



I am writing on December 19, 2021, from Scituate Rhode Island. Scituate is a little place, population 10,000, in a little state, population one million. I work sometimes in Central Falls, Rhode Island, the smallest, poorest and most densely populated city in the smallest state in the union. Still, I have the sense of being on the front lines of a war we are losing, at least at the moment, against Covid-19. Rhode Island is once again the most infected state in the nation. Central Falls had a similar dubious honor for a time in the spring of 2020. It was briefly the most infected place in the world, the most infected place in the nation and the most infected place in Rhode Island. Central Falls is struggling with Covid-19 again, but it is pretty well vaccinated because of the courage and dedication of a committed mayors, a city council who went door to door registering people for vaccination, and because of the incredible heroism of my friend and colleague Dr. Beata Nelken, who opened a pediatric practice in January of 2020 and since then has taken it upon herself to stop Covid-19 in Central Falls. She and her staff test 100-150 people a day themselves and vaccinate 30-40 people a day of all ages, including many who are undocumented, people no one else seems to care about.

I am writing to tell you about a clear a present danger that I and many other public health professional fear will impact everyone in Rhode Island, everyone in the US and around the world by the middle of January, and to tell it to you straight. I'll discuss Covid-19 and the vaccines to prevent hospitalization and death and our ineffective, and perhaps pathetic response first, then the Omicron variant and the unique risks of social disruption it presents, and then discuss how our political polarization has both inflamed our risk and incapacitated our response, in three separate but interconnected essays, which I'll send once a day for the next three days.

Apologies in advance for writing and sending these just before the holidays: the timing stinks, but the virus isn't taking time off for the holidays, unfortunately. Most likely the holidays will spread the virus faster and father, as people gather and spend time together.

But first, some good news: young people and kids are not at significant risk from Covid-19 or its Omicron variant; and the damage done by the Omicron variant, which I fear may be significant, is likely to be done by the middle of February or the beginning of March. Even though the variant will be gone, the damage to our culture and our politics will be with us for years to come.

Now some facts, which some public officials don't seem to want you to know, but which you need in order to think clearly about the Delta and Omicron variants of Covid-19 so that you can protect yourself, your family and your community. Rhode Island today has the highest rate of Delta variant virus spread in the nation. More than 1100 people are testing positive every day, when you adjust for the number of daily tests, which means 11,000 or more people, or one to two percent of the population, have and are spreading the virus every day. That number is

doubling every two weeks or so. Rhode Island hasn't done anything effective at all to stop the spread of the virus, so that this number is likely to continue doubling every two weeks, at least until the Omicron variant arrives in force. The Omicron variant spreads at least twice and perhaps three or more times as fast as Delta. We don't know how Omicron will impact Delta spread or the number of hospitalizations and deaths or whether both variants can infect the same person at once or what that might mean.

We are now losing about six to seven people every day, or about half the number we were losing at this time last year, when the then Governor, acting far too late to save lives, mandated masks and restaurants, bar, and school closings. We are doing nothing to prevent the spread of the virus this year besides vaccination, so it is likely the virus will spread. Last week the new Governor announced very weak measures to reduce viral spread – masking at large events, and masking or vaccination for smaller venues. These measures cannot do more than reduce the speed at which the spread doubles by a few percentage points. Key health professionals endorsed the Governor's weak measures as the best outcome they could hope for politically. Their inability to speak out clearly about what we must do failed Rhode Island.

Our hospitals are nearing capacity; health care workers, already exhausted, are burning out; many health care jobs are unfilled. It is likely that hospitals will overflow in the next week and/or need to move to crisis standards of care, because of which some people will die unnecessarily because we will lack the capacity to care for them. We will start losing ten to fifteen or more people a day because so many people are infected, and the impact of being one of the most vaccinated states in the union will disappear, lost into our mismanagement of community spread.

And that's all before Omicron arrives in force. Most of the people who are hospitalized and die will be over sixty, and at least half of those will be vaccinated, with many being vaccinated and boosted. That won't happen because there is anything at all wrong with the vaccine. That will happen because two governors valued commerce over human life and because two governors tried to practice public health and failed at it, a discipline in which they weren't trained and didn't know – and because our legislature sat back and watched them proceed with reckless indifference to the value of human life.

The very excellent Covid-19 vaccine protects most people younger than 80 and those without significant chronic disease against hospitalization and death. **BUT THE VACCINE DOES NOT PROTECT PEOPLE WELL AT ALL FROM GETTING OR SPREADING COVID-19.** The vaccines do not offer perfect protection against hospitalization and death for people up to eighty. They fail to protect at least 5 percent, and likely as many as 15 percent, of younger people from hospitalization and death. Our vaccines offer very weak protection, if any, for people over eighty,

and people with significant chronic disease. Five to ten percent of people over eighty who contract Covid-19 will be hospitalized or die. One person in one hundred over sixty years old in the United States has already died of Covid 19, and an even higher proportion of people over sixty died in Rhode Island. That number is likely to grow and grow fast.

Public officials, including the otherwise very good people at CDC and others in government, don't want me to say vaccination doesn't stop the spread of the virus and that it doesn't work very well if at all for people over eighty and those with serious chronic disease because they are afraid these facts will discourage people from getting vaccinated and vaccinating their kids. Because they believe, incorrectly, that vaccination alone can stop the spread of the disease, because they are ignoring what is happening right in front of their eyes and refuse to believe the very able public health professionals who work for them.

All this means that we should be doubling and tripling our efforts to protect people over 80 and those with significant chronic disease from getting Covid -19, because infection carries a high risk of hospitalization and death in that group, vaccinated or not vaccinated. Those people should be staying home, having food and supplies brought to them, making sure everyone who comes near them is tested before any contact and masked during contact and those contacts should be brief, at least until community transmission drops to below 100 new cases/100,000/week. We need to focus on the elderly and those with chronic disease with all our resources, on their mental health as well as their protection. That's the only way to reduce hospitalizations and deaths right now.

Very unfortunately, it is simply too late to stop the spread of infection now. Covid-10 is like a cancer that has metastasized.

All this also means that CDC and HHS are wrong on three key recommendations. First, vaccinated adults should need to mask when they get together, which is different from CDC guideline. Vaccinated adults from different households should rapid-test before they are together, and they should mask whenever community transmission is high. (That means when community transmission is high, we also need to limit indoor dining and drinking, and rapid test everyone on entry if we must allow indoor dining and drinking at all.)

Second, anyone who is vaccinated and is a close contact to someone who is Covid-19 positive needs to quarantine for at least seven, or better, for fourteen days, and not leave quarantine until they have a negative PCR test on the **seventh** and **tenth** days. That's because vaccination doesn't prevent the vaccinated person from getting and spreading the disease, and because the incubation period is between three and fourteen days.

Third, no one should be asked to test weekly if they are not vaccinated: the mandate to get vaccinated or test weekly makes no public health sense. Everyone, vaccinated and unvaccinated, can get and transmit infection, which means

everyone who works in a congregate setting (with people from different households) or circulates or shops regularly, should be PCR tested twice a week as long as the level of community transmission is greater than 35 new cases per 100,000 per week and until we have gone at least three months without a Covid hospitalization or a Covid death.

That also means that there is no public health justification to require vaccination (from the perspective of disease transmission) -- and that vaccine passports are useless. There *is* public health justification to require vaccination *and masking*, particularly of health care workers, from the perspective of continuity of operations: hospitals, practices, EMS, police, fire and businesses can't operate without staff, and unvaccinated unmasked people are many times more likely to contract and transmit Covid-19, and miss work in large numbers, which will make these organizations very difficult to operate, a situation that I expect to occur again the US by mid-January because of the Omicron variant -- but more on Omicron later.

All the vaccination shaming can and should now stop. At one level, I don't care if you get vaccinated or not: the life you risk is only your own. I do care if you mask, test, isolate if infected and quarantine after a contact. Masking, testing, isolation and quarantine matters to help us control community transmission, which is much more important than the vaccination rate in preventing hospitalizations and deaths.

Finally, CDC has also missed the boat on recommendations for large group events, dining, and bars. CDC failed to define large group events, likely, to avoid alienating the religious community. Many people in that community became infected, hospitalized or died as a result. CDC needs to define large group events as anything over fifty people and recommend that all of them go virtual as long as the community transmission rate is over 100 new cases/100,000/week.

A word on masking. Masking is 53 percent effective at preventing the spread of virus from people who are infected. We actually don't know how effective masking is at preventing a person who is masked from becoming infected. But even 53 percent effective means 47 percent ineffective: masks reduce the dissemination of virus but don't stop that dissemination. Better to be masked than unmasked while community spread is high.

But like vaccines, masks alone don't stop the spread of Covid-19. Testing alone doesn't stop the spread of Covid-19 at all. Contact tracing, isolation and quarantine alone don't stop the spread of Covid-19, particularly when community transmission is greater than 35 new cases/100,000/week, because no department of health in the universe has the resources to reach all infected people and their contacts when there are so many people infected.

As many better organized, better disciplined, and more unified nations around the world have shown, good public policy, intelligent social caution when disease is spreading, vaccination, testing, contact tracing, isolation and quarantine can reduce hospitalizations and death significantly. Toronto, just over the border, has five percent of our infection rate, very few hospitalizations and a fraction of our deaths: 3721 deaths in a very diverse city of four million. Rhode Island, one million people, has had 3000 deaths so far, or almost *four times* as many per capita. Other cities and nations have done far better yet.

We *can* do better. But we must want to save lives more than we want to party, shop, and eat out. At least in the short term.

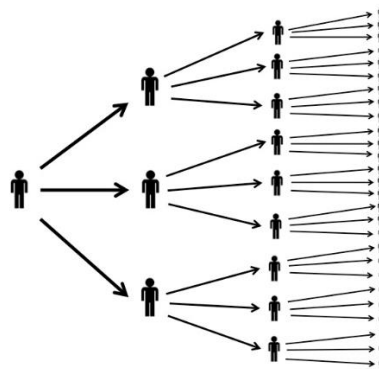
The way to do better is to focus on reducing community transmission to under 35 new cases/100,000 people per week, or no more than 50 new people testing positive with Covid-19 in Rhode Island each day. (Right now, we have about 1100 people testing positive in Rhode Island each day.) Community transmission measures how many people have and are transmitting Covid-19 presently. It is not a pure measure – the number of people tested and who is getting tested regularly impacts the number of people who test positive, but it's the best measure we have of disease activity. Most experts think that at least two and as many as ten people times the number of people testing positive is the real number of people who get Covid-19 each day, because many cases have no symptoms so people with them don't get tested, and many people with symptoms don't get tested anyway. So on a day when a thousand people test positive, likely two to ten thousand got Covid-19. And while Covid-19 is most infectious the day before a person gets symptoms and for a day or two after, people with Covid-19 can stay infectious for up to ten days. On a day when a thousand people test positive and two to ten thousand people actually got Covid-19, there are likely *ten times that* number who have and can transmit Covid-19 (all the people who got Covid-19 in the ten days before) so twenty to a hundred thousand people are actually walking around Rhode Island with and able to transmit the disease. Yikes.

Community transmission is important because the elderly and those with serious chronic disease aren't well protected from hospitalization and death by the vaccine. When community transmission is high, there's lots of virus swirling around in the air and many people infected with it walking around, and so the virus will get to and infect the elderly and those with serious chronic disease -- and those people will need hospitalization, and many will die.

When community transmission is high, many young people will also get sick. Even though hospitalization and death are rare in the young, there are many more young people than old people, and when lots of young people get infected, some of them will get hospitalized and die: a rare event, multiplied by a zillion people, produces a significant number of hospitalizations and deaths, even though the percentage risk stays small.

Imagine putting a tiny drop of red dye into a bottle of water. If you get some of that water on you, no one will notice the dye because it was so diluted by the water. Now imagine putting seven hundred or a thousand drops of dye into the water. That's enough to turn the water red, and that red water will stain anything it touches. And that's the difference between low transmission and high transmission. When transmission is low, almost no one gets infected, and we have the resources we need to track down each case and its contacts, isolate the case and quarantine that person's contacts and community transmission stops. When community transmission is high, many people are infected, they spread the disease to many others who spread the disease to others still, including the elderly and those with severe chronic disease, so many people need hospitalization and will die (about three to four weeks after they get infected) -- and the cycle continues until every susceptible person who is not protected from exposure gets infected and either recovers or dies.

What's worse is that people who allow community transmission to occur by not masking and not staying away from big events, bars, restaurants, and stores usually never see the consequences of their choices. If I'm young and healthy and have the virus and don't know it, I'm likely to transmit the virus to three other people (if I have Delta) or eight others (if I have Omicron) who each transmit it to between three and eight people, likely young and healthy, who each transmit it to between three and eight others yet and so forth. With each round of transmission, the virus moves farther and farther from my social circle, and closer and closer to susceptible people. And because the incubation period is between three and five days, it takes nine to fifteen days for there to be three generations of spread. The virus I transmit today ends up in twelve to one hundred and twenty-eight people in between nine and fifteen days. Then it takes three to four more weeks before the person I inadvertently and indirectly infected gets hospitalized and dies. It's like hitting a pedestrian on a dark country road at night, only you never ever hear a bump as you run into them and think you've run over a branch in the road.



It is now possible that we will lose 70 to 100 more Rhode Islanders before the end of the year, and at least 100 and perhaps as many 600 during January alone, and perhaps more, if Omicron turns out to be as dangerous as Delta. But 18 to 25 of those deaths in December and 25 to 150 of those deaths in January **will be**

**among people under 60.** No, Covid hasn't changed. That's just how the numbers work when many people are infected and when you understand the known limitations of the vaccine.

About half of those deaths will be in people **who were vaccinated.**

We can't change about 100 to 250 or those deaths. They will come from virus already contracted by susceptible people. The die is cast for them. Their deaths were preventable. But we all chose not to prevent them by wearing masks and staying home. We decided that pizza parlors, bars and partying were more important than those hundred or two-hundred-and-fifty odd lives. Shame on us. But we can still prevent another 100 to 350 deaths.

To save between 100 and 350 lives, we must act together, starting today. We must do what the Governor and the legislature has failed to do, which is reduce the rate of community transmission. We must vote with our feet; with the choices we make today and each and every day of the next few weeks.

If everyone stops going to bars and restaurants TODAY, and stops shopping TODAY, we'll see a drop in community transmission in about ten days, or two to three generations of spread. The load on hospitals and other health care folks will start to drop in about two weeks.

But not everyone is going to do that, you might be saying. Almost no one is going to do that. We've all had it with Covid. We're tired.

And you are probably right.

But understand our choices have consequences. We are digging graves for between one hundred and three-hundred-and-fifty people. And nobody knows who among us will get to lie in them.

Or, we can just stay home for a bit, take the responsibility for public health back from a government that puts business and commerce in front of human lives, and, in doing so, rebuild our democracy just a little, doing for others what we would want others do for us.

Not a bad choice at this time of year, when all of us, regardless of race, creed, religion, gender, language or community, think about and yearn for rebirth.

Thanks for reading,

Michael



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