



City and Borough of Juneau
Emergency Operations Center
155 South Seward Street
Juneau, Alaska 99801
Telephone: 586-5240 | Facsimile: 586-5385

DATE: June 8, 2020
TO: Beth Weldon, Mayor
FROM: Robert Barr, EOC Planning Section Chief
RE: Local COVID-19 Testing

Background

In early May, the EOC began engaging in conversations with Bartlett Regional Hospital, DHSS laboratory staff, and other partners from the medical, science, and business communities to determine the feasibility of standing up local laboratory resources to test for COVID-19. Also in early May, the Assembly's Economic Stabilization Taskforce recommended local testing be pursued¹. A local lab would enable same-day turnaround times for what we currently refer to as send out tests².

Shorter turnaround times are advantageous for a number of reasons, including:

- Reduction in quarantine lengths when test-based strategies are in place (such as Health Mandate 10)
- Faster detection and isolation of asymptomatic COVID positive individuals
- Contact tracing investigations begin sooner
- Businesses whose critical infrastructure or COVID mitigation plans include testing can meet the requirements of their plans faster

Short turnaround times are currently possible in Juneau with rapid tests³; however, the supply of rapid tests is constrained. Further, the sensitivity of rapid tests is lower than lab-processed tests and we continue to send results from rapid tests to a lab for confirmation.

In addition to the advantage of shorter turnaround times, increased local testing capacity streamlines workflows and eliminates dependencies that have the potential to cause roadblocks in an environment where testing is in high demand. Examples of these workflows/dependencies include: packaging tests for shipment, maintaining medical shipping supplies, meeting air cargo deadlines, arranging out-of-town couriers, records management, and coordination between local and out-of-town medical providers.

Our original analysis was focused on standing up the same type of high-complexity laboratory environment that the DHSS runs in Anchorage and Fairbanks. We were repeatedly cautioned against this approach by

¹ <https://beta.juneau.org/assembly/economic-stabilization>, see May 11 meeting

² Send out tests have also been referred to as PCR tests. This can be confused with rapid tests, which are also PCR based. A good non-medical primer on how PCR works: <https://jamanetwork.com/journals/jama/fullarticle/2764238>

³ Abbott ID NOW & Cepheid Xpert Xpress are the two rapid tests available locally.

medical and laboratory professionals due, primarily, to the level of personnel qualifications necessary for such an effort.

Thanks to guidance from DHSS and BRH laboratory staff, we became aware of medium-complexity systems that had received FDA Emergency Use Authorizations which were likely appropriate to our level of sophistication. Bartlett laboratory staff performed a feasibility analysis that identified an appropriate system from a large, reputable vendor.

Due to high demand, lead times on this type of equipment are long – we are currently receiving estimates of 4-6 months. We have some indication that a reduction in lead time due to our Juneau-specific circumstances (no road system connection, regional hub) may be possible.

Two different testing systems remain under analysis. They differ from each other primarily in cost and the number of tests that can be processed per day. The less expensive system has a capital cost of \$350,000 and can process 1300 tests per day. The more expensive system has a capital cost of \$700,000 and can process 4000 tests per day. The more expensive system is twice as expensive from an operating perspective (maintenance contract, consumables). It is also likely, due to size, that the more expensive system could not be housed on-site at Bartlett. If housed off-campus, additional costs will be incurred in staffing inefficiencies and space/utilities/maintenance.

For context, over the weekend at the airport, we tested 147 individuals and provided a similar number of vouchers for a 2nd test in 7-14 days. 66 of out of state passengers arrived in Juneau with negative test results in hand.

In a perfect world where Juneau's COVID-19 exposure remains low, a testing level at either of these magnitudes would not be necessary. Juxtaposed to the worst case scenario, neither of these magnitudes would be sufficient. An additional risk is that a new testing method that is simpler, more available, and/or less expensive may be developed in the near-term future that would obviate the need for this system. This risk is somewhat mitigated in that either of these options can be used for other diagnostic tests at BRH; however, in normal circumstances BRH would not acquire systems at these magnitudes.

EOC Recommendation & Assembly Action

At a glance, the less expensive option seems adequate for Juneau. At the height of its testing demand, New York City performed 33,849 tests in a single day⁴. Controlling for population, and conservatively using the population for all of Southeast Alaska instead of Juneau alone, this translates into about 300 tests per day. Looking at a smaller population, Iceland, at the height of its testing demand⁵, was up to nearly 5 tests per 1000 people in a single day, or approximately 360 tests per day for Southeast. It is logical to procure a system with significantly more capacity than current demand out of concern for future spike(s) or a scenario where vaccine development takes longer than anticipated.

Looking at Juneau specifically, in a future where all out of state travelers continue to receive an average of one local test, we can use airport and AMHS projections. BRH staff are currently working on projections for pre-procedural testing demand. Other areas of potential high demand include JSD/UAS, fish processing facilities, the legislature, rural southeast communities, the mines, other critical infrastructure surveillance

⁴ <https://www1.nyc.gov/site/doh/covid/covid-19-data.page>

⁵ <https://ourworldindata.org/coronavirus/country/iceland?country=~ISL#testing-for-covid-19>

testing, congregate living facilities, small cruise ships (esp. those homeporting in Juneau) and anywhere an outbreak occurs and a large contact tracing investigation ensues. Large cruise ships remain a significant unknown at this time.

Other than testing demand and capital cost, additional factors to consider include space, lab workflows, operating costs, and equipment lead times.

The EOC recommends that the Assembly adopt Ordinance 2019-06(AI) at its next meeting and provide any input or direction it may have.