Strategy 3: Oversight, Implementation, and Monitoring Strategy

Many unknowns remain about how the COVID-19 pandemic will affect Cornell and the surrounding community. The reactivation of campus will likely increase the infection rate in our population of students, faculty, and staff. Changes to state and local guidelines and fiscal priorities will bring additional challenges to how we operate the campus. The ability to monitor various health-related data points while implementing swift and actionable responses will be crucial in protecting the health of our community. It is possible that we may reach a point where we can relax restrictions, but we may also be forced to implement more constrained standards to campus life, or even retreat if public health indicators require such actions. To monitor and react to the evolving impact of the pandemic on our community, we recommend that Cornell compile a series of surveillance parameters (e.g., testing, syndromic surveillance, quarantine and isolation space) in a dashboard to assess community behavior associated with interventions as well as track the incidence of disease in our Cornell Community and the broader Tompkins County population. We also recommend asking a team to review published scientific literature and other data sources to inform decisions about testing, population susceptibility, and disease progression. Lastly, we recommend the formation of a COVID Response Committee that will be responsible for reviewing the various data inputs and implement actions to mitigate disease impact to campus operations in a nimble and timely fashion.

Response Oversight and Implementation

University COVID Response Committee

We recommend establishing a COVID response committee to lead an efficient and coordinated reactivation of the Ithaca campus guided by the recommendations put forth in this report. Comprised of university leadership, this committee will establish strategic priorities and policies to align the academic and administrative functions of the university and make timely, data-driven decisions. The committee will oversee implementation teams charged with leading all operational and actionable components of the strategic prioritizations (e.g. logistics of the testing program, procurement of PPE, and development of academic policies). This structure ensures the university can remain agile in managing both short- and long-term responses under changing conditions.

Emergency Notifications

The university operates emergency notification services through the RAVE Guardian App, which enhances a user’s personal safety both on- and off-campus by turning any smartphone into a personal safety device. Should the campus community need to be notified of any imminent threat to public safety (e.g., the need to shelter-in-place, sudden and extreme weather events), as well as changes in the operating status of the university (e.g., closures, delayed start), an emergency mass notification, called CornellALERT, is issued. In order to receive immediate notification of important events, individuals must opt-in and provide their mobile phone number. About 78% of faculty, staff, and students are currently enrolled in the system. In order to inform the entire community of imminent threats to safety and health, including potential COVID-19-related impacts, our committee recommends that all Cornell community members be urged to provide mobile phone numbers and enroll in the notification system.

Surveying the Literature

We have commissioned a Cornell University Library Evidence Synthesis Service Team to conduct literature reviews to provide decision makers with up-to-day information on research findings related to COVID-19 and
SARS-CoV-2. Thus far, the team has been instrumental in providing our committee with a synthesis of the relevant quality literature around a number of different questions we have pondered. The team is committed to continuing to work with the COVID response committee and implementation teams to ensure that as data are being evaluated and decisions are being made, Cornell will have the most up-to-date analysis of the current scientific literature at its disposal. More detail about the team and its methodology can be found in Appendix 18.

Detection and Monitoring of Early Warning Markers

Both the Cornell community and Tompkins County may serve as a source of infection for the other. However, the impact of spread of the virus may be more severe for Tompkins County residents, who are more likely to be older and have pre-existing conditions than Cornell students (although not Cornell faculty/staff). The spread of the virus to nursing homes and other facilities for the elderly, nationally and internationally, has proven to be catastrophic, and severe cases requiring hospitalization and intensive care may lead to the lack of ventilators, equipment, and staff at Cayuga Medical Center. Stress on the medical system could lead to other consequences, such as people not following up for routine care and adverse health consequences due to an overwhelmed health care system. Since Cornell cannot “wall itself off” from the County, tracking indicators from both are needed to monitor the prevalence of COVID-19. We recommend exploring the establishment of surveillance systems including those below, although the final systems adopted may vary.

The Surveillance Systems

The dashboard indicators are broken down into 3 categories: early, middle, and late. A ‘signal’ in one or more of the indicators may indicate the need for an adjustment in strategy. The types or degree of adjustments may differ between the three categories.

Early stage indicators measure behaviors that may precede viral infection, or track infections discovered quickly by asymptomatic surveillance. This report details a number of behavioral requirements for the Cornell community, including physical distancing, wearing face masks, and differences in uses of dining facilities. Therefore, behavioral surveillance is an important tool for monitoring compliance with these directives. A standard survey instrument should be developed to observe adherence in public places (only) on campus, such as classes, libraries, or dining facilities. A percentage of adherence by location will be tracked. Although no personal identifying information will be collected, this activity may require Institutional Review Board approval.

Another proposed activity would be to better understand what activities or practices may be associated with becoming COVID-19 positive while in Ithaca. This may allow for the identification of places or behaviors (such as attendance at parties off-campus) associated with an increase in risk of transmission. This would be conducted as a case-control study with cases of those who become SARS-CoV-2 positive while on campus (after the initial screening). Controls would be matched by affiliation (undergraduate, graduate, faculty/staff), and place of residence (on-campus vs. off-campus). Controls who are a contact of the index case, or in quarantine for another exposure, would be ineligible. Although not a surveillance system per se, this activity would provide valuable insight on subsequent guidance that could be provided to students to reduce transmission. This activity may also require Institutional Review Board approval.
SARS-CoV-2 asymptomatic testing will be a critical part of Cornell’s strategy. Ordinarily, acquisition of infection may not be considered an ‘early’ indicator, but if asymptomatic screening is conducted frequently enough it would provide the best and most timely information on the status of COVID-19 at Cornell. These data should be tracked daily and investigated if there is evidence of increased transmission to determine any patterns, adjust requirements for isolation and quarantine beds, and provide further information for modeling efforts.

Several investigators have proposed that testing of wastewater might be an early indicator of COVID-19 infection in the community. Wastewater testing has been used for surveillance of other viral infectious diseases such as wild type (non-vaccine strain) polio, indicating local polio transmission. Since wastewater testing for COVID-19 is still experimental, our proposal is to further investigate this testing to compare to our other surveillance systems and help determine the utility of this approach.

**Middle stage indicators** rely heavily on the concept of ‘syndromic surveillance’ where COVID-19-like symptoms (such as dry cough, fever, or difficulty breathing) are measured as a proxy of COVID-19 infection. Syndromic surveillance has been conducted in the United States, usually through hospital emergency departments, for about 20 years. In many locations it is the first indicator of influenza in a community, displaying its utility as an early warning system. An important caveat is that symptoms for other clinical entities overlap with COVID-19-like symptoms, so a ‘signal’ in COVID-19 syndromic surveillance does not necessarily indicate a COVID-19 problem and may require further investigation. It will be challenging to distinguish between influenza and COVID-19-like symptoms, which is one reason why influenza vaccination this coming season will be so important.

The syndromic surveillance systems included as middle stage indicators include the online “Daily Check-in" that all Cornell community members will be required to fill out every morning, as is described elsewhere in this report. Cornell Health will also track the number of students with these symptoms through its call line and clinic. The Tompkins County Health Department is organizing a syndromic surveillance system among outpatient providers in the County. We hope to be able to access this information to better understand community transmission. Finally, the Cayuga Medical Center collects data on all patients presenting to their emergency department and can categorize it by ICD (International Code of Diseases) code. Again, we hope to work out an arrangement to share this data.

Other middle stage indicators include the results of the testing programs done by TCHD. However, testing programs may be in turn dependent on other issues not related to local transmission, including availability of test kits, hospital or provider capacity, and ongoing outbreaks of disease. As an example of the latter, should there be transmission within a Tomkins County nursing home, one might expect SARS-CoV-2 prevalence to increase simply because testing would identify additional positive persons. We also intend to track the number of people in isolation and in quarantine, both on-campus and off-campus. In addition to helping understand the “picture” of COVID-19 at Cornell, this will be useful information to track facility capacity.

**Late stage indicators** are those that signify a severe COVID-19 situation in Tompkins County. Regardless of the reasons for higher transmission, late stage indicators signal a threat to the health and safety of the Cornell community (except, perhaps, for an isolated nursing home outbreak). It is possible that all of these indicators may “signal” rapidly and indicate the need for the most severe interventions to control the outbreak. The
indicators include the total number of cases reported in Tompkins County, nursing home outbreaks, and capacity of regular and intensive care beds at Cayuga Medical Center.

**Interventions in Response to Signals**

Interventions based on these indicators should be done with a complete understanding of the situation at Cornell, and not on a pre-determined numerical or percentage increase in one system. There will certainly be a degree of day-to-day variation that might not have any real significance. Some findings may indicate the need for further investigation of the signal before acting. Other findings may lead to measures to contain or mitigate the problem without further investigation. Examination of the data from all the systems may be helpful to validate the existence of a real problem because a rise in one system may be mirrored in the others.

**Early stage** interventions potentially include further education of the community on physical distancing requirements, and better enforcement of those requirements. Results from the case-control study would be provided to the community to help stop behaviors that have led to viral transmission. A geographic cluster of cases may warrant the need for an outbreak investigation to better understand the situation.

**Middle stage** indicators may require further education on the signs and symptoms associated and not associated with COVID-19. In some circumstances (especially with Cornell Health patients) a ‘signal’ may indicate the need for further investigation to see if/how symptoms progressed, and if the student is PCR negative, if there are alternative explanations for the findings. We should encourage TCHD and Cayuga Health System to be vigilant on investigating signals as well. Other interventions may include further education of the community, expansion of physical distancing rules, tightening travel policies, consideration of group quarantine, and a review of compliance with policies concerning the interaction of the Cornell community and older persons in the community.

Interventions to address elevated late stage indicators will likely have a large impact on the community. They might involve the quarantine of all persons living on campus, forbidding travel outside the area, or even campus closure. Disruptions to student and academic life (including pauses in instruction) would be more extreme if the university were shut down and students sent home. An emergency shutdown of the university and suspension of academic instruction would be considered a last resort.

Guidelines should also be established for handling an emergency move-out scenario that include: communication plan; exemption criteria for students who cannot return home; how to apply for financial assistance from the Access Fund, and the types of expenses that will be considered; policies for refunds and rebates; procurement of storage supplies and space. In the event of a shutdown, SCL should be provided at least one day advanced notice before plans are communicated to students.

The following table is a sample of the surveillance systems for the dashboard. All of the data acquired will be made available to the appropriate working groups and the COVID response committee for analysis and consideration of future steps.

<table>
<thead>
<tr>
<th>System</th>
<th>Stage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Behavioral: compliance with physical distancing</td>
<td>Early</td>
</tr>
<tr>
<td>Case-control study to determine risk factors for transmission</td>
<td>Early</td>
</tr>
</tbody>
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Further work on this dashboard would entail the creation of a surveillance group to: determine analytic issues (such as what constitutes a signal), operationally oversee the system, maintain it, analyze the data daily/weekly (dependent), and report analytic findings to the dashboard. All of these activities represent a significant investment in terms of personnel and time but will offer the best possibility to track the efficacy of the plan to reopen the Cornell University campus.

Tomkins County Community Impact

We have established regular dialogue with TCHD this summer to prepare for reactivation of parts of campus knowing that this will be of paramount importance as students come back to Ithaca and the campus. If the community concludes that “college students” will be, or are, bringing disease to Ithaca, there will be resistance to our reactivation plans. If the community, which includes our faculty and staff, deems student behavior in Ithaca as reckless or posing a public health threat, there could be conflicts. Regardless of how successful our policies and procedures are deemed to be by us, the community will make its judgment based on what they see and hear; thus, it is important that we communicate with them in conjunction with TCHD, Cayuga Health System, and local government leaders.

Among that actions that can help mitigate conflict within the broader Ithaca community and ensure that we can successfully bring students back to the area are:

- Inform and coordinate with local government officials, TCHD, Cayuga Health System, and other area institutes of higher education (Ithaca College and TC3) our plans for reopening in advance of making public announcements. These regular discussions are already underway and TCHD assures us that they will participate in public rollouts of our plans and serve as a validator of those plans to provide assurances to county residents and amplify our messages.
- Communicate, with the support of TCHD, university testing protocols and visitor and travel policies applicable to students, faculty, and staff to demonstrate that Cornell is taking great measures to responsibly reactivate its campus and that these restrictions could have an impact on the larger community (e.g., fewer visitors and events).
• Emphasize that Cornell is following, if not exceeding, NY Forward guidance required of higher education institutions along with the support of NYS and local governments to bring students back to campus.
• Offer regular updates to the community through a dashboard of indicators that includes well-defined metrics to measure the success of our testing and other protocols for a safe return to campus. We should clearly convey our intent to adjust policies (including testing frequencies and regimes) and reinstate remote learning should these metrics cross defined thresholds.
• Many colleges and universities around the state are not contemplating pre-and post-return testing protocols. It therefore is likely that the return of a substantial number of our students may initially increase the incidence of virus in the broader community and, as compared to other institutions, may appear that we have a larger problem than they do. Accordingly, we should avoid contrasting and comparing Cornell efforts and indicators with other colleges and universities, and clearly communicate expectations and metrics around incidence and response.
• Local elected officials should be prepared to speak to the economic importance to the region of Cornell (and other area colleges and universities) reopening safely and offer words of support about our efforts to do so.