Testimony of Deborah Gentile MD **May 20. 2024**

Introduction:
I am an allergy and asthma physician who has spent the past decade conducting school and community-based research in the Mon Valley which is home to the Clairton Coke Works. I have documented the impacts of both chronic and acute exposure to air pollution from this facility on poor asthma outcomes. These results have been published in peer-reviewed journals. I have been involved in extensive community outreach and also founded the only allergy and asthma specialty office in Clairton to provide much needed care to this vulnerable population.

Chronic Exposure:
I conducted a study from 2014-2016 to determine the true prevalence of childhood asthma and its rate of control among children residing near industrial sites of air pollution, including the Clairton Coke Works. I enrolled 1200 schoolchildren. Most of these children were people of color and of low socioeconomic status. On average, these children resided and attended school 2 miles from the closest outdoor air pollution site. 70% of students had exposure to PM2.5 greater than the contemporaneous WHO annual standard of 10 $\mu g/m^3$ and 38.9% had exposure above the contemporaneous EPA annual standard of 12 ug/m^3. Of note, all had exposure above the current WHO and EPA annual standards of 5 and 9 ug/m^3, respectively. After adjustment for demographic factors, the overall asthma prevalence was 22.5%, which is 2-3 times the state and national rates of approximately 8-10%. Higher exposure to several pollutants, including annual PM2.5 and sulfur, was significantly related to increased odds of asthma. Additionally, in those with a previous diagnosis of asthma, 59.3% had uncontrolled asthma (meaning they experienced asthma symptoms throughout the day and night and could not perform daily activities, including exercise, without shortness of breath, coughing, or wheezing). This rate was more than double the state reported rate of 27%. This finding was also associated with higher exposure to air pollutants.

Acute Exposure:
On Christmas Eve, 2018, there was a fire at the Clairton Coke Works facility and then a 102-day period when air pollution control equipment at the facility was not being operated due to damage. There were multiple exceedances of PM2.5 and SO2 during this time. I examined a local health network's data for acute asthma visits to outpatient clinics and the local emergency department among adults residing in the same zip code as the Clairton coke facility both before and after the fire. The results show a near doubling of the number of adult Clairton residents seeking both acute outpatient care and emergency department care for asthma attacks after the fire and during the subsequent shutdown of air pollution controls at the facility.

Conclusion:
Collectively, these peer-reviewed research studies show the impact of both chronic and acute air pollution exposure from industrial sites such as the Clairton coke works facility on poor asthma outcomes in vulnerable populations. Efforts to promote primary prevention of asthma should focus on reducing exposure to outdoor air pollution in environmental justice communities.

References:

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Morphew T, et al. Impact of a large fire and subsequent pollution control failure at a coke works on acute asthma exacerbations in nearby adults. Toxics 2021;9:147. https://doi.org/10.3390/toxics9070147.