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# The Only Time We Rest Is When We Fail

By Adam West, Course and Curriculum Manager at CriticalPoint

Part of being an adult is saying, “After this week, things will slow down,” for about the 47th week in a row. In pharmacy, that sentiment feels especially familiar. There’s always another batch to compound, another inspection to prepare for, and another “quick” task that isn’t quick at all. The only time things truly slowdown is when something goes wrong. This month’s article serves as a friendly reminder to pause before the pause is forced. Take time to inspect your cleanroom, equipment, and environment. Because nothing disrupts workflow faster than an avoidable investigation.

**Illusions of the CLEANroom**

“Cleanrooms are clean rooms, right?” This simple misunderstanding is common in the pharmacy world. After performing countless facility inspections, I’ve observed a wide range of designs, workflows, and, occasionally, complete nightmares.

The overwhelming misconception is the belief that once a cleanroom is built, it remains immaculate forever—that the rigor of daily cleaning and protocols means the space requires limited structural attention. Personnel who work there daily develop “facility blinders,” failing to recognize that the fit and finishes deteriorate over time. Even when staff do see the deterioration occur, competing demands (like a busy pharmacy schedule) often cause them to delay corrections until the issue becomes far worse. This ultimately ages that once-beautiful, new cleanroom into one that is desperate for attention.

These are common points of failure and deterioration observed during inspections:

- Exposed drywall from carts impacting walls or corners
- Ceiling tiles with crinkled, frayed, or bubbled edges
- Insanitary conditions like insects found in lighting fixtures
- Cabinet cracks, chipping, or exposed delamination
- Crusted oxidation around sink areas and exposed plumbing
- Window seals that no longer create an effective barrier
- Cracks and crevices exposed by separating flooring and baseboards
- Door seals that are frayed, ripped, or poked with holes
- Cracked or discolored light housings
- Generations of mismatched “band-aid” repairs and improper interior paint

The list seems extensive, but the point remains: a new cleanroom does not maintain itself, and it does not age gracefully. The irony is that you may work in your local community hospital every day and genuinely fail to see these points of deterioration because you simply aren't looking for its existence.

### Limitations of Primary Engineering Controls

The interesting thing about primary engineering controls (PECs) is that no one wants to ever let them go. These ISO 5 devices hang on for 10, 20, or 30 years while actually aging fairly well. A few replaced parts here and there, and it's "good as new." However, while PECs can last a very long time, they can't escape the dangers of insanitary conditions.

Rust and paint chipping are quite common observations whether the device is new or decades old. Unfortunately and much debated, there's not a lot you can do when these issues arise. Rarely will paint repairs successfully remedy the issue. And rust … it can form on the work deck or the outside structure and is nearly impossible to remediate permanently without changing the composition of the surface. This likely will be temporary fixes or efforts that delay the inevitable complete replacement.

### Neglected Equipment

Equipment, furniture, and tools are often the last items assessed, remaining in use until a failure occurs or an inspector points out a concern. A common example is the sharps waste bin setup: a brand-new plastic container placed on a mobile wire cart. While it's convenient to wheel the bin in and out of the cleanroom for replacement, the wire structure of the cart itself is almost certainly beginning to rust and deteriorate.

You might notice a pristine red plastic bin sitting on a dilapidated, rusted rack on wheels—only to realize the rusted, flaking metal is an immediate source of particulate contamination. This frequently overlooked scenario is a perfect example of how ancillary equipment can quickly become an insanitary condition, requiring immediate attention and replacement.

Other equipment that is susceptible to decline include:

- Chairs or stools
- Anything with wheels (wheels get gunky and become rusted)
- Refrigerators and their doors and rack systems
- Stainless-steel carts and tables
- Scissors, mirrors, loose paper (repeatedly wetted and dried), and basic utensils
- Cleaning equipment

### Practical Steps for Facility Maintenance

Challenge your team to view your space through a new lens. Take a moment to look around the cleanroom suite as if you are seeing it for the first time. I'm confident you will discover areas needing attention, regardless of the compounding area's age.

To proactively manage facility decay and prevent costly investigations, implement the following steps:

1. Implement formal inspections: Create a weekly or monthly inspection plan that is scheduled independently of, but coordinated with, your regular cleaning regimen.
2. Establish a tiered repair program: Develop a system to track and schedule repairs, categorizing them as minor, medium, or major based on their impact on compliance and function.

3. Empower and educate staff: Empower compounding staff to immediately report any damage or area needing attention. Educate the entire team on the definition of insanitary conditions and how to recognize them proactively, before they lead to a bigger issue.

**Summary**

Every aspect of cleanroom performance and environmental maintenance creates a chain reaction with cascading consequences. The physical state of the walls, doors, and floors challenges environmental quality just as much as the presence of people or poor compounding conduct. It's imperative to be proactive in recognizing deterioration early and correct it before it becomes a bigger issue.

Set aside dedicated time for necessary repairs, and create a budget to replace specific equipment that phases out of suitability sooner than the facility itself. Being vigilant and addressing these issues in a timely fashion will ultimately improve the overall state of microbial control, enhance quality conditions, and directly ensure patient safety.

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