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# Addressing Bioburden and Cleaning to Stop the Spread of Disease in Public Restrooms

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## Disinfecting tips every facility should follow to avoid bioburden buildup and help prevent the spread of germs that could impact public health:

- ✓ Pre-clean surfaces first to remove debris and bodily soils such as urine, feces and vomit. Then use an EPA-registered product with kill claims for some of the most contagious and hard-to-kill infections such as MRSA, influenza and Norovirus to disinfect surfaces.
- ✓ Pay particular attention to disinfecting frequently touched surfaces such as faucet handles, countertops, doorknobs and dispensers, which need to be disinfected at least once a day.
- ✓ Always refer to the disinfectant's product label and follow the manufacturer's instructions for use and contact time, or the length of time the disinfectant needs to remain wet on the surface to properly kill pathogens. Different products have different contact times for killing certain pathogens.
- ✓ Eliminate restroom odors by breaking them down at their source. Not all products can actually break down and eliminate odor-causing uric acid crystals.

Whether you manage an office building, hotel, restaurant, school, healthcare facility or other business, the restroom is likely one of the toughest areas to maintain. Restrooms are often cited as the biggest problem area for cleaning and maintenance professionals and the No. 1 source of customer complaints. For these reasons and more, restroom cleanliness is a vital part of every facility and deserves every cleaning facility manager's attention. With this in mind, Clorox Professional Products Company brought leading cleaning industry experts together for a round-table discussion during the 2013 ISSA/INTERCLEAN conference to address the state of the public restroom and learn more about what makes it such a tough place to clean and maintain. That discussion focused on the fact that restroom maintenance not only means keeping the area *looking* clean, but also ridding it of bacteria and illness-causing germs. Since ongoing education is a core component of restroom cleanliness, below is more information on dealing with restroom soils and illness-causing germs to share with cleaning staff and product selection suggestions for facility managers to keep in mind.

### Cleaning the Visible Dirt and Invisible Bioburden in the Restroom

Any cleaning professional can tell you that restrooms accumulate a lot of grime, debris and bacteria because of their function and constant use. Visible dirt, garbage and bodily fluids such as urine, vomit and feces are all common in the restroom. Not to mention, every time a toilet is flushed, it releases a plume of aerosolized droplets that can carry bacteria to other restroom surfaces, including floors, walls and door handles.<sup>1</sup> All of these things contribute to a restroom's "bioburden," or the amount of bacteria present on a surface before it is disinfected. Bioburden buildup is not a pretty subject. In fact, a Clorox Professional survey of U.S. consumers found that three out of four people are disgusted by urine stains and odors in public restrooms, and more than one-third would leave a place of business because the restroom smelled like urine.<sup>2</sup> Urine is ever-present in restrooms and, as such, significantly contributes to bioburden levels. One study in the *PLOS ONE* journal found, as expected, that the routine use of toilets results in the distribution of urine and fecal-associated bacteria throughout the restroom.<sup>3</sup> Furthermore, according to a separate survey, cleaning industry decision makers consider removing urine stains (47%) and odors (52%) from grout and other porous materials among the most important restroom cleaning priorities.<sup>4</sup> Since visible dirt, grime, stains and odors all influence people's perceptions of a facility, it is important to deal with them in a timely and efficient manner. The best approach is to focus on daily cleaning efforts, which include selecting the right products that are easy to use and engineered to deal with problems like stains and odors at their source, rather than masking them.

### Cleaning to Stop the Spread of Disease in the Restroom

Cleaning restrooms for aesthetic purposes is certainly important, even critical, but regular disinfecting, as part of the cleaning routine is also important to protect public health. Cross-contamination is also a concern in restrooms since dangerous bacteria and viruses are easily transferred from one surface to another. Visible stains, soiled surfaces and odors can signal the presence of harmful microorganisms, such as influenza, Norovirus, *Shigella*, *Salmonella*, Hepatitis A and *E. coli*, which are commonly found in restrooms and are associated with outbreaks of illness.<sup>5,6</sup> These illness-causing germs are nothing to ignore, as they can have serious consequences for both building occupants and a facility's bottom line. Because the link between the restroom and the spread of infections is not always top-of-mind, more information on infection-causing germs found in restrooms and tips to prevent their spread are included below:

**Norovirus** — Norovirus, sometimes referred to as the "vomiting disease," is a highly contagious virus that is the No. 1 cause of gastroenteritis in the United States. According to the U.S. Centers for Disease Control and Prevention (CDC), Norovirus causes an average of 800 deaths, 71,000 hospitalizations, 400,000 emergency department visits, 1.9 million outpatient visits and 21 million total illnesses each year.<sup>7</sup>

- **Transmission:** It takes as few as 18 virus particles to cause a Norovirus infection, and once infected, a person is capable of infecting many others.<sup>8</sup>

## Restrooms are often cited as the biggest problem area for cleaning and maintenance professionals and the No. 1 source of customer complaints.

- **Prevention:** Once a Norovirus outbreak occurs, it can be difficult to contain, so it is important to have a prevention plan in place that includes cleaning and disinfecting surfaces with products with label claims to kill Norovirus that have been registered with the U.S. Environmental Protection Agency (EPA).

**Influenza** — Influenza (flu) is a contagious respiratory illness caused by influenza viruses. Approximately 5 to 20 percent of U.S. residents get influenza, and more than 200,000 people are hospitalized from flu-related complications each year.<sup>9</sup>

- **Transmission:** The flu can spread from person to person through the air from up to six feet away via the droplets formed from coughs or sneezes. The flu can also spread when people touch contaminated surfaces such as a door handle or countertop and then touch their own mouth or nose.<sup>10</sup> Studies have also shown that flu viruses can survive on hard surfaces (e.g., stainless steel, plastic) for up to 48 hours and on soft surfaces (e.g., cloth, fabric) for up to 12 hours.<sup>11</sup>
- **Prevention:** To prevent the spread of flu viruses in school and business restrooms, the CDC recommends regularly cleaning to remove visible soil followed by disinfecting frequently touched surfaces (e.g., door handles, counters, light switches) with a chlorine bleach solution or EPA-registered disinfectant with a label claim to kill flu. Always follow cleaner and disinfectant product label instructions, and use personal protective equipment (e.g., gloves, eye protection) when necessary. Do not mix cleaners and disinfectants.<sup>12,13</sup>

**MRSA** — Methicillin-resistant *Staphylococcus aureus* (MRSA) is a type of antibiotic-resistant Staph bacteria found on the skin and in the nose. More than 90,000 Americans get potentially deadly MRSA infections every year, and in 2005, nearly 19,000 Americans died from MRSA infections.<sup>14</sup>

- **Transmission:** MRSA spreads primarily through skin-to-skin contact and contact with surfaces that have come into direct contact with the bacteria.<sup>15</sup>
- **Prevention:** To contain and prevent the spread of MRSA infections, the CDC recommends cleaning and disinfecting all surfaces that are likely to come into contact with pathogens, which could include toilet seats and restroom sinks.<sup>16</sup>

In addition to being a risk to public health, infection-causing germs like these can also have a financial impact on businesses they affect. For example, a study published in the *Journal of Occupational and Environmental Medicine* reported that health-related “lost productive time” costs employers \$225.8 billion per year, or \$1,685 per employee per year.<sup>17</sup>

### Disinfecting and Product Selection Tips

While each facility must determine the best restroom cleaning protocol for its needs, there are some basic cleaning and disinfecting tips every facility should follow to avoid bioburden buildup and help prevent the spread of germs that could impact public health.

- Pre-clean surfaces first to remove debris and bodily soils such as urine, feces and vomit. Then use an EPA-registered product with kill claims for some of the most contagious and hard-to-kill infections such as MRSA, influenza and Norovirus to disinfect surfaces. Pay particular attention to disinfecting frequently touched surfaces such as faucet handles, countertops, doorknobs and dispensers, which must be disinfected at least once a day.
- Always refer to the product label, and follow the manufacturer’s instructions for use and contact time, or the length of time the disinfectant needs to remain wet on the surface to properly kill pathogens. Different products have different contact times for killing certain pathogens.

- Eliminate restroom odors by breaking them down at their source. Not all products can actually break down and eliminate odor-causing uric acid crystals. This is why it is important to choose products that include stable active ingredients, such as ready-to-use, hydrogen peroxide-based solutions, which fight urine odors and stains effectively and require no additional training for cleaning staff to use them.
- Remove grime and scuff marks on restroom floors with a multi-surface cleaner. Floor care is important. A study published in the *PLOS ONE* journal found that restroom floors are the most germ-laden places, with about 230 bacterial species, compared to 150 species in other restroom locations.<sup>18</sup>
- Clean mirrors and glass to keep them shining by removing water marks, soils and streaks with a general glass and surface cleaner.
- Scrub away soap scum on sinks, countertops and more with products specifically formulated to break it down.
- Remember, hand washing is an important part of preventing the spread of infections. Cleaning staff should wash their hands regularly with soap and warm water, especially after emptying waste baskets, touching used tissues or using the bathroom.

Pay particular attention to disinfecting frequently touched surfaces such as faucet handles, countertops, doorknobs and dispensers, which must be disinfected at least once a day.



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