



BAY AREA
AIR QUALITY
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AGENDA: 3

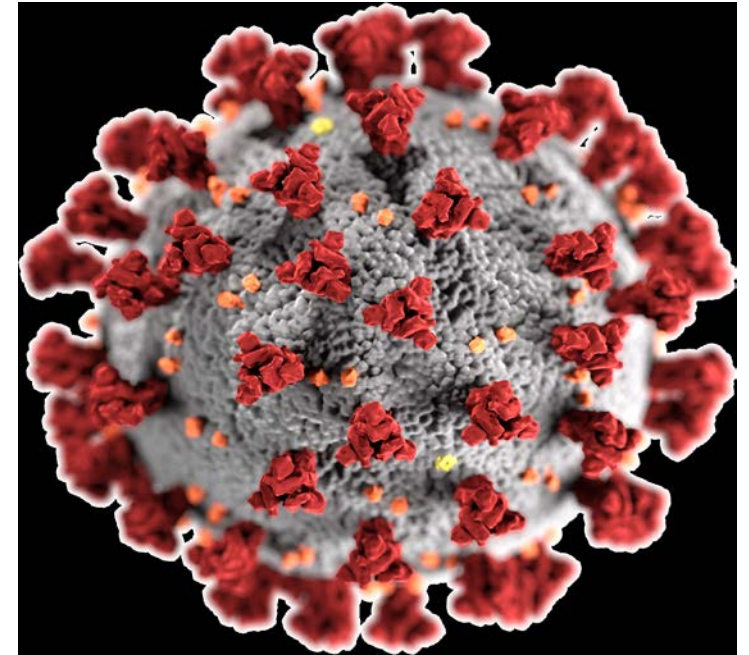
Recent Studies on COVID-19 and Particulate Matter (PM)

Community and Public Health Committee Meeting
May 20, 2020

Judith Cutino, DO, PE
Health Officer



- COVID-19 Background
- Uncertainty in the Case Fatality Rate
- Reading Preprint Studies
- Harvard Study
- Virus Ribonucleic Acid (RNA) found on PM
- Potential Implications



CDC illustration of coronavirus

COVID-19 Background

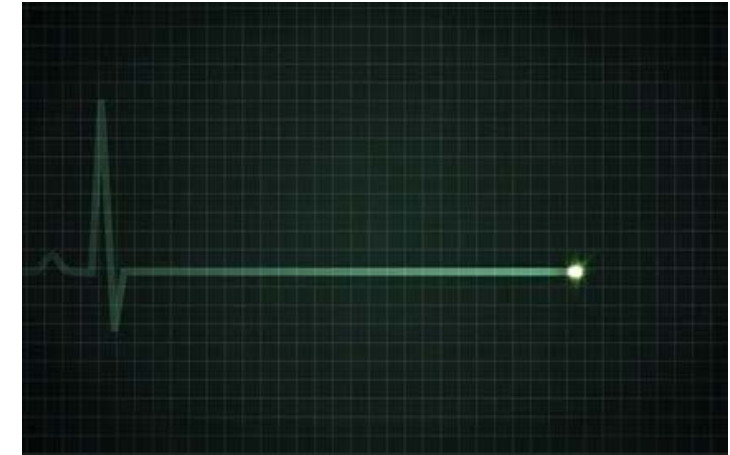


- Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) – name of the virus
- Coronavirus disease 2019 (COVID-19) – the disease
- Disease arises from a combination of the virus and the person it infects
- Some people become infected and never show any symptoms; others become so ill they need ventilators
- Early data suggests that severe and fatal illness occurs mostly in the elderly, but in the US, many middle-aged adults are hospitalized; perhaps some have other chronic illnesses

Uncertainty in the Case Fatality Rate



- Total reported deaths divided by total reported cases
- New studies by Center for Disease Control showing total deaths is nine percent higher than historical averages – suggests some deaths due to COVID-19 are not being counted as such
- Number of cases depends on ability to test – many false positives and false negatives
- Estimates of Case Fatality Rate range from 0.1 to 15 percent
- Uncertainty in both the number of deaths and the number of cases



Reading Preprint Studies



- Multiple studies published prior to peer review
- Peer review – essential part of scientific process
- Even peer-reviewed published studies may later prove incorrect
- Discussion between researchers over time eventually leads to understanding and consensus
- Normal scientific process described as “...a slow erratic stumble toward less uncertainty.” “Our understanding oscillates at first, but converges on an answer.”



Reading Preprint Studies (cont.)



- In a pandemic “...we go seeking fresher and fresher information, and end up consuming unvetted misinformation.”
- Conflicting science contributes to public confusion and increased uncertainty
- Two following studies are preprints
- Worth following



Harvard Study



T.H. Chan School of Public Health

- Investigated whether exposure to $PM_{2.5}$ is associated with increased risk of COVID-19 mortality
- Compared county-level counts of death with county-level long-term average $PM_{2.5}$ as the exposure
- Found that increase of $1\mu g/m^3$ in $PM_{2.5}$ is associated with eight percent increase in COVID-19 death rate

Wu, et al (2020)

- doi: <https://doi.org/10.1101/2020.04.05.20054502>



Harvard Study (cont.)



Limitations:

- Availability of COVID-19 individual-level outcome data
- Inability to accurately quantify number of cases due to limited testing
- Potentially affected by unmeasured confounding bias



Virus RNA Found on PM



Study from University of Bologna:

- Preliminary evidence of SARS-CoV-2 RNA genetic matter found on particulate matter filters
- Small number of samples of PM₁₀ from industrial site in Bergamo, Italy
- Highly specific genes used as markers of virus
- Reported some positive results
- Confirmations ongoing

Setti, et al (2020)

- doi: <https://doi.org/10.1101/2020.04.15.20065995>

Virus RNA Found on PM (cont.)



Questions:

- Is virus viable?
- Potency or virulence?
- Potential exposure – Dose?
- Might exposure contribute to disease?

No assumptions can be made at this time

Potential Implications



From the paper “Incidence of COVID-19 and Connections with Air Pollution”:

- “The findings call for further investigation between air pollution and SARS-CoV-2 infection risk.”
- “If PM plays a significant role in COVID-19 incidence, it has strong implications for the mitigation strategies required to prevent spreading.”

The conclusions of the Harvard study appear consistent with previous studies of health impacts of PM



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AGENDA: 4

Air District Efforts to Encourage Teleworking

**Community and Public Health Committee Meeting
May 20, 2020**

**Kristine Roselius
Acting Communications Officer**

Spare the Air 2020 Campaign



- New campaign with telework focus
- Teleworking benefits: clean air, cost savings and better work/life balance
- Media and employer outreach in progress
- Advertising starts in July 2020



Spare the Air Employer Program



- 2,000+ Members
- Outreach to employers will focus on teleworking benefits, formalized policy and pledge
- Commuter Benefits Program outreach will highlight teleworking options



Bay Area
Commuter Benefits Program

Find a better way to work!

Telecommute Pledge and Policy



- Telecommute Challenge
- Focus on mutual benefits to employers, employees, and the community
- Model teleworking policy for counties/agencies
- Walk the Talk – Air District Telecommute Policy





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AGENDA: 5

Contra Costa County Green and Healthy Homes Initiative

Community and Public Health Committee Meeting
May 20, 2020

Axum Teferra
Environmental Planner II

Contra Costa Green and Healthy Homes Initiative



Contra Costa County's Green and Healthy Homes Initiative pilot program will integrate various climate and health interventions to improve outcomes for high-risk low-income asthma patients on the Contra Costa Health Plan

The Project Team and Partners includes:



Contra Costa Green and Healthy Homes Initiative (cont.)



The County with its partners will implement and monitor improvements in the homes of select high-risk asthma patients (adults and children) across Contra Costa County to:

- improve indoor air quality,
- remove underlying asthma triggers, and
- reduce greenhouse gas (GHG) emissions

The Air District will also work with the County to align project implementation with the goals of the Assembly Bill (AB) 617 Path to Clean Air effort in Richmond-North Richmond-San Pablo

Program Components



Home Visits

- Asthma education
- Outreach on local community health protection
- Distribution of basic supplies that reduce asthma triggers

Home Assessments

- Full asthma trigger assessment
- Remediation scope developed

Asthma Trigger Remediation

- Removal of moisture, allergens or irritants

Energy Efficiency/Electrification

- Efficiency and electrification improvements

Program Components (cont.)



The County will make moderate to major improvements in up to 38 single- and multi-family dwellings of asthma patients. The types of mitigations Air District funding would cover include measures such as:

Air Filtration/
Dehumidification

Electrification of
Heating /
Cooling Systems
and Appliances

Induction
Cooking
Appliances

Electric Panel
Upgrades

Energy Efficient
Appliances

Ventilation

Alignment with Air District Goals



The Green and Healthy Homes Initiative (GHHI) program aligns with the Air District's current priorities of climate protection and improving health outcomes in communities overburdened by air pollution

The GHHI program will advance the Air District's Climate Protection Program by:

- Reducing greenhouse gas (GHG) emissions in the building sector;
- Focusing GHG reductions on the existing building stock, in particular affordable housing;
- Demonstrating the combined benefits of energy efficiency and electrification; and
- Offering measurable data on co-benefits and cost-effectiveness.

Alignment with Air District Goals (cont.)



The GHHI program will advance the Air District's Community Health Protection activities in AB 617 Communities by:

- Implementing strategies that will improve air quality and community health by reducing emissions and exposure to air pollution;
- Demonstrating local air quality benefits while reducing GHG emissions;
- Prioritizing communities overburdened by air pollution; and
- Providing an opportunity to understand air quality challenges of low-income asthma patients to further inform AB 617 implementation activities.

Next Steps



- Air District and County enter into a partnership agreement;
- Air District and County collaborate on program design and implementation and;
- Begin air quality and greenhouse gas mitigations in early Summer 2020.