation's 10-worst polluted metro areas in terms of ozone and long-term particle concentrations, had only 30 age-adjusted lung cancer deaths per 100,000 people according to CDC data, far below the national rate of 41. By county, the results are just as fascinating.

In most heavily populated California counties, the lung cancer death rates are near the state level or lower even though pollution, in all but San Diego and Santa Cruz, is far worse than in Allegheny County with its 48 deaths per 100,000 and 9.1 mcg/m<sup>3</sup> particle concentration averaged over 14 monitors. The following list shows large population California counties with their lung cancer death rates (cdr) in deaths per 100,000 and particle concentrations (pc) in mcg/m<sup>3</sup>:

Alameda County (cdr 31 or 35 percent lower than Allegheny; pc 13 or 43 percent higher than Allegheny). Marin (cdr 24.8, pc 11.1); Santa Clara (cdr 27.3, pc 11.2); Santa Cruz (cdr 26.8, pc 7.2); Los Angeles (cdr 28.6, pc 11.7); San Diego (cdr 32.9, pc 9.0); San Francisco (cdr 32.1, pc 11.7); Orange (cdr 29.8, pc 10.2); San Bernardino (cdr 36.5, pc 11.2); Fresno (cdr 33.8, pc 14.5). These ten counties have a combined population total of 24,851,300 or 63 percent of the state count. Their average death rate (unweighted by county population) was 30.3, and the average long term pm<sub>2.5</sub> concentration was 11.1 with both LA and San Francisco averaging 11.7 which is near the EPA compliance limit of 12. The average for the monitors in the Pittsburgh region was 8.1 and there are no readings for Butler County or most of the municipalities within the counties that are miles away from the monitoring sites.

Several California counties had long-term particle readings far above Allegheny County but lung cancer rates in the range of Allegheny County or much lower. For example, Tulare County had a pm<sub>2.5</sub> concentration of 17.3, nearly double Allegheny but only 36.5 lung cancer deaths per 100,000.

Just as interesting, the Asthma and Allergy Foundation of America (AAFA) in 2018 ranked the worst cities for asthma sufferers and the worst cities for air quality in terms of ozone and particulate matter pollution. Their ranking puts seven California metros in the worst 10 metros in the nation for air quality. But ironically none of those are among the Foundation's worst 50 areas for asthma sufferers.

And to add to the irony of California's comparatively low lung cancer death rates and the state's below national incidence of asthma, ALA lung disease data for 2018 show that California also

has a much lower rate of Chronic Obstructive Pulmonary Disease (COPD) at 3.4 percent than did Pennsylvania (5.8 percent).

Statistics from Maine provide still more pollution and lung disease data that call into question the ALA's hyperbolic and maligning comments about the Pittsburgh area's air quality and health.

Seven of Maine's counties that cover two thirds of the state's population have air quality monitors. The highest annual average reading for pm2.5 was posted by the monitors in Oxford County at 6.3 mcg/m<sup>3</sup>; the lowest was Hancock at 3.5. For the seven counties the annual average was 5.0 mcg/m<sup>3</sup>, far below California and Pennsylvania readings. Ozone levels are also very low compared to California.

However, notwithstanding the very good air quality compared to most of the country, Maine has higher lung cancer death rates, asthma and COPD incidence than Pennsylvania and California. The state's lung cancer death rate, according to the CDC's latest data, is 50.3 per 100,000 population compared to the nation's 41, Pennsylvania's 43, and California's 30.

The highest death rate in a Maine county with a monitor was Oxford at 61.2. Four other monitored counties with pm2.5 concentrations of 5 mcg/m<sup>3</sup> or just above had lung cancer deaths averaging 55 per 100,000. Maine's asthma incidence for adults, as a fraction of the state's population, is 9.8 percent—well above California's 6.0 percent and worse than Pennsylvania's 8.3 percent. Asthma and COPD data are taken from ALA's "Estimated Prevalence and Incidence of Lung Disease" 2018 report. Though these are estimates, the ALA chooses to publish them and they are consistent with other data from the AAFA and the CDC.

All the statistics presented for Maine, California and Pennsylvania point to a very important conclusion. Obviously, prevalence of lung diseases in specific geographic areas is the result of far more determinative factors than simply the air quality readings at EPA monitors. The extreme examples of California—with its overall worst metro area air quality yet better than national lung disease statistics—and Maine's very good air quality but bad lung disease statistics suggest strongly that the ALA take a closer look at its long-running assault on Pittsburgh air and warnings about health effects. This is especially true in light of its violation of the EPA's admonition not to apply very localized monitor readings to extensive geography within the metro area.

What is in evidence is statistical malpractice. The failure to do more investigation into the differences in lung disease prevalence that do not track as it claims with pollution levels is unprofessional.

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