## Local Health Officer #9 Lots of news about infectious diseases (may be TLDR)<sup>\*</sup> Clifford Dacso, MD, MPH healthofficer@souththomaston.me

For many reasons, the topic of immunization stirs an emotional response. This is not new. Edward Jenner in 1796 in England inoculated an eight-year-old boy named James Phipps with material from a cowpox infection and showed that it prevented smallpox in the boy. Jenner tried valiantly to infect James with smallpox (amazing! – no human subjects protection in 1796) but he never developed the disease. He was protected by the cross-immunity conferred by a cousin virus, cowpox. Certainly not an experimental strategy that we would pursue today! Jenner is credited with developing the concept of immunization, but he almost certainly did not. Click <u>here</u> for a link to the true story. What is true is that the opposition to cowpox immunization became white-hot among physicians and the public. The picture below is one of my favorites from an 1803 newspaper showing Jenner vaccinating people who subsequently developed features of cows!



Some objectors, including some local clergy, believed the vaccine was "unchristian" because it came from an animal. For other anti-vaccinators, their discontent with the smallpox vaccine reflected their general distrust in medicine and in Jenner's ideas about disease spread. Suspicious of the vaccine's efficacy, some skeptics alleged that smallpox resulted from decaying matter in the atmosphere. Lastly, many people objected to vaccination because they believed it violated their personal liberty, a tension that worsened as the British government developed mandatory vaccine policies in 1853.

Despite all that, the trajectory led to the eradication of smallpox from the face of the earth in 1977 (other than in labs in Russia and the US, another <u>interesting story</u>). This was the first time in human history that disease eradication had been accomplished. Enthusiasm spread for eradicating other diseases. Main candidates included polio and measles. Both are major killers, and they share with smallpox the characteristic of only living in humans. There is no animal reservoir for either virus, just like smallpox.

<sup>\*</sup> Too Long, Didn't Read

Why am I telling you all this? Because there is some new information about immunization that I think you should know, and I want it to be divorced from politics! First, Covid is not gone. There are still about 2000 deaths a week in the US, although 95% of hospitalizations from Covid are in people who are not up to date on vaccines. Close to 1.2 million Americans have died from Covid since the beginning of the pandemic. But the CDC has revised its guidance on respiratory disease isolation to recognize that it is hard to distinguish flu from Covid from RSV (respiratory syncytial virus). So, they now recommend for people to stay at home with an acute respiratory illness. You can go back to your normal activity when **both** these are true – you have not had fever of 24 hours (without fever reducing medicines) **and** your symptoms are improving. CDC doesn't define "symptoms improving" so here is the definition from the Minnesota Department of Health that I like: "Improved symptoms" means that a person no longer feels ill; they can do their daily routine just as they did before they were ill, and any remaining symptoms, such as a cough or runny nose, are very mild, or infrequent." After you go back to civilization, you still may be contagious so aggressive hand washing and masks when around vulnerable people for another five days make common sense. The reason for these recommendations is rooted in sound biology. Here is a chart of infectiousness for Covid.



## Source: Nat Rev Microbiol 21, 147–161 (2023

The key here is that the shedding of infectious virus is what causes the disease to be contagious. And virus is shed before you feel bad (nothing to do about that) and is almost gone by the time that symptoms subside. So how you feel is a good guide for how long you are contagious.

Here's the last thing about Covid – CDC recommends that people over age 65 get a Spring Covid shot. I support that especially in vulnerable, chronically ill older people whose immunity may not be durable from a single Fall shot. Not enough people are fully immunized against Covid so this allows another bite at that apple. Also, long Covid is still a problem and the best way to avoid that nasty one is to not get Covid in the first place and the best way to do that is to get immunized. COVID has stubbornly failed to adopt the seasonal pattern of other respiratory viruses; there was a big summer outbreak in 2022, for example. Since there is not widespread testing anymore, I like wastewater sampling as a proxy for disease activity.

Here is a graph of wastewater testing in Maine (beige) and nationally (black)\_,



Here are the data from Knox County. You can see that we had a late Fall, 2023 spike here.



What this all means is what I have been saying (and boring some people) that we may be done with Covid, but Covid is not done with is. I could be talked out of everyone over 65 getting a Spring vaccine, but immunize vulnerable older people with chronic diseases? You bet.

Now for some good news. I started this letter with a newsflash from 1977 that smallpox had been eradicated. Now, it looks like another virus, influenza B/Yamagata, a particularly nasty strain, has not been seen since 2020 and is now officially gone and removed from the new flu vaccine. The fall vaccine will once again be trivalent – covering three strains, rather than quadrivalent – covering four. But you know I couldn't end this note with good news. Measles, once soooo close to being eradicated, is now resurgent. And it is almost always in unvaccinated kids. Measles is no joke, as those of us old enough to have experienced it in childhood will remember. We remember the two weeks at home from school, in a dark room, covered with spots. That was in kids; it is fatal to some adults and causes a vicious brain infection in others. The vaccine is amazingly effective, and it is impossible to get measles from the vaccine. About 500,000 reported cases and 500 deaths occurred annually before vaccine. Actual cases were a lot more, estimated at 3 to 4 million per year. Following vaccine licensure in 1963, incidence decreased by over 95%. In 2019, 13 outbreaks were reported; underimmunized communities accounted for 88% of cases. There is now another outbreak in the US, none so far in Maine. Some "authorities" are downplaying its significance. This is not good. It is important that all children receive two doses of MMR or MMRV vaccine. Adults born before 1957 (you know who you ((we)) are) are assumed to be immune because they (we) are presumed to have had natural measles that confers a lifelong immunity. There is

an ENORMOUS amount of misinformation out there about measles including from some sources that should (and do!) know better. Here are the facts: it's a rotten disease and the extremely safe vaccine is 97% effective. Measles is perhaps the most contagious of infectious diseases. The attack rate is 90%. That means that 90% of unprotected exposed people will get infected when exposed. By comparison, Ebola virus has an attack rate of 30%! Fortunately, no measles in Maine but keep immunizations current.

Next time, I am going to write about some of the Spring and Summer plagues like ticks and the brown-tailed moth. But for now, stay dry and don't track that mud into the house!