

Dear Parents,

I hope you are all doing well and getting ready for the JKHA/RKYHS Return to Learn.

We have been busy preparing to open school in the safest possible way. I'd like to update you on a key approach we are taking to keep our school free of COVID-related outbreaks.

It has become increasingly clear over the last months that regular, rapid testing is key to any reopening strategy. Unfortunately, such tests are largely unavailable in the community at large. You may be familiar with the nasal swab PCR test or with the blood-based antibody test, which are "snapshots" of an active infection or exposure to the virus. While such tests are important for treating patients, they are less helpful in the context of school reopening - and more importantly - in keeping school open. In addition, the long lag time (5-8 days on average) between taking a test and getting results further diminishes the value of such information with respect to limiting school-based COVID outbreaks.

It is critical to identify potential spreaders of infection **before** they "seed" an outbreak. This has become even more apparent as schools and colleges have reopened, only to close back down quickly as infection rates spike and infections spread.

The data clearly points to the reality that children are infected and can transmit the virus at rates similar to that of adults, although they are significantly less outwardly symptomatic. Infected individuals are infectious **before** they are symptomatic and some (particularly children) never become symptomatic. If we wait for symptoms to appear before isolating a potentially infectious individual, it is too late. That individual may have been spreading the virus for days.

To address this problem and keep JKHA/RKYHS safe, we are initiating a frequent testing program, which will serve as a JKHA/RKYHS population surveillance screen for potential COVID infections. This program will provide twice-weekly testing for SARS-CoV-2 (the virus that causes COVID-19) nucleic acid, with a LAMP-based nucleic acid amplification assay (similar to PCR) using small saliva samples taken from each individual in the building (students, staff, faculty). Taking advantage of our "pod/cohort" Return to Learn approach, samples will be pooled by pod/cohort to facilitate throughput allowing us to obtain pod-pool same-day results for the entire facility (within hours).

If a pod-pool result comes back positive for the presence of SARS-CoV-2 nucleic acid, that pod will be considered to have a potentially COVID-positive member and the entire pod will be sent home in accordance with the "Return to Learn" protocol and advised to seek the guidance of their health care professional. <https://www.jkha.org/links/return-learn>

To be clear: this is not an individual clinical diagnostic test; it is a population surveillance screen to identify and isolate potentially infected pods. It is critical that we screen and identify potential cases well before symptoms might appear. We are preparing an application for CLIA Certification as a diagnostic lab and for FDA Emergency Use Authorization (EUA) for this test and approach. We are confident in the sensitivity and

specificity of this test, however please remember that a positive or negative pod-pool result is a population screening result and not a clinical COVID status for any specific individual.

The idea of frequent population screening - including the use of pooled samples is gaining traction. Israeli scientists are preparing to implement such an approach in the coming months. <https://www.nytimes.com/2020/08/21/health/fast-coronavirus-testing-israel.html> Many in the medical and scientific community are urging the FDA to authorize rapid antigen "dip-stick" styled tests that can be produced to detect the present of virus particles in saliva that could be taken at home on a daily basis. This would be fantastic, but at best, is still months away from general availability. We are working to obtain samples for comparison with our test.

Our twice weekly approach to pod-pool testing is designed to capture positive samples at the earliest days of infection when viral replication is "ramping up." It is generally understood that a relatively large amount of virus nucleic acid (detected in both the PCR test and the LAMP test) represents the infectious viral dose required to transmit a COVID infection from one person to the next. The rate of SARS-CoV-2 replication is quite robust early in the infection cycle and a high level of viral RNA is achieved days prior to the appearance of symptoms, generally within 1-2 days after the initial infection. For example, if we do testing on Monday and Wednesday, according to our approach, an individual infected on a Thursday, Friday, or Saturday, should be detectable on Monday's test. If they are infected on Sunday, they might not be detected on Monday, but should be detected on Wednesday's test.

We are also working with software engineers to develop software and a smartphone app to help identify contact trees that will help trace and isolate contacts (siblings, parent-teachers, busmates, teammates) of individuals in pod-pools that test positive for SARS-CoV-2.

This is an ongoing and dynamic process and we hope you will support our efforts to make JKHA/RKYHS the safest possible environment in these trying times. Testing is an important component, but must not lead to complacency with respect to the myriad of other precautions we are implementing. Even the best plans are only as good as the participants' compliance. We urge you to take responsibility. Work with your children to emphasize the importance of social/physical distancing, mask wearing - inside and outside-, good and frequent hand hygiene, good ventilation, and general care and respect for others. We all need to model and effectuate behaviors that will help us protect each other.

We urge you to partner with us as we try to protect the school community and broader community at large. At the same time we are also cognizant of privacy concerns and also recognize that some may be hesitant to participate in our testing protocol. Our "always-on" remote learning option is always available. However, participation in the JKHA/RKYHS testing protocol will be a requirement for in-person learning.

There will be a town-hall Zoom meeting on Thursday, August 27th at 8:30 pm to answer any questions and hear your comments.

Please do not hesitate to reach out to me or Dr. Steve Stein with any questions, thoughts, or concerns.

Eliezer E. Rubin