Video-based HIV testing services among cisgender men who have sex with men as a component of an HIV behavioural surveillance study during the COVID-19 pandemic in New York City: implementation, feasibility and lessons learned

HIV self-testing (HIVST) provides an opportunity for overcoming barriers to in-person HIV testing, and it has been shown to be generally preferable among populations at increased risk for HIV[1] and effective in increasing HIV testing uptake.[2–4] Within research, HIVST has mostly been incorporated into studies that aim to increase HIV testing uptake and less frequently in studies that aim to verify HIV status. Barriers to using HIVST as a method to confirm HIV status include missing data due to reliance on self-report and challenges to verifying self-report.[5] HIVST through videoconferencing (video-based HIVST) may overcome these barriers as it allows for the visual verification of testing and of the test result without relying on participant follow-up, and it can serve as a viable virtual strategy in HIV research.

From November 2020 to January 2021, we implemented video-based HIVST as an alternative to in-person HIV testing, as a component of the CDC's National HIV Behavioral Surveillance Study (NHBS) among cisgender men who have sex with men in New York City. NHBS methods are described elsewhere.[6] A convenience-based sample was recruited for an interviewer-administered survey on Zoom. Because NHBS aims to measure HIV prevalence, all participants were offered optional HIV testing regardless of self-reported HIV status. With an agreement with Orasure Technologies (Bethlehem, PA), participants who consented to HIVST were emailed a code to redeem a free OraQuick In-Home HIV Test and instructions for ordering the test, and were scheduled for a second appointment in 1 week for video-based HIVST through Zoom. At the second appointment, staff guided participants through self-administering the test and provided HIV counselling. Participants were asked to verbally provide the result of the test, confirm the number of lines that appeared in the test kit window and to show the staff member the result. Referrals were provided as necessary. In the rare case of technical difficulties, appointments were conducted via telephone and procedures adjusted accordingly. Participants were provided a US$50 gift card for completing the survey and a US$50 gift card for HIV testing.

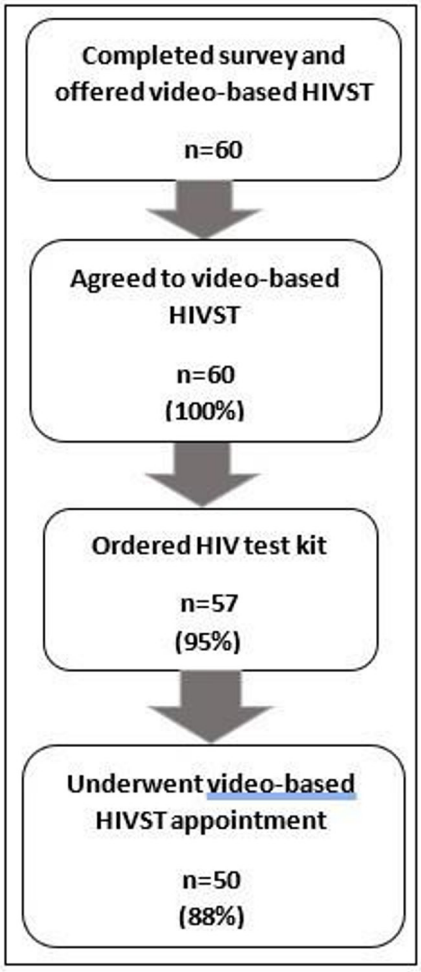

Figure 1 HIV self-testing activities.

HIVST outcomes are shown in figure 1. We observed high uptake in agreeing to test, ordering the test and self-administering the test. There was a mean of 2.8 days between survey completion and ordering the HIV test and a mean of 11.3 days between survey completion and HIVST completion. Some barriers were related to ordering and shipment of the HIV test. Some participants expressed inexperience with online ordering. For these participants, in late January, staff began offering to order the test on their behalf. General delays in ordering due to forgetting to order were common and staff began to remind participants to order their test if they had not done so within 2 days of the survey appointment. Two tests were lost in the mail and those participants were able reorder a test. Future research may benefit from having the test kit ordered in advance of the survey appointment and conducting the survey and HIV test in the same session or having the participant order the test during the survey appointment with staff present to provide assistance. Regarding challenges in HIVST uptake, some participants reported difficulty in finding a private area. Future research may consider partnering with community-based organisations that can provide private areas for participants.

Despite these barriers, we found video-based HIVST feasible to implement with high HIV testing agreement and uptake suggesting high acceptability. Barriers related to comfort with technology were minimised as participants had already completed an interviewer-administered survey on Zoom. Zoom is accessible through a cell phone with internet connection and a computer nor a personal Zoom account were needed. The survey appointment also allowed time for staff to build rapport with the participant prior to the testing appointment and the same staff member conducted both sessions. In cases where visual confirmation of the test result through video was difficult, staff instructed the participant to provide additional lighting. In addition to providing an incentive, it is also possible that we met an unmet need for HIV testing during the COVID-19 pandemic. Concerns about COVID-19 transmission could have deterred people's willingness to seek an in-person HIV test.

We acknowledge that video-based HIVST may be feasible only for those who have internet access and who are comfortable enough to undergo a video-based interview. Nonetheless, in the current context of the COVID-19 pandemic and the need to conduct research activities virtually, our experience demonstrates that video-based HIVST may be a feasible and acceptable method to verify HIV status in the research setting.

Alexis Rivera , **Pablo Martinez**, **Sarah Braunstein**

Bureau of HIV, New York City Department of Health and Mental Hygiene, New York, New York, USA

Correspondence to Mrs Alexis Rivera, Bureau of HIV, New York City Department of Health and Mental Hygiene, New York, NY 11101, USA; arivera6@health.nyc.gov

Handling editor Henry John Christiaan de Vries

Acknowledgements The authors thank all study participants.

Contributors AR oversaw data collection, analysed data and produced the first draft of the manuscript.

PM collected data and contributed to the manuscript. SB oversaw data collection and contributed to the manuscript.

Funding This study was funded by CDC grant 1U62PS005086.

Competing interests None declared.

Patient consent for publication Not required.

Provenance and peer review Not commissioned; externally peer reviewed.

To cite Rivera A, Martinez P, Braunstein S. *Sex Transm Infect* Epub ahead of print: [*please include* Day Month Year]. doi:10.1136/sextrans-2021-055110

Received 15 April 2021
Accepted 9 June 2021

Sex Transm Infect 2021;**0**:1–2. doi:10.1136/sextrans-2021-055110

ORCID iD
Alexis Rivera http://orcid.org/0000-0003-0423-6902

REFERENCES

1 Hawk ME, Chung A, Creasy SL, *et al*. A scoping review of patient preferences for HIV self-testing services in the United States: implications for harm reduction. *Patient Prefer Adherence* 2020;14:2365–75.
2 MacGowan RJ, Chavez PR, Borkowf CB, *et al*. Effect of internet-distributed HIV self-tests on HIV diagnosis and behavioral outcomes in men who have sex with men: a randomized clinical trial. *JAMA Intern Med* 2020;180:117–25.
3 Witzel TC, Eshun-Wilson I, Jamil MS, *et al*. Comparing the effects of HIV self-testing to standard HIV testing for key populations: a systematic review and meta-analysis. *BMC Med* 2020;18:381.
4 Eshun-Wilson I, Jamil MS, T Charles W, *et al*. A systematic review and network meta-analyses to assess the effectiveness of HIV self-testing distribution strategies. *Clin Infect Dis* 2021. doi:10.1093/cid/ciab029. [Epub ahead of print: 20 Jan 2021].
5 Tahlil KM, Ong JJ, Rosenberg NE, *et al*. Verification of HIV self-testing use and results: a global systematic review. *AIDS Patient Care STDS* 2020;34:147–56.
6 Centers for Disease Control and Prevention. National HIV behavioral surveillance. Available: https://www.cdc.gov/hiv/statistics/systems/nhbs/index.html