

Basics of Biofilms
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Presenter: André Côté

1. If sinks were preset to offer rinse cycle every hour; would biofilm be prevented?

Sinks and drains offer to bacteria plenty of surfaces, water in large amount and plenty of food (dirt and waste flushed in the sink). In a sink or a drain, bacteria are always attached and under the irreversible attachment step of growth. A simple rinse of the sink and drain every hour would not be enough to prevent growth. Instead, such procedure is likely to provide more moisture to the system and support more growth. We have seen in office building drains that low use sinks, that received less water, are less contaminated than highly used one.

2. For ASTM E2871, is there any friction used on the coupon, or is it just soaked in the test disinfectant?

The single Tube Method (ASTM E2871) do not ask for any friction on the coupon. The coupon is simply soaked in the antimicrobial solution. This way, we only measure the efficacy of the test product removing the bias that can be cause by friction.

3. How do you remove CPE biofilm from drains/sinks?

In drains/sinks, CPE behave like all other enterobacteria. Since oxidizing disinfectants (the bombs in the presentation) are not specific to any strains of bacteria and since no resistance to oxidizing disinfectant is possible, CPE in drains are remove the same way as any other bacteria in a biofilm. The application of a good drain disinfection program will give the best results. If your drain disinfection program is efficient, overall drain contamination as long as the CPE positives drains/sinks shall decrease. With time, CPE positive will get to near 0.

4. Does mechanical friction assist in removing the structure?

Mechanical action will help to remove macroscopic structures. As per example, mechanical action can help to get faster results if there is a 1 inch thick biofilm in a pipe. Otherwise, mechanical cannot to remove the bacteria that are attach close to the surface, especially on surfaces that show scratches and pinholes. Keep in mind that official ASTM method ask for a strong and long sonication step to remove biofilms from coupons.

5. Does turning off water supply to an area/surface reduce biofilm formation?

In theory, this is true. Without water, there is no life possible on earth. During our numerous trial, we have observed that low use sink drains show and overall lower contamination than high use ones. Need to point out here that low use sinks are still contaminate with a 4 to 6 log of bacteria. In dry condition, the biofilm structure act as a sponge that prevent all the water to dry out. In such conditions, bacteria get under a survival mode waiting for enough moisture to come back. When good conditions come again, bacteria get from the survival mode to a growth mode. Then we observe bacterial contamination to 6-8 log as usual.

6. As a follow up question to #1: What if the auto rinse cycle used ozonated water. will that decrease biofilm formation in sinks?

Ozone is a powerful oxidizing agent that is highly reactive. Because it reacts quickly, Ozone will not diffuse deeply into the biofilm but will rather be oxidize at the surface. Ozone might probably kill some bacteria at the surface of the Biofilm structure but will most likely produce the shield effect that we discussed in the webinar preventing Ozone to achieve a complete disinfection.

7. What is your recommendation for cleaning/disinfecting hospital sinks/drains?

Ideally, all establishments would have enough resources to perform a scheduled and efficient maintenance program on their sinks and drains. Drains represent the perfect environment for bacteria. The use of the sink provide a countinuous flow of water, nutrients and new bacteria. This makes drains disinfection a never ending battle. This is why we believe that complete and permanent disinfection of a drain is almost impossible to achieve. As described, the best strategy is to use periodically products that kills bacteria and remove Biofilm structures from the surfaces. This will maintain the drain contamination the lowest level and will mitigate the risk on contamination to the surrounding area. You can get more information and our recommendation at <http://www.sanimarc.com/bioassure/>

8. How do you know when you have a biofilm? is visible or are there tests for it? is there risk to over disinfecting surfaces?

I do not know any Biofilm specific detection kits available on the market. In some situation, Biofilms are visible. As per example a dark slimmy brownish deposit at the opening of a sink drain. This is something we observe oftenly. There are some other biofilms that are harder to identify. As per example, a dry, hard clear brown deposit on the side of a counter or table. This can simply be an accumulation of nonliving dirt or a biofilm that as dried on the surface. In other

cases, Biofilms are invisible. For Biofilms quantification from environmental surfaces, swabbing is one of the best tool we have.

In disinfection, there is no risk to «over disinfect» a surface if you use the right product for the appropriate contact time. Keep in mind that disinfectant does not all work the same way. For some disinfectant, efficacy will decrease drastically if to concentrate. For others, using too much will harm the surfaces without providing better results on bacteria. I think the best is to read product label and follow manufacturer's direction for use.

9. What is the recommended contact time for drain disinfection?

There are no universal way to perform disinfection especially for drains. Contact time will depend on the type of product you use, the active ingredient concentration and the overall drain conditions.