Final Report on Employer Rapid Antigen Screening Pilot at CWSDS

February 3, 2021

Introduction

This is a summary of the findings of the Rapid Antigen Screening Pilot at Central West Specialized Developmental Services (CWSDS). This includes data collected from the 8-week long pilot study period: from December 5, 2020 to January 29, 2021. The Ontario Ministry of Health is the coordinator of this Pilot Project with support from partner ministries, Public Health Ontario, and Ontario Health, and CWSDS is one of many approved participating agencies/sites. Each agency was permitted the flexibility to design the Pilot conducted at their site.

The pilot project involves the tester (a physician or nurse) collecting two nasopharyngeal swabs from each participant in a testing session: Rapid Antigen Screening test (Panbio™) and the PCR test. The Panbio™ is a Rapid Antigen Screen that can be performed with minimal equipment, and the result appears in the kit's testing window within 15 minutes. The PCR swab is sent to a laboratory for processing. It is tested at the lab using Polymerase Chain Reaction (PCR) method to detect genetic material of the SARS-CoV-2 virus, which is the virus that causes COVID-19. This PCR test is currently the gold standard test for diagnosing COVID-19 infection in Ontario, and is the test conducted at COVID Assessment Centers across Ontario.

Method

Participation was open to all individuals who work at CWSDS (including employees and contract workers). Participation was requested through email announcements sent to all Agency staff. Participation was voluntary. Informed consent was obtained from each participant, via signed Consent Form and a verbal explanation of the Pilot by the tester.

At CWSDS, our Pilot included the following features:

1. Each participant was encouraged to sign up for one 2-week long Testing Block. There were a total of four testing periods spanning the duration of the pilot.
2. There were four Testing Sessions in each Testing Block (two testing sessions per week).
3. Each Testing Session involved the collection of two separate nasopharyngeal swabs (NPS): The Panbio™ Rapid Antigen Test (the current screening test being piloted here) followed by the PCR Test (which is the gold standard for diagnosis of infection with SARS-Cov-2).
4. Participants who were unable to commit to the above were still permitted to participate in the Pilot, and their data is included in this report.

A total of 45 employees at CWSDS participated in the Pilot project. Eight participants participated in more than one Testing Block (6 participated in 2 testing blocks, and 2 participated in 3 testing blocks). Some participants were unable to commit to all 4 testing sessions during their Testing Block.

Data collected was reported to the Ontario Ministry of Health at the end of each week of the Pilot.

There were instances in which only the Rapid Antigen test was performed. Overall, **66%** of Panbio™ Rapid Antigen Tests performed during the Pilot had corresponding PCR tests done during the same testing session (**106** PCR tests for **160** Rapid Antigen Tests).

Results

The Panbio™ Rapid Antigen Test was conclusively completed a total of **160** times in the Pilot. There was **one** Rapid Antigen test result which was inconclusive, and thus excluded from our data. That is, neither the control nor test lines appeared in the testing window in the 15-minute timeframe. When this test was repeated, it was negative (this test result was included in our reported numbers). All **100%** of the **160** conclusive Panbio™ Rapid Antigen test results were **negative**.

Of the **160** conclusive Panbio™ Rapid Antigen Tests, **106** had corresponding laboratory-based PCR tests completed. Of the **106** PCR tests, **two** PCR tests were positive. The other **104** completed PCR test results were negative. As mentioned above, there were **zero** positive Rapid Antigen test results, so even the **two** participants with the positive PCR test results had screened negative with the Rapid antigen test. Thus, in this Pilot, there was a **98%** correspondence between the Panbio™ Rapid Antigen test results and laboratory-performed PCR test results.

Discussion

There were advantages and disadvantages to conducting PCR testing alongside the Panbio™ Rapid Antigen Tests. The primary advantage was confirmation of the validity of the accuracy of the Panbio™ Rapid Antigen Test with the PCR test, which is the gold standard diagnostic test for infection with SARS-CoV-2. Another advantage was that performing the confirmatory PCR test emphasized to study participants that the Panbio™ Rapid Antigen Test is a screening test, and not a diagnostic test. Explaining this distinction to study participants emphasized that they could still be infected with SARS-CoV-2, and the importance of continued IPAC measures.

One disadvantage of conducting PCR testing in addition to the Panbio™ Rapid Antigen testing was the invasive nature of such additional testing. The swab in the PCR collection kit has a larger circumference than the swab on the Rapid Antigen Test. This would presumably result in more discomfort to the participant during specimen collection. Also, the collection of any nasopharyngeal swab (NPS) results in irritation of the tissues in the nasal cavity. This could trigger inflammation and swelling of the tissues, resulting in subsequent swabs being more uncomfortable for the participant, and technically difficult for the tester. Of the **160** Panbio™ Rapid antigen testing sessions, participants declined the confirmatory PCR test **34%** of the time.

Another disadvantage of conducting PCR testing in addition to the Panbio™ Rapid Antigen test is that not all positive test results suggest current COVID-19 infection. A positive test result can represent one of the following:

1. Current COVID-19 infection
2. Prior COVID-19 infection (with positive result due to shedding on non-viable virus)[1]
3. False positive result

There were two instances in which the PCR laboratory test came back positive. The Panbio™ Rapid Antigen Test results for both of these participants had been negative.

Overall participants communicated positive feelings about participating in the Pilot. Some reported feeling reassured by having a negative result on the screening test, particularly when this was accompanied by a negative PCR test. A few participants commented that they would participate in more frequent screening if it were less invasive and less painful.

CWSDS Health Services Team

[1] COVID-19: Ongoing Viral Detection and Repeat Positives. Public Health Ontario. June 16, 2020