

## **What different types of tests are AVAILABLE?**

There are many platforms available. Some use anterior nasal swabs and some use deep nasopharyngeal swabs. There is no saliva test currently and widely available.

Each test has their advantages and disadvantages based on comfort, speed of testing and accuracy. The most accurate test are the deep but distinctly uncomfortable nasopharyngeal swabs and a three-probe PCR test such as done at Quest or the CDC. The disadvantage is that it does require a deep nasopharyngeal swab and must be sent away so that results are typically delayed two or three days. As these tests have a negligible false positive rate they are best used for screening and preoperative studies. These tests are the only test that should be used for screening in asymptomatic populations when the prevalence is low.

The quicker NAAT tests such as the Abbott ID or Biofire now are available several places around the county. They use anterior nasal swabs and are quicker but are considerably less sensitive and presumably less specific than the three probe PCR. For each of these tests, there is a critical shortage of cartridges. These tests are appropriate when a quick result is needed and high accuracy is required, such as a hospital admission.

Finally, there are some antigen tests that use anterior nasal swabs and are quick and cheap but are the least accurate of the three. These are not accurate enough for a high-risk situation such as hospitalization or even for travel but are probably most appropriate for low-risk outpatients.

So, depending upon the need for speed or high degrees of accuracy, one test may be more appropriate than the other.

## **How do we calculate the case rate?**

The 30/100,000 population is calculated by the state as the number of cases reported to them between 12:01 am Sunday to 11:59 pm Saturday, known as the Morbidity and Mortality Reporting Week. Our daily report includes cases reported to us by 10 am, so our daily case count may be slightly different than the state's and the weekly numbers may vary a little bit, but overall always end up at the same place. My prediction for last week was 24+/- 2 and the state numbers came in at 25.

For last week, if you look at Sunday, September 27<sup>th</sup> (below) we reported 233 cases. On Sunday, September 20<sup>th</sup>, we had reported 210 cases, for a week total of 23- within my predicted range.

I check the numbers over the last 7 days, each day. Today we are at 246, last Wednesday at 221, for a total of 25 cases over the last 7 days- similar to our numbers for last week.

When the case count is known, it is divided by our county population of 112,000 to get the result. So, last week we had 25 cases and 22.3 cases per 100,000 population. While high for us, it is still lower than Multnomah, Washington, Clackamas, Marion, Linn, Benton, Deschutes, Lane, Coos, or Jackson counties. Thus, this is still a very active pandemic. If this suggests we have turned a corner, it means we are lost and wandering.

At less than 30 cases per thousand we can open for K-3 and special populations and schools that are open for in person instruction can continue to be open.

## How should the BinaxNOW test be used?

I look forward to our meeting tomorrow. A few observations about these tests:

- **They need to be done in a lab that has at least a CLIA waiver.** This means that they cannot be done at fire stations or at schools, unless they have a CLIA lab.
- **These tests were validated on symptomatic people.** Although there is a suggestion that they could be used for mass screening, the total number of asymptomatic patients tested was **6**. We should be very careful about thinking about these for mass screenings, at least until more data is available. If for example, they have a 3% false positive rate (*and by their testing there could be as high as 10% false positives*), mass screening events will be a disaster in those areas with a low pre-test probability. For example, in Benton county, a screening test found about 1 positive in a thousand using a very specific test. If you now used a test with a 3% false positive rate, this same population would yield 1 true positive and 30 false positives- a truly disastrous result.
- **The site that does these tests need to be able to collect a PCR.** The labelling of these products demands that negative tests in high risk patients be confirmed with a PCR. For our data, we should require a PCR for the first 100 positives, to try to get false positive data.
- **This test does need to be done by a medical professional.** This means that they cannot be handed out to the public.

With that in mind, would recommend:

- **These test should be prioritized to those sites that would be likely to see relatively low risk symptomatic patients, especially kids, low income people and seasonal workers.** This would include (in order of priority):
  - **FQHC**
  - **SBHC**
  - **Tribal clinics**
  - **Rural health clinics**
  - **Primary care providers, (not listed above)**
  - **Hospitals (as they have other testing and have high risk patients)**
- **Those who receive the tests agree to some principles:**
  - **They would not charge for the test itself** (although they might charge for a visit)
  - **They would use the test as suggested by the county, with priority for the groups above, i.e., low risk symptomatic patients, especially kids, low income people and seasonal workers**
  - **The would report positive tests to the county**
  - **They would report positive and negative results to the state, in a complete and timely manner.**

Operationally,

- **These tests are packaged in groups of 40. Would give one packet to each of the high priority sites to start**
- **Would then work down the priority list**
- **Would “refill” clinics as they get down to 10 tests, and after they have entered the data for the first 20.**

- **If Oregon gets 1,000,000 tests over the next 6 months, then DC might expect 40,000 tests over the next 26 weeks or about 1500 tests a week.** That will give us lots of testing. We currently do about 500 to 800 tests a week, so this could double or triple our testing. However, with all things related to testing, we have been burned so many times that I only believe testing hype when it actually arrives.

## **When there is a case in a school, who needs to quarantine?**

When there is a case, those who have close and direct contact are asked to quarantine. That would include other students, the teachers and the aides in the room.

Those who did not have close contact, like students in the other rooms do not need to quarantine. Similarly, contacts of contacts, like family members of the teacher, do not need to quarantine, but all should be on the lookout for symptoms of cough and fever, and should not go to work if sick. If sick, they should contact their provider and get tested if recommended.

## **Just how deadly is this virus?**

Let's look at it in different ways.

The broadest measure is looking at the **Infection Fatality Rate (IFR)**. This means that if you find or estimate how many people are infected, what percentage of them would die? The current estimate is about 0.6%, or 6 in a thousand. That number is in the moderate range and compares to an infection fatality rate for typical flu at less than 0.1% or less than 1 in a thousand, measles at about 0.1% or 1 in a thousand. So, it is much higher than flu or measles but much lower than bacterial meningitis.

Another way to look is the **Case Fatality Rate (CFR)**. This looks at the death rate among those who are diagnosed with Covid 19. It varies over time and in different places, but is about 3% overall (or 30 in a thousand), with rates as high as 14% (or 140 in a thousand) among those over 80.

The leading causes of death in the US are heart disease and cancer, but this year, Covid has caused 200,000 deaths in the past 6 months and thus, Covid will be the third leading cause of death, displacing accidental injuries. So, while less than 1 in a thousand people have died of Covid, it is a lot of deaths in comparison to other causes. For example, breast cancer will claim about 20,000 lives in these 6 months, about 24,000 will die of pancreatic cancer in these 6 months and about 6,000 will die of HIV in 6 months.

Another way is to compare the deaths from Covid to other prominent causes of death. Overall, Covid has caused at least 200,000 deaths in the US in the past 6 months. Compare this to the rate of death from auto accidents (16,000 in 6 months), murders (8,000 in 6 months), and suicides (24,000 in 6 months).

The death rate is thankfully lower among children, but Covid is still deadly and will cause more deaths than deaths in hot cars, and as many deaths as childhood leukemia or bacterial meningitis.

Among our police, Covid will be the leading cause of death this year.

Among our active duty military, Covid will be the third leading cause of death.

## What about underlying conditions?

We frequently hear that those who die of Covid have “underlying conditions” and thus, their deaths are somehow less important or that death was imminent. This is so disturbing and really reflects a misunderstanding of the incidence of underlying conditions.

I checked the CDC National Center for Health Statistics. It showed that for people over 65, that 85.6% had one or more underlying conditions, of diabetes, cardiovascular disease, COPD, Asthma, Cancer or arthritis. The “underlying conditions” for Covid include these conditions PLUS obesity, or smoking, and thus well over 90% of those over 65 have an underlying condition. So, finding that the great majority of older people who die have an underlying condition is not the least bit surprising.

While many of those who have died around the country are older and many were in nursing homes, there are way too many deaths in young people and those who were living very full and active lives. All of the death in Douglas county were in people who were quite active. You will remember the many cases and deaths on cruise ships- these were people who were well enough to go on an international cruise.

When I think of groups that are healthy and fit, I think of our active duty troops, our police and our firefighters. Even though these groups are very healthy, they too have died from Covid 19.

Among our active duty military, at least 88 have died from Covid 19, making it the third single leading cause of death among active duty soldiers, after Accidents and suicide. More soldiers have died this year of Covid than from enemy action.

The leading cause of death among active police officers this year is Covid 19. This is from USA Today:

Deaths of Police Officers	Death through September 3
Covid 19	101
Gunfire	31
Auto crash	13
Vehicular assault	7
Source: Officer Down Memorial	

As of August, 43 firefighters have died of Covid-19. For 2020, Covid 19 is likely to be the leading cause of death for firefighters.

And children generally do well with Covid, but during this pandemic, about as many kids have died of Covid as have died from leukemia and many more than from deaths in hot cars or meningitis.

So yes, many of the people who die of Covid do have underlying conditions, but most older people have underlying conditions, and this virus does kill the young and otherwise healthy and too often even kills our children.

