Digital vending machine technology to distribute HIV self-tests to high risk men who have sex with men

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Background

• Uptake of HIV testing of hard to reach populations in conventional clinical settings remains suboptimal

• HIV self-testing has the potential to target high risk groups that don’t test regularly

• HIV self testing barriers:
  ➢ Locations where the kits can be obtained are limited.
  ➢ In-person test request and/or payment through traceable methods such as credit cards and bank accounts (online stores)
HIV self-testing using digital vending machine technology

Why?

- **Availability of tests**: (24/7). Covers busy evening hours and weekends when staff usually unavailable.
- **No staff / training costs**: testing kit with clear user instructions, and comprehensive linkage to care information for reactive testers.
- **HIV tests**: no lab costs - **£11.76** (c.f. £53.11 Sexual Health Tariff)
- **Economies of scale**: accessible at different locations (**saunas**, gay bars, train stations etc)

Where?

- Clinical staff approached by sauna manager
- ~400 MSM attend a Sauna each week with evidence of **high risk behavior** (lots of lube used but far less condoms, both free)
- Current testing levels insufficient (**THT** 6-8h/week, Weds/Sat) with a large proportion clientele **NOT** engaging

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1 BASHH conference 2017, Belfast, P078
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How?

- **Survey (n=281)**
  - 32% (89) sauna clients had never tested for HIV, with 44% (123) stating that they did not feel at risk of HIV infection
  - Acceptability of self testing via a vending machine was 93% (260)

- Codesign workshops with LGTB community and designers to develop a bespoke vending machine:

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How it works?

Machine specifications:

• Wall mounted, needing mains power, wifi or phone signal (3G/4G)
• Robust – often in bars / social venues – liquid proof - can’t be broken into (>300 machines, no incidents)
• Very little maintenance – much can be done remotely
• Email alerts when needs stocking and access to website for live monitoring of vends
• BioSURE HIV Self Test: 3 generation, CE marked
Vending machine pilot evaluation: methods

• Cross sectional mixed methods evaluation was conducted between June and March 2018

• Demographics (age, place of residency, and time of last HIV test) were collected via the machine’s user friendly touchpad screen

• An online questionnaire and structured interviews gathered information on user-experience of the machine, acceptability and attitudes towards HIV self-tests accessed via a machine.

• Number of tests delivered by the vending machine (124h/7) were compared with those delivered by community workers (THT 6-8h/week, Weds/Sat)
Vending machine pilot evaluation: Results

Tests taken from machine (n=265)

- 50% B&H residents
- Mean age 31.5 (range 18-73); 75% <40ys
- 77% (204) tested within last 12 months
- 23% (60) had either never tested (3%) or not for >12 months (20%)

Survey data (n=52)

- 51% condomless anal sex with new or casual partner last 6 months
- 46 negative, 1 positive, 3 no answer
- 94% would recommend, 6% unsure

Tests dispensed by vending machine

35 tests/month vs 4.5 test/month performed by community workers
Qualitative interviews: acceptability and experience

23 interviews: 10 users of vending machine, 13 sauna clients

I think this is the best idea ever. Especially in a gay sauna. I’ve seen what happens here so I know. So this is a perfect public place. It’s practical isn’t it ... and anybody who thinks it’s wrong or whatever, all they’re doing is they’re lying to themselves.

Participant 6 (bisexual, age 53, never tested, about to marry .... female)

It’s a good thing I would do it. ... I can’t really think of any [disadvantages] really. You take it home and you just test don’t you. Because it’s quicker for one thing, rather than go to the clinic I would just come here

Participant 4 (MSM, age 54, tested last year)

It’s great it promotes awareness.... it makes people start to think, ‘Hey am I being safe today, am I taking risks that I don’t need to take? I just think it’s a fantastic idea”

Participant 23, age 26, MSM, last test 4 months ago
Qualitative interviews: concerns

- Getting a reactive result in isolation, without support, and potential loss to care
- The limitation to HIV testing alone, with varied levels of concern about other STIs
- The convenience and discretion of HIV self-testing had displaced some participants’ routine comprehensive STI screening at clinics
- Several users had tested with sexual partners as part of risk assessment prior to condomless sex without understanding the risks of high viral-load in early infection
- Knowledge and understanding of the window-period was poor in some users
Conclusions

• Digital vending machine to distribute HIV self-test kits is highly acceptable and can be used to deliver HIV self-tests to men with low levels of prior testing

• Collaboration with designers and target communities ensured a user-centered approach to this effective innovation

• Although the machine is currently limited to HIV testing alone, STI testing facility could be integrated

• A next generation of vending machines (50% more powerful, and robust) have been developed offering the possibility of a contactless payment option

• Future research will evaluate the use of this technology in other populations (ethnic minorities, heterosexuals) and settings (gay bars, stadiums, gyms, universities, and low resource settings)
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