

## **Socratic Seminar**

### **Role of Air Pollution in COVID-19**

#### **Summary**

The understanding of mortality due to COVID-19 is still evolving. The epidemiology of COVID-19 indicates that there is overlap between cause of deaths of COVID-19 patients and certain diseases which are linked to chronic exposure to fine particulate matter (PM). Exposure to air pollution including fine particulate matter is linked to the development of diseases such as cardiovascular diseases, diabetes, and most importantly respiratory diseases. Based on the association between air pollution and risk of respiratory diseases, the authors of the article hypothesized that long term exposure to PM<sub>2.5</sub> adversely affects the respiratory and cardiovascular system<sup>1</sup>. It can also exacerbate the severity of COVID-19 symptoms and may increase the risk of death in COVID-19 patients.

An April 2020 article published in the New Orleans *Advocate* entitled “Coronavirus disparity in Louisiana: About 70% of the victims are black, but why?” provoked critical discussions about environmental justice and how political leadership’s failure to lead in times of crisis lead to devastating deaths. Data released by the Department of Health at the time linked pre-existing conditions such as diabetes and kidney failure to increased fatality of coronavirus in Louisiana but failed to acknowledge the role of air pollution. There was push-back from environmental health experts, supported by a nationwide Harvard study which suggested that only 1 ug/m<sup>3</sup> increase in PM<sub>2.5</sub> is associated with a 15% increase in the COVID-19 death rate<sup>1</sup>. This highlights the alarming correlation between the COVID-19 fatalities and highly air-polluted minority communities. A startling 70% of reported deaths were Black, who make up just 32% of the state population. The Louisiana Health Department could have clarified the apparent indication of environmental injustice in minority communities. This Socratic seminar aims to seek ideas and/or solutions to address environmental injustice with particular focus on the COVID-19 pandemic.

#### Questions to think about

- 1) How do you think Louisiana’s political leadership should have acted during the pandemic? What did they do right and what did they do wrong?
- 2) What do you think is a possible solution or policy that needs to be implemented to reduce air pollution specifically in minority communities?

#### **References:**

Link to an article in the *New Orleans Advocate*:

[https://www.nola.com/news/coronavirus/article\\_d804d410-7852-11ea-ac6d-470ebb61c694.html](https://www.nola.com/news/coronavirus/article_d804d410-7852-11ea-ac6d-470ebb61c694.html)

Link to an editorial about the pre-print now published in Science Advances:

<https://www.science.org/doi/10.1126/sciadv.abf1897>

Link to the pre-print article now published in *Science Advances*:

<https://www.science.org/doi/10.1126/sciadv.abd4049>

Link to an article published in the *European Journal of Environment and Public Health*:

<https://www.ejeph.com/article/air-pollution-and-covid-19-a-comparison-of-europe-and-the-united-states-9706>