Teachers Want to Be in the Classroom and Students Need to Be.

What's Your Playbook for Making It a Safe Return?

According to the **National Center for Education Statistics,** there were 130,930 K-12 Schools in the U.S. in 2017-2018 and in the Fall of 2019, those schools had 50.8 million students in attendance.[1] Now faced with the most challenging crisis K-12 has even known, school administrators must respond to the rapidly-changing environment brought on by the COVID-19 pandemic to protect these students and their staff and ensure that measures are taken to increase community confidence for a healthy and safe return to their facilities.

Experts from the University of Minnesota's **Center for Infectious Disease Research and Policy (CIDRAP)**[2] and organizations like **McKinsey & Company**[3] identified focus areas for a safe return to school. Below is a playbook for use in developing your own plan, dependent on where you are in the process.

The 4 key areas for consideration are:

1. Cleaning and sanitizing the environment for return
2. Protecting the school environment
3. Active and passive measures to provide continuous protection
4. Engineered Infection Protection (EIP) Planning for a potential COVID-19 event

CLEANING AND SANITIZING

Pathogen mitigation solutions include the use of cleaning technologies for suspected or confirmed contamination. There are several pathogen mitigation measures you can use to clean and sanitize:

- Ultra-Low-Volume (ULV) Fogging
- Electrostatic Fogging
- In-Space Portable Ultraviolet Germicidal Irradiation (UVGI)

PROTECTING THE SCHOOL ENVIRONMENT

Once your facility has been properly cleaned and sanitized, it's important to utilize solutions that reduce the ongoing risk of recontamination as a result of re-entry and normal occupant use. Critical measures to reduce this risk include:

- Signage promoting proper health etiquette such as mask wearing, physical distancing, and frequent hand washing
- Use and availability of PPE supplies

- Installation of thermal temperature detection devices at facility entrance points
- Installation of physical barriers (such as sneeze guards) at vestibules, in main offices and areas for large groups, and in school nurse offices
- Adjustments to the spacing and layout of classroom and school nurse office furniture for physical distancing
- Ongoing solutions focused on new, enhanced cleaning procedures

ACTIVE AND PASSIVE MEASURES TO PROVIDE CONTINUOUS PROTECTION

Indoor Air Quality (IAQ) is known to have a major impact on occupant health, comfort, productivity, and quality of life and can be a super-highway to transferring virus' between individuals and adjacent spaces. Under the right conditions, viruses can aerosolize as they are expelled from infected individuals. Once airborne, they can live for several hours and even be transferred through Heating, Ventilating and Air Conditioning (HVAC) systems. Filters alone will not stop them from being distributed to other spaces.

According to a research letter published this spring in *Environment International*, the spread of COVID-19 through aerosols, or airborne contamination inside public buildings could be suppressed using engineering controls such as effective ventilation, possibly with air filtration and disinfection and avoidance of air recirculation and overcrowding. The group of researchers responsible for this study reported that the evidence is sufficiently strong for aerosols as an important mode of coronavirus transmission, most of which occurs in indoor environments, and that measures employed to slow the spread are often easily implemented at relatively low cost.[4]

Several measures can be implemented to provide continuous protection for the long-term, focusing on two high risk areas:

1. Airborne contamination control measures might include:

- Retro-commissioning the HVAC systems Implementation of UV-C lighting for disinfection after hours
- Installation of ionization filtration units in HVAC systems
- Improvements to filtration
- Humidification
- Increased outside air ventilation
- Ultraviolet Germicidal Irradiation (UVGI) in HVAC Units & Upper Air Zones
- Better managed airflow
- Variable-frequency drives (VFD)

Buildings have natural high-traffic areas, and as a result, high touch surfaces. With viruses like SARS, MERS and COVID-19, it's known they can live up to 72 hours on stainless steel and plastic and 96 hours on glass.

2. Surface contamination control measures might include:

- Anti-microbial surface coatings on doors/doorknobs, push bars, railings, faucets, bathroom fixtures, drinking fountains, and playground equipment
- Use of touchless control automation
- Use of materials, like copper, that shorten the life of the virus on high touch areas

ENGINEERED INFECTION PROTECTION (EIP) PLANNING

Preparedness planning using EIP solutions for suspected or confirmed pathogens, both now and in the future, is key to building safe and productive facility environments. To be most effective, it's important to identify areas of risk first and then develop EIP plans using a selection matrix to prioritize based on asset condition, funding opportunities, and overall project cost.

The complexity of addressing current health and safety guidelines should not be underestimated and your EIP plan should include the following:

- Containment (designated isolation areas)
- Exit strategies (to limit and remove exposure)
- Pathogen mitigation and cleaning protocols both in the short and long-term
- Contact tracing program
- *Detailed communication plan to parents and staff outlining the important actions you have taken to facilitate a safe return for both students and staff*

Sources

[1] Education Week, National Center for Education Statistics, https://nces.ed.gov/, January 3, 2019

[2] Mary Van Beusekom, "Indoor spread of COVID-19 can be lessened, experts say", CIDRAP News, University of Minnesota's Center for Infectious Disease Research and Policy (CIDRAP), May 28, 2020

[3] Advanced Electronics Practice, McKinsey & Company, "Can HVAC systems help prevent the transmission of COVID-19?", July 11, 2020

[4] "How can airborne transmission of COVID-19 indoors be minimised?" Environmental International Volume 142, September 2020, 105832

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