




We will  
begin in  
just a few  
minutes.

## Welcome to ABM's Making Sense of It All. Here's what you should know about this Live Event...

- Everyone but the presenters will be muted during the meeting.
- If you have questions during the presentation, we encourage you to enter them into the Q&A feature. We will be taking questions at the end.
- If your screen pauses during the presentation, click on it or touch the screen to resume.
- If you can't hear us, check that your audio / speakers are not muted.



November 2021

# Making Sense of It All: Regulations, Responsibility and Resiliency in 2022 and Beyond

ABM EnhancedClean and EnhancedFacility



# Our Expert Panel



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# Current State of the Pandemic



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# Current state of the pandemic



## Gearing up for re-occupancy

- While full re-occupancy has not yet occurred in many markets and industries, there is anticipation of an up-tick in the first quarter of 2022



## Variants are keeping case numbers high

- New variants of the virus are present in the United States; variants can spread more easily and are more resistant to vaccines



## Vaccines are being distributed

- Vaccines are being distributed, but due to people opting out the vaccine, it is unlikely we will reach herd immunity
- Biden Administration and OSHA encourage widespread vaccination, but the mandate for employers >100 employees is temporarily halted



## Entering into flu season

- Upcoming influenza season will coincide with COVID-19 pandemic
- There is much overlap between the symptoms of influenza and COVID-19, making it difficult to distinguish between the two

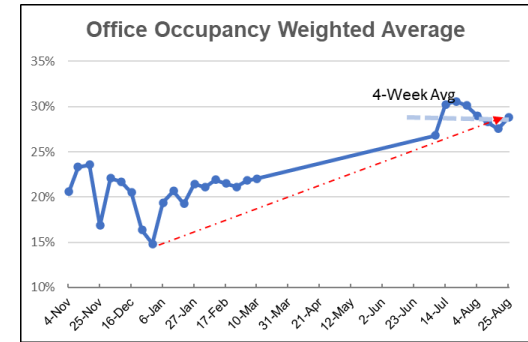
There is still a lot of uncertainty around COVID

“We've just got to concentrate on continuing to get those numbers down, and not try to jump ahead by weeks or months and say what we're going to do at a particular time” - Dr. Fauci

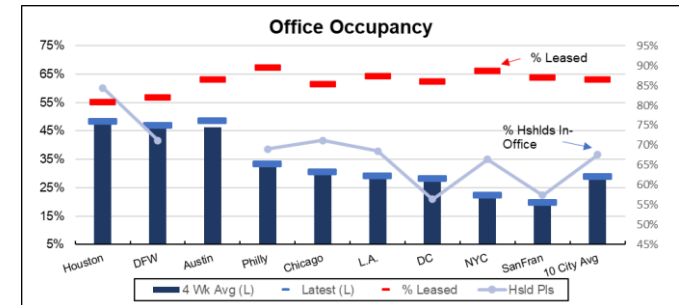
# Recent report highlights positive indicators for the future of CRE health, albeit a bit delayed, with re-entry uptick in Q1 2022

A recent report published by Cushman and Wakefield highlighted five positive indicators:

- 1 The economy has recovered **76%**, or 2.2M of the 2.9M office jobs, lost in the pandemic. At the current pace, the U.S. will return to pre-pandemic levels of office employment in the **first quarter of 2022**
- 2 Office lease duration, of leases signed in the first half of 2021, have **returned to pre-pandemic norms**.
- 3 Leasing activity was up **18% from the 1Q21** and up **28% YOY from Q2 2020**.
- 4 Office tour activity has improved every month in Q1 2021 and has reached **80% to 90% of pre-pandemic levels** the last 5 months in a row
- 5 Much of the reason for elevated vacancy in many markets is due to **new construction**, a sign of strength in the CRE market prior to the pandemic. When pandemic subsides the CRE **market should rebound**



Most companies are keeping existing offices open, so occupancy is likely to remain close to current levels through the winter

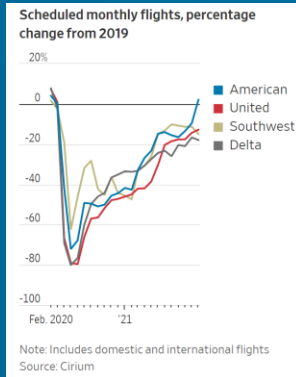


The cities are listed in order of highest occupancy to lowest, with the 9-City Average appearing at the end; Texas markets remain highest around 48% occupancy and San Francisco remains the lowest at 20% occupancy



## Aviation | Air travel has regained momentum, and will only increase with the holidays and relaxed restrictions

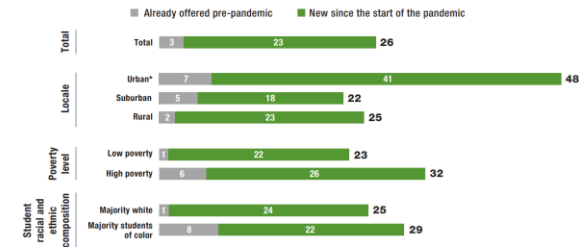
- ✓ After 20 months, the U.S. ended the ban on travelers from 33 countries, and many airlines are ramping up flights to meet demands
- ✓ Aviation has seen a sharp increase in travelers in 2021
- ✓ One major airline is already back to its 2019 flight numbers, and the other three major airlines not far behind



## Education | In-person learning has mostly returned to pre-pandemic levels

- ✓ Virtual learning is here to stay, but it will not be a replacement for in-person learning, rather it will work as a hybrid model to supplement a primarily in-person learning environment\*
- ✓ 97% of schools are back to offering fully in-person learning
  - The 3% that are not fully in-person offer a hybrid environment
  - Only 6% of students said they would opt-in for a fully virtual learning environment if one was offered

Percentage of Districts Planning to Run a Virtual School in 2021–2022 and Whether This Practice Is New Since the Pandemic Began



NOTES: This figure depicts response data from the survey question: "Does your [district/CMO] plan to run one or more virtual schools in 2021–2022?" Respondents' answers to the survey item were supplemented with data from the 2019–2020 Common Core of Data from the National Center for Education Statistics (NCES, 2021) (n = 291). An asterisk (\*) indicates that the percentage of district leaders in that subgroup who indicated that they would run a virtual school in 2021–2022 (regardless of whether it is new since the start of the pandemic) is statistically significantly different (p < 0.05) from the overall percentage of district leaders. Bars may not sum to total because of rounding.

# COVID has caused a shift in employee mindset, but all the information and misinformation in the media makes it difficult for employers to identify a path forward to meet employee needs



There is a **shift towards wellness** as COVID-19 highlights the need to provide facility occupants with a safe environment



Services, which have been viewed as an operational expense, must be positioned as a **critical** component to employee health and part of the overall strategies to **minimize both airborne and surface transmission risks.**



**Hyper-awareness of the safety** in the built environment, including **indoor air quality** issues as well as the overall health of the facility.



Even with COVID-19 vaccines available, we all should consider looking for a facilities partner to provide long-term solutions. Communication will be key to **occupant confidence.**





We have members of ABM's Expert Advisory Council on to help break through the clutter, provide clarity, and answer your questions



The image features a central illustration of a woman with dark hair, wearing a dark blue top with a white collar, looking distressed with her hands on her head. She is positioned behind a grey laptop. The background is a solid blue color, populated with various icons and speech bubbles. The speech bubbles contain the following text:

- When should we reenter?
- How do I know it's clean?
- Is it safe?
- Should we require vaccines?
- How is our air quality?

The icons include:

- A magnifying glass.
- An envelope with a cursor arrow pointing to it.
- A vacuum cleaner.
- A yellow cloud.
- A stack of books.
- A play button icon on an orange square.
- A car.
- A person icon in a yellow circle above a cloud icon in an orange box.
- A car.
- A play button icon on an orange square.
- A speech bubble.
- A person icon in a blue circle.
- A globe with a location pin.
- A person icon in a blue circle.
- A location pin on a blue map.
- A wrench and hammer.
- A leaf.
- A keyboard.
- A speech bubble.
- A group of three people icons.
- A cursor arrow.
- A gas pump and a car.
- A cloud.
- A speech bubble.
- A play button icon on an orange square.

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# Vaccines, Variants, and Influenza



**RUTH CARRICO**

Executive Director, Norton Infectious  
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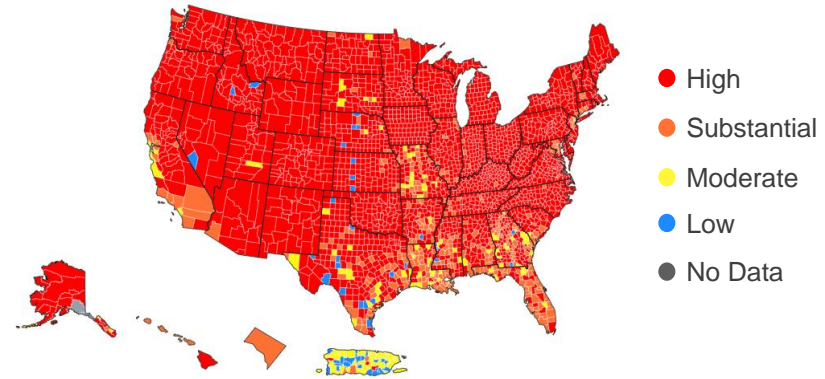
# While things are looking more positive, COVID is still very much a threat and requires our attention

Multiple times throughout the pandemic we have seen numbers drop, only to surge again

## Current state of COVID\*

- Only ~55% US population is fully vaccinated
  - There are still 70M eligible Americans who are unvaccinated
- >107,000 new COVID cases reported daily
- Hospitalizations are decreasing, but still ~71,000 hospitalized patients
- 1,800 daily American deaths from COVID
- Threat to children remains “exceptionally high”, now making up almost 27% of all new cases reported nationwide

## Community Transmission in US by County



According to the CDC, >85% of US counties are considered high transmission risk

\* Statistics from beginning of October 2021

Source: [The US Is Turning A Corner In Its Fight Against COVID-19, Fauci Says, But It's Still Too Early To Let Our Guard Down – CBS Baltimore \(cbslocal.com\)](#)

Source: [CNN - Breaking News, Latest News and Videos](#)

Source: [COVID Data Tracker Weekly Review | CDC](#)

Source: [CDC COVID Data Tracker](#)

# COVID variants are a major factor when predicting future COVID cases and surges

**Are the COVID variants more transmissible than the original strain?**

- Variants are more easily transmitted because the virus is able to infect more efficiently. This means that people can become infectious earlier and even before they exhibit symptoms.
- Ease in infection means more viral particles that may impact environmental contamination, underscoring the importance of a coordinated infection control approach

**Are new COVID variants going to emerge in the future?**

- Yes, viruses change over time
- Where variants occur, unvaccinated people are at the highest risk of promoting viral variant development. So, as long as there are large numbers of unvaccinated people, more COVID variants will emerge

There is no way of telling when the next COVID variant will emerge and what its transmissibility will be

# Vaccination rates are increasing and vaccine mandates are being instituted, but vaccine efficacy is diminishing with COVID variants

**Are the vaccines effective against the current COVID variants?**



Manufacturer	Effectiveness in reducing risk of hospitalization due to COVID-19 initially	Effectiveness in reducing risk of hospitalization due to COVID-19 after Delta variant
Moderna	97%	92%
Pfizer	96%	87%
Johnson & Johnson	90%	80%

Manufacturer	Effectiveness in preventing death due to COVID-19 initially	Effectiveness in preventing death due to COVID-19 after Delta variant
Moderna	96%	92%
Pfizer	96%	88%
Johnson & Johnson	89%	80%

**How will boosters improve vaccine efficacy?**



- Booster / 3<sup>rd</sup> dose is designed to boost the immune response and provide longer term immunity. After a booster dose the antibody levels increase significantly even to a greater degree than after the 1<sup>st</sup> and 2<sup>nd</sup> dose
- FDA has recently approved the booster, and CDC guidelines have outlined groups for whom booster doses may be provided. These include individuals at higher risk for work-related exposure such as healthcare workers and residents in long term care facilities.

# We are coming into flu season, and it is going to coincide with the ongoing COVID pandemic

## *Influenza facts*

- ✓ Globally, influenza accounts for tens of millions of infections and hundreds of thousands of deaths annually
- ✓ Two characteristics of influenza make them a particularly formidable and constant threat to public health: 1) Broad host range, 2) Ability to reassort their genomes
- ✓ Last two years of influenza were more mild than years past, potentially because we were in more of a state of lockdown due to COVID
  - Often more severe flu seasons follow light ones

## *Implications for employers*

- ✓ Many employees are taking extra precautions when sick to be sure they are not spreading germs
  - This leads to increased time off work and less productivity for the organization as a whole

Source: [Even in Shadow of COVID-19, Influenza Poses Pandemic Threat \(infectioncontroltoday.com\)](https://www.infectioncontroltoday.com)

Source: <https://www.nytimes.com/article/flu-season-symptoms.html>

Source: <https://www.cdc.gov/coronavirus/2019-ncov/downloads/stop-the-spread-of-germs.pdf>

## *The best ways to prevent the spread of influenza & COVID*

- **Vaccination** is the single most important preventive strategy
- **Wear masks** to prevent contact between virus and respiratory system
- **Remove viral particles** from surfaces through frequent cleaning and disinfection of high touch point surfaces
- **Dilute viral particles** in the air so there are fewer particles
- **Improve ventilation** so more outside air enters an environment to dilute the proportion of infectious particles in the air
- **Seek medical advice** if symptomatic or if known exposure occurred
- **Socially distance** when possible
- **Stay home** when ill
- **Do not touch** eyes, nose, or mouth



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# Regulatory and Governing Bodies



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Chair of the University of Michigan  
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# Expectation around occupant health and safety is continually being redefined, and there is no going back

People's view of safety is often binary, leading either to increased trust or no trust at all. According to Deloitte, key priority areas of customer and employee trust include:

## 1 Safety essentials

- ✓ As the new table stakes, **64%** of employees expect “regular cleaning of equipment and shared space by a cleaning service,” and **60%** expect “regular spraying/fogging to disinfect shared furniture spaces”
- ✓ **54%** of customers valued “certification of cleanliness from a trusted authority”

## 2 Heightened transparency

- ✓ **83%** or more of employees found visible mechanisms (e.g. someone onsite cleaning while they are in the office) to be most or somewhat important to them
- ✓ **82%** of customers felt that companies must take extra steps to ensure the safety of their employees



*It is hard to earn trust, but it is easy to lose it:*

- ✓ *Be proactive with your cleaning and disinfecting regiment*
- ✓ *Confidently communicate it to show your customers and employees that you care about their health and well-being*





## Biden's & OSHA's COVID Control Strategies



### What

There is a shift for more support in improving ventilation and indoor air quality beyond vaccination / masking policies that are under scrutiny

### Who

Targets densely populated occupied spaces; especially relevant for education industry

### Results

1. Improve air mixing
2. Increase outside air
3. Increase air filtration and disinfection

### Implications

These mandates are an important signal for the need for IAQ programs and improved ventilation



## ASHRAE newsletter survey highlighting importance of IAQ

### What

A survey in ASHRAE newsletter conducted by Vaisala, a world-leading measurement technology company, in summer 2021

### Who

Survey included >4,000 respondents in the USA, France, Germany, & Finland

### Results

1. More than one third of the respondents stated they are concerned about the indoor air quality of their place of work
2. Majority of people want more accurate data on indoor air quality

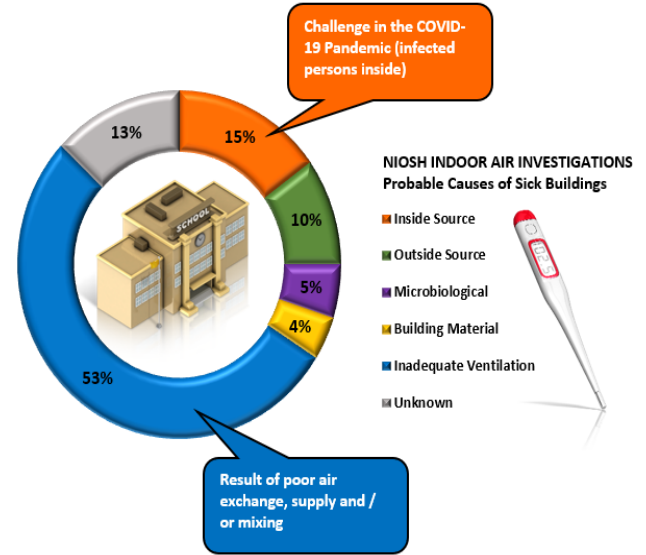
### Implications

This survey shows strong support for IAQ programs

# Indoor Air Quality (IAQ) is critical to keeping facilities safe for occupants; poor ventilation increases the risk of virus transmission

## Poor Ventilation + Viral Sources = Transmission Risk

- In studies of unhealthy facilities, poor ventilation is the most common issue per the CDC and the National Institutes of Occupation Safety and Health (NIOSH)
- The need for ventilation has heightened in the COVID-19 pandemic
  - ✓ We often do not have complete control over viral sources entering
  - ✓ We have the technology for improved mixing, filtration and disinfection
- Regulatory guidance and mandates support 100% air change and ventilation, allowing for 100% Outside Air (OA) supply &/or air disinfection technology



## 7 measurable indicators of facility wellness that facility managers have control over



Particulate concentration  
(viral aerosols)



Air volume, mixing, and  
balancing



Carbon dioxide (CO<sub>2</sub>)  
concentration



Carbon monoxide (CO)  
concentration



Volatile organic compound  
(VOC) concentration



Temperature



Relative humidity

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# Indoor Air Quality Technologies








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Vice President of Engineering; PE, EMP,  
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*Specialty: Engineering*

# A variety of technologies claim to improve air cleaning; after a careful vetting process, ABM deemed the following technologies fit for use to improve Indoor Air Quality (IAQ)

## *Evaluated technologies focusing on key criteria...*

 <b>Efficacy</b>	Is the product <b>effective in killing or inactivating COVID-19</b> or other emerging pathogens?
 <b>Safety</b>	Is the product <b>safe to install, deploy, and use</b> ? Are there any safety impacts for facility occupants, the public, or our service workers?
 <b>Perception</b>	Does the product <b>instill confidence in building occupants</b> that they are safe to enter the facility?
 <b>Efficiency</b>	Will this product help <b>improve the efficiency</b> at which cleaning activities can be performed?
 <b>Cost Impact</b>	What are the <b>cost implications</b> of this product and is it <b>reasonable when accounting for its efficacy</b> , efficiency, and perception impact?

## *... and selected the below technologies for air cleaning*





### *HVAC Technologies:*

- Bipolar Ionization
- Hydrogen Peroxide
- UV-C HVAC systems / UVGI
- MERV 13 filtration or equivalent

### *Lighting Technologies:*




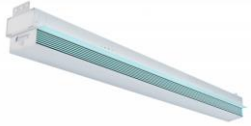

- Far-UV downlights
- Air Troffers
- Portable / Mobile
- Upper Room UV-C
- LED

# HVAC | Vetted and approved Enhanced Facility technologies

Technology Category	Technology Type	Technology Description	Ideal Use Cases
HVAC	Bipolar ionization	<ul style="list-style-type: none"> <li>Bipolar Ionization works by releasing positive and negative ions that are generated by the ionizer and then sent into the space via a fan (either in the HVAC or a portable unit)</li> <li>The ions neutralize the particles in the air by attaching themselves to the molecule and making it heavier and bringing it out of the breathing zone</li> </ul>	
HVAC	Hydrogen Peroxide (H <sub>2</sub> O <sub>2</sub> )	<ul style="list-style-type: none"> <li>H<sub>2</sub>O<sub>2</sub> systems produce ions by reflecting UV light on a surface with a photocatalytic coating</li> <li>The ions disperse in the ventilated spaces and attach to particles in the air (including pathogens); ions continue to disinfect surfaces</li> <li>Higher maintenance cost than Bipolar Ionization, but a more robust technology</li> </ul>	
HVAC	UV-C HVAC systems / UVGi (ultraviolet germicidal irradiation)	<ul style="list-style-type: none"> <li>UV light fixtures installed in the HVAC systems</li> <li>Most effective when the light is directed at drain pans and cooling coils to get sufficient dwell time to irradiate pathogens in the air stream</li> </ul>	
HVAC	Filtration	<ul style="list-style-type: none"> <li>We recommend MERV 13 (minimum efficiency reporting values) or equivalent (MERV 6-12 are what are most commonly in place)... this is the best balance for efficiency boost versus increased cost and pressure drop</li> <li>HEPA (high efficiency particulate air) is a specific type of air filter that is above minimum requirements; it removes 99.97% of airborne particles, but it can be more expensive to maintain than other air filters and may adversely affect design air flows</li> </ul>	

- Space types:
- Whole facilities
  - Specific rooms
  - Often good for larger spaces
- Facility types:
- CRE
  - Schools / universities
  - Hospitals
  - Airports
  - Manufacturing

# Lighting | Vetted and approved Enhanced Facility technologies

Technology Category	Technology Type	Technology Description	Ideal Use Cases
Lighting	Far-UV downlights (222nm)	<ul style="list-style-type: none"> <li>Far-UV downlights inactivate pathogens with no harm to exposed human or animal skin and eyes</li> <li>Installed in the ceiling to cover the desired space</li> <li>Effectiveness is dependent on sufficient airflow and the distance of surfaces from the light source</li> </ul>	 <ul style="list-style-type: none"> <li>High use areas (e.g., restroom, kitchens, elevators)</li> <li>Facilities with low ceilings (&lt; 7 ft)</li> </ul>
Lighting	Air troffers	<ul style="list-style-type: none"> <li>Circulate air through a sealed chamber inside the light fixture, which is treated with high-intensity UV-C light to inactive bacteria and pathogens</li> </ul>	 <ul style="list-style-type: none"> <li>Classrooms, offices, shorter ceiling spaces</li> </ul>
Lighting	Mobile / portable	<ul style="list-style-type: none"> <li>UV-C devices that are mobile and can be moved from room to room; require labor to move the device from one room to another</li> <li>Uses UV-C (254 nm) light, so cannot be used with occupants in the room</li> <li>UV rays disinfect by line of sight, so any surfaces that UV energy does not hit will not be disinfected</li> </ul>	 <ul style="list-style-type: none"> <li>Specific rooms requiring disinfection at different times</li> <li>Budget-friendly</li> <li>Used on an as-needed basis</li> </ul>
Lighting	Upper room UV-C (254 nm)	<ul style="list-style-type: none"> <li>Emit UV-C light into the top portion of a room, above occupants' heads, which mixes with the rest of the air in the room; works best when used in conjunction with a fan to increase air movement</li> <li>Must take into account several factors when installing, including intensity, distance, time; should be installed above 7 ft</li> </ul>	 <ul style="list-style-type: none"> <li>Require high ceilings (&gt; 7 ft)</li> <li>Target larger spaces</li> </ul>
Lighting	LED (280-405 nm)	<ul style="list-style-type: none"> <li>Higher wavelength of indirect light that provides disinfection</li> <li>Pendant lighting for higher ceilings, works like Upper Room with UV shining up but is commonly configured to use standard LED downlights to add illumination (dual-purpose)</li> <li>Lower maintenance costs</li> </ul>	 <ul style="list-style-type: none"> <li>Require high ceilings (&gt; 7 ft)</li> <li>Target larger spaces</li> </ul>

# ABM developed a disinfection comparison chart to help align on which solution is right-sized for a particular facility or client need



CRITERIA		Technology Categories Approved by ABM*							Comparison
Technology Type	IMPORTANCE of CRITERIA	Bipolar Ionization	Hydrogen Peroxide	Upper room / UV-C HVAC systems / UVGI (254 nm)	Downlights - Far-UV (222 nm)	HEPA or MERV 13+ Filtration	Portable / Mobile Air Cleaners	LED (280-405 nm)	MERV 6-12 Filtration - Common
<b>Technology Mechanism of Action</b>	Mechanism impacts occupant safety and disinfection efficacy	Ionization	H2O2	Ultraviolet Irradiation	Ultraviolet Irradiation	Filtration Media	Filtration & Ionization	Ultraviolet Irradiation	Filtration Media
<b>Air or Surface Disinfection</b>	The application determines whether both are needed	Both	Both	Both	Both	Air	Air	Air	Air
<b>Effective For Inactivating Viruses</b>	Physically trapping with filters is different than inactivation	●	●	●	●	●	●	●	●
<b>Effective Against Bacteria and Mold</b>	Physically trapping with filters is different than kill	●	●	●	●	●	●	●	●
<b>Effective Against Gases and Odors</b>	Gases and odors are often the first motivation to address IAQ	●	●	●	●	●	●	●	●
<b>Effective Against Dust/Particulates</b>	Viruses are aerosols that act like dust particles	●	●	●	●	●	●	●	●
<b>Below Regulatory Limits for Ozone or Safety Hazards</b>	Ozone is a health hazard and a common by-product of some unapproved technologies	●	●	●	●	●	●	●	●
<b>Units Applied In HVAC Systems, Portable or Stationary Single Room</b>	The application determines which capability is needed	Both	Both	Both	Room	HVAC and Portable	Portable	Both	HVAC and Portable
<b>Installation Effort Level</b>	Based upon the time and complexity of the installation	Low	Low	Moderate - High	Moderate - High	Moderate	Moderate	Low	Low
<b>Maintenance Requirement Level</b>	Based on replacement part cost and frequency	Low	Moderate	Moderate - High	Moderate - High	Moderate	Moderate-High	Low	Moderate
<b>Energy Savings</b>	The time for return on investment can be impacted by energy efficiency	High	Moderate	Low	Low	Low	Low	High	Low
<b>Return- On-Investment Level</b>	ROI takes into account installation, operational and maintenance costs	High	Moderate	Low	Moderate	Moderate	Low	High	Low

\* ABM's Expert Advisory Council has also considered a wide range of additional technology categories and decided against their use due to occupant safety and/or viral inactivation considerations. Note that not all vendors in the above categories are effective and/or safe.

# Living Labs overview



Purpose	Details	Objectives	Methods
Evaluate the occupant safety of each technology	When: Dec 2021 – Jan 2022	Evaluate the indoor air quality and ventilation system impact of HVAC optimization	Visual assessment and HVAC evaluation
Evaluate each technology's ability to effectively improve overall indoor air quality	Where: Fully functioning ABM office where we can run simulations	Evaluate the impact of NPBI on the IAQ parameters with special interest directed toward particulate matter, VOCs, and ozone	Testing according to ASHRAE 55 &/or 62.1
Better understand and assess financial return on investment	Who: ABM Expert Advisory Council and technology vendors	Validation and comparison of performance of continuous IAQ monitoring systems as compared to the real-time and laboratory analyzed IAQ measurements for VOCs, particulate matter, carbon dioxide, and ozone	Ventilation rates Airborne particulate matter Ozone measurements Volatile organic compounds

*Results of Living Labs will be shared during next client webinar in Q1 2022*



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# Importance of Surface Disinfection



**CATHY CAMPBELL**

National Director of Service  
Delivery (B&I);CHESP;CMIP

*Specialty: Healthcare*

# The CDC still supports surface disinfection to help reduce the risk of virus transmission; sustained, proactive cleaning and disinfection is always important

## Common questions:



The CDC says surface transmission of COVID-19 is not a concern. Why should we continue disinfecting and/or cleaning high-touch surfaces?



The CDC says we can clean with soap and water. Why should we continue disinfecting?



The CDC says that electrostatic spraying is not recommended. Should we stop?

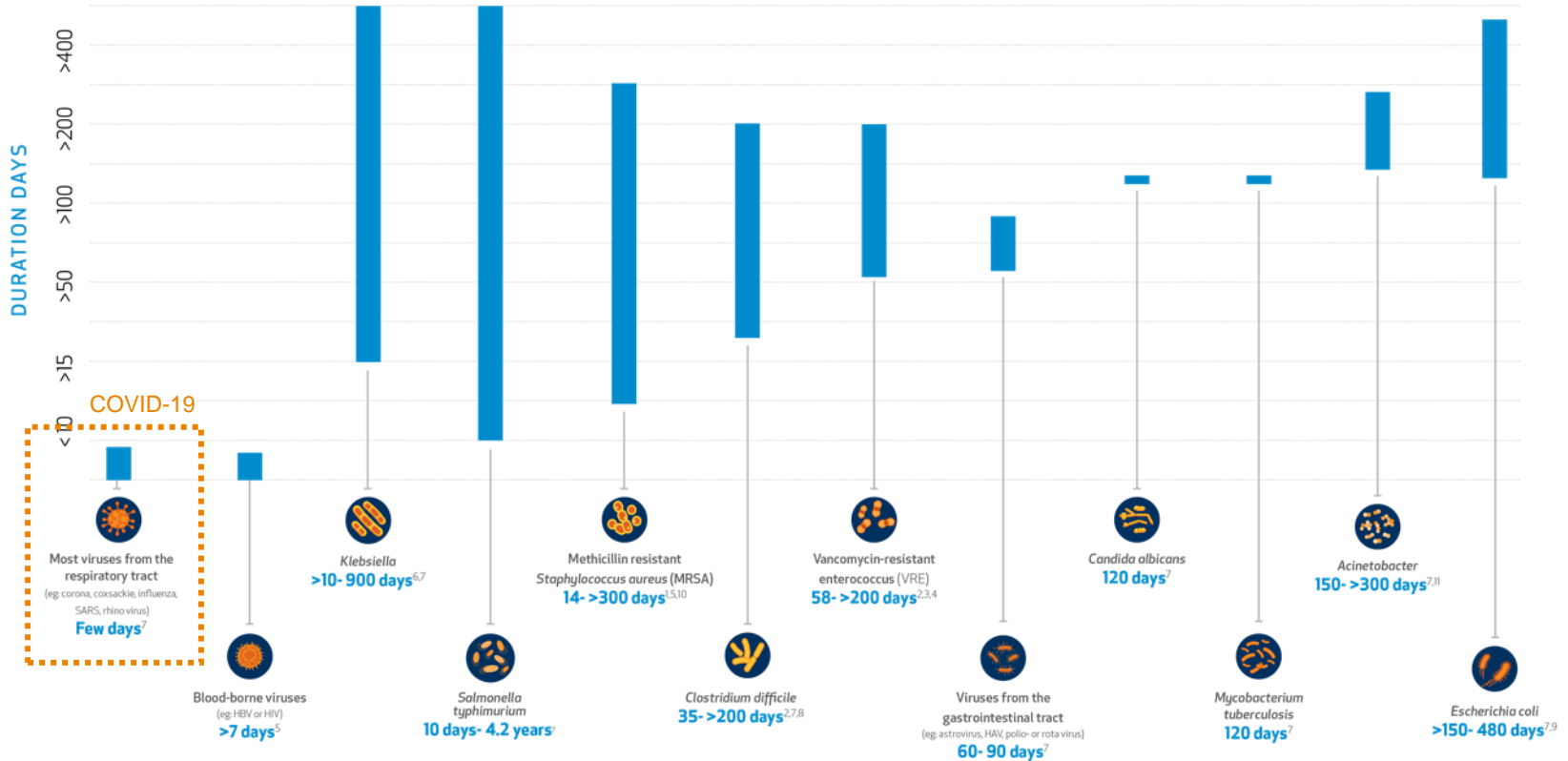
## CDC response:

- ✓ While the CDC says the risk is low for surface transmission, the CDC does not state that there is no risk
- ✓ The CDC science brief specifically states: "The principal mode by which people are infected with SARS-CoV-2 (the virus that causes COVID-19) is through exposure to respiratory droplets carrying infectious virus. **It is possible for people to be infected through contact with contaminated surfaces or objects...**"
- ✓ **COVID-19 can land on surfaces**, and it **is possible for people to become infected if they touch the contaminated surface** and then touch their eyes, nose and/or mouth.
- ✓ Cleaning with a multi-purpose cleaner or soap and water can remove COVID-19, but it does not kill the virus; **disinfection can further reduce or eliminate the risk of transmitting viruses** by killing germs left on surfaces after cleaning
- ✓ The CDC science brief states: "Both cleaning (use of soap or detergent) and disinfection (use of a product or process designed to inactivate SARS-CoV-2) can reduce the risk of transmission."
- ✓ With employees going back to work, children going back to the classroom, and COVID-19 cases and variants surges in many states, there is no way to definitively know when a person has unknowingly spread COVID-19 and thus, **disinfection and cleaning of high touch areas should be a part of daily cleaning**. The CDC science brief states: "Disinfection is recommended in indoor community settings where there has been a suspected or confirmed case of COVID-19 within the last 24 hours."
- ✓ The CDC science brief states: "Cleaners and disinfectants should be used safely, following the manufacturer guidance. Some types of disinfection applications, particularly those including fogging or misting, are neither safe nor effective for inactivating the virus **unless properly used**."
- ✓ The **disinfectants ABM uses in electrostatic sprayers (ESS) have been approved by the EPA** for use against viruses and pathogens, and our team members are properly trained in the use of these chemicals. ESS is not typically the primary disinfection method and is used to disinfect hard-to-reach surfaces as a complement to high-touch disinfection.



# Proper disinfection is necessary beyond COVID to protect against other pathogens and viruses

A variety of organisms can exist on surfaces and in the air for periods ranging from just a few days to years



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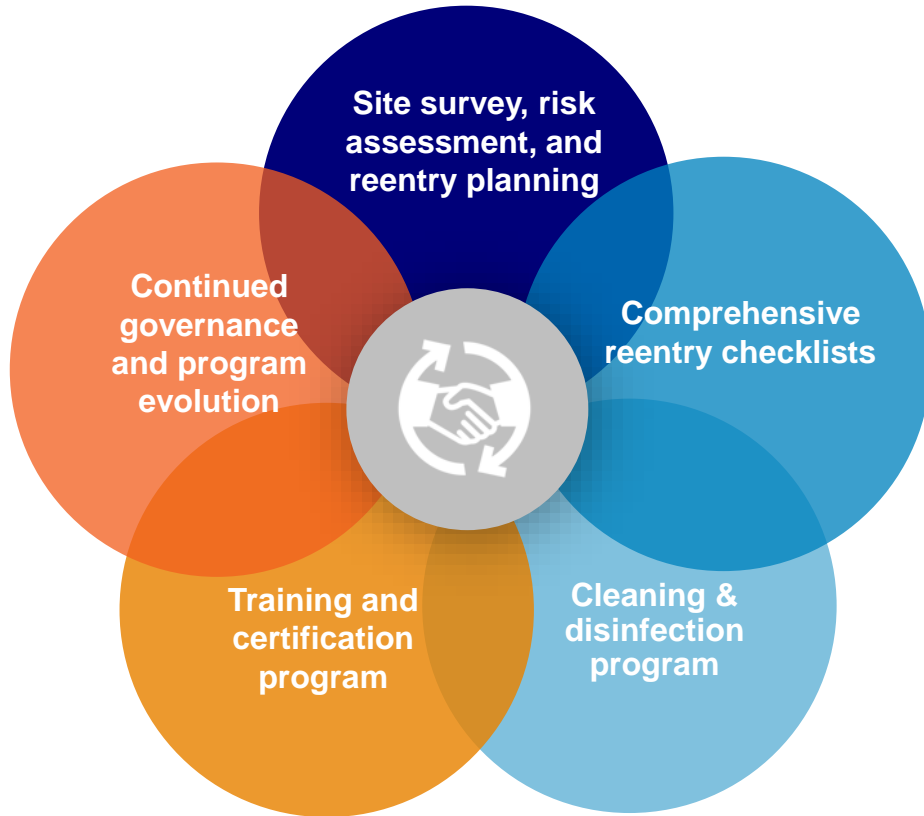
# EnhancedClean & EnhancedFacility



**BEN DODDS**

Director, EnhancedClean &  
EnhancedFacility

# You need a trusted partner who can develop strategic, customized solutions to meet your needs



A DIVERSE VANTAGE POINT  
ACROSS INDUSTRIES BRINGS  
BEST PRACTICES FROM ALL  
DISCIPLINES TOGETHER



# HEALTHY BUILDING SOLUTIONS: To help keep your employees safe

*From the things you touch to the air you breathe, ABM delivers healthier facilities with the latest approaches and innovations backed by experts*

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## DISINFECTING SURFACES

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A Three-Step Approach for  
Cleaning and Disinfecting Surfaces

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## DISINFECTING THE AIR

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A Comprehensive Program to  
Improve Healthier Indoor Air Quality

Together, **EnhancedClean** and **EnhancedFacility** help reduce viral transmission on surfaces and in the air.

We help you build greater occupant trust and confidence regarding your commitment to their health and safety, while improving building health during the pandemic and beyond.

# EnhancedClean™ + EnhancedFacility™ Minimum Recommended Frequencies

	Base	Cold / flu season	Community outbreak
Return Safely	<ul style="list-style-type: none"> <li>Reentry site assessment</li> <li>New workforce protocols</li> <li><b>1x disinfection</b> timed with reentry</li> <li><b>1x general deep clean</b>, if facility has been closed for extended amount of time</li> </ul>	→	
Daily Enhanced Scope - Days	<ul style="list-style-type: none"> <li>Facility communication kits</li> <li>Damp wipe disinfect individual use high-touch areas <b>1x per day</b> and communal use high-touch areas <b>3x – 5x per day</b></li> </ul>	<ul style="list-style-type: none"> <li>Damp wipe disinfect individual use high-touch areas <b>3x – 5x per day</b> and communal use high-touch areas <b>6x – 8x per day</b></li> </ul>	<ul style="list-style-type: none"> <li>Damp wipe disinfect all high-touch areas <b>6x – 8x per day</b></li> </ul>
Daily Enhanced Scope - Nights	<ul style="list-style-type: none"> <li>Enhance SOW by replacing general purpose cleaner with disinfectant for nightly cleaning <b>1x per week</b></li> </ul>	→	
Broad Disinfection Services	<ul style="list-style-type: none"> <li>On an as needed basis</li> </ul>	<ul style="list-style-type: none"> <li><b>Weekly</b> broad disinfection service using electrostatic spray application</li> </ul>	→
Evidence Based Testing	<ul style="list-style-type: none"> <li>On an as needed basis to both assess the efficacy of the cleaning performed and appropriate frequency</li> </ul>	→	
EnhancedFacility – Indoor Air Quality	<ul style="list-style-type: none"> <li>Healthy building risk assessment</li> <li>Customized IAQ solution</li> <li>Pre / post IAQ testing</li> </ul>	→	

# Enhanced Facility success story: Higher Education

## Reminder

### Situation

The university had to restrict on-campus learning for over a year due to COVID-19

### Evaluation

ABM conducted a Healthy Building Risk Assessment and inspected the university's HVAC system

### Strategy

ABM was able to identify potential indoor air quality (IAQ) challenges and determine an improvement strategy

### Solution

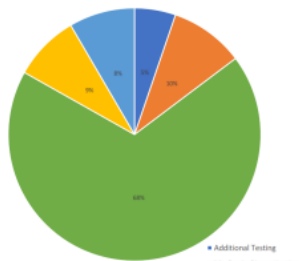
Initial focus on upgrading MERV air filters in mechanical equipment throughout the campus

### Analysis

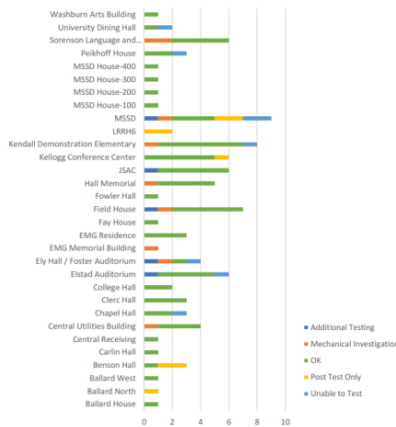
Post-implementation analysis to verify ventilation is optimized to support in-person activities

## Conducted pre / post IAQ test for MERV filter upgrade

### Dashboard for clients to received “snap shots” of their equipment



Air exchange pie chart indicating percentages OK, need additional testing, mechanical investigation, unable to test, and post test only



Air exchange data by building broken out into categories

Building	Pre-Test	Post-Test	Rate of Change	Additional Testing	Mechanical Investigation	OK	Post Test Only	Unable to Test
Ballard House	1037	1106	6%	0	0	100	0	0
Ballard North	1104	1104	0%	0	0	100	0	0
Ballard West	1104	1104	0%	0	0	100	0	0
Benson Hall	1104	1104	0%	0	0	100	0	0
Carlisle Hall	1104	1104	0%	0	0	100	0	0
Central Receiving	1104	1104	0%	0	0	100	0	0
Chapel Hall	1104	1104	0%	0	0	100	0	0
Clerc Hall	1104	1104	0%	0	0	100	0	0
College Hall	1104	1104	0%	0	0	100	0	0
EMG Memorial Building	1104	1104	0%	0	0	100	0	0
EMG Residence	1104	1104	0%	0	0	100	0	0
Fay House	1104	1104	0%	0	0	100	0	0
Field House	1104	1104	0%	0	0	100	0	0
Fowler Hall	1104	1104	0%	0	0	100	0	0
Hall Memorial	1104	1104	0%	0	0	100	0	0
JSCAC	1104	1104	0%	0	0	100	0	0
Kellogg Conference Center	1104	1104	0%	0	0	100	0	0
Kendall Demonstration Elementary	1104	1104	0%	0	0	100	0	0
LRHS	1104	1104	0%	0	0	100	0	0
MSSD	1104	1104	0%	0	0	100	0	0
MSSD House-100	1104	1104	0%	0	0	100	0	0
MSSD House-200	1104	1104	0%	0	0	100	0	0
MSSD House-400	1104	1104	0%	0	0	100	0	0
Peakoff House	1104	1104	0%	0	0	100	0	0
Sorenson Language and	1104	1104	0%	0	0	100	0	0
University Dining Hall	1104	1104	0%	0	0	100	0	0
Waikburn Arts Building	1104	1104	0%	0	0	100	0	0

Air exchange detailed data highlighting areas of concern



# EnhancedClean success story: Manufacturing



## Situation

Customer has been an ABM janitorial client for **10 years**

There is a lot of mutual **respect** and **trust** between ABM and the customer



## Pain point

At the start of the pandemic, the customer had to shut down its facility **three times in two weeks** due to confirmed COVID cases

This caused a major **disruption** and **decreased productivity**

The customer's employees felt the facility was **not a safe space** to come to work



## Solution

ABM implemented EnhancedClean's **high touch disinfecting** and **electrostatic spraying**

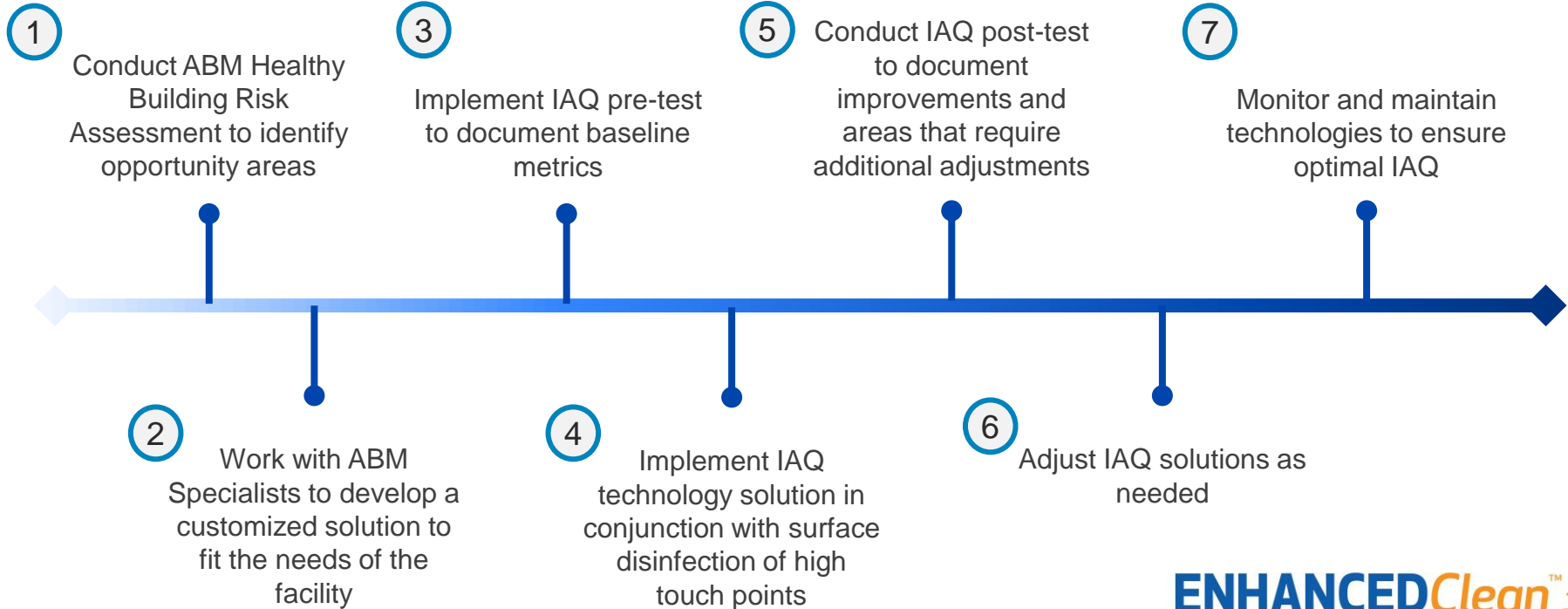
The customer has **not had to shut down** its facility since instituting EnhancedClean services

The client just **extended EC services for a full year** with a slight increase in service

## Key takeaway

ABM remained an integral partner for the client throughout the pandemic and provided the best solutions to enable the client to remain up and running

# To reach optimal healthy building status, IAQ and surface disinfection must work in tandem to provide a holistic solution



EnhancedClean and  
EnhancedFacility  
services can help  
improve the overall  
health of your facility



Not everyone is going to receive the vaccine, even with mandates in place



Vaccines are not 100% effective, especially regarding the variants



Even when vaccinated, individuals can transmit COVID through surface-to-surface contact



Disinfection is the new expectation of occupants and employees, and they want “safety seen”



There are, and will be in the future, other pathogens to disinfect against



Governing bodies are issuing requirements and recommendations that support air and surface disinfection

For more information, visit [HealthyFacility.com](https://www.healthyfacility.com)  
and join our next client webinar in Q1 2022



Q&A

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# Thank You

HealthyFacility.com

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