CONFIDENTIAL: DRAFT, PRELIMINARY AND ADVISORY

Public Health Informed Testing Report

Testing Subcommittee

May 17, 2020

Riccardo Valdez, Preeti Malani, Rob Ernst, Steve Kunkel, Laraine Washer, Emily Martin, DuBois Bowman

RECOMMENDATION

The need for widespread availability of testing has been a common thread essential to the success of many components of an in-residence fall semester including reducing the risk of on-campus housing and in person classes and enabling containment of outbreaks should they occur. Testing capacity must be sufficient to support three major functions: (1) Start of semester testing for early identification of virus transmission stemming from students newly traveling to campus, (2) Widespread, early testing of students, faculty and staff with symptoms and exposed contacts of these individuals and (3) Continued active monitoring, or sentinel surveillance, across campus to enable early identification of emerging outbreaks.

Resource needs for a widespread testing platform include test costs and the staff and infrastructure support to support high volumes of specimen collection, laboratory work, and data reporting. The cost of these resources are dependent on the complexity and application of testing in each of these scenarios. The below recommendations detail the turnaround time and type of test that is ideal for each scenario given complexity, capacity and cost. The vast majority of testing currently available for SARS-CoV-2 is PCR-based and is used to detect the current presence of the virus in a symptomatic or asymptomatic individual. Our recommendations are centered around virus testing. Serology testing for antibodies that indicates past infection is an active area of development worldwide, and these strategies may be increasingly incorporated as innovations in the implementation and interpretation of these tests move forward. The following specific recommendations detail proposed uses of testing and the associated capacity requirements of these scenarios.

Recommendation 1. Baseline Testing

We recommend that widespread testing be implemented at the beginning of the semester for students, faculty and staff with one sample at the start of the semester and one sample 2-3 weeks following the beginning of classes. This testing strategy would identify those individuals arriving on campus with a previously undetected infection. This strategy would complement requirements that students self-quarantine for 14 days prior to moving into on-campus housing, or prior to beginning campus activities for those students that live off campus. Given potential limits on testing resources (either availability of supplies, cost limitations, or constraints on testing

throughput), tests will be implemented by priority group. **Priority 1- Students living in on campus residential halls** will be tested at move-in. This is estimated to be approximately 9,000 students. **Faculty and staff** with a focus on those faculty and staff that have in-person contact with students will be tested within 7 days prior to student arrival and asked to social distance between testing and beginning contact with students. **Priority 2 - Students living in off-campus housing** with a focus on students living in large group settings (e.g. >10 individuals in a single residence) or students living in large multi-unit complexes.

Tests will be conducted at two timepoints - once upon arrival on campus for fall semester, and once approximately 2-3 weeks later to identify new emergences. Historically, university campuses have commonly experienced small outbreaks of respiratory disease several weeks into the beginning of the semester, emphasizing that a mid-semester sampling point is important for early identification of viral spread.

Testing Considerations. We recommend the use of clinical, nucleic acid tests (NAT) for this purpose. Given that there are parallel recommendations for high levels of social distancing prior to the start of the semester, and these tests will be conducted in asymptomatic individuals, a rapid point-of-care test is *not* required, and tests can be performed using high throughput systems in the UM clinical laboratory system. In consideration of the wide scale sample collection that is needed, observed self-collection of nasal swabs will be acceptable for this scenario. Ideally, we will be able to include test results from students who are able to obtain an FDA-approved NAT from another provider, however this will require a level of data tracking and linking that is currently unavailable. **Testing Requirements - Nasal swabs collected by observed self-collection. Clinical NAT using high throughput systems. Results communicated to tested individuals.**

Recommendation 2. Symptomatic Case Testing and Contact Tracing

We recommend that point-of-care rapid NAT be in place prior to the start of the semester at a capacity that will support testing of all symptomatic students, faculty and staff and exposed contacts. The beginning of the COVID-19 pandemic in March 2020 prompted the development of campus-wide systems for case identification, self-isolation and quarantine. These systems require accurate tests with rapid turnaround in a clinical environment. In order to meet anticipated testing needs and the potential need for surge capacity testing, point-of-care testing capacity needs to be expanded on Central Campus at University Health Services and, ideally, at additional

pop-up testing locations on campus. Additional staffing and PPE resources are also needed to provide in-room collection from symptomatic self-isolating students when possible. The identification of local testing partners (e.g. commercial laboratories) can assist in the capacity if available.

Testing Considerations. The collection and testing methods for this purpose should be optimized for sensitivity, specificity, and rapid turnaround to inform decision-making for clinical and isolation purposes. **Testing Requirements - Nasopharyngeal swabs collected by a clinician preferred over nasal or oral swabs. Clinical NAT using rapid point-of-care systems. Results communicated to tested individuals and to the contact tracing team.**

Recommendation 3. Active Surveillance for Early Outbreak Detection

We recommend that random, anonymous, pooled sampling be used to monitor for early signs of increase in virus transmission. Once the semester has started and the two point prevalence sampling points have concluded (Recommendation 1), there will be a need for ongoing active surveillance to support the early detection of community transmission, particularly transmission stemming from asymptomatic or pre-symptomatic individuals. Individuals may be infected for 5-10 days prior to showing symptoms, allowing for spread of the virus in close quarters prior to the initiation of symptom-base case investigation and isolation. Sampling can occur on a regular basis (i.e. weekly) and rotate across various campus communities (e.g. residence halls, graduate students, specific schools).

Testing Considerations. The tests used for this purpose should be minimally invasive to enable implementation on a wide scale and regular uptake by students. This can be accomplished with the use of research use only tests and unobserved self swabs. Research use tests can be performed on pooled specimens in order to further conserve resources, following CDC guidance. If an increase in virus prevalence is indicated by this testing, clinical testing can be quickly deployed in that community using tests described in Recommendation 1 to support decision making for changes in mitigation and increased case identification. **Testing Requirements - Self-collected, minimally invasive swabs. Research use only testing of anonymized specimens pooled by residence location or key subgroup.**

Recommendation 4. Use of Serology Tests

We recommend that serology tests be used when feasible for community-based surveillance studies to inform planning and forecasting for future phases of the pandemic. We strongly advise against using serology tests to inform individual risk mitigation strategies, such as housing assignments or mask wearing. These recommendations are in accordance with current IDSA guidance which states "*As serological testing for SARS-CoV-2 advances, there are multiple issues that need to be addressed, from test quality to interpretation. Unlike molecular tests for COVID-19 (e.g., PCR), antibody tests may be better suited for public health surveillance and vaccine development than for diagnosis. The current antibody testing landscape is varied and clinically unverified, and these tests should not be used as the sole test for diagnostic decisions. Further, until more evidence about protective immunity is available, serology results should not be used to make staffing decisions or decisions regarding the need for personal protective equipment.*" As validated tests become increasingly available and guidance is updated, serology may support modified case investigation strategies that would partially reduce the need for NATs should community transmission rapidly increase.

CONSIDERATIONS FOR INCLUSION AND EQUITY (VULNERABLE POPULATIONS)

- **Access to Testing:** Priority groups are indicated above to guide test allocation when resources are limited. However, students and possibly UM employees not in priority groups may have limitations in their access to care making it difficult for individuals to acquire testing. Every effort should be made to ensure equitable access to testing, particularly among vulnerable populations and those individuals who interact with the general public.
- **Individuals in High Risk Groups:** Individuals in high risk groups are particularly vulnerable in the early days of an emerging outbreak. Testing efforts should serve as a complement to mitigation strategies to protect individuals at high risk of serious morbidity.
- **Communication to Reduce Stigma:** A culture of stigma surrounding COVID-19 symptoms or test results will discourage proactive reporting of symptoms, initiation of self isolation, and participation in testing necessary to reduce the risk of infection on our campus. Communication strategies must carefully consider the risk of driving stigma in implementing these programs, and input should be

sought from health communication professionals.

KEY PARTNERS

1. Monitoring and Surveillance Workgroup; Quarantine and Isolation Workgroup
2. Student Life groups coordinating arrival and housing
3. MLabs (Valdez)
4. Surveillance laboratory (Martin/Monto)
5. UM Communications
6. Health Communications professionals (HBHE faculty?) to advise on strategies to reduce stigma.
7. Washtenaw County Public Health and MDHHS need to be aware of testing strategies and we will communicate a plan for integrating with MDSS.

FUNDING NEEDED

This plan will require funding to build capacity in the following ways:

- High throughput NAT capacity
- Rapid point of care capacity at key locations across campus
- Research testing capacity for surveillance
- Data team to support processing and analysis of laboratory data and building a data pipeline to alert case investigation and contact tracing teams of positive results.

SUPPORTING DATA

Recommendation Theme	References
Testing Capacity	The Rockefeller Foundation. National COVID-19 Testing Plan. Accessed May 12, 2020.
Testing and Surveillance	American College Health Association. Considerations for reopening institutions of higher education in the COVID-19 Era. May 7, 2020. Centers for Disease Control and Prevention. COVID-19

	colleges and universities: plan, prepare, and respond. May 7, 2020. University of California, San Diego. Return-to-Learn program. May 5, 2020.
Test Methods	Infectious Diseases Society of America. IDSA COVID-19 Antibody Testing Primer. May 4, 2020. Infectious Diseases Society of America. Guidelines on the Diagnosis of COVID-19. May 6, 2020

EVALUATION MEASURES

Testing progress and results will feed into evaluation measures being tracked by monitoring / dashboard platforms and contact tracing and quarantine systems.