

Cowlitz County COVID-19 tests vs. cases

Cowlitz County elected officials have recently asked if our increased case counts are a result of more testing. This document aims to investigate this question and explain our findings.

Key findings

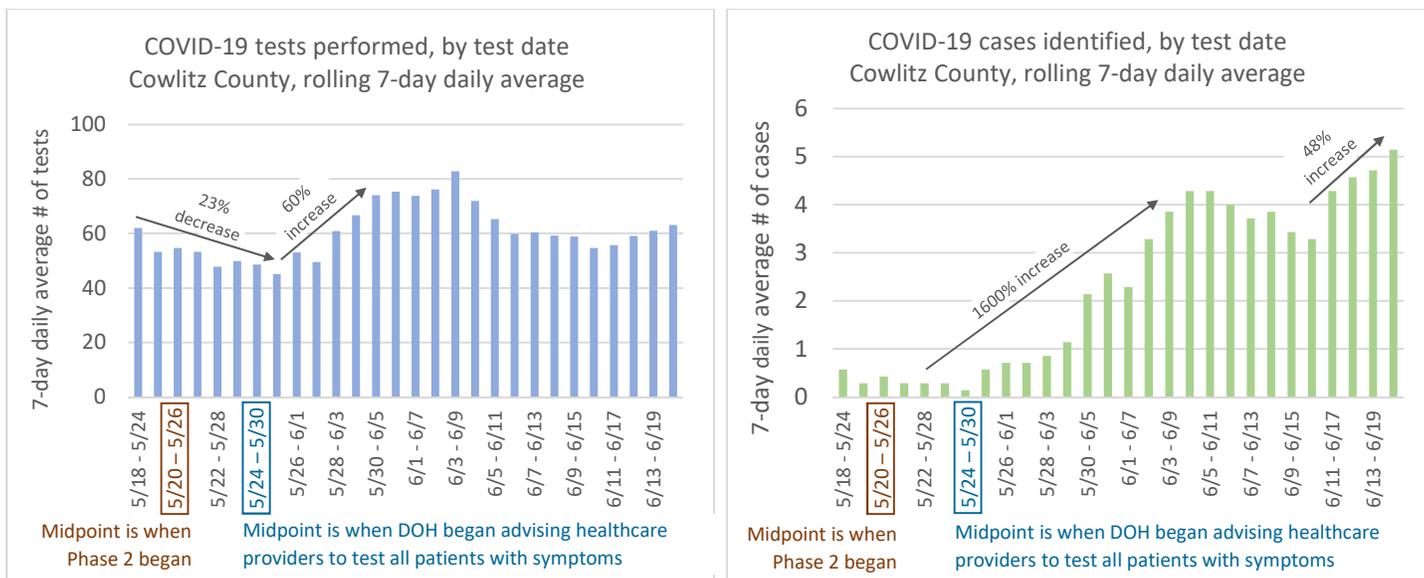
The transition to Phase 2 and increase in testing have both likely contributed to the increased number of cases in Cowlitz County. We would expect that increased testing would identify more cases, and that loosening restrictions on social contact would increase disease transmission. Because these happened around the same time in Cowlitz County, and our case counts were small mid-May, it is challenging to calculate exactly how much of the increase is due to each factor. However, looking at how the metrics in this report have changed can be helpful.

Guidance from DOH indicates that, as testing rates increase, the percent of tests that are positive should decrease. An increase in both of these metrics indicates that disease transmission is increasing in the community. Between May 18 and June 20, Cowlitz County appears to have had a 7% increase in testing, 1300% increase in case incidence, and 1500% increase in the percent of tests that are positive. Because of this, **the primary driver of our increase in cases is the fact that more of our tests are positive, not because we are doing more testing.**

Tests vs. cases

First we look at the number of tests and the number of cases, and how those have changed over time. These are average daily counts each week because our daily numbers are small. Our data begin on May 18, 2020, the point at which COVID-19 testing became widely available in Washington State.

Cowlitz County entered Phase 2 on May 23, four days before DOH released its updated guidelines for healthcare providers around COVID-19 testing on May 27, advising them to test all patients with symptoms.



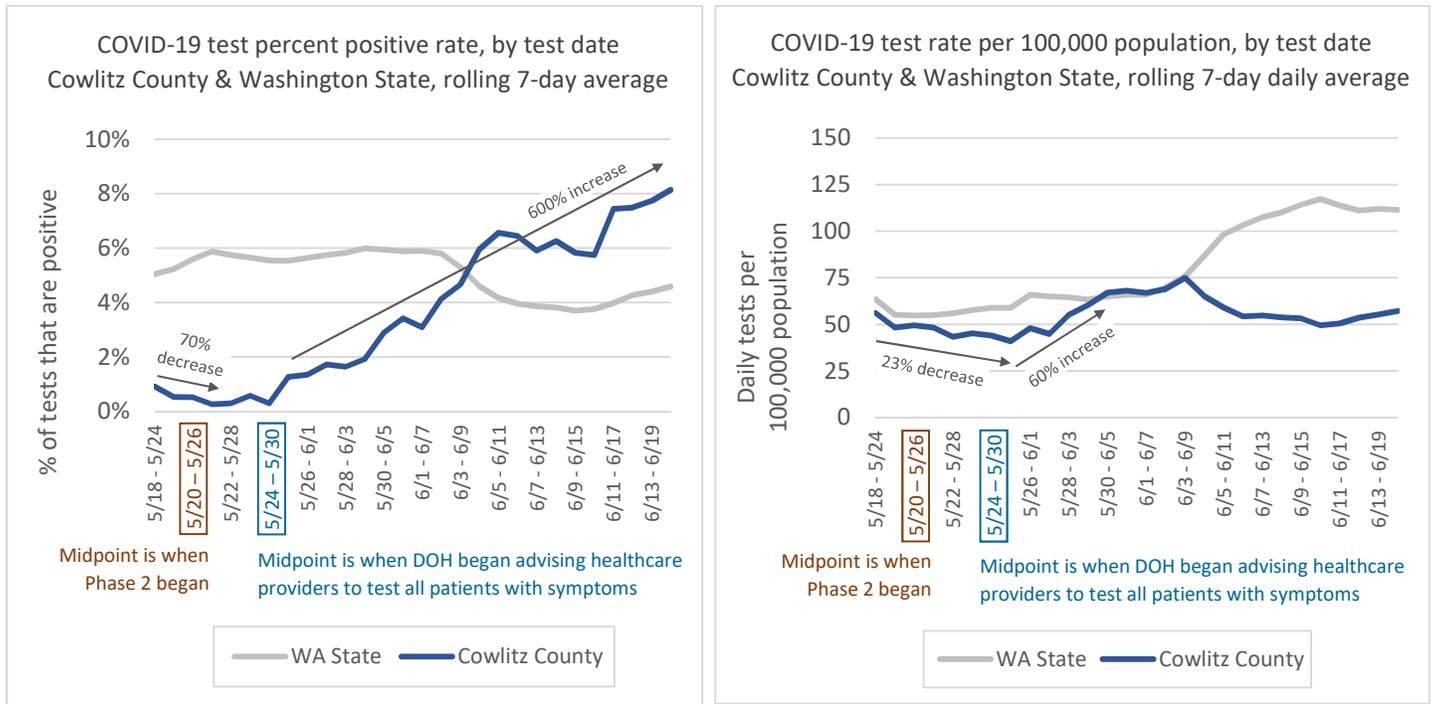
Statistical analysis identified trends in COVID testing and case identification. Time periods when these were increasing or decreasing are labeled. Both testing and case identification increased after Cowlitz County entered Phase 2 and DOH began advising healthcare providers to test all patients with symptoms.

Over the whole time period, cases appear to have increased 1300% while testing appears to have increased 7%.

Percent of tests that are positive and testing trends

The percent of tests that are positive is one particularly helpful metric to determine if case incidence is increasing. This is used for other diseases as well -- the percent of influenza tests that are positive is a key indicator for influenza surveillance each year.

Guidance from DOH indicates that, as testing rates increase, the percent of tests that are positive should decrease. An increase in both of these metrics indicates that disease transmission is increasing in the community.



Statistical analysis identified trends in the percent of COVID tests that are positive and overall testing rates for Cowlitz County. Time periods when these were increasing or decreasing are labeled. Washington State data are provided only for context – statistical testing for Washington State is not reported.

In Cowlitz County over the whole time period, the percent of tests that were positive appears to have increased 1500% while testing increased 7%.

Technical notes

- Trend calculations on page one are based on rates per 100,000 population, while the case/test graphs display counts.
- Testing data are included only for May 18 through June 20. We exclude earlier data because testing was not widely available before May 18th and making useful conclusions from those data is challenging. We exclude more recent data because they are incomplete due to reporting lags.
- Statistical testing has been done to determine trends over time using Joinpoint Regression Program, Version 4.8.0.1 - April 2020; Statistical Methodology and Applications Branch, Surveillance Research Program, National Cancer Institute. Trends over the whole time period were calculated using their methodology for the Average Annual Percent Change. Confidence intervals were not calculated for these estimates.
- Because time trends are based on statistical calculations, we have reported out to only two significant digits to avoid implying more statistical precision than is warranted.
- Time trend estimates are based on current data and may change as additional data become available.
- “Test date” refers to the date on which the specimen was collected.
- Testing data source: WA Department of Health COVID-19 Data Dashboard, available online at <https://www.doh.wa.gov/Emergencies/NovelCoronavirusOutbreak2020COVID19/DataDashboard>. Accessed 6/29/20 at 2:44pm.
- Cowlitz case data source: Cowlitz County Health & Human Services Case Log. Saved 6/29/20 6:59am.