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

Jurisdiction:	lowa
Population Size:	3,155,000

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

a) Since the beginning of the pandemic, lowa has expanded testing volume monthly. Reported tests have increased from approximately 0.2% of the poulation in March to over 4% of the population in June. This is over two times the minimum CDC testing target.

The COVID-19 testing ecosystem includes the following partners:

- 1) State Hygienic Laboratory (SHL) testing at laboratory in Eastern Iowa, with a current capacity of 3,000 tests per day using ThermoFisher PCR assay and Hologic Panther; (SHL is expanding COVID-19 testing to include two additional laboratory sites in Northwest and Central Iowa to provide better statewide coverage, greater testing capacity, and decrease specimen transport time.)
- 2) Test Iowa Laboratory at SHL using the CoDiagnostics PCR assay with the capacity of 3,000 tests per day;
- 3) The Iowa State University Veterinary Diagnostics Laboratory, located in Ames, Iowa, using the ThermoFisher PCR assay with the capacity of 6,000 tests per day;
- 4) Twenty Abbott ID Now instruments have been strategically placed to meet immediate testing needs across lowa; and
- 5) 44 clinical laboratories across lowa with testing capacity of 24,000 tests per day depending on availability of supplies.

b)Testing sites and testing events have been established to maximize access to all lowans, these include federally qualified health centers; student health centers at lowa universities, colleges, and community colleges; seasonal agriculture worker orientation events; high-density occupational sites experiencing illnesses; prisons and jails; and the over 400 long term care facilities located in lowa. In addition, the Test lowa system includes drive-up testing sites that are strategically placed in communities experiencing high levels of illness and Test lowa Clinics that provide testing to community members.

Twenty Abbott ID Now instruments provided by the federal government were distributed to the Iowa National Guard, Boone County Hospital, Buchanan County Health Center, Buena Vista Regional Medical Center, Clarke County Hospital, Community Health Center in Columbus City, Hansen Family Hospital, Iowa Veterans Home, Kossuth Regional Mealth Center, MercyOne Cedar Falls, MercyOne Oelwein, Montgomery Regional Medical Center, Ringgold County Hospital, Spencer Memorial Hospital, Veterans Memorial, and Washington County Hospital. As activity shifts in communities, SHL and IDPH will continue to reassess and relocate the instruments based upon usage and need.

SHL has developed a non-traditional testing relationship with the Iowa State University Veterinary Diagnostic Laboratory (ISU VDL). ISU VDL has provided staff and equipment to SHL throughout the pandemic response. In addition, ISU VDL has developed a public health unit to conduct COVID-19 PCR and serology testing. SHL provides the CLIA laboratory director oversight and courier services for ISU VDL. In case of future shortages of swabs and viral transport media, SHL and ISU VDL are collaborating on a validation of the saliva specimen type to reduce the need for swabs and personal protective equipment during sample collection. SHL has the capacity to make viral transport media at a rate of 2000 per day.

c) SHL and ISU VDL conduct serologic testing at no charge to the submitter. SHL uses the Abbott Architect, the Diasorin Liaison, and the Euroimmun assay. ISU VDL uses the Euroimmun assay. SHL is working on a validation of the dried blood spot sample type for serologic testing.

Serology Testing criteria includes the following:

- 1) A patient suspected or confirmed to have COVID-19 who is greater than 7 days post symptom onset
- 2) Healthcare worker, essential services personnel, first responder or critical infrastructure worker (e.g., healthcare worker, fire, EMS, law enforcement, food service worker and residential facility staff)

SHL and ISU are also screening blood donations in collaboration with blood donation centers. SHL is investigating use of dried blood spots for serology testing, which will assist in considerations of conducting a seroprevalence assessment. Healthcare providers are also testing patients through commercial laboratories.

d) SHL communicates with the 44 clinical laboratories through weekly email updates, a bi-weekly zoom conference call, and regularly polls the laboratories to monitor testing capacity and supply availability. SHL communicates with the Governor's office daily to provide testing volumes and test reagent availability. Similarly IDPH maintains a weekly webinar with local public health, emergency managers, and healthcare partners as well as a weekly webinar for long term care facilities to provide updates on activities. Public health personnel also provide daily updates together with SHL for the Governor's office staff, partner state agencies, and public information personnel. There is also a daily dedicated communication between SHL and IDPH leadership.

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*	108,838	147,775	150,000	155,000	165,000	170,000	190,000	210,000	1,296,613
Serology	19,212	14,677	15,000	17,000	18,000	19,000	20,000	21,000	143,889
TOTAL	128,050	162,452	165,000	172,000	183,000	189,000	210,000	231,000	

<sup>\*</sup>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	<b>Testing venue</b> (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)
SHL- Eastern Iowa Coralville Laboratory	Public health lab		5,000	3,300	
SHL- Central Iowa Ankeny Laboratory	Public health lab		2,300		
SHL- Northwest Iowa Lakeside Laboratory	Public health lab			600	

Name of testing entity	<b>Testing venue</b> (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)
Iowa State University Veterinary Diagnositic Laboratory, Public Health Services Unit	Other				Serologic testing within criteria and screening blood donors
Peoples Community Health Center (Black Hawk County)	Federally Qualified Health Center	Test lowa Lab at SHL			Community wide testing to all populations including at risk populations
St. Anthony's Regional Hospital (Carroll County)	Community-based	Test Iowa Lab at SHL			Community wide testing to all populations including at risk populations
Cass County Health System (Cass County)	Community-based	Test Iowa Lab at SHL			Community wide testing to all populations including at risk populations
St. Anthony's Clinic (Crawford County)	Community-based	Test Iowa Lab at SHL			Community wide testing to all populations including at risk populations

Name of testing entity	<b>Testing venue</b> (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)
Great River Health Drive- thru Testing Site (Des Moines County)	Community-based	Test Iowa Lab at SHL			Community wide testing to all populations including at risk populations
Dickinson County Public Health Drive- thru Testing Site (Dickinson County)	Community-based	Test lowa Lab at SHL			Community wide testing to all populations including at risk populations
Epic Health and Wellness Clinic (Dubuque County)	Community-based	Test Iowa Lab at SHL			Community wide testing to all populations including at risk populations
Mitchell County Public Health Drive-thru testing site	Community-based	Test Iowa Lab at SHL			Community wide testing to all populations including at risk populations
Clarinda Regional Health Center (Page County)	Community-based	Test Iowa Lab at SHL			Community wide testing to all populations including at risk populations

Name of testing entity	<b>Testing venue</b> (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)
All Care Health Center (Pottawattamie County)	Community-based	Test Iowa Lab at SHL			Community wide testing to all populations including at risk populations
Greater Regional Health (Union County)	Community-based	Test Iowa Lab at SHL			Community wide testing to all populations including at risk populations
Black Hawk County Test Iowa Drive-thru site	Drive-thru testing site	Test Iowa Lab at SHL			Community wide testing to all populations including at risk populations
Buena Vista County Test Iowa Drive-thru site	Drive-thru testing site	Test Iowa Lab at SHL			Community wide testing to all populations including at risk populations
Dallas County Test Iowa Drive- thru site	Drive-thru testing site	Test Iowa Lab at SHL			Community wide testing to all populations including at risk populations
Linn County Test Iowa Drive-thru site	Drive-thru testing site	Test Iowa Lab at SHL			Community wide testing to all populations including at risk populations

Name of testing entity	<b>Testing venue</b> (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)
Marshall County Test Iowa Drive- thru site	Drive-thru testing site	Test Iowa Lab at SHL			Community wide testing to all populations including at risk populations
Polk County Test Iowa Drive-thru site	Drive-thru testing site	Test Iowa Lab at SHL			Community wide testing to all populations including at risk populations
Pottawattamie County Test Iowa Drive-thru site	Drive-thru testing site	Test Iowa Lab at SHL			Community wide testing to all populations including at risk populations
Scott County Test Iowa Drive- thru site	Drive-thru testing site	Test lowa Lab at SHL			Community wide testing to all populations including at risk populations
Test lowa sites are being established at the student health departments of every lowa independent college and	Other	Test Iowa Lab at SHL			College students living in congregate settings

Name of testing entity	<b>Testing venue</b> (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)
university, including:					
Allen College – UnityPoint Health					
Briar Cliff University					
Buena Vista University					
Central College					
Clarke University					
Coe College					
Cornell College					
Dordt University					
Drake University					
Graceland University					
Grand View University					

Name of testing entity	<b>Testing venue</b> (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)
Grinnell College					
Iowa Wesleyan University					
Loras College					
Luther College					
Mercy College of Health Sciences					
Morningside College					
Mount Mercy University					
Northwestern College					
Simpson College					
St. Ambrose University					
St. Luke's College –					

Name of testing entity	<b>Testing venue</b> (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)
UnityPoint Health University of Dubuque Wartburg College William Penn University					
Test lowa sites are being established in the student health departments of every lowa public university, including: University of lowa lowa State University	Other	Test Iowa Lab at SHL			College students living in congregate settings

Name of testing entity	<b>Testing venue</b> (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)
University of Northern Iowa Iowa School for the Deaf Iowa Braille and Sight Saving School					
Testing sites are being established for every lowa Community College at their designated provider, including: Northeast Iowa Community College	Other	Test Iowa Lab at SHL			College students living in congregate settings

Name of testing entity	<b>Testing venue</b> (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)
North Iowa Area Community College					
Iowa Lakes Community College					
Northwest Iowa Community College					
Iowa Central Community College					
Iowa Valley Community College District					
Hawkeye Community College					
Eastern Iowa Community College District					

Name of testing entity	<b>Testing venue</b> (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)
Kirkwood Community College					
Des Moines Area Community College					
Western Iowa Tech Community College					
Iowa Western Community College					
Southwestern Community College					
Indian Hills Community College					
Southeastern Community College					

Name of testing entity	<b>Testing venue</b> (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)
Proteus Healthcare	Community-based	SHL Lab			Migrant agriculture workers
Iowa Department of Corrections	Other	SHL Lab & onsite Abbott ID NOW			Inmates and staff
Iowa Jails	Other	SHL Lab			Offenders and staff
Over 400 Long Term Care Facilities	Other	SHL Lab			Nursing home residents and staff
44 clinical laboratories across lowa	Hospitals or clinical facility				Patients and staff across the state as indicated by the treating clinician

# 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.

a) IDPH and SHL are working with state agency partners to expand Test Iowa Drive-thru sites and contracted Test Iowa Clinics. IDPH and state agency partners provide internal agency and contracted personnel to staff the drive-thru sites located across Iowa. IDPH contracts with clinics to provide testing through Test Iowa. Several Federally Qualified Health Centers (FQHCs) are currently under contract and additional FQHC partnerships are being pursued.

In an effort to expand testing capacity, SHL will develop a plan for pooling samples when the incidence declines to a level that makes pooling of samples practical. SHL is working on using saliva as an acceptable sample type to expand testing capacity by making it easier to collect samples.

SHL has developed a non-traditional testing relationship with the Iowa State University Veterinary Diagnostic Laboratory (ISU VDL). ISU VDL has provided staff and equipment to SHL throughout the pandemic response. In addition, ISU VDL has developed a public health unit to conduct COVID-19 PCR and serology testing. SHL provides the CLIA laboratory director oversight and courier services for ISU VDL.

IDPH and SHL are establishing Test Iowa sites at the student health centers of all Iowa universities, four year colleges, and community colleges. SHL is providing extensive testing for the over 400 Long Term Care Facilities in Iowa. IDPH, SHL, and Iowa Workforce Development have partnered with Proteus, an organization that provides healthcare to migrant agriculture workers. Proteus and contracted healthcare providers are offering testing to migrant workers in Iowa.

Currently, SHL is conducting COVID-19 testing only at their Eastern Iowa laboratory. To improve statewide geographic and capacity coverage, SHL will be expanding COVID-19 testing to their Central Iowa and Northwest Iowa laboratories. This expansion will greatly enhance capacity and improve turn-around-times through decreased transit times. SHL is hiring staff, and purchasing additional supplies and equipment for all three sites, including:

- 1) Eastern Iowa Coralville Lab, additional capacity building: Reagents and consumable supplies, Perking Elmer Janus G3 liquid handling system, ThermoFisher High Throughput COVID-19 System, and a Gene Expert-16. (Using existing Hologic Panther, Qiastat, KingFisher extractors (2) and 7500 Fast Dx thermocyclers (4)).
- 2) Central Iowa Ankeny Lab, new capacity building: Reagents and consumable supplies, a Hologic Panther, and a biosafety cabinet. (Using existing Cepheid 4, King Fisher extractors (2), and 7500 Fast Dx thermocyclers (4)).
- 3) Northwest Iowa Lakeside Lab, new capacity building: Reagents and consumable supplies, and a biosafety cabinet. (Using existing Cepheid-4 and QiaStat currently in place in the Coralville lab.)

IDPH and SHL are also aware of and remain in contact with our Board of Pharmacy partners to understand serology testing that they might offer and ensure appropriate reporting.

b) SHL is expanding capacity to meet the needs of the vulnerable and at risk populations which includes over 400 Long Term Care (LTC) facilities in Iowa. SHL has provided and will continue to provide extensive testing for LTC facility staff and residents. SHL has created individual LTC facility user accounts on their electronic ordering and resulting system. This has streamlined testing procedures to LTCs and SHL. At this time, the majority of SHL testing is focused on vulnerable populations and high risk persons including hosptalized patients.

lowa will continue to provide testing for seasonal agriculture workers (1,600 workers have been tested to date) through established partnerships with Proteus and Iowa Workforce Development. Iowa has provided (over 14,000 tests have been conducted) and will continue to provide testing for high-density occupational sites experiencing high levels of illness.

IDPH and SHL will continue to support testing in prisons and jails across the state. An Abbott ID NOW has been positioned at a prison experiencing high levels of illness and SHL is providing testing for all inmates and staff in the facility (over 1000 people). IDPH, SHL and the lowa Department of Corrections consult on a regular basis (at least weekly) to assure that testing needs are met. As illnesses are identified in other prisons and jails, the same level of testing support will be provided.

lowa will continue to develop testing partnerships with FQHCs, community clinics, and county public health agencies who provide services for many at risk lowans. Since the pandemic began, SHL has provided testing services for over 600 facilities and county public health agencies in Iowa.

IDPH and SHL have also worked with local public health and clinical partners who have assessed needs and provided support to populations experiencing homelessness including testing and some support services.

c) SHL needs to become a high throughput laboratory to expand capacity to meet the demands of the pandemic. To do so, SHL has invested in multiple testing platforms (ThermoFisher KingFisher extractors, Hologic Panther, and Cepheid GeneXpert) to lessen supply chain difficulties iand mprove efficiency. SHL must now move to automation for liquid handling. With all three locations, SHL will have capacity to test 14,000 samples per day and operate a 24 hour per day 7 day per week schedule. This plan also minimizes concerns of supply chain difficulties because there will now be four platforms available for testing. In this manner, SHL can be flexible with the resources and provide backup capacity at other

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sites when needed. An additional problem that needs to be addressed is data entry and verification since this is a huge barrier for SHL to meet turnaround times and report results quickly. To accomplish this, SHL needs to modernize its information technology system (LIMS) which is over ten years old.

d) SHL has on-boarded the Abbott IgG serology assay for the Architect platform, the Diasorin IgG on the Liaison platform, and the Euroimmun IgA and IgG ELISA assays. SHL continues to look at other platforms to provide more capacity and flexibility (Beckman Coulter). SHL has collaborated with Iowa State University's Veterinary Diagnostic Laboratory which has brought the Euromimmun test in house to provide high through put testing capacity. SHL is validating the use of dried blood spots for serology to allow for mail-in sampling (based on the NIH sampling model) for serosurveillance.

e) IDPH will continue to monitor healthcare and testing resources in alignment with COVID-19 virus activity. Community mitigation policies will be continually adjusted as disease activity increases or decreases at the local, regional and state levels. Virus activity will be informed by diagnostic testing among symptomatic vulnerable populations in high-risk settings including hospitalized individuals, residents of congregate living facilities, older adults with underlying conditions, healthcare workers, first responders and critical infrastructure workers, and staff and children in daycare facilities.

Additional sentinel surveillance will be performed among symptomatic persons in a network of hospitals and clinics as well as a sample of symptomatic or asymptomatic long-term care facility staff, offenders in jails and prisons, young adults in colleges and universities, and in collaboration with selected high-density occupational sites such as manufacturing.

IDPH and SHL will also consider other potential options for informing virus activity which could include concepts like waste water surveillance.

f) Since the State Hygienic Laboratory is connected with the University of Iowa, recruitment and filling of positions has not be a problem when there are funds available. Supplies continue to be a problem, however, SHL has established standing orders with several manufacturers and will continue to work to have sufficient inventory available. SHL has the capacity to make viral transport media (2000 tubes per day) and has been doing so for months.

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	3	4	0	2	1	0	0	0	9
				FOR DIAGNO	STIC 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)	6	0	0	0	0	0	0	0	6

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**	180,000	195,000	210,000	225,000	240,000	340,000	350,000	420,000	2,160,000
Volume of additional media (VTM, MTM, saline, etc.) needed to meet planned testing levels**	180,000	195,000	210,000	225,000	240,000	340,000	350,000	420,000	2,160,000

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 - Thermofish er)	ThermoFish er reagents and supplies to perform 180K tests/mont h	ThermoFish er reagents and supplies to perform 185K tests/mont h Hologic reagents and supplies to perform 10K tests/mont h	ThermoFish er reagents and supplies to perform 185K tests/mont h Hologic reagents and supplies to perform 24K tests/mont h Cepheid cartridges to perform 1K tests/mont h	ThermoFish er reagents and supplies to perform 200K tests/mont h Hologic reagents and supplies to perform 24K tests/mont h Cepheid cartridges to perform 1K tests/mont h	ThermoFish er reagents and supplies to perform 215K tests/mont h Hologic reagents and supplies to perform 24K tests/mont h Cepheid cartridges to perform 1K tests/mont h	ThermoFish er reagents and supplies to perform 315K tests/mont h Hologic reagents and supplies to perform 24K tests/mont h Cepheid cartridges to perform 1K tests/mont h	ThermoFish er reagents and supplies to perform 325K tests/mont h Hologic reagents and supplies to perform 24K tests/mont h Cepheid cartridges to perform 1K tests/mont h	ThermoFish er reagents and supplies to perform 420K tests/mont h Hologic reagents and supplies to perform 24K tests/mont h Cepheid cartridges to perform 1K tests/mont h			
	FOR SEROLOGIC TESTING										
Number of additional* equipment and devices to meet planned	1								1		

BY MONTH:	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	TOTAL
testing levels									
Volume of additional reagents needed to meet planned testing levels, by testing unit and platform (i.e. 100K/day - Hologic panther; 100k/day - Thermofish er)	Abbott Reagents and controls to perform 15,000 tests per month.	Abbott - reagents and controls to perform 15,000 tests per month Euroimmun - reagents to perform 500 tests/mont h (confirmato ry for CCP) Liaison - reagents and supplies to perform 5,000 tests/mont h	Abbott - reagents and controls to perform 25,000 tests per month Euroimmun - reagents to perform 500 tests/mont h (confirmato ry for CCP) Liaison - reagents and supplies to perform 5,000 tests/mont h	Abbott - reagents and controls to perform 25,000 tests per month Euroimmun - reagents to perform 500 tests/mont h (confirmato ry for CCP) Liaison - reagents and supplies to perform 5,000 tests/mont h	Abbott - reagents and controls to perform 25,000 tests per month Euroimmun - reagents to perform 500 tests/mont h (confirmato ry for CCP) Liaison - reagents and supplies to perform 5,000 tests/mont h	Abbott - reagents and controls to perform 25,000 tests per month Euroimmun - reagents to perform 500 tests/mont h (confirmato ry for CCP) Liaison - reagents and supplies to perform 5,000 tests/mont h	Abbott - reagents and controls to perform 25,000 tests per month Euroimmun - reagents to perform 500 tests/mont h (confirmato ry for CCP) Liaison - reagents and supplies to perform 5,000 tests/mont h	Abbott - reagents and controls to perform 25,000 tests per month Euroimmun - reagents to perform 500 tests/mont h (confirmato ry for CCP) Liaison - reagents and supplies to perform 5,000 tests/mont h. Total tests per	

BY MONTH:	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	TOTAL
								month: 30,000	

<sup>\*</sup> Report new monthly additions only, not cumulative levels

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