INTRODUCTION

HIV infection rates among men who have sex with men (MSM) are increasing and the uptake of STI and HIV testing in conventional clinical settings is suboptimal. An estimated 14% of UK MSM with HIV are thought to be undiagnosed, and 30% of new diagnoses in MSM are late diagnoses. Innovative strategies are required to increase uptake of HIV testing. One approach is to increase access to instant result HIV self-testing kits, enabling opportunities for providers to reach populations not actively engaged with clinical services.

METHODS

A mixed-methods evaluation included early co-design workshops, cross-sectional surveys and qualitative interviews to assess uptake and acceptability.

Co-Design workshops

Using data from previous research we surveyed access to add-on capabilities and flexibility of a vending machine delivering HIV self-testing kits. Preliminary design workshops were held with volunteers and designers in target community venues, discussing approaches for interventions. The co-design workshops utilized service design tools such as personas, stories, scenarios, a service blueprint, an experience map, and a prototyping workshop to build support for a campaign plan and the digital interface for the vending machine.

The Vending Machine

The Manchester University vending machine was installed in a gay sauna. The interface included a touch-screen screen suggesting reporter users to enter demographics and confirm a photo before a sale. A sale placed the chosen kit into an individual container, which is stored in the machine to release the free self-test kit at an economic cost. A financial transfer was handled and a receipt was issued. Both cash and card payments were accepted. The machine responded to touch-screen and touchscreen, and on-line and offline advertising. On-line and offline advertising and peer recruitment created awareness, encouraged testing and user experience.

Cross-sectional and on-line survey

The final (v2) manuscript survey was also included in an on-line survey of 12 questions exploring demographics, HIV testing, history of HIV self-testing and other sexual health behaviors. The final version included additional questions on demographics and past self-testing experience. (https://brightonunitednetworks.co.uk/authoring/).

RESULTS

Key themes relating to visual campaign options were: a sense of community and support, clinical service awareness and gaining clear communication. There was excellent engagement in the process and many participants generated their own style, wording and selection for the campaign.

The participant-generated discussions developed a ‘user journey’ from options for HIV testing, to decision-making, priorities, and routes to action. Participants explained benefits and drawbacks for the following populations identified as core target groups for self-testing:

- Clinic attendees with high HIV risks
- MSM not engaged with clinical services
- Framing the campaign within the ‘gay scene’

The vending machine in the entrance of the gay sauna successfully dispensed 204 tests between 18 June 2017 and 4 August 2017 (average v3).

A total of 204 tests was higher via the vending machine compared to community outreach testing at the sauna over the same period (41 v 156 tests per month).

(Demographics of vending machine users)

48 survey respondents:
- Mean age: 42; range 17 to 70
- HIV test: 18 had a positive test and 30 a negative test
- 14% had condylomas and one with a new or casual partner in the last year
- 46% of participants were from the local area of MMU (approximately 3 miles from the university) and 48% had no prior experience.

27 of 48 survey respondents left free text comments indicating high levels of acceptability with the vending machine and HIV self-testing.

DISCUSSION

Co-Design workshops

User co-design of this innovation has been central to the development of an acceptable and effective interface.

The Vending Machine

The machine distribution has not previously been used to deliver HIV self-testing kits in the UK. A single pilot study using disclosure rapid HIV tests is not comparable due to methodological differences.

Cross-sectional on-line survey

This study supports our previous reported high-levels of acceptability for HIV self-testing as well as an unmet need.

Vending machine distribution reached eligible users with high levels of access to sexual health care, behavior, many with low uptake of HIV testing.

Qualitative interviews

Both phases of interviews reported high levels of acceptability and accessibility. However, concerns were identified by users in two key areas:

- The emotional and clinical risks of getting a reactive result in isolation, without immediate support, and with potential loss of confidentiality.
- The limitation to HIV testing alone, with varied levels of concern about other STIs.

Additional concerns were also identified by researchers:

- The convenience and discretion of HIV self-testing had displaced some participants’ routine comprehensive STI screening at clinics.
- One participant felt that they had tested with sexual partners as part of risk assessment prior to condom use—often without understanding the risks of high viral load early in the window period.
- Knowledge and understanding of the window period was frequently poor.

CONCLUSIONS

Vending machine distribution of HIV self-testing kits is an accessible option to increase appropriately targetted groups’ awareness of high-risk HIV. The immediate availability of results reduces the risk of HIV time is thought to be crucial for elimination of HIV transmission (reference HIVF report).

Additional locations for vending machines such as gay bars/clsks, community pharmacies and GP practices, universities/colleges, sexual health clinics (as a ‘short-cut’ to HIV testing where comprehensive STI screening involved long appointments or delays) have been planned.

Further work is needed to evaluate the acceptability and impact of this intervention in other populations affected by HIV such as heterosexual men and women from high HIV-prevalence. We have developed a pilot service promoting BioSURE® rapid-result HIV self-testing kits (one drop of blood 99.7% accurate) to MSM via a bespoke digital vending machine in a gay sauna (Brighton, UK). This included co-deisgn workshops to develop a campaign and digital interface to the vending machine, and extensive evaluation of user experience.