

ELC ENHANCING DETECTION: WEST VIRGINIA TESTING PLAN

2020 Overarching Jurisdictional SARS-COV-2 Testing Strategy

Jurisdiction:	West Virginia
Population Size:	1,792,147

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

1a) The State of West Virginia (WV) Department of Health and Human Resources (DHHR) is already testing a minimum of 2% of WV's population for SARS-CoV-2 monthly, and will maximize the use of testing platforms, particularly those that are high throughput, across the state to reach higher targets by prioritizing target populations. The Office of Laboratory Services (OLS) currently uses CDC's PCR SARS assay via the ABI 7500, Qiagen QIAcube, and EZ1 DNA, RNA, and protein extraction units, and has purchased Cepheid - GeneXpert System and Hologic Panther, which are high throughput. Although WV has a comparatively lower number of positive tests, the state's socioeconomics, health status, and rural nature increase the risk for individuals testing positive to have poor outcomes, including increased rates of morbidity and mortality. Thus, it is important to test at a higher rate. This will be accomplished by leveraging the State public health lab (OLS), as well as private, hospital, commercial, and academic labs to continue to rapidly scale up testing capacity, with careful consideration for available supplies and workforce (including those who can conduct sampling). DHHR will also utilize point-of-care and other rapid result testing to quickly respond to local outbreaks, with regard to transient populations such as homeless individuals with limited resources. DHHR currently has contracts in place with LabCorp and QLABS, which are able to accommodate high-volume testing. Academic and hospital partners such as West Virginia University (WVU) and Charleston Area Medical Center (CAMC) function as overflow lab testing sites based on location. OLS can process 100 tests a day with current available equipment, focusing on public health priorities such as outbreak testing. The Office of Epidemiology and Prevention Services (OEPS) notifies labs of outbreaks and the number of tests submitted, serving as a hub to coordinate labs across the state so that public, academic, and commercial labs can work efficiently. Because of close relationships with partners, DHHR is able to increase testing capacity to meet needs of clinics, drive-through testing, and other non-traditional sites. The National Guard (NG), OLS, and Local Health Departments (LHDs) are continuing to work to stand up testing sites for increased access within communities, which will provide surge capacity for testing needs beyond traditional labs. Point of care testing will be targeted for use in outbreak situations and transient populations such as unsheltered homeless individuals. Due to concerns with specificity of the point of care testing options, asymptomatic patients receiving negative results with rapid testing may receive confirmation testing utilizing PCR, based on potential exposure and risk, determined by the provider's clinical judgement. Communications between partners will continue to be essential in order to coordinate available capacity, functionally and regionally. The NG has administered tests in a variety of locations, supporting testing carried out by LHDs, hospitals, primary care centers, and urgent care sites.

Labs across the state report capacity back to OLS on both a daily and weekly basis. DHHR estimates that it may have capacity statewide to accommodate testing at 16,000 tests per day, should need arise; however, this is largely dependent on availability of supplies, reagents, staff to conduct sample collection and analysis, and funding for testing covered by the DHHR. The DHHR is currently undertaking a rapid needs assessment of LHDs to assess and inform the needs and barriers for expanded testing capacity. Moving forward the DHHR expects to gradually increase testing over the final 6 months of the

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year to complete nearly 500,000 additional tests, as shown in table 1a. The DHHR has developed a plan that includes reference to the state alert system which utilizes an algorithm to identify counties with growth in infection rates. Guidance will be provided to partners to coordinate testing at the local level, with 3 primary alert-based tiers differentiating testing rates in targeted populations. These tiers include “epidemic”, “spreading”, and “other” trend-based statuses (“other” includes all other categories within the alert system). Testing protocols will be further developed with consideration for these tiers and risk factors associated with identified vulnerable populations. In order to account for concerns with supply availability and strategy implementation time, WV will gradually increase testing over the coming months, beginning with universal testing of individuals with symptoms and their contacts. Additionally, the state’s governor has already signed executive orders to test individuals who are most vulnerable or who have the highest opportunity for exposure, and to provide asymptomatic testing for individuals in higher risk areas—with focus on those with increased risk of spread or poor outcomes. DHHR expects to complete an average of 2,415 tests daily in the month of July, moving towards 3,000 tests daily by the start of flu season, accounting for 5.1% of the state’s population during October. Testing will be maintained throughout the end of the year with a slight downward trend in December, when universities will be out of session.

In order of priority, the four target groups for increased testing include diagnostic for symptomatic individuals; contact tracing and outbreak investigation; surveillance of vulnerable populations, including congregate settings, high-risk populations, minorities, and high-risk areas; and sentinel surveillance. Broader sentinel surveillance of asymptomatic individuals on a volunteer basis is planned for later in the year, with a strategy to incorporate partnerships through Federally Qualified Health Centers (FQHCs) with heavier sampling in dense areas and areas with higher incidence. Out-of-state reference labs can supplement in-state capacity, bringing the potential surge capacity up to 16,000 tests completed in a day, assuming adequate staffing, supply availability, and funding. Daily throughput in the table below totals to over 25,000 tests, which is based off reported laboratory capacities; however, these figures do not account for currently known limitations in supplies, staffing, and funding free testing events. Organizational structures and workforce could further limit operational capacity at this level.

1b) To provide testing at nontraditional laboratory sites, DHHR is working with partners to stand up testing at retail sites, community centers, residential medical facilities, and pharmacies, among others. The LHDs have and continue to be a central link in coordination and implementation of local testing, as well as communication through weekly contact with the Bureau for Public Health (BPH). The NG’s mobile unit contains 80 guard staff that assist in fulfilling targeted testing outreach. In addition, drive-through testing, hospital-based testing, urgent care sites, and non-traditional testing are in place in many communities and considered for expansion in others. The NG has administered tests in a variety of locations, supporting testing carried out by LHDs, hospitals, and urgent care sites.

Testing related to the Governor’s Executive Orders include nursing homes, assisted living facilities, correctional facilities, and childcare centers. Outside of the recent executive order, inmates and staff are tested on site on an as-needed basis under a protocol that instructs facilities to monitor for signs of illness and separation of populations to limit spread of infection. To expand access to testing for minorities and others who may have limited access to testing, DHHR has prioritized free testing in high-density population areas, regardless of present symptoms. This will continue to be offered guided by epidemiological findings from the alert system. To increase access to testing for minorities, counties with a higher incidence of SARS-CoV-2, and counties with populations at greater risk of infection (due to

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population density, community-level spread, etc.), further testing focusing on populations considered high risk (see response 2b) will occur through drive-through sites, pharmacies, FQHCs, and other appropriate venues. Healthcare systems typically require testing of patients for elective surgeries and long-term care facilities prior to patient admission or transfer. DHHR will provide further guidance to local agencies to address need and frequency for surveillance of asymptomatic individuals within congregate and high-risk settings. Guidance will include details for mass or randomized monthly testing for these populations, with consideration for individuals experiencing the greatest risk. DHHR will continue to work with employers of these settings to test employees and residents, as deemed appropriate.

1c) Due to the low incidence of SARS-CoV-2 in WV, serologic testing has not been a priority to capture prevalence estimates compared to other, higher incidence states. However, some providers and commercial laboratories have undertaken initial serologic testing, and DHHR has developed a serology process and plan to assess seroprevalence across the state. Through strong alliances with university partners, serologic testing will be utilized for three major purposes in WV including on-demand testing, research, and seroprevalence related to plasma donation. Due to limitations on funding, several unknowns regarding lasting immunity and testing validity, and seemingly low incidence of COVID-19 in the state, DHHR will primarily focus current resources on diagnostic testing to address the state's greater number of vulnerable individuals. Currently, serologic testing is offered or being onboarded in several laboratories across the state on an on-demand basis. These convenience samples are reported via the state's Electronic Laboratory Reporting system. As more research becomes available regarding acquired immunity and immune response to SARS-CoV-2, serologic testing data will become more necessary for reference. WV's lab systems will continue to build capacity and will reassess further need as more information becomes available. WV is currently conducting some serologic testing in nursing homes and assisted living facilities on a small scale to more fully understand seroconversion. Please reference table 1b for further detail on serologic testing capacity.

WVU has begun to conduct a serologic study of healthcare workers in high and low-risk settings through random sampling across four different hospitals, using the SARS-CoV-2 Immunoglobulin G (IgG), Qualitative test. WVU is also interested in designing community-based serologic testing in partnership with BPH. Other opportunities for serologic testing include the quantitative Immunoglobulin (IgG) test and neutralizing antibody (NAb) test in the future; this capacity is in development at WVU. The university will continue these efforts in researching prevalence, as the laboratory with the greatest serologic capacity in the state. WVU and DHHR have worked closely and strategically during the pandemic, allowing for continued planning regarding studies of seroprevalence. DHHR is exploring serologic testing with the Red Cross as a mechanism to identify plasma donors for individuals with severe illness caused by COVID-19

Testing goals and daily throughput will vary due to consideration for limited resources and priorities. WV expects testing levels to gradually increase as more laboratories onboard equipment and interest in exposure status and treatment options develop. Expanded serologic testing efforts are planned for the late summer and fall months, and will focus on geographic areas of the state with highest known incidence.

1d) OLS communicates, collaborates, and coordinates with labs across the state through weekly calls and regular email communications as needed, which serve to align approaches and address progress

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toward jurisdictional goals. Call discussions include monitoring test kits, supplies, reagent inventory, and staffing levels at respective facilities. OLS is also collaborating with partners to assess machine capacity in advance of influenza season and the opportunity for multiplex solutions. In addition, DHHR's Center for Threat Preparedness (CTP) has established a data dashboard that is updated every Monday, Wednesday, and Friday and shared with partners. CTP creates this dashboard from data regarding capacity and supply/equipment availability that is collected from partners including LabCorp, QLABS, CAMC, WVU, the NG, and LHDs through an Excel spreadsheet. This process is expected to be moved to the Laboratory Information Management (LIMS) System later this summer. Large-scale testing initiatives are handled collaboratively. For example, during a prison outbreak, over 1,300 prisoners and staff were expeditiously tested through careful coordination, utilizing dashboard information. OLS requested assistance from clinical laboratory network colleagues, CAMC and WVU - Ruby; specimens were split between laboratories to achieve a rapid turnaround time. Coordinating the NG to deploy specimen collection supplies (swabs and viral transport media) to the prison health center along with the return transport of the specimens was achieved through the lab group and OLS partnership. Staffing levels for specimen collection remains a concern as testing capacity expands; the LHD needs assessment responses will further assess staffing levels. Some information regarding daily throughput and testing platforms in table 1b was unknown, estimates were provided based on laboratory records when possible.

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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*	48,800	54,000	72,450	76,950	82,050	90,600	91,500	86,400	602,750
Serology	4,200	5,200	5,500	6,000	6,500	7,000	7,500	8,000	49,900
TOTAL	53,000	59,200	77,950	82,950	88,550	97,600	99,000	94,400	

*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)
West Virginia University Medicine	Hospitals or clinical facility	West Virginia University Medicine	1,055	2,000	healthcare workers, students at universities, elementary staff, social workers, close contacts, child care providers , supply chain - processing plants
Pharmacies	Drug store or pharmacy	West Virginia University Medicine	1,055	0	low income, uninsured, elderly, minorities, elementary staff, social workers, child care providers , supply chain - processing plants

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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)
National Guard/DHHR Initiatives	Drive-thru testing site	West Virginia University Medicine	1,055	0	minorities, low income, uninsured
Local Health Departments	Community-based	West Virginia University Medicine	1,055	0	low income, uninsured, healthcare workers, essential workers, minorities, close contacts, elementary staff, social workers
Congregate Care facilities	Community-based	West Virginia University Medicine	1,055	0	disabled/elderly, nursing home residents and staff, healthcare workers, close contacts, residential treatment residents, psychiatric patient residents, daycare facility staff
Private Physician Office/FQHCs	Federally Qualified Health Center	West Virginia University Medicine	1,055	0	low income, uninsured, disabled/elderly, child care providers , supply chain - processing plants, elementary staff, social workers , close contacts
Charleston Area Medical Center	Hospitals or clinical facility	Charleston Area Medical Center	360	0	healthcare workers, students at universities, close contacts, elementary staff, social workers, child care providers , supply chain - processing plants

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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)
Pharmacies	Drug store or pharmacy	Charleston Area Medical Center	360	0	low income, uninsured, elderly, minorities, elementary staff, social workers, child care providers , supply chain - processing plants
National Guard/DHHR Initiatives	Drive-thru testing site	Charleston Area Medical Center	360	0	minorities, low income, uninsured
Local Health Departments	Community-based	Charleston Area Medical Center	360	0	low income, uninsured, healthcare workers, essential workers, minorities, close contacts, elementary staff, social workers, child care providers , supply chain - processing plants
Congregate Care facilities	Community-based	Charleston Area Medical Center	360	0	disabled/elderly, nursing home residents and staff, healthcare workers, close contacts, residential treatment residents, psychiatric patient residents
Private Physician Office/FQHCs	Federally Qualified Health Center	Charleston Area Medical Center	360	0	low income, uninsured, disabled/elderly, close contacts, elementary staff, social workers, child care providers , supply chain - processing plants

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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)
Cabell-Huntington Hospital	Hospitals or clinical facility	Cabell-Huntington Hospital	191	24	healthcare workers, first responders, essential workers, close contacts, low income, medically fragile, students at universities, elementary staff, social workers, child care providers , supply chain - processing plants
Pharmacies	Drug store or pharmacy	Cabell-Huntington Hospital	191	24	low income, uninsured, elderly, minorities, elementary staff, social workers, child care providers , supply chain - processing plants
National Guard/DHHR Initiatives	Drive-thru testing site	Cabell-Huntington Hospital	191	24	minorities, low income, uninsured
Local Health Departments	Community-based	Cabell-Huntington Hospital	191	24	low income, uninsured, healthcare workers, essential workers, minorities, close contacts, elementary staff, social workers, child care providers , supply chain - processing plants
Congregate Care facilities	Community-based	Cabell-Huntington Hospital	191	24	disabled/elderly, nursing home, healthcare workers, close contacts, residential treatment residents, psychiatric patients, daycare staff

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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)
Private Physician Office/FQHCs	Federally Qualified Health Center	Cabell-Huntington Hospital	191	24	low income, uninsured, disabled/elderly, close contacts, elementary staff, social workers, child care providers , supply chain - processing plants
St. Mary's Medical Center	Hospitals or clinical facility	St. Mary's Medical Center	150	0	healthcare workers, first responders, essential workers, close contacts, low income, medically fragile
Stonewall Jackson Hospital	Hospitals or clinical facility	Stonewall Jackson Hospital	38	0	minorities, low income, uninsured, disabled/elderly, healthcare workers, close contacts
National Guard/DHHR Initiatives	Drive-thru testing site	Stonewall Jackson Hospital	38	0	minorities, low income, uninsured
Local Health Departments	Community-based	Stonewall Jackson Hospital	38	0	low income, uninsured, healthcare workers, essential workers, minorities, persons experiencing homelessness, elementary staff, social workers, close contacts, child care providers , supply chain - processing plants
Congregate Care facilities	Community-based	Stonewall Jackson Hospital	38	0	disabled/elderly, nursing home, healthcare workers, close contacts,

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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)
					residential treatment residents, psychiatric patients, daycare staff
Private Physician Office/FQHCs	Federally Qualified Health Center	Stonewall Jackson Hospital	38	0	low income, uninsured, disabled/elderly, close contacts, elementary staff, social workers, child care providers , supply chain - processing plants
Boone Memorial Hospital	Hospitals or clinical facility	Boone Memorial Hospital	38	16	minorities, low income, uninsured, disabled/elderly, healthcare workers, close contacts
National Guard/DHHR Initiatives	Drive-thru testing site	Boone Memorial Hospital	38	16	minorities, low income, uninsured
Local Health Departments	Community-based	Boone Memorial Hospital	38	16	low income, uninsured, healthcare workers, essential workers, minorities, persons experiencing homelessness, elementary staff, social workers, close contacts, child care providers , supply chain - processing plants
Congregate Care facilities	Community-based	Boone Memorial Hospital	38	16	disabled/elderly, nursing home, healthcare workers, close contacts

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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)
Private Physician Office/FQHCs	Federally Qualified Health Center	Boone Memorial Hospital	38	16	low income, uninsured, disabled/elderly, close contacts, elementary staff, social workers, child care providers , supply chain - processing plants
Monongalia General Hospital (Mon Health)	Hospitals or clinical facility	Monongalia General Hospital (Mon Health)	65	0	healthcare workers, first responders, essential workers, close contacts, low income, medically fragile
Pharmacies	Drug store or pharmacy	Monongalia General Hospital (Mon Health)	65	0	low income, uninsured, elderly, minorities, elementary staff, social workers, child care providers , supply chain - processing plants
National Guard/DHHR Initiatives	Drive-thru testing site	Monongalia General Hospital (Mon Health)	65	0	minorities, low income, uninsured
Local Health Departments	Community-based	Monongalia General Hospital (Mon Health)	65	0	low income, uninsured, healthcare workers, essential workers, minorities, close contacts, elementary staff, social workers, child care providers , supply chain - processing plants

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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)
Congregate Care facilities	Community-based	Monongalia General Hospital (Mon Health)	65	0	disabled/elderly, nursing home, healthcare workers, close contacts, residential treatment residents, psychiatric patients, daycare staff
Private Physician Office/FQHCs	Federally Qualified Health Center	Monongalia General Hospital (Mon Health)	65	0	low income, uninsured, disabled/elderly, close contacts, elementary staff, social workers, child care providers, supply chain - processing plants
Grafton City Hospital	Hospitals or clinical facility	Grafton City Hospital	48	0	minorities, low income, uninsured, disabled/elderly, healthcare workers
National Guard/DHHR Initiatives	Other	Grafton City Hospital	48	0	minorities, low income, uninsured, healthcare workers, persons experiencing homelessness
Logan Regional Medical Center	Hospitals or clinical facility	Logan Regional Medical Center	32	0	healthcare workers, first responders, essential workers, close contacts, low income, medically fragile patients
National Guard/DHHR Initiatives	Drive-thru testing site	Logan Regional Medical Center	32	0	minorities, low income, uninsured

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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)
Local Health Departments	Community-based	Logan Regional Medical Center	32	0	low income, uninsured, healthcare workers, essential workers, minorities, close contacts, elementary staff, social workers, child care providers, supply chain - processing plants
Montgomery General Hospital	Hospitals or clinical facility	Montgomery General Hospital	80	0	healthcare workers, first responders, essential workers, close contacts, low income, medically fragile
Pleasant Valley Hospital	Hospitals or clinical facility	Pleasant Valley Hospital	32	0	minorities, low income, uninsured, disabled/elderly, healthcare workers
National Guard/DHHR Initiatives	Drive-thru testing site	Pleasant Valley Hospital	32	0	minorities, low income, uninsured
Local Health Departments	Community-based	Pleasant Valley Hospital	32	0	low income, uninsured, healthcare workers, essential workers, minorities, close contacts, elementary staff, social workers, child care providers , supply chain - processing plants
Raleigh General Hospital	Hospitals or clinical facility	Raleigh General Hospital	87	0	healthcare workers, first responders, essential workers, close contacts, low income, medically fragile

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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)
Pharmacies	Drug store or pharmacy	Raleigh General Hospital	87	0	low income, uninsured, elderly, minorities, elementary staff, social workers, child care providers , supply chain - processing plants
National Guard/DHHR Initiatives	Drive-thru testing site	Raleigh General Hospital	87	0	minorities, low income, uninsured
Local Health Departments	Community-based	Raleigh General Hospital	87	0	low income, uninsured, healthcare workers, essential workers, minorities, close contacts, elementary staff, social workers, child care providers , supply chain - processing plants
Congregate Care facilities	Community-based	Raleigh General Hospital	87	0	disabled/elderly, nursing home, healthcare workers, close contacts, residential treatment residents, psychiatric patients, daycare staff
Private Physician Office/FQHCs	Federally Qualified Health Center	Raleigh General Hospital	87	0	low income, uninsured, disabled/elderly, close contacts, elementary staff, social workers, child care providers , supply chain - processing plants

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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)
Sistersville General Hospital	Hospitals or clinical facility	Sistersville General Hospital	32	0	minorities, low income, uninsured, disabled/elderly, healthcare workers
National Guard/DHHR Initiatives	Drive-thru testing site	Sistersville General Hospital	32	0	minorities, low income, uninsured
Local Health Departments	Community-based	Sistersville General Hospital	32	0	low income, uninsured, healthcare workers, essential workers, minorities, close contacts, elementary staff, social workers, child care providers , supply chain - processing plants
Valley Health	Federally Qualified Health Center	Valley Health	48	0	low income, uninsured, disabled/elderly, persons experiencing homelessness, close contacts, elementary staff, social workers, supply chain - processing plants
National Guard/DHHR Initiatives	Drive-thru testing site	Valley Health	48	0	minorities, low income, uninsured
WV Health Right	Community-based	WV Health Right	48	0	minorities, low income, uninsured, disabled/elderly, persons experiencing homelessness

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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)
National Guard/DHHR Initiatives	Drive-thru testing site	WV Health Right	48	0	minorities, low income, uninsured
National Guard/DHHR Initiatives	Other	WV National Guard	192	0	elderly, nursing homes, congregate settings, healthcare workers, corrections staff, inmates, persons experiencing homelessness, supply chain - processing plants, minorities
National Guard/DHHR Initiatives	Drive-thru testing site	WV National Guard	192	0	minorities, low income, uninsured
National Guard/DHHR Initiatives	Public health lab	Office of Laboratory Services	155	15	priority given to Persons Under Investigation within an identified outbreak, supply chain, healthcare workers, elderly, inmates, persons experiencing homelessness
National Guard/DHHR Initiatives	Drive-thru testing site	Office of Laboratory Services	155	15	minorities, low income, uninsured
Local Health Departments	Community-based	Office of Laboratory Services	155	15	priority given to Persons Under Investigation within an identified outbreak, close contacts, healthcare

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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)
					workers, first responders, supply chain, child care workers
Congregate Care facilities	Community-based	Office of Laboratory Services	155	15	priority given to Persons Under Investigation within an identified outbreak, healthcare workers, nursing home, elderly, close contacts
Hospital	Hospitals or clinical facility	Office of Laboratory Services	155	15	priority given to Persons Under Investigation within an identified outbreak, healthcare workers, hospital patients
Private Office/FQHCs/Urgent Care	Federally Qualified Health Center	Office of Laboratory Services	155	15	priority given to Persons Under Investigation within an identified outbreak, healthcare workers, first responders, low income, uninsured, close contacts, supply chain, child care workers
National Guard/DHHR Initiatives	Community-based	Laboratory Corporation of America	508	0	elderly, nursing homes, congregate settings, healthcare workers, inmates, persons experiencing homelessness, supply chain, minorities
Pharmacies	Drug store or pharmacy	Laboratory Corporation of America	508	600	low income, uninsured, elderly, minorities, close contacts, elementary

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					staff, social workers, child care providers , supply chain - processing plants
National Guard/DHHR Initiatives	Drive-thru testing site	Laboratory Corporation of America	508	600	minorities, low income, uninsured
Local Health Departments	Community-based	Laboratory Corporation of America	508	0	low income, uninsured, healthcare workers, essential workers, minorities, close contacts, elementary staff, social workers, child care providers , supply chain - processing plants
Congregate Care facilities	Community-based	Laboratory Corporation of America	508	600	disabled/elderly, nursing home, healthcare workers, close contacts
Hospital	Hospitals or clinical facility	Laboratory Corporation of America	508	600	elderly, nursing homes, congregate settings, healthcare workers, inmates, persons experiencing homelessness, supply chain, minorities
Private Office/FQHCs/Urgent Care	Federally Qualified Health Center	Laboratory Corporation of America	508	600	low income, uninsured, disabled/elderly, close contacts, elementary staff, social workers, child care providers , supply chain - processing plants

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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)
National Guard/DHHR Initiatives	Community-based	QLabs	200	0	elderly, nursing homes, congregate settings, healthcare workers, inmates, persons experiencing homelessness, supply chain, minorities
Pharmacies	Drug store or pharmacy	QLabs	200	0	low income, uninsured, elderly, minorities, close contacts, elementary staff, social workers, child care providers , supply chain - processing plants
National Guard/DHHR Initiatives	Drive-thru testing site	QLabs	200	0	minorities, low income, uninsured
Local Health Departments	Community-based	QLabs	200	0	low income, uninsured, healthcare workers, essential workers, minorities, close contacts, elementary staff, social workers, child care providers , supply chain - processing plants
Congregate Care facilities	Community-based	QLabs	200	0	disabled/elderly, nursing home, healthcare workers, close contacts
Hospital	Hospitals or clinical facility	QLabs	200	0	elderly, nursing homes, congregate settings, healthcare workers, inmates, persons experiencing homelessness, supply chain, minorities

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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)
Private Office/FQHCs/Urgent Care	Federally Qualified Health Center	QLabs	200	0	low income, uninsured, disabled/elderly, close contacts, elementary staff, social workers, child care providers , supply chain - processing plants
National Guard/DHHR Initiatives	Community-based	AIT Labs	300	0	elderly, nursing homes, congregate settings, healthcare workers, inmates, persons experiencing homelessness, supply chain, minorities
Pharmacies	Drug store or pharmacy	AIT Labs	300	0	low income, uninsured, elderly, minorities, elementary staff, social workers, child care providers , supply chain - processing plants
National Guard/DHHR Initiatives	Drive-thru testing site	AIT Labs	300	0	minorities, low income, uninsured
Local Health Departments	Community-based	AIT Labs	300	0	low income, uninsured, healthcare workers, essential workers, minorities, close contacts, elementary staff, social workers, child care providers , supply chain - processing plants
Congregate Care facilities	Community-based	AIT Labs	300	0	disabled/elderly, nursing home, healthcare workers, close contacts

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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)
Hospital	Hospitals or clinical facility	AIT Labs	300	0	elderly, nursing homes, congregate settings, healthcare workers, inmates, persons experiencing homelessness, supply chain, minorities
Private Office/FQHCs/Urgent Care	Federally Qualified Health Center	AIT Labs	300	0	low income, uninsured, disabled/elderly, close contacts, elementary staff, social workers, child care providers , supply chain - processing plants
National Guard/DHHR Initiatives	Community-based	Mayo Medical Labs	86	0	elderly, nursing homes, congregate settings, healthcare workers, inmates, persons experiencing homelessness, supply chain, minorities
Pharmacies	Drug store or pharmacy	Mayo Medical Labs	86	80	low income, uninsured, elderly, minorities, elementary staff, social workers, child care providers , supply chain - processing plants
National Guard/DHHR Initiatives	Drive-thru testing site	Mayo Medical Labs	86	80	minorities, low income, uninsured
Local Health Departments	Community-based	Mayo Medical Labs	86	0	low income, uninsured, healthcare workers, essential workers, minorities, close contacts, elementary staff, social

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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)
					workers, child care providers , supply chain - processing plants
Congregate Care facilities	Community-based	Mayo Medical Labs	86	0	disabled/elderly, nursing home, healthcare workers, close contacts
Hospital	Hospitals or clinical facility	Mayo Medical Labs	86	80	elderly, nursing homes, congregate settings, healthcare workers, inmates, persons experiencing homelessness, supply chain, minorities
Private Office/FQHCs/Urgent Care	Federally Qualified Health Center	Mayo Medical Labs	86	0	low income, uninsured, disabled/elderly, close contacts, elementary staff, social workers, child care providers , supply chain - processing plants
National Guard/DHHR Initiatives	Community-based	Quest Diagnostics	571	0	elderly, nursing homes, congregate settings, healthcare workers, inmates, persons experiencing homelessness, supply chain, minorities
Pharmacies	Drug store or pharmacy	Quest Diagnostics	286	100	low income, uninsured, elderly, minorities, elementary staff, social workers, child care providers , supply chain - processing plants

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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)
National Guard/DHHR Initiatives	Drive-thru testing site	Quest Diagnostics	286	100	minorities, low income, uninsured
Local Health Departments	Community-based	Quest Diagnostics	286	0	low income, uninsured, healthcare workers, essential workers, minorities, close contacts, elementary staff, social workers, child care providers , supply chain - processing plants
Congregate Care facilities	Community-based	Quest Diagnostics	286	100	disabled/elderly, nursing home, healthcare workers, close contacts
Hospital	Hospitals or clinical facility	Quest Diagnostics	286	100	healthcare workers, first responders, essential workers, close contacts, low income, medically fragile, students at universities
Private Office/FQHCs/Urgent Care	Federally Qualified Health Center	Quest Diagnostics	286	100	low income, uninsured, disabled/elderly, close contacts, elementary staff, social workers, child care providers , supply chain - processing plants
Hospital	Hospitals or clinical facility	Roane General Hospital	36	0	contacts, healthcare workers, low income

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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)
Hospital	Hospitals or clinical facility	Princeton Memorial Hospital	80	0	contacts, healthcare workers, low income
Hospital	Hospitals or clinical facility	Preston Memorial Hospital	96	0	contacts, healthcare workers, low income
Hospital	Hospitals or clinical facility	Greenbrier Valley Hospital	96	0	contacts, healthcare workers, low income
Hospital	Hospitals or clinical facility	Grant Memorial Hospital	96	0	contacts, healthcare workers, low income
Jail	Other	Bioreference	2,000	0	prisons/jails

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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.

2a) DHHR is expanding testing capacity through contracts, partnerships, and other arrangements, including partnering with academic and community-based organizations, and continuing to use drive-through testing sites. Testing platforms currently used are five ABI 7500's, Qiagen QIAcube and one EZ1 DNA, RNA, and protein extraction units. New units already ordered include two Cepheid-GenXpert System, and three Hologic Panther machines for clinical testing and one Evolis.BioRad for serologic testing. The new instruments will increase the daily volume of tests that OLS is able to perform, and the GeneXpert system—which has a more rapid turnaround time—may be reserved for more urgent testing requiring faster results (e.g. outbreak-associated). OLS currently has contracts in place with LabCorp and QLABS, which are both able to handle high-volume testing. In addition to commercial labs, DHHR has its own lab and partners with WVU, CAMC, and others. These laboratories include platforms such as Biofire which will also accommodate antigen and Multiplex tests in response to the upcoming influenza season. OLS placed 14 Abbott ID NOW PCR Point-of-Care Analyzers in clinical laboratories that did not have testing capacity. Serology testing platforms in use throughout the state such as Abbott Architect and Siemens Centaur are in need of reagents to build statewide network capacity (included in Table 2). There is constant communication with stakeholders to stress importance of testing needs in West Virginia (WV). The volume of additional reagents needed is based on supply chain deficits. To build public health lab output potential, an additional 6 scientists are needed with skills dedicated to COVID-19 analysis. For labs throughout the state, there are 19 additional positions needed.

Point-of-care tests will be prioritized for transient populations and outbreaks when appropriate (e.g., homeless, transitioning inmates, unstable housing) and due to greater probability of false negative results may be followed by non-rapid PCR testing if a negative result is found and further warranted.

In addition to traditional medical laboratory testing, DHHR has also deployed drive-through sites throughout the state for safer mass testing. Community providers across the state also use safety protocols such as testing in parking-lots for individuals with known exposure or symptoms. The NG and LHDs are regularly operating drive thru sites for ease of testing within the community, which provides surge capacity for needs beyond traditional labs. The OLS assists with coordination of the NG and LHDs by managing which labs can assist regionally.

At the federal level, the ability to collect specimens and arrange for testing through pharmacies has been established. DHHR has worked with the state Board of Pharmacy (BOP) to coordinate this effort in WV. DHHR and the BOP are currently developing protocols to improve access through pharmacy testing.

2b) To meet the needs of vulnerable and at-risk populations, DHHR is prioritizing several populations for testing including nursing home residents and staff; assisted living residents and staff; child care center staff; healthcare workers (with highest risk of exposure); first responders; elementary school staff; students and staff at universities; minorities; homeless individuals and related staff; social workers; individuals working in processing plants; Division of Corrections (DOC) inmates and staff; and individuals in other congregate care environments such as residential treatment and psychiatric hospitals. The NG has administered tests in a variety of locations as a result of Executive Orders for nursing homes,

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assisted living facilities, daycares, and DOC testing, supporting testing carried out through LHDs, hospitals, and urgent care sites. In an effort to expand testing access to testing for minorities and others who may have limited access, the Governor has also had the NG and DHHR coordinate free testing in high-density populations. This testing has been offered to minorities and concerned community members regardless of present symptoms. In addition to these early efforts, the DHHR has identified the above groups for strategic surveillance testing (details outlined in response 1a). Testing will be offered to these vulnerable populations on an as needed basis, according to developed alert-system based protocols and outbreak status change within congregate environments. To increase access to testing in counties with high incidence, and counties with populations at greater risk of infection (due to population density, disabled, older population, etc.), further testing will also occur at drive-through sites, community health centers, and FQHCs, and will be available to individuals most at risk for exposure, or who are high risk for poor outcomes, on a voluntary basis. LHDs, vulnerable population employers, and congregate care sites will receive recommendations to test employees and residents based on epidemiologic guidance and current community-based trends. Testing for these individuals will be orchestrated through coordination by LHDs and community-based partnerships to maximize local resources.

2c) Like other states, WV faces numerous barriers to efficient testing, including supply-chain difficulties. Specifically, current barriers include lack of staff for collection and analysis, limited reagent supply, and new equipment arrival delays. To address these barriers, OLS discusses and documents these issues during weekly calls with clinical labs. Information is shared and collected from partners via a spreadsheet which CTP then turns into a shared dashboard. OLS has identified labs in need of equipment and supplies and redistributes resources as needed and as permitted by funding sources. Labs and LHDs submit a paper requisition for supplies, which allows OLS to monitor where supplies have been distributed. Swabs and Viral Transport Media (VTM) have also been shared when possible. For example, Marshall University and other vendors are providing VTM and the Federal Emergency Management Agency (FEMA) is supplying WV with 100,000 swabs in May, and an additional 100,000 swabs in June. FEMA has also committed to supplying 75,000 VTM. Although supply-chain challenges are difficult to address, this close partnership among labs statewide allows for scarce resource maximization.

2d) To advance serology testing, OLS is at the beginning stages of utilizing the EVOLIS system, which will increase testing volume and capacity. OLS is also expanding the laboratory information system, STARLIMS. Lab systems will continue to build capacity and reassess need as more information becomes available. Testing levels will gradually increase as more labs onboard equipment and interest in exposure status and treatment options develop.

West Virginia will leverage alliances with university partners such as WVU to expand serologic testing. WVU labs are able to retrieve and process 2,000 serology tests a day and will use this capacity to follow a targeted sampling strategy, first testing all of their healthcare workers. The university will continue these efforts in researching prevalence, as the laboratory with the greatest serologic capacity in the state. LabCorp is also able to conduct serology testing, and DHHR is working to contract with them for this. Currently, serology testing is on an individual organization basis; DHHR is moving towards further coordination across labs. Some clinics and medical centers are conducting serology testing if requested by patients. DHHR has worked closely and strategically with labs across the state during the pandemic,

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allowing for continued planning regarding studies of seroprevalence as well as exploring serologic testing as a mechanism to identify plasma donors for individuals with severe illness caused by COVID-19.

2e) To manage sentinel surveillance for vulnerable populations, DHHR is targeting populations named above (2b) within high density or high incidence areas. This strategy is being conducted with the assistance of the NG. In collaboration with the Herbert Henderson Office of Minority Affairs and the NG, DHHR is managing several free, drive-through, testing sites across the state. DHHR has planned and marketed these sites to increase testing among those without insurance, minority populations, and other vulnerable people residing in high-density areas. Although sites target minority and underserved populations, any resident of the county is eligible to receive free testing, including asymptomatic individuals. DHHR continues to perform testing at all correctional facilities in WV. Based on an executive order for correctional facility mass testing, the state continues to implement strategies to prevent further spread both in the jail and community, as well as to identify asymptomatic cases that might trigger an outbreak in other correctional locations.

Following this initial broader strategy, DHHR will deploy a focused effort to areas of high incidence, utilizing the refined testing strategy to target vulnerable populations, referencing protocols and county status through the state alert system. This targeted testing strategy prioritized by risk will lower future costs and help conserve resources.

For the homeless population, rapid tests will be commonly used to provide test results immediately and overcome the barrier in traditional testing of having to reach individuals 48-72 hours later. Though rapid tests are less accurate, the clinics serving homeless populations have determined use of rapid tests (situation dependent) to be more effective for this population than traditional tests that require more processing time. Testing will be offered to all homeless individuals and staff monthly, regardless of county alert status, due to individual's risk of exposure and limited personal and staffing resources.

2f) DHHR's plan to expedite and streamline procurement, hiring, and onboarding of new staff includes acquisition of supplies, reagents, test kits, and collection materials. Procurement has been streamlined to prioritize and expedite testing supplies that are considered emergency needs, minimizing the levels of approval required. OLS works to expedite hiring, though they still have to follow the Department of Personnel's processes, which remain a barrier. A longer-term strategy includes raising pay rate, as private sector laboratory microbiologists require a higher salary. OLS has requested an ongoing register to collect potential applicants for microbiologists as there is always a need. DHHR is taking these steps to streamline procurement:

1. Expedite process for emergency purchases - Purchases associated with the response are expedited through incident command structure. In addition, OLS has authority to make emergency purchases. If a purchase is considered an emergency, such as for reagents, supplies, or lab equipment to process tests, there are fewer levels of approval.
2. Coordination among agencies/groups - Coordinate with other organizations and agencies such as laboratories, LHDs, clinics, hospitals, and universities to share resources while waiting on purchases. Alternatively, coordinate purchases in this highly competitive market to obtain equipment and supplies. There are frequent calls between multiple organizations to share needs and distribute resources among all parties. This team approach has succeeded due to strong relationships and frequent contact.

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3. Share vendor information – Share supplier insight amongst the different entities that are communicating on a regular basis regarding resource needs. This information can help identify reputable suppliers, including new suppliers that DHHR may not have purchased from previously. This sharing of information informs all entities of vendors to avoid and vendors to approve quickly.

DHHR has expedited hiring and onboarding to allow for new employees to be selected and trained within weeks instead of several months. The barriers to hiring before the COVID-19 pandemic still remain. DHHR is using the following strategies to increase workforce response activities:

1. Reassign current employee duties – In order to quickly obtain additional human resources, DHHR is asking current employees not involved in outbreak investigations or similar public health related functions to learn new job responsibilities. From epidemiologists to project managers, staff within DHHR have assumed new positions or have added responsibilities to help coordinate or fulfill tasks related to the response.

2. Hire contractors/offer sub-recipient grants to LHDs - Many of the LHDs prefer to hire their own employees to assist with testing or other job duties related to the response. DHHR plans to hire contractors or offer grants directly to LHDs. Priority will be given to LHDs with the highest incidence of positive cases with consideration for already limited resources.

3. Advocate to raise the salary of selected positions – Microbiologists, laboratory technicians, and epidemiologists are in high demand during this crisis, however the pay rate by state government is low compared to the private sector. It has been a challenge to recruit and retain employees for these positions, therefore there is high turnover. Often, there are multiple vacancies. During the SARS-CoV-2 crisis, one laboratory technician/microbiologist resigned due to long hours and stress related to testing. DHHR intends to raise the salary for these positions to retain employees and recruit new.

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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	15	4	4	2	0	0	0	25
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)	Abbott 15 ID NOW	5	2 Cepheid	2 panther, 1 biofire	Antigen tests - Quidel sofia	Multiplex	0	0	5

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BY MONTH:	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	TOTAL
Volume of additional swabs needed to meet planned testing levels ⁺⁺	3,472	110,000	110,000	75,000	70,000	70,000	60,000	60,000	558,472
Volume of additional media (VTM, MTM, saline, etc.) needed to meet planned testing levels ⁺⁺	NA	100,000	90,000	90,000	90,000	90,000	60,000	60,000	580,000

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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)	3472	56,700 tests using Panther , Cephid	73,400 Cepheid, Panther, ID NOW, M2000	87,000 Biofire, Cepheid, panther, M2000	100,000 Biofire, eplex, antigen tests, panther, M2000	100,000 Multiplex CDC, ABI Biofire, Panther,	86400 all platforms listed	86400	593372
FOR SEROLOGIC TESTING									
Number of additional* equipment and devices to meet planned testing levels	0	1 Evolis, Archetect	1 Siemens Centaur	1 Beckman coulter	1 beckman coulter	0	0	0	0

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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	37,160 Architect BioRAD, Beckman	33,760, Architect,b eckman,evo lis	45,000, Beckman, archetect, evolis	67,520, same methods	67,520, same methods	67,520, same methods	67,520, same methods	386000

* 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.