



School Based Testing Pilot End of Year Report

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Tacoma-Pierce County
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Healthy People in Healthy Communities

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Executive Summary

In the fall of 2020, Tacoma-Pierce County Health Department developed a COVID-19 screening and testing pilot program for K-12 schools, staff and students funded with \$7.8 million in federal CARES Act dollars. The pilot worked with three rural school districts, White River, Eatonville and Peninsula, to continue with their reopening plans. Testing among school populations can help to identify cases of COVID-19 and prevent outbreaks.

Individuals under 20 years of age account for an increasing number of positive cases. Many parents, even when notified their child may have been exposed to COVID-19, may not pursue testing. Lack of testing data on children limits public health's ability to offer accurate information on disease spread among children.

We will publish a complete report in February.

Original Pilot Concept

When we first conceived the pilot testing concept, we envisioned these important community health goals:

- Students' physical, mental and emotional health.
- Safety of staff and students for a safe in-person learning environment.
- Reduce transmission in the community.
- Increase access to testing in areas with fewer testing options.

Project Goals

As we developed the testing strategy and a sustainable approach for the three-week duration of the pilot, the original stated goals evolved into these achievable metrics:

- Catch new COVID-19 cases using antigen tests to rapidly identify asymptomatic new COVID-19 cases among school populations.
- Measure the participation of Eatonville, Peninsula and White River school districts and families in the pilot (overall, by district and school, by staff/student, weekly trends, demographic differences).
- Assess staff and family perception of tests and testing process; influence of testing on perceptions of in-person learning.

Preliminary Key Findings

Testing Data

- 4,063 individual people tested, including 2,641 students, 1,372 school staff, and 50 other adults (guardians, family members, walk-ins).
- Performed 9,827 antigen tests and found 29 positives. The BinaxNOW test resulted in <0.30% probable (unconfirmed) test positivity rate.
- Of the 29 antigen positives, 28 received follow-up PCR (1 PCR refusal). Of the 28 PCR tests, 19 were confirmed positive by PCR.

- PCR tests were conducted for those with positive antigen tests and symptomatic individuals regardless of whether the antigen test was positive or not. Out of a total 73 PCR tests conducted 20 were positive. For every 491 antigen tests, we found one positive confirmed by PCR. This is a 0.20% confirmed “true” positive rate.
- Between Nov. 23 and Dec. 18, 2020, Pierce County had a 14-day case rate from 246 to 348 cases per 100,000.

Survey Data

- Across all three districts, 1,102 faculty and staff and 2,959 parents and guardians responded to the surveys. Responses came from 67% of Eatonville’s faculty and staff and 20% of families, 31% of Peninsula’s faculty and staff and 16% of families, and 51% of White River’s faculty and staff and 25% of families.
- In general, those who took part in the testing process liked it. They said the BinaxNOW tests were painless, and the process was convenient, quick, and easy.
- Suggestions include quicker notifications of negative results, mandatory testing, more frequent testing, and to expand testing beyond students and staff to the larger community.
- Approximately two thirds of respondents in the testing pilot did not change established opinions on reopening schools or COVID-19.

Testing Results

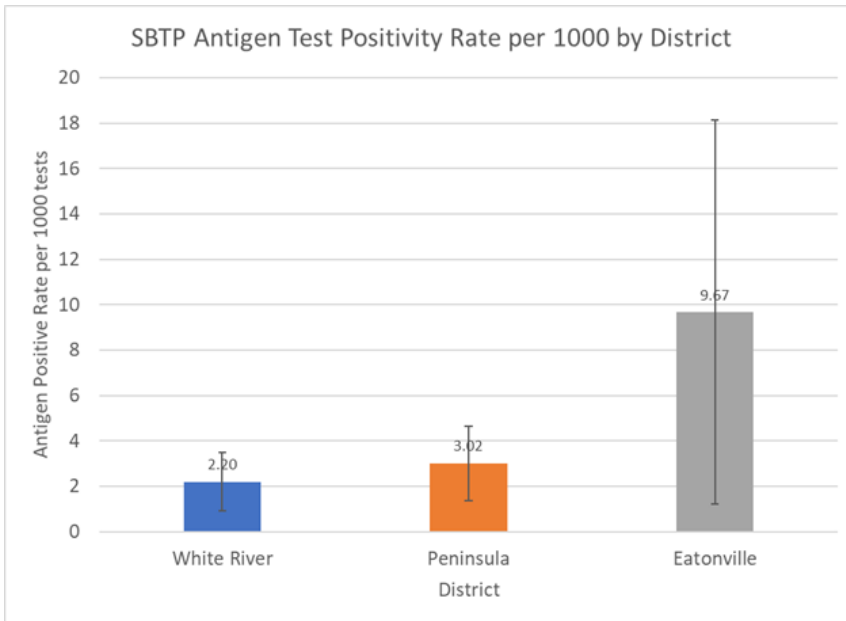
Students and staff tested in each district differed because of different education models. White River had in-person learning for kindergarten through 5th grade and tested the highest percentage of individuals. Peninsula had in-person learning for kindergarten and 1st grade only, while Eatonville had not yet returned to in-person learning. Peninsula and Eatonville school districts had lower testing percentages.

During the School Based Testing Pilot (SBTP), all districts offered some small group instruction for those with highest needs. The districts offered testing to those students. All three districts offered testing to high school athletes. Peninsula and Eatonville used social media to invite remote students to get tested while White River did not. Peninsula and Eatonville offered testing to the entire district population, while White River offered testing to in-person learners only.

	White River	Peninsula	Eatonville
# individuals tested	1,824	1,969	271
# in-person individuals (students and staff, approx.)	2,314	2,633	350
# individuals offered testing	2,314	10,599	2,109
# total Antigen tests	5,001	4,309	517
% ever tested (# individuals tested divided by # individuals offered testing)	78.80%	18.60%	12.80%
# Antigen positives	11	13	5
% Individuals Ag positive	0.60% [0.25, 0.96]	0.66% [0.30, 1.02]	1.85% [0.23, 3.46]

% Tests Ag positive	0.22% [0.09, 0.35]	0.30% [0.14, 0.47]	0.97% [0.12, 1.81]
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The number of people tested, and the number of antigen positive results varies between school districts. The varying antigen positive % (per testing individual) and accompanying confidence intervals (in brackets) reflects this. Smaller population samples yield larger confidence intervals. For example, Eatonville tested fewer individuals than the other districts but had a higher proportion of positives and a related higher individual rate. The rate's confidence interval is also wider than the other districts because of the smaller sample size (# tested).



The SBTP performed 9,827 antigen tests and found 29 positives. This is a <0.30% positivity rate (2.95 per 1,000). Differences in Test Antigen Positivity Rates between districts were not statistically significant. A higher number of tests may help increase the confidence in district antigen positive rates and help identify differences in student and staff rates in future testing programs.

Of the 73 PCR follow-up tests, 20 were positive.

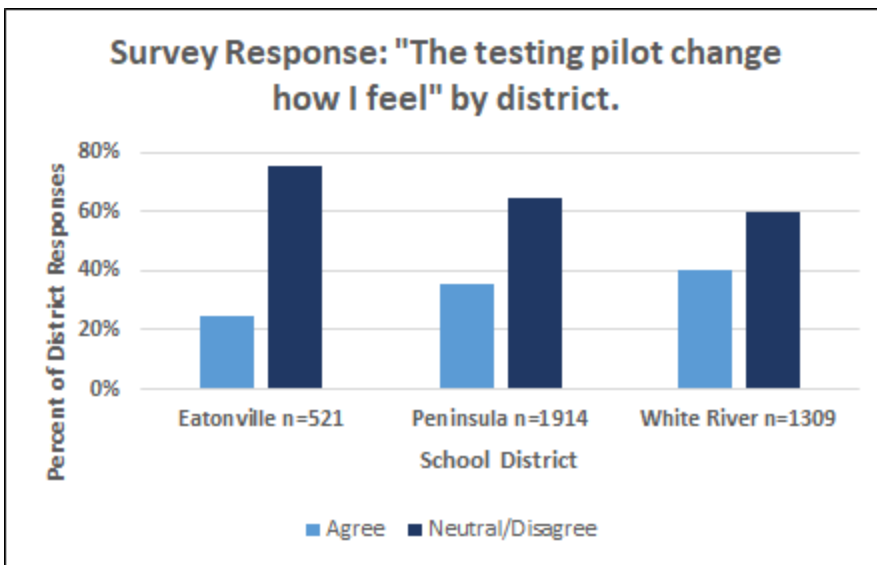
The testing pilot found a 5% false negative rate and a *16.98% false positive rate for

the antigen test among testers who received follow-up PCR tests. (*False positive rate may have been much lower had we provided PCR to most Antigen negative testers).

Department of Health recommends reopening schools under the assumption transmission in classrooms is low. This assumption requires more analysis to fully assess in-school transmission.

Survey Results

Tacoma-Pierce County Health Department created two electronic surveys (one for faculty and staff and one for parents and guardians) to evaluate how the communities felt about the testing process and if testing changed how they felt about in-person learning. We conducted the faculty and staff survey Dec. 7-13, and the parent and guardian survey Dec. 14-20. The surveys had open-ended and multiple-choice questions. The Health Department received 1,102 responses to the faculty and staff survey and 2,959 responses to the parent and guardian survey.



“The testing pilot changed how I feel.”

Preliminary results show 42% of faculty and staff and 33% of parents and guardians agreed the testing pilot changed how they felt. In all three districts, more respondents said the pilot did not change how they feel, though exact percentages varied. Both groups said:

- The testing pilot did not change existing beliefs about the risk of COVID-19 or reopening schools for in-person learning.
- Respondents perceived a low participation in the testing pilot and had concerns about how often people in schools are tested. Some parents and guardians and faculty and staff said mandatory testing or daily testing would change how they feel.

“What about the process for testing worked well?”

Parent and guardian answers did not significantly differ from faculty and staff to this question. Participants said:

- The process was quick and easy.
- The BinaxNOW tests were painless and non-invasive.
- The site locations and schedule made the testing easy to access and convenient.
- A few responses directly called out the benefits of having a testing resource in their rural community.

“What about the testing process could be improved?”

Three main themes emerged across the three districts:

- Notifications were often delayed or missing causing unease to parents.
- Parents and guardians and faculty and staff suggested mandatory or and more frequent testing. Some even suggested daily testing to attend in-person learning.
- Parents/guardians want the testing to be open to family members.

The responses from each district varied and require further analysis.

Limitations

BinaxNOW

- False Positive Rate = 16.98%, CI [6.53%, 27.43%]
- False Negative Rate = 5.00%, CI [-5.47%, 15.47%]

Survey

- Self-selected survey responses.
- Electronic parent survey made it accessible only to parents with reliable internet.

Recommendations

- The Health Department recommends school districts use Washington state Department of Health [testing strategies](#). Tacoma-Pierce County Health Department encourages schools to expand reopening efforts based on district needs.
- Tacoma-Pierce County Health Department continues to provide support for data collection and analyses through January 2021.
- Provide positive and negative test results to families, faculty and staff sooner.
- We recommend school districts analyze positivity rates with increased in-person learning, especially as older students return.
- Maintain relationships established during this pilot and use enhanced community outreach for future work.
- Health Department provides tests to districts for their use through January 2021.