

# STANDARD DEVIATIONS: Plotting Peril

Greetings,

Are we healthcare workers?

Well, yes, of course. While laboratory staff usually don't have direct patient contact, many of us do. We perform phlebotomy extensively and deal with outpatients all day long. We are in direct contact with patient specimens that contain the very pathogens that led to our patients' hospitalizations. We breathe the same air and touch the same surfaces as our patients throughout our institutions. And we interact with staff who are in direct contact with very contagious people and places. We are definitely HCW and the studies should be looking at our risk, but the numbers for Laboratory Acquired Infections (LAI) just aren't there, yet. But, the numbers are accumulating for many professions and we can begin to examine the risks.

We're about as close to the action as it gets. And that **proximity** puts us at risk.

On **April 15, 2020**, the CDC issued an initial finding about HCW infections and deaths: over 9000 HCW had acquired COVID-19 and 27 had died.

Yesterday, **June 14, 2020, 60 days later**, the statistics are updated: **77,186 cases and 412 deaths**.

**In two months the incidence grew 800% for infection and 1500% for deaths among HCW.**

Notably, the data only reflects the number of HCW surveyed and does not reflect the actual number of infections. Most models predict much higher figures when the totals are known.

The Department of Labor has been crunching some numbers to look at the risks of different professions. They have plotted the information as Exposure to Disease (Y axis) and the Physical Proximity to Others (X axis) to get a sense of the risk for different groups. The closer one is to the upper right-hand corner of this graph, the closer one is to infection. Let's just look at three examples: Loggers, Registered Nurses, and Microbiologists. The target group is highlighted in color in the graph.

The interactive map is found here, (<https://www.nytimes.com/interactive/2020/03/15/business/economy/coronavirus-worker-risk.html>) for those interested in the full spectrum.





{Loggers are low risk, duh.}

Loggers? Why loggers? Well, we want to see the graph in action, so let's look at the extreme low end, too.

FYI, the highest points are dentists, dental hygienists, and respiratory therapists.





{Registered Nurses are way up there!}

Nurses. These guys are the frontline, right? Let's expect them to be pretty risky ...



{Micro has the same Exposure risk with less Proximity!}



Microbiologists. Is this where you expected the point to appear? Although our proximity to others is slightly less than RNs, we have essentially the same exposure. Surprising? Hardly.

In the laboratory, we understand that risk abounds and we mitigate those risks with our hierarchy of controls. Our policies, and engineering, and PPE use all work to protect us at the bench. It's interesting to see these controls being applied to our everyday lives because of the pandemic.

Biosafety requires vigilance and dedication. The lessons we've learned from Hepatitis, HIV, and any other pathogens (whatever their route of infection) continue to be important tools in our defense. Our proximity to risk makes the value of those lessons even more precious.

Have a great week and be safe,

Bryan

