

The Common Good: Preparing for the Corona Virus Pandemic in Union County
By Bill Whitaker (3-19-20)

In response to the coronavirus crisis city councilors and county commissioners in Union County must make the difficult decision to require all persons except those providing essential public services to shelter at home immediately. Why is this drastic action necessary?

As of March 19 the Oregon Health Authority confirmed a total of 88 people in Oregon infected with COVID-19, the novel coronavirus. Cases have now been documented in Union, Benton, Clackamas, Deschutes, Douglas, Jackson, Klamath, Lane, Linn, Marion, Multnomah, Polk, Umatilla, Washington, and Yamhill counties. So far there is one diagnosed cases of COVID-19 in Union County. COVID-19 is spreading throughout Oregon. It's coming at an exponential speed—gradually, and then suddenly.

Cases are typically discovered only when someone gets sick enough to seek medical attention. This is important as it typically takes approximately 5 days to start showing any symptoms. Here's the math: For every known case there are approximately 50 unknown cases. This is because if I become sick, I infect several people today, and they infect a few people each tomorrow (as do I), and the total count of infected people doubles every 3 days until I get so sick I get hospitalized or get tested and become a "known case". But in the time it takes me to figure out I am sick 50 others now have the virus.

With the virus now identified in Union County, our healthcare system is likely to be overwhelmed. Our neighbors are likely to end up treated in hallways. Exhausted healthcare workers will likely breakdown. Some will die. They will have to decide which patient gets the oxygen and which one dies.

COVID-19 is a pandemic now. It can't be eliminated. But we can reduce its impact by flattening the curve. The only way to prevent this disaster is social distancing today. Not tomorrow. Today. That means keeping as many people home as possible, starting now.

Some people cannot, or will not, practice social distancing for a variety of reasons and will continue to spread the virus to many people. So everyone else must start today. Social distancing isn't easy. But we must do it. It's not optional, because the virus is spreading exponentially. Social distancing is the only way to stop the spread of the virus.

Let's look at how this could play out in Union County.

Assume there are currently 4 unrecognized COVID-19 cases in Union County (there are very probably more). The virus is expanding exponentially. Since virus infections double approximately every three days, the 4 unrecognized cases in 15 days (5 doublings) would be $4 \times 4 \times 4 \times 4 \times 4 = 4096$ cases in Union County unless social distancing succeeds in flattening the infection curve.

About 15% of cases of COVID-19 infections require hospitalization. This means that 614 hospital beds ($4096 \times 15\%$) would be required. About 5% of COVID-19 infections (projected 205 cases in Union County) would require intensive care.

Grande Ronde Hospital is a critical access hospital with 19 beds in its Medical/Surgical Unit and 6 beds in its Critical Care Unit. During a time of

emergency the 25 bed limit is lifted. The hospital is preparing to try to take patients who present. Even the expanded capacity will likely fall far short of meeting medical need.

Some social distancing actions have already been implemented in Union County. Public schools are closed at least through April 28. Eastern Oregon University is teaching classes on line (but continuing to keep dormitories and cafeterias open). On-site consumption of food and beverages at bars and restaurants is prohibited. Safeway is joining Red Cross Drugs in delivering prescriptions. Cook Memorial Library is closed. Grande Ronde Symphony spring events are cancelled. Public gatherings of more than 25 persons are prohibited and meetings of more than 10 persons are strongly discouraged. Many residents are sheltering in place in their homes. People are working from home if possible.

These actions are reducing the spread of the virus and its impact on our healthcare system.

But voluntary social distancing will not flatten the curve of exponential virus infections enough. All Union County residents except those providing essential public services must shelter at home immediately.

If we reduce the infections as much as possible, our healthcare system will be able to handle cases much better, driving the fatality rate down. And, if we spread this over time, we will reach a point where the rest of society can be vaccinated, minimizing the risk. So our goal is not to eliminate coronavirus contagions. It's to postpone them. Each day we delay makes it more difficult to flatten the curve of new infections in the pandemic and will increase the number of deaths in Union County.

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Sources: Center for Disease Control. Oregon Health Authority. Oregon Public Broadcasting. Tomas Pueyo, "Coronavirus: Why You Must Act Now". Jason S. Warner, "Sober Math Everyone Must Understand about the Pandemic".