

STANDARD DEVIATIONS: Time to Get Real

Greetings,

Is perception reality?

Perhaps. But if you and I perceive things differently, what's real? Here's the rub; what we think of reality is just a unique opinion formed by our perception – right or wrong. Really.

Everything you know, everything you feel, taste, smell, hear, or see is defined **and tainted** by your perceptions. We understand reality through our perceptions.

Time can be especially problematic. We can measure it down to the level of molecular decay for our atomic clocks and still disagree on how long eight hours can last. A day at work lasts much longer than a nice, warm Saturday off, right? Has your 2020 lasted a decade? Time flies when we're having fun. Quarantined? With kids? Not quite so fast.

Turns out that 20 seconds can fool us too. It seems to mean different things to different people in different circumstances. Twenty seconds is the **minimum** suggested time for effective handwashing.

And this is where we get into trouble. Because when we fail to perceive reality, or our perception misleads us, **we lose touch** (and you probably know someone who's "out of touch with reality"). This can be especially hazardous for those of us in health care.

Because touch is important.

When we touch patients or handle samples that are potentially infectious the need to put perception aside is paramount to working safely. That's just reality.

The WHO estimates that there are over 1.4 million cases of Hospital Acquired Infection (HAI) at any given time, and this is likely to be vastly underreported. While we know that patients can acquire bloodstream infections, surgical site infections, urinary tract infections, chest/respiratory infections or gastrointestinal infections, the fact is that these maladies can and are acquired by healthcare personnel, too.

The simple reason is that healthcare workers (HCP) are often the conduit for the spread of such infections to other patients in their care. HCP also share these bugs with each other and a number of HCP are vulnerable to those exposures. Horizontal transmission is not exclusive to providers and patients; our patients are just more likely to suffer poor outcomes.

Sure, working in the laboratory provides some isolation from this contact but how many of us are also performing phlebotomy and/or naturally working or present in the main body of our hospitals?



In the lab, we wash our hands a bunch. We also handle bunches of pathogenic bugs. We routinely encounter bloodborne pathogens in samples, notorious bacteria in cultures, and, as HAI data demonstrates, transmissible disease in hospital environments. If we are lax in our perception of time when we scrub for cleanliness, then we risk leaving viable microbes on our skin. Our cuticles, abrasions, and broken skin become entry points for those microbes. And we also transfer those bugs to everything we contact.

There's a perception (well, a misperception) that healthcare workers are more protected, either through our training, our access to PPE, or access to treatment.

Now, the coronavirus pandemic is an easy way to illustrate the dangers of misperception. There are elegant examples of how a false sense of reality endangers the believer and others.

Misguided perceptions about the nature, origin, risk, infectivity, pathogenicity, treatments, transmissibility, and consequence of the SARS-CoV2 virus have led to unprecedented disease and death around the globe. That's just reality.

While hand hygiene is not the only measure to counter HAI, compliance with it alone can dramatically enhance patient safety, because there is a body of scientific evidence showing that microbes causing HAI are most frequently spread between patients on the hands of health-care workers.



■ Most Frequently Missed ■ Frequently Missed ■ Less Frequently Missed

DID YOU KNOW ?

ON AVERAGE, 95% OF PEOPLE DON'T WASH THEIR HANDS PROPERLY



What sort of microbes can spread during lapses in hand hygiene?

The following are examples of the types of microbes that can be spread on the **hands** of health-care staff:

- Staphylococcus aureus (including MRSA)
- Streptococcus pyogenes (Group A Strep)
- Vancomycin-resistant Enterococcus (VRE)
- Klebsiella
- Enterobacter
- Pseudomonas
- Clostridium difficile
- Candida
- Rotavirus
- Adenovirus
- Hepatitis A virus
- Norovirus

In biosafety (and the whole world, but let's take small bites), reality pushes our perceptions aside to reveal itself as indisputable. Pathogens really do cause harm and our mitigations really do make a difference.

I'm not going to tell you how to wash your hands. This is a newsletter about thinking, not doing. But I am including a couple of videos that demonstrate good handwashing technique from the CDC and WHO (neither have sound). There are tons of these out there, and it is important; it's just not what I wanted to emphasize.

For such a simple mitigation, a lot of study has gone into the “how to” and “how long” necessary for handwashing to be effective. It doesn't take long for things to go wrong; **less than 20 seconds**.

Have a great week and be safe,

Bryan



p.s. An interesting distinction between the perceptions of our senses and time is the notion of **duration**. Our senses of touch, sight, hearing, taste, and smell are reactions to a single, immediate and unique phenomenon. Time, on the other hand (that's a clock pun), is a duration between two separate phenomena; the space between beginning and end. We endure time as a gap between sensations. That's why 20 seconds means different thing to different people at different times.



