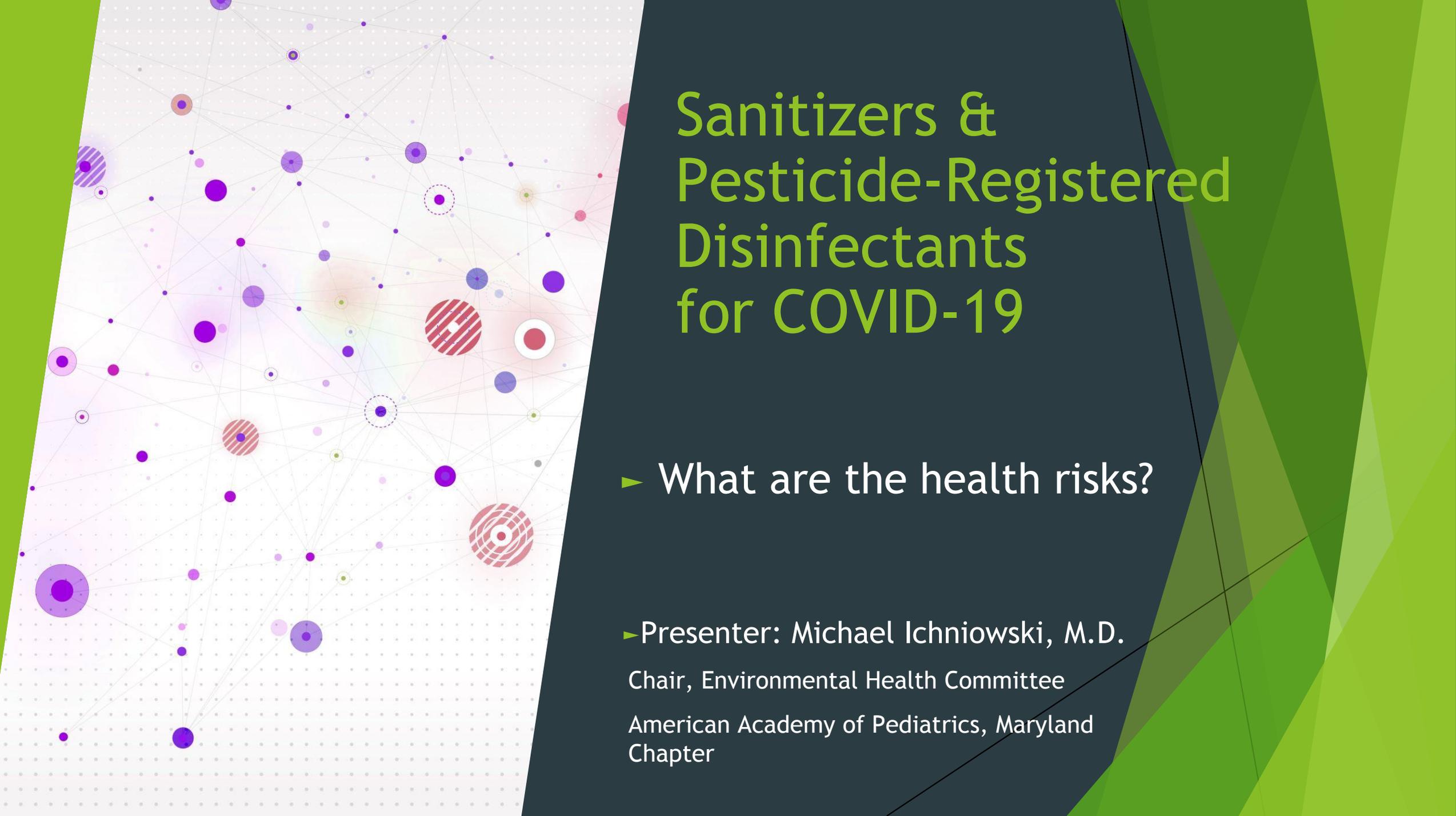




# Welcome

Dr. Mike Ichniowski

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# Sanitizers & Pesticide-Registered Disinfectants for COVID-19

- ▶ What are the health risks?

- ▶ Presenter: Michael Ichniowski, M.D.

Chair, Environmental Health Committee

American Academy of Pediatrics, Maryland Chapter

# Children are not little adults

- They breathe more air, eat more food and drink more water, relative to their weight
- They receive a higher dose of harmful chemicals when air, water or food are contaminated
- They have little control over their environment and may not be able to remove themselves from danger

“Children encounter pesticides daily and have unique susceptibilities to their potential toxicity. Acute poisoning risks are clear, and... the influences of low-level exposures on child health are of increasing concern.”

- ▶ *American Academy of Pediatrics,  
Council on Environmental Health*

# Disinfectants are registered pesticides

- ▶ The developing brain and other organs are susceptible to irreversible damage at critical stages of development (including during fetal life)
- ▶ Infants & toddlers have greater exposure to toxic chemicals due to crawling and frequent hand-to-mouth behaviors
- ▶ They may be less able to detoxify harmful chemicals



# Sanitizers & disinfectants

- Important in controlling spread of COVID-19 in homes, schools, workplaces, health care facilities, nursing homes
- Products are not equally safe-some have more potential adverse health effects
- Some have potential to increase risk and severity of COVID-19

# Soap and water washing

- Extremely safe and effective
- Disrupts the lipid capsule of the virus, making it non-infectious
- Should always be used first on visibly soiled hands & surfaces
- Many disinfectants are inactivated by soil



# Hand sanitizers

- ❑ CDC recommends products with > 60% ethyl alcohol or at least 70% isopropyl alcohol
- ❑ Also act on lipid capsule of the virus
- ❑ Recommended when soap and water washing is unavailable or impractical
- ❑ Only meant for use on hands, not on other skin surfaces



# Hand sanitizers: health risks

- ❑ Alcohols are flammable!
- ❑ Acute alcohol poisoning-young children especially at risk
- ❑ Methanol or 1-propanol contamination ([fda.gov/handsanitizerlist](https://www.fda.gov/handsanitizerlist))



# Chemical disinfectants

For use on hard, non-porous surfaces

## EPA-listed safer products:

- Ethyl & isopropyl alcohol
- Hydrogen peroxide (H<sub>2</sub>O<sub>2</sub>)
- L-lactic acid
- Citric acid
- Sodium bisulfate



# Chemical disinfectants with health hazards



- Sodium hypochlorite (chlorine bleach)
- Quaternary ammonium compounds (QACs or Quats)
- Not for use on skin or food
- **DO NOT INGEST, INHALE OR INJECT!**
- **DO NOT MIX PRODUCTS!**

# Dangers of mixing bleach & other products

- ▶ Bleach + vinegar/acids ---> Chlorine gas
- ▶ Bleach + heat/hot water ---> Chlorine gas
- ▶ Bleach + ammonia/ammonium products  
---> Chloramine gas
- ▶ Bleach + alcohol ---> chloroform + HCl
- ▶ Chlorine and Chloramine gases are potent respiratory irritants that can cause lung damage

# COVID-19 and pesticides used in agriculture, lawn care & by consumers

- Organophosphates and synthetic pyrethroids are associated with increased risk of asthma and respiratory illness including COPD
- Respiratory disease is associated with more severe COVID-19 illness.
- *These pesticides also known to impact the Bay ecosystem and pollinators*

## Reducing risks during the COVID-19 pandemic

- Choose safer products for sanitizing and disinfecting
- Avoid chemical products (chlorine bleach and QACs) with the potential to increase the risk for more severe COVID-19 illness
- Avoid using pesticides harmful to the health of people, pollinators, wildlife & the Bay
- Keep all products out of the reach of children