

## An Evaluation of Barriers and Facilitators to Implementing Multiplex rapid antigen testing for SARS-CoV-2 and influenza A and B in congregate living settings

### Summary

We explored the implementation of a rapid antigen test that detects both COVID-19 and Influenza by identifying barriers (things that made it harder to use the test) and facilitators (things that made it easier to use the test). Implementation took place in 24 congregate living settings, including long-term care homes, retirement homes and shelters across the Greater Toronto Area (GTA). This test can quickly identify infections and help staff respond early to outbreaks in high-risk settings. Staff used the Sofia Flu + SARS rapid antigen test and analyzer between January 2022 and March 2023. Findings were analyzed using two established theoretical frameworks that help researchers understand factors that influence the success of health interventions, and find strategies to improve future implementation.

### Implications

This study suggests that the successful implementation of rapid antigen testing for COVID-19 and influenza in congregate living settings requires trained staff, access to resources that meet the needs of the organization, and strong leadership. Strong leadership can include having dedicated “champions” at the organization who support and encourage testing.

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\*Quidel Corporation's Sofia® Flu + SARS Antigen Fluorescent Immunoassay (FIA) and Sofia 2 analyzer: a small cartridge test that checks for COVID-19 and Influenza from one nose or throat swab. The Sofia 2 reader is a desktop device that scans the cartridge and gives results in about 15 minutes.

### What is the context?

- Congregate living settings (CLSs) are at a higher risk of outbreaks due to close living quarters and other factors that impact the spread of infectious disease. Residents are also at a higher risk of severe illness and death from these infections due to underlying health conditions and physical frailty.
- Rapid antigen tests that detect both COVID-19 and Influenza from a single swab provide quick results and support decision-making for treatment and managing outbreaks.
- Despite these benefits, there was little guidance on how to include this testing approach as part of routine care in congregate living settings.

### What did we do?

- We explored barriers and facilitators to the use of the Sofia Flu + SARS rapid antigen test and analyzer in long-term care homes, retirement homes and shelters across the GTA.
- We interviewed 57 staff across 24 CLSs that had used the tests between December 2021 and March 2023.
- We analyzed the interview data across different sites and time points using two frameworks: the Consolidated Framework for Implementation Research (CFIR) which looks at how organizational and system-level factors affect implementation; and the Theoretical Domains Framework (TDF), which focuses on individual behaviours that impact implementation.
- These frameworks helped us identify 20 strategies that may support the successful use of rapid antigen tests in similar settings.

### What were the results?

- Four barriers were identified. This included a lack of access to material resources to meet organizational needs (e.g., not enough testing devices) and staffing shortages, which led to pauses or delays in implementation. Additionally, the testing process was complex, with multiple steps and small machine parts that were easy to misplace, also leading to interruptions in implementation. In some cases, staff were hesitant about adopting this new testing process, which reduced uptake.
- Five facilitators were identified. Access to enough supplies and a dedicated testing space made the process smoother. Training, along with ongoing support also helped staff feel more confident using the analyzer to conduct rapid antigen testing. At some sites, a “testing champion” helped to encourage continued use of the analyzer for testing and supported peers who had trouble using it. Staff appreciated that the test checked for both COVID-19 and Influenza at once. This, in addition to perceptions by some staff that the test was user-friendly enhanced buy-in for staff at several CLSs.
- We mapped the findings into 20 implementation strategies. We further grouped these strategies into four intervention functions: education (e.g., educational meetings), enablement (e.g., appoint champions), environmental restructuring (e.g., reminders), and training (e.g., train the trainer strategies). Sites should select strategies that are tailored to their needs and context, and sustainable to facilitate long-term.