



HB 473 Economic Matters and Environment and Transportation
Environment – Ambient Air Monitoring – Particulate and Fine Particulate Matter
POSITION: FAVORABLE

HB 473 is a very important public health bill that will save lives in Maryland and that is why **Chesapeake Physicians for Social Responsibility strongly supports HB 473**. This bill would protect those who live in neighborhoods we have abandoned to industrial pollution. If this bill is enacted, air monitoring for PM will be required in those overburdened census tracts, linking future permits for more air polluting facilities to on-going exposures, based on measurements of air pollution in those neighborhoods. We will finally have the data accessible to the public as well as to regulators. EPA has recently proposed tightening of PM2.5 annual ambient standards and further proposed that air monitoring should take into account at risk communities. This proposed legislation is very consistent with those new recommendations from EPA. <https://www.govinfo.gov/content/pkg/FR-2023-01-27/pdf/2023-00269.pdf>

Chesapeake Physicians for Social Responsibility (CPSR) is an evidenced-based organization of over 900 physicians, medical students, other health professionals and supporters addressing the most serious public health issues of our time: nuclear war prevention, climate crisis mitigation, toxic pollution prevention and all through the lens of racial, social and environmental justice.

Though a primary care physician for many decades, it wasn't until the early 2000's that I began to understand the enormity of the problem of particulate matter

pollution and its effects on the health of my patients. Subsequently, I learned that we had one of the most highly exposed communities here in Curtis Bay, once # 8 in the nation for toxic air pollution emitted from smoke stacks (stationary air pollution sources). In 2013 an article from MIT reported that of 20 major cities, Baltimore was #1 in highest total mortality rate attributable to PM2.5 : about 130 early deaths attributable to PM2.5 per year per 100,000 inhabitants. F. Caiazzo et al. / Atmospheric Environment 79 (2013) 198e208.

Very disturbing is a number of recent articles linking COVID-19 mortality to airborne PM2.5 . <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8553633/>. Whether it is the PM aerosol carrying the virus or the lung inflammation caused by PM2.5 increasing susceptibility to the infections, the pandemic has added another dangerous twist to the PM story.

Particulate matter (PM) are microscopic particles and liquied disperse in an aerosol that are small enough to be airborne, and for humans to inhale. Particulate matter is classified according to its size: PM10 is 10 micrometers in diameter, up to 1/5 the diameter of a strand of air and PM2.5 is 2.5 micrometers, 1/20-1/30 the diameter of a strand of hair. The size is actually the diameter when airborne, and the smaller, the more dangerous for human health because when breathed, the smallest particles evade normal body defense mechanisms like mucous and cough and can get deep into lungs. even cross into the blood stream and get carried around the rest of the body. That is what PM2.5 can do. Some evidence in animals suggest some PM2.5 particles in the nose can travel up the olfactory nerve and cross into the front of the brain, possibly linking them to degenerative brain illnesses like Alzheimers and Parkinsons. A. Lockwood, The Silent Epidemic MIT Press

I think of these fine particles as toxic delivery vehicles because they can carry toxic particles like: lead, mercury, arsenic, organic chemicals, , and now recent evidence that it can carry the SARV-COVID VIRUS as well as other biological toxics into the body. Essentially these small particles hitch a ride on the PM2.5 which can deliver them deep into our bodies where they can do harm. Not just from one particle but we are breathing them in every day and the more PM2.5 in the air, the more we are exposed to their harmful effects.

The EPA has determined long and short-term exposure to PM2.5 **causes increased mortality** and cardiovascular disease and long-term exposure **causes** cardiovascular and respiratory effects, nervous system effects, and cancer. In addition, the EPA determined associations including non-accidental, cardiovascular, or respiratory mortality; cardiovascular or respiratory hospitalizations or emergency room visits, lung cancer and development of asthma. <https://www.govinfo.gov/content/pkg/FR-2023-01-27/pdf/2023-00269.pdf>. These particles, when they make patients sick, never come with a little note saying where the heart attack, asthma attack, infection or lung cancer came from. We only know the association by studies done all over the world and for decades now.

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1. [Short term exposure to pm2.5 associated with acute CVA https://www.ahajournals.org/doi/pdf/10.1161/STROKEAHA.116.015303](https://www.ahajournals.org/doi/pdf/10.1161/STROKEAHA.116.015303)
2. [Short term exposure to pm2.5 associated with increase in hospital admissions for medicare population with many different illnesses https://www.bmj.com/content/367/bmj.l6258](https://www.bmj.com/content/367/bmj.l6258)
3. [Children, elderly and those with underlying heart and lung diseases most susceptible to the acute effects of PM 2.5. https://www.euro.who.int/_data/assets/pdf_file/0006/189051/Health-effects-of-particulate-matter-final-Eng.pdf](https://www.euro.who.int/_data/assets/pdf_file/0006/189051/Health-effects-of-particulate-matter-final-Eng.pdf)
4. [Short term exposure to pm2.5 associated with increase in hospital admissions for medicare population with many different illnesses https://www.bmj.com/content/367/bmj.l6258](https://www.bmj.com/content/367/bmj.l6258)

With this bill I think of Curtis Bay. In addition to all of the smoke stacks belching pm and other pollutants, its coal pier has a permit which allows it to emit into the environment 1 ton a year of pm2.5. Before future permits are allowed in this neighborhood and others like it around the state, shouldn't we know what the air pollution levels are? This bill defines exposed communities according to environmental justice indices, demographic indices and National Air Toxics Data and assessment tools. This bill will save lives especially in those neglected

neighborhoods where pollution makes children and adults sick and shortens their lives. Children in every neighborhood should have the right to breathe the air and not get sick.

Chesapeake Physicians for Social Responsibility strongly supports HB 473. We must prevent what we cannot cure.

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