



NPS Memo

To: NPS School Committee
From: COVID Testing Working Group
Date: Wednesday, February 3, 2021
RE: Recommendations for Faculty and Student Testing

Working Group Members:

Dori Zaleznik, M.D., Chair
Margaret Albright, School Committee
Liam Hurley, Assistant Superintendent for Business & Finance/CFAO
Elizabeth Fitzmaurice, Assistant Superintendent for Student Services, NPS
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Ruth Hoshino, B.S.N., R.N., Director of School Health Services
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Working Group Meeting Schedule:

January 12, 20, 22, 27, 2021
February 3, 5, 2021

Why Testing

- Prevent spread in schools by identifying asymptomatic cases
- Allow districts to make data-informed decisions about the learning model
- Provide reassurance of the efficacy of safety protocols and mitigation efforts
- Reduce fear and anxiety among staff, students, and families about in-person learning, leading to a more positive teaching and learning experience. Initial data from multiple asymptomatic school screening programs suggest that prevalence rates in schools are low even in communities where the community positivity rates are high.

Goals for a Successful Testing Program

- Feasible (should not interfere with learning time and not require in-school staff administration)
- Sustainable (should be able to continue as long as there is a need)

- *Scalable* (should be able to be expanded to include all in-person staff and students who wish to be tested)
- *Flexible* (should be able to be modified particularly as data about vaccinated individuals becomes known)

Types of Testing

PCR (polymerase chain reaction) anterior nasal swab uses shallow nasal swabs to collect a sample which is then placed in a tube and sent to the lab for processing. The lab process for the PCR test takes just a few hours but turn-around times may be longer due to lab capacity and the time required to ship samples to the lab. PCR tests can also be done utilizing a saliva sample.

Rapid Antigen Testing (Binax/Now) uses a shallow nasal swab to collect the specimen. A tester then adds the extraction reagent to the sample and inserts it into the Binax card. Results can be expected in 15 minutes. This test must be performed by someone who is trained to both use the test card and reagent and read it accurately.

Current testing in NPS

NPS is currently providing *individual* weekly PCR testing for teachers at a central testing site located at the Ed Center. Teachers are able to sign up for a test window; the program is run in conjunction with our vendor CIC-Health and processed at the Broad Institute. The cost to NPS for individual testing is currently approximately \$47 per test. Testing all 1,200 staff who opted in requires approximately 8 hours per week and a minimum team of 6-7 to successfully operate. An additional 20+ hours of coordination time exists each week outside of the testing sessions.

Pooled Testing

In pooled testing, samples are gathered from multiple people and mixed together. Instead of testing each individual sample on its own, the lab tests the pool. If the pool tests negative, then all the individuals in that pool are presumed to be negative. If a pool test is positive, a re-test of all the members of the pool is necessary. This is called reflex testing. Some laboratories require a second sample for reflex testing of a positive pool. Others retain the original individual specimen so that they can run reflex testing on a positive pool — often on the same day — without bringing people back in to obtain a new sample. Pools can range in size from 5 to 25 depending on the methods used by the testing company. Pooled testing is appropriate for surveillance testing and can save money and lab resources if the prevalence of disease is low.

Analysis of Options:

The working group reviewed the medical, public health, and educational benefits of many models of pooled testing. We weighed the lab costs for processing specimens from each vendor, but more importantly the operational, logistical, human resource, and time requirements for registering participants, collecting specimens, and performing the reflex tests on positive pools, and the cost of investing in the program (human capital and disruption to student learning) to

cultivate a balanced recommendation calculated to provide a safe learning environment for faculty, staff, and students.

The primary decision points centered around:

- Ease of registration and obtaining parental consent for student testing
- Ease and safety of collecting specimens for testing
- Reflex testing of a positive pool in a safe and timely manner
- Analysis of entire program cost (operational, logistical, human resource, and time requirements for registering participants, collecting specimens, and performing the reflex tests on positive pools, and the cost of investing in the program)

We examined the DESE pilot program and submitted an application of interest. The state matched Newton with the vendor Project Beacon with laboratory testing at the Broad Institute. The school nurses have some experience with Project Beacon which manages our state-sponsored BinaxNOW antigen testing for symptomatic individuals. How the state program would work:

- Specimen collection would involve staff and students swabbing their own nose with shallow swabs but they would be required to be observed, and NPS would need to staff testing locations at schools.
- Staff would be needed to create pools by placing or having the individual put their swab into a pool designed for multiple specimens (which the staff would cap after the right number of specimens were in place) and staff would need to track which specimens were placed in each pool.
- Reflex testing of positive pools would need to be done by school nurses taking an additional sample using the Binax/NOW tests. This requires individuals in a positive pool to come back to school to test.
- Because the reflex testing is an antigen test, if all individuals in the positive pool test negative with the BinaxNOW test, there would be either an additional antigen test or an additional individual PCR test for everyone in the pool.
- Lab costs are low (initially free until March 28), but logistical and operational requirements would be costly and would need to be provided by the district
- Because the specimen collection is onsite and must be observed, testing would need to be done during the school day

Two testing vendors not current participants in the state's program (JCM Analytics, Mirimus) provided options that were less logistically and operationally complex.

- Registration and permissions provided through vendor-supplied software
- Specimen collection is done with a pre-assembled take-home kit
- Software and scanners provided to scan in the specimens dropped off at locations in the school, minimizing time away from classes for in school testing.
- Staff would need to place the individual specimens in pools but would not have to handle open specimens
- Reflex testing is done by the vendor using the original sample

- Follow up of a positive individual sample from a positive pool would be handled by the school nurse per the current protocol for an identified positive case
- Turn around times are within a 48 hour window and reflex testing of positive pools is done within 6 hours.
- PCR testing is highly accurate and JCM Analytics has experience coordinating with a testing laboratory. Pool testing results are usually available within 24 hours of receiving the specimens (overnight express mailed with JCM) and reflex testing of the same sample with results promised within six hours after a positive pool has been identified.
- BinaxNOW results are available within 15 minutes and to administer, it requires the positive pool members to come in for a repeat swab.

Financial Considerations:

NPS has no provision for COVID testing in the FY21 budget. Relief monies such as CARES or ESSERS are a possibility. There are a few key testing related financial factors we considered:

- The current contract with CIC Health has cost approximately \$131,00 for the 2,700 tests administered through 2/4/21. The cost does not include the significant administrative and volunteer time and effort that has been involved to implement and run the testing center and many thanks are due to everyone involved.
- If we continue with the current weekly testing model of staff only with CIC and assume approximately 1,200 tests administered per week for the remainder of the year, we would incur an additional \$961,000.
- JCM quotes test cost at approximately \$13-15 per pool and \$26 per needed reflex test.
- Many unknowns with a varying landscape (cost, scope of need, vaccine influence, etc) necessitate monthly monitoring and adjustments as needed as part of a malleable plan.

JCM Analytics		DESE State Plan Summary	
Test Cost	\$ 1,459,644	Test Cost	\$ 79,742
Staff Costs	\$ 253,590	Staff Costs	\$ 1,280,040
Estimated Reflex Testing	\$ 22,441	Estimated Reflex Testing	\$ -
On boarding and training	\$ 4,045	On boarding and training	\$ TBD -
Program Mgt, technical spt	\$ 8,302	Program Mgt, technical spt	\$ TBD -
JCM Works Software	\$ 42,488	Software	\$ 10,000
Transport and logistics	\$ 30,934	Transport and logistics	\$ 1,500
Barcode Scanner	\$ 867	Barcode Scanner	\$ 2,000
Optional Lanyards/Id Card	\$ 4,552	Optional Lanyards/Id Card	\$ -
Total 16-week Cost estimate	\$ 1,826,863	Total 16-week Cost estimate	\$ 1,373,282

Final Recommendation:

As a working group, we are dedicated to recommending the most effective testing program for our district. Careful consideration of fiscal prudence, feasibility of implementation, and ability to staff and sustain a program was paramount in our considerations.

With this framework in mind, we strongly recommend that we implement a phased approach as follows:

1. Continue with the current weekly testing model for PK-8 faculty and staff for a period of time.
2. Immediately contracting with JCM Analytics to provide weekly pooled testing for our high school and post-secondary faculty, staff, and students.
3. Carefully monitor the implementation of pooled testing at the HS and a gradual implementation at other subsequent levels (middle school first, followed by elementary, and then pre-school) at the earliest possible time.
 - a. Proposed Timeline:

Week Of:	Action:
3/1/21	Start HS, Post-Secondary and Ed. Cntr. Students
3/8/21	Start HS, Post-Secondary and Ed. Cntr. Staff (stop CIC testing for this group)
3/22/21	Start MS Staff and Students (Stop CIC testing for this group)
4/5/21	Start PK & Elementary and Ed. Cntr. Staff (END CIC Testing for all)
4/26/21	Start PK & Elementary Students (ALL PK-post-secondary students and staff)
6/7/21	Potentially stop staff testing (Vaccine dependent)
6/14/21	No Senior student testing

****The COVID Testing Working Group respectfully requests that the school committee favorably vote to adopt JCM Analytics pool testing for staff and students as outlined in this memorandum.***