THE PANDEMIC V. CHILDREN & SCHOOLS

A Presentation For
CHE ALASKA: PROTECTING CHILDREN WHILE REOPENING SCHOOLS

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www.HealthySchools.org
THE PANDEMIC V. CHILDREN AND SCHOOLS
FRAMING THE ISSUES

Children are not just little adults.
- Uniquely vulnerable to environmental hazards
- Still developing; specific behaviors
- Cannot recognize threats or articulate exposures
- Lack of timely research on virus and on children

Schools are not just little offices.
- More densely occupied than offices or nursing homes
- ~ 95% occupants are women and children
- Mix of processes under one roof
- Poor facilities: air, sanitation, molds, chemicals, legacy toxics
- No consistent funding; minimal oversight
PUBLIC HEALTH STOPS AT THE SCHOOLHOUSE DOOR

- All states require children to attend school
- School and childcare facilities have environmental health problems that impact children’s health, thinking, and learning
- Schools are not required to have infection control plans or to stay current on ventilation standards
- OSHA regulations cover all private schools; and public schools in 24 states with State OSHA Plans
- No state provides environmental public health services for children at risk or with suspected exposures in these settings
- The poorest communities have the schools in the worst physical condition
- Not all school environmental improvements are costly, and many will boost health, attendance, and learning.

High CO2: indicates poor ventilation and increased air pollution

Adult critical thinking skills begin a steep decline at 1,000 ppm; this classroom shows over 4,000 ppm. Research in U.S. classrooms has shown CO2 levels often at 2,000-3,000 ppm
LEGACY TOXICS UNADDRESSED – High Cost to address
POOR MAINTENANCE = POOR INDOOR ENVIRONMENTS

Medium cost to address
Indoor Environmental Challenges:

- Filled with dust catchers
- What to clean, how to clean, what to disinfect
- Pests drawn to food and plants in classrooms
- Air flow impeded
- Flammable decorations: fire hazard

Cost to clean up? $0.00

NB- cluttered classrooms do not appear in media stories about reopened schools in Europe
DISPROPORTIONAL BURDEN OF THE ONGOING PANDEMIC

The Black, Latinx, and Native American communities hit hardest by COVID will send their children back to the poorest schools in the worst condition.

A fragmented, piecemeal approach will speed the spread the virus, sow confusion, deepen disparities, and stymie research on how to keep schools open and kids healthy.
CALL TO ACTION - PANDEMIC V. SCHOOLS PLAYBOOK

Contributors: American Public Health Association, New Jersey Education Association, New Jersey PTA, National Association of School Nurses, Asthma and Allergy Foundation of American, New York Lawyers for the Public Interest, Green Seal, Learning Disabilities Association of America, Collaborative for High Performance Schools, NEA Healthy Schools Caucus
A Public Health Imperative: Keeping Children Safe at School

The State’s Role: Providing Infection Prevention and Control Plan for Schools
- State, advised by stakeholders, develops model “School Infection Prevention and Control Plan”
- State establishes hotline and system to follow up on complaints, requires schools to report attendance and new infections
- Local schools convene stakeholders to adapt the state template plan and adopt locally as policy

The Condition of School Facilities Affects the Transmission of the Virus

School Staff Vulnerability, COVID-19, and Schools

Appendices
- Federal and other resources; Indoor air, water systems; molds; cleaning and disinfecting, symptoms
School Infection Prevention and Control Plans: specify how the building will be operated and maintained to reduce the presence of the virus, and how occupancy rates and occupants will be managed for optimal health and learning.

- **Reopen Facility - Routine Inspections**
- **Assess Exterior and Interior Spaces**
  - Prioritize cleanups and repairs; save list
  - Check building systems:
    - drinking water, air/HVAC, plumbing, electrical, communications
- **Inventory and stock supplies**: products for cleaning and disinfecting, masks and PPE, ventilation/AC filters, water filters, soap, hand sanitizer, paper towels, toilet tissue; HEPA vacuums, mops, cleaning cloths, etc.
- **Facility engineering controls to help stay open**
- **Enhanced ventilation and filtration**
- **Clean and disinfecting**
- **Safer pest control**
- **Track and respond to complaints and illnesses**
  - Update maintenance schedule as needed to address one-time or persistent problems
- **Closures**
  - Unexpected opportunity to address priority repairs
## ASTHMA TRIGGERS IN SCHOOLS

<table>
<thead>
<tr>
<th>Asthma Triggers</th>
<th>Homes</th>
<th>Schools</th>
<th>Communities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Secondhand Smoke</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pests</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Mold</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Pets</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Chemical irritants</strong></td>
<td>x</td>
<td><strong>x</strong></td>
<td></td>
</tr>
<tr>
<td>Outdoor air pollution</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Dust mites</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Cleaning &amp; Disinfecting products</strong></td>
<td>x</td>
<td><strong>x</strong></td>
<td></td>
</tr>
<tr>
<td>Pesticides</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Respiratory infections</td>
<td>x</td>
<td><strong>x</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Fragrances, strong odors</strong></td>
<td><strong>X</strong></td>
<td><strong>x</strong></td>
<td></td>
</tr>
<tr>
<td>Food allergies</td>
<td>x</td>
<td><strong>x</strong></td>
<td></td>
</tr>
</tbody>
</table>
Cleaning with soap and water will decrease the presence of the human coronavirus (SARS-CoV-2) on surfaces and objects, which reduces the risk of exposure. Handwashing with soap and water for 20 seconds deactivates and removes the virus.

Sanitizing lowers the number of germs on surfaces to a safe level, judged by public health standards or requirements. Products used to sanitize are not registered to kill viruses.

Disinfecting deactivates viruses on surfaces, but viruses return every time dirty hands or droplets touch the surface. Not all disinfectants kill the coronavirus. Read and follow all directions exactly, including observing the product “dwell time”.

Avoid asthmagens and chemical irritants: buy safer, low-odor products.

WARNING. Caution on use of foggers and misters. Do not overuse disinfectants. Do not allow children to apply disinfectants or use disinfecting wipes. If your facility has been unoccupied for weeks, the coronavirus will no longer be active. If your school is pressured to use more, check with your public health agency. If vendors are pressuring schools to buy “new” or “emerging” products, schools may save money by checking the EPA N-List * to see if the product is registered as effective against the human corona virus.
**GREEN CLEANING: START-UP TIPS**

**Parents**
- Ask your school facility director or head of maintenance if s/he is now doing green cleaning
- Ask to see a product label
- Talk to other parents and see if they want to learn more and help you

**Classroom Staff**
- Keep classroom easy to clean
- Do not use room deodorizers

**Custodial Staff**
- Identify the worst products you must use
- Read the SDS (Safety Data Sheets)
- Ask your supervisor for safer substitutes
- Ask the vendor for free demonstrations of green cleaning products

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Model Fragrance-Free Policy

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Disinfecting and Sanitizing in Child Care Centers: Model Recommendations from San Francisco Asthma Task Force
Cleaning and Disinfecting

- Inventory all cleaning supplies; restock
- **Cleaning for Healthy Schools**
  - NYS Joint Memo on Cleaning and Disinfecting Appendix C (2020)
  - Washington State Department of Health on Cleaning for Healthy Schools
  - Enhanced Green Cleaning Training Manual (NYS 2010)
- **Disinfectants**: EPA N List (>500)
  - **Safer Disinfectants** *(Responsible Purchasing Network)* (~80)

- Read and follow directions on product labels.
- Children must not use school cleaning and disinfecting products.
CLEANING AND DISINFECTING

New York State Education and Health Joint Memo on Cleaning and Disinfecting Appendix C (2020)

Step 1: Clean: Always clean surfaces prior to use of disinfectants to reduce soil and remove germs

Step 2: Disinfect: Cleaning of soiled areas must be completed prior to disinfecting to ensure the effectiveness of the disinfectant

Examples of frequently touched hard surfaces
- Classroom desks and chairs
- Door handles and push plates
- Kitchen and bathroom faucets
- Light switches
- Buttons on vending machines and elevators
- Shared telephones
- Shared computer keyboards and mice
- Bus seats and handrails.

• Note: Computer keyboards are difficult to clean due to the spaces between keys and the sensitivity of its hardware to liquids.
When to Suspect a School IAQ Problem

• The roof leaks, the building smells damp, or has been flooded
• The building or its floors are newly surfaced, painted, or renovated and have not aired out
• The building is fully carpeted.
• You/your child frequently comes home from school with odd smells on his or her clothing
• You/your child has health/learning problems only in the building and not during days off or in other settings
• Building maintenance and repair are always under-budgeted.

- rhinitis, nasal congestion 1, 2, 3, 4, 6
- nosebleed 4
- pharyngitis, cough 1, 2, 3, 4, 6
- wheezing, worsening asthma 2, 4, 6
- shortness of breath 1, 3, 6
- severe lung disease 1
- red, watery eyes 1, 2, 3, 4, 6
- headache or dizziness 1, 2, 3, 4, 5, 6
- lethargy, fatigue, malaise 1, 2, 3, 4, 5
- nausea, vomiting, loss of appetite 2, 3, 4, 5
- cognitive impairment, personality change 1, 2, 4, 5
- rashes 3, 4, 5
- fever, chills 3, 5
- rapid pulse 2, 5
- retinal hemorrhage 2
- muscle aches 1, 4
- hearing loss 5

1 Sick Building  2 Combustion  3 Biologicals  4 VOCs  5 Heavy Metals  6 Tobacco
Airborne Transmission

- Transmission of SARS-CoV-2 through the air is possible so facility engineering controls will help
- Improving operations of heating, ventilating, and air-conditioning, will help reduce airborne virus particles

Source: ASHRAE, Statement on airborne transmission of SARS-CoV-2, May 2020

Reducing Transmission

- Ventilation and filtration provided by mechanical systems can reduce the airborne concentration of SARS-CoV-2
- Unconditioned spaces can cause thermal stress to people that may be directly life threatening and that may also lower resistance to infection.

Source: ASHRAE, Statement on operation of heating, ventilating, and air-conditioning systems to reduce SARS-CoV-2 transmission, May 2020

Schools Lack of Indoor Air Quality Controls (US GAO)

- HVAC systems in 36,000 buildings should be updated or replaced
- These are only the schools that already have HVAC systems
- No agency at any level in any state routinely monitors environmental hazards or exposures in schools

Source: US Government Accountability Office (GAO), K-12 Education: School Districts Frequently Identified Multiple Building Systems Needing Updates or Replacement, June 2020
ASHRAE Epidemic Task Force: Reopening Schools and Universities checklist (excerpts)

- Review: system design (HVAC), existing Indoor Air Quality complaints; inspect systems
- Upgrade filters (MERV 13 or 14, if equipment allows)
- Air flush all systems prior to school occupancy

If there is no mechanical ventilation: ensure tall windows open top and bottom and are screened; install vents to outside in RN office, lavatories, kitchen, gym; use box fans; use classroom air cleaners

- US EPA Maintaining Healthy Indoor Environments in Schools (2020)
### IS IT COVID-19, THE FLU, A COLD OR ALLERGIES?

<table>
<thead>
<tr>
<th>Symptoms</th>
<th>Coronavirus* (COVID-19)</th>
<th>Cold</th>
<th>Flu</th>
<th>Seasonal Allergies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length of symptoms</td>
<td>7-25 days</td>
<td>Less than 14 days</td>
<td>7-14 days</td>
<td>Several weeks</td>
</tr>
<tr>
<td>Cough</td>
<td>Common (usually dry)</td>
<td>Common (mild)</td>
<td>Common (usually dry)</td>
<td>Rare (usually dry unless it triggers asthma)</td>
</tr>
<tr>
<td>Shortness of breath</td>
<td>Sometimes</td>
<td>No**</td>
<td>No**</td>
<td>No**</td>
</tr>
<tr>
<td>Sneezing</td>
<td>No</td>
<td>Common</td>
<td>No</td>
<td>Common</td>
</tr>
<tr>
<td>Runny or stuffy nose</td>
<td>Rare</td>
<td>Common</td>
<td>Sometimes</td>
<td>Common</td>
</tr>
<tr>
<td>Sore throat</td>
<td>Sometimes</td>
<td>Common</td>
<td>Sometimes</td>
<td>Sometimes (usually mild)</td>
</tr>
<tr>
<td>Fever</td>
<td>Common</td>
<td>Short fever period</td>
<td>Common</td>
<td>No</td>
</tr>
<tr>
<td>Feeling tired and weak</td>
<td>Sometimes</td>
<td>Sometimes</td>
<td>Common</td>
<td>Sometimes</td>
</tr>
<tr>
<td>Headaches</td>
<td>Sometimes</td>
<td>Rare</td>
<td>Common</td>
<td>Sometimes (relates to sinus pain)</td>
</tr>
<tr>
<td>Body aches and pains</td>
<td>Sometimes</td>
<td>Common</td>
<td>Common</td>
<td>No</td>
</tr>
<tr>
<td>Diarrhea</td>
<td>Sometimes</td>
<td>No</td>
<td>Sometimes for children</td>
<td>No</td>
</tr>
<tr>
<td>Chills/repeated shaking</td>
<td>Sometimes</td>
<td>No</td>
<td>Sometimes</td>
<td>No</td>
</tr>
<tr>
<td>Loss of taste or smell</td>
<td>Sometimes</td>
<td>Rare</td>
<td>Rare</td>
<td>Rare</td>
</tr>
</tbody>
</table>

*Your symptoms may vary. **Information is still evolving. **Allergies, colds and flu can all trigger asthma, which can lead to shortness of breath. COVID-19 is the only one associated with shortness of breath on its own.

Sources: Asthma and Allergy Foundation of America, World Health Organization, Centers for Disease Control and Prevention.
WHAT TO ASK YOUR SCHOOL ABOUT REOPENING

1. **Indoor Air Quality.** Do you have a written plan for enhancing ventilation at school that includes assessing the system, upgrading air filters, flushing the air out of the system before occupancy? If you do not have a mechanical ventilating system, do you have air cleaners in classrooms and ensure that all classroom windows can open?

2. **Drinking Water.** Did you consult with public health on reopening closed water systems?

3. **Cleaning and Disinfecting.** Do you have a written plan for cleaning and for disinfecting?

4. **Distance learning and social distancing.** Is there a plan for how to provide accessible e-learning? A plan for social distancing inside schools?

5. **Illnesses.** Is the nurse/clinic office ventilated to the outside? Do you have a written plan for managing new onset illnesses in school occupants and a plan for reporting absenteeism and new illnesses to public health officials?

6. **Masks and face coverings.** Do you have a written plan that requires masks and face coverings, and also addresses how sensitive and or special needs occupants can be exempted?

7. **High risk children and staff.** Do you have a written plan on how to accommodate the children and staff with special needs and or a plan for children whose families/guardians or households do not have the capacity for distance learning?

8. **Supplies and staffing.** Do you have sufficient stockpiles of masks and PPE, water and air filters, and cleaning and disinfecting products to last one full semester?
SELECTED RESOURCES

- **US EPA, Healthy Schools/Healthy Children** (IAQ, IPM, Radon, Mold, Design, Chemical Management, Water, Asbestos, LSRR, Siting)

- **Schools for Health**, Harvard TH Chan School of Public Health (2017)


- **Towards Healthy Schools: Reducing Risks to Children** (HS Network, 2016)

- **Establishing Environmental Public Health Systems for Children at Risk or with Suspected Exposures**, American Public Health Association policy # 201713

- **Pandemic v. Schools: National Call to Action** (CHS - HS Network and NJ WEC, 2020)

- **COVID and the Education Sector: Early Lessons from the Pandemic**, APHA policy Oct 2020
HEALTHY SCHOOLS NETWORK

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... for children ... health ... environment ... education ... and communities ... since 1995 ...

Honors: APHA David P Rall Award for contributions to public health through science-based advocacy; American University William K Reilly Award for National Environmental Leadership; US EPA National Recognitions - 2005, 2007, 2017; Green Seal Outstanding Partner Award; Collaborative for High Performance Schools Green Apple Award, among others.