

# Protecting Children's Environmental Health During COVID-19: *Supporting Child Care Programs*

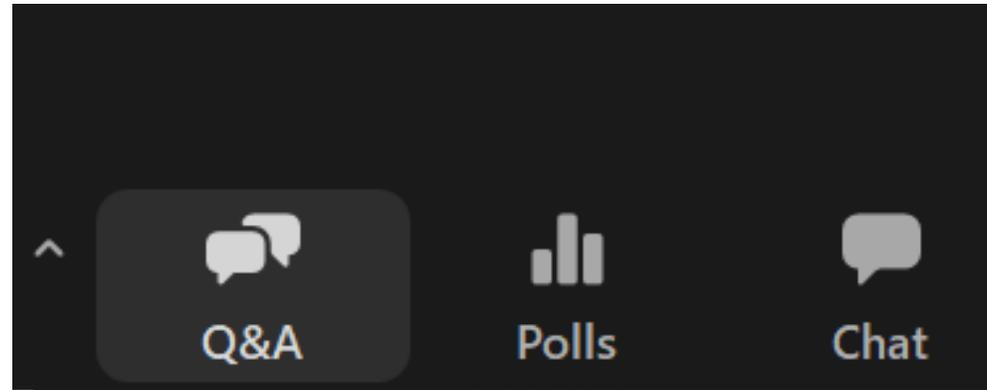
April 28, 2021



**NACCHO**  
National Association of County & City Health Officials

# For Questions Use Q&A Feature

Please submit questions through the Q&A feature found at the bottom of your Zoom window.



If we are not able to get to your question today, please feel free to send a follow up note to [aroy@naccho.org](mailto:aroy@naccho.org).

# New COVID-19 Resource Library

NACCHO has compiled resources to address the needs of environmental public health staff during the COVID-19 pandemic in a new, open-access [Environmental Health and COVID-19 Resource Library](#).

## Environmental Health and COVID-19 Resource Library

As a result of the ongoing COVID-19 pandemic, environmental health staff at local health departments have had to adapt existing programs and respond to new challenges. To support local health officials, NACCHO has gathered and developed resources to address the needs of environmental public health staff during the COVID-19 pandemic.

  
EDUCATION &  
CHILDCARE

  
EXTREME WEATHER

  
FOOD SAFETY

  
INDOOR  
ENVIRONMENTS

  
WASTEWATER  
SURVEILLANCE

  
HEALTH EQUITY



# Resource Categories

## Education and Childcare

- Operational Guidance
- Early Childhood Education
- K-12 Education

## Extreme Weather

- Guidance
- Tools

## Food Safety

- Guidance
- Tools

## Indoor Environments

- Indoor Air Ventilation & Filtration
- Safer Cleaning & Disinfection
- Housing
- Reopening Buildings

## Wastewater Surveillance

## Health Equity



The screenshot shows a webpage with a navigation bar at the top containing icons and labels for: EDUCATION & CHILDCARE, EXTREME WEATHER, FOOD SAFETY, INDOOR ENVIRONMENTS (highlighted), WASTEWATER SURVEILLANCE, and HEALTH EQUITY. Below the navigation bar, there is a main heading: "Considerations and Information pertaining to limiting the spread of COVID-19 in Indoor settings can be found here." The page is divided into several sections, each with a blue header: 1. INDOOR AIR VENTILATION & FILTRATION: Contains three bullet points with links to EPA, ASHRAE, and CDC resources. 2. SAFER CLEANING & DISINFECTION: Contains four bullet points with links to EPA, Clean Away COVID, FDA, and ACMT resources. 3. HOUSING: Contains two bullet points with links to CDC resources. 4. REOPENING BUILDINGS: Contains one bullet point with a link to CDC resources.

EDUCATION & CHILDCARE EXTREME WEATHER FOOD SAFETY INDOOR ENVIRONMENTS WASTEWATER SURVEILLANCE HEALTH EQUITY

Considerations and Information pertaining to limiting the spread of COVID-19 in Indoor settings can be found here.

### INDOOR AIR VENTILATION & FILTRATION

- [Indoor Air and Coronavirus \(COVID-19\)](#). Source: EPA. Resources, best practices, and latest information on airborne transmission of SARS-CoV-2.
- [Recommendations for Reducing Airborne Infectious Aerosol Exposure](#). Source: ASHRAE. Recommendations based on the concept that within limits, ventilation, filtration, and air cleaners can reduce exposure subject to constraints that include comfort, energy use, and costs.
- [Ventilation in Buildings](#). Source: CDC. Ventilation is a recommended strategy to reduce exposure to SARS-CoV-2. This webpage contains considerations to improve ventilation, and answered to frequently asked questions.

### SAFER CLEANING & DISINFECTION

- [Evaluating SARS-CoV-2 Cleanup and Disinfection Practices](#). Source: EPA. Reducing the risk of exposure to SARS-CoV-2 relies on effective cleaning and disinfection, along with continued social distancing practices. EPA researchers are working on determining the best environmental sample collection methods and the limits of detection for SARS-CoV-2 on surfaces and objects.
- [Clean Away COVID](#). Source: Clean Away COVID. This public service campaign provides information and resources to keep homes and environments safe during the pandemic. Various resources are available at no cost to WIC, state and local health agencies, and other community-based organizations.
- [Is Your Hand Sanitizer on FDA's List of Products You Should Not Use?](#) Source: FDA. Guidance to determine if hand sanitizing products contain uncovered toxic ingredients.
- [List N: Disinfectants for Coronavirus \(COVID-19\)](#). Source: EPA. Products expected to kill the SARS-CoV-2 virus, which causes COVID-19. Products intended for use on surfaces, not humans.
- [Safer Disinfectant Use FAQ](#). Source: ACMT. Answers to questions regarding disinfection and sterilization against the SARS-CoV-2 virus.

### HOUSING

- [Households Living in Close Quarters](#). Source: CDC. Guidance is intended for people living together in close quarters, such as people who share a small apartment, or for people who live in the same household with large or extended families.
- [Living in Shared Housing](#). Source: CDC. Considerations for reducing risk of COVID-19 in shared or congregate housing (i.e., apartment buildings, dormitories, shelters).

### REOPENING BUILDINGS

- [Guidance for Reopening Buildings After Prolonged Shutdown or Reduced Operation](#). Source: CDC. Resources and guidance to help ensure the safety of building occupants from exposure to legionella and mold. Additional resources on maintaining building water systems after prolonged or reduced shutdown.



We are welcoming feedback on this resource library, and/or recommendations for resources to add!

[EHCVID-19@naccho.org](mailto:EHCVID-19@naccho.org)



# Today's Speakers

- **Vickie Leonard, RN, FNP, PhD** has been working as a Child Care Health Consultant for the past seven years, first as a nurse at the California Childcare Health Program, UCSF School of Nursing, then at the UCSF Institute for Health & Aging. Dr. Leonard was the principal author of the California Department of Education, Child Development Division's Preschool Learning Foundations in Health and Physical Development (Volume 2, released in 2011). Vickie heads up the PEHSU's Environmental Health in Early Care and Education Project.

**Gredia Huerta-Montañez, MD, FAAP** is a Board Certified Pediatrician with fellowship training in pediatric environmental health. She is an associate clinical professor at the University of Georgia working as a researcher on NIH-funded projects. These projects study how mixtures of environmental exposures and other factors affect pregnancy outcomes the health and development of infants and children living in Puerto Rico. She is the vice-president of the PR Chapter of the American Academy of Pediatrics, a member of the Executive Committee of the AAP Environmental Council, and the director of the PR Chapter of Clinicians for Climate Action. She is the medical consultant in Puerto Rico for the Region 2 Pediatric Environmental Health Specialty Unit.

- **David Brown, MPA** is the Surveillance Coordinator for the Children's Environmental Health Unit (CEHU) at the North Carolina Department of Health and Human Services (DHHS). David earned a Bachelor's degree in Environmental Health from East Carolina University and a Master's degree in Public Administration from North Carolina State University. He has since worked in the public health sector at the local, state and federal levels, and has been in his current position with CEHU since 2008.

# Promoting Environmental Health in Underserved Communities: A Pilot Project in ECE and What We learned



Photo: Victoria Leonard

Vickie Leonard, RN, NP (retired) PhD

Director, Environmental Health in Early Care and Education Project

Western States Pediatric Environmental Health Specialty Unit (WSPEHSU)



# Acknowledgements

*This presentation was supported by the American Academy of Pediatrics (AAP) and funded (in part) by the cooperative agreement award number 6 NU61TS000296-02-01 from the Agency for Toxic Substances and Disease Registry (ATSDR).*

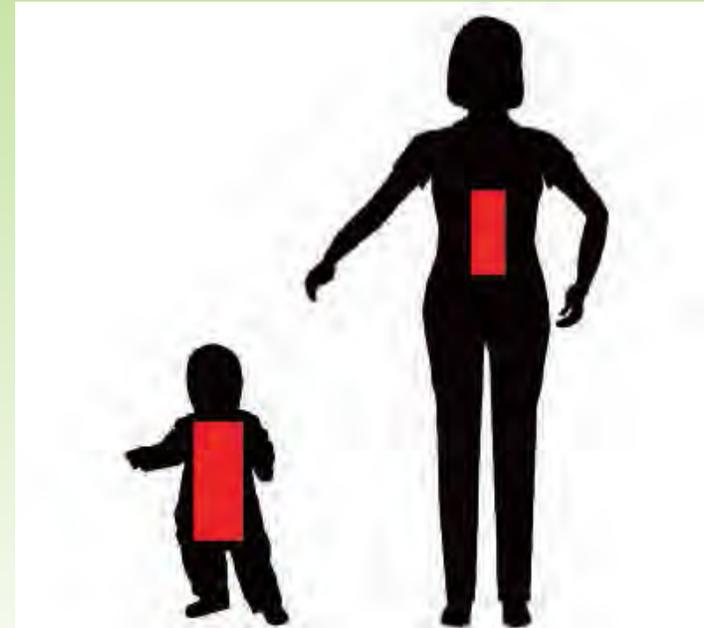
*The content in this presentation represents the views of the presenter. It does not represent the views of Centers for Disease Control and Prevention (CDC)/ATSDR and does not represent endorsement by CDC/ATSDR of the purchase of any commercial products or services that are mentioned.*



Photo: Victoria Leonard

# Why Is Environmental Health an Important Consideration in ECE?

- ▶ Children are uniquely susceptible to environmental health exposures that may:
  - adversely affect short-term health or
  - cause long-term problems such as developmental delays and cancer.



[Green Cleaning, Sanitizing, and Disinfecting: A Toolkit for Early Care and Education](#)

# Why Is Environmental Health an Important Consideration in ECE?

- ▶ Recent studies have identified widespread chemical contamination in child care environments that often exceed standards set to protect health. Sources of toxicants include:
  - pesticides
  - cleaning, sanitizing, and disinfecting products
  - antibacterial hand soaps
  - furniture and cabinets made of composite wood products that off gas formaldehyde
  - furniture and cabinets made of composite wood products that off gas formaldehyde
  - foam furniture containing fire retardants and phthalates
  - carpets harboring allergens, pesticides, fire retardants and other residues in dust
  - PCB-containing caulk and light fixtures
  - radon
  - lead paint
  - mold
  - asbestos



# Our Goal

This project was initiated by the Center for Environmental Health in Oakland, CA with funding from the Honest Company. Our goal was to perform a pilot study to identify and mitigate environmental/chemical hazards at one early childhood education (ECE) facility in an underserved community, and to develop plans and materials for a future national curriculum to improve environmental health in ECE programs. To accomplish this, we:

1. Selected an ECE facility where interventions were needed and feasible.
2. Identified environmental hazards and their contributing factors at the ECE facility.
3. Developed a plan to mitigate the environmental hazards both through education and direct intervention.
4. Ensured the plan worked.
5. Developed proposals for next steps towards a national curriculum.



Photo: Victoria Leonard

# Our Site

- ▶ We chose a site that served toddlers and preschool children in a low-income community in the shadow of an oil refinery.
- ▶ The staff was, in general, a relatively stable group of committed, long-time employees led by a dedicated director.
  - This was threatened by recent increases in the minimum wage in a neighboring area. Because salaries in the center were so low, as is common in ECE, many of these long-time teachers were considering other jobs that paid the new minimum wage, a terrible loss for the center and the children.

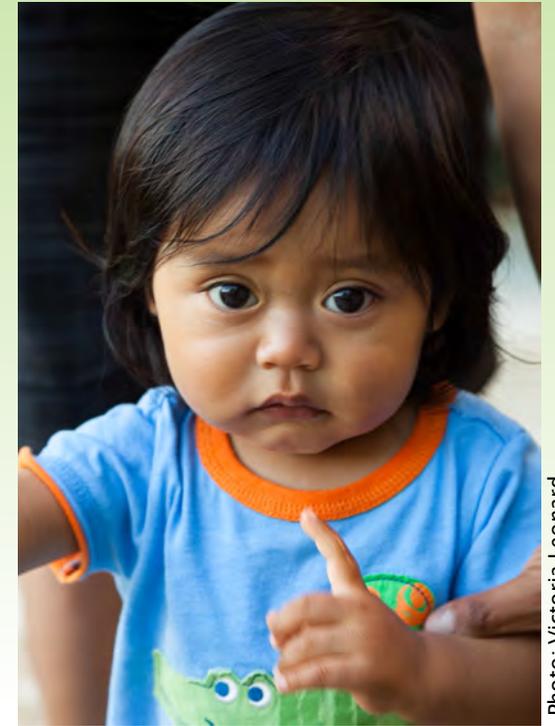


Photo: Victoria Leonard

# Our Site



# What Our Inspections Revealed

- ▶ We inspected the facility before the intervention and discovered
  - 85 chemical ingredients present in pesticide, disinfection, cleaning, and other products stored and used on site.
- ▶ Many of these compounds raise health concerns for children. The chemical exposures found include:
  - Asthmagens
  - Carcinogens
  - Neurotoxins
  - Threats to reproductive health
  - Skin, eye, and respiratory irritants
- ▶ We also discovered that the ECE staff were unaware of
  - green cleaning techniques,
  - safer and effective sanitizing and disinfecting procedures,
  - safer pest management methods, or
  - the health hazards of chemical products they used in their daily work (as required by OSHA).



Photo: Victoria Leonard

**Table 1: Health effects of chemicals found at [REDACTED]**

Chemical	Health Effects						
	Carcinogens	Asthmagens	Neurologic Toxicity	Reproductive or Developmental Toxicity	Skin, Eye, Respiratory Irritant	Endocrine Disruption	Bioaccumulate
Acetaldehyde	✓						
Benzene	✓			✓	✓		
Carbon Tetrachloride	✓						
Chloroform	✓			✓			
Cocamidopropyl Bentaine					✓		
DMDH hydantoin (formaldehyde releaser)					✓		
Flame Retardants	✓		✓	✓		✓	
Formaldehyde	✓	✓			✓		
Fragrance					✓		
Lead			✓				
Particulate Matter					✓		
Perfluorinated Compounds						✓	✓
Phthalates	✓			✓	✓	✓	
Polycyclic Aromatic Hydrocarbons	✓				✓		✓
Polyurethane Foams		✓			✓		
Pyrethroids					✓	✓	
Quaternium Ammonium Compounds "Quats"					✓		
Sodium Hypochlorite (Bleach)		✓			✓		
Triclosan					✓	✓	
VOCs	✓	✓		✓	✓		

# What We Did

▶ After evaluating our findings, we decided to pursue a two-pronged approach:

## 1. Education

- To educate the staff, we created a simple, easy-to-understand “affirmative pledge,” simultaneously teaching the staff about 25 chemical exposure issues in ECEs and asking them to pledge to address them.
- We focused on topics that were both critical and where verifiable measures of completion were possible. (Being able to verify completion is critical to building a program that can scale nationally.)
- We also created two informative posters and conducted several trainings for staff and parents, covering such topics as green cleaning and sanitation, safe pest management, plastics, choosing safer furnishings and indoor air quality.

## 2. Direct Intervention

# What We Did

- ▶ **Direct Intervention**
- ▶ We provided safer
  - cleaning products,
  - disinfectants and sanitizers,
  - cleaning equipment, and
  - bait traps for pest control.
- ▶ We also replaced some of the hazardous furniture, flooring, nap mats, and cooking and serving equipment in the facility.
  - Nap mats were tested and were found to contain both fire retardants (in the foam cushions) as well as phthalates (from the vinyl covers).
  - We replaced a vinyl floor with a linoleum floor.
  - We replaced old foam children's furniture with fire retardant free furniture without vinyl.
  - We replaced some plastic eating and serving equipment.



# What We Did

- ▶ We took air samples before we started our project and again at the end of the project.
- ▶ Assuming the measurements we obtained in our assessments were reflective of annual averages in the room tested, initial exposures to
  - formaldehyde,
  - acetaldehyde,
  - carbon tetrachloride,
  - chloroform, and
  - benzeneexceeded age-adjusted “safe harbor” levels based on California’s Proposition 65 guidelines for children’s risk of cancer in their lifetime.
- ▶ Formaldehyde also exceeded regulatory levels for chronic health effects such as long-term respiratory problems.

# Results

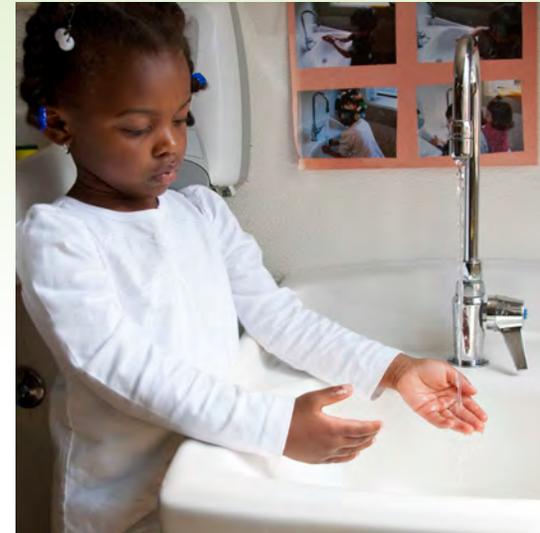
- ▶ Many VOCs decreased at the second sampling point, but not consistently. This may in part be due to the small sample size, as the second sampling day was much colder and cloudy, so the child care room doors and windows were kept closed. This reduced ventilation and thereby likely increased some indoor VOC levels.
- ▶ Chloroform, derived from bleach, a key agent we intervened on, declined by about half on the second sampling day, suggesting that elimination of bleach as a disinfectant resulted in reductions of this carcinogen and respiratory irritant.



Photo: Victoria Leonard

# Results

- ▶ As a result of our work in the center, the staff reported:
  - direct changes to their and the children's health. Respiratory illnesses dropped amongst the children, and one staff member reported that since they had stopped using bleach, both she and the children had stopped coughing constantly in the classroom.
- ▶ In addition, we reduced the children's exposure to seven classes of hazardous chemicals, whose impacts include cancer, neurological damage, asthma and other respiratory problems, and early puberty.



# Results

- ▶ Staff reported changes in their knowledge, attitudes, and behaviors. These changes included:
  - a better understanding of green cleaning and sanitizing,
  - avoiding using microwave ovens to heat food in plastic food containers,
  - adoption and use of safer disinfectants to replace bleach,
  - Replacing antibacterial soap with third party certified soap in foaming dispensers,
  - increased awareness of safe pest control techniques and elimination of pesticide sprays, and
  - increased awareness of the importance of ventilation, including changing HVAC filters and increased use of windows and doors to actively ventilate rooms.

# Staff Comments in Evaluations

The staff responded very positively to our project. After workshops several providers commented, shaking their heads, “We just didn’t know...”

From staff post evaluations:

- ▶ “I used to cough all the time in my classroom. Since we stopped using bleach, I’ve noticed that I don’t cough at all anymore. The same is true for the kids in my class—they used to cough all the time and they don’t do that anymore.”
- ▶ We feel better about the environment. We feel safer.”
- ▶ “We are changing the way we do a lot of things-even at home!”
- ▶ “We can bring the curriculum down to the kids. They can take it home and tell their parents. They are good educators!”

# Results

- ▶ At the end of the study, we concluded that there was a clear need for intervention in ECE facilities to reduce children's exposure to hazardous chemicals, and that our intervention had succeeded.
- ▶ Unfortunately, the funding we had hoped for to scale the project never materialized.



Photo: Victoria Leonard

# Questions

- ▶ Questions?
  - [pehsu@ucsf.edu](mailto:pehsu@ucsf.edu)

WSPEHSU website:  
<https://wspehsu.ucsf.edu/>

Green Cleaning, Sanitizing, and  
Disinfecting Toolkit:  
<https://wspehsu.ucsf.edu/projects/environmental-health-in-early-care-and-education-project/>



# References

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# Protecting Children's Environmental Health during crisis and disaster in Puerto Rico

Gredia Huerta-Montanez, MD, FAAP



# Disclosure

*This presentation was supported by the American Academy of Pediatrics (AAP) and funded (in part) by the cooperative agreement award number 6 NU61TS000296-02-01 from the Agency for Toxic Substances and Disease Registry (ATSDR).*

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# What helped us to respond?

- Understand the phases of recovery
- Know your community and the resources
- Understand the vulnerabilities and needs
- Evidence based public policy
- Science translation and education
- Outreach and collaboration
- ❖ ***Pediatricians are the experts on children's health***

# Some groups are even more vulnerable

- People with a disability
- Elderly Persons
- **Pregnant Women**
- **Children**
- Individuals with Language Barriers
- Communities of color
- Impoverished communities
- Indigenous communities
- Undocumented residents and workers

# Phases of disasters

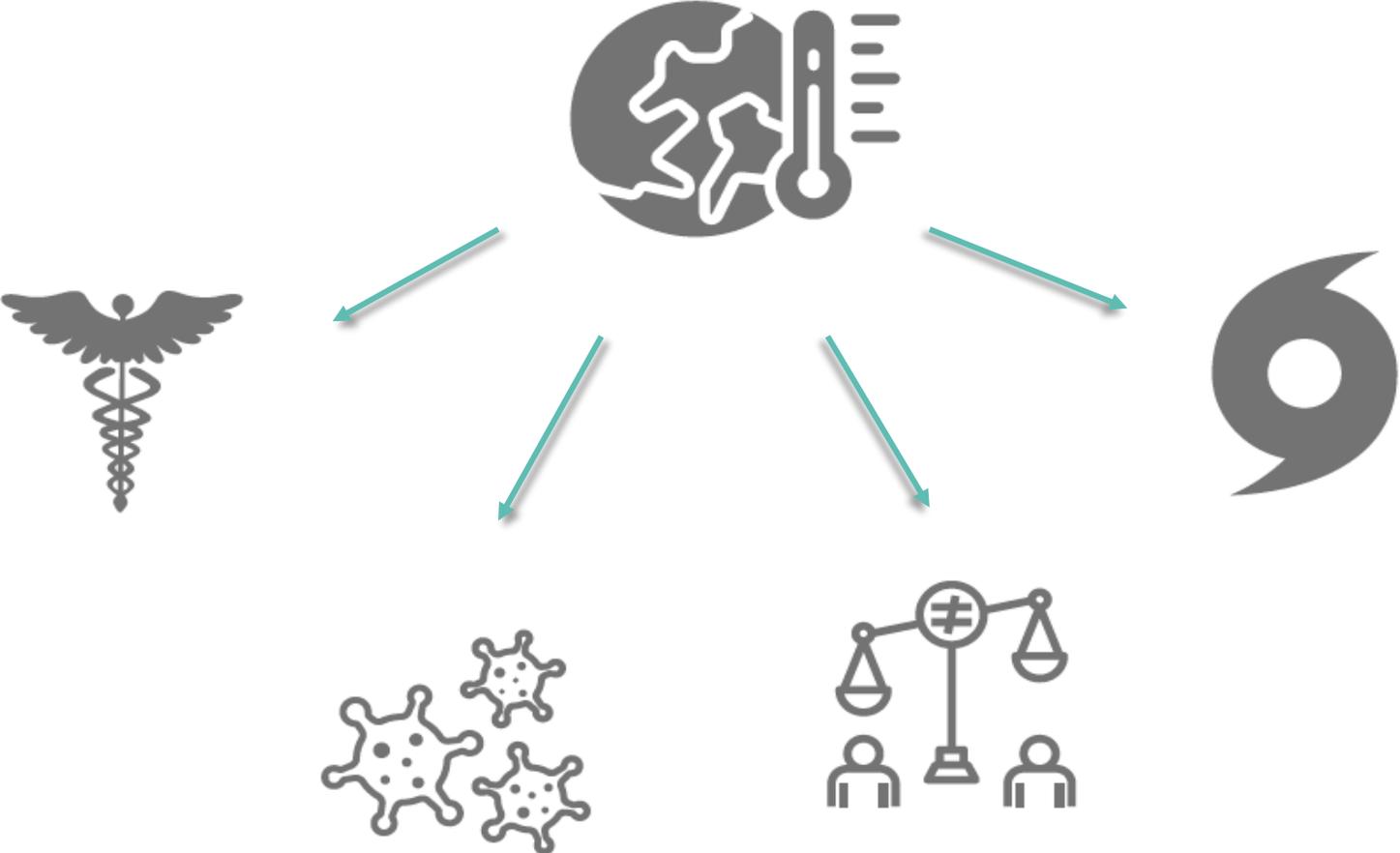
Planning

Rescue/  
Emergency

Response/  
Recovery

Mitigation/  
Prevention

# Compounding Global Emergencies



# Puerto Rico



<https://www.coris.noaa.gov/portals/puertorico.html>

# Children's Health in PR



Asthma prevalence:  
14.4%

<sup>1</sup><https://www.de.pr.gov/wp-content/uploads/2017/08/Det2013Tabla2pr-acc-stateprofile-11-12.pdf>

<sup>2</sup>Eliás-Boneta, Augusto R et al. "High prevalence of overweight and obesity among a representative sample of Puerto Rican children." *BMC public health* vol. 15 219. 5 Mar. 2015, doi:10.1186/s12889-015-1549-0

Preterm Birth rate: 11.9%

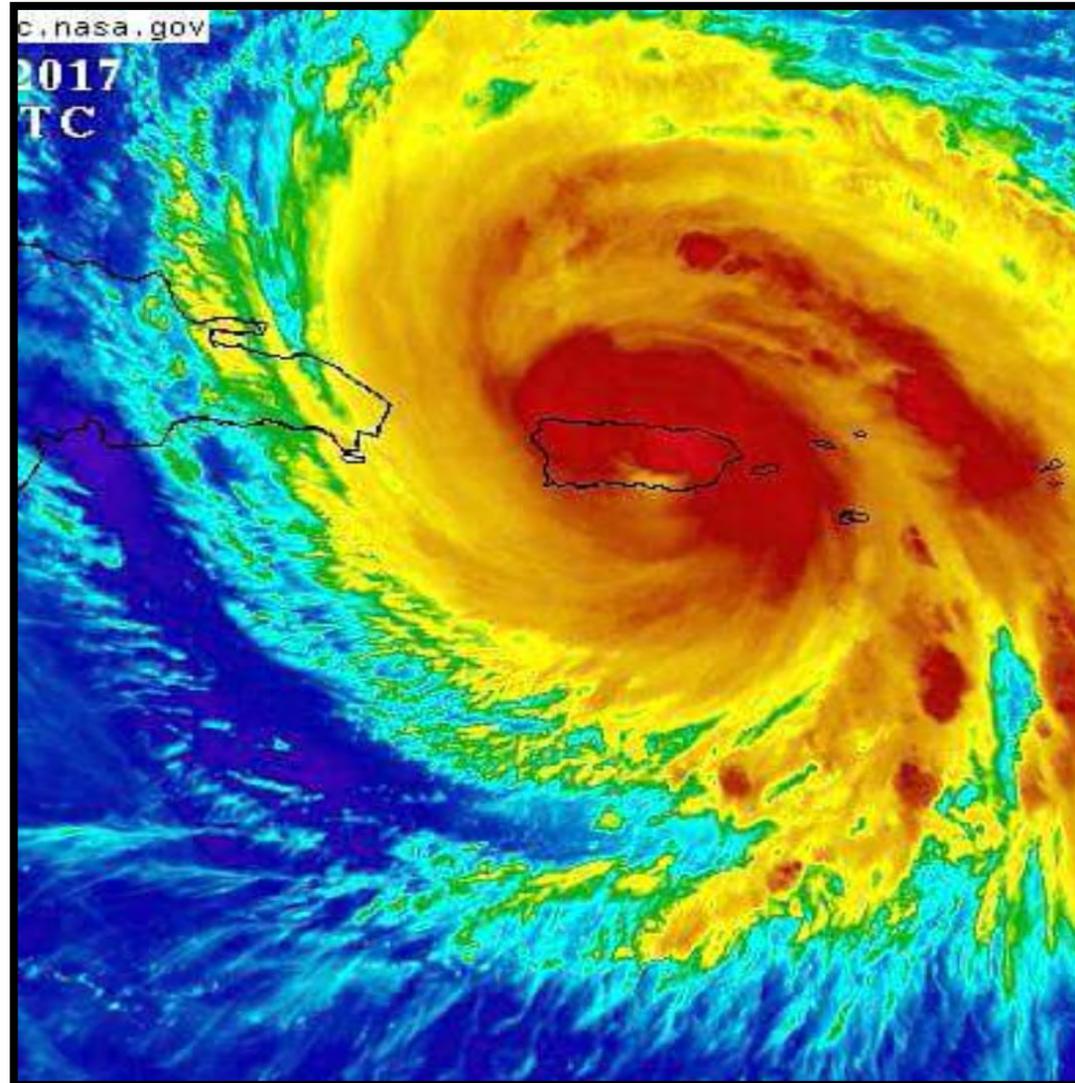


Children with disabilities  
(IDEA): 25.9%<sup>1</sup>

Overweight and obesity  
rates : 18.8% and  
24.3%<sup>2</sup>



# September 20, 2017: Hurricane María



(Image source: nasa.gov)

# Consequences



Images source: Gredia Huerta-Montanez

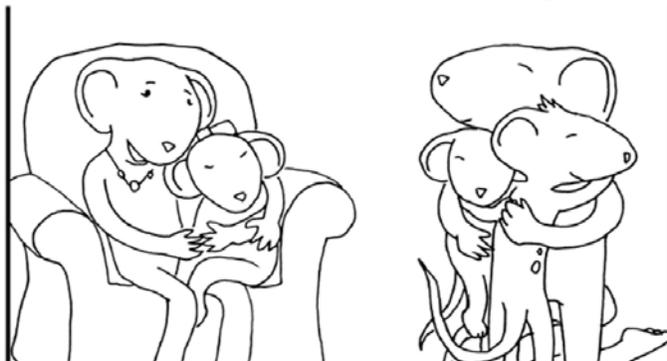
# Consequences of disasters

Food and water insecurity	General hardship	Lack of safety	Risks for epidemics
Environmental exposures	Economic loss	Migration and Family separation	Social disruption: school, daycare, work
Toxic stress	Lack of access to medical care	Risks for accidents	Destruction of infrastructure

# Response and mitigation efforts: hurricanes



## Trinka y Juan en un día de mucho viento y lluvia



Author: Chandra Ghosh Ippen /Illustrator: Erich Ippen, Jr.



(Images source: Gredia Huerta-Montanez)

### LO QUE DEBES SABER PARA PROTEGER A TU FAMILIA DESPUÉS DEL HURACÁN

Cuando ocurren inundaciones, esas aguas son sucias y aumentan el riesgo de enfermedades infecciosas y exposiciones a tóxicos.

- Aguas contaminadas pueden resultar en formación de enfermedades (como E.coli, Shigella, Salmonella, leptospirosis y el virus de hepatitis A).
- Las aguas de inundaciones pueden estar contaminadas con químicos (como pesticidas, herbicidas o químicos industriales) todos dañinos a la salud.

#### Recomendaciones

- No tome agua de riego, manantiales, canales, charcos. Toda esa agua está contaminada.
- ¡No utilice agua de un día anterior! (Bacterias y parásitos que se quedan en el agua). Si debe usarla, déjela hervir.
- Tome agua embotellada certificada como segura. Si no hay, requiera que alguien de la familia revise la palmeta antes de beberla.

#### Si tomas agua de la pluma puedes:

- En una olla limpia traer al agua de 1 a 3 minutos. Deje enfriar el agua hervida con tallas tapadas y guardada en un recipiente limpio con tapa.
- Si un recipiente de plástico puede contener el agua, frotarlo con alcohol 70% o lejía (1 parte de lejía por 10 partes de agua) y dejar secar.
- Si tienes un filtro de agua que te funciona, úsalo tal como se indica.

PROTECT CRECE ZIP STUDY

# January 7, 2020: Magnitude 6.4 earthquake



Images source: Gredia Huerta-Montanez

# Life inside a shelter tent



Image source: Gredia Huerta-Montanez

# Significant seismic activity for weeks



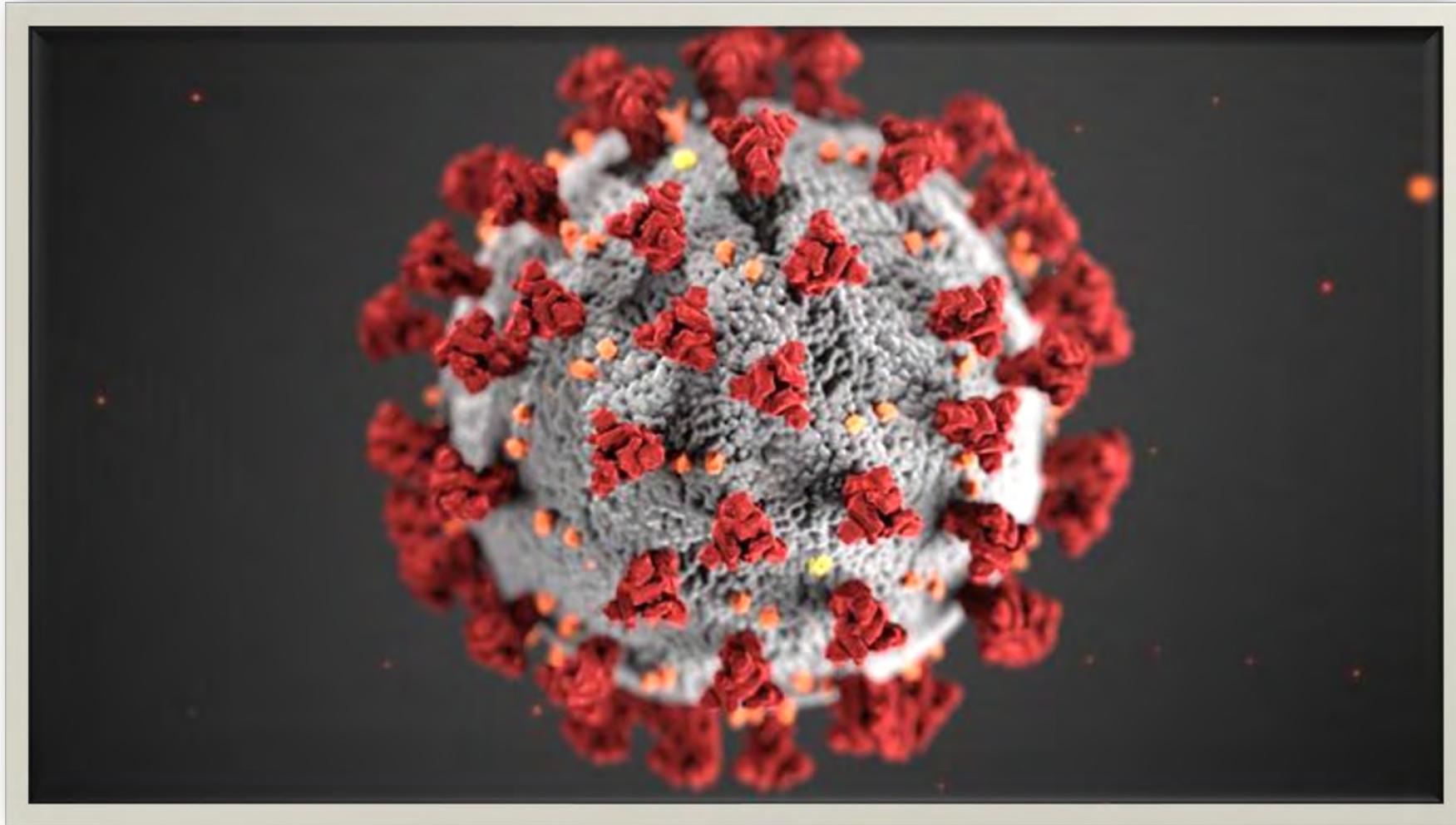
Image source: Gredia Huerta-Montanez

# Response and mitigation efforts: earthquakes



Images source: Gredia Huerta-Montanez

# March 2020: COVID-19 pandemic



<https://phil.cdc.gov/QuickSearch.aspx>

# Response and mitigation efforts: COVID-19



Images source: Gredia Huerta-Montanez

# Education and training during the pandemic



**Puerto Rico Chapter**

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Pediatric Environmental Health Specialty Unit

Region 2: NJ | NY | PR | USVI

## Webinars for the daycare (HS/EHS) community

- Pediatric asthma prevention
- Preparedness for hurricane season
- COVID-19 infection control and prevention
- Safe and healthy daycare and school reopening
- How to promote infants' development during the pandemic
- Infant and young children development, oral health, safe sleep, nutrition
- Prevention of injury
- Prevention of environmental exposures

# Webinars library: increasing access

**PR AAP Chapter**  
600 subscribers

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Migración masiva de personas buscando lugar seguro y sano para vivir.

2:52

**El impacto del Cambio Climático en ti y tu familia.**  
7 views • 1 month ago

Adiestramientos post-desastres y durante emergencias de la pandemia de COVID para HS y EHS; prevención de lesiones no intencionales y manejo de asma

2:00:51

**Manejo de Asma y Lesiones no Intencionales luego de...**  
29 views • 2 months ago

¿Qué es el vapeo? ¿Por qué es peligroso? ¿Cómo hablarle a los hijos sobre el vapeo?

1:40:11

**Como hablarle a los hijos sobre el vapeo**  
73 views • 2 months ago

Protege a tus niños y no le permitas encender o manipular pifanetas.

0:20

**La pirotecnia no es juego de niños.**  
18 views • 3 months ago

No empañes las celebraciones. Ni un solo tiro al aire.

0:24

**NI un solo tiro al aire en año nuevo**  
32 views • 3 months ago

Protege su sonrisa. Protege sus dientes.

2:22

**Protege su sonrisa, protege sus dientes**  
91 views • 3 months ago

en las escuelas

1:11

**Mensaje de Navidad PR AAP**  
57 views • 3 months ago

Consejos para una Buena Salud Oral

1:56:24

**Evaluación y promoción de la salud oral pediátrica en la...**  
80 views • 4 months ago

2:16:07

**COVID 19, 16 de octubre de 2020**  
27 views • 4 months ago

IMPORTANCIA DE BEBER AGUA

2:05

**La importancia de beber Agua**  
55 views • 4 months ago

2:38

Para protegerlos contra la poliomielitis infantil tenemos la vacuna inactiva de pollo (VIP)

2:27

Bienvenidos al seminario web Zoom: Lactancia y bienestar emocional. Jueves 27 de agosto de 2020. 9:00 am

1:54:35

Bienvenidos al seminario web Zoom: ¡Opciones en la carrera de Pediatría, Tu futuro! Miércoles 12 de agosto de 2020. 7:30 PM

2:39:00

Year	Infant Mortality		Total births
	n	Rate	
2017	174	7.1	24,395
2018	143	6.7	21,482
2019	135	6.6	20,409

1:06:54

# Science translation and risk communication

## LO QUE DEBE SABER DEL COVID-19 DURANTE EL EMBARAZO

Conozca la información más importante

### SÍNTOMAS

**Los síntomas principales**

- Fiebre
- Tos
- Dificultad para respirar

**También puede dar**

- Dolor de garganta
- Congestión y/o goteo nasal
- Dolor en los músculos
- Cansancio
- Vómitos y diarrea

### COVID-19 Y EL EMBARAZO

¿Está a riesgo?

- Cuando está embarazada, su sistema inmune se debilita un poco y los síntomas pueden ser más difíciles de detectar.
- Tener un sistema inmune más débil significa que es más probable que se enferme.
- Es importante tener en cuenta que una vez que está embarazada también se protege de esta enfermedad.

### ¿PUEDE AFECTAR AL BEBÉ?

**Prevención es la clave**

- Al pensar en su bebé al enfrentar evidencia (información) que a saber si afecta al bebé, debe prevenir el contagio.
- El virus no se ha detectado en el líquido amniótico (líquido que rodea a que su bebé en desarrollo) ni en la leche materna.
- Si tiene febre alta, puede aumentar el riesgo de defectos de nacimiento.

### ¿QUÉ HACER?

Diga estos 5 consejos:

1. Si le da febre de más de 38 grados Celsius (101 F) tome a su bebé de inmediato.
2. No tome aspirina al bebé y evite la aspirina durante los días siguientes.
3. Lávese las manos con agua y jabón por 20 segundos. Si no tiene, utilice alcohol con un contenido del 70 por ciento.
4. Permanezca en su casa y evite llevar a su bebé, mamá o papa a la escuela, al trabajo, al centro de compras o al gimnasio.
5. Limpiar y desinfectar cuidadosamente las superficies que se tocan con frecuencia.

### PARA LOS QUE VIVEN EN CASA:

- Al volver a la casa, no toque nada que se encuentre en la entrada, coloque la ropa en una bolsa y lávese o desinfecte las áreas expuestas.
- Desinfecte las superficies y juguetes y el auto.
- Mantenga distancia y evite tocar cosas que otros hayan tocado.
- Evite compartir platos y cubiertos.
- Desinfecte áreas de alto contacto.
- Limpie superficies selectivamente para cubrir los dedos y tocar superficies.

PROTECT CRECE ECHO CONECTA

## LACTANCIA Y EL CORONAVIRUS

### EL COVID-19 ES LA ENFERMEDAD QUE CAUSA ESTE NUEVO CORONAVIRUS.

### SÍNTOMAS

**Los síntomas principales**

- Fiebre
- Tos
- Dificultad para respirar

**También puede dar**

- Dolor de garganta
- Congestión y/o goteo nasal
- Dolor en los músculos
- Cansancio
- Vómitos y diarrea

### ¿PUEDE LACTAR A SU BEBÉ?

- La leche materna le da protección al bebé contra muchas enfermedades.
- La leche materna es la mejor nutrición que usted puede darle a su bebé.
- El virus que causa COVID-19 hasta este momento no ha sido detectado en la leche materna.

### ¿QUÉ HACER SI TIENE SÍNTOMAS?

1. Siga las recomendaciones de higiene, como lavarse las manos.
2. Coloque una mascarilla si es posible mientras lacta.
3. Si se lacta la leche, lávese las manos antes del "barrido" (parte de la máscara o botella) y luego las recomendaciones de limpieza de la máscara antes que lo use.
4. Si se puede, pida a alguien que le dé la botella al bebé con la leche materna extraída.

### PARA LOS QUE VIVEN EN CASA:

- Al volver a la casa no toque nada, deje las cosas en la entrada, coloque la ropa en una bolsa y lávese o desinfecte las áreas expuestas.
- Desinfecte las superficies y juguetes que otros toquen.
- Mantenga distancia y evite tocar cosas que otros hayan tocado.
- Evite compartir platos y cubiertos.
- Desinfecte áreas de alto contacto.
- Limpie superficies selectivamente para cubrir los dedos y tocar superficies.

PROTECT CRECE ECHO CONECTA

# Echo-Healthy Child Care in PR



(Images source: Region2 PEHSU)



Eco-Healthy  
Child Care®



PEHSU

Pediatric Environmental Health Specialty Unit  
Region 2: NJ | NY | PR | USVI

AIRE  
ATENTO

ACCIÓN PARA IDENTIFICAR Y REDUCIR EXPOSICIONES AMBIENTALES TÓXICAS  
EN LA NIÑEZ TEMPRANA Y OTRAS ETAPAS



Icahn School  
of Medicine at  
Mount  
Sinai

# Promotion of resources

CDC Centros para el Control y la Prevención de Enfermedades  
CDC 247. Salvar las vidas. Protegerlos a la par!™

Índice A-Z de los CDC

Buscar

Búsqueda Avanzada

Aprenda los signos. Reaccione pronto.

**Apoye su desarrollo y crecimiento**

Descargue la aplicación gratuita de los CDC **Sigamos el desarrollo.**

Si la edad de su hijo está entre dos de las listas de verificación de arriba, recibirá la lista de la edad menor.

Siga y comparta los indicadores del desarrollo

Vea consejos y actividades

Sepa cuándo debe reaccionar pronto

Encuentre más información en [www.cdc.gov/Sigamos](http://www.cdc.gov/Sigamos)

12:38

Alex

¡Alex tiene 4 años!

2 años 3 años 4 años 5 años

Si la edad de su hijo está entre dos de las listas de verificación de arriba, recibirá la lista de la edad menor.

Lista de indicadores

Sigamos el Desarrollo.

# Climate Action



menu

» MS2CH Home » States » Puerto Rico » Puerto Rico Clinicians for Climate Action

## Puerto Rico Clinicians for Climate Action



[About Us](#)

[News & Events](#)

[Take Action](#)

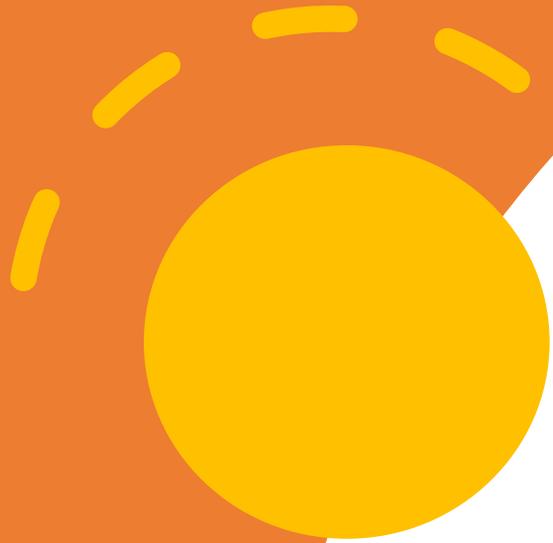
[Contact Us](#)

### PRCCA Mission:

To establish a network of clinicians in Puerto Rico to advocate for equitable climate change solutions that protect the health of our patients and communities and promote a sustainable future for all.

### PRCCA Vision:

Support clinicians interested in engaging with patients and their families, the general public, other healthcare providers, and policymakers – through education, science translation, community outreach, and advocacy – to protect the health and well being of our citizens, especially those more vulnerable, from climate change.



# Environmental Health Coordination Opportunities in Child Care Centers During COVID-19

W. David Brown, R.S., M.P.A.

Surveillance Coordinator

Children's Environmental Health Program

# North Carolina's Regulatory Support Structure

## Department of Health and Human Services

- Environmental Health Section – conducts safety and health inspections of licensed child care facilities.
- Division of Child Development and Early Education – Licenses child care facilities and sets operational standards, staff education requirements, employee to child ratios, educational programs for children.
- Partner Organizations
  - The NC Resource Center is a collaborative partnership with the [Division of Child Development and Early Education](#), [Smart Start](#), and University of North Carolina at Chapel Hill (UNC)
  - NC Child is nonprofit organization advancing public policies for children's health and welfare.

## North Carolina Snapshot

- 4,607 licensed child care centers
- 246,622 children enrolled in licensed child care centers

<https://ncchildcare.ncdhhs.gov/County/Child-Care-Snapshot>

*Source, Division of Child Development and Early Education Monthly Statistical Summary Report*

# NC Child Care

- Over half of mothers with children less than six years old work outside their home.
- Sixty percent of the children of moms working outside the home receive care in a setting outside their home.
- >4,600 licensed child care centers
- >246,600 children enrolled in licensed child care centers
- <https://ncchildcare.ncdhhs.gov/County/Child-Care-Snapshot>
- *Source, Division of Child Development Monthly Statistical Summary Report – May 2017*

# Impact of Illness

- Child illness accounted for 40 per cent of parental absenteeism from work.
- Parents of children in child care centers miss an average of 1 to 4 weeks of work each year to care for their sick children.

## WHAT YOU DO MAKES A DIFFERENCE!

*Illness associated with child day care: a study of incidence and cost.*

*D M Bell, D W Gleiber, A Glibber Mercer, R Phifer, R H Guinter, A J Cohen, E U Epstein and M Narayanan.*

*Department of Pediatrics, Memphis State University.*

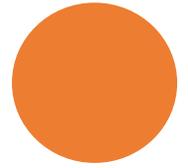
<http://www.ajph.org/cgi/content/abstract/79/4/479?ck=nck>

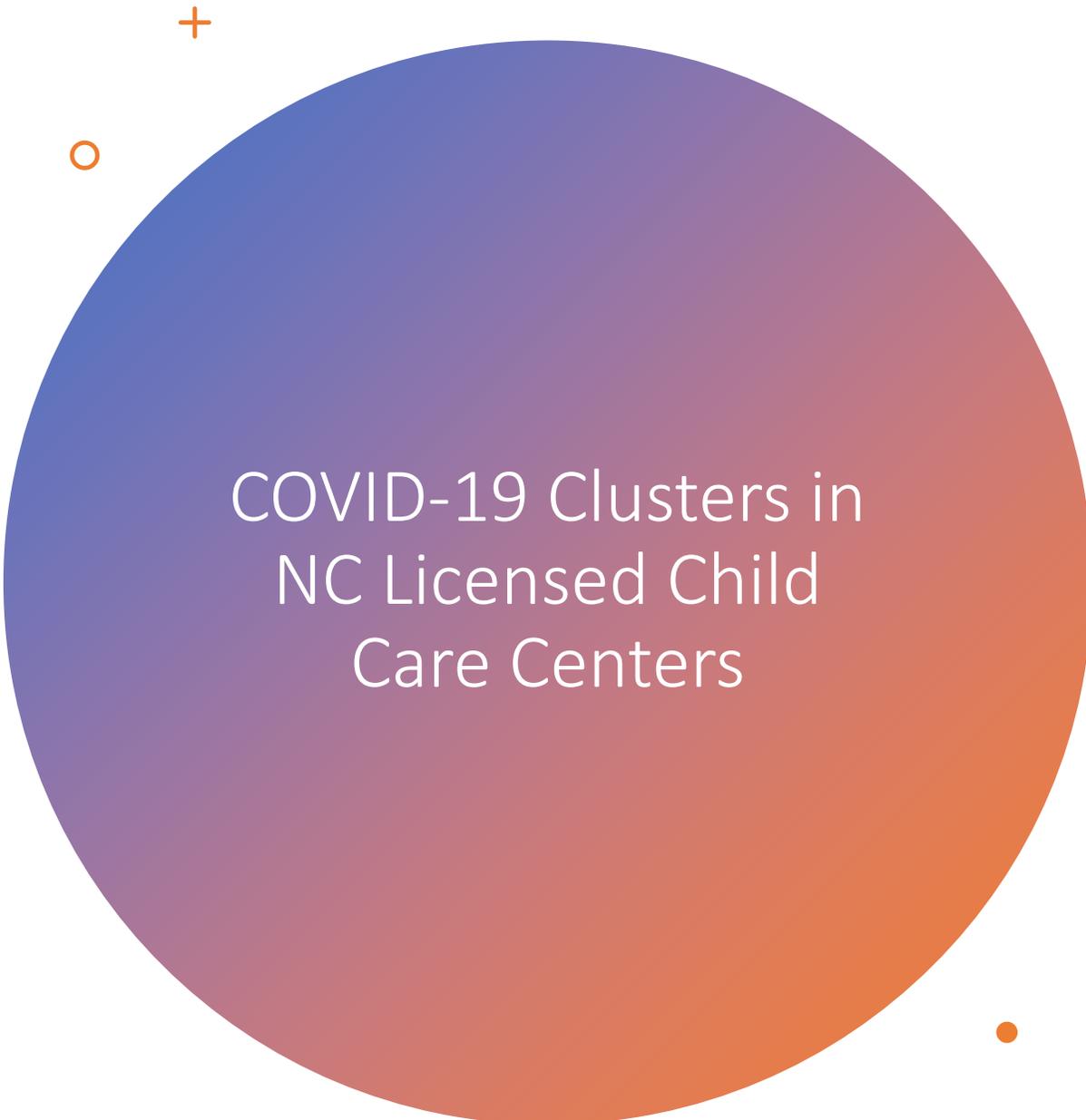
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*Department of Pediatrics, Memphis State University.*

<http://www.ajph.org/cgi/content/abstract/79/4/479?ck=nck>





## COVID-19 Clusters in NC Licensed Child Care Centers

- In a child care or school setting, a COVID-19 cluster is defined as a minimum of **five positive cases** identified through a positive molecular (PCR) or positive antigen test result with illness onsets or initial positive results within a 14-day period and plausible epidemiologic linkage between cases.
- As of 04/19/2021 - Over 117 Clusters in NC

*Source: COVID-19 Ongoing Clusters in Child Care and School Settings: Updated March 26, 2021*

Highlighted  
Recommended  
Actions Specific to  
COVID-19

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Social distancing

---

Restrict teachers to one classroom

---

Waiting areas 6' space markings

---

Keep children together in their assigned room

---

Nap time increase spacing between children head to toe

---

Increased use of outdoor learning environment

---

Increased cleaning and disinfecting of high touch surfaces

## Critical Need for Information

---

When the Pandemic first hit operators looked for information. Governmental agencies did not have all the answers creating an opportunity for a great deal of misinformation.

---

Regular stakeholder meetings providing the most up-to-date information were helpful. IF we didn't know we said so.

---

Emphasis shifted from touch surfaces to respiratory protection, distancing and ventilation.

---

In many situations we had to say, "this is what we know right now, but it may change."

---

Effective coordination requires transparency with stakeholders.

---

# Information Resources

- Help ensure that the information staff, children, and their families are getting is coming directly from reliable resources.
- <https://covid19.ncdhhs.gov/slow-spread/materials-resources>

The screenshot shows a website page with a blue navigation bar at the top containing links for Home, About COVID-19, Vaccines, Dashboard, Information For, Guidance, and Slow The Spread. Below the navigation bar is a large heading 'Materials & Resources' with a blue underline. Underneath the heading are six blue rectangular buttons arranged in two rows of three. The first row contains buttons for 'NCDHHS Social Media Toolkit', 'Prevent and Protect Media Toolkit', and 'Know Your Ws: Wear Wait Wash'. The second row contains buttons for 'Let's Keep It Up', 'Hay Que Seguirle Dando', and 'Toolkit for Faith Leaders'. At the bottom of the page is a grey rectangular box with the text 'Espanol: Recursos e Información acerca del COVID-19' and 'Information on COVID-19 in Spanish' below it.

Home About COVID-19 ▾ Vaccines ▾ Dashboard ▾ Information For ▾ Guidance ▾ Slow The Spread ▾

## Materials & Resources

[NCDHHS Social Media Toolkit](#)

[Prevent and Protect Media Toolkit](#)

[Know Your Ws: Wear Wait Wash](#)

[Let's Keep It Up](#)

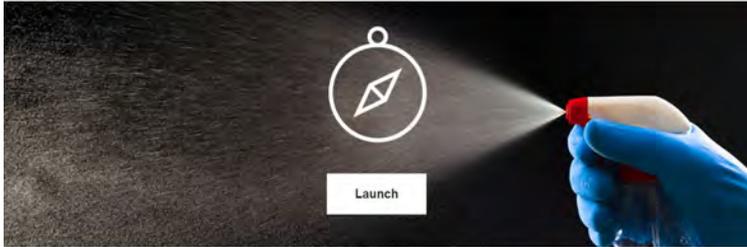
[Hay Que Seguirle Dando](#)

[Toolkit for Faith Leaders](#)

[Espanol: Recursos e Información acerca del COVID-19](#)  
Information on COVID-19 in Spanish

### List N Tool: COVID-19 Disinfectants

[More Information](#) [Feedback](#)



All products on this list meet EPA's criteria for use against SARS-CoV-2 (COVID-19). These products are for use on surfaces, NOT humans.



Which spray do I use ?

<https://cfpub.epa.gov/giwiz/disinfectants/index.cfm>

### List N Tool: COVID-19 Disinfectants

[Feedback](#)

Search filters:

- # EPA Registration Number
- Active Ingredient
- Use Site
- Contact Time**
  - <= 1 (contact in minutes)
  - <= 5 (contact in minutes)
  - <= 10 (contact in minutes)
  - <= 15 (contact in minutes)
  - <= 20 (contact in minutes)
  - <= 25 (contact in minutes)
  - <= 30 (contact in minutes)
- Browse All
- Keyword Search

[Show results](#) [Clear results](#)

Total count: 85

Show  entries

[PDF](#) [CSV](#)

EPA Registration Number	Active Ingredient(s)	Product Name	Company	Follow the disinfection directions and preparation for the following virus	Contact Time (in minutes)	Formulation Type	Surface Type	Use Site	Emerging Viral Pathogen Claim?
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Where do I  
get materials  
and  
resources?

<https://covid19.ncdhhs.gov/slow-spread/materials-resources>

The screenshot shows the 'Materials & Resources' page on the NCDHHS website. At the top is a blue navigation bar with links for Home, About COVID-19, Vaccines, Dashboard, Information For, Guidance, and Slow The Spread. Below the navigation bar is the main heading 'Materials & Resources' with a blue underline. The content is organized into two rows of blue buttons. The first row contains three buttons: 'NCDHHS Social Media Toolkit', 'Prevent and Protect Media Toolkit', and 'Know Your Ws: Wear Wait Wash'. The second row contains three buttons: 'Let's Keep It Up', 'Hay Que Seguirle Dando', and 'Toolkit for Faith Leaders'. At the bottom of the page is a grey box with the text 'Espanol: Recursos e Información acerca del COVID-19' and 'Information on COVID-19 in Spanish'.

[Home](#) [About COVID-19](#) [Vaccines](#) [Dashboard](#) [Information For](#) [Guidance](#) [Slow The Spread](#)

## Materials & Resources

[NCDHHS Social Media Toolkit](#) [Prevent and Protect Media Toolkit](#) [Know Your Ws: Wear Wait Wash](#)

[Let's Keep It Up](#) [Hay Que Seguirle Dando](#) [Toolkit for Faith Leaders](#)

[Espanol: Recursos e Información acerca del COVID-19](#)  
Information on COVID-19 in Spanish

Where do I get up-to-date guidance on COVID-19?

Interagency Guidance  
Distributed By The State To  
Local Health Departments and  
Other Stakeholders

Interim Guidance for Child Care  
Settings

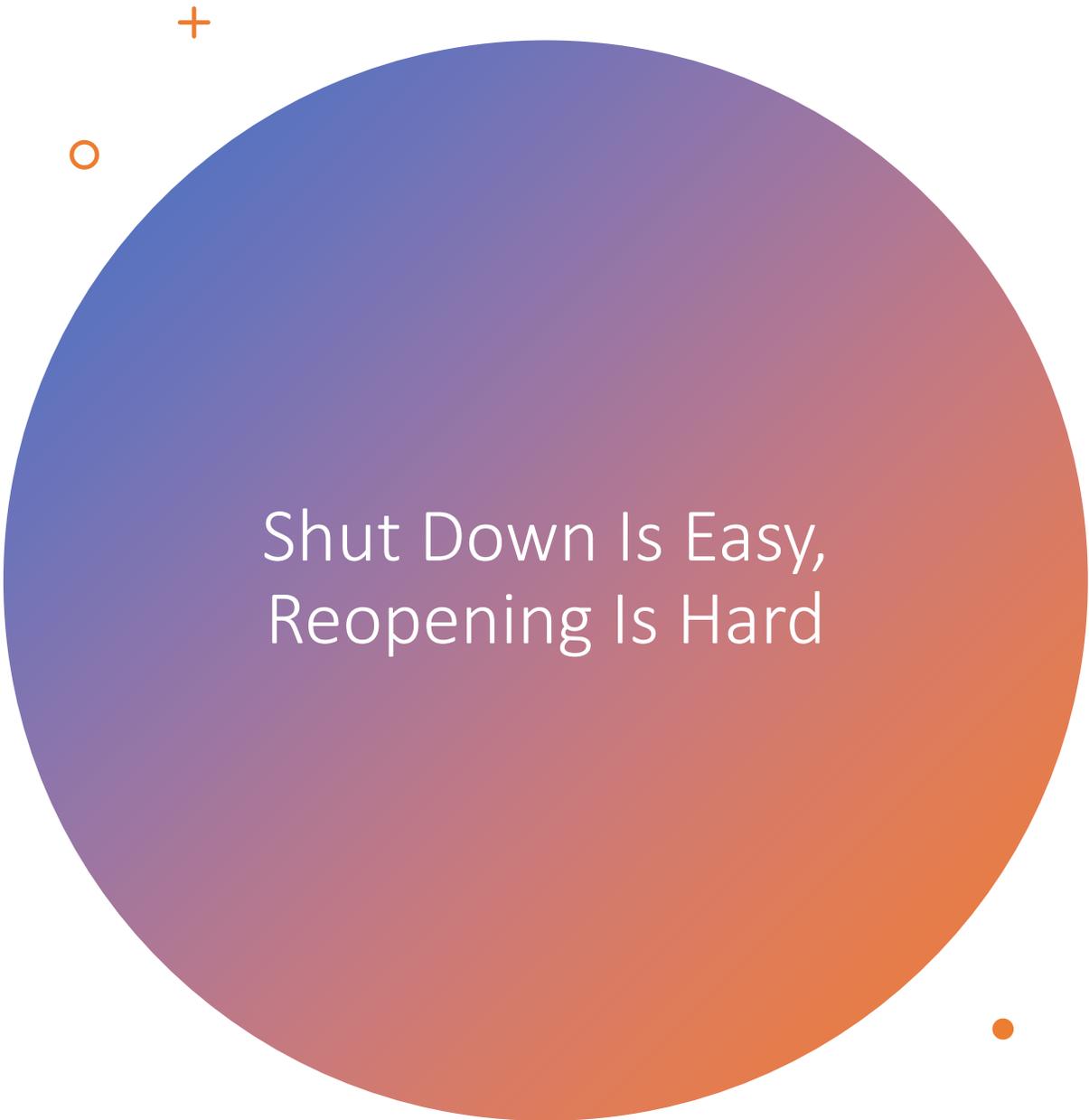
<https://covid19.ncdhhs.gov/media/220/download>



## Challenges Impacting our Facilities

Closures, differed maintenance, lack of pest control, reduced income, loss of trained staff, under enrollment, changing guidance on the epidemiology of COVID-19 transmission, applying State sanitation rules, new polices, Executive Orders from the Governor's office, CDC guidance and Federal guidance, technical guidance on PPE

One of our challenges continues to be combating MISINFORMATION-RUMORS-CONSPIRACY IDEAS spread through contacts, listservs media and parents.



Shut Down Is Easy,  
Reopening Is Hard

What can go wrong during a shutdown?

**LOTS!**



# Closures Resulted in Neglected Exterior Maintenance Causing Interior Damage





Overgrowth, leaf matter invite mold/mildew growth, structural damage, paint delamination



# Exterior

Check sandboxes, buckets, containers, play tables and toys for stagnant water, entrapment hazards, snakes, spiders etc.





Interior wall moisture causing paint film failure.

## Prepping the Building for Reopening:



HVAC System -  
what can go wrong?

Ventilation is mainly used to control indoor air quality by diluting and displacing indoor pollutants

---

Before advising operators to open doors and windows they need to consult an HVAC technician.

---

Shift to more outdoor educational activities when and where possible.

---

Maintenance of filters and other equipment, condensate drains and drip pans may need to be flushed and cleaned to remove stagnant water and reduce the risk of legionella bacteria.

---

Legionnaires' disease is a type of pneumonia caused by legionella bacteria.

---

Legionnaires' disease doesn't spread from person to person. Instead, the bacteria spreads through mist, such as from air-conditioning units for large buildings.



## Plumbing Systems

Flush cold and hot water taps at all points of use to remove water that can be unsafe to drink. Stagnant water accumulates leached metals such as lead and copper and due to low disinfectant levels may create conditions favorable for growth of Legionella bacteria and other pathogens.

EPA recommends that building owners and managers take proactive steps to protect public health by minimizing water stagnation during closures and taking action to address building water quality prior to reopening.

## Water Temperatures

Check hot water temperatures at each tap with a calibrated thermometer.

## Frequently Requested Guidance

Hand washing – how long?

Pre-COVID 15 seconds, Now minimum  
20 seconds



Sanitizer/Disinfectant – how strong?

Pre-COVID

Sanitizer 50 – 200 ppm Cl

Disinfectant 500 – 800 -1000 ppm Cl

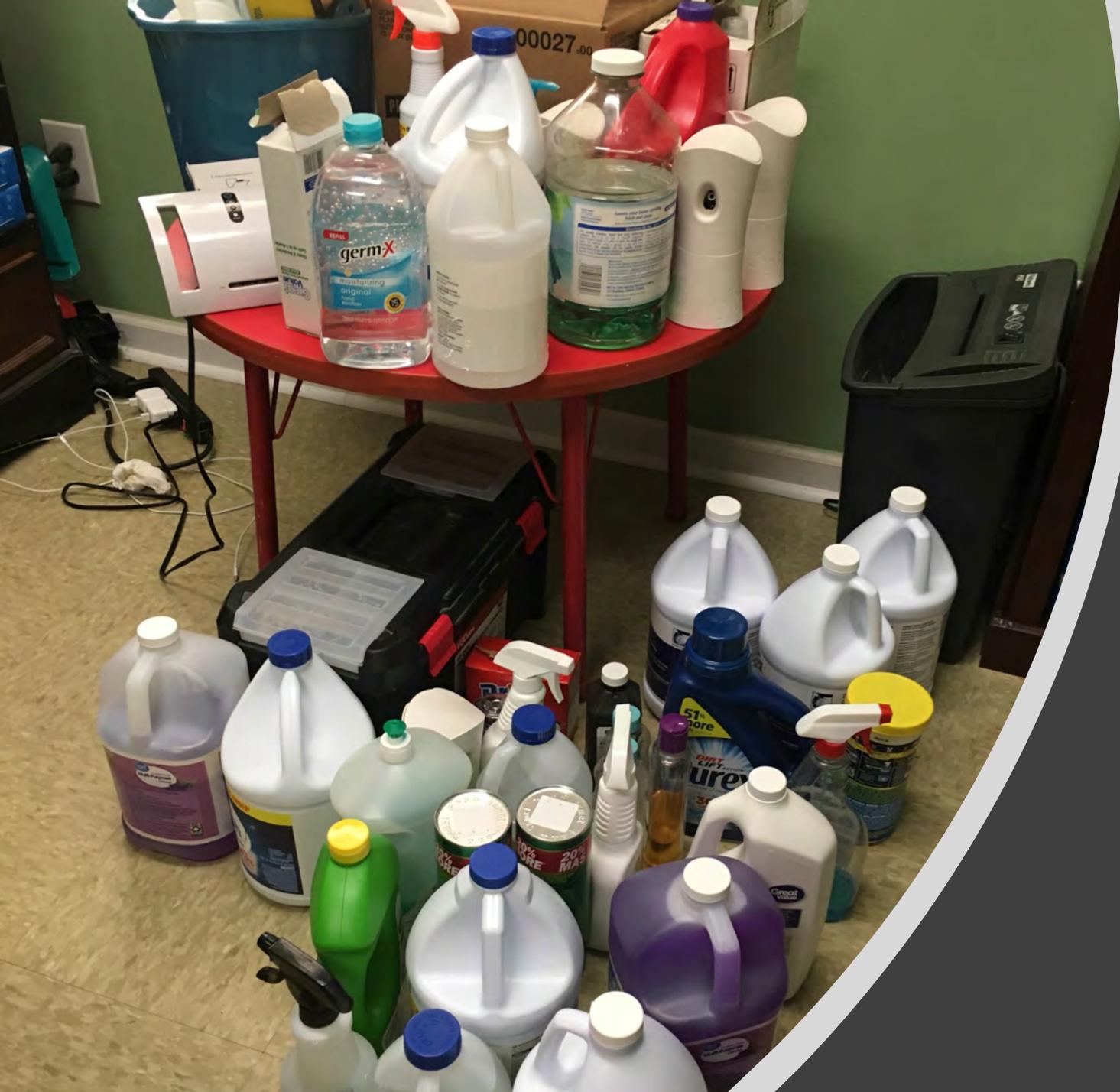


Electric eye properly  
working – battery check?

Supplies /signage in place



**"Electric Eye" Handsink**



Hazardous product storage was a challenge pre-COVID and only got worse.

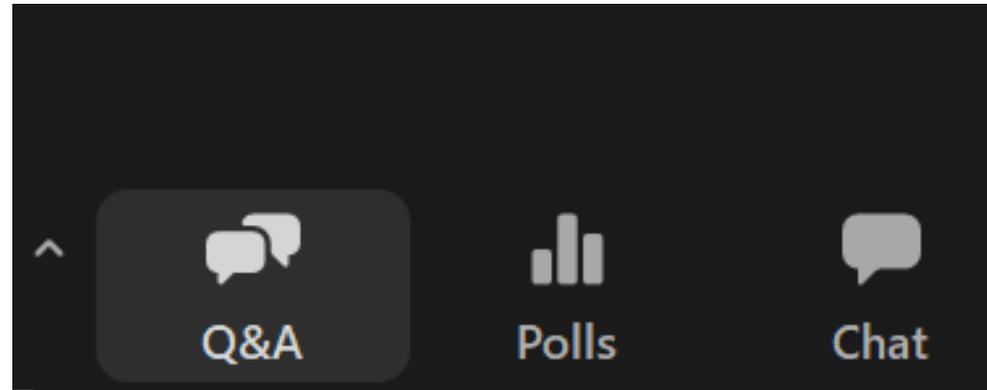


Container for storing mouthed toys until they can be washed and sanitized.

Thank you

# For Questions Use Q&A Feature

Please submit questions through the Q&A feature found at the bottom of your Zoom window.



If we are not able to get to your question today, please feel free to send a follow up note to [aroy@naccho.org](mailto:aroy@naccho.org).

**Thank You**