Preferences for HIV Testing Technologies in Seattle, Washington: a Mixed-Methods Study

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Background

HIV testing is a core component of the US Ending the HIV Epidemic initiative.

Understanding preferences around HIV testing can inform product development, programming, and policy and has potential to increase testing uptake.

We conducted a convergent parallel mixed-methods study to explore testing preferences among participants in the Greater Impact and Access with Nucleic Acid Tests (GAIN) Study.

Methods

Between June 2023-May 2024 the GAIN study enrolled a convenience sample of persons seeking HIV testing, PEP, or PrEP at two sites in Seattle, WA:

- Seattle's LGBTQ+ Center: community-based organization offering HIV/STI testing and PrEP
- Madison Clinic: largest provider of HIV care in Washington State; offers HIV testing, PEP, & PrEP services

Participants who completed a study visit were later offered self-administered electronic surveys (N=142) and then invited to participate in in-depth interviews (N=20).

The 62-item survey contained a discrete choice experiment (DCE). Participants were randomized to one of three blocks of 12 DCE choice sets. For each set of three hypothetical HIV tests, participants selected their most and least preferred options based on four attributes: specimen type, window period, time to results and likelihood of a false positive (Table)

	OPTION 1	OPTION 2	OPTION 3
Specimen type	Oral fluid	Fingerstick	Blood draw
Window period	12 weeks	2 weeks	4 weeks
Time to results	2 hours	20 minutes	2 days
Chance that you'll have a false positive	1 in 20 (5%)	1 in 100 (1%)	1 in 1000 (0.1%)

Table. Example DCE choice set

Preference weights and relative importance were calculated using multinomial logistic regression, and semi-structured interviews were analyzed using the Rapid Assessment Process.

DCE and interview data were triangulated to enhance interpretations.

Results

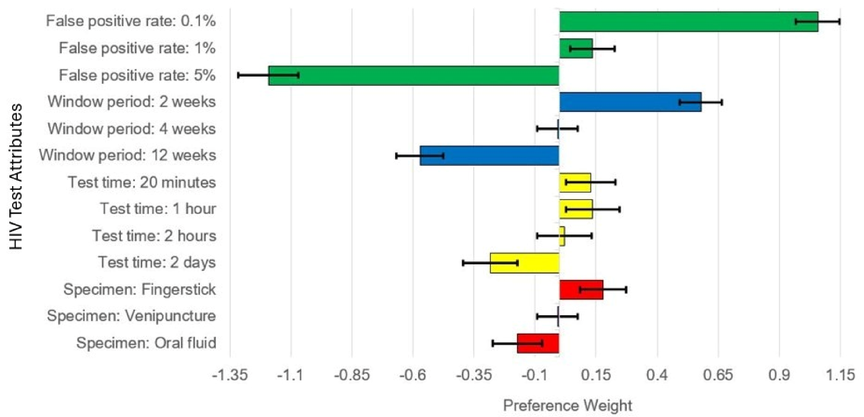
Table. Characteristics of study participants

	Survey Participants N=142	Interview Participants[1] N=20
Study site		
Seattle's LGBTQ+ Center	132 (93%)	15 (75%)
Madison Clinic	10 (7%)	5 (25%)
Median age [IQR]	32 [27-38]	33 [27-40]
Gender		
Cisgender man	96 (68%)	14 (70%)
Cisgender woman	7 (5%)	1 (5%)
Non-binary or genderqueer	24 (17%)	2 (10%)
Transgender man	5 (4%)	0 (0%)
Transgender woman	5 (4%)	2 (10%)
Gender not listed here	2 (1%)	1 (5%)
Unknown	3 (2%)	0 (0%)
Race/ethnicity		
Asian	22 (15%)	2 (10%)
Black or African American	4 (3%)	1 (5%)
Hispanic or Latinx	24 (17%)	4 (20%)
Multiracial	9 (6%)	3 (15%)
White	81 (57%)	10 (50%)
Unknown	2 (1%)	0 (0%)
PrEP use		
Never	84 (59%)	8 (40%)
Former	13 (9%)	1 (5%)
Current	42 (30%)	11 (55%)
Unknown	3 (2%)	0 (0%)

IQR: Interquartile range; PrEP: pre-exposure prophylaxis

1. All interview participants also completed a survey.

Figure: Discrete choice experiment preference weights for HIV test attributes expressed by GAIN study participants seeking HIV testing, June 2023-May 2024, Seattle, WA.



Legend: Greater positive preference weight bars indicate stronger participant preference for that attribute. Confidence intervals are shown with brackets; if they do not overlap that indicates a significant difference in preference within each attribute.

DCE showed preference for fast, accurate blood-based tests with shorter window periods, but qualitative data identified misconceptions about HIV test properties.

"It doesn't matter how quick the test is or how easy it is or how fast we can get the results, **if we get wrong information then it's useless to us**."

"Normally when I go in and get tested I wait for my results to come in before I go out and have any additional hookups. **I want to know my results are good before I go hookup**. Okay, if I can have results in 20 minutes and go have a meetup, great. **If I have to wait two days in between, that's no fun**."

Accuracy was the most important test characteristic.

Strong preference for tests with shorter **window periods**, but general lack of awareness about the window period in interviews.

Faster tests were more preferred, with little difference between 20 and 60 minutes.

Oral fluid was least preferred **specimen type,** and interviews revealed confusion about how HIV could be detected but not transmitted via oral fluid.

Conclusions

HIV testing should be paired with education to ensure persons understand results.

Device development should focus on specificity and window period sensitivity while keeping time to results under 1 hour.

Study findings are not representative outside of Seattle.

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