

Time to test for HIV: Expanded healthcare and community HIV testing in England

Interim report



Acknowledgments

This work was carried out with the support of a grant from the Department of Health.

We wish to thank the participating organisations and individuals of all eight projects for their contribution to this report. These organisations and individuals are listed in the abstract section of the report.

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Key findings

- Eight projects, in hospitals (3), primary care (2) and community settings (3), were funded by the Department of Health. All except one were in high prevalence areas (where diagnosed prevalence greater than 2/1000 15-59 year olds).
- Projects ran for periods of 3-12 months between 2009 and 2010 and resulted in more than 10,000 diagnostic HIV tests being performed, with the largest number being in healthcare settings.
- A total of 50 HIV-infected persons were newly diagnosed, giving an overall positivity of five per 1,000 tests across the projects. The highest positivities were reported in community based projects. Among the eight projects, all but three initiatives found positivities of greater than one per thousand tests; the cost-effective threshold for expanded HIV testing programmes in the United States of America.
- The routine offer and recommendation of HIV testing in primary care and hospital settings was feasible and acceptable to both staff and patients.
- Community based pilots demonstrated the feasibility and acceptability of establishing HIV testing services in these settings and illustrated the importance of community involvement in setting up these services.
- These pilot projects were successful in diagnosing individuals with previously undiagnosed HIV infection.

Recommendations

- HIV testing in primary care and general medical admissions must be prioritised in areas with a high diagnosed HIV prevalence (i.e. >2/1,000 15-59 year olds) and among most at-risk populations in order to reduce late diagnoses and the proportion undiagnosed.
- Efforts are required to increase the uptake of HIV testing among people attending sexually transmitted infection (STI) clinics and to maintain high uptake of HIV testing among women attending for antenatal care.
- Community HIV testing services need to be appropriately targeted and established with strong community representation. To be successful these initiatives require long term commitment.
- Strong links between HIV specialist services and primary care, hospital and community projects are essential for immediate continuity of care for newly diagnosed patients. Particular attention should be paid to prompt referral of patients newly diagnosed in primary care and community services to minimise loss to follow-up.
- Economic evaluations, including cost-effectiveness studies, are needed to determine the best strategies to expand HIV testing in each of these settings.
- Concerted effort and ongoing resources (both human and financial) are needed to sustain successful projects beyond the research and pilot stages.

HIV testing policies in the UK

HIV testing has been routinely offered, with a recommendation to accept, to all patients attending antenatal clinics and sexually transmitted infection (STI) clinics since 1999 and 2001 respectively (1, 2). Consequently, in the UK the majority of diagnostic HIV testing occurs within these settings (3).

In order to address the problem of late diagnosis and undiagnosed HIV infection in the UK, BHIVA/BASHH/BIS issued national guidelines in 2008. These guidelines recommend the expansion of HIV testing beyond antenatal and STI clinic settings. Importantly, they advocate the routine offer of an HIV test to all adults registering in general practice and all general medical admissions where the local diagnosed HIV prevalence is greater than two per thousand among 15-59 year olds (4); in 2009, 37 English PCTs had a prevalence above this threshold, 26 of which were in London (5). This geographical targeting covers about a fifth of the English population (6).

The extent to which these guidelines have been implemented in general healthcare settings remains unknown. Responses from 17 medical Royal Colleges, Faculties and professional organisations to a recent survey conducted by the Health Protection Agency (HPA) showed that although 11 organisations reported awareness of the guidelines only four knew of any work being conducted within their specialty to address HIV testing and only five had included HIV testing in any of their own clinical guidelines.

Epidemiology of HIV in the UK

In 2009 in the UK, an estimated 86,500 people were living with HIV (both diagnosed and undiagnosed) and a quarter (26%) of HIV-infected people were estimated to be unaware of their infection. In 2009 there were 6,630 new diagnoses of HIV. Over half of these individuals are thought to have acquired their infection heterosexually of which an estimated 68% were acquired abroad, mainly in sub-Saharan Africa. High numbers of new diagnoses (2,760 in 2009) continue to be reported in men who have sex with men (MSM) and the majority of these infections (83%) are thought to be acquired in the UK.

Late diagnosis of HIV is associated with increased morbidity and mortality. In 2009 an estimated 52% (3,450/6,630) of newly diagnosed patients had a CD4 count less than 350cells/mm³ and are therefore considered to have been diagnosed late (after a point at which treatment should have commenced). The proportion of late diagnoses is higher among heterosexual men and women (66% and 59% respectively) than among MSM (39%) (1).

HIV testing patterns

Antenatal Services: The success of universal offer of an HIV test as part of routine care is best illustrated in the antenatal setting. Since its introduction in 1999, uptake of HIV testing among women in antenatal care has reached 95% nationally (Table 1) and the proportion of women who remain undiagnosed after delivery has fallen from 27% in 2000 to 12% in 2009. Consequently the estimated proportion of newborns at risk of HIV infection who become infected decreased from 8% to 2% between 2000 and 2008 (data from unlinked anonymous survey of newborn dried blood spots and the national study of HIV in pregnancy and childbirth).

Table 1: HIV antenatal screening uptake and positive results in England in 2009

Region	Uptake ¹	Positivity per thousand tests ²
East Midlands	91%	1.01
East of England	96%	1.40
London	95%	3.99
North East	91%	0.59
North West	94%	1.11
South East	97%	1.23
South West	94%	0.67
West Midlands	97%	1.73
Yorkshire & the Humber	95%	1.82
National	95%	1.85

¹ The proportion of women booked for antenatal care that were tested for HIV

² This may include both women diagnosed prior to and during pregnancy

Data Source: National Antenatal Infection Screening Monitoring programme

STI clinics: Patients attending STI clinics are also offered an HIV test, with a recommendation to accept, as part of routine care. Overall in 2009, 77% (984,117/1,282,918) of all patients attending an STI clinic had an HIV test. This uptake is lower than that seen among patients tested as part of the sentinel unlinked anonymous HIV survey of residual syphilis blood samples which increased from 32% to 95% over the last 10 years. However, despite this increase in HIV testing uptake, 32% of MSM and 23% of heterosexual patients attending the 13 sentinel clinics still left the clinic unaware of their infection in 2009. In both high and low prevalence areas positivity in STI clinics far exceeded the USA threshold (one per thousand tests) deemed cost effective for routine testing (Table 2).

Table 2: Uptake and outcome of HIV testing in STI clinics in England, 2009

Diagnosed HIV prevalence ¹	Gender/sexual orientation	Number offered HIV test ²	Number tested for HIV ²	Uptake	Number positive ²	Positivity per thousand tests
High prevalence areas	MSM	31420	27781	88%	987	35.53
	Other males	150074	125582	84%	670	5.34
	Females	193062	155158	80%	696	4.49
	Total	374556	308521	82%	2353	7.63
Low prevalence areas	MSM	23950	21449	90%	557	25.97
	Other males	327820	251641	77%	631	2.51
	Females	385624	279936	73%	706	2.52
	Total	737394	553026	75%	1894	3.42

¹ Data for patients' PCT of residence

² Excludes data from patients who are not resident in England but attended a clinic in England and data where patients' PCT of residence is not known

Data source: Data from STI clinics in England

Population estimates of HIV testing: Behavioural surveys provide insight into HIV testing patterns in the general and in the most at-risk populations. In a survey, conducted in 2000, among a nationally representative sample of the British population, a third of men (32%) and women (32%) reported ever having had an HIV test, mostly through antenatal care or blood donation (7). More recent community surveys of convenience samples of black African populations estimate that between 47% and 61% had ever tested (8, 9). Among MSM, surveys have shown that between 30% (10) and 50% (11) have tested in the past 12 months and between one in eight (11) and one in three (12) had never tested.

Expanded HIV testing – pilot evaluations

To explore ways in which the testing guidelines might best be implemented, the Department of Health (DH) funded eight demonstration projects to pilot the expansion of HIV testing outside traditional settings. Three types of settings were assessed: hospitals, primary care and community outreach. The results of these projects will inform an evidence base for successful strategies to increase HIV testing and reduce the proportion of individuals who are undiagnosed and present late.

Each of the pilot projects was implemented between 2009 and 2010. The projects were visited by the HPA/DH team and information about the projects gathered with the aid of a proforma. Data were collected to evaluate the projects and information was shared wherever possible to ensure consistency of measures across the projects.

A summary of the projects is available in appendix 1 and individual results from each are available in abstract form in appendix 2. For dissemination of best practice, we have evaluated local projects using comparable data. The projects have been assessed within the following four criteria: feasibility, acceptability, effectiveness and cost effectiveness, and sustainability.

Feasibility

All projects demonstrated that expanding HIV testing within the three different types of settings was feasible.

Offering HIV testing: the number of patients that were offered a test in each project varied due to the very different settings and operational environments. For example, 129 testing kits were distributed in the 4 month home sampling project (AB8) compared to 3,468 tests offered in three months in an emergency department (AB1).

In hospital and primary care settings, which aimed to make the offer of a test routine practice, the proportion of all patients attending who were offered a test (the offer rate) ranged from 40% (AB2) to 67% (AB1) indicating that it is feasible to offer HIV testing to patients even when they are attending for other reasons.

Across the projects a range of different staff offered and recorded patients' consent for HIV tests. Testing rates varied greatly by clinician in hospital and primary care settings (AB2, AB3, AB4) emphasising the importance of staff engagement and support within the departments conducting the testing.

Logistics: The types of resources and staff required varied for each of the settings. In three community-based projects the main factor limiting feasibility was the ability to develop partnerships with the appropriate community (AB6a, AB6b, AB7). These partnerships were required both to promote the

testing service and provide facilities to house the service. There were also challenges in identifying appropriate staff to run community based projects (AB6a, AB6b).

In the hospital and primary care settings the key aspect which impacted on feasibility was the use of existing staff to carry out HIV testing alongside other tasks.

Transfer to care: All projects specified clear pathways to ensure results were returned to patients and that those patients testing positive or reactive were appropriately counselled and referred for HIV care in a timely manner. Rates of transfer to care for newly-diagnosed individuals were reported in all projects and ranged from 67% (AB7) to 100% (AB1, AB2, AB3, AB4). The results emphasise that when expanding testing it is essential to create strong links between the testing service and specialist HIV services early in the planning stage of the project

Acceptability

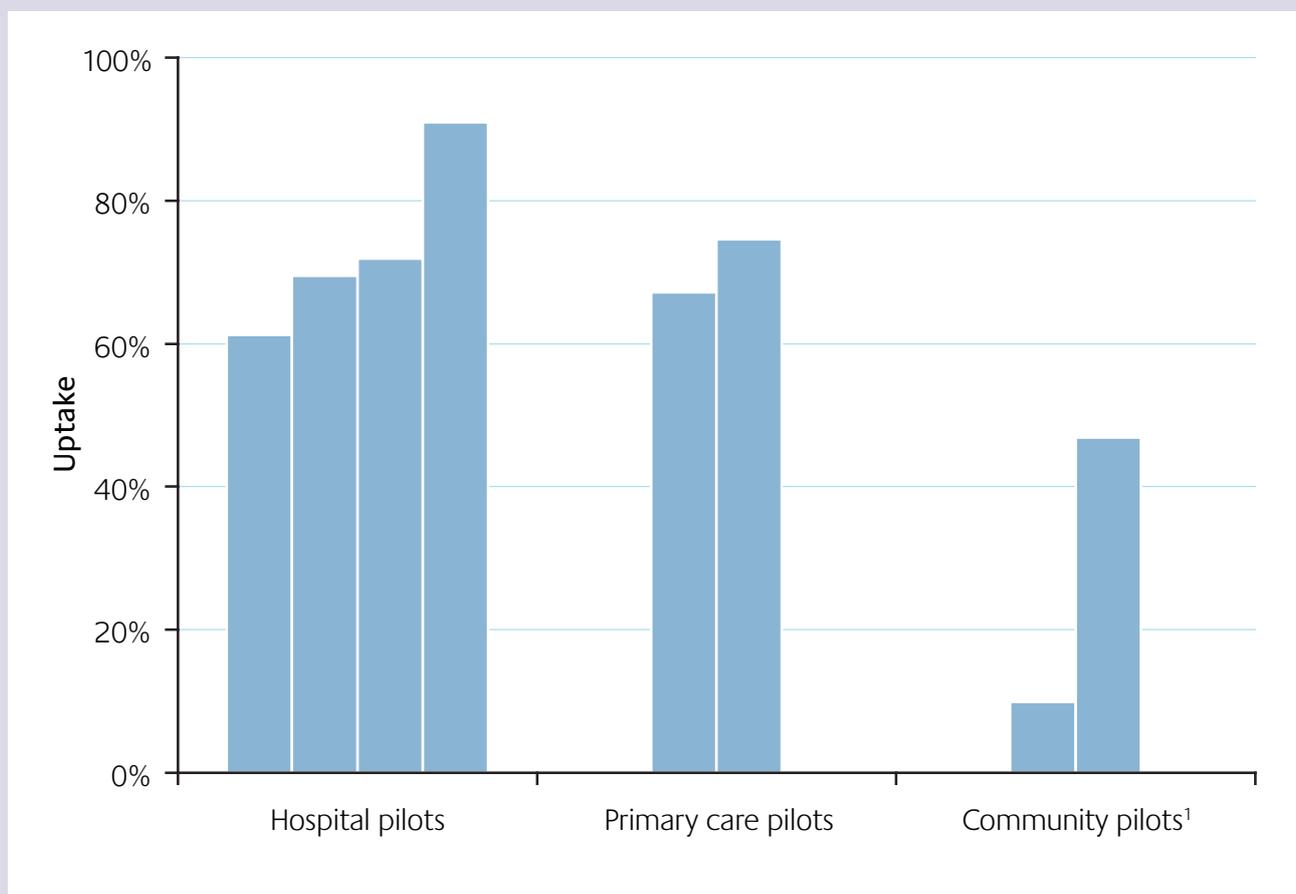
A total of 10,478 tests have so far been performed within the pilot projects. The greatest number of HIV tests (2,713 in nine months) was achieved in a primary care setting where all newly-registering patients were offered an HIV test as part of their new patient health check (AB5) while the smallest numbers were carried out in community based projects (for example, 59 tests over six months – AB8).

Uptake of HIV testing: Uptake of testing – defined as the number of individuals accepting a test as a proportion of all those offered a test – was widely used as a measure of patient acceptability for the pilot studies.

High levels of test uptake were seen in all primary care (67-75%) and hospital settings (61-91%) (Figure 1), indicating good patient acceptability of a routine offer and recommendation of an HIV test in these settings.

Lower levels of uptake were reported in community settings. However, the routine offer of an HIV test was not the objective of these projects. Of the community service projects, the 47% uptake reflected the return of mailed HIV tests (AB8), the 10% uptake was the proportion of individuals entering a service and accepting HIV test after being approached in the street (AB7) and two settings (AB6a, AB6b) did not report uptake as individuals attended the services in order to have an HIV test.

Figure 1: Uptake of HIV testing in DH funded HIV testing pilot projects, 2009-2010



1. The 10% uptake reflects the proportion of individuals entering a service after being approached in the street, while the 47% uptake reflects the proportion of mailed HIV tests which were returned and tested.

Patient questionnaires and interviews: Evaluation of patient acceptability from questionnaires and interviews was collected in four of the pilots (AB1, AB4, AB6a, AB6b, AB7). These studies showed that patient acceptability of HIV testing was high across all the settings (92-97%) (AB1, AB4, AB7). Where patients declined an HIV test, the most common reasons given were a recent test or that they did not perceive themselves to be at risk of HIV (AB1, AB5, AB6b).

Staff acceptability: Staff acceptability was assessed in four pilots using questionnaires, focus groups or reflective diaries. (AB1, AB4, AB7, AB6a, AB6b). In all settings the model of HIV testing was shown to be generally acceptable to staff. Reported barriers to offering HIV testing before the initiation of a project included a need for additional training, concerns that patients would ask challenging questions and sufficient time to gain informed consent for an HIV test (AB1, AB4). Although in healthcare settings staff had anxieties before the pilot was introduced, these fears were usually assuaged once the pilot was underway (AB1, AB4).

Effectiveness

The hospital and primary care based projects routinely offered HIV tests to all people (within a designated age group) attending their services. In contrast the community projects focussed on targeting particular populations: two MSM projects and two projects serving individuals from black African communities.

Positivity: The 10,478 HIV tests conducted by the eight projects resulted in 50 new diagnoses – a positivity of 0.5% (95% confidence interval (CI) 0.4-0.6%).

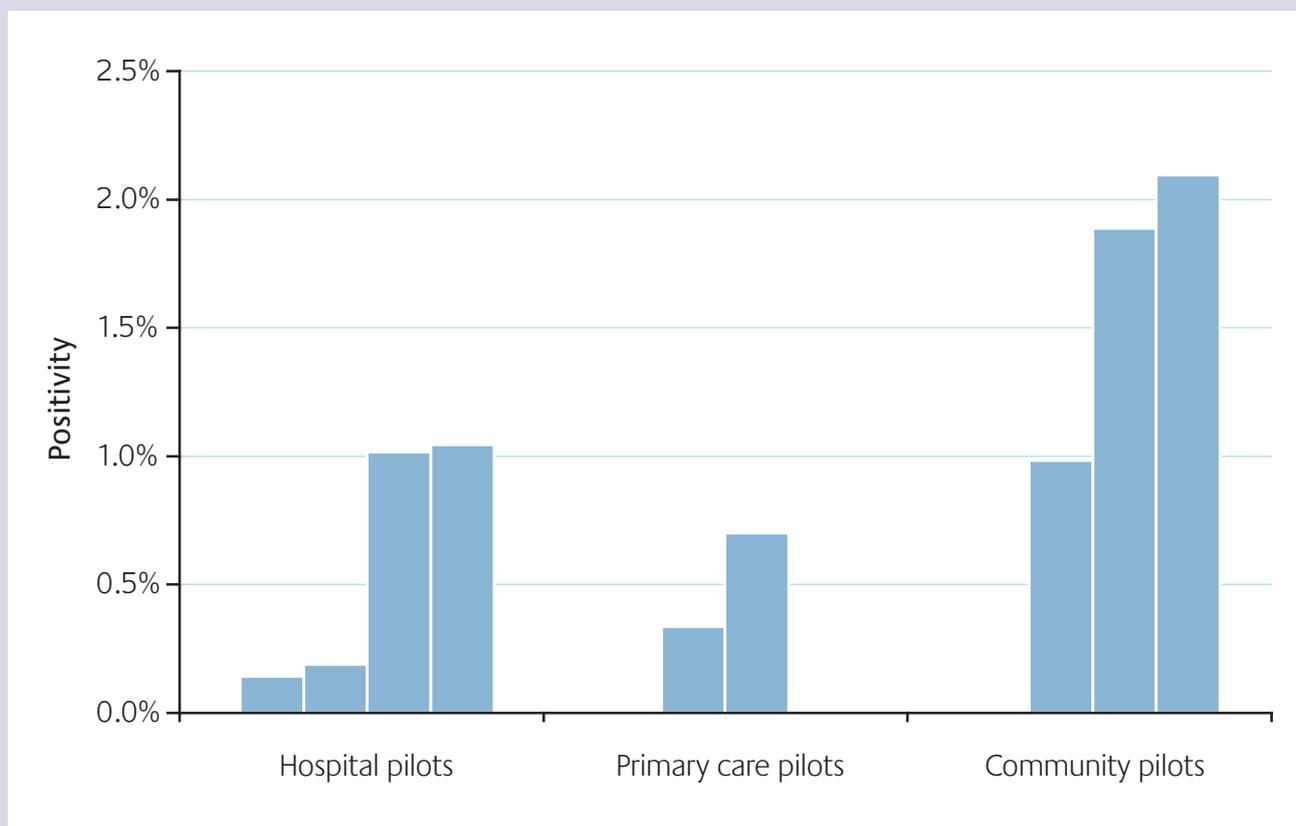
The highest positivities were in projects established in community settings: 1.0% (95% CI 0.2%-2.8%) and 1.9% (95% CI 0.2-6.6%) in services for black African communities (AB6b, AB7); and 2.1% (95% CI 0.6%-5.3%) in services for MSM (AB6a) (Figure 2).

Of the projects established in healthcare settings, the highest positivity, 1.0% (95% CI 0.3-2.7%), was reported in an acute care unit (AB1). For all but two healthcare settings (AB1), the positivity was higher than the 1/1,000 threshold deemed as cost-effective (Figure 2).

In three settings (a community pilot of home sampling, a primary care setting and an outpatient department) no HIV diagnoses were made (AB1, AB8).

A further component of one pilot investigated those patients who did not have an HIV test (AB2). In this study where patients may not have been offered an HIV test, 6/8 HIV positive individuals were not diagnosed during their attendance at the hospital. This emphasises the need for a universal offer of the test.

Figure 2: HIV test positivity in DH funded HIV testing pilot projects, 2009-2010



Cost-effectiveness: Three projects (AB1, AB2, AB4) have sought further funding to conduct a formal cost-effectiveness component as part of the study. These will report later in the project cycle. However, data on costs from the other projects can be used as part of the broader economic evaluation of establishing HIV testing initiatives in a range of settings.

It has been estimated that the life-time healthcare cost of each new HIV infection in the UK is between £280,000 and £360,000 (13). The prevention of all HIV infections diagnosed in 2009 would have reduced future HIV-related costs in excess of £1 billion. The cost-effectiveness of different HIV testing strategies has been evaluated in the USA and France. In the USA, testing for HIV is considered cost-effective as long as the positivity rate is $>1/1,000$ (14). In France, an HIV test undertaken in a lifetime for the general population and annually for the most at risk populations has been shown to be cost-effective (15).

As yet no cost-effectiveness studies have been published in the UK. However, a number are underway which consider cost-effectiveness of strategies to expand HIV testing as well as the short term and long term cost savings of earlier diagnosis. Assessing the cost-effectiveness of HIV testing in various settings and establishing a UK specific threshold of positivity for routine offer of HIV testing will be critical in informing future testing policies.

Sustainability

Results from the pilot projects have shown that, with a high level of commitment from staff, HIV testing can be introduced into a range of settings and can be successful in diagnosing previously unrecognised HIV positive individuals and transferring them to care. However, it is important to ensure the sustainability of HIV testing in these different settings outside of a research project. This will require the identification of ongoing funding mechanisms to provide the necessary staff and resources.

The projects have employed a number of methods to ensure longer term sustainability:

- Inclusion of HIV testing in the medical admissions proforma and the general information leaflet given to patients on admission (AB3);
- Introduction of a local performance indicator (CQUIN – commissioning for quality and innovation) for HIV testing among all acute admissions (AB2);
- Ongoing work investigating the feasibility of HIV testing in healthcare settings using existing staff to deliver the test as an additional part of their role. This has included HIV testing being included in departmental plans for altering the patient care pathway within the department (AB1);
- Including point of care HIV testing in primary care core contracts as a level one sexual health service and withdrawal of accompanying locally enhanced service payments (AB5).

Conclusion

This report provides interim results of eight DH-funded HIV testing pilots outside of STI and antenatal clinics.

The results of the pilots provide evidence that the national 2008 guidelines recommending routine offer of an HIV testing to new registrants in primary care and general medical admissions in high prevalence areas are feasible, acceptable and effective in identifying previously undiagnosed persons. Therefore HIV testing in these settings should be prioritised. Community based pilots, targeting the most at risk populations were also shown to be highly acceptable and resulted in high numbers of individuals in most at risk groups being newly diagnosed with HIV infection and transferred into care.

Establishing HIV testing in healthcare and community settings requires robust protocols to ensure the timely transfer of patients with reactive or positive test results into care and support services. In healthcare settings training of staff within the setting will increase the number of tests offered and as a result the number of tests which are performed.

A number of the projects are not yet complete. A final report will be produced in early 2011.

Appendix 1: Summary of Department of Health funded HIV testing pilot projects, 2009-2010

	Abstract number	Project summary	Interim Project results
Hospital projects	AB1	London (HINTS Study) - Routine offer of an HIV test to all 16-65 year olds in an emergency department (ED), an acute admissions unit (ACU), an outpatients department (OPD) and primary care (PC). Serological blood testing was used in the ACU and saliva testing was used in the other settings.	<p>Total number tests offered: ED=3469; ACU=551; 1st care=1489; OPD=840 Total number tested: ED=2123; ACU=383; PC=1001; OPD=600 Total number newly diagnosed patients: ED=4; ACU=4; PC=0; OPD=0</p> <p>Status: Pilot complete</p> <p>References: Rayment et al. 2nd joint BHIVA/ BASHH conference, Manchester, 2010 Sullivan et al. XVIII World AIDS conference, Vienna, 2010 Thornton et al. XVIII World AIDS conference, Vienna, 2010</p>
	AB2	Brighton - Routine serological HIV testing as part of normal clinical investigations in medical admissions (aged 16-79). The testing was conducted for 6 months. At the same time, an unlinked anonymous seroprevalence survey of all admissions (aged 16-79) was carried out.	<p>Total number tests offered: 1553 Total number tested: 1413 Total newly diagnosed patients: 2</p> <p>Status: Pilot complete with testing ongoing</p> <p>References: Perry et al. 2nd joint BHIVA/ BASHH conference, Manchester, 2010 Perry et al. XVIII World AIDS conference, Vienna, 2010</p>
	AB3	Leicester – Routine offer of HIV serological testing on patients who were having blood drawn in the medical admissions. Testing incorporated into normal clinical care pathway and data are presented for one year of testing.	<p>Total number tested: 82 per month compared to 15 per month in the preceding 12 months Total newly diagnosed patients: 10</p> <p>Status: Pilot complete with testing ongoing as part of normal clinical care</p>
Primary care projects	AB4	Brighton – Routine offer of rapid HIV testing to all new registrants (aged 16-59) at 10 GP surgeries. All patients were offered a rapid finger prick blood test. Data are presented for 4 months of testing.	<p>Total number tested: 596 Total newly diagnosed patients: 2</p> <p>Status: Ongoing</p>
	AB5	London (Lewisham) – Routine offer of rapid HIV testing by healthcare assistants to all patients aged 18-59 who were newly registering in 18 GP surgeries. Data are presented for 9 months of testing.	<p>Total number tested: 2713 Total newly diagnosed patients: 19</p> <p>Status: Testing ongoing as part of normal clinical care</p>
Community projects	AB6a & AB6b	London – GMI Partnership. Two community based pilots providing rapid HIV testing each running for 6 months: african community testing (ACT) and community clinics for men who have sex with men (MSM).	<p>Total number tested: ACT pilot=106; MSM pilot=191 Total newly diagnosed patients: ACT pilot=2; MSM=4</p> <p>Status: Pilots complete (MSM clinics are continuing beyond the pilot)</p>
	AB7	London – Terrence Higgins Trust. A pilot establishing community partnerships with black African communities to conduct health promotion and offer HIV testing in a range of community settings. Data are presented for 9 months of testing.	<p>Total number tests offered: 3062 Total number tested: 305 Total newly diagnosed patients: 3</p> <p>Status: ongoing</p>
	AB8	Sheffield (Time to Test) – Home-sampling kits (for saliva) were made available through an established MSM website and peer outreach works to MSM. Samples were processed and results managed by the local sexual health centre.	<p>Total number of kits distributed: 126 Total number tested: 59 Total newly diagnosed patients: 0</p> <p>Status: Pilot complete</p>

Appendix 2: Project Abstracts

AB1: HIV Testing in Non-Traditional Settings – the HINTS Study

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Background: In the UK, the majority of HIV testing occurs in sexual health and antenatal services. Guidelines recommend routine testing in healthcare settings when the local diagnosed HIV prevalence exceeds 0.2%, but these have yet to be widely implemented. This prospective study assessed the feasibility and acceptability, to patients and staff, of routinely offering HIV tests in four non-traditional settings: Emergency Department (ED), Acute Care Unit (ACU), Dermatology Outpatients (DO) and Primary Care (PC).

Methods: Patients aged 16-65 years were offered an HIV test over a three-month period by local or seconded clinical staff, or trained non-clinical testers. In the PC arm, testing was delivered solely by GPs, who received an incentivising payment for participation. Demographic data, test uptake, test result, transfer to care and departmental activity were collected. Testing was performed on serological (ACU) or oral fluid samples (other sites), the latter using a standard platform with in-house validation. Univariate analysis was conducted to identify factors associated with the likelihood of test uptake. Subsets of patients completed a questionnaire, collecting behavioural and attitudinal data, or participated in focus groups and interviews (analysis ongoing). Staff completed questionnaires and participated in focus group discussions (analysis ongoing).

Results: Of 6349 patients offered a test, 4111 (65%) accepted (range 61-72% across sites). Eight individuals were newly diagnosed with HIV (range 0.0-1.0% across sites). All were transferred to care, and two sexual partners later tested HIV positive. There were seven false reactive results. ED patients were more likely to test if they were younger, or offered the test by clinical rather than non-clinical staff ($p < 0.001$). An association was observed between test uptake and ethnicity in ACU patients ($p = 0.04$). Analysis at the PC and DO sites is ongoing. Of 635 (528 ED, 107 ACU) analysed patient questionnaires, the offer of an HIV test in this setting was acceptable to 95%. There was no significant difference in reported acceptability by gender, ethnicity, age or HIV testing history. 50% of patients had never tested before. The most commonly cited reasons for declining a test were having recently tested (43%) and self-perception of low risk of HIV infection (40%). Pre-study, staff had anxieties about the feasibility of delivering the service and its impact on service delivery. Post-study staff focus groups demonstrated a high level of satisfaction that the delivery of testing was feasible with no negative impact on the department. To date, 42% ED and 57% ACU staff agreed they would feel comfortable offering HIV tests: the majority believed they would require further training to do so (82% in ED and 65% in ACU).

Conclusions: HIV testing in these settings is acceptable to the majority of patients and staff, and is operationally feasible. The strategy was successful in identifying and transferring to care previously undiagnosed HIV-infected individuals. However, in all but the PC arm, testing was mostly delivered by external study staff. Further work at two sites (ED and DO) shows testing can be integrated into the patient pathway by departmental staff. However, if HIV testing is to be included as a routine part of patients' care, additional resources and staff training will be required.

Acknowledgements: Patient and Public Engagement: Gus Cairns, John Holland

Additional Funding: NIHR CLAHRC North West London, NHS Hammersmith & Fulham and Kensington & Chelsea Primary Care Trusts

AB2: HIV testing in acute general medical admissions must be universally offered to reduce undiagnosed HIV

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Background: A third of HIV infections in England are thought to be undiagnosed and consequent late presentation causes avoidable morbidity, mortality and onward transmission. HIV testing guidelines produced by BHIVA, BASHH and BIS, have addressed this issue by encouraging more widespread HIV testing strategies. Among recommendations is a routine offer of HIV testing in acute general medical (AGM) admissions in areas of high HIV prevalence (>2/1000).

Methods: Individuals aged between 16 and 79 years of age admitted under AGM not already known to the admitting team to be HIV positive were eligible to be offered an HIV test as part of routine investigations. In addition to offer and uptake rates and test results, demographic data and clinical information regarding the presenting admission was collected. A parallel anonymous sero-prevalence study was undertaken to assess effectiveness of the pilot in correctly identifying undiagnosed HIV and to determine the prevalence of HIV in all acute hospital admissions (medical, orthopaedic, surgical and obstetrics & gynaecology).

Results: From August to January 2010, 3913 patients were admitted through AGM. Of these, 1553 (39.7%) were offered a test, of whom 1413 (91%) accepted. 2 tested HIV positive; both were individuals from high prevalence countries although 1 (who was seroconverting) acquired her infection within the UK; both presented with a clinical indicator disease. 1 partner tested positive and was able to commence treatment and the other partner was negative, so onward transmission may have been avoided. The offering rate varied by Consultant from 35% to 61%. Those offered a test were more likely to be younger (median age 57 years v 62 years, $p < 0.001$), and more likely to have a clinical indicator disease (59.6% v 42.0%, $p < 0.001$).

In the anonymous seroprevalence study, 6300 tests were performed; 3872 in AGM and 2416 in other specialties). 73 tests were positive; 54 in AGM (a prevalence of 14/1000), 12 in surgery (8/1000), 0 in O&G (0/1000), and 7 in orthopaedics (13/1000). In AGM, 46 were known to be HIV positive and therefore 2/8 (25%) of undiagnosed infections were identified and 6/8 (75%) not.

Conclusions: Whilst HIV testing is acceptable to the majority of patients in AGM, the rate of offering during this pilot was low, and varied substantially between medical teams as in previous antenatal testing research. The prevalence of HIV was higher than in the general population, and well above that recommended for routine testing in AGM, surgery and orthopaedics. Although recommended as routine, clinicians appear to be targeting testing, yet failing to identify the majority of undiagnosed infections. A local Trust performance indicator (CQUIN) has now been introduced by the PCT for offering HIV testing across all acute admissions.

AB3: Leicester acute medical admissions unit HIV testing pilot

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Background: Leicester city has a prevalence of diagnosed HIV infection of 3.12/1,000, Leicester Royal infirmary has the only accident and emergency (A&E) department in the county, patients requiring medical admission are all admitted via the acute medical admissions unit (AMU).

Method: We introduced Opt out HIV testing on the AMU in line with the 2008 National HIV testing Guidelines for 1 year as a pilot commencing August 2009. We looked carefully at the patient pathway for the AMU and had discussions with all the medical nursing and support staff working both on AMU and in A+E and with the lab staff in virology. Following these discussions we decided to integrate testing into the pathway by using the clinical aides who perform phlebotomy on all patients on the AMU to take an additional blood sample for HIV testing with a standard 4th generation test on all patients who are having blood drawn on the AMU for other investigations and who are less than 60 years old. Consent was obtained by a written information leaflet in English and 4 other languages given to each patient by the clinical aide. If the patient had any questions or concerns regarding this they were referred to a member of the nursing or medical staff. All consultants working on the unit were contacted by email and all junior staff working on the unit were informed about the new HIV testing policy at induction.

In order to normalise HIV testing as routine we modified all the medical admission clerking proformas to include the HIV test and issued a new poster and information sheet given to each new patient which included general information on visiting times, smoking, hand washing and HIV testing. These were finally delivered in May 2010.

Results: In the 12 months prior to the pilot the HIV testing rate was on average 15 per month with 4 new diagnoses made. For the period of the pilot the rate was on average 82 per month with 10 new positives diagnosed with one unconfirmed equivocal result. All patients were transferred into HIV care with none lost to follow up

The proportion of patients tested vs those eligible for testing remained disappointingly low varying between 6% and 22% month by month. This low figure was attributed to many patients within the age group having had all blood tests deemed necessary done in the emergency dept and therefore extra bloods were not needed on AMU. This does not however explain the variation over time, and we therefore looked at testing rates by individual consultants. This also exhibited variance between 3% and 22%. This was fed back to the consultants concerned.

Conclusion: We demonstrated that routine HIV opt out testing on a busy acute medical admissions unit was acceptable to patients, deliverable without significant extra resources and lead to the earlier diagnosis of HIV infection in several patients which would have otherwise been missed.

AB4: A study to assess the acceptability, feasibility and cost-effectiveness of universal HIV testing with newly registering patients (aged 16-59) in primary care.

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Background: New HIV testing guidance recommends introducing universal HIV testing in areas where diagnosed prevalence is 2 per 1,000 or more. The acceptability, feasibility and cost effectiveness of universal HIV testing with newly registering patients (aged 16-59) was assessed in the primary care setting in Brighton and Hove, where diagnosed prevalence is more than 7 per 1,000. A total of 10 GP practices that hold locally enhanced service contracts to improve access to primary care for people living with HIV took part in the study. The results presented here were obtained during the first four months of the study.

Methods: Newly registering patients (aged 16-59), attending for a new patient health check appointment (NPHCA), were universally offered a point of care Biolytical INSTi[®] HIV tests. Patient acceptability was assessed through a self-completed questionnaire using Likert scales. All patients were asked to complete the questionnaire following the offer of an HIV test, regardless of whether they opted to have an HIV test or not. Feasibility factors, such as time constraints, delivering reactive results, clinicians' attitudes and referral to care were assessed through the use of reflective diaries, regular working group meetings and focus groups. A cost-effectiveness analysis is being conducted to establish the incremental cost-effectiveness of testing in this setting.

Results:** Across all 10 practices, 799 patients who were offered an HIV test completed a patient questionnaire. HIV testing was accepted by 596 (74.6%) patients of whom 369 (61.9%) were female. Accepting an offer of an HIV test was significantly associated with practice ($p < 0.001$), age band ($p = 0.003$), gender ($p < 0.001$) and timing of last HIV test ($p < 0.001$). No significant association was found with sexual identity. Of those tested, 3 patients produced reactive results of which 2 were later confirmed HIV positive.

Overall, 96.7% of patients agreed that the offer of HIV testing was a good idea, with 81.7% reporting that they had had enough time to make the decision to test. Patients reported being happy to have an HIV test at their GP's surgery (92.4%), and only 9.0% stated that they would prefer to have a test at a specialist sexual health clinic. Patients rated the experience of being offered a test as helpful and useful (92.1%).

Clinicians' views of the feasibility of universal HIV testing were positive overall. In a small focus group ($n=10$) all agreed that the universal testing policy had been adopted well despite some early anxieties about offering an HIV test and managing reactive results.

In the 6 practices for which complete information about the uptake of the NPHCA was available, the average uptake by newly registered patients was 36% (range 3-81%).

Conclusion: Preliminary results suggest that universal HIV testing in primary care is both acceptable and feasible. The provision of genuinely universal coverage in the context of a NPHCA is dependent on several factors including the policies and practices of individual primary care facilities in offering NPHCAs, uptake rates by patients and follow-up mechanisms for patients who do not attend. A challenge remains in supporting clinicians to be confident in offering HIV testing to patients, particularly if this may potentially involve delivering "bad news".

*We are grateful for the contributions of members of the study working group and joint advisory group.

**Due to the interim nature of the results it is not yet possible to provide results for all practices taking part in the study; full results will be published in early 2011.

AB5: Primary care HIV screening in a high prevalence area

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Background: Lewisham is an inner city London borough with a large Black African community. HIV prevalence in 2008 was 5.88 per 1,000 in males and 3.91 per 1,000 in females. Fifty-seven percent of infections are acquired through heterosexual sex, and 41% of new cases are late diagnoses. Late diagnosis in heterosexuals was even higher, at 51%.

A proposal was submitted to the Department of Health in late 2008 to pilot HIV screening for new patients registering in primary care in line with the BHIVA guidance for high prevalence areas. The preparation and training for the pilot occurred in August – December 2009. HIV screening began in January 2010.

Methods: An expression of interest was sent to all GP practices in Lewisham, to invite them to participate in a pilot of HIV testing for newly registering patients. Of 48 practices in Lewisham 18 went on to participate in the pilot. One of the practices is also a GP walk in centre. Initially practices favoured a mix of serology and point of care (rapid) testing (POCT). However, following a demonstration of the INSTI rapid test at a GP training event, all opted to use point of care testing. A universal approach was adopted where the test would be offered to all patients on an 'opt out' basis. All patients aged 18-59 were provided with information about HIV testing when registering with the participating practices, and the test was performed as part of the new patient health check, usually by a practice nurse or healthcare assistant. Any reactive (positive) point of care tests were referred to the local HIV clinic for confirmatory testing. Practices were given a Local Enhanced Service payment of £250 for participating in the pilot plus £5 per test.

Results: Between January and September 2010 just over 2,713¹ patients had HIV tests in primary care. In addition to this some practices also did serology on a small number of patients having bloods taken for other reasons. There have been 19 positive test results up to the end of September. Five of these are from the GP walk in centre. There has been one false positive result, where 2 POCTs were assessed as 'weak positives' in the practice but serology was HIV negative. All reactive POCTs were referred to specialist HIV services for confirmatory testing. Four of the 19 patients with a positive result in primary care failed to attend the HIV clinic appointment. It is not known whether these patients sought HIV care elsewhere.

Across 13 practices where data was available on uptake, 62% of patients offered an HIV test chose to have one. Uptake ranged from 26% to 97%. CD4 counts were available on 7 patients. Only 2 had a CD4 count of less than 200.

Although data was not collected on the reasons why tests were declined, feedback from practices suggests the majority of patients refusing a test do so because they have previously had one (usually through antenatal screening) although a small number refuse as they do not perceive themselves to be at risk or because they know they are HIV positive.

Conclusions: The HIV point of care test is highly acceptable to both patients and staff using the test. Point of care testing is particularly helpful in primary care, as it makes results management much less of an administrative burden on the practice, particularly for the negative results.

Routine screening appears to help normalise testing and is estimated to add 1-5mins to a consultation. There have been substantial problems with data collection for the pilot as there are no appropriate READ codes for rapid HIV testing in primary care. The high proportion of patients failing to attend the HIV clinic is a cause for concern and warrants some further investigation. Few practices have seen patients again following a positive HIV test. It is not clear whether this is because most of their care is then taken over by specialist services or whether patients choose to avoid the practice once they receive their diagnosis for other reasons.

¹ This number is an underestimate due to issues with extracting data from GP practice systems. Work is underway to improve remote extraction of testing data as part of the sustainability of the project.

AB6a: The MSM Comparative Community HIV testing pilot

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Affiliations: ¹The Metro Centre; ²West London Gay Men's Project; ³Positive East

Pilot Aim: The aim of the MSM Comparative Community HIV testing pilot will be to set up, evaluate and directly compare two different models of community based rapid HIV testing targeting MSM in London.

Pilot Objectives:

1. To complete the set up of 3 sites offering rapid HIV testing clinics. These will be in Greenwich, Fulham and Islington.
2. To target men most at risk of HIV transmission and those who have never tested, aiming to reduce undiagnosed infection
3. To compare 2 different models of testing -peer led and nurse led
4. To strengthen processes for the more effective follow-up of reactive and non-reactive results, including partner notification
5. To provide an evaluation of both models and determine if one is more successful, appropriate or cost effective for this group of men
6. To contribute to the body of research and make recommendations for future work in this field.

Background: Three rapid HIV testing clinics in different areas of London were utilized for this pilot between June and December 2009, in Fulham, Greenwich and Islington. Each clinic catered specifically for MSM, and operated out of office hours. The clinics were of various levels of establishment, with one longstanding (several years), one established for 6 months and one a new set up. Each clinic advertised its services in the Gay press London wide and locally, and each clinic's advertising stated which model the clinic was run under, ie. Either by a nurse, or by trained peers.

Data collected: Data collected included patient database, client satisfaction surveys and staff surveys.

Methods: Type of test used – Abbotts Determine rapid HIV test (nurse-led) and Instii rapid HIV test (peer-led).

Provision of the tests – nurse-led or peer-led

Target population - MSM

Results: Staff and patient acceptability - MSM indicated no clear preference for nurse-led or peer-led clinics, and staff found both models acceptable.

Uptake – 191 attendances, including Greenwich (90), Fulham (30), and Islington (41)

Positivity - Greenwich (2), Fulham (1), Islington (1)

False positives - zero

Costs per test - information not yet available

Conclusions: Key challenges included seeding a new community clinic in a 6 month period, and up-skilling two existing community clinics, identifying appropriately trained nursing staff to work at irregular hours at the nurse-led clinics, building appropriate community partnerships to support and promote the clinics, defining and making 'the test offer' in the community context, and collecting and analysing relevant cost-effectiveness data.

Key successes included demonstrating the efficacy of community clinics in reaching high risk MSM communities and therefore identifying HIV positive clients, high attendances at all three community clinics, setting up a new clinic with appropriate care and referral pathways in a short period, designing and implementing a number of methods to promote the clinics and creating templates and processes for extensive and varied data collection

All three clinics have been sustained beyond the Pilot period

AB6b: African Community Testing (ACT) Pilot

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Affiliations: ¹The Metro Centre; ²West London Gay Men's Project; ³Positive East

Pilot aim: The African Community Testing (ACT) Pilot aimed to assess the acceptability, feasibility and cost-effectiveness of improving HIV diagnosis rates in African communities in Lewisham, Southwark and Lambeth (LSL) through the provision of embedded rapid HIV tests in the context of a holistic primary health screen (including Abbotts Determine rapid HIV test, Body Mass Index (BMI), estimation of cardiovascular risk - including screening for lipid abnormalities, diabetes and hypertension - plus screening for sexually transmitted infections including chlamydia and gonorrhoea) in both African and non-African settings, and with the specific and targeted promotion of the Clinics through dedicated outreach and community mobilisation workers.

Pilot Objectives:

1. Measure the acceptability of providing rapid HIV testing, in the context of a holistic health screen in a community setting, to African communities in LSL;
2. Assess the feasibility of providing rapid HIV testing, in the context of a holistic health screen in a community setting, to African communities in the high prevalence boroughs of LSL;
3. Measure the cost-effectiveness of all aspects of the Pilot against designated outputs and outcomes;
4. Compare the effectiveness of providing rapid HIV testing in African and non-African settings; and
5. Assess the impact of recruiting and embedding culturally specific, measurable access/outreach workers providing clinical support and outreach.

Hypothesis: That holistic community health clinics that included a rapid HIV test would be more acceptable, feasible and cost-effective than stand-alone community HIV testing clinics for African and other BME communities in Lewisham, Southwark and Lambeth. Additionally, that African settings would be more acceptable than non-African settings, and targeted outreach including an 'offer' would be more feasible than generic promotional outreach.

Background: The ACT Pilot was conducted at two separate sites in South London between 31/11/09 and 31/5/10. ACT clinics sites were at UAAF offices in Brixton and at Metro Centre offices in Vauxhall. During this period, clinics were conducted on Saturdays between 10-1pm, Tuesdays between 5-8pm, Wednesdays between 1-4pm and Thursdays between 10-1pm. Data from these clinics was compared with data from the Peckham Pulse stand-alone Clinic.

Data collected: Data collected included patient database, client satisfaction surveys, outreach evaluations, outreach weekly reports, outreach schedules and staff surveys

Methods: Type of test used: Abbotts Determine rapid HIV test, Body Mass Index (BMI), estimation of cardiovascular risk (including screening for lipid abnormalities, diabetes and hypertension) plus screening for sexually transmitted infections including Chlamydia and Gonorrhoea

Provision of the tests: tests were conducted by nursing staff

Target population: The ACT Pilot focused on African communities in the LSL boroughs, for whom current epidemiology indicates an increased risk of HIV.

Results: Staff and patient acceptability - Staff were frustrated by the low uptake of these clinics, but found the community settings flexible. African communities had a clear preference for African settings, but indicated no clear preference for holistic clinics as opposed to HIV stand-alone clinics.

Uptake – 54 attendances, including Brixton (37) and Vauxhall (17) and Peckham Pulse (52)

Positivity – Brixton (0) and Vauxhall (0) and Peckham Pulse (2)

False positives - zero

Costs per test - information not available

Conclusions: Key challenges included seeding and concluding two new community clinics in a 6 month period, identifying appropriately trained nursing staff to work at irregular hours, building appropriate community partnerships to support and promote the clinics

(specifically with UAAF and the Safer Partnership) that were guided by formal Memoranda of Agreement , defining and making 'the test offer' in the community context, and collecting and analysing relevant cost-effectiveness data.

Key successes included demonstrating the efficacy of community clinics in reaching high risk African communities and therefore identifying HIV positive clients, setting up two new clinics with appropriate care and referral pathways in a short period, designing and implementing concrete, staggered and measurable outreach interventions to promote the clinics, supporting and training a range of African community mobilisation workers to promote, support and work in community HIV testing clinics and creating templates and processes for extensive and varied data collection.

The ACT clinics were not sustained beyond the Pilot period due to lack of funding.

AB7: Community HIV testing: the feasibility and acceptability of assertive outreach and community testing to reduce the late diagnosis of HIV

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Background: THT piloted assertive outreach of health promotion and HIV testing in community settings to assess the feasibility and acceptability of this model as a strategy to increase the uptake of HIV testing and reduce rates of late diagnosis.

Methods: Trained outreach workers used a variety of venues to engage with black African communities. They undertook HIV health promotion interventions and offered HIV testing. 22 community partnerships were formed; primarily in areas of South and East London with high HIV prevalence. Some were with community organisations (e.g. African and migrant refugee community groups) and some with specific locations (e.g. money transfer shops, churches and community centres). All tests were carried out using the Determine 4th generation HIV POCT. Referral pathways were agreed with local HIV centres for confirmatory HIV testing and on-going care. A standardised questionnaire was issued to staff at the venues and clients accepting testing. Information on demographic details, acceptability, HIV knowledge and testing history were collected. Clients who declined a test were asked to complete a similar questionnaire which also included their reasons for not testing. The data from 19th January – 8th October are presented here.

Results: 3,062 people have been approached and 305 (9.96%) tested. 237 / 2520 who declined a test completed the questionnaire (9.4%). The mean age of those testing was 33. 57.3% were men and 89.4% were heterosexual. 77.0% were black African or Afro-Caribbean. 44.4% had never tested before. 96.3% thought the service was appropriate, 91.5% said they would use the service again and 97.9% would recommend it to a friend. 3 clients tested positive for HIV (0.98%). Despite considerable efforts by both THT and the local NHS HIV service, one client failed to attend following his positive result. The other two accessed care.

Of those declining an HIV test 50.4 % said it was because they had recently tested, 28.7% didn't think they were at risk and only 5.3% said it was because they didn't want testing in this setting. 83.6% had tested in the last year. 90.7% felt the setting was appropriate and 95.9% said they were likely to recommend the service to a friend. Similar opinions on acceptability were elicited from the staff survey. Cost per test was £265.61, which includes 'set up' and the cost of health promotion interventions.

Conclusions: We have demonstrated both the feasibility and acceptability of assertive outreach to increase the uptake of HIV testing. We found high levels of acceptability and tested a high proportion who had either never tested or not tested recently. We were able to deliver HIV health promotion to over 3,000 individuals. The challenges encountered were mainly around developing the partnerships with community organisations; many of whom wanted payment for testing in their premises. This affected both the 'set up' time as well as the overall cost per test. Developing these relationships is key to the sustainability of the model: as we normalise the concept of community testing we should see the uptake of testing increase and the cost per test go down.

AB8: Outreach HIV testing using home sampling kits in Men who have Sex with Men(MSM) in Sheffield – “The Time 2 Test” pilot project

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Background: This MSM community HIV testing pilot project was conducted in Sheffield from June to September 2009. Self-taken oral swabs, accessed via the internet and from outreach venues were used at home, then posted to virology for HIV testing. We aimed to validate the use of salivary collection kits for self sampling as an option for increasing uptake of HIV testing in hard to reach MSM.

Methods: Access to home sampling kits was linked to an established MSM website /postal condom distribution scheme and also via outreach workers. A local media publicity campaign promoted the project.

Care pathways were developed for results management and rapid access to specialist HIV services. Kit ‘usability’ was assessed in patients attending GUM before use in the community.

Vironostika HIV Uniform II Ag/Ab (Biomerieux) and Detect-HIV (v4) (Adaltis) tests were validated for use with the Oracol collection device in our virology laboratory using samples from GUM patients known to be HIV positive or negative. Sensitivity of both tests was 100%, specificity was 97% and 91% respectively. Reliability of the system incubated for 7 days at room temperature (25-30 °C) prior to being processing was assured.

Results: 126 kits were distributed. 60 (47.6%) were returned, 59 with user-completed request forms giving contact details: All MSM, 27% bisexual. Median age 24 years (range 17-59 years). 75% of samples were received from patients under 30 years of age.

39% of participants disclosed a new MSM partner in the preceding 3 months. 34% of participants had no previous HIV testing. Only 30% had tested for HIV in the last 12 months. Previous HIV testing patterns were similar in gay and bisexual men. 74% of participants had never accessed local GUM services. Only 13% had accessed local GUM in the last 12 months. 29 participants were advised to re-test because of postal delays or sampling within the “window period” (ie unprotected sex in the last 3 months).

59 samples were screened using the Vironostika HIV antigen/antibody assay. 52 were negative. 7 samples initially gave ‘equivocal’ result in the Vironostika EIA screening test. All were negative on the repeat testing in both Vironostika and Adaltis HIV assays.

Discussion: Positive feedback was received from MSM and outreach workers in local commercial gay venues and public sex environments. The oral kit was highly acceptable. Users valued the privacy of internet availability and home sampling. Virology testing of the samples avoided unnecessary distress associated with equivocal results and ensured access to fast-tracked HIV care pathways.

The pilot facilitated validation of local laboratory systems for HIV testing on oral samples, expanded opportunities for wider MSM outreach work and informed further collaborative work in Sheffield including Gilead UK & Ireland Fellowship funded outreach HIV testing in African Communities.

The study is limited by its short duration. No new HIV infections were detected in the small sample of MSM tested.

Conclusions: This pilot project demonstrates the feasibility and acceptability of home sampling, using oral swabs accessed via the internet and outreach services, as an option for increasing HIV testing. It may be especially beneficial in hard to reach MSM.

References:

1. Department of Health. The national strategy for sexual health and HIV. 2001.
2. Health Service Circular. Reducing mother to baby transmission of HIV. London DOH 1999; HSC 1999/183
3. Tweed E, Hale A, Hurrelle M, Smith R, Delpech V, Ruf M, Klapper P, Ramsay M, Brant L. Monitoring HIV testing in diverse healthcare settings: results from a sentinel surveillance pilot study. *Sex Transm Infect.* 2010 Oct;86(5):360-4.
4. Health Protection Report Vol 2 no 38 – 19 September 2008. New Guidelines on HIV testing in high prevalence areas
5. Health Protection Agency. HIV in the UK: 2010 Report
6. Chadborn T, Delpech V, Evans B, Gill ON. HIV testing in the UK. *Lancet*, 2009 374(9687):376-7
7. McGarrigle CA, Mercer CH, Fenton KA, Copas AJ, Wellings K, Erens B, Johnson AM. Investigating the relationship between HIV testing and risk behaviour in Britain: National Survey of Sexual Attitudes and Lifestyles 2000. *AIDS.* 2005 Jan 3;19(1):77-84.
8. Sadler KE, McGarrigle CA, Elam G, Ssanyu-Sseruma W, Davidson O, Nichols T, Mercey D, Parry JV, Fenton KA. Sexual behaviour and HIV infection in black-Africans in England: results from the Mayisha II survey of sexual attitudes and lifestyles. *Sex Transm Infect.* 2007 Dec;83(7):523-9.
9. SIGMA Research. Bass Line 2008-09 Assessing the sexual HIV prevention needs of African people in England.
10. SIGMA Research. Multiple chances Findings from the United Kingdom Gay Men's Sex Survey 2006.
11. University College London. Gay Men's Sexual Health Survey London 2008 (Provisional Report)
12. SIGMA Research. Testing targets Findings from the United Kingdom Gay Men's Sex Survey 2007.
13. Health Protection Agency. HIV in the United Kingdom: 2009 Report
14. Centers for Disease Control. Revised Recommendations for HIV Testing of Adults, Adolescents, and Pregnant Women in Health-Care Settings. *Morbidity and Mortality Weekly Report.* September 22, 2006 / 55(RR14);1-17.
15. Yazdanpanah Y, Sloan CE, Charlois-Ou C, Le Vu S, Semaille C, Costagliola D, Pillonel J, Poullié AI, Scemama O, Deuffic-Burban S, Losina E, Walensky RP, Freedberg KA, Paltiel AD. Routine HIV Screening in France: Clinical Impact and Cost-Effectiveness. *PLoS One.* 2010 Oct 1;5(10):e13132.

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December 2010

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HPA Gateway reference: HPA10-05

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