

STANDARD DEVIATIONS: The Other Side

Greetings,

First, there is fever and fatigue, then a persistent, hacking cough and shortness of breath. It is aerobic, and spreads easily in crowds or close contact with a symptomatic or asymptomatic person. Contact tracing, sheltering in place, and closing businesses are efforts to mitigate spread of the disease. The sick are sequestered and treated for weeks that can turn into months.

Sound familiar? **It's tuberculosis**, and it has used the cover of COVID-19 to creep back to the forefront of infections that ravage its victims.

In 2018, 10 million people fell ill with tuberculosis (TB). Despite being a preventable and curable disease, 1.5 million people died from TB that year (latest WHO data) – making it the world's top infectious killer. TB is caused by bacteria (*Mycobacterium tuberculosis*) and it most often affects the lungs. TB is spread through the air when people with lung TB cough, sneeze or spit. A person needs to inhale only a few germs to become infected.

About one-quarter of the world's population is estimated to be infected by TB bacteria. Only 5-15% of these people will fall ill with active TB disease. The rest have TB infection but are not ill and cannot transmit the disease. Both TB infection and disease are curable using antibiotics.

A curious anomaly about the situation with TB is reflected in the testing numbers. The number of reported cases has dramatically fallen over the last few months, but the number of infections is probably growing. And, **when we lose this connection between identification and treatment, the result will be unnecessary increases in disease and deaths** in the millions. We are likely to see a decade worth of treatment success simply vanish due to a decrease in detection.

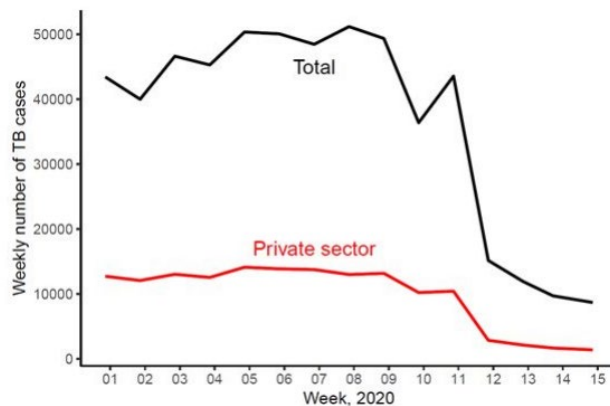


Figure 1. Trends in weekly case notifications in India in 2020



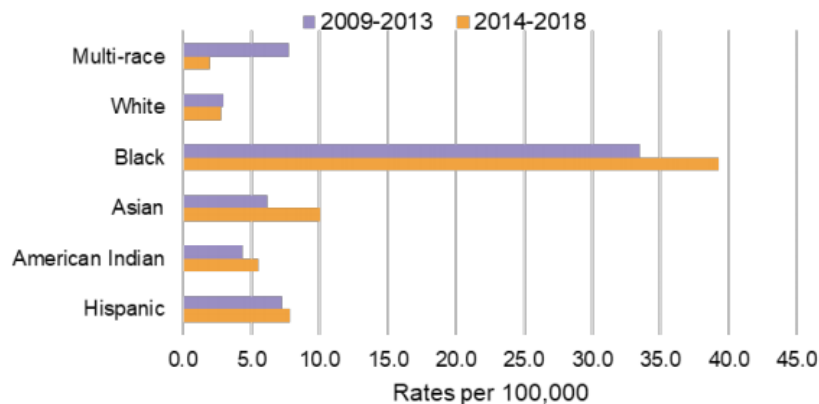
The same phenomenon is occurring with HIV and malaria.

Lack of detection, delays in treatment, and shuttered prevention programs caused by pandemic response are contributing to increased incidence and consequence.

And all this will lead to one certain result. **Laboratories around the world will see an increased workload dealing with these patients.** The burden in Asia and Africa for lab testing in diagnostics and treatment for these three diseases will skyrocket in the near future.

Will Utah see the same? Well, not for TB or malaria, based on our incidence of these. HIV may be a condition that we see increased testing for in Utah. Our case numbers have been increasing for Utah populations in the last 5 years. The expectation in the time of coronavirus is that these increases will continue and expand.

Fig. 8 Many Utah Populations Had Minor Rate Increases in HIV Diagnosis, 2009-2013 vs 2014-2018



{health.utah.gov}

And, of course, it isn't that simple. Flu season is coming, cancers and other diseases have been undertreated during the pandemic and these will also lead to increased diagnoses, hospitalizations, treatments, and **testing** needs. Oh, yeah, there's a pandemic going on, too.

Fallout for COVID-19 will be reflected in many ways. One certainty is that increased laboratory testing will be required for the diseases and conditions that march on relentlessly.

This all points to remembering and observing our biosafety awareness. Bloodborne pathogens and basic laboratory safety issues are constant threats that will be with us before, during, and as a consequence of the pandemic.

Have a great week and be safe,

Bryan

