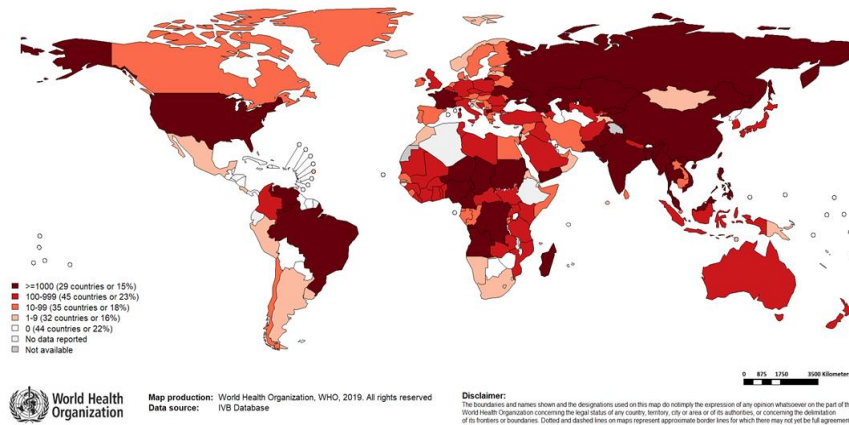


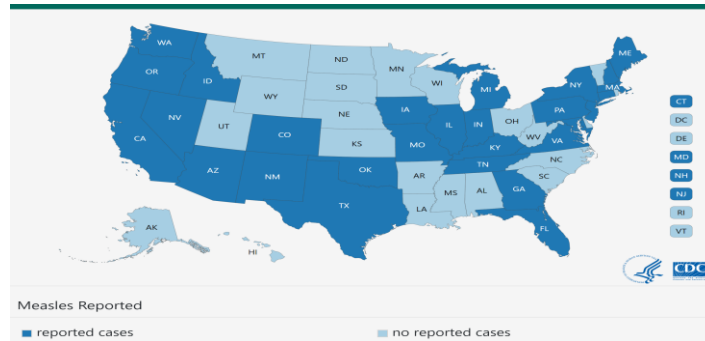
# STANDARD DEVIATIONS: Measles and Real Risk

How significant is measles in the US?

Last month, the United States crossed the 1000 case milestone. That seems meager compared to the 80,000 plus cases this year in Ukraine, alone. And yet, it's still a significant number. Because, measles poses a health risk to us here, as well as the rest of the planet. Here's a snapshot of the last six-month widow:



And here's where we've seen it in the states this year:



Last week I downplayed the risk of acquiring zika virus in the United States. This is because the likelihood of acquiring zika is just about ZERO here in the US.

What about measles? This is a different beast. Even though our case numbers are low, just over 1000, doesn't mean the risk is the same as zika. Measles is a much hardier virus. It tolerates our geography perfectly fine. And the vector for measles is also much hardier than the *Aedes* mosquito because, let's face it, it's us; we're the vector. As an airborne, highly transmissible virus, we are as susceptible as our proximity to the next person (actually, more so). So, the risk for measles is much, much higher than zika. As a matter of fact, historically and worldwide

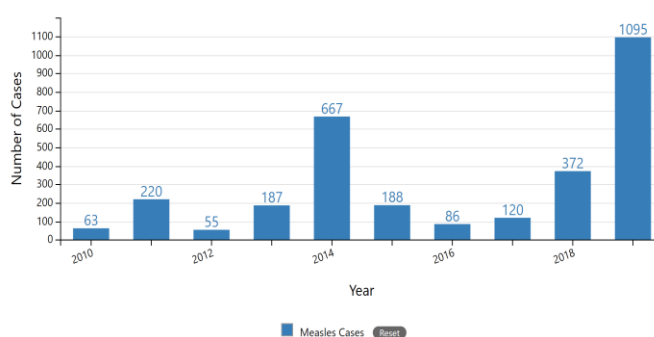


measles is a huge, high risk issue. Here in the US and in many countries, mitigation steps like isolation, quarantine, and vaccination have made that risk less observable, not less real.

Our recognition of measles as a risk led us to mitigate the disease years ago. We declared the US officially measles free in the year 2000. Ah, but, here we are in 2019 with over 1000 cases; and if you look back, we really didn't get rid of it. The threat is still there. Countries such as Ukraine and the Democratic Republic of Congo are seeing 10s of thousands of cases this year, because their efforts at prevention such as isolation and vaccination are still catching up to ours. The risk is still evident. If we eliminated measles from America in the year 2000, how do we explain the following graph??

### Number of Measles Cases Reported by Year

2010-2019\*\*(as of June 27, 2019)



**We never eradicated measles.** We just marked a date on the calendar where we hadn't seen it for a while.

And let's think about how this matters to us in the lab. Because, of course, that's where this is headed. How many of your staff have acquired disease in the lab? I'm guessing, not very many (hopefully none). That's because we're using a similar risk assessment. We use isolation, we use protection (gloves, face masks, eye wear, BSC, etc.) and that makes risk less observable, not less real. It's not that the risk is low, it's not; it's very real. We are not about to declare labs free of bloodborne pathogens, are we? We just know, despite every effort, risk exists, and we mitigate that risk.

So, here's the gist, it's that awareness of risk, the use of PPE, the adherence to our safety protocols, that keep us safe, not the absence of risk. Just like we're seeing an increased case number of measles due to what seemed to be breaches in mitigation effort (cast your vote here for vaccines), we need to protect laboratory workers from breaches in our safety consciousness.

**We will never eradicate laboratory acquired infection.** But by practicing good laboratory technique we can mark our calendars. Eradication of laboratory acquired infection is a lofty goal. It's a risk that we can't eliminate, we can only mitigate.

Have a great week and be safe,

