KEYS TO COMPREHENSIVE HEALTH AWARENESS IN YOUR BUILDING

Five key factors prevent spread of infectious disease.

By Jonathan Antar

COVID-19 and many other viruses are thought to spread mainly from person to person through respiratory droplets and aerosols in the air. Studies suggest that emissions from people can span a room and be pulled into air circulation systems in just a few seconds. A strong air-monitoring and air-management strategy can make the difference between a healthy environment and one in which disease easily spreads.

KNOW THE RISK FOR THE SPREAD OF INFECTIOUS DISEASE.

The HALO Smart Sensor is a key component in the solution to providing a low-risk environment. HALO monitors Carbon Dioxide (CO_2), Particulate, Humidity, Volatile Organic Compounds (VOCs) and Nitrogen Dioxide (NO_2) in the air. These five key factors make up the HALO Health Index, which can be used to identify the risk level of spreading infectious diseases:

- **Key Factor #1: Don't breathe someone else's air.** Elevated carbon dioxide (CO_2) levels are a direct indicator of inadequate ventilation. Rising carbon dioxide levels increase the probability of spreading infections diseases like COVID-19 and influenza. HALO is able to determine the percentage of air that has been exhaled by one or more people and then inhaled by another person by identifying corresponding CO_2 levels.
- **Key Factor #2: Remove the vehicles that viruses use to travel from person to person.** Particulates in the air can contain payloads of a virus. The further they penetrate the respiratory system, the more effectively the virus is delivered. Vaping, dust, smoke, pollen, sneezing and coughing are just some of the ways that particulates can be introduced into the air.
- **Key Factor #3: Protect your lungs from irritation.** Volatile Organic Compounds (VOCs) are emitted as vapors from certain solids or liquids and include a variety of chemicals. VOCs are seen often in cleaning supplies, adhesives, paints and air fresheners. These are irritants to your respiratory system and can make a person more susceptible to infection. With increased cleaning frequency and alternate cleaning processes, it can be easy to overlook the effects of having these chemicals in the air we breathe.
- **Key Factor #4: Maintain ideal relative humidity:** Relative humidity (RH) influences how long particulates remain suspended and how long a virus can survive in the air. An RH below 40% allows for particulates carrying a virus payload to remain suspended for longer periods of time. Similarly, an RH above 60% allows a virus to live longer in the air. Keep the RH within the 40%-60% range in indoor spaces to reduce infection.
- **Key Factor #5: Protect your lungs and circulatory system:** Nitrogen dioxide (NO_2) is an ambient trace-gas caused by urban combustion. According to the EPA, breathing air with a high concentration of NO_2 can irritate airways in the human respiratory system. Such exposures over short periods can aggravate respiratory diseases, particularly asthma,

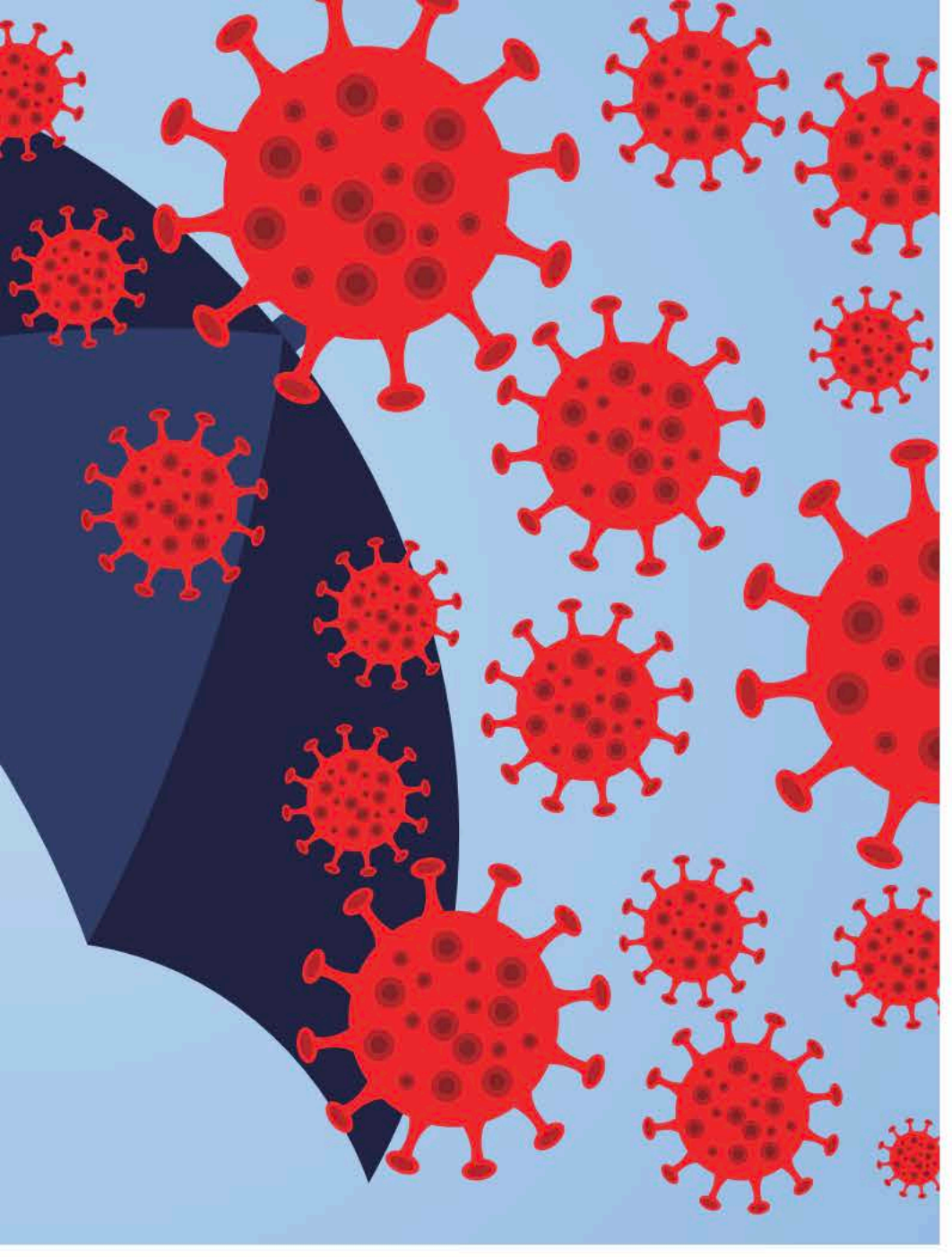

PHOTO CREDIT WAN WEI

leading to respiratory symptoms (such as coughing, wheezing or difficulty breathing), hospital admissions and visits to emergency rooms. Long-term exposure to NO_2 may cause a wide spectrum of severe health problems such as hypertension, diabetes, heart and cardiovascular diseases and even death.

The HALO Smart Sensor can measure for all of these factors and present results to occupants of a building in an easy-to-read and easy-to-classify Health Index dashboard. HALO Smart Sensors can be connected to a Building Automation System (BAS) over its BACnet interface to instruct the HVAC system to open its dampers and allow more fresh air into the room when levels begin to rise. In the event that the building's systems were to fail, HALO will notify the facilities team to take corrective action.

The HALO Health Index empowers you to capture complete health awareness and take a proactive approach to remediation. Know the risk for the spread of infectious disease.

Jonathan Antar brings a unique proficiency to the IPVideo team, as he is well-versed in security technology, building structures and industry best practices. Jonathan has been the Director of Engineering for a security integrator with 10+ years' experience specifically in system design and engineering. This long-standing experience and training of security technology systems provides Jonathan with the expertise to dissect the composition of systems that are relied upon for life safety.

Sources: https://www.epa.gov/no2-pollution/basic-information-about-no2