

Hi Everyone!

Thanks for participating in our Halloween fun!

We thought it appropriate to post our results during U.S. Antibiotic Awareness Week – Nov. 18-24

How Creepy is your Cell Phone?

We sampled cell phones and we looked at total aerobic bacterial counts and Coliform/E. coli. We found that 91% of our cell phones samples had aerobic bacterial growth, 95% of those were heavy growth, too numerous to count (TNTC). We found that 35% of our cell phone samples had E. coli/Coliform bacteria present, 91% of those were heavy growth, TNTC.

What's that Goo on your Shoe?

Additionally, we sampled the bottom of shoes and we looked for Carbapenem resistant Gram – negative bacteria, 3rd generation Cephalosporin (Ceftiofur) resistant Gram – negative bacteria, *Salmonella*, and *Methicillin resistant Staphylococcus* spp. We found that 16% of the shoe samples were positive for Carbapenem-resistant Gram – negative bacteria, 12% were positive for 3rd generation Cephalosporin (Ceftiofur) resistant Gram – negative bacteria. We didn't find any *Salmonella* or *Methicillin resistant Staphylococcus* spp. on our shoe samples.

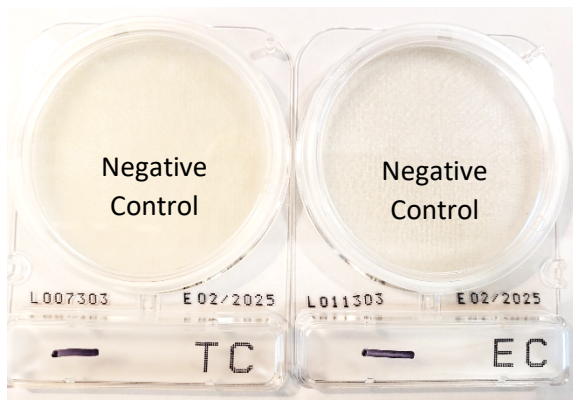
The take home message from the ASP team...

Bacteria are everywhere and it is no surprise they hang out on our phones, but maybe before the next text message or your next glance at a TikTok video, take a second to wipe that phone down and maybe think about some hand sanitizer or some soap and water. Oh, and those work shoes you're probably wearing right now, maybe they should stay at work to prevent taking these bugs with you.

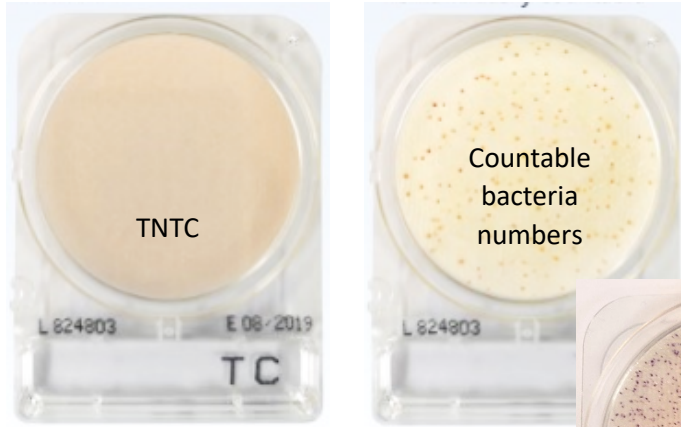
One of the main goals of our Antimicrobial Stewardship Program is to keep staff, students, clients, and patients safe from the threat of pathogens and antimicrobial resistant bacteria. We all know hand hygiene plays a key role in keeping us safe. So, again this year, we wanted to know, **“How Creepy is Your Phone? AND What's that Goo on your Shoe?”**

So, here's the news on our phones and shoes...

Let's face it. Our phones are part of us. We use them all the time and they can get pretty cruddy. The phone swabs you collected were inoculated to two different selective plates, a **Total Count** bacteria plate (TC) and an **E.coli/Coliform** plate (EC). If negative, both plate types look white or cream with a texture similar to a paper towel.

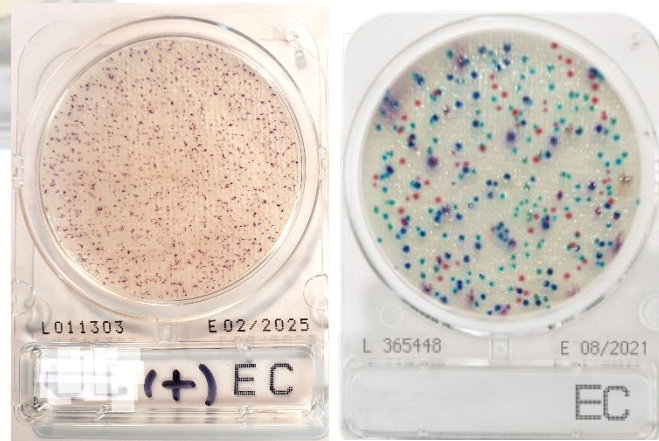


The TC plates will grow almost all microorganisms that can tolerate oxygen. Since these plates grow pretty much everything but anaerobes, it is not surprising that most of the TC plates had growth that was Too Numerous To Count (TNTC). TC plates with bacteria that is *too numerous to count* will look peach or yellow in color, but will not have individual bacterial colonies you can pick out. TC plates with bacterial in a countable range will often have yellow/orange colonies of unknown bacteria.



The *E.coli*/Coliform plates grow bacteria that is found in the gut of warm-blooded mammals as well as throughout the environment. While most coliforms are harmless to humans, some can cause mild illness and a few can lead to serious disease.

Coliform bacteria are often referred to as 'indicator organisms' when assessing the success of cleaning and disinfection. Our ASP environmental surveillance has cultured samples from our hospital for coliform bacteria to ensure our disinfection protocols are working. On the EC plate, *E. coli* are seen as blue colonies, Other coliforms, such as *Klebsiella*, *Enterobacter*, and *Citrobacter*, can be red, blue, purple, or even yellow or orange. You can see our positive control EC plate on the left grew a bunch of 'purple' coliforms, but no *E. coli*. The manufacturer's EC plate on the right gives a good example of the rainbow of coliforms these plates can grow. Most of EC plates inoculated with the phone samples grew coliforms in numbers TNTC. A few had distinct colonies, but mostly just lots of coliform bacteria.



Now, let's talk about the "Goo on Our Shoes"

As we can see from those phone swabs, there a lot of bacteria out there and this year we decided to find out, "What's that Goo on Your Shoe?" It is important to know what bacteria are in our hospital and on our floors, especially since we are not the only ones walking on them. Most of our patients walk on those same floors...and they're barefoot.

For your shoes, you collected a double swab. We used one of those swabs to look for a Gram-positive bacteria, *Staphylococcus*, specifically, those resistant to methicillin. Our monthly environmental surveillance does find methicillin resistant *Staphylococcus aureus* and *S. pseudintermedius* (MRSA and MRSP) in our hospital. *Staphylococcus* is often associated with the skin and mucous membranes and, the **good news** is that **Methicillin resistant Staphylococcus** doesn't seem to be prevalent on our floors.

The second swab was for Gram negative bacteria. We looked for *Salmonella* and coliforms resistant to β -lactam drugs, **Ceftiofur resistant Gram (-)** and **Carbapenem resistant Gram (-)**. The β -lactams are the most widely used drug class in the world and many of our patients are, or have been, treated with the veterinary cephalosporin, ceftiofur. Highly multidrug resistant infections in non-food animal patients can be treated with last resort β -lactams, the carbapenems.

The **good news** is that *Salmonella* on our shoes is rare! The less than good news is that we are tracking around coliforms resistant to β -lactam drugs and some of these coliforms have resistance to drugs in our "Protected Antimicrobial" arsenal, the carbapenems. We are saving the characterization of **Ceftiofur resistant Gram (-)** isolates for a future student project. The **Carbapenem resistant Gram (-)** isolates were speciated and added to the results.