

STANDARD DEVIATIONS: PPE is not the Answer, and only Part of the Problem

Greetings,

Around the globe millions of people are self-isolating, social distancing, and just plain layin' low. At the same time thousands more are donning PPE and stepping up. That's you, me, and every healthcare worker (HCW) with a pulse.

Trouble is, we're getting COVID-19, and a bunch of HCW are becoming infected every day. Something isn't right.

Let's look at some numbers and then talk about the problem.

Consider China first, after all they should have the most data, right? In March, they report 3,400 HCW infections and 13 deaths. But they under-report. If this is anything like the African Swine Fever data, China has had several times that number (they say 1.2 million ASF pigs; research suggests 400 million, hmmm).

In Italy, 20% of responding health-care workers were infected. More than 60 doctors have died in Italy. In Spain, the health ministry announced this week that out of 40,000 confirmed cases of coronavirus in the country, 5,400 — nearly 14% — are medical professionals. In France, five doctors have died from the virus as well.

Nearly 10,000 U.S. health care workers have contracted COVID-19, and at least 27 have died. A majority of those who tested positive (55%) think they were exposed while at work. Although the Washington State health department isn't collecting data, some counties are. At least 88 health care workers in Snohomish County have tested positive for the coronavirus, out of 1,300 total cases. In Yakima County, it's more like 30%.

In Pennsylvania, 4.4% of the health care workforce had COVID-19 as of Monday. In Oklahoma, 10.6% of confirmed coronavirus patients worked in health care; in Ohio, that share is roughly 20%. Rhode Island, roughly 70% of COVID-19 tests are going to medical personnel, and they make up a quarter of all confirmed cases in the state. while in Minnesota, it was 28% on Wednesday. Many states aren't following the HCW numbers and others are still acquiring data.

I think we can see where this is headed. If you're a HCW, you are at higher risk of infection.

And, of course, it's not just COVID-19. In 2014-16 the Ebola epidemic in West Africa saw HCWs 20-30 times more likely to be infected. In 2003, the SARS outbreak "only" caused 8,500 cases, but 37-63% were healthcare workers.

Why do HCW get sick?

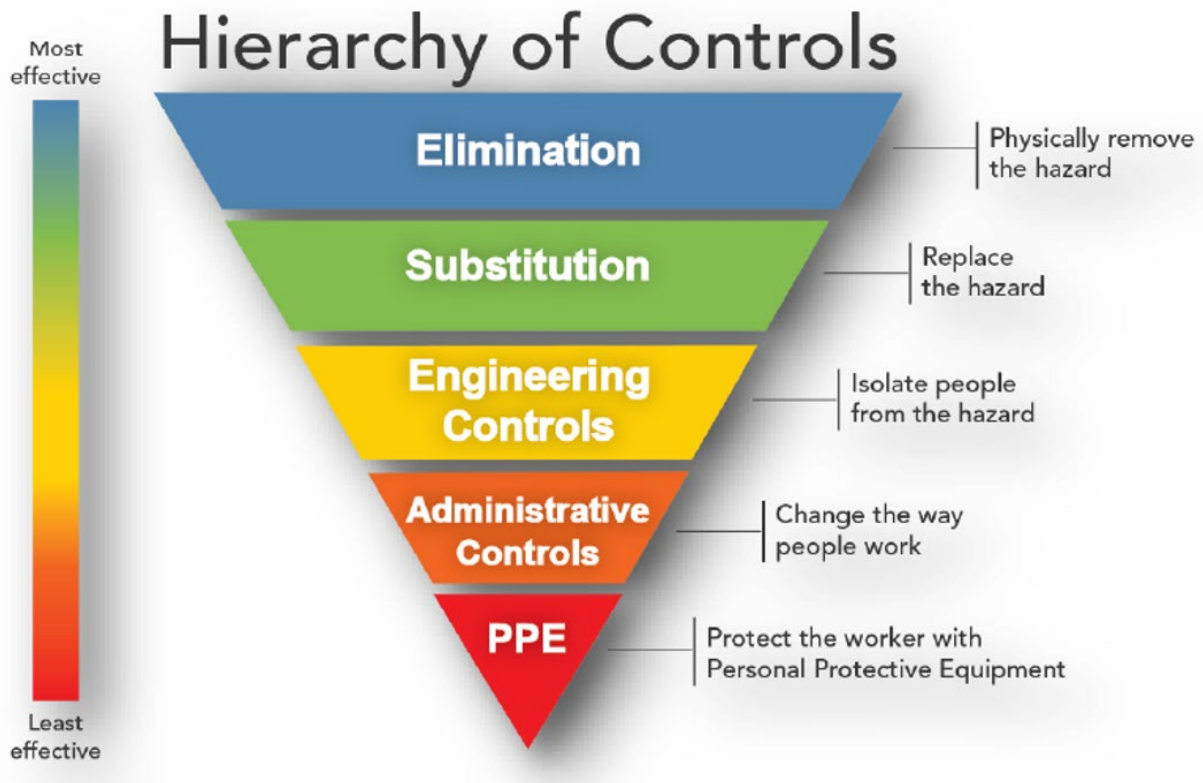
Well, if you think it's all about PPE, think again.



Yes, yes, yes; PPE is important, it's vital, it's necessary. It just ain't the only thing we have to keep us safe.

PPE is the LAST RESORT! It's the bottom of the list in biosafety controls. It's the last thing between you and danger. If we're blaming a lack of PPE on all these HCW infections then we're missing something else that should be saving lives.

Here's a little chart that I post now and again:



Now, we can't run away from SARS-CoV2. We can't use elimination or substitution as safety valves because the virus is something we have to deal with. But we can use other tools in the toolbox to make our lives safer.

Engineering controls are one way to be better at being safe. Isolation is probably the most obvious. With Ebola, they're using isolation rooms that are allowing HCW to provide care without contacting a patient.





But this is the extreme. There are conventional engineering controls we take for granted. Like hand washing, negative pressure, HVAC, and disinfection.

Administrative controls are another set of tools we could improve. We know how to work safely around infectious disease, so why don't we? A standard of care that is defined and followed is fundamental to how we operate. Every SOP in your lab has a reason. To perform the task correctly, safely, and consistently. Uniform guidance for COVID-19 care that addresses the risks would be a good place to start.

We look at PPE like it's the be-all of our safety and, in reality, it's the last line of defense. We'll improve our care for COVID-19 patients and HCW by assessing the risks and finding solutions that use all the tools.

As the pandemic accelerates, access to personal protective equipment (PPE) for health workers is a key concern. As a biosafety guy, I can only tell you that PPE is not the only answer; it's not even the best answer. Out protection lies in understanding the risks and using our hierarchy of controls to make our work safer.

Have a great week and be safe,

Bryan

