EVALUATION OF NASAL SWAB COLLECTION METHODS ON A UNIVERSITY CAMPUS DURING THE SARS-COV-2 PANDEMIC

Poster ID# 1916

Jessica O'Hanlon[1], Zack Acker[2], Julia C. Bennett[1], Peter D. Han[2,3], Devon McDonald[1], Tessa Wright[1], Kyle G. Luiten[1], Lani Regelbrugge[2], Kathryn McCaffrey[2], Brian Pfau[2], Caitlin R. Wolf[1], Lincoln C. Pothan[2,6], Geoffrey S. Gottlieb[1,5], Katia Harb[5], James P. Hughes[6], Lea M. Starita[2,3], Helen Y. Chu[1], Ana A. Weil[1]

[1]Department of Medicine, University of Washington, Seattle, WA, [2]Brotman Baty Institute, [3]Department of Genome Sciences, University of Washington, [4]Department of Global Health, University of Washington, [5]Environmental Health & Safety Department, University of Washington, [6]Department of Biostatistics, University of Washington

BACKGROUND

Community COVID-19 testing programs using SARS-CoV-2 PCR are primarily conducted using provider obtained or observed nasal swabs, but it is unknown if other test administration methods would improve uptake.

To handle surges of testing and reach additional university campus groups, we evaluated a novel method of nasal swab self-collection.

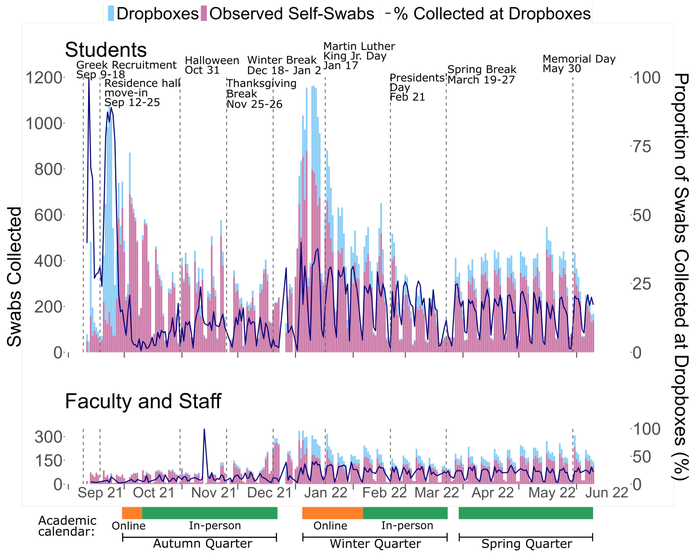
METHODS

- From Sept 2020 – June 2022, participants were enrolled in a COVID-19 testing study at a large university in the Seattle metropolitan area
- Participants tested for COVID-19 after self-reporting symptoms, exposures, or travel on a daily, online questionnaire; walk-in testing was also available
- Testing was available at:
  1) observed swabbing kiosk
  2) pick up a swab kit & return to campus drop box (unobserved)
- RHINOsticTM automated dry nasal swabs in a MatrixTM 1.0mL screw top tube were used
- Samples were collected from drop boxes and kiosk sites daily and returned to the laboratory for Swab-Express qRT-PCR testing.

RESULTS

- 116,373 swabs were returned with results (91,420 observed kiosk and 24,953 unobserved drop box) from 26,305 unique individuals (Table 1)
- A greater proportion of drop box only users were aged 18-24 years (74%) and were students (82.1%) compared to kiosk only users (62% and 75.2%, respectively)
- Similar proportions of participants using each testing method had comorbidities
- During the Omicron surge (starting December 9, 2021), mean daily drop box use increased 4.6-fold vs. 1.5-fold-increase in kiosk use (Figure 1)
- The rate at which swab kits were completed and returned incorrectly decreased over time (15.0% in October 2021, 9.5% in November, 7.9% December, and 4.2% January – May 2022)
- Following travel, participant use of both drop boxes and kiosks increased similarly (Figure 2)

FIGURE 1: Drop box and kiosk samples over time by affiliation

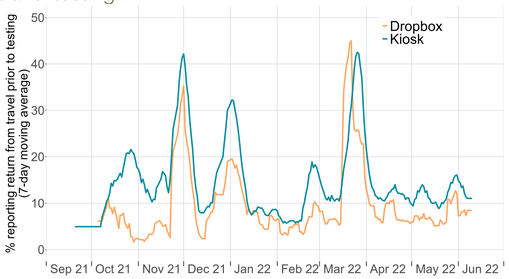


** Campus events, holidays, breaks in courses, and periods of online instruction that impacted university populations are shown. Testing demand was reduced on weekends and operations were paused for holidays, inclement weather, and campus closures (represented by gaps in testing).

TABLE 1: Demographics by unique individual

	Kiosk only (N=14910)	Dropbox only (N=5022)	Both (N=6373)	Total (N=26305)
Age				
Median	22.1 (20.4, 30.4)	20.4 (18.9, 24.9)	20.1 (18.9, 22.7)	21.3 (19.6, 27.9)
Sex				
Male	5923 (39.7%)	2033 (40.5%)	2196 (34.5%)	10152 (38.6%)
Race				
White	7582 (50.9%)	2153 (42.9%)	3117 (48.9%)	12852 (48.9%)
Asian	4941 (33.1%)	1836 (36.6%)	2191 (34.4%)	8968 (34.1%)
Black	351 (2.4%)	160 (3.2%)	104 (1.6%)	615 (2.3%)
Multiple	1080 (7.2%)	459 (9.1%)	602 (9.4%)	2141 (8.1%)
Other	956 (6.4%)	414 (8.3%)	359 (5.7%)	1729 (6.6%)
Comorbidities				
One or more	377 (2.5%)	129 (2.6%)	144 (2.3%)	650 (2.5%)
Affiliation				
Student	11211 (75.2%)	4124 (82.1%)	5404 (84.8%)	20739 (78.8%)
Staff	2624 (17.6%)	620 (12.3%)	705 (11.1%)	3949 (15.0%)
Faculty	960 (6.4%)	254 (5.1%)	243 (3.8%)	1457 (5.5%)
Other	115 (0.8%)	24 (0.5%)	21 (0.3%)	160 (0.6%)

FIGURE 2: Percent usage of drop box for return to travel testing



CONCLUSIONS

- Drop boxes allowed for drastic increases in testing capacity during periods of increased testing demand, including during the Omicron surge
- Drop boxes may have provided testing for a unique population not captured by observed testing locations

LIMITATIONS

Location of testing sites may have been more convenient and accessible to specific groups. Participants enrolled in year 1 had been familiar with kiosk testing method, possibly impacting drop box uptake.

ACKNOWLEDGEMENTS

We would like to thank the University of Washington, specifically the UW Environmental Health and Safety Department and all our participants. Thank you to the CARES Act for funding.

Contact information: Jessica O'Hanlon, jessoh@uw.edu