



NSW Rapid HIV Testing Evaluation Framework

Final Report



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SYDNEY



Kirby Institute

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NSW Rapid HIV Testing Evaluation Framework Final Report

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Front Cover Images

Top: ACON rapid HIV testing promotion, Sydney Gay and Lesbian Mardi Gras Parade, 2014, image courtesy of ACON.

Bottom: 'Ending HIV Easy As' Campaign logo image, courtesy of NSW Ministry of Health.

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3. Executive summary

3.1 Rapid HIV testing program

From June 2013 to December 2014, rapid testing for HIV was offered to gay, bisexual and other men who have sex with men (GBM) using the Trinity Biotech Uni-Gold test (Trinity Biotech, Bray, Co. Wicklow, Ireland). Rapid testing was available at 22 clinical and community-based health services in Sydney and regional New South Wales (NSW), including: 14 publicly-funded sexual health clinics, one general practice clinic, three permanent community-based, peer-led rapid HIV testing services ('a[TEST]' clinics), three fixed-term ('pop-up') sites, and one clinician outreach service at a social venue. Parallel HIV laboratory serology using 4th generation immunoassays were conducted for all men who received a rapid HIV test. The a[TEST] clinics were established as specialist rapid HIV testing services for gay and bisexual men.

3.2 Evaluation design

The Rapid HIV Testing Evaluation Framework was established with the following objectives: (i) assess **feasibility** and **uptake** of rapid HIV testing across settings; (ii) determine the **acceptability** of the new testing models; (iii) evaluate the **performance** of the Trinity Uni-Gold test; (iii) measure the **cost** of the HIV testing models; (iv) determine the **impact** of rapid testing on HIV testing generally; and (v) assess the impact of social marketing undertaken to promote rapid HIV testing. A mixed methods approach was adopted for the process and impact evaluation, which involved; a) clinical data collected before and during the rapid testing period for all GBM clients who attended participating services; and b) a survey of 369 GBM who received a rapid test for HIV across different rapid test service types.

3.3 Evaluation results: Process

The key findings of the process evaluation are as follows:

- **Feasibility:** Between June 2013 and December 2014, a total of 10,793 rapid HIV tests were conducted across 22 participating sites.
- **Uptake** of rapid testing was highest in community-based peer-led rapid testing specialist services (~100%) and lowest in the general practice clinic (18%). Men undergoing rapid testing were more likely to be high risk than men who didn't have rapid tests, and at community services 20% of men presented for their first ever HIV test.
- **Acceptability** of rapid testing among GBM was high across a range of community and clinical sites.
- **Test performance:** Of the 10,793 tests, 94 were new HIV diagnoses (0.9%); 0.9% at the community sites, 1.4% at the GP clinic and 0.8% at the sexual health clinics (these were not statistically different).
- Of the new diagnoses, over a third of these (39.4%) were acute infections.
- Overall, the Trinity Uni-Gold rapid HIV test accurately reflected the HIV status of 998 of every 1,000 patients (99.8%).
 - The test demonstrated very high specificity (99.9%), returning only seven false positives
 - Test sensitivity was very high in established infections (98.2%) but lower in acute infections (56.8%).
- **Cost:** HIV testing with conventional serology cost \$12.98 per patient. The additional cost to conduct a rapid test using the Trinity Uni-Gold was \$9.70. The cost of a rapid test accounted for 5 – 9% of the total cost of a full sexual health screen.
- The total cost of offering rapid testing was lower in services where peer-workers and enrolled nurses conducted the testing.

3.4 Evaluation results: Impact

The key findings of the impact evaluation are as follows:

- **Frequency of testing:**
 - Over three quarters of GBM said that they thought rapid testing would help them test more regularly, including 89% of men not recently tested for HIV.
 - In the rapid testing period, the mean number of HIV tests in 12 months was significantly higher (29%) among GBM who had a rapid test compared with GBM who did not have rapid tests (1.8 tests vs 1.4 tests).
 - The increased HIV testing frequency, equated to 3324 additional tests being conducted in the rapid testing period.
- **Impact of social marketing**
 - HIV testing in GBM increased during periods of targeted social marketing campaigns.

3.5 Conclusions

The evaluation supports rapid testing for HIV as a feasible testing option in a diverse array of health services. Nearly all (99.8%) men received an accurate result from the rapid test, which therefore required no return visit. Similar to other rapid tests for HIV, the Trinity Uni-Gold test was less accurate at detecting acute infections, with 18% of the new HIV diagnoses made during the study not detected by the rapid test. These infections were detected by conventional laboratory testing which occurred in parallel during the study, highlighting the importance of conducting parallel serology in the future when offering rapid testing MSM to populations who may have had recent exposure risks.

There was strong support for rapid testing among participating GBM, the majority of whom found it to be a highly acceptable form of testing. Also the rapid testing reached a higher proportion of high risk men and at the community sites, nearly 20% of men who attended had never tested previously.

Importantly, the availability of rapid testing was associated with more frequent HIV testing, and an additional 3324 tests being done, which has implications for the timely diagnosis of HIV and the prevention of onward transmission. It is also important to note that the additional 3324 tests account for about half of the overall estimated increase in HIV testing during the study period. The increased testing among gay and bisexual men during the study period reflected significant investments made to increase testing in NSW in addition to rapid HIV testing as part of the NSW HIV strategy, such as advertising and social marketing campaigns, pop-up testing sites and related media work, Xpress clinics, fast track test results, and other changes.

In conclusion, the ongoing availability of rapid testing may play an important part in increasing HIV testing frequency among GBM and reaching high risk men and infrequent testers. Further, the evaluation suggests social marketing campaigns should be considered alongside rapid testing programs.

4. List of abbreviations

GP	General practitioner
HREC	Human research ethics committee
IVD	In vitro diagnostic
IQR	Interquartile range
NAAT	Nucleic acid amplification testing
NHMRC	National Health and Medical Research Council
NRL	National Research Laboratory
NSW	New South Wales
PCR	Polymerase chain reaction
PMS	Patient (information) management system
POC	Point-of-care
QA	Quality assurance
QC	Quality control
RHT	Rapid HIV test
STI	Sexually transmissible infection
TGA	Therapeutic Goods Administration
UNSW	University of New South Wales
GBM	Gay, bisexual and other men who have sex with men

5. Background

5.1 What is the public health importance of HIV?

HIV remains an incurable chronic disease that increases the risk of a range of cancers, cardiovascular disease and diabetes. Each year, treatment costs for HIV cost the Australian Government over \$300 million (1) with the lifetime cost of one HIV infection estimated to be \$450,000 (2). In Australia and New South Wales (NSW), gay, bisexual and other men who have sex with men (GBM) are most at risk of acquiring HIV infection; each year about 75% of diagnoses are in GBM (3).

5.2 HIV testing is a key prevention strategy

Regular HIV testing is a key strategy in HIV control. Being aware of one's HIV status can not only prevent onward transmission via a change in sexual practices (4) but also via the initiation of antiretroviral therapy (ART), which substantially reduces transmission risk (5-7). Mathematical modelling estimates that reducing the time between infection and diagnosis in conjunction with earlier treatment of people with HIV could lead to reductions in population incidence of up to 32% over five years (8). Australian clinical guidelines recommend at least annual HIV testing for all sexually active GBM and 3 – 6 monthly testing for those at high risk of infection (9). In 2013 however, only 32% of high risk GBM attending sexual health clinics in NSW achieved the 6-monthly testing target outlined in clinical guidelines (10). Further, it has been reported that between 13% and 28% of GBM have never been tested for HIV (11, 12). As a result, it is estimated that 10 – 12% of GBM with HIV are unaware of their status (13, 14), which modelling suggests is responsible for approximately 31% of all new infections in Australia (15).

The NSW HIV Strategy 2012 – 2015 has set a target of reducing HIV infections among GBM by 60% in 2015 and a further 80% by 2020 (16). The strategy also aims to reduce the average time from HIV infection to diagnosis from 4.5 years to 1.5 years, and to increase the proportion of people living with HIV on ART to 90%. Increasing the coverage and frequency of HIV testing among GBM is a key element of realising these targets.

5.3 What is rapid HIV testing?

Rapid HIV testing, also called point-of-care (POC) testing, involves a trained laboratory or health care worker collecting a finger-prick blood or oral fluid specimen, running the test, and interpreting the result. As the name suggests, rapid testing can provide results quickly (within 30 minutes) and results are usually provided to clients at the same visit. Rapid tests are considered screening tests, which means that reactive results must be confirmed by conventional serology (17). Where rapid HIV tests are used for screening purposes without parallel laboratory HIV tests, the sensitivity (the ability to detect true HIV infection) needs to be very high to ensure that infections are not missed.

5.4 Why rapid HIV testing in GBM in Australia?

GBM have reported a number of barriers to frequent HIV testing, including: perceptions of being at low risk, not having any symptoms, the fear of testing positive, and structural considerations, notably the need to return to clinics for results, cost, time constraints, and inconvenience of attending clinics (19, 20). It has been suggested that rapid HIV testing may reduce some of these barriers and facilitate more frequent testing in high risk population groups (21, 22).

In previous survey research, it has been reported that 75% of previously tested and 65% of untested GBM in Australia would be more likely to test, and test more frequently, if results were available at their initial consultation (23). In another survey, almost all men who had a rapid test reported that they would have a rapid test again, while more than half said they would test more often with rapid testing (24). Further, 99% of men in that sample were satisfied with the overall process of rapid testing.

Rapid HIV testing models may be ideal for non-clinical or community settings, with the potential to reach GBM who do not usually access traditional clinical services (25). Notably, it has been reported that community-based rapid HIV testing services have attracted a high proportion of GBM who have never tested before for HIV (26). In Barcelona, the 'Checkpoint' rapid HIV testing service showed an increase in the annual number of tests performed, as well as new HIV diagnoses (27).

5.5 Rapid HIV testing in Australia

Although rapid HIV tests had been routinely used in developed and developing countries through the 1990s and 2000s, the Australian National HIV Testing Policy did not at that time support their use in Australia (28). In 2011, a review of this policy introduced support for their use in Australia among populations with high HIV prevalence, notably GBM (29).

Starting in October 2011 and lasting for 20 months, the Sydney Rapid Test Study introduced rapid HIV testing to four publicly-funded sexual health clinics in Sydney, NSW (14). Eligible GBM could receive one rapid test only in the study period. The study evaluated the performance of the Alere Determine HIV 1&2 Ag/Ab Combo assay, as well as staff and patient acceptability to the test (14, 24). The Determine HIV Combo has an incubation time of 20 minutes (the duration from application of specimen to result) and is the first rapid HIV test containing both HIV antibody and antigen

components. Use of this test was approved by the Therapeutic Goods Administration (TGA) in December 2012 (under certain conditions) (30).

Following the Sydney Rapid HIV Test Study, the NSW Rapid HIV Testing Evaluation Framework was established to expand availability of rapid testing to clinical and community-based testing sites across NSW, and allow repeat rapid testing to reflect real world use. This study introduced the Trinity Biotech Uni-Gold HIV 1/2 assay, which has an incubation time of only 10 minutes. Some services also utilised the OraSure OraQuick Advance Rapid HIV-1/2 Antibody Test, which has an incubation time of 20 minutes and can be used with either finger-prick whole blood or oral fluid samples. Both these assays were registered by the TGA in June 2015 which was after the period of this study (31, 32).

5.6 Key attributes of rapid tests

The World Health Organization Sexually Transmitted Diseases Diagnostics Initiative (SDI) has developed what is known as the 'ASSURED' criteria to help determine if tests address disease control needs: Affordable, Sensitive, Specific, User-friendly, Rapid and robust, Equipment-free, and Deliverable to end-users (33). In the context of rapid testing for HIV, sensitivity refers to the proportion of people with HIV who have a reactive rapid test result and it measures a test's ability to correctly identify people with HIV. Specificity refers to the proportion of people who do not have HIV who have a negative rapid test result.

6. Rapid test program description

Through the NSW Rapid HIV Testing Evaluation Framework, rapid HIV testing was offered to GBM from June 2013 to December 2014 at a range of clinical and community-based testing sites in Sydney and regional NSW. Some services took the initiative to establish rapid testing programs independently and utilised the Framework to access rapid tests and quality management systems.

6.1 Rapid testing sites

Rapid testing for HIV was offered at 22 sites during the 19-month study period, which included:

- 14 publicly-funded sexual health clinics, specifically:
 - Five in inner-city Sydney, four in metropolitan Sydney, two in outer-metropolitan Sydney, and three in regional NSW (Lismore, Byron Bay and Newcastle)
- 1 inner-city Sydney general practice clinic with a high caseload of GBM patients
- 3 permanent community-based peer-led HIV and STI testing sites in inner-city Sydney
- 1 regular clinical outreach clinic in a community organisation office in Newcastle
- 1 fixed-term ('pop-up') community-based HIV and STI testing service on Oxford Street, Darlinghurst during the 2014 Sydney Gay and Lesbian Mardi Gras (February – March 2014)
- 1 fixed-term outreach HIV and STI testing service at a metropolitan sex on premises venue
- 1 outreach HIV and STIs testing event at a gay and lesbian social venue in a regional city (Newcastle)

A description of the rapid testing sites and the dates they commenced rapid testing are included in Table 1. Sites reviewed their clinic pathways in the context of introducing a 10 minute incubation rapid test in order to incorporate rapid testing into a single client consultation. In most cases, sites adopted a delivery pathway that avoided sending clients back to the waiting room during incubating, which had been the practice during the longer incubation of the Alere Determine Combo test.

During the study period new community based testing sites were established by ACON and its partners (Sydney Sexual Health Service, Royal Prince Alfred Sexual Health Centre, the Kirketon Road Centre and the Australian Federation of AIDS Organisations). The Ministry of Health therefore advised that rapid test support (supply, quality assurance) be prioritised to these sites and cease at some services conducting fewer rapid tests. Thus, a small number of services ceased using Trinity Uni-Gold half way through the evaluation.

6.2 Staffing models

The staffing models for rapid testing varied by site and involved a range of staff including doctors, nurses and peer educators (see Table 1). Models of rapid test process and staffing included:

- **Publicly-funded sexual health service**
 - Express sessions: Asymptomatic patients provided risk assessment data via computer kiosks. Nursing staff performed rapid testing and collected specimens for HIV/STI laboratory testing.
 - General sessions: Rapid testing was conducted by a range of medical and nursing staff who also collected specimens for HIV/STI laboratory testing
- **General practice clinic**
 - Patients consulted with a general practitioner (GP) before a rapid test was performed by practice nurse. Pathology staff collected specimens for HIV/STI laboratory testing.
- **Community sites**
 - A mixed staffing model was developed, which involved both trained peer-workers and sexual health clinicians performing rapid testing. Peer-workers also collected behavioural information and discussed rapid testing and other pathology results. Sexual health clinicians collected specimens for HIV/STI laboratory testing. This peer-led model of service delivery was developed by ACON in partnership with the Sydney Sexual Health Centre, Royal Prince Alfred Sexual Health Centre, Kirketon Road Centre, Western Sydney Sexual Health Centre and the Kirby Institute.

6.3 Operating hours and charges

Service hours of operation are detailed in Table 1. The hours of operation and number of hours rapid testing was offered varied widely between services, with testing offered for only 3.5 hours per week in some services, to over 50 hours per week in others. At some services, rapid testing was not available at all times and the type of consultation during which rapid testing was available (i.e. appointment, walk-in or both) also differed between services. Although rapid HIV testing was provided without cost by all services, the participating general practice clinic did charge a standard consultation fee.

6.4 Confirming and delivering results

Services used different methods to deliver laboratory confirmed HIV negative results, which included short-message-service (SMS), via telephone, in-person or some combination of these options (see Table 1). Where rapid HIV test results were reactive, half of participating sites had arrangements with laboratories for fast-track or next-day availability of results by 4th generation immunoassay. Repeatedly reactive 4th generation immunoassays were confirmed using Western blot testing. Delivery of confirmed HIV-positive results were handled in accordance with existing protocols at participating services.

Table 1 Description of service delivery model at services offering rapid HIV testing

Service	Start date	Staff*	Second RHT reader	Days/Week	Hours/week	RHT availability	RHT cost	Consultation	Lab test result delivery	Lab result for reactive RHT
Sexual health services										
Sydney	19/6/2013	N/D/PE	Experienced staff exempt	6	45	Limited times	No	App/walk-in	Phone/SMS	Normal
Western Sydney	6/6/2013	N/D	Always	5	40	All clinic sessions	No	App/walk-in	Phone/SMS	Fast-track
Royal Prince Alfred	8/8/2013	N/D	When available	5	50 [†]	All clinic sessions	No	App/walk-in	Phone/SMS/In-person	Next day
Albion Centre	30/7/2013	N/D	Always	6	50	All clinic sessions	No	App/Walk-in	Phone/SMS/In-person	Same day/next day
Lismore	8/8/2013	N/D	Always	5	28	All clinic sessions	No	App/walk-in	Phone/In-person	Fast-track
Byron Bay Hospital	27/5/2014	N/D	Always	1	6	All the times	No	App/walk-in	In-person	Fast-track
Liverpool	5/9/2013	N/D	Always	5	38	All clinic sessions	No	App/walk-in	Phone	Fast-track
Campbelltown	25/9/2013	N/D	Always	2	17		No	App/walk-in	Phone	Fast-track
Nepean	27/8/2013	N/D	Experienced staff exempt	4	24	Limited times	No	App/walk-in	Phone	Next day
Clinic 16 (Royal North Shore)	19/6/2013	N/D/IC**	Always	5	24	Limited times	No	App only	Phone/SMS/In-person	Fast-track
Kirketon Road Centre	27/3/2014	N	When available	6	40	All clinic sessions	No	App/walk-in	Phone/SMS/In-person	Fast-track
Clinic 180	15/4/2014	N	When available	6	30.5	All clinic sessions	No	App/walk-in	Phone/SMS/Email/In-person	Fast-track
IBAC	12/6/2013	N	Experienced staff exempt	5	16	Limited times	No	App only	SMS	Fast-track
Pacific Clinic (Newcastle)	2/8/2013	N/D	Always	5	4	All clinic sessions	No	App only	SMS	Fast-track
Service	Start date	Staff*	Second RHT reader	Days/Week	Hours/week	RHT availability	RHT cost	Consultation	Lab test result delivery	Lab result for reactive RHT
General practice										
Taylor Square Private Clinic	8/8/2013	N/D	Always	5	52.5	Limited times	Consult fee only	App only	Phone/In-person	Fast-track
Community-based and outreach services										
ACON-Hunter	13/8/2013	N/D	Always	2	9	All clinic sessions	No	Walk-in only	Phone	Fast-track
Aarows (sex on premises)	24/6/2014	D/PE	Experienced staff exempted	2/ Month	8/ month	All outreach sessions	No	Walk-in	Phone/SMS	Next day
a[TEST] Surry Hills	10/7/2013	N/PE	Always	2	7	All service sessions	No	App/walk-in	Phone/SMS/In-person	Next day
a[TEST] Kings Cross	26/7/2014	N/PE	Always	1	4	All service sessions	No	App/limited walk-in	Phone/SMS/In-person	Next day
a[TEST] Newtown	10/11/2013	N/PE	Always	2	8	All service sessions	No	App/walk-in	Phone/SMS/In-person	Next day
Fixed term and one-off services										
Newcastle	20/10/2014	N/D/S/R	Always	One-time (4 hrs)		Once off	no	Walk in only	Phone	Normal
a[TEST] Oxford Street***	6/2/2014	N/PE	Always	6	48	All service sessions	No	App/walk-in	Phone/SMS/In-person	Next day

* C=counsellor; D=doctor; N=nurse; PE=peer educator; S=social worker; R=receptionist

** Counselling staff only read RHT results, did not perform tests

***Fixed term service, concluded on 26/03/2014

6.5 Training and Quality assurance

The Kirby Institute in partnership with St Vincent's Centre for Applied Medical Research developed a quality management system to support high quality rapid testing at study sites. Elements of the quality management framework included:

- The development of a training curriculum and standardised training and competency assessment package, designed in collaboration with the Australasian Society for HIV Medicine (ASHM) and the National Reference Laboratory (NRL);
- The development of an Operations Manual and Standard Operating Procedures for performing rapid HIV testing;
- Centralised rapid HIV test procurement and storage;
- Batch-release quality control testing of rapid HIV test kits by Sydpath Laboratory at St Vincent's Hospital
- Regular quality control testing of rapid HIV test kits at study sites; and
- Ongoing liaison with sites to monitor rapid HIV test results and test batch performance.

6.6 Choice of rapid HIV test for evaluation

Following the evaluation of the Alere Determine Combo rapid HIV test, which has an incubation period of 20 minutes, participating services sought to evaluate a rapid HIV test with a shorter incubation period and higher specificity to reduce the likelihood of false reactive test results. For these reasons, the Steering Committee selected the Trinity Uni-Gold rapid HIV test (Trinity Biotech Plc, Bray, Co. Wicklow, Ireland), which has a ten minute incubation period and high specificity according to the product information (34).

6.7 Test approvals and supply

The Trinity Uni-Gold rapid HIV test was approved in June 2015 by the TGA for use in Australia. The approval to supply the Trinity Uni-Gold assay during the evaluation framework was obtained from the TGA under the Clinical Trial Notification Scheme. The Kirby Institute staff worked with rapid HIV testing site coordinators to monitor stock levels and expiry dates of rapid HIV tests kits to ensure sites remained stocked with kits. In addition to supplying rapid HIV test kits, the Kirby Institute supplied lancets and pipettes for use in administration of rapid tests.

6.8 Rapid testing procedures

6.8.1 Eligibility

Men for whom HIV testing was indicated were eligible to participate in rapid testing study if they were:

- Aged 18 years or older,
- Reported sexual contact with other men,
- Willing to provide a blood specimen by venepuncture for parallel laboratory HIV serology, and
- Able to provide informed consent.

Further, men were excluded from participation if they were known to be HIV positive or could not speak English. Service staff determined eligibility, and obtained written informed consent. Participants were eligible for multiple rapid HIV tests over the course of the study.

6.8.2 Rapid test administration

Rapid HIV tests were administered by service staff and were typically part of a comprehensive sexual health screen. A lancet and pipette were used to collect a finger-prick sample and apply it to the rapid test cassette, which was incubated in a nearby area to avoid distraction for either staff or patients, and to facilitate interpretation and confirmation. This process was deemed important where rapid HIV test results needed careful interpretation and discussion between two test readers. Rapid HIV test results were given to the patient at the end of the consultation, following collection of specimens for STI testing and parallel HIV serology.

6.8.3 Reactive rapid test results

Where rapid HIV test results were reactive, patients were offered counselling support while confirmatory testing was performed. In the event of a confirmed HIV diagnosis, patients at sexual health clinics or at the general practice clinic were recalled, and linked to care consistent with standard practice. At community-led testing services, patients were referred to care at either a sexual health clinic or private GP.

7. Governance and communication

A study steering committee met once every six months during the course of the study. The steering committee provided advice on the development and revision of study procedures and the study protocol, advice on the content and authorship of publications, and assisted with site engagement.

Over the course of the study, preliminary findings were presented at a number of in-service training and information sessions at participating clinics, HIV sector forums and conferences. Also, quarterly data reports were submitted to the NSW Ministry of Health. These reports included data on the number of rapid HIV tests performed, HIV diagnoses and rapid testing, and patient HIV testing history and behavioural risk.

8. Evaluation methods

8.1 Aims

A framework was established to evaluate rapid testing for HIV, which spanned a period from January 2013 to December 2014. The major objectives of this evaluation were to:

1. Describe HIV testing models adopted across settings
2. Assess the feasibility of rapid HIV testing across settings
3. Assess client acceptability of new (rapid) testing models across settings
4. Assess the performance of the Trinity Uni-Gold rapid HIV test
5. Assess the cost of the rapid HIV testing model compared with standard practice
 - a. Determine the cost per infection detected via the rapid HIV testing model
6. Assess the characteristics of men undergoing rapid testing across settings
7. Assess the impact of rapid HIV testing on:
 - a. HIV testing frequency (average number of tests in 12 months)
 - b. Interval between tests (average days between HIV tests)
8. Assess the impact of marketing initiatives to promote rapid HIV testing

8.2 Study data

A mixed methods approach was adopted for evaluation including clinical data and surveys of patients and staff involved in rapid testing.

Test results from rapid HIV and laboratory testing

The number of rapid HIV tests performed, rapid HIV test results and parallel laboratory HIV screening test (4th generation immunoassay) results were collected directly from participating clinics on a quarterly basis. For patients with reactive 4th generation HIV immunoassay results, de-identified laboratory HIV screening, specimens for confirmatory and supplementary testing were collected along with some basic HIV monitoring information. Specifically, results were collected from: 4th generation combination HIV 1/2 antigen/antibody immunoassays, p24 antigen immunoassays, HIV 1/2 antibody immunoassays, Western blots, CD4 cell count tests, and HIV viral load tests.

Clinical data

Using an established sexual health surveillance network known as 'ACCESS' (35), de-identified data were collected from participating services, which included patient demographics (e.g., age, home postcode), rapid and conventional HIV tests results, previous HIV tests, and behavioural risk details. These data were collected for the rapid testing period and an equivalent time period prior to the introduction of rapid HIV testing.

Site details

A checklist was completed by rapid testing site coordinators at participating services to collect data on clinic operating hours, changes in operating hours, activities to promote rapid HIV testing, rapid HIV test procedures, staff roles in relation to rapid HIV testing, methods for client appointments (walk-in/appointment), methods for delivering HIV test results, and arrangements with laboratories for confirmation of samples from patients with reactive rapid HIV test results.

Patient survey

From August and October 2014, a survey of patients who had a rapid HIV test was conducted to assess the acceptability of rapid HIV testing among GBM at five services: two inner-Sydney community sites, one inner-Sydney general practice clinic, one inner-Sydney sexual health clinic and one suburban Sydney public sexual health clinic. Survey questions were adapted from a client survey conducted in the Sydney Rapid HIV Testing Study (14) and collected information on satisfaction with rapid HIV testing procedures, knowledge and beliefs about rapid HIV tests, reasons for (rapid) HIV testing, and willingness to pay for rapid HIV tests (see Appendix A). The survey was approved by the Human Research Ethics Committee of St. Vincent's Hospital and the ACON Ethics Committee.

Patients were eligible to participate if they were aged 18 years or older and consented to receive a rapid HIV test. Participation in the survey was optional. Patients were invited to complete the self-administered paper-based survey at the end of their consultation, except in the case of the private general practice clinic, where some patients partially completed the survey while waiting for test results. Patients who had received reactive rapid HIV test results were not invited to complete the survey. Recruitment continued until the target sample size of 350 was reached, although a total of 369 men participated in the survey.

Stocktake of social marketing activities

Information was also collected about any activities undertaken to promote rapid HIV testing, including social marketing, advertising campaigns, and media engagement. Data were provided by ACON, the Australian Federation of AIDS Organisations, the NSW Ministry of Health, and the local health districts of Sydney and South East Sydney.

Data for cost analysis

Five rapid testing sites that represented a range of testing models were included in a separate cost analysis, specifically an inner-Sydney sexual health clinic, a suburban sexual health clinic, two inner-Sydney community sites, and an inner-Sydney general practice clinic. The calculations included all costs relating to staffing, delivery of rapid HIV testing, and laboratory HIV/STI testing. Additional data on leasing and set-up costs were collected for community sites.

The cost of staff wages in sexual health services was estimated using data from the sites with regard to their staffing profile, and from NSW State Awards for staff working in the public healthcare system. Data on staff wages for staff working at the community sites were sourced from the service directly, while data relevant to general practice were sourced from the Medicare Benefits Schedule, on rebates for patient consultations that would be applicable to the delivery of rapid HIV testing.

Data on the cost of rapid testing kits were sourced from Kirby Institute records and from the rapid test manufacturers, which incorporated the cost of the rapid test devices, lancets, capillary tube pipettes and buffer solution. The cost of laboratory-based HIV/STI testing was sourced from the sites and from public and private laboratories, and incorporated venepuncture specimen collection, couriers, labour, reagents, consumables and specimen storage. Similarly, the cost of STI testing incorporated specimen collection and processing in the laboratory.

8.3 Data organisation and analyses

Using the clinical data from 1/7/2011 to 31/12/2014, GBM patients were categorised in four groups (see Figure 1):

1. Rapid testers: patients who received rapid HIV testing during the study period
2. Control and comparison groups
 - a. Concurrent: patients who did not receive rapid HIV testing during the study period
 - b. Historical/before: patients who attended a service prior to the study for a period equivalent to the availability of rapid HIV testing. Note: this includes men who may have received testing from one of the four services in the Sydney Rapid Test Study
 - c. Paired: patients who attended prior to and during the study period (within comparison)

We included all three control groups to increase the validity of the findings, as a randomised controlled trial (RCT) design was not conducted. The reason a RCT was not selected was because it was an implementation study, and also rapid testing has already been demonstrated to be highly acceptable to men previously (24), so withholding rapid testing from men was considered unethical.

Analyses that utilised clinic data focussed on selected sites where complete patient consultation data was available. These sites contributed 92% of rapid tests done. Among patient groups, the following outcomes were calculated:

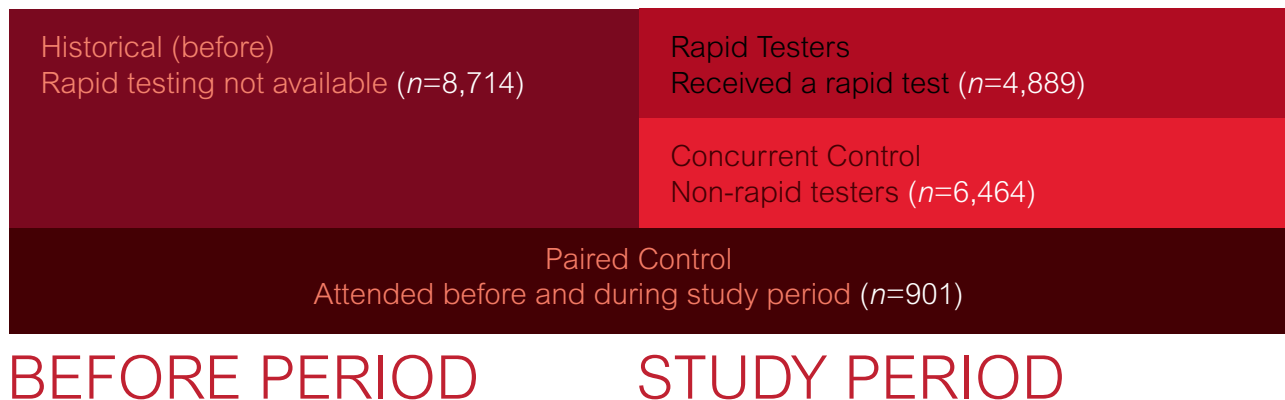
3. Testing uptake: proportion of HIV tests in the study period that were rapid tests
4. Test frequency: mean (average) number of tests per person during a 12 month period (October 2013 - September 2014) when all study sites in the analysis were operating, compared to a 12 month period before rapid testing commenced (July 2011 - June 2012)
5. Inter-test interval: mean (average) number of days between HIV tests

Given the staggered nature of site participation, testing frequency was calculated for the 12 months during which all sites were active (October 2013 - September 2014). Outcomes were stratified by site type (sexual health service, general practice clinic, and community-based), age group, and sexual risk behaviour (high risk and other). At sexual health services and community sites, high risk was defined as either more than five partners in the past three months or more than 20 partners in the past 12 months. At the general practice clinic, high risk was defined as more than ten partners, or any unprotected anal sex outside of a relationship in the past six months.

Independent sample t-tests, paired t-tests and Chi-square analyses were used to assess differences in outcome measures either across study sites or between comparison groups. A backwards stepwise multiple logistic regression was also undertaken to determine if rapid testing was independently associated with a high rate of testing for HIV. The outcome variable was more than two HIV tests during the study period and factors such as patient demographics and sexual risk behaviours were included in the analysis.

For all analysis, significance was determined by a p-value of less than 0.05. All analyses were performed using STATA version 12 (36).

Figure 1 Overview of study evaluation groups before and during the rapid HIV testing period (excluding community-led services)



8.3.1 Rapid test performance analysis

Specific to evaluation of the Trinity Uni-Gold rapid HIV test, the following measures were also calculated:

1. Sensitivity: The proportion of people with a true HIV infection (as confirmed by laboratory testing) with a reactive rapid HIV test result
2. Specificity: The proportion of people without HIV infection (as demonstrated by laboratory testing) with a nonreactive rapid HIV test result
3. Positive predictive value: The proportion of reactive rapid HIV test results confirmed as true HIV infections by laboratory testing
4. Negative predictive value: The proportion of nonreactive rapid HIV test results confirmed as negative by laboratory testing

Laboratory confirmation of positive HIV results was conducted in accordance with the Australian national case definition (37). Performance of the Trinity Uni-Gold rapid HIV test was assessed overall, and separately in men who were classified as having acute or established HIV infections. Results of laboratory tests were used to classify men diagnosed HIV positive as acute or established infections. A classification system was developed to characterise the specimens where laboratory serology confirmed a new HIV diagnosis.

Acute HIV infections needed to meet the following criteria:

- Reactive 4th generation immunoassay;
- Negative or indeterminate Western blot (WB) pattern

Established HIV infections needed to meet the following criteria:

- Reactive 4th generation immunoassay;
- Positive Western blot

8.3.2 Acceptability analysis

Frequencies and proportions for each response category of the patient survey were calculated. The analysis compared these responses overall and by service type (sexual health service, general practice clinic, and community-based), sexual risk behaviour (high risk, other), and time since last HIV test (within 2 years, >2 years or never tested). Chi-square analyses were used to assess proportional differences in responses between strata.

8.3.3 Cost analysis

The cost per patient tested and cost per HIV positive case diagnosed were calculated on the basis that patients would only have laboratory HIV testing conducted if their rapid test result was reactive. A 'program' cost for delivering rapid HIV testing was calculated, which incorporated all these costs using the probability of specific outcomes of rapid HIV testing occurring (i.e. non-reactive, false reactive and true reactive). Calculations in this report are based on costs of all components as at 10 October 2014. Data on the performance characteristics of the rapid tests and the HIV positivity among men tested at the sites were used in the calculation of program costs. Full details on the cost analysis can be found in the *Rapid HIV Testing Evaluation Framework Cost Analysis Report* (38).

8.4 Ethical oversight

The conduct of this project was reviewed and approved by the UNSW Human Research Ethics Committee (#HC12351) and the committee of St Vincent's Hospital (HREC/11/SVH/16). Local governance approval from relevant local health districts was granted for all publicly-funded services.

9. Results: process

The key findings of the process evaluation are as follows:

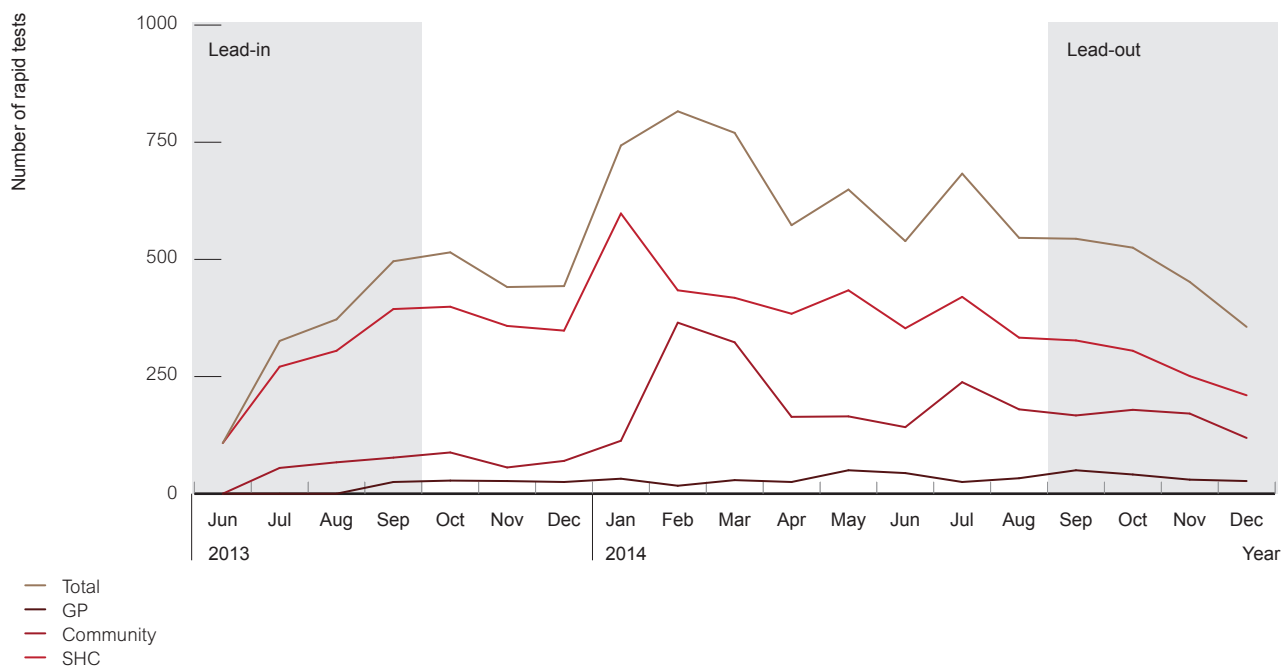
- **Feasibility:** Between June 2013 and December 2014, a total of 10,793 rapid HIV tests were conducted across 22 participating sites.
- **Uptake** of rapid testing was highest in community-based peer-led services (~100%) utilising a rapid HIV testing service model, and lowest in the general practice clinic (18%). Men undergoing rapid testing were more likely to be high risk than men who didn't have rapid tests. At community services, 19% of men had never tested previously.
- **Acceptability** of rapid testing among GBM was high across a range of community and clinical sites
- **Test performance:** Of the 10,793 tests, 94 were new HIV diagnoses (0.9%); 0.9% at the community sites, 1.4% at the GP clinic and 0.8% at the sexual health clinics (these were not statistically different).
- Over a third of HIV diagnoses (39.4%) were acute infections
- Overall, the Trinity Uni-Gold rapid HIV test accurately reflected the HIV status of 998 of every 1,000 patients (99.8%)
 - The test demonstrated very high specificity (99.9%), returning only seven false positives
 - Test sensitivity was very high in established infections (98.2%; 1 of 56 specimens from men with established infections was false negative on Uni-Gold) but lower in acute infections (56.8%; 16 of 37 specimens from men with acute infections were false negative on Uni-Gold)
- **Cost:** Conducting a rapid test for HIV using the Trinity Uni-Gold cost \$9.70 compared with \$12.98 for conventional serology. The cost of a rapid test accounted for 5 – 9% of the total cost of a sexual health screen.
- The total cost of offering rapid testing was lower in services where peer-workers and enrolled nurses conducted the testing.

9.1 Feasibility and uptake of rapid HIV testing

For the following sections, we used data from the ACCESS project as it contains the denominator of total HIV tests needed to calculate uptake. As not all sites at the time of this analysis were participating in the ACCESS project, the data below relates to 9,897 of 10793 (91%) rapid tests in the study.

From June 2013 to December 2014, a total of 9,897 rapid HIV tests were performed at the selected sites for 7,618 unique clients (median age: 31 years, interquartile range [IQR]: 25-38) with an average of 521 tests conducted per month (Figure 2). The 19-month study period includes a four month lead-in and three month lead-out period. Testing was also subject to seasonal variation, notably an annual increase in HIV testing during the summer months of January and February.

Figure 2 Number of rapid HIV tests conducted during June 2013 – December 2014, by month and site type



NB: Oxford Street community-based shop-front service operated from 6/2/2014 – 26/3/2014, during which a[TEST] Surry Hills was closed
 NB: Operating hours at a[TEST] Surry Hills increased from 7 to 8 hours per week from April 2014; operating hours at a[TEST] Newtown increased from 3.5 to 8 hours per week from March 2014

The proportion of HIV tests that were rapid tests was highest at the community-based peer-led rapid HIV testing specialist services (~100%) and lowest in general practice (18%; Table 2), reflecting differences in service delivery models. Uptake was highest in younger patients and lowest in GBM aged 40 years and older.

Table 2 Proportion of all tests for HIV during the study period that were rapid, by site type, age group and sexual risk*

		Lab tests		Rapid tests		p
		n	%	n	%	
Site type	SHC	11,239	62.8	6,650	37.2	<0.001
	GP	2,397	82.5	508	17.5	
Age group	<30 years	5,106	62.8	3,023	37.2	<0.001
	30 – 39	4,371	64.8	2,380	35.3	
	≥40 years	4,159	70.3	1,755	29.7	
Sexual risk	High risk*	5,298	61.6	3,306	38.4	0.001
	Other	5,941	64.0	3,344	36.0	
Overall		13,636	65.6	7,158	34.4	

*High risk= >5 partners in 3 months; >20 partners in 12 months

Patient risk categorisation differed by service type and if a rapid test was received or not. A greater proportion of men attending sexual health and general practice clinics who received a rapid test were classified as high- risk, than those who did not receive a test and also than men who attended community-based services (42% vs 30% vs 26%, $p < 0.001$; Table 3). These data however need to be interpreted with the following **caveats**:

- I. The number of sexual partners is a crude indicator of risk, which does not consider condomless sex with casual partners as this information was not routinely collected by participating services. It is possible a higher proportion of men attending the community sites reported condomless anal sex with casual partners which were not collected by the sites.
- II. When comparing the reported risk across services, any differences can be influenced by the clinical and demographic characteristics of the populations. For example, men attending sexual clinics were more likely to be symptomatic, suggesting recent high risk behaviour. Conversely, community-based services triaged symptomatic men or men presenting following contact tracing to sexual health clinics, which may therefore underestimate the proportion of 'high risk' men attending these services.

Of note, at the community-based rapid testing services close to 20% of men who received a rapid test reported no previous HIV test. Similar clinic-based data were not available from sexual health clinics in order to compare; Table 3). Among men in the patient survey, 13.8% of men reported no previous HIV test, compared to 1.4% at general practice and 4% at sexual health clinics. More information on participant details can be found in Appendix B.

Table 3 Sexual risk categorisation and HIV testing history among service attendees, by site type

	Sexual health & general practice		Community clinics*	X ² (p)
	Received rapid test			
	Yes	No		
Risk profile				
High risk	2,030 (42%)	1,891 (30%)	697 (26%)	253.69 (<0.001)
Other risk	2,859 (58%)	4,479 (70%)	1997 (74%)	
HIV testing history				
<12 months	._#	._#	1,676 (56%)	319.50 (<0.001)
>12 months	._#	._#	762 (25%)	
Never tested	._#	._#	574 (19%)	

* Patients not uniquely identified within community services

Data not available

9.2 Patient acceptability of rapid testing models

A total of 369 men completed the patient survey, of whom 151 (41%) were recruited at sexual health clinics, 145 (39%) at community services, and 73 (20%) at the general practice clinic. The median age of participants was 30 years (IQR: 25-38), and the majority lived in Australia (94%), identified as gay (89%), had been tested for HIV in the 12 months prior to participation (76%), and had previously experienced a rapid HIV test (60%). More information on participant details can be found in Appendix B.

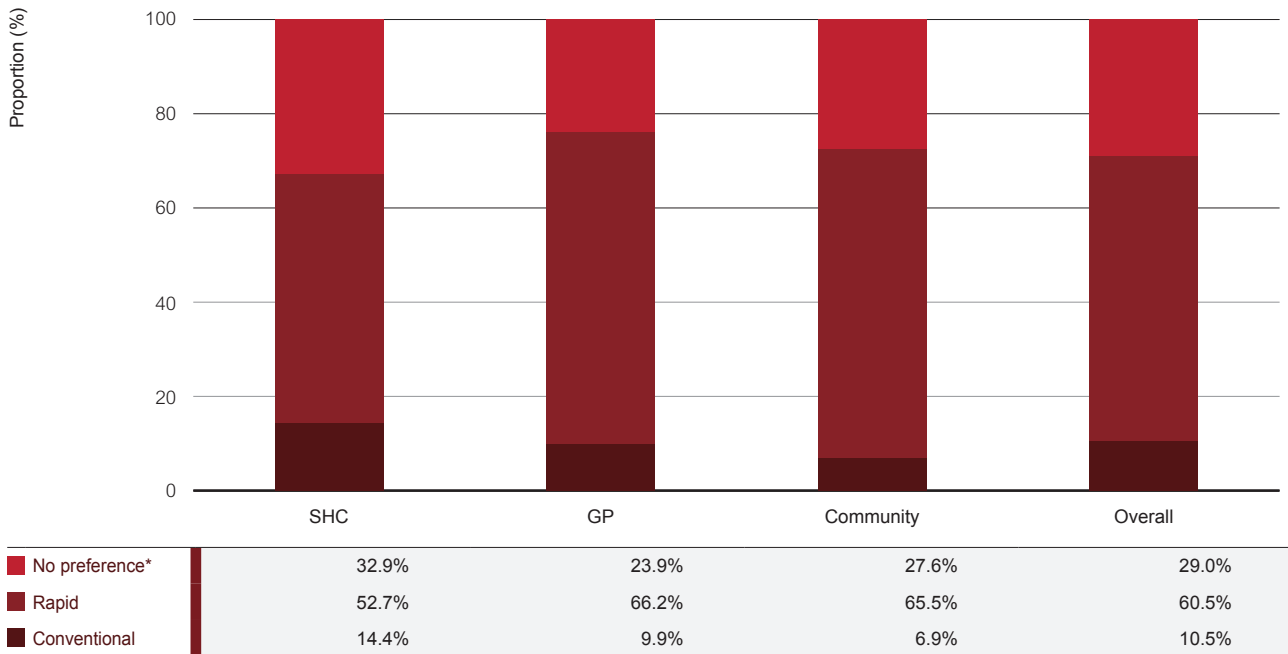
9.2.1 What was the level of satisfaction with rapid HIV testing?

The level of satisfaction with different aspects of rapid HIV testing experience was generally very high, which included the pre and post-rapid test discussion, the rapid test conduct itself, and the length of wait for results (>90% of participants satisfied or very satisfied overall). The majority of men (87%) also reported that they were satisfied or very satisfied with the comfort of the finger-prick collection. The majority of participants (71%) reported no concerns with the accuracy or reliability of rapid testing for HIV, and nearly all indicated a willingness to be rapid tested in the future and recommend it to others (>99%). Participant response frequencies and stratifications can be found in Appendix B.

9.2.2 Would men prefer a rapid test for their next HIV test?

The majority of men (61%) said they would prefer a finger-prick or oral-swab rapid test for their next HIV test, which compared with 21% of men who expressed interest in a conventional test and 29% who indicated no preference. The proportion of men who reported a preference for rapid testing was similar across services (Figure 3, $p=0.098$), as well as by testing history ($p=0.323$) and risk classification ($p=0.316$). As men who completed the patient survey had a conventional test in parallel with their rapid test, some men may have assumed that a future rapid test would also be accompanied by conventional testing.

Figure 3 Preference for next HIV test, by clinic type ($n=362$)



* Includes those who selected both 'rapid' and 'conventional' tests

9.3 Performance of the rapid test compared to lab-based testing

There were a total of 10,793 tests using the Trinity Uni-Gold rapid HIV testing, which were accompanied by parallel laboratory serology using 4th generation immunoassays. In total, 94 specimens were confirmed positive using conventional serology (0.90%, 95%CI: 0.70-1.07%). Of those 94 specimens, 77 returned a reactive result on the Trinity Uni-Gold test for an overall sensitivity of 81.9% (95%CI: 72.6-89.1%).

Among the 94 cases of confirmed HIV infection, 37 (39.4%) were classified as acute infections. Of these 37 acute cases, 21 returned a reactive result on the Trinity Uni-Gold, which means that test sensitivity for acute infections was 56.8% (95%CI: 39.5-72.9%). The remaining 57 cases were classified as established cases and of these, 56 returned a reactive result on the Trinity Uni-Gold, which means that test sensitivity was 98.2% for established infections (95%CI: 90.6-100%). Although there was one case of established HIV infection that the Trinity Uni-Gold test failed to detect, the banding pattern on the confirmatory Western blot test was suggestive of recent seroconversion. Although there were differences in the proportion of diagnoses in acute infections between testing service models, these were not statistically significant.

Of 10,699 specimens that were negative by 4th generation immunoassay, 10,692 were non-reactive on Uni-Gold for an overall specificity of 99.9% (95% CI: 99.9-100%). There were only seven false-reactive rapid HIV test results, which accounted for less than 0.01% of all tests. The positive predictive value of Uni-Gold was 91.7% (95%CI: 83.6-96.6%), which means that nine out of every ten reactive rapid test results were among patients confirmed to be HIV positive. The negative predictive value of the Trinity test was 99.8% (95%CI: 99.8-99.9%).

Overall, the Trinity Uni-Gold rapid HIV test accurately reflected the HIV status of 998 of every 1,000 patients (99.8%).

Table 4 Overall test performance results of the Trinity Uni-Gold rapid HIV test

		Reference test results		Total
		Positive	Negative	
Uni-Gold rapid test results	Reactive	77	7	84
	Non-reactive	17	10,692	10,709
	Total	94	10,699	10,793

Table 5 Test performance results of the Trinity Uni-Gold rapid HIV test in acute and established infections

		True positive reference test		Total
		Acute	Established	
Uni-Gold rapid test results	Reactive	21	56	77
	Non-reactive	16	1	17
	Total	37	57	94

9.4 Rapid HIV tests, HIV diagnoses and positive yield by site type

There were a total of 10,793 Uni-Gold rapid HIV tests performed at sites in the study. Of these, 7,198 rapid tests were performed at sexual health clinics, 3,028 at community-based peer-led sites, and 555 in general practice. There were a total of 94 new HIV diagnoses among men who had rapid HIV tests and parallel laboratory HIV serology at study sites.

The positive yield (number of HIV diagnoses as a proportion of total tests performed) was 0.9% overall. Positive yield by site type was 1.4% in general practice, 0.9% at community sites and 0.8% at sexual health clinics, with no statistically significant difference in positivity across sites. It is important to note, HIV positivity would be influenced by the frequency of testing at these different services. The data from the sexual health clinics would include a higher proportion of frequent testers.

Table 6 HIV diagnoses and positive yield by site type and overall

Site type	Number of Uni-Gold rapid HIV tests performed	HIV diagnoses			Positive yield (%) [*]	P#
		Acute	Established infections	Total		
Sexual Health Clinic	7,198	19	40	59	0.8	0.136
Community	3,028	14	13	27	0.9	0.271
GP	555	4	4	8	1.4	-
Total	10,793	37	57	94	0.9	

^{*} number of tests confirmed positive by laboratory serology as a proportion of all tests performed,
[#] compared to the GP site

9.5 Cost of rapid testing and cost per infection detected

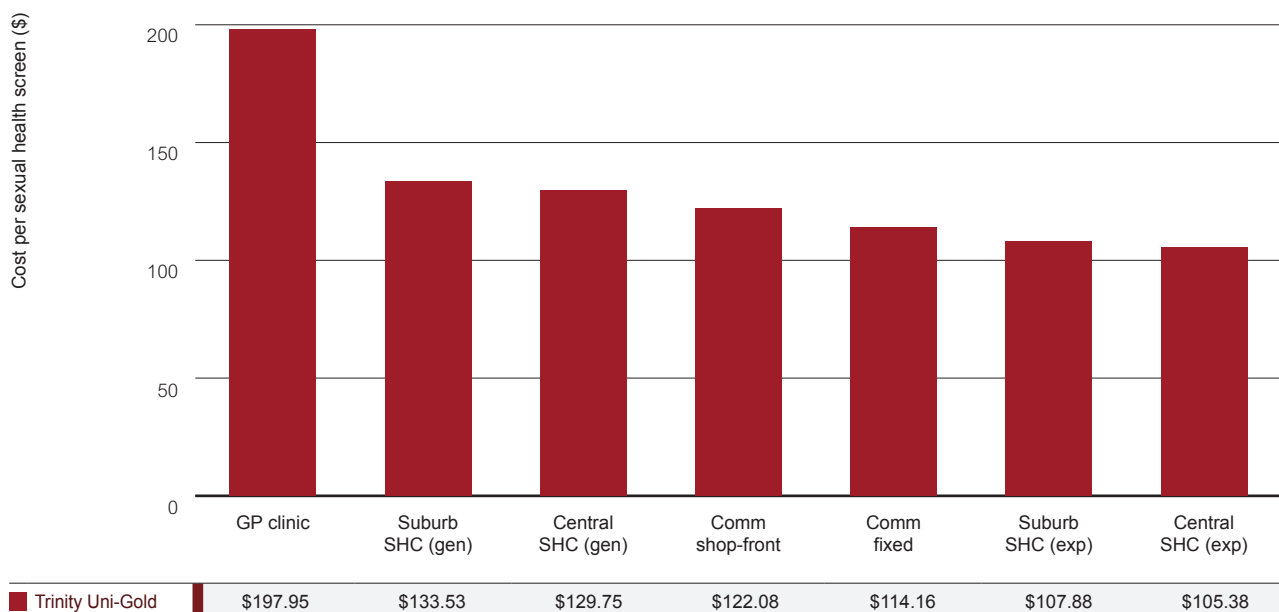
Patient willingness to pay for rapid testing

In the patient survey, more than half of respondents (58%) reported a willingness to pay \$20 or more for a rapid test, while 20% said they would forego rapid testing if there was a fee. Overall, the majority of men were willing to pay at least a nominal fee for the option of rapid testing.

The cost to the health system per patient tested

A separate report describing the cost of rapid testing has been prepared (38); this section contains only key findings extracted from this report. The cost of administering the Trinity Uni-Gold rapid HIV test was lowest in 'express' sessions at a central (\$105.37/patient) and suburban sexual health clinic (\$107.88/patient), as well as at the community sites (\$114.15 per patient in the fixed location and \$122.08 for the fixed-term shop-front site). Costs were higher at general clinic sessions of sexual health clinics (\$129.75/patient in central clinic; \$133.52/patient in suburban clinic). Finally, cost overall was highest at the general practice clinic at \$197.94 per patient (Figure 4). The total cost of offering rapid testing was lower in services where peer-workers and enrolled nurses conducted the testing.

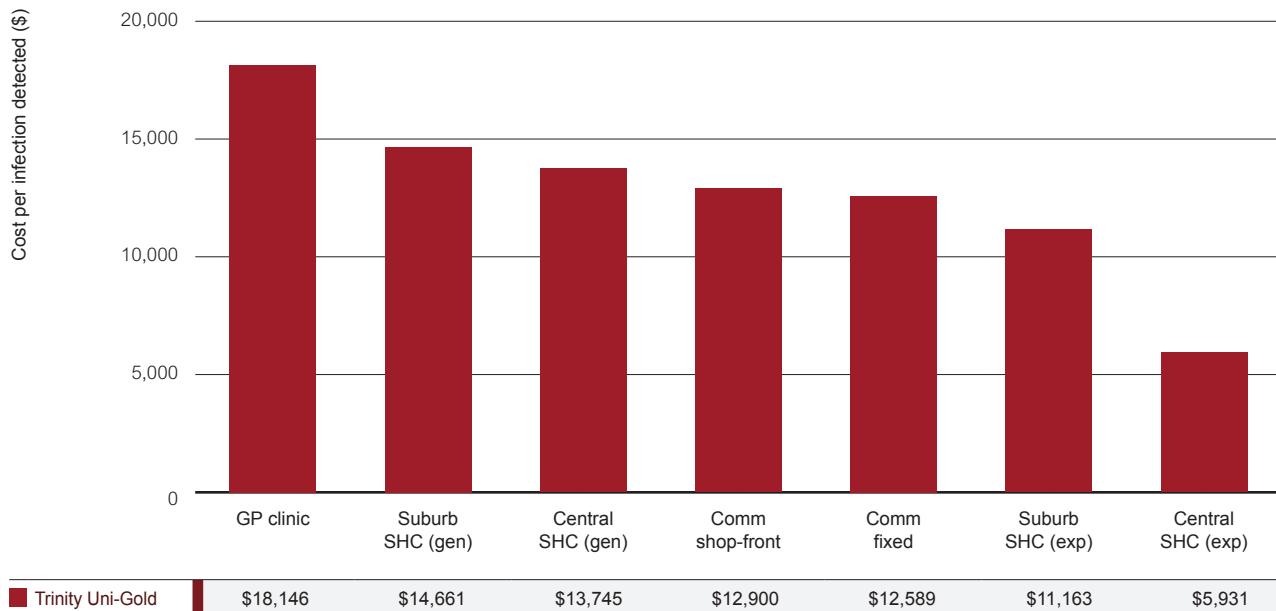
Figure 4 Cost per Uni-Gold rapid HIV test administered by site type



The cost (to the health system) per HIV-positive case

The cost per infection detected was lowest at the community-based shop-front site (\$5931.06/infection), followed by 'express' sessions of the centrally located sexual health clinic (\$11,163.00/infection), the general practice clinic (\$12,589.14/infection), general sessions of the more centrally located sexual health clinic (\$13,745.11/infection), and finally the express sessions (\$14,661.15/infection) and general sessions (\$18,145.93/infection) of the suburban sexual health clinic. Cost per infection was a function of HIV positive yield and costs per patient tested, with the highest HIV positivity observed at the community-based shop-front and general practice clinic (Figure 5).

Figure 5 Cost per HIV infection detected by site type



10. Results: impact

The key findings of the impact evaluation are as follows:

- Frequency of testing:**
 - Over three quarters of GBM said that they thought rapid testing would help them test more regularly, including 89% of men not recently tested for HIV.
 - In the rapid testing period, the mean number of HIV tests in 12 months was significantly higher (29%) among GBM who had a rapid test compared with those men who did not (1.8 tests vs 1.4 tests)
 - The increased HIV testing frequency equated to 3,324 additional tests being conducted in the rapid testing period (56% of the 5,963 tests compared to an equivalent period before)
- Impact of social marketing**
 - HIV testing in GBM increased during periods of targeted social marketing campaigns
 - Men who tested at community-based peer-led rapid HIV testing sites and the general practice clinic were more likely to report having an HIV test because of seeing promotional material, a desire to try rapid testing or having heard about rapid testing through a friend, compared to men at sexual health clinics (27% vs 10%)
 - Compared with other service types, a higher proportion of men at community sites said they tested because they saw an advertisement about sexual health check-ups (15% vs 4-10%)

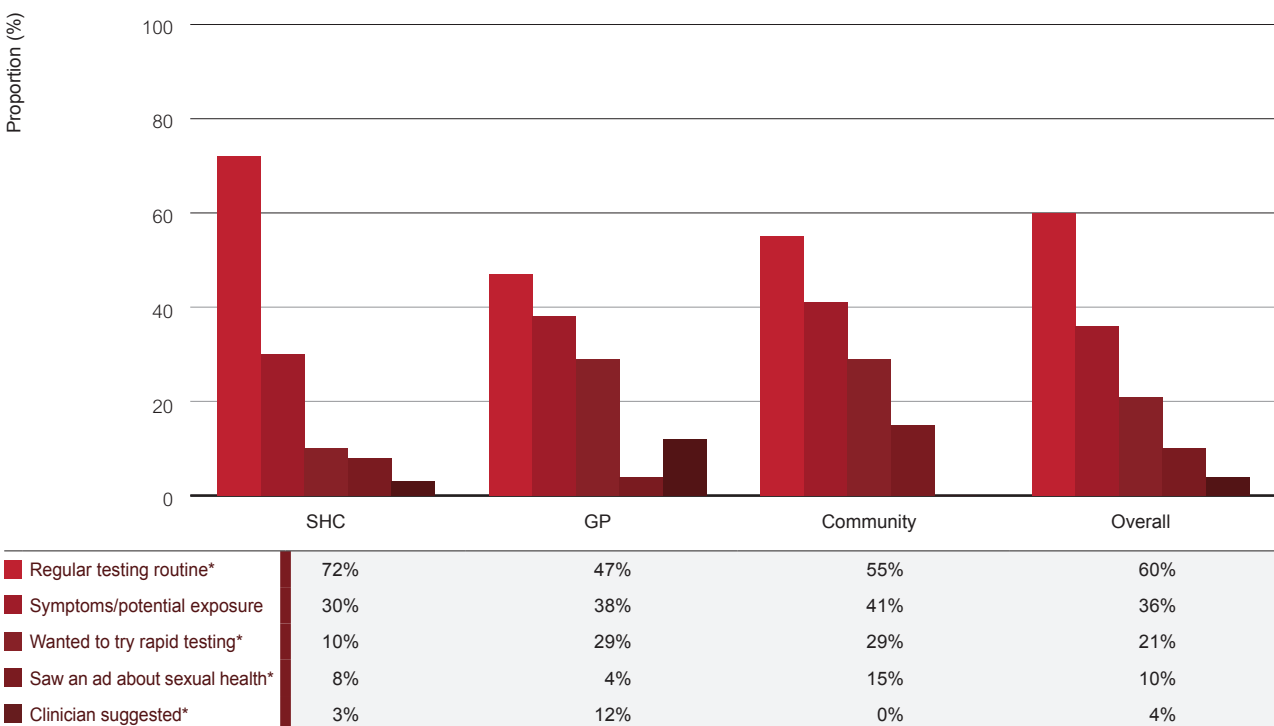
10.1 Access and demand

What were the reason(s) for having an HIV test?

The patient survey explored motivations for general HIV testing, specifically why participants had decided to have an HIV test (Figure 6). The most commonly reported reason was that the test was part of a regular routine (60%), which was highest at sexual health clinics (72%) and lowest at the general practice clinic (47%, $p < 0.001$). Notably, a higher proportion of men classified as high risk reported testing because of symptoms/potential exposure when compared to men of other risk categories (42% vs 30%, $p = 0.02$).

Compared with men at sexual health clinics, those tested at community sites and the general practice clinic were more likely to report having an HIV test because of promotional material, a desire to try rapid testing, or having heard about rapid testing through a friend (27% vs 10%, $p < 0.001$). Further, compared with other service types a higher proportion of men at community sites said they tested because they saw an advertisement about sexual health check-ups (15% vs 4-10%, $p = 0.020$). During the evaluation period, there was considerable promotion of rapid testing at community or general practice services, particularly compared to sexual health services (see Section 10.2).

Figure 6 Self-reported reasons for HIV testing among GBM, by service type ($n=369$)



NB: Participants could choose more than one response option

* Statistically significant differences between service types ($p < 0.05$)

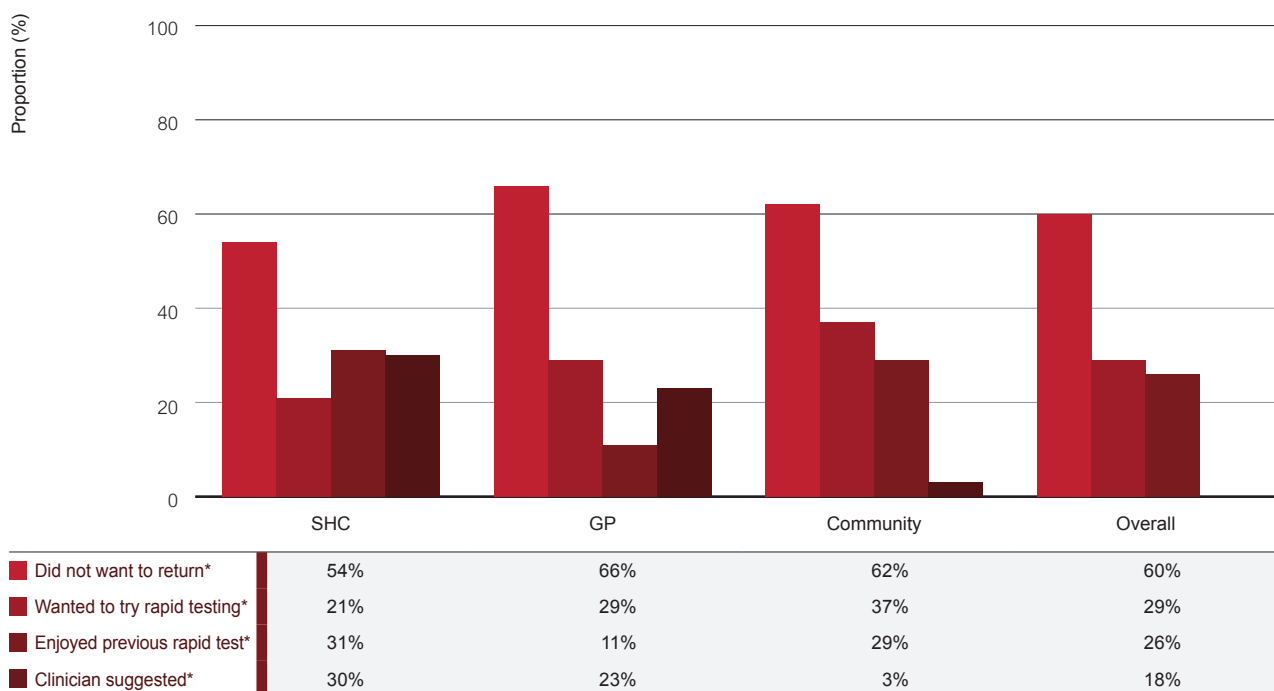
What were the reason(s) for having a rapid HIV test?

The patient survey also collected responses on motivations for rapid HIV testing (Figure 7). The most commonly reported reasons across services were that participants did not want to return for results or wanted their results immediately (60%), with no differences across sites ($p=0.20$) by testing history ($p=0.90$), or sexual risk category ($p=0.26$).

An interest in trying rapid HIV testing was also identified as a motivator for many participants (29% overall). Compared with other service models, wanting to try rapid testing was most commonly reported at community-based services (29%), and less commonly at sexual health clinics (10%, $p=0.006$). Interestingly, a desire to try rapid testing was more commonly reported by men who had not been tested for HIV in the two years prior to participation, than among those with more recent tests (53% vs 25%, $p<0.001$; Figure 8).

Previous experiences with rapid HIV testing were a motivator for some men, accounting for 31% of responses at sexual health services, 29% at community sites, and 11% in general practice ($p=0.004$). This difference is unsurprising given that sexual health services in NSW had offered rapid HIV testing for a longer period than other service types (see Section 6.1). Finally, it is worth noting that a higher proportion of men classified as 'high risk' reported they had a rapid test because the staff offered it compared to other men (24% vs 13%, $p=0.006$).

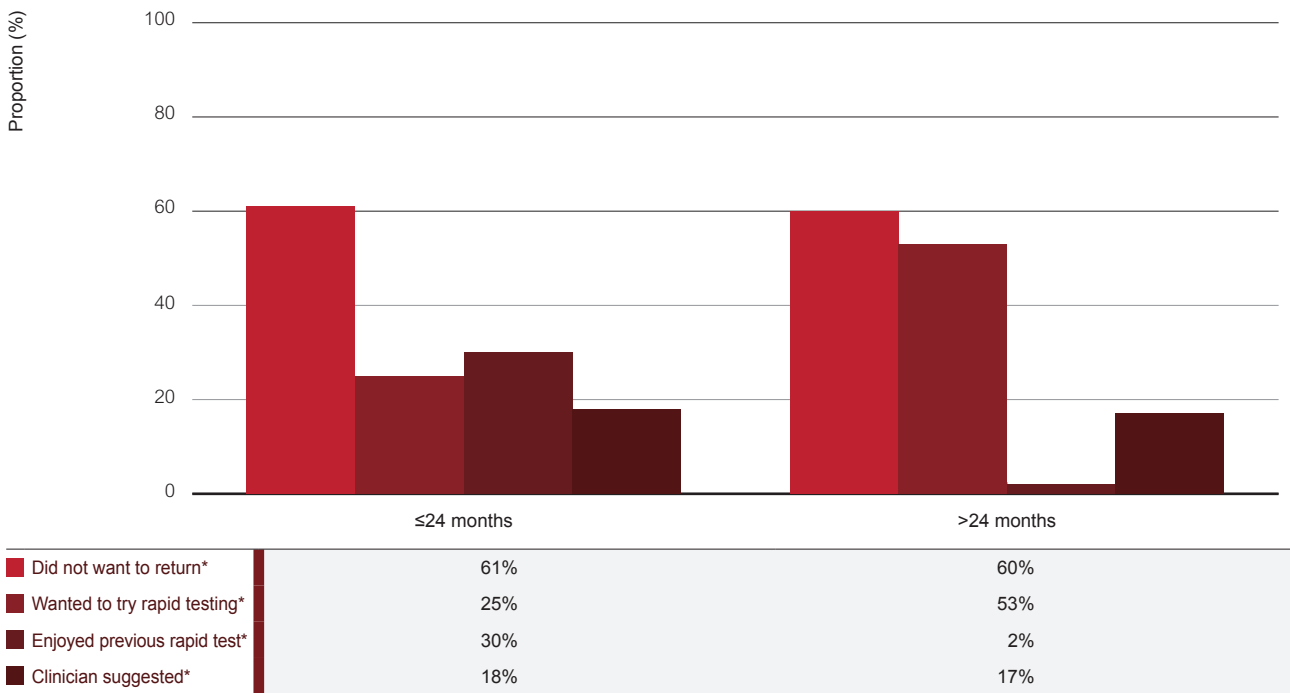
Figure 7 Self-reported reasons for rapid HIV testing among GBM, by service type ($n=369$)



NB: Participants could choose more than one response option

* Statistically significant differences between service types ($p<0.05$)

Figure 8 Self-reported reasons for rapid HIV testing among GBM, by time since last HIV test ($n=356$)

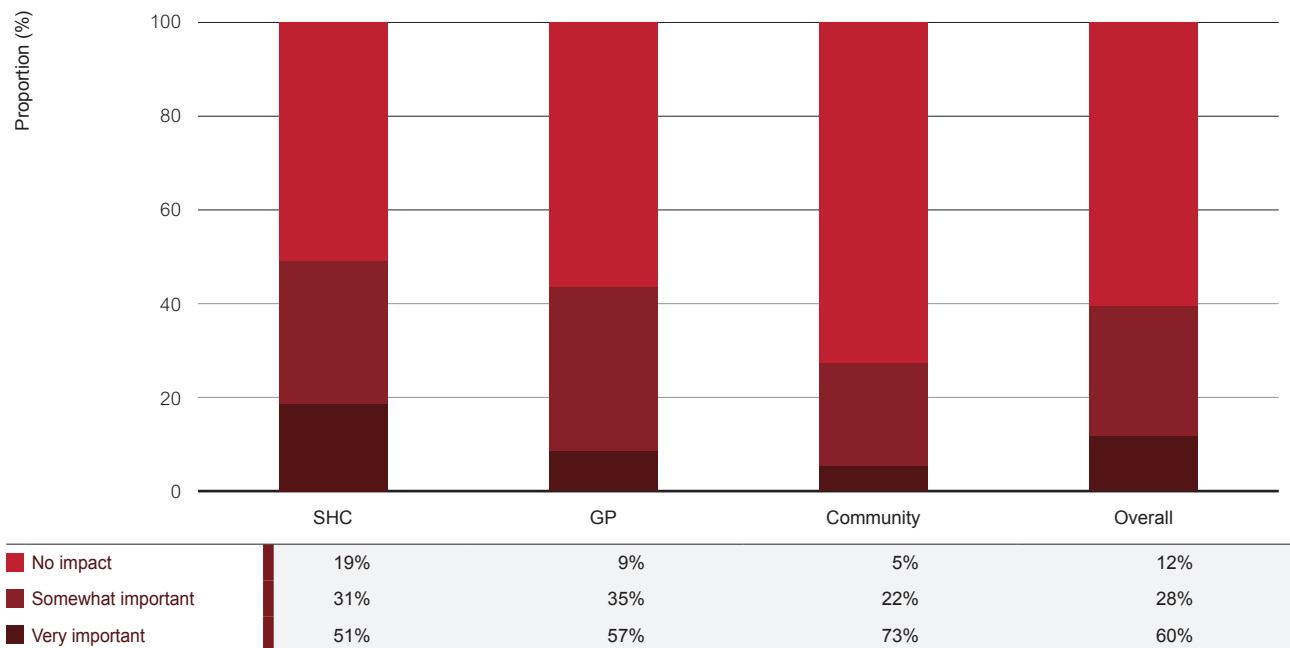


NB: Participants could choose more than one response option
 * Statistically significant differences between time since last HIV test ($p<0.05$)

Was availability of rapid HIV testing important for men’s decision to get tested?

Nearly all of GBM surveyed who were aware that rapid HIV testing was available reported that it was an important factor in their decision to get tested (88%; Figure 9). Rapid testing availability was identified as important by a higher proportion of men at community-based sites than sexual health services (73% vs 51%, $p=0.002$).

Figure 9 Self-reported importance of rapid HIV testing availability as a motivator for testing*, by site type ($n=283$)



* Among those who were aware that the service was offering rapid HIV testing before visit

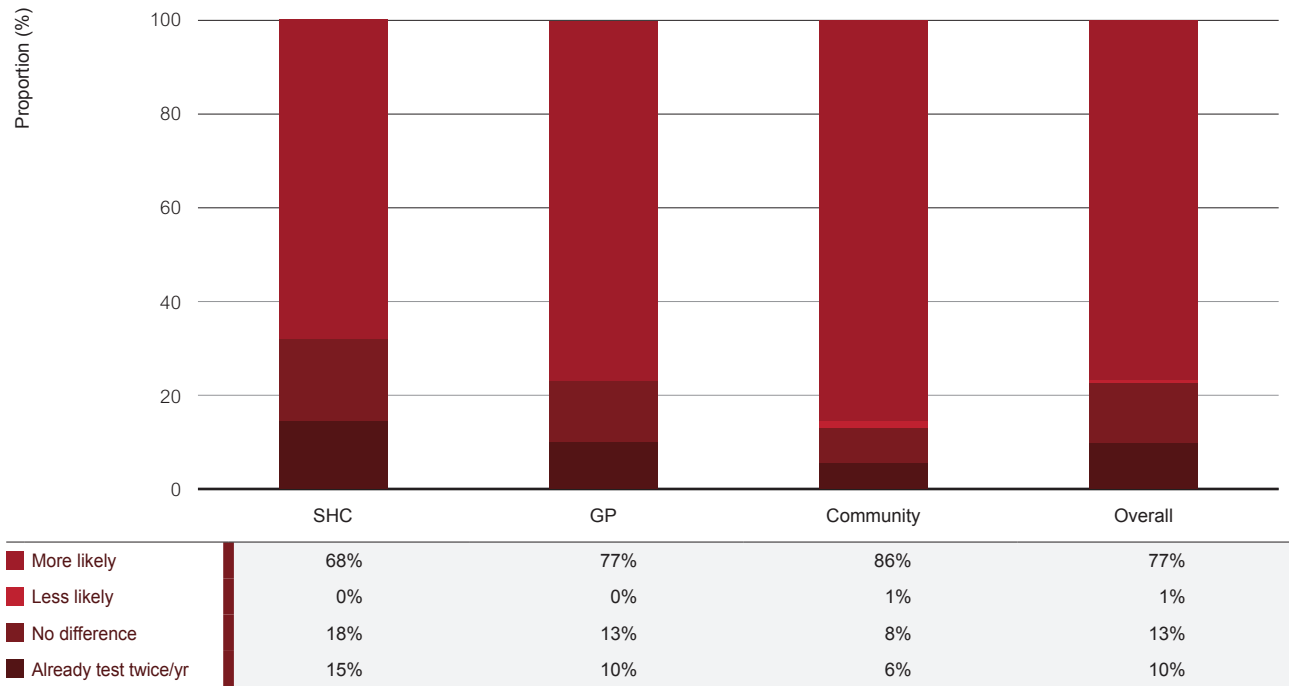
10.1.1 HIV testing frequency

What is the likelihood men would test more frequently for HIV if rapid testing is available?

The question of testing frequency and rapid testing availability was explored through both survey responses and clinical data. In the patient survey, the majority of GBM (77%) said that they would be more likely to test for HIV twice a year if rapid testing was available, which was higher among men at community services (86%) compared with those at the general practice clinic (77%) and sexual health services (68%, $p=0.005$; Figure 10).

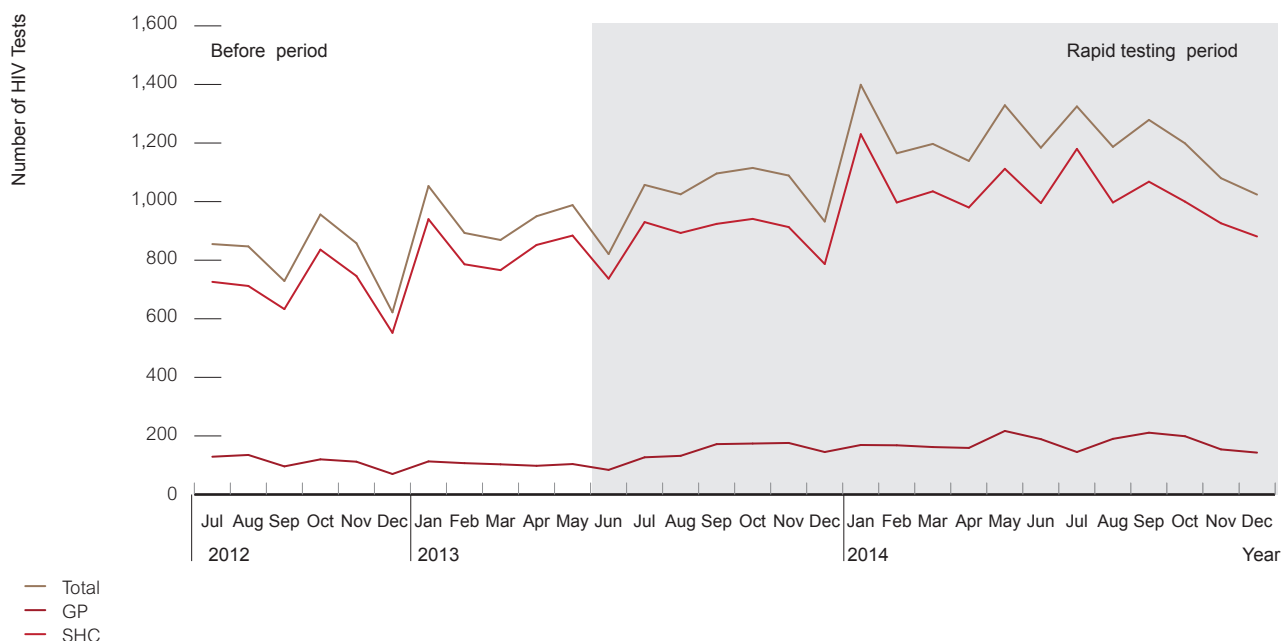
Importantly, among men who reported their last HIV test was more than two years prior, 89% said that they would be more likely to test bi-annually if rapid testing was available, which was higher than the 75% of men tested within the previous two years ($p=0.027$).

Figure 10 Self-reported likelihood of bi-annual HIV testing and rapid testing availability, by service type ($n=362$)



During the rapid testing period, a total of 20,891 HIV tests were conducted in 11,353 unique clients compared to 14,928 tests in 8,714 unique clients during an equivalent period before the commencement of rapid testing (Figure 11).

Figure 11 Number of HIV tests conducted during rapid testing period and 12 month before period, by month and site type

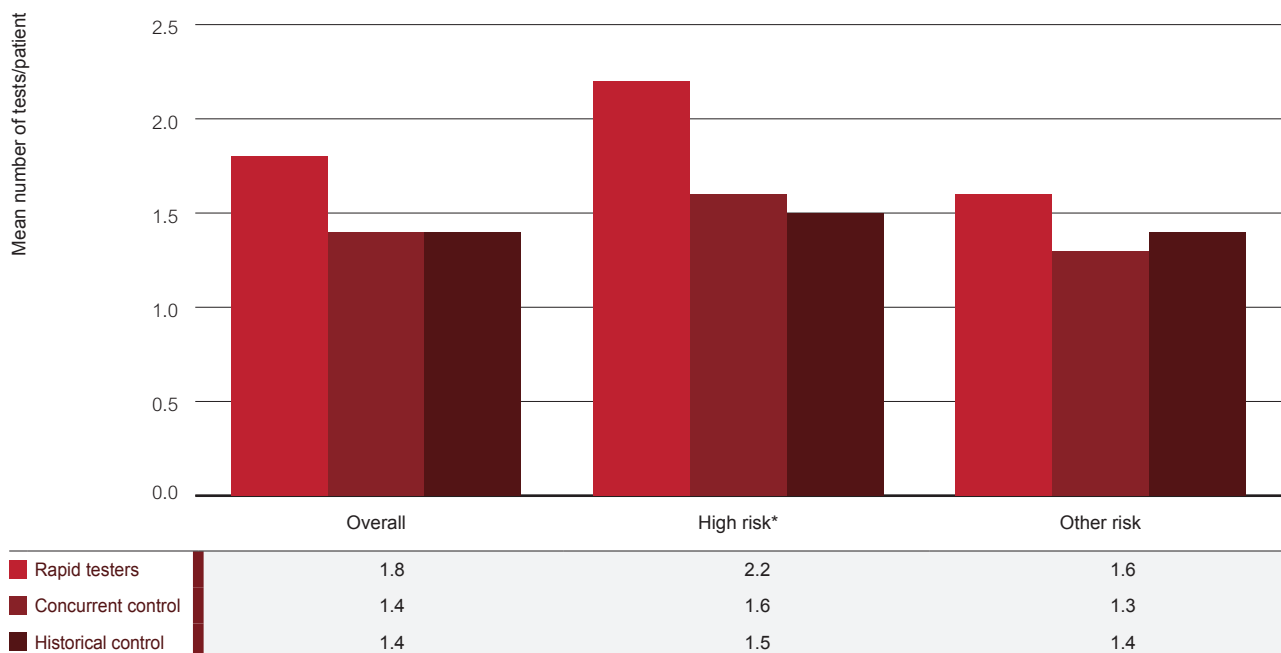


Data extracted from the participating general practice clinic and sexual health services also facilitated an evaluation of testing frequency. The key findings are summarised below and further details can be found in Appendix C.

During the 12 month period when all services were actively providing rapid testing (October 2013 – September 2014, the 'study period'), men who received one or more rapid HIV tests had a significantly higher mean number of total HIV tests, compared with those who did not receive a rapid test, and also those in the period before rapid testing (1.8 tests/person vs 1.4 tests/person, $p < 0.001$; Figure 12).

Further, among a sub-sample of men who had a rapid test during the study period and also attended the service before rapid testing was available (paired control), the average number of tests was 2.1 per person during the rapid testing period and 1.6 per person during the before period ($p < 0.001$).

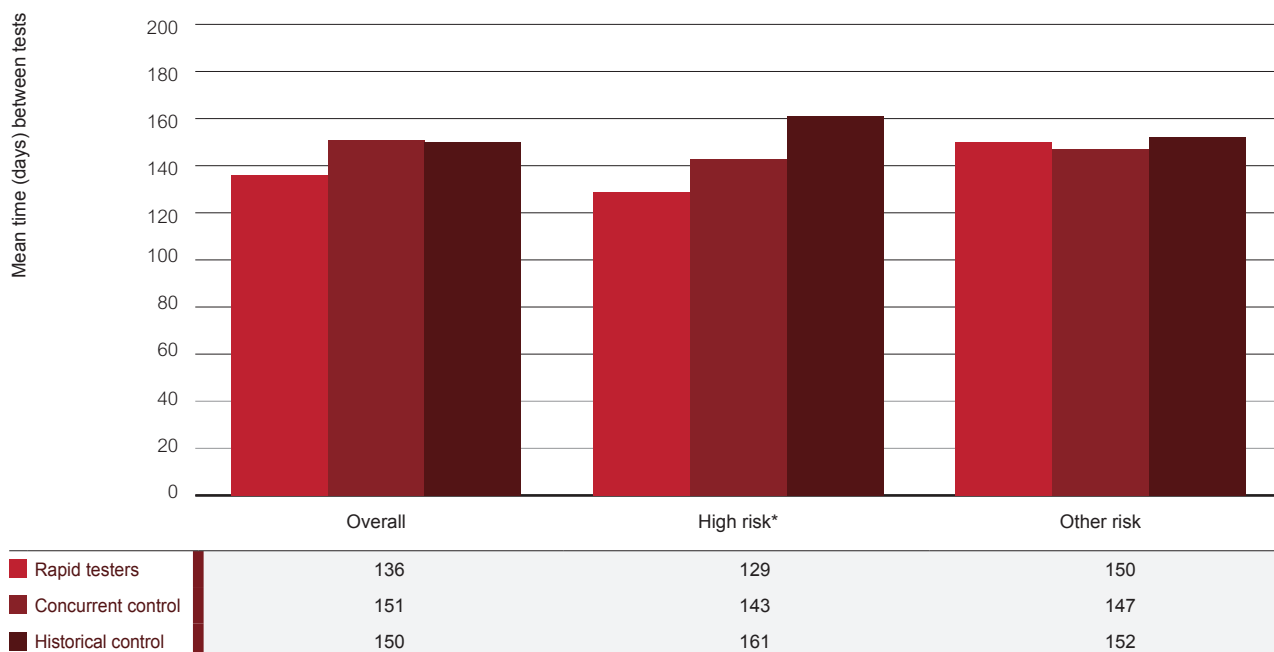
Figure 12 Mean number of HIV tests per patient among those who received a rapid test for HIV, those who did not (concurrent control), and those who attended before rapid testing was available (historical/before period), by sexual risk classification



* High risk= >5 partners in 3 months; >20 partners in 12 months

The time between tests (in days) was also lower among men who received a rapid HIV test, returning on average 15 days sooner for a subsequent re-test than the concurrent control group ($p<0.001$), 14 days sooner than the historical control ($p<0.001$), and 10 days within the paired control ($p=0.012$; Figure 13).

Figure 13 Mean time between HIV tests (in days) among men who received a rapid test for HIV, those who did not (concurrent control), and those who attended before rapid testing was available (historical/before period), by sexual risk classification



* High risk= >5 partners in 3 months; >20 partners in 12 months

Table 7 details the results of the multi-variate logistic regression analysis. Men were more likely to have more than two HIV tests over 12 months if they received a rapid test, if they were classified as high risk, and if they lived nearer to the clinic.

Table 7 Multiple logistic regression analysis of factors associated with HIV testing among GBM during the study period (October 2013 – September 2014; $n=4,799$)

	HIV tests		Adjusted odds ratio	<i>p</i>
	1 – 2 tests	>2 tests		
Postcode distance from service (M)*	136.80	98.38	0.75	0.001
Sexual risk behaviour			2.98	<0.001
High risk	950 (62%)	581 (38%)		
Other risk	2,642 (81%)	626 (19%)		
Received RHT			2.47	<0.001
Yes	1,343 (66%)	699 (34%)		
No	2,249 (82%)	508 (18%)		

* Expressed as the numerical difference between a patient's home postcode and the service postcode

The observed increase in HIV testing frequency equated to 3,324 additional tests being conducted during the rapid testing period.

10.2 Marketing and promotion of rapid HIV testing

10.2.1 Collating promotional and marketing activities

During the rapid HIV testing period, many participating services and local health organisations undertook marketing and promotional activities to increase awareness around rapid testing and HIV testing generally. Descriptions and timelines of these activities are detailed in Table 6.

The promotional strategies undertaken included advertisements displayed via online social media, such as *Facebook*, *Twitter* and *Grindr* (e.g., Figure 14). Advertising using the AdWords feature of *Google* was also undertaken, ensuring a wide reach beyond advertising placed on specific targeted websites. These advertisements varied between advertising specific services, advertising HIV testing generally, and advertising rapid testing specifically. Similar advertisements were also displayed in gay and mainstream print media sources, such as the *Sydney Morning Herald* and *SX*. Such campaigns were not exclusive to Sydney, as several regional and rural marketing exercises were also undertaken (e.g., Figure 15).

Other marketing strategies included outdoor advertisements and visual activation to boost interest and spur public relations (PR) opportunities. Advertisements on bus shelters, a presence at gay community events, distribution of drink coasters, and a temporary shopfront service were all a part of those efforts.

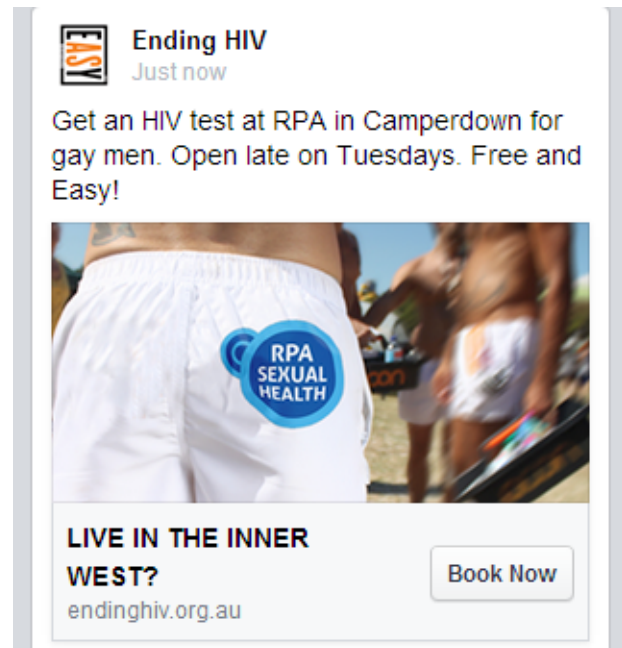


Figure 14 Facebook advertisement for SLHD (produced by ACON)

Figure 15 HIV and rapid testing advertisement for NSW Northern Rivers region (produced by ACON)

Table 8 Marketing and promotional activities at participating services (2013 – 2014)

Activity	Organisation	Description	2013				2014			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Social media	ACON	Ending HIV Facebook page –posts promoting rapid testing (Sydney/NSW)								
		'Easy As' campaign Facebook and YouTube pages (Sydney/NSW)								
		a[TEST] sites promotion (Sydney)								
		Specific promotion of rapid testing sites (NSW)								
		HIV testing week – one week in July (NSW)								
		World AIDS Day, pop-up caravan, Red Hot 100 (December; NSW)								
	SLHD	Facebook, Twitter for RPA & a[TEST]								
	SESLHD	Facebook, Twitter								
		Grindr (Illawarra, St George St & Sutherland, SE Sydney)								
		Same Same								
MOH	World AIDS Day (Sydney) 'Test More' initiative									
	HIV Testing Week (one week; NSW)									
Media/ marketing/ advertisement	ACON	SX – advertisement, collation of all metro Sydney testing sites								
		GNN (online), Inner West Courier, SMH								
		Google AdWords (ongoing; NSW)								
	SESLHD	SX - weekly half page advertising all HIV testing services in SESLHD								
		Short Street Clinic SX & Leader (March/April)								
		Clinic 180 SX & Courier Ads								
		Albion Centre SX Ads								
	AFAO	'Time to Test' campaign - online advertising (National)								
Outdoor/ PR/ activation	ACON	'Easy As' campaign – Mardi Gras float, Tropical Fruits stall, Fair Day (NSW)								
		Dissemination of safe packs to SLHD service (internal)								
	SLHD	Vintage caravan Newtown Hub (3 days in Feb and Jul 2014)								
		Fairday stall (one day)								
		HIV testing policy launch promotion								
		Safe pack distribution to the Imperial Hotel Erskineville								
		Community engagement event at Newtown Hub (one day)								
		In-services for SLHD staff								

Activity	Organisation	Description	2013				2014			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Outdoor/ PR/ activation	SESLHD	Bus shelters; KRC bus at Taylor Square								
		Drink coasters								
	MOH	Pop-up testing caravan								
		Temporary shopfront								
		PR/activation for World AIDS Day, pop-up, Red Hot 100								
Posters/ banners/ newsletters	ACON	Posters in venues at a[TEST] Surry Hills launch								
	SLHD	Article in the Inner West Sydney Medicare Local newsletter (for GPs)								
		Promotion via e-GPs website								
		Street posters (2 weeks)								
		Venue posters								
	SESLHD	SES services testing matrix poster, internal newsletters								
		Pull up banners, Testing Week/Could It Be HIV; flag poles Taylor Square;								
		Internal forums, newsletters, posters and quiz								
		'Test 357' internal ads								
	MOH	Print advertisements – WAD (Sydney)								
		Test more campaign launch (Sydney)								
		Online social marketing and media (Sydney)								
		Online social marketing for EASY campaign – one week (Sydney)								
Permanent shopfront announcement										
Opening of Ankali House testing service (at Albion Centre D&A service)										
Launch of pregnancy and HIV info sheet - online										
Other	MOH	F2F education and monthly newsletter for health professionals								
		HIV testing page launched on RACGP website for GPs								

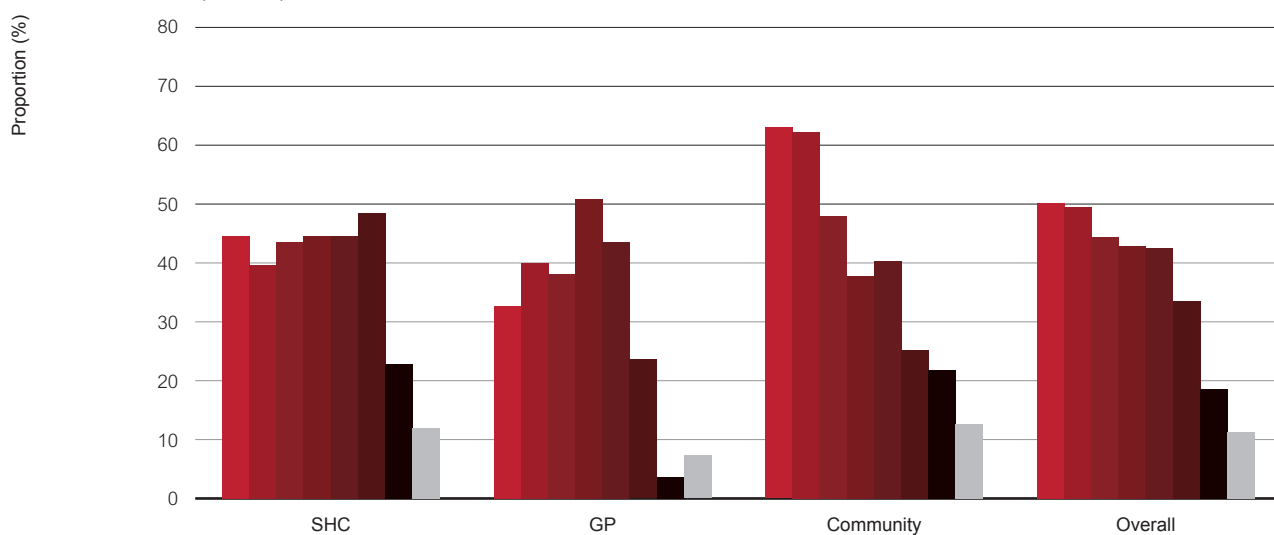
Results: impact

10.2.2 Impact of marketing and promotion

Marketing activation and awareness

The majority of survey respondents reported seeing some promotional or advertising material related to rapid HIV testing (75% overall). Notably, recall of promotional activities was highest at community-based services (88%), compared with general practice clinic (76%) and sexual health services (68%, $p=0.022$). Online advertisements delivered by websites or *Facebook* were the most commonly identified marketing strategy (50% overall). Interestingly, online marketing was reported more commonly by community service attendees, while waiting room posters were more commonly reported by those attending sexual health services ($p<0.001$). Figure 16 displays the types of marketing materials seen by GBM stratified by service type.

Figure 16 Self-reported recall of marketing and promotional activities among GBM, by service type ($n=275$)



Online promotion*	45%	33%	63%	50%
Facebook*	40%	40%	62%	50%
Street promotion	44%	38%	48%	44%
Print advertisement	45%	51%	38%	43%
Mobile web-service ads	45%	44%	40%	43%
Posters in waiting room*	49%	24%	25%	34%
Drink coasters and venue posters*	23%	4%	22%	19%
TV/print news	12%	7%	13%	11%

NB: Only includes participants who reported seeing marketing/promotional materials

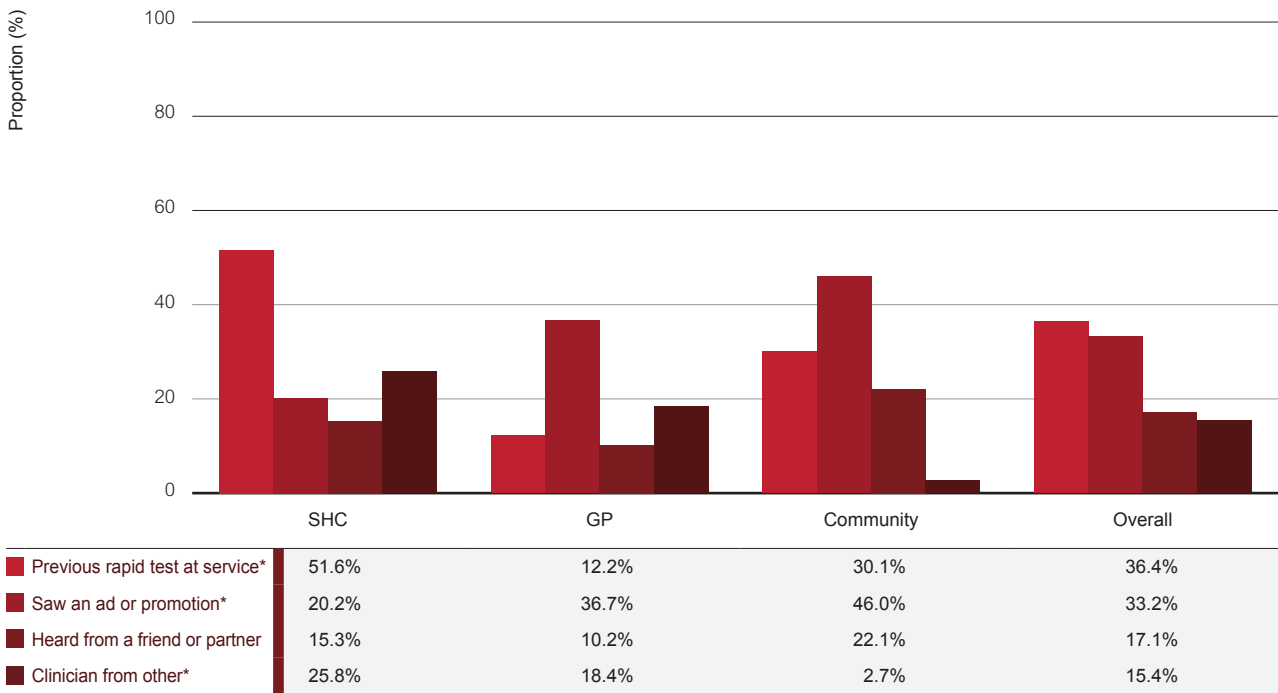
NB: Participants could choose more than one response option

*Statistically significant differences between service type ($p<0.05$)

How clients become aware of rapid HIV testing at a health service

Although a large proportion of patients reported exposure to advertising or promotional materials relevant to HIV testing, only a third (33%) reported that promotional material was how they became aware of rapid testing at the service. By service type, 46% of respondents at community-based clinics were aware of rapid testing because of promotion or advertising, which compared with 20% at sexual health services ($p < 0.001$). At sexual health clinics, most participants reported a previous rapid test at the service for how they knew about rapid testing (52%). Figure 17 provides an overview of participant responses.

Figure 17 Self-reported explanations for being aware of rapid HIV testing among GBM, by service type ($n=286$)



NB: Only includes participants who reported seeing marketing/promotional materials

NB: Participants could choose more than one response option

* Statistically significant differences between service type ($p < 0.05$)



Clinical data were also analysed to explore the impact of marketing and promotional campaigns. One campaign central to testing promotion in NSW was 'EASY' (Easy As) and 'KNOW' (Know Now), which was developed by ACON (Figure 18). The 'Easy As' campaign had a number of features across diverse promotional strategies, specifically outdoor and print-media advertising, community and event outreach, online marketing and social marketing, and venue-driven promotion.

Although this campaign had state-wide reach, during February – May 2014, its primary focus was in central Sydney to coincide with the Sydney Gay and Lesbian Mardi Gras. Figure 19 reviews the number of rapid HIV tests conducted before, during and after the campaign was introduced in early 2014. During the campaign, the mean number of HIV tests (rapid and conventional) conducted per month at a sexual health clinic in inner-Sydney increased significantly compared to the period prior ($p=0.002$; Table 7). There was a 77% increase in the mean number of rapid tests per month at the community-based site during the campaign period compared to prior months, which was not statistically significant.

Figure 18 Fair Day participant with 'Easy As'

Figure 19 Number of HIV tests at a sexual health clinic (SHC) and community site, by month

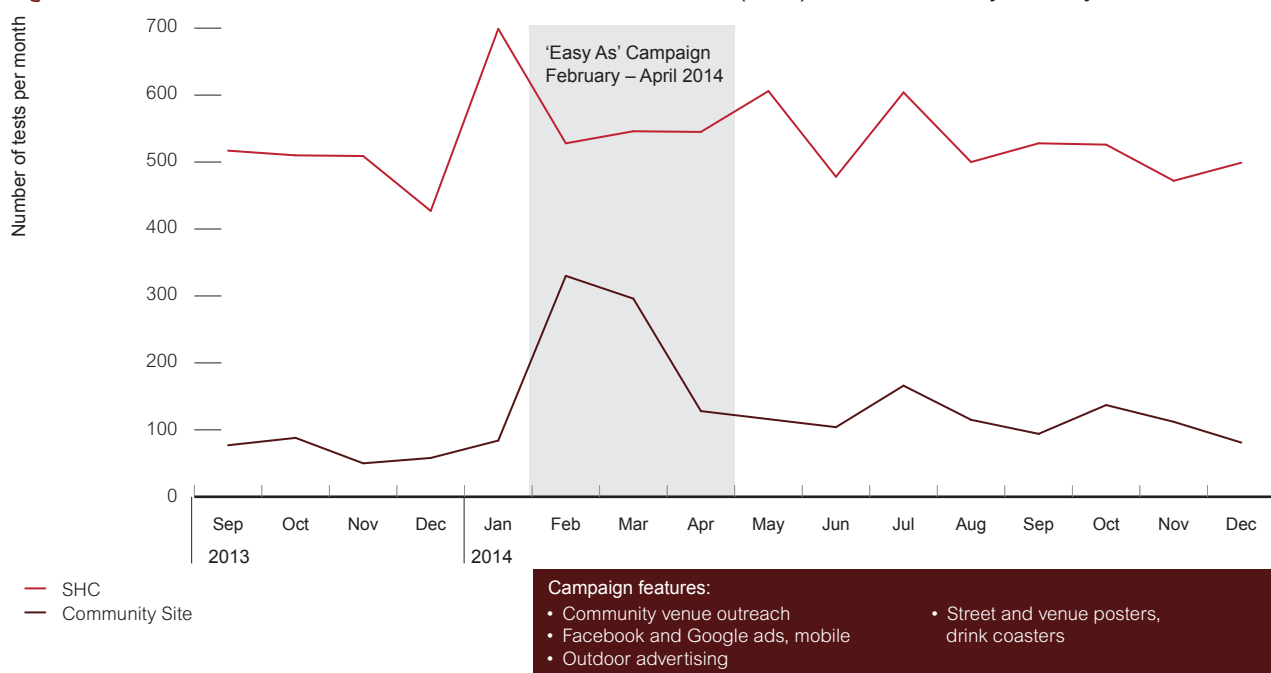


Table 9 Mean number of HIV tests per month before and during the ‘Easy As’ campaign

Service	Mean tests/month			Mean tests/month	
	Campaign period*	Before period**	<i>p</i>	Previous year***	<i>p</i>
Sexual health clinic (all tests)	556.3	490.8	0.054	491.3	0.024
Sexual health clinic (rapid tests)	253.3	214.8	0.002	-	-
Community site (rapid tests)	122	69	0.117	-	-

NB: There is no previous year comparison for a[TEST] as the service was newly opened

The Sydney Local Health District commissioned ACON to produce a campaign targeting Inner Western Sydney, using materials adapted from the Easy As campaign materials to promote the local sexual health clinic and community site. This campaign ran during July and August in 2014 (Figure 20).

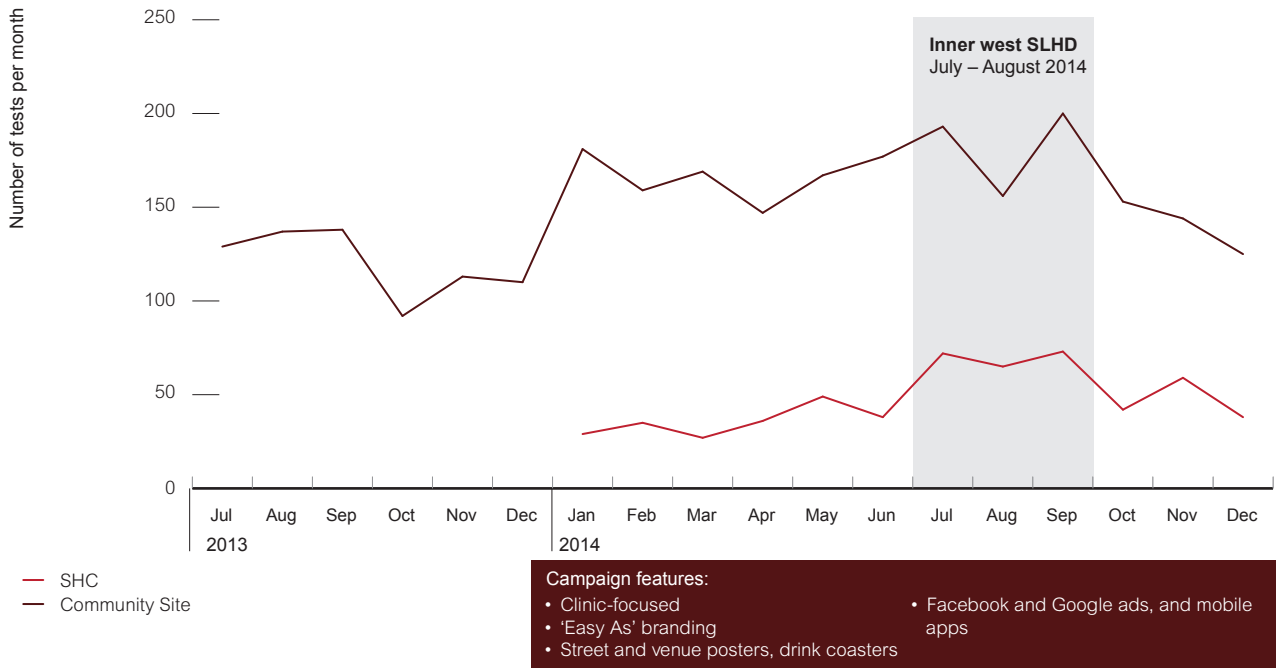
At the community testing service there was a significant increase in the mean number of rapid tests conducted per month during the campaign, rising 75% during the three months of the campaign compared to the three months prior ($p=0.003$; Table 8). There was also a significant increase in the number of all HIV tests per month at the sexual health clinic compared with the same months in previous year ($p=0.011$), but the increase was not significant compared with prior three months.

Table 10 Mean number of HIV tests per month before and during the ‘Inner Western Sydney’ campaign

Service	Mean tests/month			Mean tests/month	
	Campaign period*	Before period**	<i>p</i>	Previous year***	<i>p</i>
Sexual health clinic (all tests)	182.3	163.3	0.037	117.3	0.011
Sexual health clinic (rapid tests)	35	40	0.393	-	-
Community site (rapid tests)	70	39.7	0.003	-	-

NB: There is no previous year comparison for a[TEST] as the service was newly opened

Figure 20 Number of HIV tests at a sexual health clinic (SHC) and community site, by month



11. Conclusions

Summary of key findings

The evaluation supports rapid testing for HIV as a feasible testing option in a diverse array of health services. Nearly all men (99.8%) received an accurate result from the Trinity Uni-Gold rapid test, however the rapid test was less accurate in acute infections. It is important to note that no infections were missed during the study as parallel lab testing was conducted. The majority of men found rapid testing a highly acceptable form of testing and men accessing rapid testing were shown to be high risk, and at the community sites nearly 20% of men were first-time testers. Importantly, men who accessed rapid testing tested more frequently - the mean number of HIV tests over 12 months among men who accessed rapid testing was 29% higher than among men who did not access rapid testing. The increased HIV testing frequency among men who accessed rapid testing equated to 3,324 additional tests being conducted in the rapid testing period. HIV testing also increased by 12% to 77% at some sites during targeted marketing campaigns. The key summary points are listed below, followed by a discussion of these points.

Evaluation results: Process

The key findings of the process evaluation are as follows:

- **Feasibility:** Between June 2013 and December 2014, a total of 10,793 rapid HIV tests were conducted across 22 participating sites.
- **Uptake** of rapid testing was highest in community-based peer-led rapid testing specialist services (~100%) and lowest in the general practice clinic (18%).
- Men undergoing rapid testing were more likely to be higher-risk than men who didn't have rapid tests, and at community services nearly 20% of men had never tested previously.
- **Acceptability** of rapid testing among GBM was high across a range of community and clinical sites.
- **Test performance:** Of the 10,793 tests, 94 were new HIV diagnoses (0.9%); 0.9% at the community sites, 1.4% at the GP clinic and 0.8% at the sexual health clinics (these were not statistically different).
- Of the HIV diagnoses, over a third of these (39.4%) were acute infections.
- Overall, the Trinity Uni-Gold rapid HIV test accurately reflected the HIV status of 998 of every 1,000 patients (99.8%).
 - The test demonstrated very high specificity (99.9%), returning only seven false positives
 - Test sensitivity was very high in established infections (98.2%), but lower in acute infections (56.8%).
- **Cost:** HIV testing with conventional serology cost \$12.98 per patient. The additional cost to conduct a rapid test using the Trinity Uni-Gold was \$9.70. The cost of a rapid test accounted for 5 – 9% of the total cost of a full sexual health screen.
- The total cost of offering rapid testing was lower in services where peer-workers and enrolled nurses conducted the testing.

Evaluation results: Impact

The key findings of the impact evaluation are as follows:

- **Frequency of testing:**
 - Over three quarters of GBM said that they thought rapid testing would help them test more regularly, including 89% of men not recently tested for HIV.
 - During the rapid testing period, the mean number of HIV tests in 12 months was significantly higher (29%) among GBM who had a rapid test, compared with men those who did not (1.8 tests vs 1.4 tests).
 - The increased HIV testing frequency, equated to 3324 additional tests being conducted in the rapid testing period (56% of the 5963 more tests compared to an equivalent period before).
- **Impact of social marketing**
 - HIV testing in GBM increased during periods of targeted social marketing campaigns.

Testing performance

The rapid test utilised in the program (Trinity Uni-Gold) was nearly 100% specific, producing only seven false positive results in nearly 11,000 tests. This degree of specificity is important given that, in Australia, over 99% of GBM who present for HIV testing will be HIV negative (3). Thus, if tested with a rapid test that is highly specific almost all men will receive an accurate result, which will require no return visit. The test also had very high sensitivity in established infections (98.2%; 1 of 56 specimens from men with established infections was false negative on Uni-Gold), but lower sensitivity in acute infections (56.8%; 16 of 37 specimens from men with established infections was false negative on Uni-Gold). This is similar to the performance of the Alere Determine Combo test previously evaluated in Australia (14). Also a laboratory evaluation conducted in Sydney, demonstrated that Alere Determine Combo test had a slightly higher sensitivity among well characterised acute infections compared to Trinity Uni-Gold, however confidence intervals overlapped suggesting the difference was not statistically different (39). Without parallel laboratory testing in this study, 18% of infections would have not been detected at the time of testing.

Frequency of HIV testing

The evaluation highlighted the potential for rapid testing to be an important tool for GBM to increase HIV testing. Accessing rapid testing was associated with an increased frequency of HIV testing. The mean number of HIV tests in a 12 month period was 29% higher among men who accessed rapid testing, compared to men attending the same clinics who did not access rapid testing. The increased HIV testing frequency among men who accessed rapid testing equated to 3,324 additional tests being conducted in the study period. To our knowledge these findings are novel. A randomised controlled trial in a large sexual health clinic in Melbourne, showed men who had access to HIV rapid tests presented earlier for their first test, but by 18 months the overall testing frequency was not significantly different to men who did not have access to HIV rapid tests (41). This trial was conducted at a clinic where the only change introduced was the availability of rapid testing, which was provided in a separate room following an initial consultation. In the NSW Framework however, rapid testing was integrated into routine consultations and promoted.

Marketing and promotion of rapid testing was an important tool for increasing testing, with nearly a fifth of GBM attending services on account of exposure to promotional material or a desire to try rapid testing. Due to the constant promotion which occurred throughout the period, it is difficult to evaluate accurately the impact of specific campaigns. However the clinical data suggested that for some more local targeted campaigns, there were increases in testing which suggests the combination of social marketing and rapid testing is an important 'hook' into testing services. The importance of social marketing has been demonstrated in other rapid testing programs overseas, particularly when a new service opens (26).

Rapid testing uptake

Men accessing rapid testing were shown to be higher-risk compared to men who didn't undergo rapid testing. Also at the community sites, nearly 20% of men had never tested previously (were first-time testers). These findings are consistent with a separate analysis reported by Knight et al, whereby the availability of HIV rapid tests at community sites attracted a high proportion of men who had never tested before, compared with the Xpress service at Sydney Sexual Health Service (42). This is also consistent with a review by Pedrana et al, which showed community testing sites overseas attracted a high proportion of men who had never tested previously (26). The survey in this evaluation supports these findings suggesting that rapid testing may be a more attractive HIV testing option for men who are untested or delay testing. Half of men who were untested or had not tested for more than two years reported that their reason for having a rapid test was that they wanted to try rapid testing, compared to a quarter of men who had tested within the previous two years.

Acceptability of rapid testing

There was a very high level of satisfaction with all aspects of rapid HIV testing among men who completed a patient survey (>90% of participants satisfied or very satisfied overall). Nearly all men in the survey indicated a willingness to be rapid tested in the future and recommend it to others (>99%).

HIV positivity

Across the entire study period, HIV positivity among men undergoing rapid testing ranged across sites from 0.8% at the sexual health clinics to 1.4% at the general practice clinic, but these differences were not statistically different. It is possible the promotion of the new rapid testing service at the general practice clinics may have attracted a subgroup of men at higher risk of HIV. This is consistent with a recent report in a high HIV caseload primary care clinic in Australia offering rapid HIV testing to GBM, which attracted men at a higher risk of HIV, and found a significantly higher positivity rate among men having rapid tests compared with the retrospective positivity rate using conventional testing (4.1% vs 1.3%).(43)

Cost

Costs need to be considered when establishing new testing models. The cost of administering the Trinity Uni-Gold rapid test represented between 5% and 9% of the total cost of sexual health screening. The cost of offering rapid testing was lower in services where peer workers and enrolled nurses offered the testing. Adding parallel conventional testing to rapid HIV testing is a small additional cost when considering the cost of a full STI screen, but avoids 18% of HIV infections being missed if rapid tests were used alone. Most infections missed by rapid testing are likely to be early infections with high viral loads, associated with increased risk of HIV transmission. The lifetime cost of one HIV infection is estimated to be \$450,000 (2).

There were strengths and limitations of the evaluation. Strengths included; the evaluation framework was built into the initial program design, ensuring both the processes and outcomes of the program were documented. Second, multiple methods and different data sources were utilised (triangulation). For example, key findings were often observed in both the survey and clinic data. Third, the use of ACCESS data enabled indicators to be tracked before and during the rapid test program. Finally, the involvement of clinical, community and laboratory partners in the development and implementation of the evaluation and interpretation of results, has aided the progress of the evaluation project. This occurred through participation of these partners in the evaluation reference group, and as research investigators.

There are a few limitations of the evaluation to consider. First, the majority of services did not ask clients about partner types (casual or regular); thus men in the evaluation were classified as high risk based on a higher number of sexual partners only, which may mean the proportion is over-estimated as many of these men may have used condoms with all casual partners. Second, the evaluation did not involve a randomised controlled trial, but was an observational study with control groups, and testing frequency among men attending the community sites could not be compared to a period before the introduction of rapid testing. Therefore there may have been internal or external factors which could have been associated with the impact results observed, that we were unable to measure and control for. To minimise the risk of confounding we included three different control groups (including a concurrent control), and conducted a multivariate analysis that included key factors (age, sexual risk) likely to influence testing patterns. Third, the evaluation did not aim to undertake a full evaluation of social marketing campaigns as this was being conducted by ACON (see separate report), but instead largely focused on the impact of social marketing combined with rapid testing.

In conclusion, the evaluation highlights that rapid HIV testing with social marketing was a useful public health tool, associated with men testing more frequently and returning sooner for their next test. The evaluation also showed that rapid testing should be conducted with parallel conventional laboratory HIV testing, otherwise the benefits of rapid testing will be offset by many acute infections not being detected.

12. Recommendations

1. Rapid testing should be embedded as one of the testing options in NSW targeted at gay and bisexual men.
2. Rapid testing models should be linked with ongoing marketing and promotional strategies for maximum effectiveness.
3. Conventional laboratory serology should be conducted in parallel with rapid testing, to account for the lower sensitivity of rapid testing to detect acute HIV infections.
4. As each rapid HIV test has different characteristics (performance, sample collection, incubation period, complexity), services should consider how each test may suit their client population and clinic.
5. Now that the public health findings are available, a cost-benefit analysis should be undertaken.

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14. Appendices

14.1 Appendix A: Patient acceptability survey

30. Consider the following aspects of your testing experience and rate your level of satisfaction with each.

	Very dissatisfied	Dissatisfied	Neither satisfied nor dissatisfied	Satisfied	Very satisfied
The discussion about rapid HIV testing before being tested	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The discussion about my rapid HIV test result	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The discussion after getting tested	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The way the rapid HIV test was conducted by the staff at the clinic	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The comfort of the fingerprick	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The length of wait for rapid test results	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

31. What is the most you would be prepared to pay for a rapid HIV test if the cost was not covered by Medicare?
(choose one option only)

I would choose not to have a rapid HIV test if I had to pay

\$15 \$30

\$20 \$50

32. Do you have any other feedback about the service?

Thank you for your participation!

Please return this survey to the receptionist or place it in the survey box when you are finished



Rapid HIV Testing Client Survey

You are invited to participate in a survey of clients having a rapid HIV test at this service. Participation in this survey is optional. Your answers to this survey are anonymous and will not be matched with your rapid HIV test or other test results.

1. Do you think of yourself as:

Gay/homosexual Bisexual

Heterosexual

Other (please specify) _____

2. How old are you?

SECTION 2 Sex

5. Do you currently have sex with casual male partners?

Yes No – Go to Question 7

6. In the last 6 months, how often did you use condoms for anal sex with casual male partners?

Never Sometimes Always

No anal sex with casual partners

7. Do you currently have sex with a regular male partner (or partners)?

Yes No – Go to Question 9

SECTION 3 HIV Testing

10. Before today, have you ever been tested for HIV?

Yes No – skip to Question 15 (next page)

Don't know/unsure – skip to Question 15 (next page)

11. How long ago was your last HIV test?

In the last 3 months

Between 3 and 6 months ago

Between 6 and 12 months ago

Between 1 and 2 years ago

More than 2 years ago

12. Where was your last test for HIV conducted?

This service

Another service (please name): _____

13. Before today, have you ever had a rapid HIV test?

Yes No – skip to Question 15 (next page)

Don't know/unsure – skip to Question 15 (next page)

14. Where did you last receive a rapid HIV test?

This service/clinic

Another service (please name): _____

Continued on next page



SECTION 4

Advertising and HIV testing

15. Have you seen any promotional or advertising material relating to rapid HIV testing?
 Yes No – skip to Question 17

16. Please consider the following rapid HIV testing promotional materials and select any that you have seen. You may tick several boxes.

- (tick as many as apply)*
- Print advertisement in SX or the Sydney Star Observer
 - Facebook
 - An advertisement on a mobile webservice, such Grindr
 - A 'pop-up' rapid HIV testing caravan
 - A television or print news story on rapid HIV testing
 - Posters placed in the waiting room advertising rapid HIV testing
 - ACON website (ErhdnHIV.org.au)
 - Drink coasters and posters in venues
 - Street posters
 - Google advertisements
 - Other *(please specify)* _____



17. Why did you decide to get tested for HIV today?

- (tick as many as apply)*
- It is part of my regular testing routine
 - I saw an ad reminding me to have a sexual health check-up
 - I wanted to try rapid HIV testing
 - I have symptoms that worry me
 - A friend mentioned that they had a rapid HIV test
 - Other *(please specify)* _____
 - My doctor or nurse suggested that I be tested
 - I saw some promotional material for rapid HIV testing
 - I have had sexual contact with someone diagnosed with a sexually transmitted infection
 - I was worried about a potential exposure to HIV

18. Why did you decide to get a rapid HIV test today?

- (tick as many as apply)*
- I wanted to try rapid testing
 - I did not want to return for my results
 - One of the staff here offered a rapid HIV test
 - Other *(please specify)* _____
 - I wanted my results today
 - I had a rapid test in the past and enjoyed it

19. Before your visit, were you aware this service was offering rapid HIV testing?
 Yes No – skip to Question 22

20. How did you hear about rapid HIV testing at this service?

- (tick as many as apply)*
- I saw the service listed in an ad or promotional material
 - I heard about it from a friend or partner
 - Other *(please specify)* _____
 - A doctor or nurse from another service told me about it
 - I have had a rapid HIV test here before at this service

21. How important was the availability of rapid HIV testing on your decision to get tested here today?

- Very important Somewhat important It had no impact on my decision

SECTION 5

Future HIV testing and satisfaction

22. Did anyone at the service discuss returning for another HIV and/or STI test in the future?

- Yes No – skip to Question 24
 Don't know/unsure – skip to Question 24

23. When was it recommended that you return for testing?

- In 2 or 3 months In a year
 In 6 months I'm not sure
 Other *(please specify)* _____

24. If you return for HIV testing, which test would you prefer?

- Conventional HIV testing (blood drawn from your arm)
 Rapid HIV testing (fingerprick)
 Rapid HIV testing (mouth swab)
 No preference

25. Does the availability of rapid HIV testing make it more or less likely that you will get tested for HIV twice a year?

- More likely
 Less likely
 No difference
 I already get tested for HIV at least twice per year

26. Do you have any concerns regarding the accuracy or reliability of rapid HIV testing?

- Yes No Don't know/unsure

27. Did anyone provide information about rapid HIV testing, such as the test's accuracy or its window period (the time needed to detect HIV after being exposed)?

- Yes No Don't know/unsure

28. Would you use rapid HIV testing at this service again?

- Yes No

29. Would you recommend rapid HIV testing at this service to others?

- Yes No

14.2 Appendix B: Patient acceptability survey results

Table 1 Characteristics of men included in patient survey, by clinic type (n=369)

	SHCs n(%)	GP n(%)	Community n(%)	Total n(%)
Participants	151 (40.95)	73 (19.78)	145 (39.30)	369 (100)
Median age (IQR)	31.5, 25-39	33, 28-42	27, 24-34	30, 25-38
Country of birth				
Australia	140 (92.72)	70 (95.89)	138 (95.17)	348 (94.31)
Other	3 (1.99)	2 (2.74)	2 (1.38)	7 (1.90)
Missing/ unknown	8 (5.3)	1 (1.37)	5 (3.45)	14 (3.79)
Identified as				
Gay/ homosexual	135 (89.4)	65 (89.04)	127 (87.59)	327 (88.62)
Bisexual	13 (8.61)	6 (8.22)	15 (10.34)	34 (9.21)
Other	2 (1.32)	2 (2.74)	3 (2.07)	7 (1.89)
Missing/ unknown	1 (0.66)	0	0	1 (0.27)
Last HIV test				
<12 months ago	123 (81.46)	57 (78.08)	100 (68.97)	280 (75.88)
12-24 months ago	10 (6.62)	7 (9.59)	12 (8.28)	29 (7.86)
>24 months ago	9 (5.96)	3 (4.11)	8 (5.52)	20 (5.42)
Never tested	6 (3.97)	1 (1.37)	20 (13.79)	27 (7.32)
Missing/ unknown	3 (1.99)	5 (6.85)	5 (3.45)	13 (3.52)
Rapid test ever				
Yes	113 (74.83)	33 (45.21)	76 (52.41)	222 (60.16)
No	31 (20.53)	35 (47.95)	47 (32.41)	113 (30.62)
Never tested	6 (3.97)	1 (1.37)	20 (13.79)	27 (7.32)
Don't know	1 (0.66)	0	0	1 (0.27)
Missing/ unknown	0	4 (5.48)	2 (1.38)	6 (1.63)

Abbreviations: GP, general practice; IQR, interquartile range; SHC, sexual health clinic.

Table 2 Types of rapid test promotional material(s) seen by clients (n=275)

	Clinic type				Last HIV test*			Risk group*			Overall n(%)
	SHC n(%)	GP n(%)	Community n(%)	p-value	<24m ago n(%)	>24m ago n(%)	p-value	High risk** n(%)	Other n(%)	p-value	
Online promotion†	45 (44.6)	18 (32.7)	75 (63.0)	<0.001	116 (49.8)	17 (51.5)	0.835	66 (48.2)	71 (52.2)	0.505	138 (50.2)
Facebook	40 (39.6)	22 (40.0)	74 (62.2)	0.001	115 (49.2)	17 (51.5)	0.799	67 (48.9)	68 (50.0)	0.856	136 (49.5)
Street promotion‡	44 (43.6)	21 (38.2)	57 (47.9)	0.477	109 (46.6)	10 (30.3)	0.078	59 (43.1)	62 (45.6)	0.675	122 (44.4)
Print advertisement (SX/ star observer)	45 (44.6)	28 (50.9)	45 (37.8)	0.245	107 (45.7)	11 (33.3)	0.180	61 (44.5)	56 (41.2)	0.576	118 (42.9)
Mobile web-service ads (Grindr)	45 (44.6)	24 (43.6)	48 (40.3)	0.806	100 (42.3)	14 (42.4)	0.973	63 (46.0)	54 (39.7)	0.295	117 (42.6)
Posters in waiting room	49 (48.5)	13 (23.6)	30 (25.2)	<0.001	85 (36.3)	4 (12.1)	0.006	47 (34.3)	45 (33.1)	0.831	92 (33.5)
Drink coasters and venue posters	23 (22.8)	2 (3.6)	26 (21.9)	0.006	49 (20.9)	2 (6.1)	0.042	32 (23.4)	19 (14.0)	0.047	51 (18.6)
TV/print news	12 (11.9)	4 (7.3)	15 (12.6)	0.569	26 (11.1)	5 (15.2)	0.498	17 (12.4)	13 (9.6)	0.452	31 (11.3)

NB: Analysis restricted to those who saw any promotional material (n=275)
 Abbreviations: GP, general practice; m, months; SHC, sexual health centres
 * Missing excluded
 ** any UAI with casual partner or >10 partners in last 6 months
 † includes: ACON website (EndingHIV.org.au); google advertisements
 ‡ includes: 'Pop-up' caravan; street posters

Table 3 How clients heard about rapid HIV testing at the service (n=286)

	Clinic type				Last HIV test*			Risk group*			Overall n(%)
	SHC n(%)	GP n(%)	Community n(%)	p-value	<24m ago n(%)	>24m ago n(%)	p-value	High risk** n(%)	Other n(%)	p-value	
Had a rapid test before at this service	64 (51.6)	6 (12.2)	34 (30.1)	<0.001	102 (40.6)	0 (0)	<0.001	51 (36.4)	52 (36.1)	0.956	104 (36.4)
Saw an ad or promotion	25 (20.2)	18 (36.7)	52 (46.0)	<0.001	81 (32.3)	11 (45.8)	0.179	44 (31.4)	50 (34.7)	0.555	95 (33.2)
Heard from a friend or partner	19 (15.3)	5 (10.2)	25 (22.1)	0.140	40 (15.9)	5 (20.8)	0.536	25 (17.9)	24 (16.7)	0.791	49 (17.1)
A clinician from another service told me	32 (25.8)	9 (18.4)	3 (2.7)	<0.001	42 (16.7)	1 (4.2)	0.105	23 (16.4)	21 (14.6)	0.667	44 (15.4)

NB: Analysis restricted to those who were aware that the service was offering rapid testing before visit (n=286)
 Abbreviations: GP, general practice; m, months; SHC, sexual health centres.
 * Missing excluded
 ** any UAI with casual partner or >10 partners in last 6 months

Table 4 Reason(s) to get tested for HIV (n=369)

	Clinic type				Last HIV test*			Risk group*			Overall n(%)
	SHC n(%)	GP n(%)	Community n(%)	p-value	<24m ago n(%)	>24m ago n(%)	p-value	High risk** n(%)	Other n(%)	p-value	
Regular testing routine	108 (71.5)	34 (46.6)	79 (54.5)	<0.001	211 (68.3)	5 (10.6)	<0.001	114 (62.3)	106 (57.6)	0.360	221 (59.9)
Symptoms/potential exposure†	45 (29.8)	28 (38.4)	60 (41.4)	0.105	110 (35.6)	20 (42.6)	0.356	77 (42.1)	56 (30.4)	0.020	133 (36.0)
Wanted to try rapid testing‡	15 (9.9)	21 (28.8)	42 (29.0)	<0.001	54 (17.5)	22 (46.8)	<0.001	38 (20.8)	40 (21.7)	0.820	78 (21.1)
Saw an ad about sexual health	12 (8.0)	3 (4.1)	22 (15.2)	0.020	30 (9.7)	7 (14.9)	0.278	13 (7.1)	24 (13.0)	0.059	37 (10.0)
Clinician suggested	5 (3.3)	9 (12.3)	0	<0.001	11 (3.6)	2 (4.3)	0.813	8 (4.4)	5 (2.7)	0.391	14 (3.8)

Abbreviations: GP, general practice; m, months; SHC, sexual health centres.

* Missing excluded

** any UAI with casual partner or >10 partners in last 6 months

† includes: I have symptoms that made me worry; I have had sexual contact with someone diagnosed with a STI; worried about potential exposure to HIV

‡ includes: I wanted to try rapid testing; a friend mentioned that they had a rapid HIV test; saw rapid testing promotional material

Table 5 Reason(s) to have a rapid HIV test (n=369)

	Clinic type				Last HIV test*			Risk group*			Overall n(%)
	SHC n(%)	GP n(%)	Community n(%)	p-value	<24m ago n(%)	>24m ago n(%)	p-value	High risk** n(%)	Other n(%)	p-value	
Didn't want to return for results†	82 (54.3)	48 (65.8)	90 (62.1)	0.195	187 (60.5)	28 (59.6)	0.902	115 (62.8)	105 (57.1)	0.259	220 (59.6)
Wanted to try rapid testing	31 (20.5)	21 (28.8)	54 (37.2)	0.006	77 (24.9)	25 (53.2)	<0.001	48 (26.2)	57 (31.0)	0.314	106 (28.7)
Enjoyed previous rapid test	47 (31.1)	8 (11.0)	42 (29.0)	0.004	93 (30.1)	1 (2.1)	<0.001	47 (25.7)	49 (26.6)	0.836	97 (26.3)
Staff offered rapid test	45 (29.8)	17 (23.3)	4 (2.8)	<0.001	56 (18.1)	8 (17.0)	0.855	43 (23.5)	23 (12.5)	0.006	66 (17.9)

Abbreviations: GP, general practice; m, months; SHC, sexual health centres.

* Missing excluded

** any UAI with casual partner or >10 partners in last 6 months

† includes: wanted results today; didn't want to return for results

Table 6 Importance of the availability of rapid testing in decision to get tested (n=283)

	Very important n(%)	Somewhat important n(%)	No impact n(%)	Total n(%)	p-value*
Clinic type					0.002
SHC	63 (50.8)	38 (30.7)	23 (18.6)	124 (100)	
GP	26 (56.5)	16 (34.8)	4 (8.7)	46 (100)	
Community	82 (72.6)	25 (22.1)	6 (5.3)	113 (100)	
Last HIV test					0.403
<24 months ago	151 (60.4)	72 (28.8)	27 (10.8)	250 (100)	
>24 months ago	14 (63.6)	4 (18.2)	4 (18.2)	22 (100)	
Missing/ unknown	6 (54.6)	3 (27.3)	2 (18.2)	11 (100)	
Risk group					0.766
High risk**	86 (61.4)	40 (28.6)	14 (10.0)	140 (100)	
Other	84 (59.6)	39 (27.7)	18 (12.8)	141 (100)	
Missing/ unknown	1 (50.0)	0	1 (50.0)	2 (100)	
Overall	171 (60.4)	79 (27.9)	33 (11.7)	283 (100)	

NB: Analysis restricted to those who were aware that the service was offering rapid testing before visit (n=283)

Abbreviations: GP, general practice; m, months; SHC, sexual health centres.

* Missing excluded

** any UAI with casual partner or >10 partners in last 6 months

Table 7 Preference for next HIV test if returned for HIV testing (n=362)

	Conventional n(%)	Rapid* n(%)	No preference** n(%)	Total n(%)	p-value†
Clinic type					0.098
SHC	21 (14.4)	77 (52.7)	48 (32.9)	146 (100)	
GP	7 (9.9)	47 (66.2)	17 (23.9)	71 (100)	
Community	10 (6.9)	95 (65.5)	40 (27.6)	145 (100)	
Last HIV test					0.323
<24 months ago	34 (11.2)	186 (61.4)	83 (27.4)	303 (100)	
>24 months ago	3 (6.5)	26 (56.5)	17 (37.0)	46 (100)	
Missing/ unknown	1 (7.7)	7 (53.6)	5 (38.5)	13 (100)	
Risk group					0.316
High risk‡	15 (8.3)	110 (60.8)	56 (30.9)	181 (100)	
Other	23 (12.9)	108 (60.3)	48 (26.8)	179 (100)	
Missing/ unknown	0	1 (50.0)	1 (50.0)	2 (100)	
Overall	38 (10.5)	219 (60.5)	105 (29.0)	362 (100)	

Abbreviations: GP, general practice; m, months; SHC, sexual health centres.

* finger-prick or oral rapid test

** includes those who selected both conventional and rapid test (n=37)

† missing excluded

‡ any UAI with casual partner or >10 partners in last 6 months

Table 8 Likelihood to get tested for HIV twice a year if rapid testing is available (n=362)

	More likely n(%)	Less likely n(%)	No difference n(%)	Already test twice n(%)	Total n(%)	p-value*
Clinic type						
SHC	101 (68.2)	0	26 (17.6)	21 (14.2)	148 (100)	0.005
GP	53 (76.8)	0	9 (13.0)	7 (10.1)	69 (100)	
Community	124 (85.5)	2 (1.4)	11 (7.6)	8 (5.5)	145 (100)	
Last HIV test						
<24 months ago	229 (75.3)	1 (0.3)	38 (12.5)	36 (11.8)	304 (100)	0.027
>24 months ago	40 (88.9)	1 (2.2)	4 (8.9)	0	45 (100)	
Missing/ unknown	9 (69.2)	0	4 (30.8)	0	13 (100)	
Risk group						
High risk**	139 (76.8)	1 (0.6)	28 (15.5)	13 (7.2)	181 (100)	0.175
Other	137 (76.5)	1 (0.6)	18 (10.1)	23 (12.9)	179 (100)	
Missing/ unknown	2 (100.0)	0	0	0	2 (100)	
Overall	278 (76.8)	2 (0.6)	46 (12.7)	36 (9.9)	362 (100)	

Abbreviations: GP, general practice; m, months; SHC, sexual health centres.

* Missing excluded

** any UAI with casual partner or >10 partners in last 6 months

Table 9 Any concerns regarding the accuracy or reliability of rapid HIV testing (n=364)

	Yes n(%)	No n(%)	Don't know n(%)	Total n(%)	p-value*
Clinic type					0.091
SHC	22 (14.8)	98 (65.8)	29 (19.5)	149 (100)	
GP	11 (15.7)	45 (64.3)	14 (20.0)	70 (100)	
Community	16 (11.0)	114 (78.6)	15 (10.3)	145 (100)	
Last HIV test					0.907
<24 months ago	42 (13.7)	216 (70.6)	48 (15.7)	306 (100)	
>24 months ago	7 (15.2)	31 (67.4)	8 (17.4)	46 (100)	
Missing/ unknown	0	10 (83.3)	2 (16.7)	12 (100)	
Risk group					0.029
High risk**	32 (17.7)	126 (69.6)	23 (12.7)	181 (100)	
Other	17 (9.4)	129 (71.3)	35 (19.3)	181 (100)	
Missing/ unknown	0	2 (100.0)	0 (0)	2 (100)	
Overall	49 (13.5)	257 (70.6)	58 (15.9)	364 (100)	

Abbreviations: GP, general practice; m, months; SHC, sexual health centres.

* Missing excluded

** any UAI with casual partner or >10 partners in last 6 months

Table 10 Would clients use rapid HIV testing again (n=364)

	Yes n(%)	No n(%)	Total n(%)	p-value*
Clinic type				
SHC	149 (100.0)	0	149 (100)	0.399
GP	70 (98.6)	1 (1.4)	71 (100)	
Community	143 (99.3)	1 (0.7)	144 (100)	
Last HIV test				
<24 months ago	303 (99.3)	2 (0.7)	305 (100)	0.582
>24 months ago	46 (100.0)	0	46 (100)	
Missing/ unknown	13 (100.0)	0	13 (100)	
Risk group				
High risk**	180 (98.9)	2 (1.1)	182 (100)	0.158
Other	180 (100.0)	0	180 (100)	
Missing/ unknown	2 (100.0)	0	2 (100)	
Overall	362 (99.5)	2 (0.6)	364 (100)	

Abbreviations: GP, general practice; m, months; SHC, sexual health centres.

* Missing excluded

** any UAI with casual partner or >10 partners in last 6 months

Table 11 Would clients recommend rapid HIV testing to others (n=365)

	Yes n(%)	No n(%)	Total n(%)	p-value*
Clinic type				
SHC	148 (99.3)	1 (0.7)	149 (100)	0.406
GP	70 (98.6)	1 (1.4)	71 (100)	
Community	145 (100.0)	0	145 (100)	
Last HIV test				
<24 months ago	304 (99.4)	2 (0.7)	306 (100)	0.582
>24 months ago	46 (100.0)	0	46 (100)	
Missing/ unknown	13 (100.0)	0	13 (100)	
Risk group				
High risk**	180 (98.9)	2 (1.1)	182 (100)	0.157
Other	181 (100.0)	0	181 (100)	
Missing/ unknown	2 (100.0)	0	2 (100)	
Overall	363 (99.5)	2 (0.6)	365 (100)	

Abbreviations: GP, general practice; m, months; SHC, sexual health centres.

* Missing excluded

** any UAI with casual partner or >10 partners in last 6 months

Table 12 Satisfaction with different aspects of rapid testing experience (n=355)

	Satisfied n(%)	Not satisfied/ neutral n(%)	Total n(%)	p-value*
Discussion before rapid test				
Clinic type				0.022
SHC	136 (91.3)	13 (8.7)	149 (100)	
GP	55 (87.3)	8 (12.7)	63 (100)	
Community	139 (97.2)	4 (2.8)	143 (100)	
Last HIV test				0.935
<24 months ago	279 (93.0)	21 (7.0)	300 (100)	
>24 months ago	42 (93.3)	3 (6.7)	45 (100)	
Missing/ unknown	9 (90.0)	1 (10.0)	10 (100)	
Risk group				0.142
High risk**	168 (94.9)	9 (5.1)	177 (100)	
Other	160 (90.9)	16 (9.1)	176 (100)	
Missing/ unknown	2 (100.0)	0	2 (100)	
Overall	330 (93.0)	25 (7.0)	355 (100)	
Discussion about rapid test result				
Clinic type				0.040
SHC	138 (94.5)	8 (5.5)	146 (100)	
GP	53 (88.3)	7 (11.7)	60 (100)	
Community	139 (97.2)	4 (2.8)	143 (100)	
Last HIV test				0.663
<24 months ago	279 (94.9)	15 (5.1)	294 (100)	
>24 months ago	42 (93.3)	3 (6.7)	45 (100)	
Missing/ unknown	9 (90.0)	1 (10.0)	10 (100)	
Risk group				0.009
High risk**	170 (97.7)	4 (2.3)	174 (100)	
Other	158 (91.3)	15 (8.7)	173 (100)	
Missing/ unknown	2 (100.0)	0	2 (100)	
Overall	330 (94.6)	19 (5.4)	349 (100)	
Discussion after getting tested				
Clinic type				0.016
SHC	138 (93.24)	10 (93.2)	148 (100)	
GP	48 (84.21)	9 (84.2)	57 (100)	
Community	136 (95.77)	6 (95.8)	142 (100)	
Last HIV test				0.264
<24 months ago	273 (93.49)	19 (93.5)	292 (100)	
>24 months ago	40 (88.89)	5 (88.9)	45 (100)	
Missing/ unknown	9 (90.0)	1 (10.0)	10 (100)	

	Satisfied n(%)	Not satisfied/ neutral n(%)	Total n(%)	p-value*
Risk group				0.279
High risk**	164 (94.25)	10 (94.3)	174 (100)	
Other	156 (91.23)	15 (91.2)	171 (100)	
Missing/ unknown	2 (100.0)	0	2 (100)	
Overall	322 (92.8)	25 (92.8)	347 (100)	
Way rapid test conducted				
Clinic type				0.111
SHC	141 (94.6)	8 (5.4)	149 (100)	
GP	53 (91.4)	5 (8.6)	58 (100)	
Community	140 (97.9)	3 (2.1)	143 (100)	
Last HIV test				0.443
<24 months ago	281 (95.3)	14 (4.8)	295 (100)	
>24 months ago	44 (97.8)	1 (2.2)	45 (100)	
Missing/ unknown	9 (90.0)	1 (10.0)	10 (100)	
Risk group				0.119
High risk**	170 (97.1)	5 (2.9)	175 (100)	
Other	162 (93.6)	11 (6.4)	173 (100)	
Missing/ unknown	2 (100.0)	0	2 (100)	
Overall	334 (95.4)	16 (4.6)	350 (100)	
Comfort of fingerpick				
Clinic type				0.008
SHC	122 (81.9)	27 (18.1)	149 (100)	
GP	48 (84.2)	9 (15.8)	57 (100)	
Community	134 (93.7)	9 (6.3)	143 (100)	
Last HIV test				0.090
<24 months ago	255 (86.4)	40 (13.6)	295 (100)	
>24 months ago	42 (95.5)	2 (4.6)	44 (100)	
Missing/ unknown	7 (70.0)	3 (30.0)	10 (100)	
Risk group				0.255
High risk**	155 (89.1)	19 (10.9)	174 (100)	
Other	147 (85.0)	26 (15.0)	173 (100)	
Missing/ unknown	2 (100.0)	0	2 (100)	
Overall	304 (87.1)	45 (12.9)	349 (100)	
Length of wait for results				
Clinic type				0.027
SHC	132 (90.4)	14 (9.6)	146 (100)	
GP	53 (93.0)	4 (7.0)	57 (100)	
Community	140 (97.9)	3 (2.1)	143 (100)	

	Satisfied n(%)	Not satisfied/ neutral n(%)	Total n(%)	p-value*
Last HIV test				0.268
<24 months ago	273 (93.5)	19 (6.5)	292 (100)	
>24 months ago	43 (97.7)	1 (2.3)	44 (100)	
Missing/ unknown	9 (90.0)	1 (10.0)	10 (100)	
Risk group				0.109
High risk**	166 (96.0)	7 (4.1)	173 (100)	
Other	157 (91.8)	14 (8.2)	171 (100)	
Missing/ unknown	100.0	0	2 (100)	
Overall	93.9	21 (6.1)	346 (100)	

Abbreviations: GP, general practice; m, months; SHC, sexual health centres.

* Missing excluded; **any UAI with casual partner or >10 partners in last 6 months

Table 13 Amount in AUD clients would be prepared to pay for a rapid HIV test (n=344)

	Nothing n(%)	A\$15 n(%)	A\$20 n(%)	A\$30 n(%)	A\$50 n(%)	Total n(%)	p-value*
Clinic type							0.134
SHC	41 (28.3)	29 (20.0)	25 (17.2)	23 (15.9)	27 (18.6)	145 (100)	
GP	6 (10.3)	13 (22.4)	11 (19.0)	16 (27.6)	12 (20.7)	58 (100)	
Community	23 (16.3)	33 (23.4)	29 (20.6)	27 (19.2)	29 (20.6)	141 (100)	
Last HIV test							0.298
<24 months ago	61 (21.1)	67 (23.2)	52 (18.0)	52 (18.0)	57 (19.7)	289 (100)	
>24 months ago	7 (15.6)	6 (13.3)	9 (20.0)	13 (28.9)	10 (22.2)	45 (100)	
Missing/ unknown	2 (20.0)	2 (20.0)	4 (40.0)	1 (10.0)	1 (10.0)	10 (100)	
Risk group							0.969
High risk**	34 (19.9)	35 (20.5)	34 (19.9)	33 (19.3)	35 (20.5)	171 (100)	
Other	36 (21.1)	39 (22.8)	31 (18.1)	33 (19.3)	32 (18.7)	171 (100)	
Missing/ unknown	0	1 (50.0)	0	0	1 (50.0)	2 (100)	
Overall	70 (20.4)	75 (21.8)	65 (18.9)	66 (19.2)	68 (19.8)	344 (100)	

Abbreviations: GP, general practice; m, months; SHC, sexual health centres.

* Missing excluded

** any UAI with casual partner or >10 partners in last 6 months

14.3 Appendix C: Impact analysis results

Table 14 Mean HIV tests per unique client with at least one HIV test

	Rapid testers Mean (n)	Historic control Mean (n)	p	Concurrent control Mean (n)	p
Site type					
SHC	1.80 (3586)	1.45 (5002)	<0.001	1.36 (4205)	<0.001
GP	1.72 (348)	1.41 (903)	<0.001	1.50 (858)	<0.001
Age group					
<30	1.83 (1692)	1.46 (2200)	<0.001	1.35 (1866)	<0.001
30-39	1.82 (1269)	1.47 (1863)	<0.001	1.40 (1533)	<0.001
≥40	1.71 (973)	1.39 (1842)	<0.001	1.41 (1664)	<0.001
Risk category*					
High risk	2.20 (1401)	1.54 (2579)	<0.001	1.58 (1460)	<0.001
Other	1.55 (2185)	1.40 (2423)	<0.001	1.25 (2745)	<0.001
Overall	1.80 (3934)	1.44 (5905)	<0.001	1.39 (5063)	<0.001

NB: community sites excluded from this analysis

Abbreviations: **GP**, general practice; **SHC**, sexual health centres.

* Risk based on SHCs only. High risk=>5 partners in 3 months; >20 partners in 12 months

Table 15 Mean HIV tests per unique client in clients who had a rapid test in rapid testing period and had visited in the period before rapid testing

	Rapid testers Mean	Paired control Mean	p
Site type			
SHC (n=2008)	2.03	1.59	<0.001
GP (n=143)	2.36	1.28	<0.001
Age group			
<30 (n=948)	2.09	1.55	<0.001
30-39 (n=681)	2.10	1.67	<0.001
≥40 (n=522)	1.93	1.47	<0.001
Risk category*			
High risk (n=1072)	2.10	1.77	<0.001
Other (n=936)	1.93	1.37	<0.001
Overall (n=2151)	2.05	1.57	<0.001

NB: community sites excluded from this analysis

Abbreviations: **GP**, general practice; **SHC**, sexual health centres.

* Risk based on SHCs only. High risk=>5 partners in 3 months; >20 partners in 12 months

Table 16 Mean number of days between consecutive HIV tests in clients who had at least 2 HIV tests

	Rapid testers Mean (n)	Historic control Mean (n)	p	Concurrent control Mean (n)	p
Site type					
SHC	135.8 (4823)	148.8 (4973)	<0.001	150.3 (2354)	<0.001
GP	145.1 (310)	161.5 (681)	0.007	152.5 (667)	0.197
Age group					
<30	131.9 (2132)	143.1 (2042)	<0.001	146.5 (928)	<0.001
30-39	138.7 (1801)	153.4 (2017)	<0.001	153.0 (1018)	<0.001
≥40	140.9 (1200)	155.9 (1595)	<0.001	152.0 (1075)	0.001
Risk category*					
High risk	128.7 (3024)	147.3 (3182)	<0.001	142.6 (1354)	<0.001
Other	147.8 (1799)	151.7 (1791)	0.188	160.6 (1000)	<0.001
Overall	136.4 (5133)	150.4 (5654)	<0.001	150.7 (3021)	<0.001

NB: community sites excluded from this analysis. HIV tests within 6 weeks of a previous test excluded

Abbreviations: GP, general practice; SHC, sexual health centres.

*Risk based on SHCs only. High risk=>5 partners in 3 months; >20 partners in 12 months

Table 17 Mean number of days between first two HIV tests in clients had a rapid test and at least 2 HIV tests in both periods

	Rapid testers Mean	Paired control Mean	p
Site type			
SHC (n=849)	149.8	160.7	0.008
GP (n=52)	151.8	148.4	0.841
Age group			
<30 (n=385)	146.4	159.8	0.033
30-39 (n=318)	144.3	161.3	0.007
≥40 (n=198)	165.7	158.0	0.387
Risk category*			
High risk (n=563)	147.4	160.9	0.008
Other (n=286)	154.5	160.2	0.416
Overall (n=901)	149.9	160.0	0.012

NB: community sites excluded from this analysis. HIV tests within 6 weeks of a previous test excluded

Abbreviations: GP, general practice; SHC, sexual health centres.

*Risk based on SHCs only. High risk=>5 partners in 3 months; >20 partners in 12 months

