

COVID-19

Public Health Long-Term Testing and Investigation Plan

May 7, 2020



Tacoma-Pierce County
Health Department
Healthy People in Healthy Communities

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Executive Summary

Current Situation

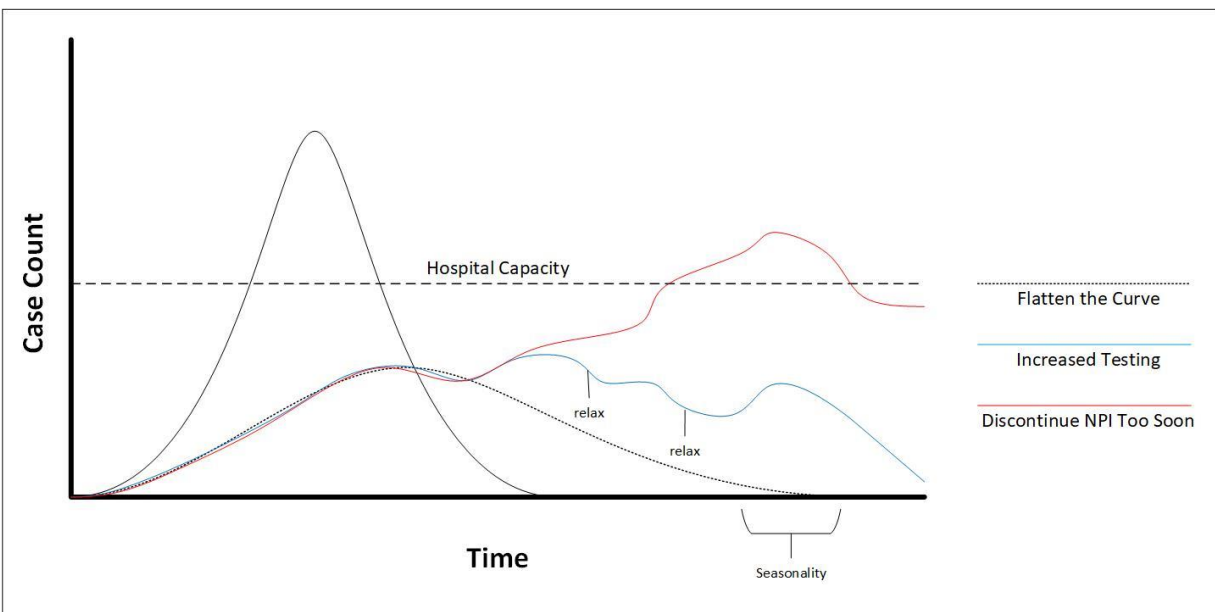
To protect the health of Pierce County communities in the next stages of the COVID-19 epidemic, and achieve statewide control targets significant investment is needed to:

- Increase case investigation capacity.
- Identify and follow up with contacts.
- Support targeted testing.
- Isolate or quarantine anyone who needs a safe place to do so.

The intensity of the effort needed is linked to the speed and degree to which social distancing measures are eased. In a scenario of rapid reduction in non-pharmaceutical interventions (NPIs), an estimated \$67 million is needed to cover staff costs for up to 170 investigators as well as the infrastructure to support them, increased testing, and isolation and quarantine options for the community.

Our state partners continue to gather resources, adjust guidance, and prepare local jurisdictions for the possibilities as NPIs are lifted throughout the state. The plan assumes broadened testing criteria. Increased testing means an increase in positive cases. As we see more cases in our community, we expect to also see a greater impact on communities that already experience health inequities. We need to make sure we protect our most vulnerable community members.

The graph below outlines some considerations. The blue line shows the impact of slowly relaxing NPI's (best case scenario). If we discontinue NPIs too quickly, the red line shows the anticipated increase in disease spread and a greater burden on our current healthcare system. Possible seasonality of this disease is also a factor.



Investigations

Our current investigation team can conduct 35 case interviews and 140 contacts per day. We need additional investments in this area to meet a potential disease burden of 700 cases and 2,800 contacts per day. The scenarios below take into consideration increased cases from relaxed social distancing and other non-pharmaceutical interventions and potential seasonality.

Staff Numbers for Case Investigation and Contact Tracing PER DAY						
<i>Multiplier</i>	<i>Current</i>	<i>2x</i>	<i>5x</i>	<i>10x</i>	<i>15x</i>	<i>20x</i>
No. of Cases per day	35	70	175	350	525	700
No. of respective contact investigations per day	140	280	700	1400	2100	2800
Case Investigation Staff	5	10	25	50	75	100
Contact Tracing Staff	6	12	30	60	90	120
Supervisors	1	2	5	10	15	20
Data Entry	2	4	10	20	30	40
Administrative Support	1	2	5	10	15	20
Drop Team Nursing Staff	2	4	10	20	30	40
TOTAL STAFF	17	34	85	170	255	340
Assumptions: <ul style="list-style-type: none"> • 1 case investigator can accomplish 7 case investigations in an 8-hour day. • 1 contact tracer can reach 21 contacts in an 8-hour day. • Average of 8 close contact for each confirmed case. • Half of contacts are household contacts and are notified by case investigator. • Only half of contacts would need to be completed by a contact tracer. • Multiplier equals the number of new high-risk facilities that require investigation. 						

Variables Impacting Planning and Cost

- Uncertainty of size, timing or existence of further waves of cases.
- Impact on other public health work.
- Uncertain supply chain for testing materials.
- Uncertain test results (false positive / negative) until product quality improves.
- Uncertain supply chain for resources like Personal Protective Equipment (PPE).
- Continued universal, extended and reuse mask recommendations.
- Impacts on supply of limited PPE when non-CoVID-19 medical procedures start.
- Balance of case and contact tracing to the model of disease.
- Impact of unknown or insufficient funding on disease response capacity.

Major Plan Assumptions

- Pace of NPI relaxation will be moderate.
- Supplies, PPE and testing options are readily available.
- Disease trends and population impact stays consistent with the multipliers outlined above.
- Public health and healthcare guidance remain constant.
- Projected vaccination timeline is realistic:
 - 2020 for development and approval.
 - 2021 for manufacturing and testing.
 - Late 2021 to early 2022 for mass distribution.
- State will develop and distribute a case investigation and tracking database that will be free for local public health.
- There is no need to customize the state database to meet Pierce County data reporting needs.
- Healthcare systems receive significant CARE funds directly. Assumptions are they will:
 - Use that funding stream to build healthcare system capacity.
 - Either purchase or bill for the majority of testing kits and supplies.

Estimated Budget

Based on CARES funding received by Pierce County and preliminary decisions by the Pierce County COVID-19 Recovery Steering Committee, the budget proposed assumes a 10x multiplier from the current rate of response to this disease. This budget may vary based on lower or higher case activity than assumed.

	New Projection	
	for 5-1-2020	Notes
COVID-19 Response Costs**	\$14,000,000	Staff and operational costs not currently budgeted.
Less: Other Sources of Funding	(\$2,725,000)	\$1.5M State, \$860k FEMA (75%), \$365k other grants with allowable response costs.
Anticipated Surge Costs***		
Case & Contact Investigation Staff	\$12,268,800	350 new cases per day, 1400 contacts, 170 new staff
IT Equipment & Software	\$575,200	Laptops or tablets, monitors, computer equipment and accessories, phones etc.
New Data Collection & Reporting System	\$0	Use existing State free systems with no customization for Pierce County.
Data Support Staff	\$3,150,000	Epidemiologists, Data Analysts, Project Management, IT Support.
Health Care Testing	\$12,965,000	Laboratory Staff, Equipment, Processing Costs, Supplies.
Community Based Testing	\$4,210,000	Test Kits, PPE, incentives, advertising, EMS, other support from municipalities e.g. law enforcement.
PPE	\$3,715,000	Masks, shields, gowns, gloves for drop teams, community-based testing, some congregate settings.
Non-Congregate I&Q Facility	\$14,389,000	Facility Lease and all wrap-around services.
Congregate I&Q Facility	\$677,000	Facility Lease and all wrap-around services.
Facility Expansion	\$3,340,000	Facility lease cost, furniture & maintenance for new staff.
Communications	\$200,000	Staff and operational costs not currently budgeted.
Public Education Programs	\$235,000	Community needs assessment to address health disparities in vulnerable populations.
Surge Sub-Total	\$55,725,000	
Grand Total	\$67,000,000	
**	With ongoing stay-at-home order	
***	With relaxing of stay-at-home order and economy opening	

Plan Overview

Tacoma-Pierce County Health Department's COVID-19 Activation started in January 2020. We partnered and collaborated with multiple sectors and governments, conducted case and contact investigations, developed outreach and robust communications and information distribution systems, set up temporary care centers, investigated facility outbreaks, and more.

To prepare for the stage out of the Stay Home, Stay Safe order and the subsequent waves of transmission, public health must plan to respond through the winter of 2021.

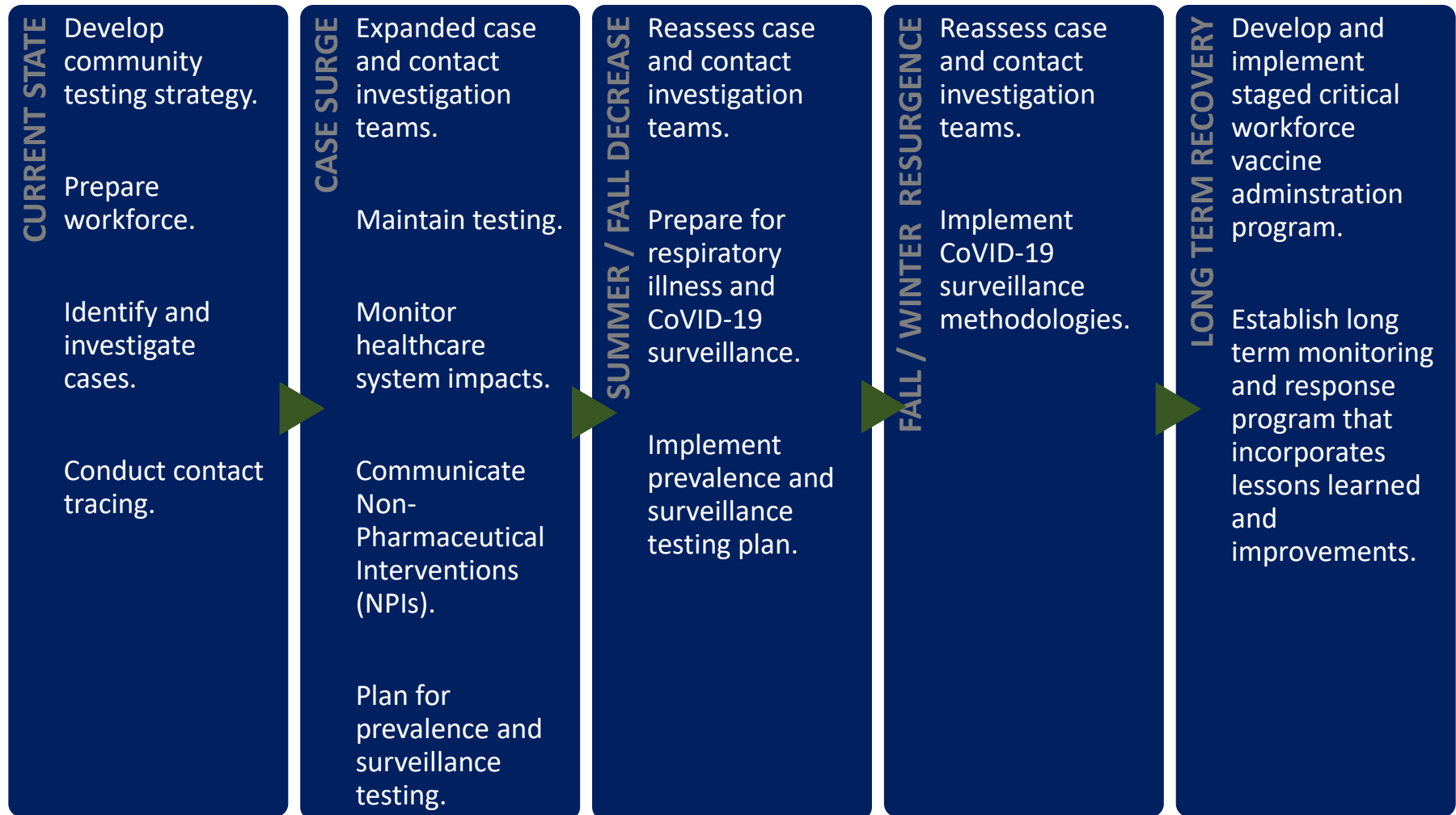
This should include:

- Align with Washington State strategies to focus on testing, case and contact identification, and isolation and quarantine support.
- Consider population ability to comply and economic impacts of continued Non-Pharmaceutical Interventions (NPI).
- Align with WA Department of Health and consider neighboring county's approaches.
- Implement and scale:
 - Community testing strategies.
 - Case and contact investigations.
 - Facility outbreak response and mitigation strategies.
- Use reliable, valid serologic tests for prevalence testing and surveillance.
- Use local data to inform decisions to remove or add NPIs.
- Develop and finalize local vaccine distribution strategy in advance of vaccination availability.
- Request healthcare systems to:
 - Test individuals with minor symptoms.
 - Ask providers to identify close contacts of those tested.
 - Report information to public health.

Variables Impacting Planning and Cost

- Uncertainty of size, timing or existence of further waves of cases.
- Impact on other public health work.
- Uncertain supply chain for testing materials.
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Planning Stages and Goals



Stage 1: Current State and Planning

This stage is characterized by supporting the existing healthcare systems to make increased testing available to the community and preparing a workforce for increased case and contact investigation on the local level.

Goals and Methods

Develop community testing strategy.

Testing capacity and availability is based on supply chain and availability of new reliable testing methods. While the Department can't influence supplies or testing capacities, there are strategies we can implement locally to be ready when these become available.

Role of public health in testing is to facilitate the work of healthcare, provide education about standards and expectations, and to fill gaps. Public health will:

- Support healthcare system testing.
- Develop and distribute Education/Outreach materials.
- Develop and implement social marketing plan.
- Maintain Drop Team functionality.
- Improve testing capacity and turn-around times.
- Work with healthcare systems to implement updated guidance and set up expanded test sites.
- Work with healthcare systems to collect names of contacts at time of sample collection to speed investigation.
- Start investigations on individuals to quarantine or isolate close contacts.
- Liaison with DOH to track testing supplies and inform partners about emerging methods.
- Work with local emergency management to ensure resource requests continue to be managed and resource distribution meets prioritization list.
- Request needed supplies from DOH and other stakeholders.
- Develop and proof processes for drive through testing and other innovative methodologies that can be replicated by others.

Prepare workforce.

- Assess workforce pool.
- Assess resource needs.
- Assess workplace needs.
- Recruit.
- Personnel management
- Develop and implement training program.

Identify and investigate cases.

- Follow up with confirmed cases from healthcare systems.
- Provide isolation guidance and health education.
- Ensure confirmed cases have adequate wrap around services to successfully isolate.
- Identify household and close contacts to conduct contact tracing.

Conduct contact tracing.

- Provide quarantine guidance and health education.
- Ensure confirmed cases have adequate wrap around services to successfully quarantine.
- Apply DOH guidance for first- and second-generation contact investigations.
- Monitor asymptomatic contacts using DOH text-based application.

Policy Assumptions & Considerations

Community Testing-WA DOH and healthcare will pay for majority of test kits.

- Based on projections and goals for testing through 2020.
- Local public health will pay for focused testing based on disease prevalence or characteristics.
- The public will continue to seek testing when risk from pandemic decreases.
- The labs have capacity, supplies and staffing to handle expanded testing volume.

Workforce development

- Adequate workforce pools and additional resources are available.

Investigation and contact tracing

- 1 case investigator can accomplish 7 case investigations in an 8-hour day.
- 1 contact tracer can reach 21 contacts in an 8-hour day.
- Average of 8 close contact for each confirmed case.
- Half of contacts are household contacts and are notified by case investigator.
- Only half of contacts would need to be completed by a contact tracer.

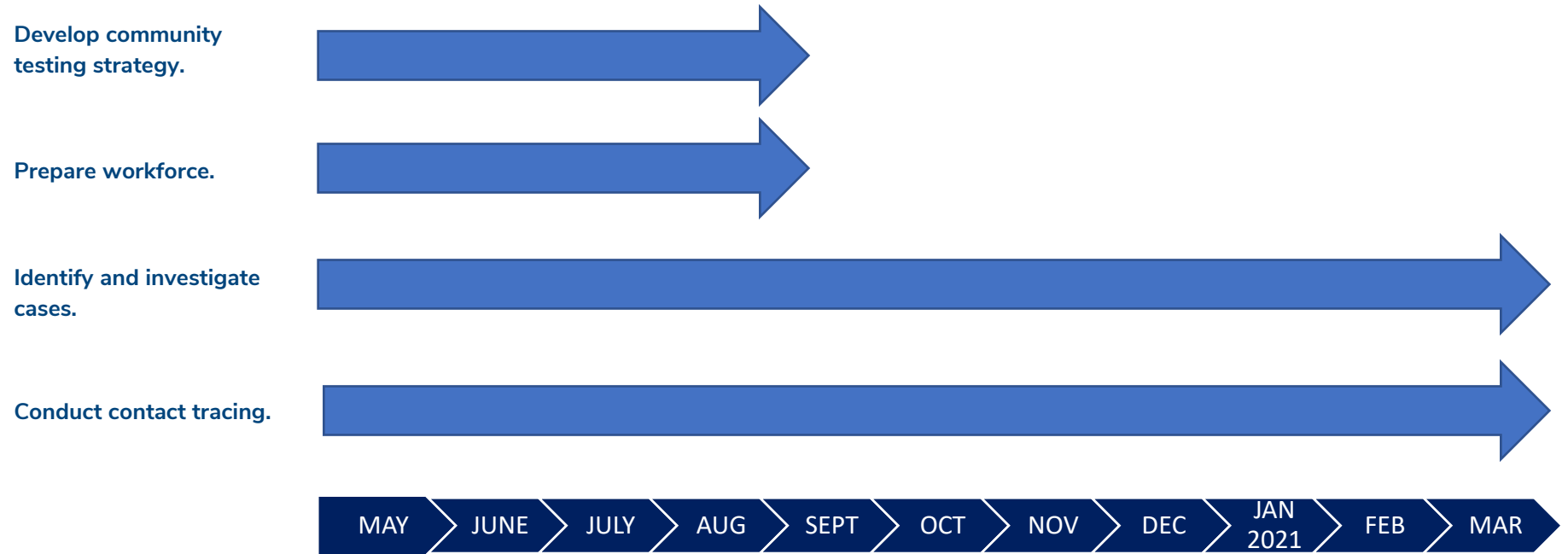
Policy

- Department receives adequate funding.
- Stay Home Stay Healthy ends in a staged approach.
- The Department opens slowly over time, much work will still be on hold to support response and investigation work.
- Workforce development leverages Department, Pierce County and City of Tacoma staff.

Limiting Factors

- Re-opening Department services will limit the available pool of Department resources to dedicate to investigations.
- Current pool of trained investigators does not meet projected need.
- Databases and data systems at both state and local level need to be improved.
- Use of DOH REDCap database manager limits local ability to adapt and modify reporting parameters.
- Supply chain challenges for test kits and viral transport media (VTM)
- Lab capacity (staffing, equipment and supplies).
- Availability of trained case and contact staff.
- Social distancing needs for investigators.
- Infrastructure to support remote workers (when possible).
- PPE for increased testing, increased hospitalizations, and/or elective surgeries continuing.
- Health system capacity for in-house testing changes rapidly with equipment and supply availability.

Stage 1: Current State and Planning Timeline



Stage 2: Case and Contact Investigation Surge

This stage is characterized by a second wave and surge in COVID-19 cases as social distancing measures are relaxed. This requires an aggressive identification, investigation, isolation, quarantine and support approach. Early isolation of tested patients and quarantine and/or isolation of their household contacts will be key to stop the spread of the virus. Cases will need support to maintain isolation for the required length of time. Public health messaging and education is critical in this stage as well as supporting healthcare as cases surge and the demand for testing increases.

Goals and Methods

Expand case investigation and contact tracing teams.

- Continue case investigation and contact tracing with model of disease.
 - Consider staffing levels.
 - Manage resource needs.
 - Monitor data input and output.
 - Support Patient Under Investigation (PUI) investigations in order to get ahead of contact tracing.
 - Manage probable cases with testing and I&Q recommendations.
- Continue contact tracing and notification for all positive results.
- Expand outreach and supports to communities disproportionately impacted.
- Continue to collaborate with regional partners for placement at isolation and quarantine facilities for those that cannot remain in their own homes.
- Identify resources that will serve youth, families, people with physical disabilities and people with behavioral health issues including addiction.
- Assess and improve wraparound services necessary for successful completion of isolation and quarantine.

Maintain diagnostic tests and testing capacity.

- Use drop teams to maintain and monitor outreach to high risk facilities.
 - Review the need to re-test facilities as new cases show up.
 - Provide consultation regarding new infection prevention, testing and PPE guidance.
- Use database manager (REDCap) to track tests that are:
 - HIPAA compliant.
 - User friendly.
 - Healthcare system can transfer files of tested patients and their contact information in real time.
 - Software upgrades for hospital partners to improve data sharing.

Monitor healthcare system impacts.

- Monitor testing levels and outline testing measures for healthcare.

- Assess need to contract with clinic and providers or offer drive-thru testing to increase testing in high-priority communities and communities of focus.
- Develop rapid reporting system from healthcare system to public health for any individual being tested.
- Improve and expediate data sharing with partners such as MultiCare Health System, CHI Franciscan, Kaiser Permanente, Sea Mar Community Health Centers, Community Health Care, Northwest Physicians' Network and Puyallup Tribal Health Authority.
- Provide guidance for Healthcare-to-Patient communication, such as isolation and quarantine practices.
- Case investigation team will contact individual within 24-hours of positive test result to ensure compliance of isolation and instruct household members to isolate/quarantine.

Communicate non-pharmaceutical interventions.

- Implement communication plan for social distancing and non-pharmaceutical intervention (NPI) requirements. Include staged approach consistent with state guidelines of how requirements can be modified to reduce disruption and disease transmission, while protecting high-risk groups.
- Ensure communications meet Departmental Health Equity and Culturally and Linguistically Appropriate Services.

Plan for prevalence and surveillance testing.

- Coordinate with Health Department epidemiologists and analysts to identify appropriate methodology for data collection and analysis.
- Coordinate with partners to identify reporting strategy.
- Coordinate with healthcare systems for data collection.

Policy Assumptions & Considerations

- Coordination with legal and law enforcement resources when non-compliance presents a significant risk to the public's health.
- Coordination with Puget Sound counties for efficient use of Temporary Care Center(s).
- Explore other mutual aid considerations, such as shared workforce.
- Review Departmental policy on continued remote work expectations to create infrastructure capacity.
- Explore additional contracts with facilities that specialize in behavioral health needs.
- Define the appropriate resources provided to isolation and quarantine guests and how to track and monitor those resources.

Limiting Factors

- Availability of adequate workforce to support extended case and contact investigation teams.
- Capacity to rapidly investigate all reported cases.
- Capacity to identify and follow up with close contacts.
- Individuals under isolation or quarantine may chose to leave prematurely.
- Ability of centralized resource centers (example 2-1-1 or city, county or state-sponsored options) to meet resource needs of patient/family during isolation.

Stage 2: Case Surge Timeline

Expand case and contact investigation teams.



Maintain testing.



Monitor healthcare system impacts.



Communicate NPIs.



Plan for prevalence and surveillance testing.



Stage 3: Summer / Fall Decrease

This stage is characterized by a decrease in cases and monitoring and preparing for the next surge. It is critical during this time that response is scaled according to investigation needs through syndromic surveillance and prevalence testing.

Goals and Methods

Reassess case and contact investigation teams.

- Adjust staffing and disease investigations and with changes in disease prevalence or characteristics.
- Manage resources needs.
- Monitor data input and output.
- Support PUI investigations in order to get ahead of contact tracing.
- Manage probable cases with testing and I&Q recommendations.
- Monitor testing levels within healthcare.

Prepare for respiratory illness and COVID-19 surveillance.

- Prepare for respiratory illness season; data collection and communication.
- Maintain and monitor outreach to high risk facilities.
- Monitor new testing options for the community and make recommendations for ease of use or ease of access to those tests.
- Work with data teams to develop appropriate methods for data collection and analysis.
- Improve syndromic surveillance data collection and analysis.

Implement prevalence and surveillance testing plan.

- Develop team to monitor data, identify data to share and validate surveillance system.
- Support healthcare systems continued testing.
- Identify priority communities—informed by data.

Policy Assumptions & Considerations

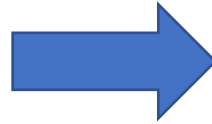
- Further lifting social distancing restrictions.
- Number of new cases will decrease.
- There will be minimal importation of cases from areas still experiencing high levels of cases.
- Healthcare system policies will align with Departmental efforts.

Limiting Factors

- Response to other public health issues and emergencies could limit resources to respond.
- Increased public fatigue.
- As perceived risk changes, so may adoption of public health recommendations.

Stage 3: Summer / Fall Decrease Timeline

Reassess case and contact investigation teams.



Prepare for respiratory illness and COVID-19 surveillance.



Implement prevalence and surveillance testing plan.



Stages 4 and 5: Fall / Winter Resurgence and Long-Term Recovery

These stages are characterized by implementing systems to test for, investigate, and respond to cases and contacts of COVID-19. A vaccine plan will also be developed and implemented. Over time, vaccines will be made available to the community through mass vaccination events. This plan and timeline may need significant revision based on disease progression in the community and progress on identifying additional tests, medications and vaccine. The current timeline extends through early 2022.

Goals and Methods

Reassess case and contact investigation teams.

- Assess if teams are adequately staffed to provide effective investigation.
- Identify gaps in staffing.
- Apply lessons learned and quality improvements.

Implement COVID-19 surveillance methodologies.

- Conduct surveillance testing at sentinel sites.
- Monitor syndromic surveillance data sources.
- Share data with medical providers and community.

Develop and implement a staged critical workforce vaccine administration program.

- Quantify populations identified in vaccine prioritization plan.
- Work with stakeholders to develop distribution and administration plan to cover population needs.
- Develop and implement communications plan.
- Accept and prioritize vaccine orders.
- Manage vaccine distribution.
- Conduct targeted vaccination strategy.
- Conduct large scale public vaccination events if indicated.
- Assess vaccination coverage. Revise plan based on findings.

Establish long term monitoring and response program that incorporates lessons learned and improvements.

- Document processes.
- Conduct After Action Review.
- Develop workplans to apply quality improvements.
- Identify resources to support ongoing work.

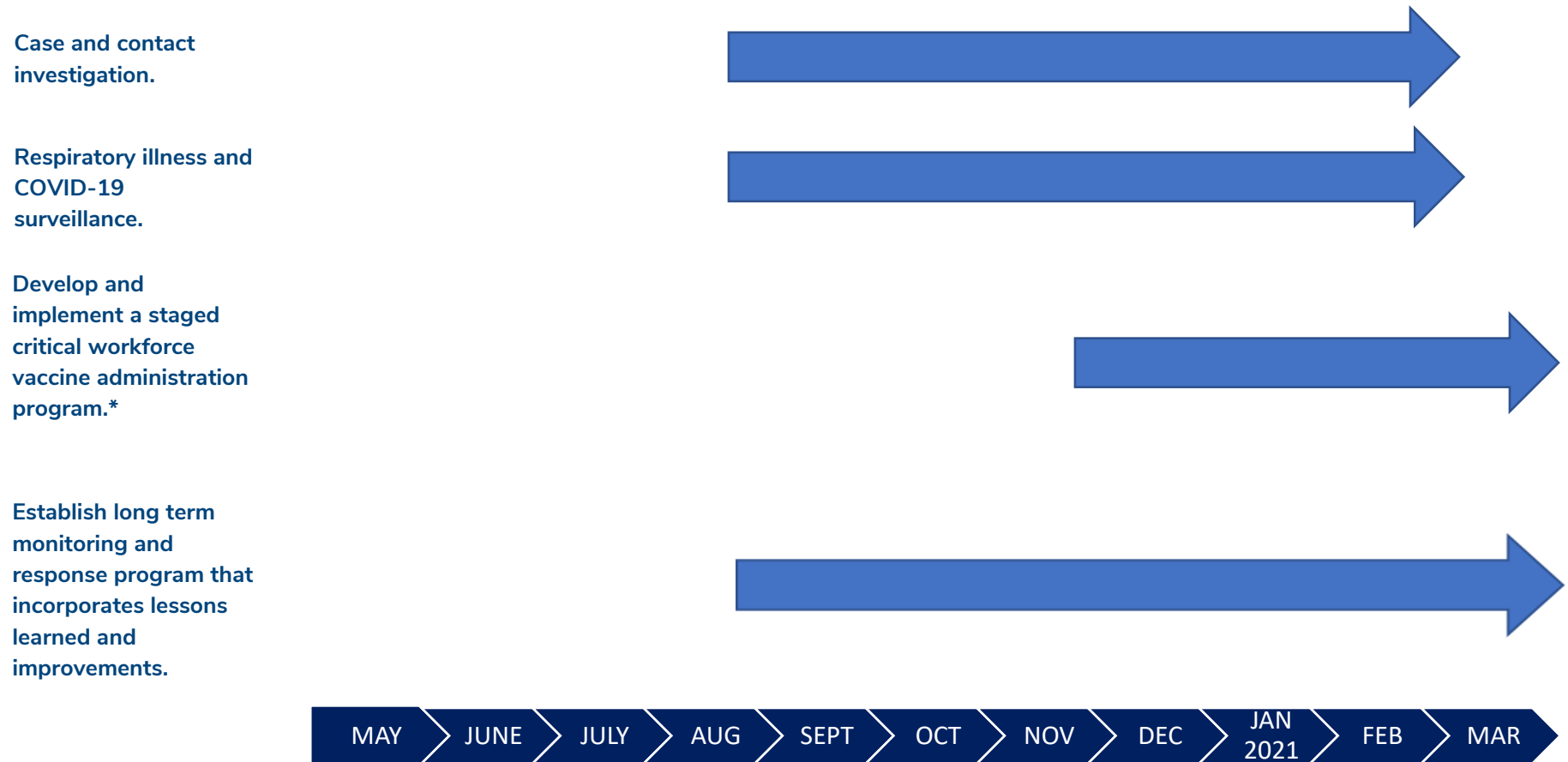
Policy Assumptions & Considerations

- Consider reimplementing of social distancing requirements.
- Reassess testing availability and prioritization recommendations.
- Identify priority populations for vaccination consistent with state and federal guidance.
- Vaccination priority plan will balance needs of critical workforce, health equity and needs of vulnerable populations.
- Maintain consistency with other LHJs.
- Maximize administration of doses while adhering to prioritized population plan.
- There will be a fall resurgence in cases.
- There is a clear timeframe for vaccine availability.
- Vaccine supply will be limited at first and demand will exceed supply.
- Vaccine distribution and administration should build from existing healthcare systems, with public resources used to fill gaps.
- Local public health will have influence upon vaccine allocation and distribution.

Limiting Factors

- Budgetary restrictions.
- Response to other public health issues and emergencies could limit resources available to respond.
- Demand for vaccine will depend upon perceived risk from disease. If disease is not present, demand will be less.
- Vaccine development timeline and rollout will greatly impact the Department's ability to provide timely mass vaccination to the community.

Stages 4 and 5: Fall / Winter Resurgence and Long-Term Recovery Timeline



*Develop and implement a staged critical workforce vaccine administration program will extend far beyond March 2021. The estimated timeline for vaccine development, approval, manufacturing, and mass distribution is below. This is built on current projections and is subject to revisions.

1. 2020 for development and approval.
2. 2021 for manufacturing and testing.
3. Late 2021 to early 2022 for mass distribution.