

## INTRODUCTION

As of the end of 2015, data from the Centers for Disease Control and Prevention (CDC) reveals that approximately 1.1 million individuals aged 13 and above were dealing with HIV infection in the United States. Among these, around 162,500 people (15%) were unaware of their infection. In the state of New York (NYS), an estimated 122,600 individuals were living with HIV, with 11,100 of them being unaware of their HIV status. A key objective of the NYS Blueprint to End the AIDS Epidemic is to identify those with undiagnosed HIV infection, connect them to medical care, and prevent unintentional HIV transmission. The NYS Blueprint also suggests broadening routine HIV testing to other environments, including dental offices.

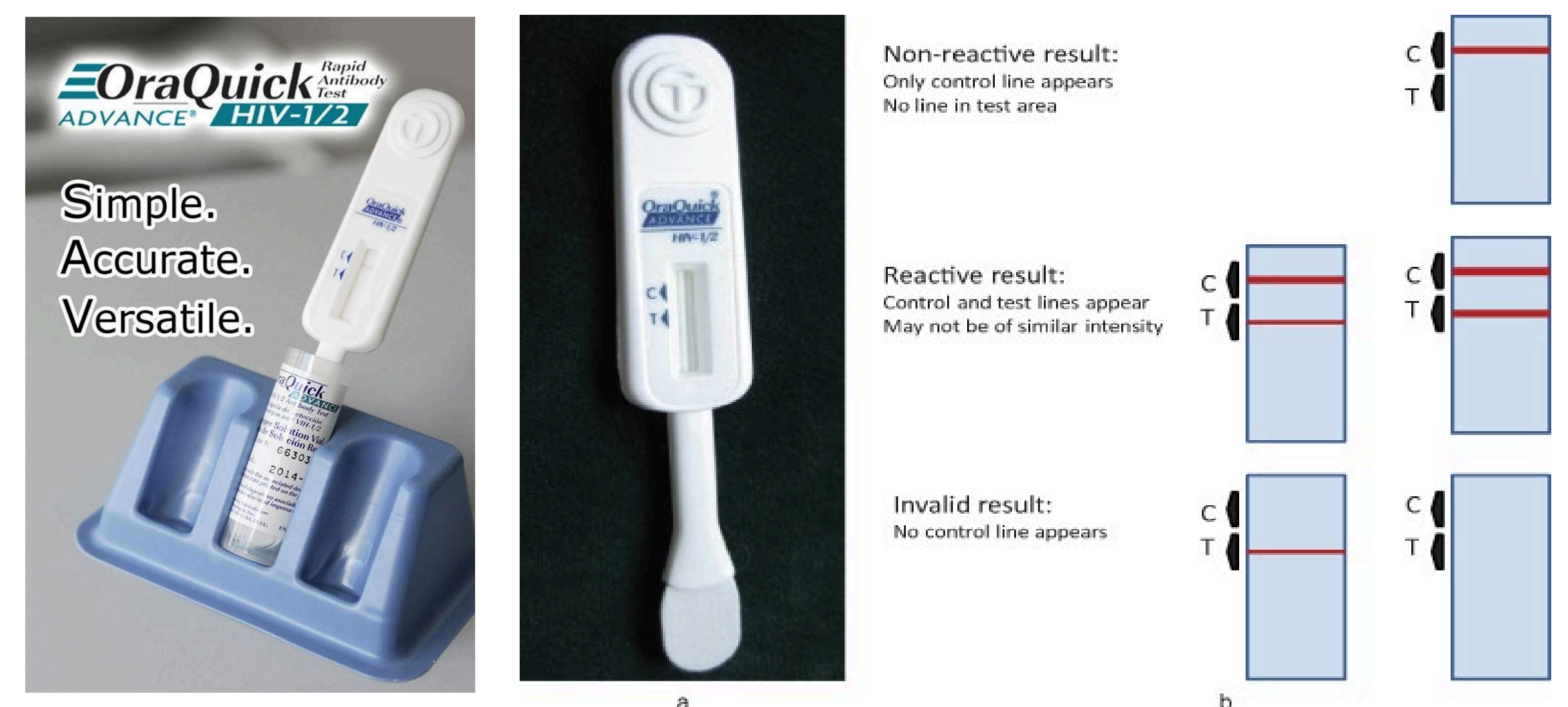
In collaboration with the Northeast/Caribbean AIDS Education and Training Center (NECA AETC) and three dental schools in New York State, the NYSDOH initiated an HIV screening demonstration study at 10 dental clinics. This study spanned a two-year duration and collected data from a substantial sample of dental patients. The hypothesis was that patients would be more inclined to undergo HIV screening if they met certain criteria: (1) had not recently visited a primary care provider, (2) had not received HIV screening during their most recent primary care appointment, (3) had never undergone an HIV test, (4) had not been screened for HIV recently, and/or (5) lived in a financially disadvantaged community. This hypothesis took into account the patient's age, race/ethnicity, gender, country of origin, and dental coverage.

## METHODS & MATERIAL

This research was approved by the University at Buffalo Institutional Review Board, University of Rochester Office for Human Subject Protection, and by the Stony Brook University Institutional Review Board. Between February 2016 to March 2018, dentists, hygienists, assistants and non-clinical staff offered rapid oral HIV screening tests (OraQuick™ ADVANCE1 Rapid HIV-1/2 Antibody Test) free of charge to patients who visited dental clinics associated with the above schools and community dental clinics and private practices including Baker Victory Dental Center, Eastman Dental Downtown, Eastman Dental at School #17, the Erie County Health Mall, Seneca Nation Dental Health Services, the Western New York Dental Group, Shinnecock Indian Health, as well as the mobile dental van of Stony Brook University

Trained staff offered HIV screening tests to all patients (ages 18+) visiting the study dental sites over a 2-year period. Dental providers used a uniform script for presenting the HIV screening, and eligible patients were asked if they wanted the test. If asked about the test, testers explained it was free for everyone. A poster at dental offices emphasized the legal requirement for the test. Tests were given at the appointment start, and results were often available by appointment end.

Patients with reactive results were referred for confirmatory testing; they were then linked to medical care if confirmed positive. In addition, we collected data regarding patient demographics, primary care visits in the past year, and previous HIV testing experience for all patients, and any oral signs of HIV infection for those with reactive results. Data managers at NYSDOH merged the data from all dental clinics, monitored data quality, and provided monthly status reports.



## RESULTS

### Patient characteristics

There were 14,935 patients presented for care at the dental clinics during the project period. 49% were non-Hispanic white, 30% were non-Hispanic black, 12% were Hispanic/Latino, 2% were NAAN, and 2% were Asian. Their age ranged from 18 to 96 with a mean of 46.6 and a median of 46. Female patients (8,051) outnumbered male patients (6,849). Seven patients self-identified as transgender women and zero self-identified as transgender men. Nearly half of the patients were covered by Medicaid (46%) or Medicare (3%); 26% paid out-of-pocket; and 17% paid through private insurance

### Offer and acceptance of an HIV screening test

During the project period, 14,935 patients visited 10 testing sites and one mobile van for dental services; 14,887 (99.7%) were offered an HIV screening test; 9,063 (60.9%) accepted the offer and 9,057 (60.8%) were screened; and one of them was tested reactive, confirmed HIV positive and subsequently linked to medical care. The OraQuick™ In-Home Test made two errors out of the 9,056 tests of uninfected individuals, showing a 99.98% accuracy. Patient's demographic characteristics are also significant predictors of screening acceptance. A patient is more likely to accept the HIV screening offer if the patient is younger (age 18–34), black/Hispanic/multi-racial (compared to white), born outside of the United States or Puerto Rico, male, or covered by Medicare, controlling for all other variables. The poverty level is found significant: those who reside in economically disadvantaged communities are more likely to accept HIV screening.

### HIV screening from patient's perspective

Approximately 40% of patients declined HIV screening, with common reasons being recent prior testing (54%), perceiving low HIV risk (38%), or other unspecified reasons (8%). Conversations between clinical staff and patients revealed patient concerns about HIV screening. Confidentiality emerged as a significant issue, with most patients preferring private testing. HIV-related stigma led some patients to worry that testing might link them to risky behaviors such as unprotected sex or intravenous drug use. Concerns about positive results were notable, as some

patients feared discrimination if known to be HIV positive, even from dental office staff.

### HIV screening from provider's perspective

Qualitative information on barriers, facilitators, and best practices were collected among clinical and non-clinical staff near the end of the project. Providers were mostly concerned over the practical issues of implementing HIV screening in the provision of routine dental care. Providers largely found the integration of HIV screening successful due to the ease of administering OraQuick™ tests, quick result turnaround, and high patient acceptance. Dental school faculty also recognized its educational value in teaching students about asymptomatic HIV cases.

## CONCLUSION

The oral rapid HIV screening fit well into the provision of routine dental care. Dental providers and staff were able to administer the screening effectively after a short training period. Dental providers (dentists, dental students, and hygienists) who administered rapid HIV screening were able to link preliminary positive patients for confirmatory testing and subsequent medical care. Above all, dental providers demonstrated willingness to incorporate rapid HIV screening into routine practice. Furthermore, implementing HIV screening in routine dental care was an effective educational tool for dental students to learn about HIV infection among asymptomatic individuals.

### Reference:

Chung R, Leung SJ, Abel SN, Hatton MN, Ren Y, Seiver J, Sloane C, Lavigne H, O'Donnell T, O'Shea L. HIV screening in the dental setting in New York State. PLoS One. 2020 Apr 16;15(4):e0231638. doi: 10.1371/journal.pone.0231638.