

# ELC ENHANCING DETECTION: RHODE ISLAND TESTING PLAN

## 2020 Overarching Jurisdictional SARS-CoV-2 Testing Strategy

|                  |              |
|------------------|--------------|
| Jurisdiction:    | Rhode Island |
| Population Size: | 1.059M       |

### 1. Describe the overarching testing strategy in your state or jurisdiction.

#### Overview

There are currently over 1.5 million confirmed cases of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2, the cause of COVID-19) in the United States ([www.cdc.gov/coronavirus/2019-ncov/cases-updates/cases-in-us.html](http://www.cdc.gov/coronavirus/2019-ncov/cases-updates/cases-in-us.html)). In Rhode Island, >130,000 SARS-CoV-2 PCR tests have been performed with 11% positive ([ri-department-of-health-covid-19-data-rihealth.hub.arcgis.com](http://ri-department-of-health-covid-19-data-rihealth.hub.arcgis.com)). There have been >1,300 people hospitalized and approximately 600 deaths. Importantly, Rhode Island has experienced a concentrated epidemic among racial and ethnic minority groups. Approximately 43% and 13% are among Hispanic/Latino and African American/Black populations, respectively. The top four urban centers with the highest percent of positivity rates are Central Falls (24% positivity), Providence (21%), North Providence (16%), and Pawtucket (16%). Rhode Island is the second most densely population state in the country. These urban centers have a high density of racial and ethnic minority groups, highlighting the critical need to improve testing and access in these settings.

SARS-CoV-2 PCR-based testing is critically important for timely diagnosis, isolation, and subsequent quarantine of those exposed. Serology-based antibody testing is important for surveillance and to inform modeling efforts. Testing in the United States has been limited until more recently. Significantly increased testing is urgently needed to help guide public health policy and reopening of the economy. Rhode Island has the highest rate of testing per capita in the country and was the only state with the projected number of tests to adequately reopen ([www.nytimes.com/interactive/2020/04/17/us/coronavirus-testing-states.html](http://www.nytimes.com/interactive/2020/04/17/us/coronavirus-testing-states.html)). This was achieved with partnerships across government, public health, clinical, business, and academic sectors. However, distribution and access to testing is uneven with less access among underserved populations. Furthermore, as the state reopens to business, increased testing is needed in critical sectors to prevent re-emergence of infection and prevent further transmission.

The broad goals of the Rhode Island State Testing Plan are as follows: 1) Implement efficient and timely testing for symptomatic individuals with suspected COVID-19; 2) Perform screening of asymptomatic individuals at high-risk of COVID-19 and from underserved populations; 3) Perform sentinel surveillance of populations with a focus on high-risk and underserved populations; 4) Ensure isolation and timely contact tracing of SARS-CoV-2 positive cases with quarantining of close contacts.

Rhode Island is currently performing >60,000 tests/month. This represents 5.7% of the state's population (N=1,059,361, [www.census.gov/quickfacts/RI](http://www.census.gov/quickfacts/RI)). The state has performed an increasing number of PCR-based tests over time (N=1 in February, N=44,17 March, N=62,294 April, and N=62,420 in May through the 22nd). The goal of the Rhode Island State Testing Plan is for approximately 24% of the state's population to be tested each month (Approximately 250,000 tests/month) by September of 2020. This is based on the following justification: 1) The peak of COVID-19 occurred in Rhode Island during the week of April 20th and April 27th both in terms of the number of positive tests and number

# ELC ENHANCING DETECTION: RHODE ISLAND TESTING PLAN

of hospitalizations. During these weeks, approximately 18,500 tests/week were performed with a positivity of up to 17%. This included testing with a focus on symptomatic individuals as well as some screening of asymptomatic individuals in high-risk settings (i.e. nursing home residents/staff, healthcare workers). This is approximately 74,000 tests/month (7% of the state's population); 2) Assuming a testing positivity goal of 10% or less (based on World Health Organization recommendations) 129,000 tests/month (Approximately 12% of the state's population) may be needed during peak times; 3) We assumed a similar number of testing needed for asymptomatic screening including aggressive outbreak investigations during the same period; 4) During peak time, testing resources will be directed to the clinical sector to focus on symptomatic patients; 5) During non-peak times, testing resources will still be prioritized for the clinical sector and symptomatic individuals, but will also be directed for asymptomatic screening for surveillance purposes.

## Description of Current Laboratory Venues and Testing Platforms

Testing access in Rhode Island has been a culmination of efforts led by the Rhode Island Department of Health and in partnership with multiple organizations despite significant and ongoing challenges. The State of Rhode Island is currently using multiple laboratory sites and platforms for SARS-CoV-2 testing. This includes both PCR- and antibody-based platforms.

The Rhode Island Department of Health State Health Lab (RISHL): Rhode Island State Health Laboratories (RISHL) are located in Providence. RISHL organizationally include environmental and forensic laboratories, as well as the Office of State Medical Examiners (OSME). RISHL has a staff of approximately 78 FTE, with 25 scientists assigned to the Center for Biological Sciences where clinical diagnostic testing activities take place. Initially, RISHL was the only laboratory in the state performing testing for SARS-CoV-2. Specific equipment dedicated to SARS-CoV-2 testing to date includes various extraction instruments (Roche MagnaPure 96, Roche Compact, Qiagen EZ1, Qiagen QiaCube) and real-time PCR machines (ABI 7500 Fast DX, Quant Studio DX). The RISHL eventually added the Cepheid Genexpert test on existing instruments. To further increase capacity, the RISHL purchased additional Qiagen EZ1s and expansion modules for one of the Cepheid Genexperts. As of May 22nd, RISHL has completed over 23,000 PCR tests, with as many as 800 tests/day. RISHL also has the Hologic SARS-CoV-2 EUA assay available on an existing Panther instrument. RISHL also plans to institute the Abbott SARS-CoV-2 IgG serologic EUA assay on an existing Architect instrument by early June.

Lifespan Laboratories: Lifespan Laboratories include some of the major hospitals in the state (Rhode Island Hospital, The Miriam Hospital, and Newport Hospital) and account for a significant amount of the state's normal laboratory services. Lifespan's primary molecular laboratory is located at Rhode Island Hospital in Providence. The state has worked to build-up capacity at Lifespan with currently available PCR-based SARS-CoV-2 platforms include primarily automated instruments (Roche Cobas 6800, Cepheid GeneXpert, Genmark ePlex), and a ThermoFisher Kingfisher/ABI 7500 Fast DX system. The Miriam Hospital and Newport Hospital also have the Cepheid GeneXpert onsite. Antibody-based SARS-CoV-2 platforms are located at Lifespan's serological laboratory on the campus of The Miriam Hospital in Providence. The lab has validated the Abbott SARS-CoV-2 IgG serologic EUA assay on an existing Architect platform.

# ELC ENHANCING DETECTION: RHODE ISLAND TESTING PLAN

Care New England: Care New England is the other major hospital system in the state (Women and Infants Hospital and Kent Hospital) with a primary laboratory located on the campus of Women and Infants Hospital in Providence. The lab has multiple automated PCR-based SARS-CoV-2 instruments including Cepheid GeneXpert and Genmark ePlex. Care New England also has Abbott ID Now platforms at both Women and Infants and Kent Hospital, which are being used to test women presenting for labor and delivery. Antibody-based SARS-CoV-2 platforms include an existing Architect instrument for running the Abbott SARS-CoV-2 IgG serologic EUA assay.

Westerly Hospital: Westerly Hospital is part of Yale-New Haven Health and is located in Westerly, Rhode Island. Westerly Hospital is in the process of bringing online the Hologic SARS-CoV-2 EUA assay on an existing Panther instrument.

Our Lady of Fatima Hospital and Roger Williams Medical Center: These hospitals are part of the CharterCARE Provider Group of Rhode Island, and is located in North Providence, Rhode Island. Fatima Hospital will be bringing online the Hologic SARS-CoV-2 EUA assay on an existing Panther instrument.

East Side Clinical Laboratories (ESCL): ESCL was established in 1949 as a small physician owned laboratory and is now one of the major outpatient laboratory systems in the state. ESCL has an extensive network of more than 50 locations throughout Rhode Island, Massachusetts and Connecticut which is complimented by an extended courier network. They service a diverse set of clinics consisting of single and multi-physician group practices, community health care centers, home health agencies, long term care facilities and local businesses. ESCL is now part of the multi-state SONIC Healthcare, and multiple PCR-based SARS-CoV-2 assays are available through ESCL at Sunrise Laboratories in NY, and others. Antibody-based SARS-CoV-2 platforms available include the Abbott SARS-CoV-2 IgG serologic EUA assay.

Coastal Medical Laboratory: Coastal Laboratory mostly services a network of primary care practices in the state and is bringing online the Hologic SARS-CoV-2 EUA assay on an existing Panther instrument.

Other Laboratory Services: The State of Rhode Island and other clinical organizations in the state have contracts for both PCR-based and antibody-based SARS-CoV-2 testing through Bio-Reference Laboratories, LabCorp, and Quest.

## Testing at Non-Traditional Sites

A key component of access to PCR-based SARS-CoV-2 testing is engaging at-risk communities in community settings. In the future, the state of Rhode Island plans to increase testing access and capacity at community sites to engage at-risk and underserved populations. Current sites where PCR-based testing occurs includes:

CVS Health COVID-19 Testing: In April, CVS Health implemented a rapid testing site in Lincoln, Rhode Island using the Abbott ID Now PCR-based platform. The site is drive-up (requires a vehicle) and is staffed in-part by the Rhode Island National Guard. Specimens are obtained through a self-collected nasal swab and results are available in 15-20 minutes. This approach allowed Rhode Island to significantly increase PCR-based testing capacity and has averaged approximately 680 tests/day in May

# ELC ENHANCING DETECTION: RHODE ISLAND TESTING PLAN

with over 36,000 tests to date. However, CVS Health plans to close this site in the near future and move testing to community-based pharmacies in the state to facilitate access.

**Other Community-Based Sites:** Abbott ID Now machines have been implemented in several other community-based settings around the state to improve access to at-risk and transient populations in which timely results may facilitate delivery of results and immediate action.

**Mobile Community-Health Van:** The state has implemented a mobile testing van through a partnership with the University of Rhode Island and CVS. The van includes medical providers and five Abbott ID Now machines. The van has been operating at 934 Dexter Street in Central Falls which has among the highest density of diverse racial and ethnic groups and also the highest rates of SARS-CoV-2 infection.

**Alert Ambulance Services:** The state has a contract with this organization to facilitate collection of swabs for PCR-based SARS-CoV-2 testing at community sites across the state. This has recently included six community-based sites at Stop and Shop supermarkets across the state which encompass a large geographic diversity.

## Antibody-based Serology Testing

A number of antibody-based serology tests have been approved by the FDA under an Emergency Use Authorization (EUA) ([www.fda.gov/medical-devices/emergency-situations-medical-devices/emergency-use-authorizations#covid19ivd](http://www.fda.gov/medical-devices/emergency-situations-medical-devices/emergency-use-authorizations#covid19ivd)). Studies suggest that IgM may develop as early as five days after onset of symptoms, but may be non-specific for SARS-CoV-2 (Guo et al., CID, 2020). IgG develops later at a median time of 14 days and is much more specific for SARS-CoV-2 after this time (Zhao et al., CID, 2020; Guo et al., CID, 2020). Antibody-based testing in the state of Rhode Island is available through multiple laboratories as described above. The major test is the Abbott SARS-CoV-2 IgG serologic EUA assay on the Architect platform. Antibody-based SARS-CoV-2 testing is not being used for diagnostic purposes in Rhode Island and is not included in statewide case counts. The state is currently in the process of implementing antibody-based surveillance testing as part of a comprehensive testing approach (described in next section).

## Coordination Between Testing Sites

The Rhode Island Department of Health is working with other state agencies to effectively implement testing approaches. The Rhode Island State Testing Team under the direction of the Department of Health (Director: Nicole Alexander-Scott, MD, and Deputy Director: Ana Novais) is responsible for coordinating testing between sites. The state testing team maintains a management staff of five individuals who evaluate policy approaches and oversee the daily operations of testing sites. State operated testing sites are staffed by approximately 165 Rhode Island National Guard members. Dr. Ewa King, PhD (Director) and Dr. Richard Huard, PhD (Chief, Biological Sciences) oversee the RISHL and coordinate the response among other laboratory systems. Testing supplies and specimen collection kits that have been obtained by the state are centrally located at a National Guard site in Coventry. The Rhode Island COVID-19 case reporting system includes data transmission of positive cases from labs to RIDOH, clinical case investigation of each positive case, and outreach to contacts of index positive cases.

## ELC ENHANCING DETECTION: RHODE ISLAND TESTING PLAN

The case investigation approach is tailored to case type with unique protocols utilized to respond to localized outbreak scenarios. Contact outreach can include, in addition to quarantine/monitoring education, test scheduling and transferals to isolation supports, depending on the case.

## ELC ENHANCING DETECTION: RHODE ISLAND TESTING PLAN

**Table #1a: Number of individuals planned to be tested, by month**

| BY MONTH:    | May-20        | Jun-20         | Jul-20         | Aug-20         | Sep-20         | Oct-20         | Nov-20         | Dec-20         | TOTAL     |
|--------------|---------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|-----------|
| Diagnostics* | 70,000        | 100,000        | 150,000        | 200,000        | 250,000        | 250,000        | 250,000        | 250,000        | 1,520,000 |
| Serology     | 1,000         | 2,000          | 5,000          | 5,000          | 5,000          | 5,000          | 5,000          | 5,000          | 33,000    |
| <b>TOTAL</b> | <b>71,000</b> | <b>102,000</b> | <b>155,000</b> | <b>205,000</b> | <b>255,000</b> | <b>255,000</b> | <b>255,000</b> | <b>255,000</b> |           |

\*Each jurisdiction is expected to expand testing to reach a minimum of 2% of the jurisdictional population.

**Table #1b: Planned expansion of testing jurisdiction-wide**

| Name of testing entity | Testing venue (select from drop down) | Performing Lab (if different from testing entity) | Daily diagnostic through-put | Daily serologic through-put | Specific at-risk populations targeted (list all)                  |
|------------------------|---------------------------------------|---|------------------------------|-----------------------------|---|
| ESCL                   | Other                                 | ESCL  |                              | 250                         | High contact workers, High density communities, random population |
| Ambulance Corps        | Other                                 | State Lab, ESCL, Bioreference Labs                | 3,000                        | 0                           | Congregate care residents and staff                               |
| Respiratory Clinics    | Hospitals or clinical facility        | ESCL, Bioreference Labs, Quest, LabCorp           | 500                          | 0                           | General population  |

## ELC ENHANCING DETECTION: RHODE ISLAND TESTING PLAN

| Name of testing entity     | Testing venue (select from drop down) | Performing Lab (if different from testing entity) | Daily diagnostic through-put | Daily serologic through-put | Specific at-risk populations targeted (list all) |
|----------------------------|---------------------------------------|---|------------------------------|-----------------------------|--|
| Hospitals                  | Hospitals or clinical facility        | Internal Labs, Quest                              | 1,000                        | 0                           | Patients and staff                               |
| PCPs                       | Community-based                       | ESCL, Bioreference, Quest                         | 500                          | 0                           | General population                               |
| National Guard Field Sites | Other                                 | ESCL  | 2,000                        | 0                           | General population                               |
| CVS Minute Clinic          | Drug store or pharmacy                | Quest   | 500                          | 0                           | General population                               |
| Urban Clinics              | Federally Qualified Health Center     | ESCL, Bioreference Labs                           | 1,500                        | 0                           | High density communities                         |
| Department of Health       | Public health lab                     | State Health Laboratory                           | 2,500                        | 400                         | Community, underserved, safety-net, uninsured    |

# ELC ENHANCING DETECTION: RHODE ISLAND TESTING PLAN

## 2020 Direct Expansion of SARS-COV-2 Testing by Health Departments

### 2. Describe your public health department's direct impact on testing expansion in your jurisdiction.

#### Overview

The goals of the RI Testing Plan (Testing for symptomatic individuals, screening of asymptomatic individuals, sentinel surveillance, and isolation/quarantining) will be achieved by a strategy focused on improving access to testing in key populations. The testing target goal is for approximately 24% of the state's population to be tested each month (Approximately 250,000 tests) by September, 2020. PCR- and antibody-based SARS-CoV-2 testing are critical components in decisions related to reopening the state and community mitigation. Well-designed surveillance efforts will help policy makers understand if an occupation, setting, municipality, or building is the cause of an outbreak and lead to focused intervention and outbreak response efforts.

#### Description of Expanded Testing Capacity

Implementation will occur by expanding testing capacity across organizations and institutions, leveraging clinical infrastructure wherever possible. These include: 1) Emergency Departments/Hospitals; 2) Urgent Care Centers; 3) Primary Care Clinics (including federally qualified health centers, FQHCs); 4) Mobile Testing Sites (i.e. ambulance/van); and 5) State-Sponsored Community Testing Sites. A goal of the testing program is to ensure access for the entire population. We will connect each of the testing sites with a novel Salesforce scheduling platform to ensure accurate data collection and reporting. Rhode Island is also exploring testing at grocery stores, large indoor spaces, and community centers. Procurement of new testing equipment and device platforms will include resources to ensure we have in-state testing capacity which is an overall limitation in Rhode Island. The State is working to procure two new Thermo Fisher COVID-19 10K-24 Automated Testing Platforms capable of >10,000 tests per day. This is a substantial investment to ensure long-term access to testing capacity. The state has a significant number of testing performed on the Abbot ID Now platform. However, given recent concerns ([www.fda.gov/news-events/press-announcements/coronavirus-covid-19-update-fda-informs-public-about-possible-accuracy-concerns-abbott-id-now-point](http://www.fda.gov/news-events/press-announcements/coronavirus-covid-19-update-fda-informs-public-about-possible-accuracy-concerns-abbott-id-now-point) [fda.gov]), the state testing strategy will shift from this platform and use only in settings where timely testing and delivery of results is critical.

#### Prioritizing Testing for Vulnerable and At-Risk Populations

The Rhode Island State Testing Team has identified at-risk and vulnerable populations for PCR- and antibody-based testing. PCR-based testing is the focus to perform timely diagnosis, isolation, investigation of close contacts, and quarantining. The following are key populations which have been prioritized:

At-Risk Populations: Priority at-risk populations include healthcare workers (HCWs), first responders (fire/EMS/police), government workers, educational settings, and high-contact business and manufacturer settings. These groups will be offered access to PCR-based testing. Antibody-based testing will be offered to select groups to understand seroprevalence in these populations. Symptomatic individuals will be tested at emergency departments/hospitals, urgent care settings, and through



# ELC ENHANCING DETECTION: RHODE ISLAND TESTING PLAN

primary care clinics. Screening (asymptomatic) testing will occur through state-sponsored community testing sites.

**Vulnerable Populations:** Priority vulnerable populations include congregate care settings (i.e. nursing homes), correctional setting, and African American/Black and Hispanic/Latino populations in urban settings. The Rhode Island State Testing Team working to establish high-capacity sites of testing in vulnerable communities. These sites are accessible for walk-up patients, have signage in multiple languages, and leverage community trust with our FQHC network to ensure robust access to testing. These sites include: Providence Community Health Center (FQHC which provides care for 60,000 residents in Providence, 80% of which are Hispanic/Latino), Blackstone Valley Community Health Center (Major FQHC in Central Falls and Pawtucket), state-sponsored mobile testing van (934 Dexter Street, Central Falls), state-sponsored community testing site at Memorial Hospital (Pawtucket), Armistice Urgent Care Clinic (Pawtucket), Clinica Esperanza (Providence, primarily Hispanic/Latino population), East Bay Community Action Program (Newport and East Providence), Community Action Program & Health Services (CCAP, Cranston), and Wooksocket (Thundermist, FQHC). Future testing sites also include Open Door Health (Providence, LGBTQ+ population).

## Addressing Barriers and Challenges

Rhode Island is currently facing significant challenges to testing including:

**Testing Material and Supply Chains:** Access to supplies is a daily challenge for our statewide testing effort. Suppliers continue to be unable to deliver on promised quantities for specimen collection kits and reagents. Without high volume test processing capability in state, we have issues with scale and rapid test turnaround. RISHL has performed heroically during this pandemic, but the necessity to outsource specimens to other states results in unpredictable result turnaround times at commercial labs. This issue becomes particularly prevalent in outbreak response, where we are hamstrung by our limited in state capacity. Despite this, we have succeeded in testing a high per capita amount of state residents. This has been achieved through numerous partnerships. The state will continue to build off these partnerships to improve access to testing.

**Reporting and Delivery of Test Results:** Key components of the testing process include who is ordering the test (especially for asymptomatic individuals), reporting to the Department of Health, and delivery of test results. Symptomatic individuals are typically tested through a clinic site where a provider orders the test and follows-up on results. Over 90% of Rhode Island is insured due to Medicaid-expansion ([health.ri.gov/data/healthcareaccess](https://health.ri.gov/data/healthcareaccess)). The state has mandated coverage of SARS-CoV-2 testing for symptomatic patients. A more difficult challenge has been screening of asymptomatic individuals. Although the laboratory test is covered, there is no mechanism in place to cover the cost for the associated time of ordering, performing, reporting, counseling, and following-up on results. This has created challenges which are being addressed through a combined effort between the Department of Health and Office of the Health Insurance Commissioner. With the support of the CDC, efforts will be made to align reporting across multiple laboratory systems through electronic lab reporting (ELR) to provide real-time surveillance data to guide efforts to address COVID-19, as well as for reporting to the CDC. This will be done through a single, custom-built lab interface which will be implemented statewide to address these technical and reporting challenges.

# ELC ENHANCING DETECTION: RHODE ISLAND TESTING PLAN

**Engaging Underserved Populations:** Similar to other states, Rhode Island has observed significant disparities among underserved populations including African American/Black and Hispanic/Latino communities in urban settings. The Rhode Island Department of Health will build off past community-initiatives to engage populations who are most at-risk. This includes the statewide Health Equity Zones (HEZ) Initiative which has infrastructure in place at 11 underserved communities in the state. HEZ's have focused on community-based initiatives to address social determinants of health and improve health outcomes. This initiative will be used to engage community partners for outreach to improve testing uptakes among at-risk groups. HEZ's are located in the areas of the state with the highest prevalence of COVID-19 rates.

**Technical Expertise related to PCR- and Antibody-based SARS-CoV-2 Testing:** Given rapidly evolving pace of research and experience using both PCR- and antibody-based tests, and to help guide testing implementation, the state of Rhode Island formed a Clinical Validation and Testing Taskforce which is co-chaired by Dr. Angela Caliendo, MD, PhD ([vivo.brown.edu/display/ac184](http://vivo.brown.edu/display/ac184)) and Dr. Jonathan Kurtis, PhD, MD ([vivo.brown.edu/display/jkurtis](http://vivo.brown.edu/display/jkurtis)). Both are experts in molecular- and serology-based diagnostic testing. Dr. Caliendo is a member of the Infectious Diseases Society of America Guideline Committee on the diagnosis of COVID-19 ([www.idsociety.org/practice-guideline/covid-19-guideline-diagnostics](http://www.idsociety.org/practice-guideline/covid-19-guideline-diagnostics)). Other members of the Taskforce include state experts and representatives from major laboratories and academic institutions in Rhode Island. Their insights have guided implementation of antibody-based testing platforms and methods of specimen collection (i.e. nasal versus nasopharyngeal, symptomatic versus asymptomatic).

**Improved electronic laboratory reporting (ELR):** RISHL utilizes Cerner Millennium as the laboratory information management system (LIMS). Multiple high throughput instruments are currently interfaced to LIMS, however, ABI 7500 fast DX and Quant Studio are not, necessitating manual resulting. RISHL is currently reporting all SARS-CoV-2 test results via HL7 messaging to the local NEDSS database and to CDC through PHLIP. Significant progress has been made to implement ETOR with the major hospital system, Lifespan (operational), and the Providence Community Health Centers (in testing). These projects need to be finalized and expanded to all tests, including COVID-19. Additionally, as test ordering and specimen collection increasingly take place outside of the clinical settings, there is a need for test ordering using a web portal for online ordering and reporting, which would be accessible to both patients and providers and integrated into LIMS. Hospital and commercial laboratories in the state differ in their capacity to submit their results utilizing HL7 messaging. A comprehensive strategy to improve this situation will rely on providing state IT services to implement and test ELR solutions.

## Description of Strategy for Serology Testing

Antibody-based testing in the state of Rhode Island is largely through the Abbott SARS-CoV-2 IgG serologic EUA assay on the Architect platform. Importantly, antibody-based SARS-CoV-2 testing is not being used for diagnostic purposes in Rhode Island. The overall statewide goal of using antibody-based SARS-CoV-2 testing is to determine seroprevalence of COVID-19 in different populations to help inform modeling estimates and guide policy decisions. The overall approach includes:

**Geography-based, random sampling of the general population in Rhode Island:** The ideal strategy for estimating seroprevalence of the general population is a random sample of the state. This is important for modeling estimates as well as to adjust data from non-random (“convenience”) samples to more accurate estimate seroprevalence. We are in the process of conducting/evaluating a geography-based

# ELC ENHANCING DETECTION: RHODE ISLAND TESTING PLAN

random sample across the state based on a modified CDC Community Assessment for Public Health Emergency Response (CASPER) framework ([www.cdc.gov/nceh/casper/default.htm](http://www.cdc.gov/nceh/casper/default.htm)).

Convenience-based sampling of discarded/remnant blood specimens: The seroprevalence of SARS-CoV-2 antibodies will be estimated in a sample of patients having blood drawn at different laboratories across the state for other reasons (i.e. not for SARS-CoV-2). This will include specimens from the Rhode Island Blood Center (RIBC) for people donating blood, and to Lifespan Laboratories for routine outpatient labs from across the state. We anticipate testing 500-1000/week depending on the availability of antibody tests and funding.

Population-specific sampling of at-risk and underserved populations: To evaluate the seroprevalence of SARS-CoV-2 in different population subsets, we will collaborate with participating organizations to perform and collect specimens for antibody-based testing. Specific populations of focus will include healthcare workers, first responders (Fire/EMS/Police), correctional settings, at-risk patients (i.e. HIV+, dialyses, cancer, etc.), and underserved populations (i.e. Hispanic/Latino individuals).

## Resource Utilization and Management of Testing

The Rhode Island State Testing Team under the direction of the Department of Health will be responsible for managing testing resources and implementation. A high-priority focus will be directing resources to at-risk and underserved populations. The testing team is led by Director Nicole Alexander-Scott, MD, and Deputy Director Ana Novais who will be responsible for coordinating testing between sites. Dr. Ewa King, PhD (Director) and Dr. Richard Huard, PhD (Chief, Biological Sciences) will oversee the RISHL and coordinate the response among other laboratory systems. The RISHL Biological Sciences regularly partners with other RIDOH agencies and health care institutions to ensure that actionable laboratory results are promptly utilized to protect public health. Programs include Arbovirus Surveillance, Biomonitoring, Foodborne and Enteric Pathogens, Sexually Transmitted Infections, Tuberculosis and other Infectious Diseases (including COVID-19), as well as Biothreats and Chemical Threats Preparedness and Response (<https://health.ri.gov/laboratorytesting/>).

## Training of Staff and Procurement of Supplies for Expanded Testing

The training of staff will occur under the leadership of the Department of Health and the Rhode Island State Testing Team. This will include a 40-hour training session for new technical staff to perform tests. Feedback will be delivered on an ongoing basis with continuous monitoring and evaluation of performance. The State will establish a feedback team to ensure that staff, providers and community groups shape our processes and training. Procurement of supplies will occur by a process of follow all standards used by the Rhode Island Department of Purchases. A request for proposals (RFP) process will be used wherever possible. All contracts will be public information.

## ELC ENHANCING DETECTION: RHODE ISLAND TESTING PLAN

**Table #2: Planned expansion of testing driven by public health departments**

| BY MONTH:   | May-20 | Jun-20   | Jul-20 | Aug-20 | Sep-20 | Oct-20 | Nov-20 | Dec-20 | TOTAL |
|---|--------|--|--------|--------|--------|--------|--------|--------|-------|
| Number of additional* staff to meet planned testing levels  | 0      | 220  | 5      | 95     | 0      | 0      | 0      | 0      | 320   |
| FOR DIAGNOSTIC TESTING  |        |  |        |        |        |        |        |        |       |
| How many additional* testing equipment/ devices are needed to meet planned testing levels? (provide an estimated number, and include platform details in narrative above) | 0      | <ul style="list-style-type: none"> <li>• The rmo Scientific Spinnaker Robotic Mover</li> <li>• Ha Panther Fusion (1)</li> <li>• The rmo milton STARlet Liquid Handling System</li> </ul> |        | 0      | 0      | 0      | 0      | 0      | 0     |

## ELC ENHANCING DETECTION: RHODE ISLAND TESTING PLAN

| BY MONTH:                                 | May-20 | Jun-20  | Jul-20  | Aug-20  | Sep-20  | Oct-20  | Nov-20  | Dec-20  | TOTAL     |
|---|--------|---|---------|---------|---------|---------|---------|---------|-----------|
|   |        | Scientific Multidrop Combination with reagent switching valve (x2) <ul style="list-style-type: none"> <li>• The rmo Scientific KingFisher Presto (x4)</li> <li>• The rmo Scientific ALPS5000 Plate Sealer</li> <li>• App lie</li> </ul> |         |         |         |         |         |         |           |
| Volume of additional swabs needed to meet | 0      | 100,000   | 150,000 | 200,000 | 250,000 | 250,000 | 250,000 | 250,000 | 1,450,000 |

## ELC ENHANCING DETECTION: RHODE ISLAND TESTING PLAN

| BY<br>MONTH:  | May-20 | Jun-20 | Jul-20 | Aug-20 | Sep-20  | Oct-20  | Nov-20  | Dec-20  | TOTAL   |
|---|--------|--------|--------|--------|---------|---------|---------|---------|---------|
| planned testing levels <sup>++</sup>  |        |        |        |        |         |         |         |         |         |
| Volume of additional media (VTM, MTM, saline, etc.) needed to meet planned testing levels <sup>++</sup> | 0      | 0      | 0      | 0      | 224,540 | 250,000 | 250,000 | 250,000 | 974,540 |

## ELC ENHANCING DETECTION: RHODE ISLAND TESTING PLAN

| BY MONTH:  | May-20 | Jun-20                       | Jul-20                       | Aug-20                                    | Sep-20                                    | Oct-20                                    | Nov-20                                    | Dec-20                                    | TOTAL                                     |   |  |
|--|--------|------------------------------|------------------------------|---|---|---|---|---|---|---|--|
| Volume of additional reagents needed to meet planned testing levels, by testing unit and platform (i.e. 100K/day - Hologic panther; 100k/day - Thermofisher) | 0      |                              | ABI7500<br>(10,000)          | ABI7500<br>(10,000)                       | ABI7500<br>(10,000)                       | ABI7500<br>(30,000)                       | ABI7500<br>(30,000)                       | ABI7500<br>(30,000)                       |   |   |  |
|  |        |                              | Panther<br>(60,000)          | Panther<br>(60,000)                       | Panther<br>(60,000)                       | Panther<br>(60,000)                       | Panther<br>(60,000)                       | Panther<br>(60,000)                       | Panther<br>(60,000)                       |   |  |
|  |        |                              | Panther Fusion<br>(15,000)   | Panther Fusion<br>(15,000)                | Panther Fusion<br>(15,000)                | Panther Fusion<br>(15,000)                | Panther Fusion<br>(15,000)                | Panther Fusion<br>(15,000)                | Panther Fusion<br>(15,000)                |   |  |
|  |        |                              | Genexpert<br>(1800)          | Genexpert<br>(1800)                       | Genexpert<br>(1800)                       | Genexpert<br>(1800)                       | Genexpert<br>(1800)                       | Genexpert<br>(1800)                       | Genexpert<br>(1800)                       |   |  |
|  |        |                              | Genexpert (ABI7500 1800)     | ThermoFisher                              | ThermoFisher                              | ThermoFisher                              | ThermoFisher                              | ThermoFisher                              | ThermoFisher                              | ThermoFisher                              |  |
|  |        |                              | Roche cobas 6800 (12,000)    | KingFisher and Quantstudio 7<br>(125,000) | KingFisher and Quantstudio 7<br>(230,000) | KingFisher and Quantstudio 7<br>(230,000) | KingFisher and Quantstudio 7<br>(230,000) | KingFisher and Quantstudio 7<br>(230,000) | KingFisher and Quantstudio 7<br>(230,000) | KingFisher and Quantstudio 7<br>(230,000) |  |
|  |        | Roche cobas 6800<br>(12,000) | Roche cobas 6800<br>(12,000) | Roche cobas 6800<br>(12,000)              | Roche cobas 6800<br>(12,000)              | Roche cobas 6800<br>(12,000)              | Roche cobas 6800<br>(12,000)              | Roche cobas 6800<br>(12,000)              |   |   |  |
| FOR SEROLOGIC TESTING  |        |                              |                              |   |   |   |   |   |   |   |  |

## ELC ENHANCING DETECTION: RHODE ISLAND TESTING PLAN

| BY MONTH:  | May-20 | Jun-20                    | Jul-20   | Aug-20   | Sep-20   | Oct-20   | Nov-20   | Dec-20   | TOTAL |
|--|--------|---------------------------|--|--|--|--|--|--|-------|
| Number of additional* equipment and devices to meet planned testing levels   | 0      | 0                         | Abbott Alinity (1)                                   | 0  | 0  | 0  | 0  | 0  | 0     |
| Volume of additional reagents needed to meet planned testing levels, by testing unit and platform (i.e. 100K/day - Hologic panther; 100k/day - Thermofisher) | 0      | Abbott Architect (12,000) | Abbott Architect (12,000)<br>Abbott Alinity (12,000) | Abbott Architect (12,000)<br>Abbott Alinity (12,000) | Abbott Architect (12,000)<br>Abbott Alinity (12,000) | Abbott Architect (12,000)<br>Abbott Alinity (12,000) | Abbott Architect (12,000)<br>Abbott Alinity (12,000) | Abbott Architect (12,000)<br>Abbott Alinity (12,000) |       |

\* Report new monthly additions only, not cumulative levels

++ For May and June, only include needs beyond the supplies provided by FEMA. Report new monthly additions only, not cumulative levels.



# ELC ENHANCING DETECTION: RHODE ISLAND TESTING PLAN