COVID-19 Testing

Dr. Gib Morrow
Health Officer

KITSAP PUBLIC HEALTH DISTRICT

Types of tests

- **PCR Analyze for viral genetic material (RNA) from oral and nasal swabs of saliva**
  - "Gold Standard" (but still imperfect)
  - Positive test confirms disease but negative does not rule it out
  - Most expensive, typically done at large labs
  - Used at most community and other testing sites
  - Requires certified medical personnel for most specimen collections
- **Antigen testing**
  - Analyzes for viral antigen, typically a capsule protein
  - "Rapid"*, relatively inexpensive point of care test
  - Less sensitive that PCR (misses more cases)
  - Requires a test system, CLIA certification
  - Becoming available for doctors' offices
- **Antibody testing**
  - Blood test that detects presence of antibody in people with prior infection
  - Not used for diagnosing current infection
  - Levels drop over time and doesn't necessarily mean you're "immune"

Epidemiology 101

- **Specificity – Likelihood that a positive test represents true infection**
  - It's about 100% for PCR and Antigen tests
  - If these tests are positive, you've got it
  - (However this does not mean that live replicating virus is present)

- **Sensitivity – What's the likelihood that a positive test will identify all people who are infected**
  - PCR> Antigen
  - But remember that false negatives occur with both PCR and Antigen

- **Negative Predictive Value**
  - Probability that a patient with a negative test truly doesn't have infection (lower sensitivity tests are more likely to be true if likelihood of disease is lower, i.e. low prevalence of disease)

- **Positive Predictive Value**
  - Probability that a patient with a positive result truly has infection
  - It's excellent for both PCR and Antigen tests (as specificity is 100%)

Testing process

1. Determine need for testing
2. Order test, typically by a physician or other licensed healthcare provider
3. Schedule test, get patient information (insurance, etc.)
4. Educate all people being tested to isolate while awaiting test results
5. Collect the specimen at medical office, hospital, clinic, or community sites
6. Transport the test to lab
7. Run the test at lab
8. Notify results to PCP, health department (if+), and patient

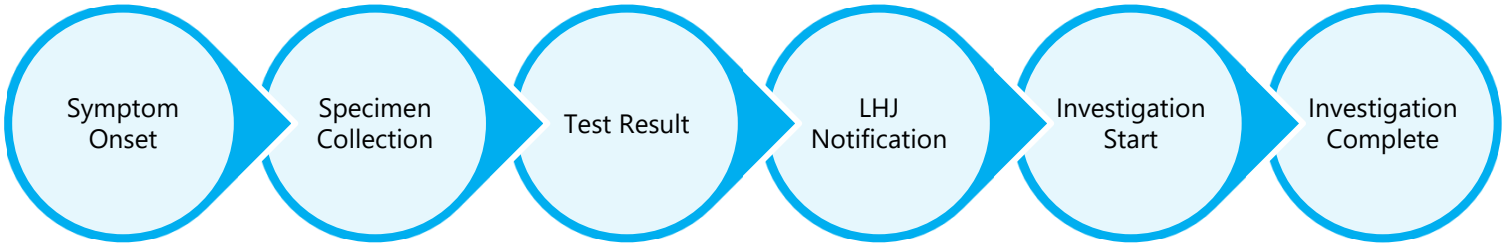
Who pays?

- Insurance (for the test and clinic visit) for those who have insurance and an appropriate medical indication for testing
- HRSA for those without insurance
- No one for collection alone (in the absence of a clinic visit, which is why most all local physician groups in Kitsap require clinic visits for testing)
- Employer or state DOH in large outbreak situations

Testing in Kitsap

- Process metrics, testing rates, CBT sites (above visuals)
- Most groups (except Kaiser) require a clinic or tele-health visit for testing
- Many use large national labs with variable turn-around-times
- There are no community-based testing sites currently
- Low testing rates

KPHD COVID-19 Process Metrics

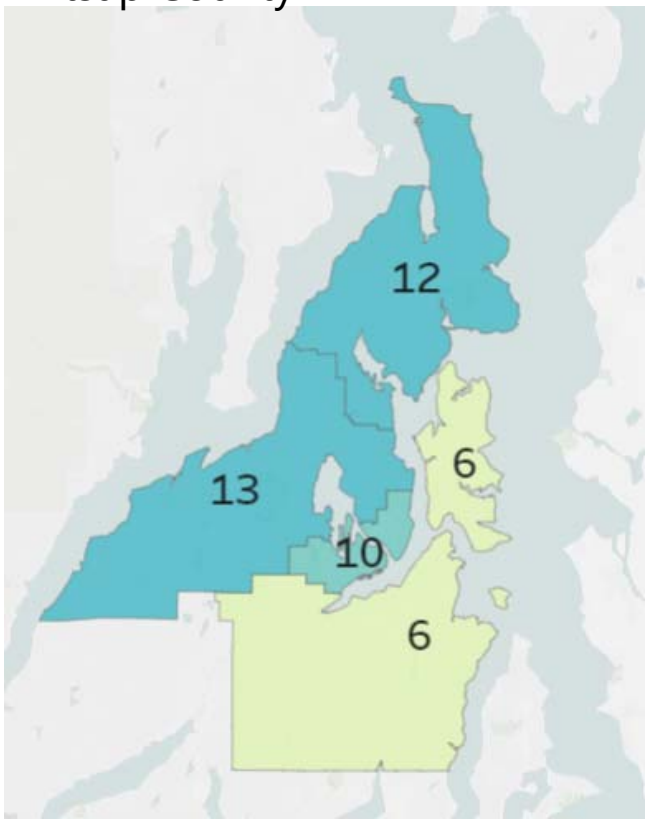


Average Total Time: 7.3 Days	3.5 Days	2.3 Days	0.9 Days	0.2 Days	0.6 Days

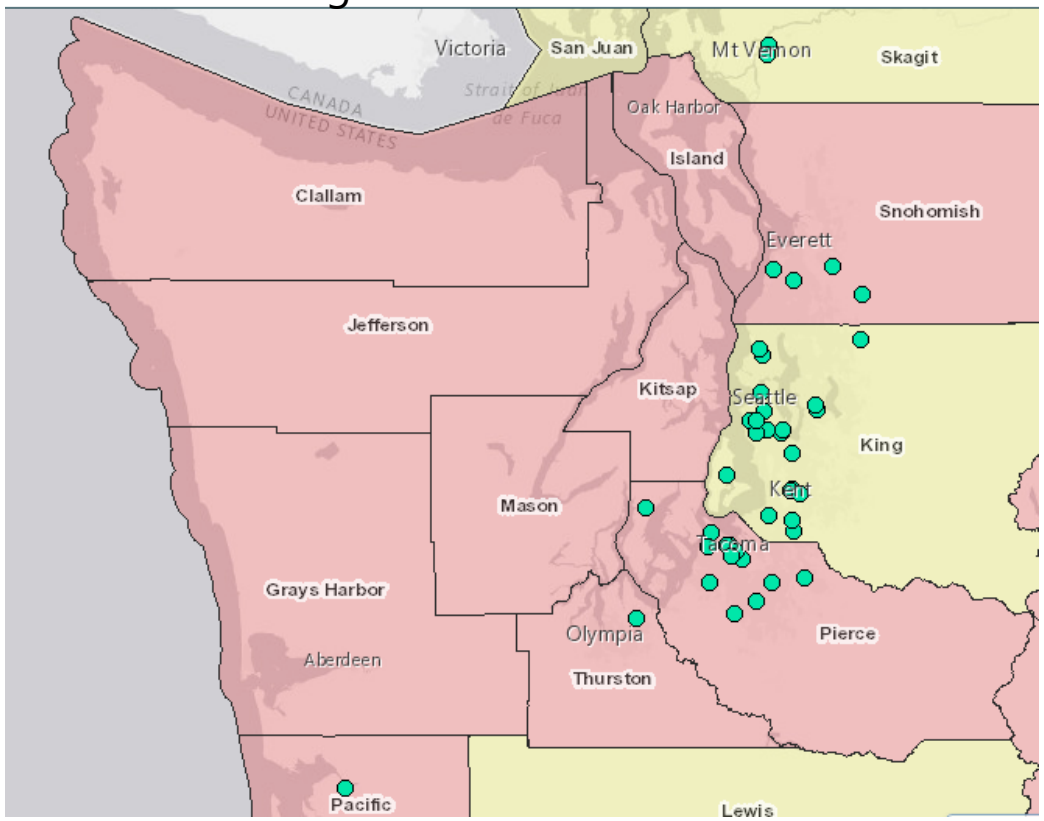
Source: Washington Disease Reporting System, Washington Department of Health. 8/31/2020

Kitsap County Testing Sites

COVID-19 Testing Locations in Kitsap County[1]

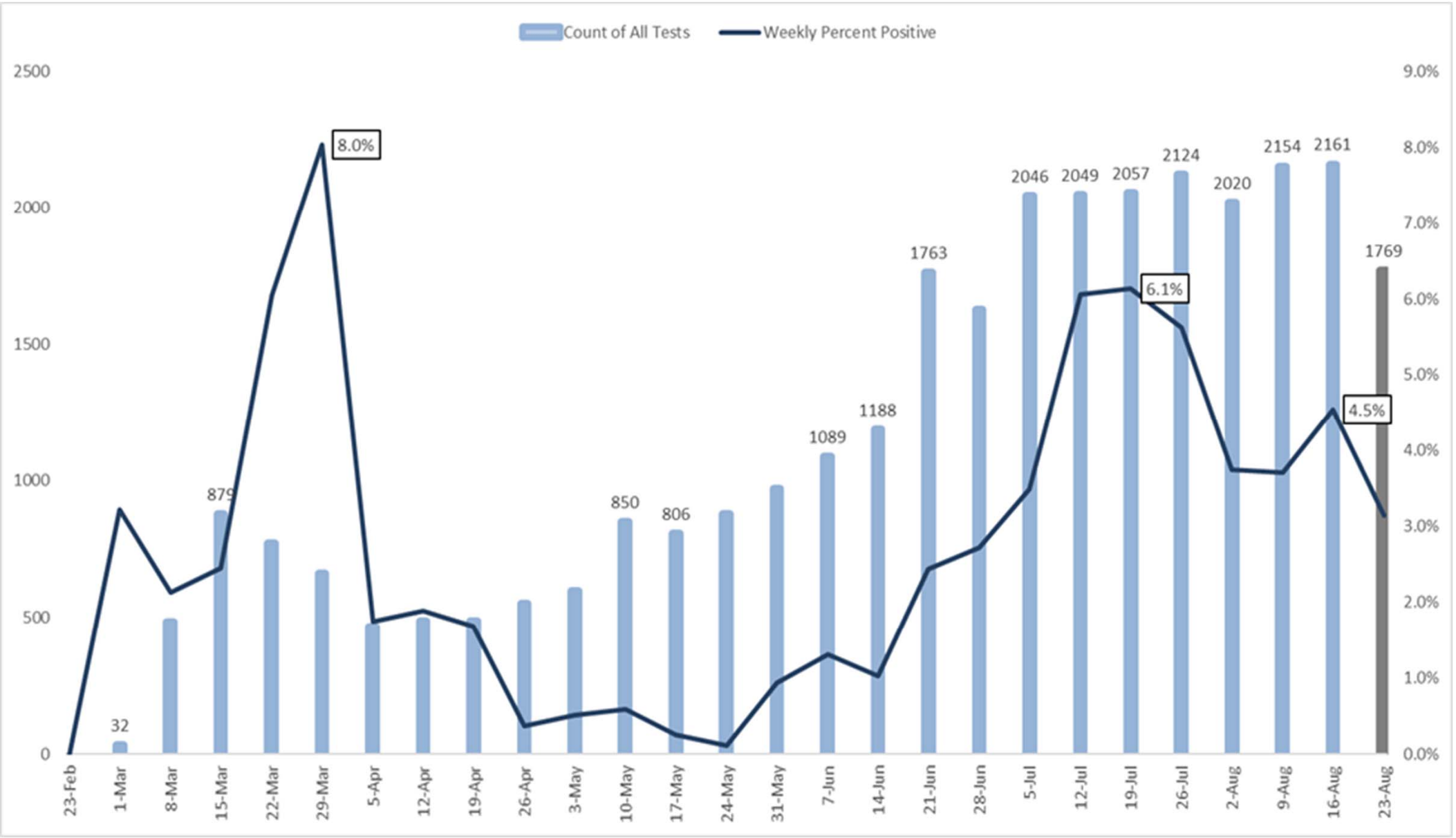


Community Based COVID-19 Testing Sites in Western Washington State[2]



Sources: 1.) Risk Assessment Dashboard, Kitsap Public Health District**.** 2.) COVID-19 Testing Data, Washington Department of Health. Both Web Accessed 8/28/2020

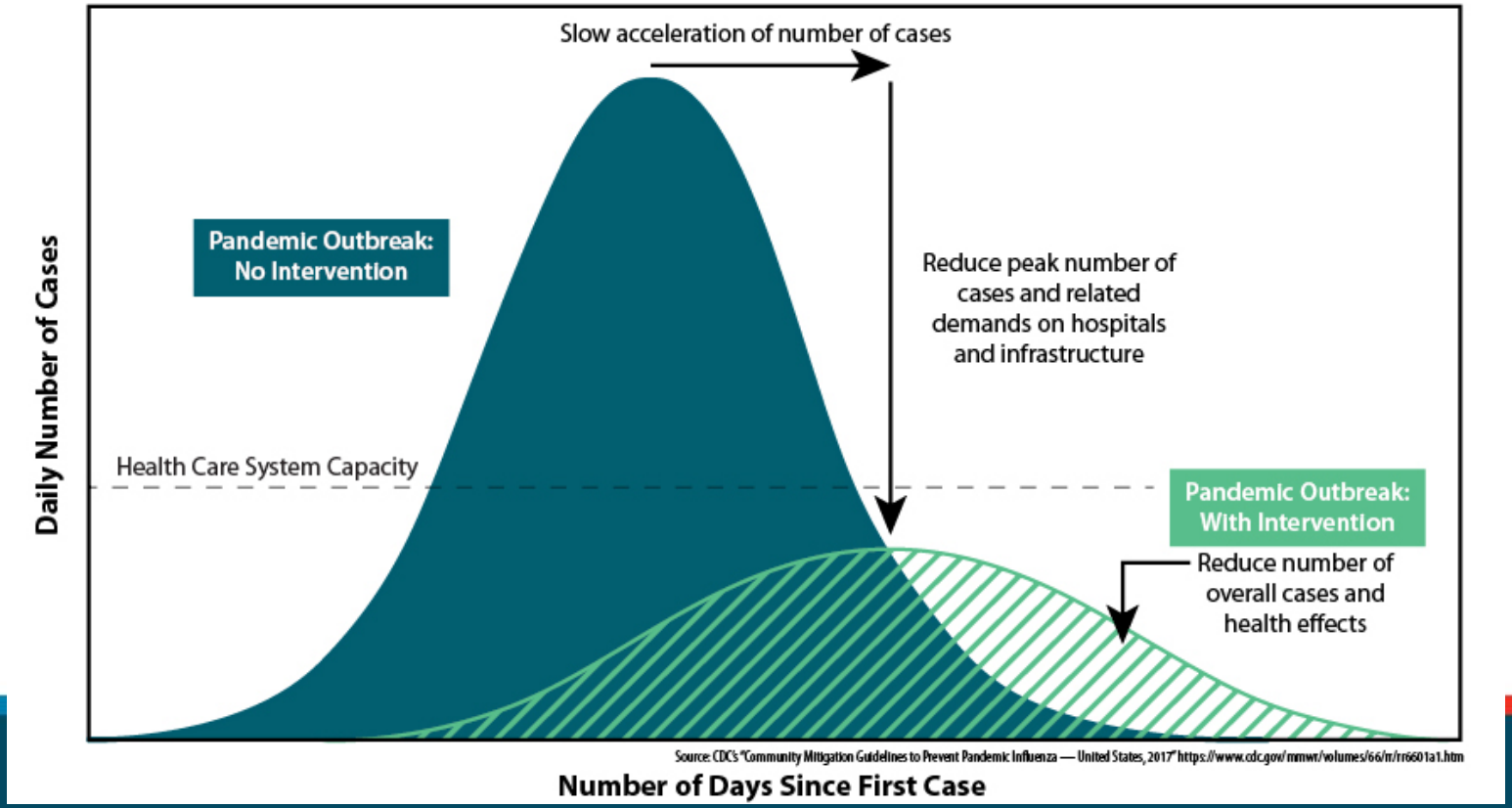
Kitsap County Weekly Percent Positive



Why test?

To identify people with infection and stop its spread

- For identification of cases and close contacts (Case investigation, contact tracing)
- Containment (find cases, stop spread)
- Mitigation (lockdown, masks, distancing, hygiene)



Community-based testing goals

- Decrease barriers to testing
- Prioritize testing for those who really need to be tested
- Rapid testing for priority groups
- Rapid resulting and notification
- Avoid cost and bills to people getting tested
- Keep local healthcare providers doing it

Questions for Board discussion

- Commit resources for a mobile CBT site or centralized site?
- Test everyone who wants it or priority groups?
- Saliva (no medical, but slightly less sensitive, less PPE) of NP/ nasal (requires medical and more PPE)

St. Michael COVID-19 Outbreak

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St. Michael Outbreak Timeline

Aug. 4
Case at St. Michael identified

No close contacts

Aug. 13
5 cases linked to a unit at St. Michael

KPHD recommended notification and testing of all staff, patients and discharged patients on impacted unit.

Aug. 14
KPHD declared outbreak at St. Michael

Aug. 18
New positives indicate spread to add'l unit at hospital

https://kitsappublichealth.org/CommunityHealth/CoronaVirus_StMichael.php

KITSAP PUBLIC HEALTH DISTRICT

St. Michael Outbreak Timeline

Aug. 21
KPHD provided recommendations to St. Michael

KPHD, DOH, and St. Michael consulted with CDC

News release issued 35 cases in 4 units

Aug. 24
Media briefing

KPHD and DOH meet with hospital union

Aug. 25
St. Michael site visit & assessment from DOH and KPHD

EOC & St. Michael began testing all hospital employees

https://kitsappublichealth.org/CommunityHealth/CoronaVirus_StMichael.php

KITSAP PUBLIC HEALTH DISTRICT

St. Michael Outbreak Timeline

Aug. 26
KPHD announced add'l actions and provided add'l recommendations to St. Michael

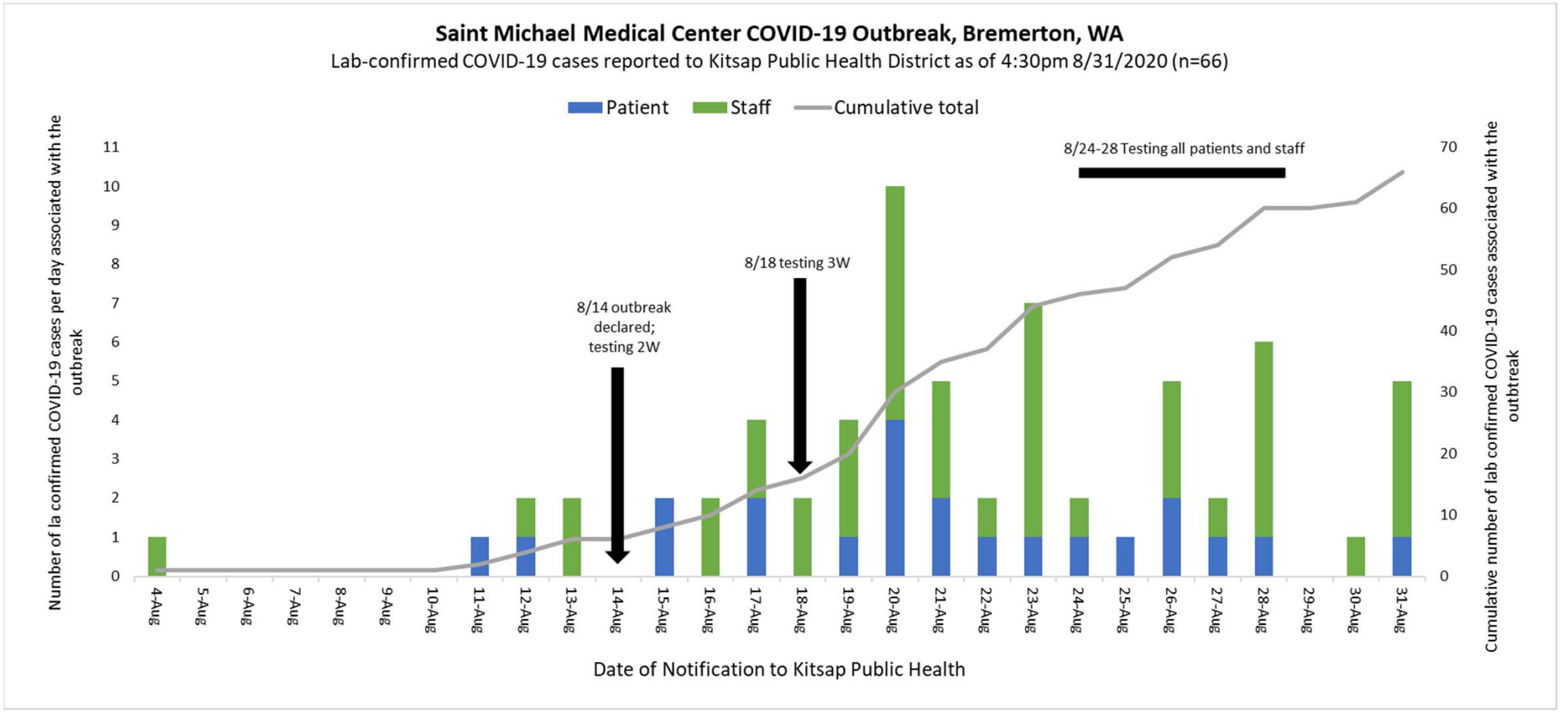
Aug. 28
DOH HAI* produced report from 8/25 assessment

Aug. 29
Testing for 2,300 St. Michael employees completed

Aug. 31
63 confirmed positive cases to date reported

*DOH HAI: Washington Department of Health Healthcare-Associated Infections program

St. Michael Outbreak



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