

A woman with short brown hair, wearing a light green long-sleeved shirt and a bright yellow-green high-visibility safety vest, is sitting in the driver's seat of a bus. She is smiling and looking towards the camera. Her hands are on the steering wheel. The bus interior is visible, including the dashboard, a control panel with various buttons and switches, and a large window looking out onto a bright, outdoor environment. The text "GUIDANCE FOR CLEANING, DISINFECTING AND DECONTAMINATING FOR MASS TRANSIT" is overlaid in white, bold, sans-serif font on a dark grey rectangular background in the upper left portion of the image.

GUIDANCE FOR CLEANING, DISINFECTING AND DECONTAMINATING FOR MASS TRANSIT

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HEALTHY HYGIENICALLY CLEAN VEHICLES IS VITAL TO YOUR BUSINESS

The high volume of human traffic coupled with a wide variety of high contact surfaces creates a haven for the spread of COVID-19 pathogens. In 2019, Americans took 9.9 billion trips on public transportation, and each workday people board public transportation 34 million times.

Further complicating any efforts to thoroughly clean and disinfect on such a large scale is the need for the quickest possible turnaround time for putting vehicles and equipment back in service.

This guide will help you ensure that best practices in cleaning and disinfecting are being used by your staff. Following these protocols can give guests and staff the confidence to know that management is executing thorough and complete care in protecting against disease such as COVID-19.

Always follow the policies, procedures and controls when it comes to health and safety and the use of disinfectants and decontaminants.

In the pages that follow, we offer a set of protocols, practices and information that will help you to develop a plan to meet your specific needs for infection control using disinfectants and decontaminants.

FOUR STEPS TO CREATING A HEALTHY ENVIRONMENT

1. Conduct Your Site Assessment
2. Select Your Antimicrobial
3. Design Your Delivery System
4. Execute Your Plan



CONDUCT YOUR SITE ASSESSMENT

TAKE NOTE OF HIGH TRAFFIC AREAS

When assessing an area, there are a host of issues to consider. There is the novel coronavirus that is gripping the nation in fear, but also standard pathogens such as viruses, molds, other fungi and bacteria. Recently, executives have turned their focus toward viruses due to the coronavirus pandemic.

Take note of areas that are highly trafficked, such as the restrooms. Remember to include a plan for decontaminating ventilations systems.

Collect surface sample swabs with an ATP (adenosine triphosphate) meter, such as the Hygiena Systemsure Plus, in order to gauge levels of biomass on surfaces throughout the facility. Biomass is simply the number of organisms on a particular surface or in an area, and assessing its level will dictate how much pre-cleaning should be done before disinfecting or decontaminating a surface or area.



* Available at artemisbiolsolutions.com

FOLLOW POLICIES, PROTOCOLS AND PROCEDURES

Most companies have developed policies, protocols and procedures to comply with federal laws and OSHA standards. Always follow company policies, protocol and procedures, along with applicable laws.

CONSIDER THE TIME REQUIRED TO DISINFECT THE PROPERTY

When planning for cleaning, disinfecting and decontamination procedures, consider and plan for the time needed to properly do the job.

Ask yourself the following questions:

- ▲ Can the space be vacated? And is that a requirement?
- ▲ Is there a need to work in zones?
- ▲ Can sufficient cleaning, disinfecting and decontamination be done in-between shifts?
- ▲ Are there any HVAC concerns?
 - ▲ Is treatment of ductwork and air handler unit (AHU) an option?
 - ▲ Should the system be turned off during application?
 - ▲ Can the system be turned on right after treatment to incorporate some of the antimicrobial product to provide light disinfection in the duct system?
- ▲ Do smoke/alarm detection devices or sensors in the space need to be treated?
- ▲ What, if any, are the post remediation verification (PRV) requirements?
 - ▲ Air sampling for the presence of fungal or bacterial CFUs
 - ▲ Visual inspection
 - ▲ Presence of chemicals or gas

SELECT YOUR ANTIMICROBIAL



THE GOAL IS TO CHOOSE AN ANTIMICROBIAL THAT IS HIGHLY EFFECTIVE AGAINST PATHOGENS YET POSES MINIMAL RISKS TO HUMAN HEALTH OR DAMAGE TO SURFACES AND EQUIPMENT.

A pathogen is an organism that causes disease. Once the pathogen sets itself up in a host's body, it uses the body's resources to replicate before exiting and spreading to a new host. Pathogens can be transmitted through skin contact, bodily fluids, airborne particles, contact with feces and touching a surface touched by an infected person.

FOUR COMMON PATHOGENS

VIRUSES

Viruses are made up of genetic code, such as DNA or RNA, and protected by a coating of protein. Antibiotics are ineffective as a treatment for viral infections. Antiviral medications can sometimes be used.

Examples

- COVID-19, SARS
- Meningitis
- Chickenpox/shingles
- Measles
- Hepatitis A, B, C, D, E
- HIV and AIDS

BACTERIA

Bacteria are microorganisms made of a single cell. They are diverse and can live in just about any environment. Not all bacteria cause infections. Those that can are called pathogenic bacteria.

- Strep throat
- Bacterial meningitis
- Lyme disease
- Tuberculosis
- Gonorrhea
- Cellulitis

FUNGI

There are millions of fungal species, but only about 300 are known to cause illness. Fungi can be found virtually everywhere, including indoors, outdoors and on human skin, and cause infection when they overgrow.

- Vaginal yeast infections
- Thrush
- Ringworm
- Athlete's foot
- Jock itch
- Onychomycosis

PARASITES

Parasites live in or on a host. Three parasites that can cause disease are protozoa (single-celled organisms), helminths (commonly known as worms) and ectoparasites (organisms that live on or feed off your skin).

- Giardiasis
- Trichomoniasis
- Malaria
- Toxoplasmosis
- Intestinal worms
- Public lice

FIRST, DETERMINE WHICH PATHOGENS YOU NEED TO KILL

The choice of any antimicrobial product will depend on the type of contaminate you hope to eradicate. Some pathogens are relatively easy to kill, while others are resistant to commonly used disinfectants and decontaminants.

When choosing an antimicrobial, your goal should be to always choose a disinfectant or decontaminate that is highly effective against the pathogen yet poses minimal risks to human health or damage to surfaces and equipment.







Always read the product's EPA-

registration label for a list of pathogens that the product kills. Label claims are based on standardized tests conducted at a GLP laboratory for efficacy (the ability to kill) against pathogens. Also read the product's SDS (safety data sheet) because some products can pose health hazards and cause corrosion to surfaces.

Not all antimicrobial products are alike. The chart below is a guide to the different types of products used in infection control. From cleaners to sterilants, the product you use should be based on the type of pathogen to eradicate.

TYPES OF INFECTION CONTROL PRODUCTS

There are six general types of infection control products. The effectiveness of the infection control product will depend on the type of biohazardous material involved.

CLEANERS	SANITIZERS	DISINFECTANTS	VIRUCIDES	TUBERCULOCIDES	STERILANTS
Aid in soil removal	Reduce number of bacteria	Kill viruses, bacteria and fungi	Kill viruses	Kills mycobacteria	Eliminate viruses, fungi, bacteria & spores
					
Cleaners help to remove soil from a surface. Cleaners remove germs from surfaces, but don't kill them..	Sanitizers lower the number of bacteria on surfaces to levels considered safe by public health organizations. They work fast and are safe, but disinfectants usually have broader kill claims.	Disinfectants kills infectious viruses, fungi and bacteria (but not bacterial spores) on hard surfaces.	Virucides destroy or irreversibly inactivate viruses outside of a living "host," like people.	Tuberculocides are effective against mycobacterium tuberculosis and other mycobacteria	Sterilants destroy or eliminate all forms of microbial life including viruses, fungi, bacteria and bacterial spores.


SECOND, DETERMINE THE REQUIRED LOG KILL OF A DISINFECTANT OR DECONTAMINANT

Log reduction stands for a 10-fold (or one decimal point) reduction in bacteria, meaning the disinfectant reduces the number of live bacteria by 90 percent for every step. Log kill is simply the percentage of bacteria or virus that are killed by a particular product. A 7-log kill rate, or 99.99999% is the highest rate measured by U.S. regulatory agencies.

LOOK FOR PRODUCTS WITH THESE ATTRIBUTES

The high passenger high traffic means that these environments tend to accumulate dirt and grime. Executives should look for cleaning, disinfectant and decontaminant products with these attribute.

- ▲ They work in challenging, soil-load conditions. Many products have kill claims that are based on laboratory tests, but it's important that they work in real-world conditions.
- ▲ They have quick kill times for the contaminants that need to be eradicated, so that people can get back to work quickly.
- ▲ They contain no VOCs (volatile organic compounds).
- ▲ They are non-flammable and non-toxic.
- ▲ They have little or no adverse effects on equipment.



DESIGN YOUR DELIVERY SYSTEM

CHOOSE HOW TO APPLY YOUR ANTIMICROBIAL PRODUCT

There are numerous ways to apply cleaners, sanitizer, disinfectants and decontaminants. Choosing the right delivery systems will depend on the specific area of the hotel.



TIPS TO PROPERLY & WIPESPRAY

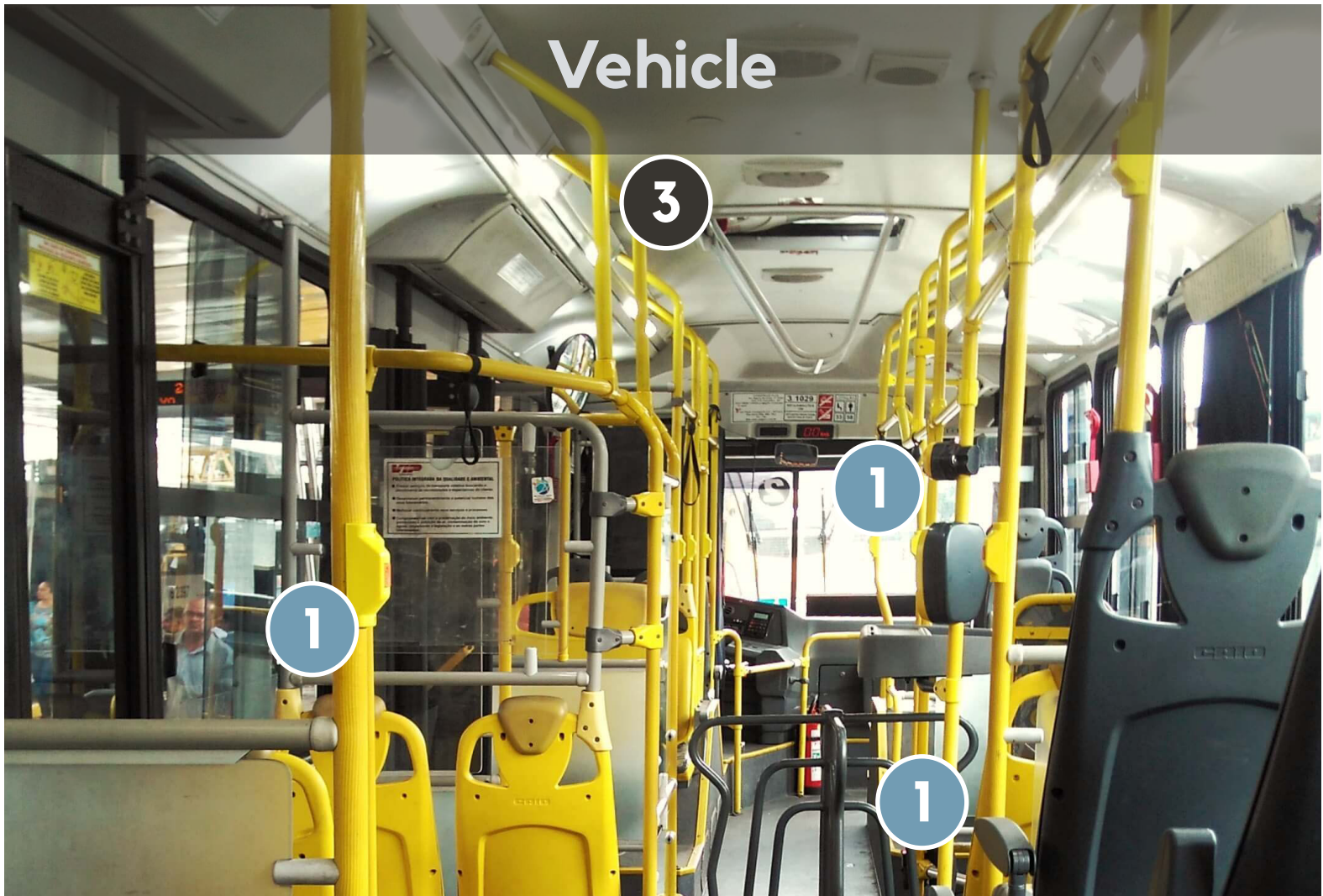
- ▲ Follow the manufacturer's EPA-registered label
- ▲ Use microfiber cloth, rather than commonly used shop rags, to wipe surfaces.
- ▲ Use a 2-step process to first clean a soiled surface, removing dirt, grime and grease, and then disinfect.
- ▲ Allow for the product's prescribed dwell time to kill pathogens.

[See the tips in action in this video](#)

EACH AREA OF THE PROPERTY REQUIRES MULTIPLE DELIVERY METHODS

- 1 Heavy Touchpoints
- 2 Food Contact Surfaces
- 3 Ventilation Systems
- 4 Carpets
- 5 Laundry
- 6 Personal Hygiene
- 7 Mold and Mildew
- 8 Insect Infested Areas

Vehicle



The vehicles and cars have numerous heavy touchpoints and requires thorough antimicrobial application.

1 Heavy Touchpoints

2 Food Contact Surfaces

3 Ventilation Systems

4 Carpets

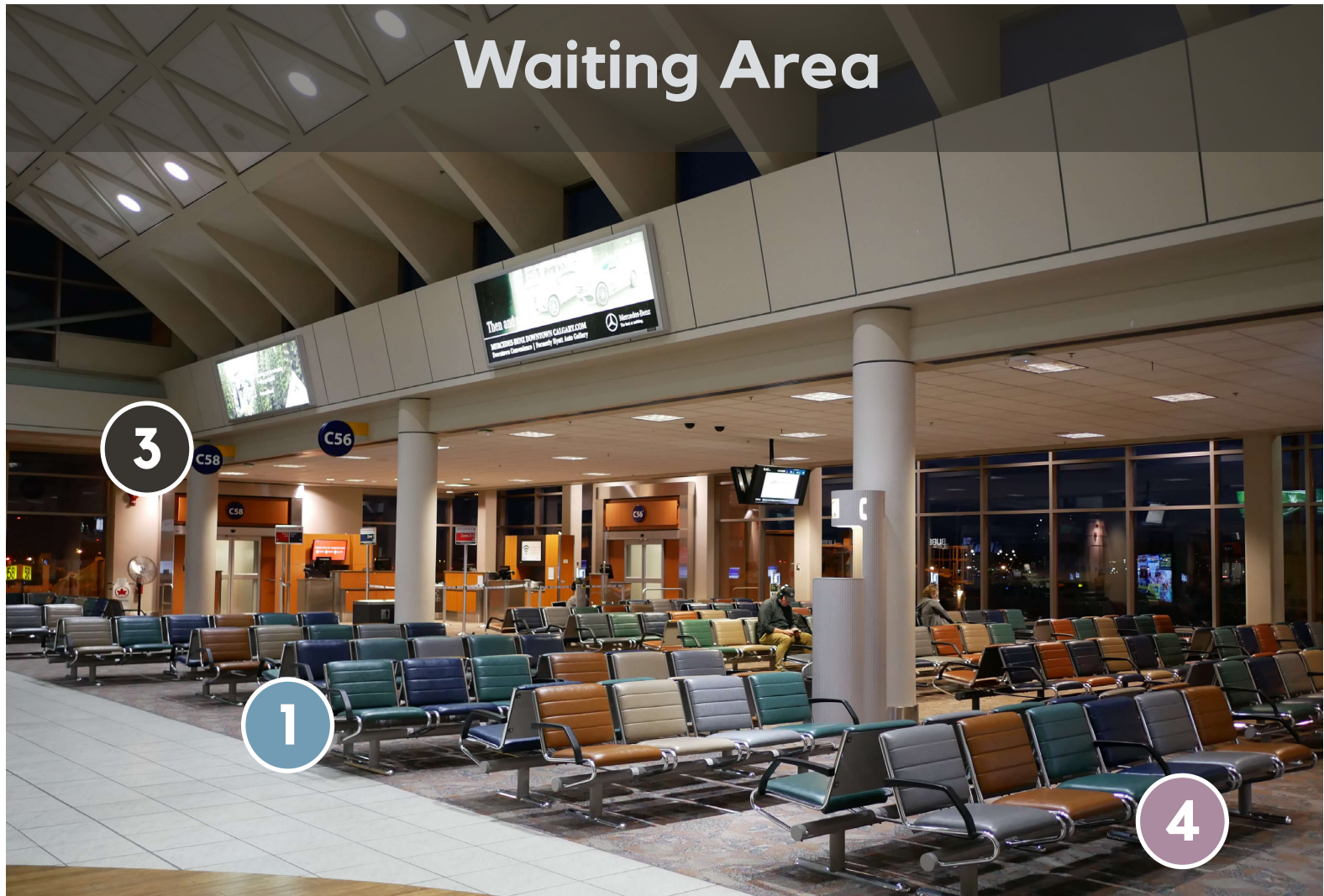
5 Laundry

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7 Mold and Mildew

8 Insect Infested Areas

Waiting Area



The waiting area requires a more complex delivery system. There are several heavy touchpoints, but also surfaces that may have contact with food and, therefore, require a mild solution. The ventilation system should be used to disinfect that air, while the carpets can be treated with a carpet disinfectant solution.

1 Heavy Touchpoints

2 Food Contact Surfaces

3 Ventilation Systems

4 Carpets

5 Laundry

6 Personal Hygiene

7 Mold and Mildew

8 Insect Infested Areas

Ticket Office

3

METRO-NORTH TICKETS

1

Ticketing counters are one of the most important areas to disinfect as multiple passengers spend time at these heavy touchpoints.

1 Heavy Touchpoints

2 Food Contact Surfaces

3 Ventilation Systems

4 Carpets

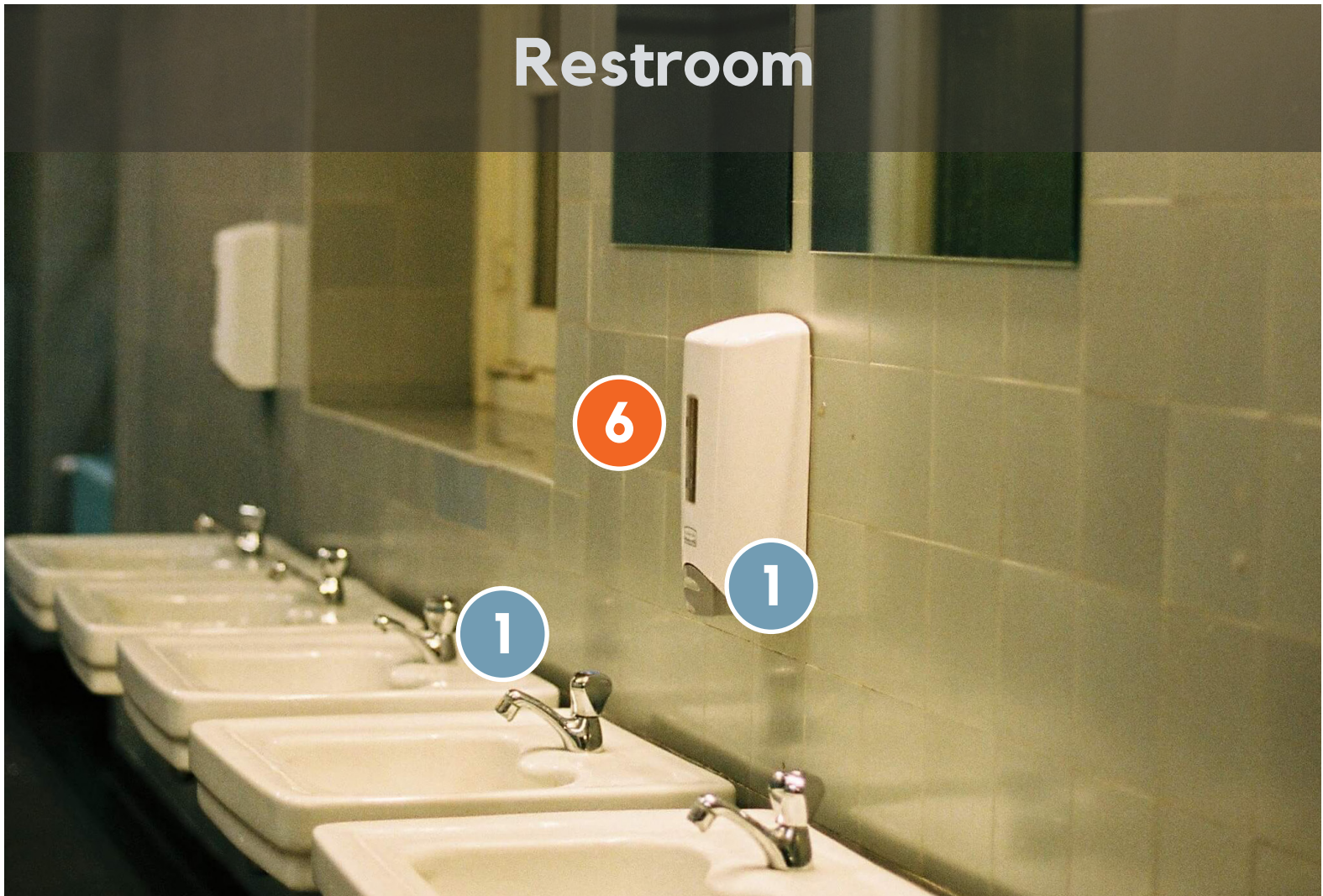
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Restroom



Restrooms have heavy touchpoints at the toilet and sink. Laundry disinfecting takes care of the towels, and personal hygiene products should be placed on the counter to accompany the other personal hygiene products.

1 Heavy Touchpoints

2 Food Contact Surfaces

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4 Carpets

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Personal Hygiene



Make sure to deliver personal hygiene products in convenient locations throughout the facility. Place antiseptic soaps at all sinks, sanitizer bottles at all entrances and exits, and sanitizer stations conveniently at all traffic hubs and congregating areas.



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**EXECUTE YOUR
PLAN**

COMMUNICATE AND TRAIN

The coronavirus pandemic has impacted all industries across the economy, but the transportation industry has been particularly affected. To establish confidence to all that the property is safe and clean, guests and staff must know what to expect and how to comply with policies and protocols for entering and working at the mass transit facility. Consequently, communication and training should be a priority within any mass transit facility that is undergoing remediation or changes to daily routines to prevent the spread of disease.

When communicating and training, we also recommend that you describe the types of antimicrobial products used to disinfect or decontaminate the facility, and explain why they were chosen. Also describe the types of delivery methods for the antimicrobial, such as spraying and wiping, fogging, foaming, mopping and other methods.

In addition to employees, also try to communicate with family members. They will want to know that the mass transit facility is as safe as can be, and they can encourage compliance with safety policies and protocols.

COMMUNICATE AND TRAIN

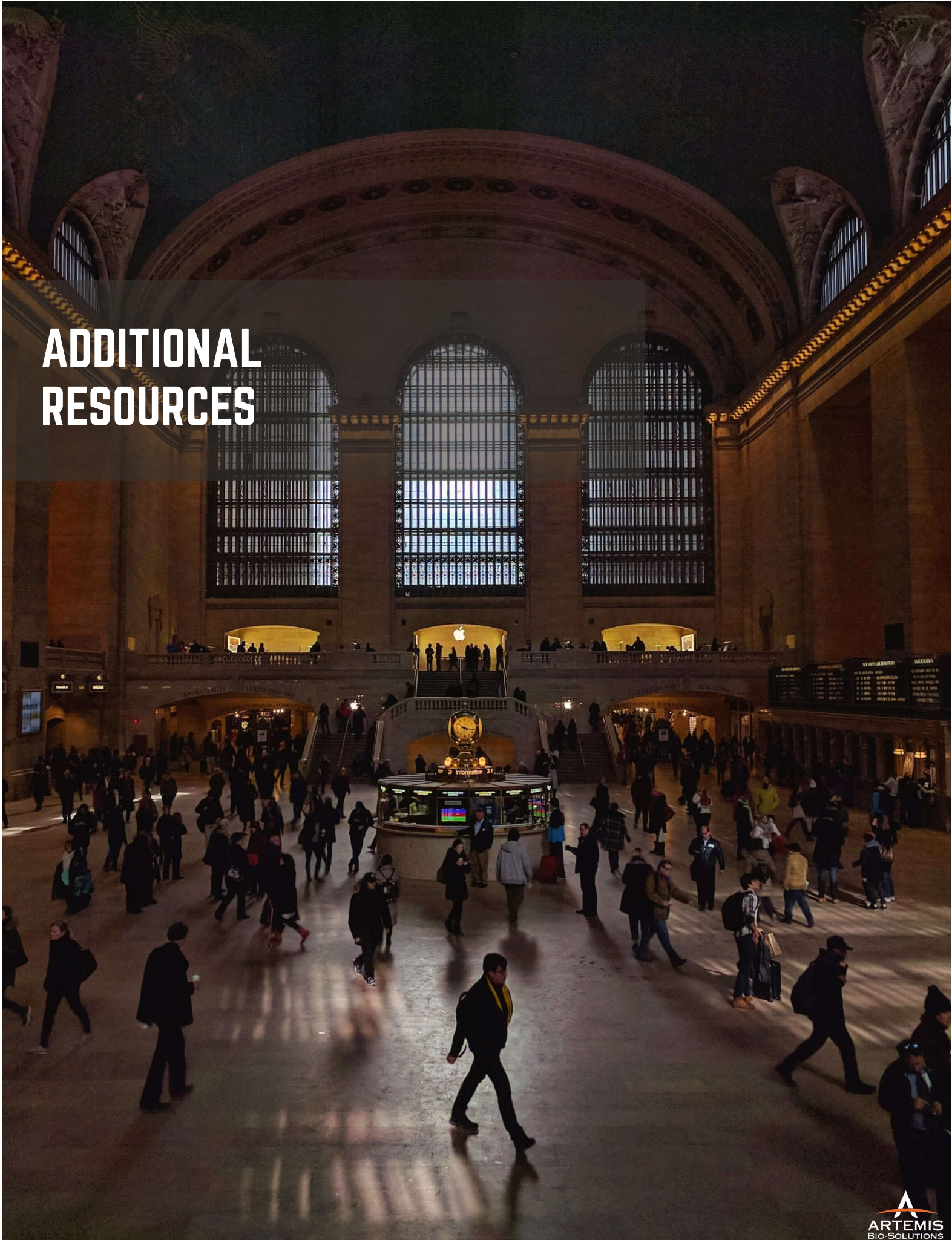
To create your cleaning, disinfecting, and decontaminating plan, follow six steps:

- ▲ Establish Engineering Controls
- ▲ Gauge Biomass Levels to Determine Pre-Cleaning
- ▲ Pre-Clean as Needed
- ▲ Setup Antimicrobial Delivery Systems
- ▲ Apply the Antimicrobial and Allow for Dwell Time
- ▲ Post Treatment Considerations

DOCUMENT YOUR WORK

Industrial hygiene information is needed at all levels of operations, from front-line workers to C-level executives, particularly during the coronavirus pandemic. Document cleaning, disinfection and decontamination with activity log sheets and a log book, or use an electronic system. Logs should include the purpose of the procedure; the type of pathogen(s) you hope to kill; the type and quantity of cleaning, sanitizing, disinfecting and decontaminations materials used; the methods and systems used in the process; and the date and time of the work.

ADDITIONAL RESOURCES



ADDITIONAL RESOURCES

[Coronavirus Disease 2019 \(COVID-19\): COVID-19 Employer Information for Bus Transit Operators](#)

Centers for Disease Prevention

[Cleaning and Disinfecting for the Coronavirus \(SARS-CoV2\)](#)

ISSA (International Sanitary Supply Association)

[The COVID-19 Pandemic: A Report for Professional Cleaning and Restoration Contractors, 4th Edition](#)

Institute of Inspection Cleaning and Restoration Certification (IICRC), Restoration Industry Association (RIA), American Industrial Hygiene Association (AIHA).

[Guidance on Preparing Workplaces for COVID-19](#)

U.S. Department of Labor and U.S. Department of and Health and Human Services' booklet

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