

An evaluation of the GP-facilitated HIV home testing pilot in the Cardiff City & South GP cluster

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With thanks to: Cardiff City & South GP cluster practice staff and patients, Terrence Higgins Trust, PCIC (Primary Care) in Cardiff & Vale NHS UHB, local authority partners.



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Executive summary

Widening access to HIV testing is considered to be an effective approach to meet the UK government's goal of zero new HIV transmissions by 2030 and the 'Getting to Zero' strategy of ending new HIV infections by 2030. This pilot aimed to investigate the feasibility and acceptability of GP-facilitated HIV home testing, and was a collaboration between Cardiff City & South GP cluster and Fast Track Cardiff & Vale.

Patients aged 16+ years with a mobile phone number recorded in their GP practice's contact list were sent an SMS text message from their practice encouraging them to request a HIV home test and providing a link to a Terrence Higgins Trust (THT) webpage. Patients were then triaged and, if eligible based on risk criteria, received a free rapid HIV home test kit from THT. Other patients (i.e. those not meeting these criteria) were referred to the all-Wales postal testing service from Public Health Wales.

Five of the seven practices in the GP cluster took part in the pilot, with an estimated 27,360 patients sent a text message regarding HIV testing between June to September 2021. Practices did not receive negative feedback from patients regarding the text message and nor was there any negative feedback from practice staff regarding the service.

From 232 individuals who clicked through to the THT webpage, 97 were eligible and requested a rapid HIV home test from THT – this included individuals across the age range and of varying ethnic groups, with a larger proportion of non-MSM individuals than would typically be tested within sexual health clinics. Over 40% of those requesting a rapid HIV home test had not tested for HIV within the previous year. An additional 38% had never tested for HIV.

Of the 58 tests where a result was reported back to THT, one was inconclusive, 56 were negative, and one was reactive. The reactive test was confirmed as being a true positive HIV test result with confirmatory testing. The individual with the reactive test confirmed positive for HIV had a CD4 count of 180 cells/mm³, has been linked to care, and has now commenced antiretroviral therapy. The financial commitment of this pilot was disproportionately more sustainable than the impact of hospitalisation on public health resources.

This pilot has demonstrated preliminary evidence that a GP-delivered text messaging service is feasible, acceptable, and an effective means of offering an invitation to test to individuals at risk of acquiring HIV and not otherwise engaged in testing. We recommend extending this pilot to other GP clusters, exploring approaches to optimise the service and associated data capture, and a broader assessment of acceptability to service users.

Background

Widening access to HIV testing is viewed to be an effective approach to meet to UNAIDS 90/90/90 targets of i.) 90% of all people living with HIV diagnosed; ii.) 90% of all people diagnosed with HIV being on treatment; iii.) 90% of all people on treatment having undetectable, un-transmittable viral load.

Offering invitations to test for HIV through a range of services may normalise HIV testing and as a result reduce any associated stigma – now a fourth target outlined by UNAIDS.

In addition to this, the UK government has set a goal of zero new HIV transmissions in the UK by 2030, and this is aligned with the “Getting to Zero” campaign whereby the ultimate goal is zero new HIV infections.¹

In Cardiff and Vale, it is estimated that 1.4 out of every 1,000 residents are living with HIV and over 90% know their status. Furthermore, it is estimated that 62% of those diagnosed with HIV in Cardiff & Vale have an initial CD4 count under 350 cells/mm³, which is the threshold for considering individuals as having a “late diagnosis”. This estimation is higher than the UK-average (42%). Community testing in this context therefore aims to find those living with HIV who are undiagnosed.

Funds were made available by a primary care cluster (Cardiff City & South) to pilot a HIV home testing service facilitated through their GP practices.

Aim

To assess the feasibility of stimulating HIV home testing through the use of SMS text messages sent to patients by their GP practices.

Objectives

- Send an SMS text message to all adults registered at the practice for whom a mobile phone number was available inviting them to take a HIV test with a link to order a test;
- Investigate the acceptability, to staff and patients, of encouraging HIV testing;

¹ <https://www.iapac.org/files/2020/09/Paris-Declaration-3.0-December-2019-1.pdf>

- Measure the uptake of HIV tests;
- Measure the outcomes of HIV tests requested.

Approach

Selection of General Practices

Practice staff from Cardiff City & South GP cluster approached Fast Track Cities Cardiff & Vale to develop a pilot project. Practices were therefore selected from this GP cluster only. All practices within the cluster were approached.

The Cardiff City & South GP cluster covers the Butetown, Grangetown, and City Centre areas of Cardiff, covering approximately 10% of the entire population of Cardiff (combined list size of all seven practices within the GP cluster is approximately 42,000). According to the 2011 census, 64% of residents in this cluster were of white ethnicity (lower than the Cardiff average of 87%), 22% were aged 0 to 15 years, and 5% were over the age of 75 years.² The life expectancy in the areas served by this GP cluster are lower than they are in more affluent areas of Cardiff & Vale. Moreover, some areas served by this GP cluster fall within the 10-20% most deprived parts of Cardiff and Vale, where health conditions and life expectancy are lower than they are in less-deprived areas – i.e. areas with lower rates of income-related benefits and tax credits.³

GP HIV self-testing process

Practice staff sent an SMS text message to all registered patients aged 16+ years for whom a mobile telephone number was included in GPs' contacts lists. The content of the SMS text message during the first wave was:

“<Practice name> GPs support HIV testing. Get a free confidential home test from: <Web-link>.”

Following initial feedback, the content of the message was modified to make it clearer that this was not a targeted message and was instead sent to all practice patients:

“<Practice name> GPs support HIV testing. Get a free confidential home test from: <Web-link> This message is sent to all registered adult patients.”

² <https://primarycareone.nhs.wales/files/cardiff-vale-uhb-resources/cluster-plans-and-reports/cardiff-city-and-south-cluster-plan-2017-2020-pdf/>

³ See Welsh Index of Multiple Deprivation (WIMD) 2019, available at: <https://wimd.gov.wales/?lang=en>

The link included in the message sent individuals to a triaging service through the Terrence Higgins Trust (THT). Individuals were triaged and were eligible to receive a free rapid HIV home test through THT provided they resided in the catchment area of the Primary Care Cluster and met at least one of the following criteria:

- A man who had sex with other men (MSM);
- Of Black African ethnicity;
- Identified as transgender;
- Born in a high-prevalence country;
- Had paid for sex;
- Had been paid for sex;
- A partner of a person who would fulfil the abovementioned criteria.

Those who were not eligible for a free rapid home test via THT were referred onto the all-Wales postal testing service.⁴

HIV testing with either THT or the all-Wales postal testing service was free of charge to patients.

Those receiving a rapid home test obtained their own result and were encouraged to report these back to THT. Those who were referred onto the all-Wales postal testing service and subsequently requested a postal test obtained results via the processing laboratory (if negative), all-Wales postal testing service / Public Health Wales (if missing or insufficient samples), or all-Wales postal testing service / local sexual health clinic (if positive).

Text messages were supported by social media advertising campaigns and further information which patients and practice staff could access via the Fast Track Cardiff & Vale website.

For patients:

- <https://fasttrackcardiff.wales/campaigns-communities/21st-century-hiv/home-testing-in-cardiff/>

For practice staff:

⁴ <https://www.friskywales.org/chlamydia-and-gonorrhoea-home-testing-pilot.html>

- <https://fasttrackcardiff.wales/campaigns-communities/21st-century-hiv/home-testing-information-for-gps/>

See Figure 1 for a flow diagram illustrating this process.

Data and analysis

Findings are reported as frequencies and percentages and denominators are made clear throughout.

In order to determine the total number of SMS text messages sent across the GP cluster, data were needed on the number of patients aged 16+ with a mobile telephone number included in GPs' contacts lists for each participating practice. However, this information was not available for any participating practice at the time of reporting. However, list sizes were available for all practices, and we were provided with the total number of patients aged 16+ on their register for one practice. We have therefore assumed that the proportion of patients aged 16+ years was similar across practices in order to estimate the maximum number of SMS text messages sent to patients across the GP cluster (this is a maximum because it assumes all patients aged 16+ years have a mobile phone recorded in their GP practice notes).

Qualitative data (e.g. feedback from practice staff) are presented to provide an understanding of the acceptability of the intervention and provide some context around the quantitative findings.

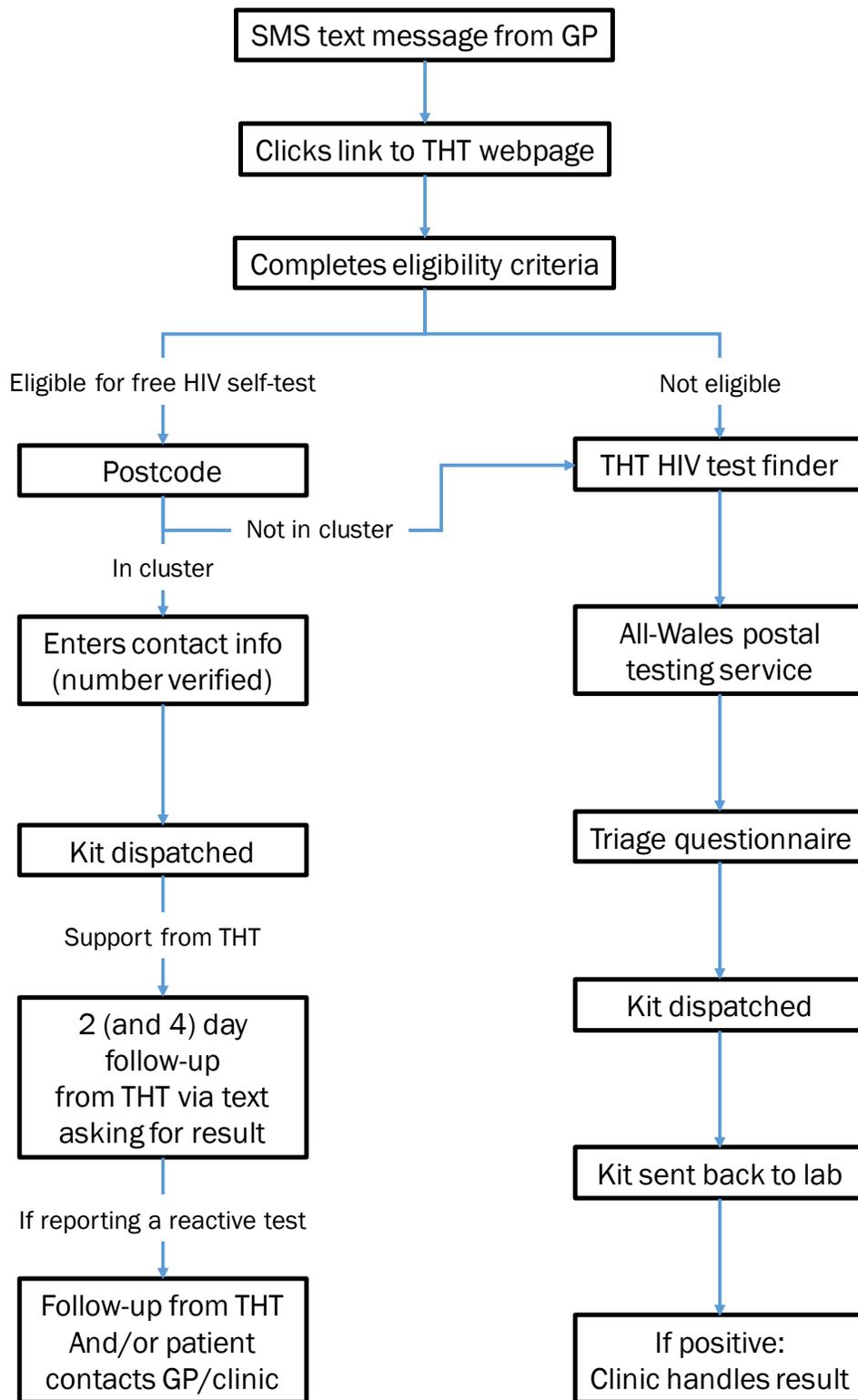


Figure 1: Flow diagram of patient pathway through the HIV home testing pilot through Cardiff City & South GP cluster practices

Findings

Duration of pilot and details of GP practices

Overall, five of the seven GP practices in the Cardiff City & South GP cluster took part in the HIV home testing pilot. The five participating practices served a population of approximately 34,200 patients.

Due to practice-level logistics, practices took part across three waves spanning three months in total:

- Wave 1: one practice (text messages sent on 22/06/2021);
- Wave 2: three practices (text messages sent on 09/08/2021);
- Wave 3: one practice (text messages sent on 08/09/2021).

For one practice, we know that 80% of their list size are aged 16+ years. Assuming similar percentages across other practices, we estimate that approximately 27,360 could have been sent an SMS text message in total. This estimate is an upper limit, as not all patients will have a mobile telephone number recorded in the GP practice contact details.

Acceptability

Informal reports indicated that the GP-facilitated HIV home testing intervention was acceptable to practice staff and patients, with minimal impact on workload.

Staff from the GP practice in Wave 1 (list size > 9,000 patients; SMS text messages sent to up to 7270 patients) reported a total of 18 telephone calls to the practice enquiring about the text message, the vast majority of these within the first three days of the messages being sent.

Text message content and queries around targeting

The majority of these contacts were from patients seeking clarification around why they were contacted about HIV testing – in particular whether or not the message was targeted. Patients were reassured that the messages were not targeted. The content of text messages was modified across subsequent waves to make this more explicit.

Language barriers

Two patients, for whom English was not their first language, were concerned about the content of the message as they recognised “HIV” but not the remaining content. Practice staff were able to explain the content of the message to these patients and both were satisfied with the explanation.

Complaints and compliments

There were no phone calls complaining about the messages. Two patients contacted the practice to thank them for offering such a service – describing it as a fantastic idea.

Clarification sought

Reports from another practice (following modification of the text message content) indicated that patients who had recently received a blood test from their GP practice were initially concerned about the content of the message. However, these patients were reassured once they had contacted practice staff for clarification.

Out-of-area requests

Four patients engaging with the message and requesting a HIV home test, while meeting eligibility criteria, lived outside of the cluster area and were therefore not given a free rapid home test through THT and instead went through the THT HIV Test Finder (as per Figure 1). These patients are not reflected in the denominator in the next section.

Practice staff workload

There have been no negative comments from practice staff regarding the additional workload.

Uptake (correct as of 21/09/2021)

Overall, 232 individuals clicked through to the THT webpage, entered their eligibility criteria, and had a post code within the cluster region. Of these, 97 were eligible for a free rapid HIV home test through THT (41.8%) and the remaining 135 were referred onto all-Wales postal testing service (58.2%).

Characteristics of those ordering a rapid HIV self-test through THT

The majority of those ordering a rapid HIV home test were men who have sex with men (52/97, 53.6%), 14 were of Black African origin (14.4%), and 31 met other eligibility criteria (including being born in a high-prevalence country, having a partner in a high-risk group, or paid or being paid for sex).

The majority of test orders were for patients aged 20 to 40 years (70/97, 72.2%, Figure 2).

Of those eligible for and ordering rapid HIV home tests, 37 had never previously had a HIV test (38.1%), 43 last tested more than a year ago (44.3%), and 17 had tested in the last year (17.5%).

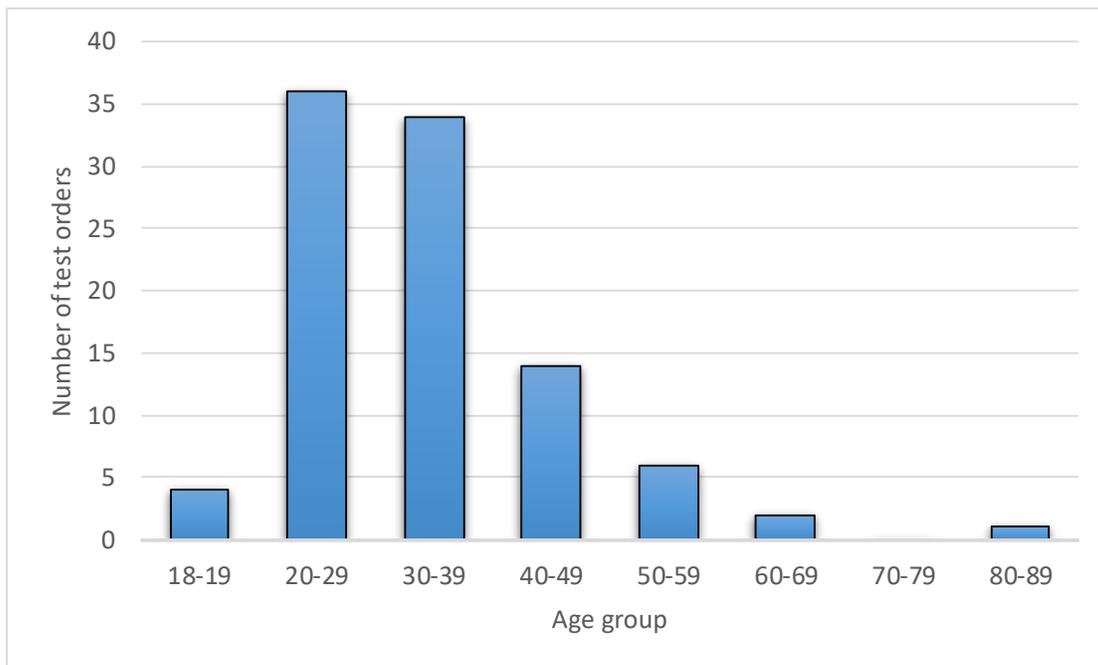


Figure 2: Age distribution of patients ordering a rapid HIV home test through THT

Characteristics of those referred onto the all-Wales postal testing service

Of the 135 not eligible for a HIV rapid home test through THT and referred onto the all-Wales postal testing service, the majority were women (86/135, 63.7%) and identified as either “White British” (55/135, 40.7%) or “White Other” ethnicity (40/135, 29.6%). Similar to those ordering a HIV rapid self-test through THT, the majority referred onto all-Wales postal testing service were aged between 20 and 40 years (116/135, 85.9%).

Outcomes

Of the 97 orders for a HIV rapid home test through THT, test results were reported in 61 instances (62.9%). One test returned an error message (i.e. an inconclusive result) and three tests were associated with a delivery issue (i.e. address provided was incorrect). Of the remaining 57 tests, one test was reactive and was later confirmed positive within a sexual health clinic and the other 56 were negative.

The individual who tested positive for HIV was male, in their 30s and had not tested for HIV for over a year. Their baseline CD4 count was 180 cells/mm³, which means they are termed a “very late diagnosis”. With this CD4 count, it would have been expected that they would be admitted to hospital with a HIV related illness in the next two years.

Costs and cost components

The key recorded cost was the cost per HIV rapid home test, which was £12.40 per unit (i.e. for the 97 HIV rapid self-tests, the total cost was £1,202.80). The total cost to any one practice will vary depending on the number of individuals clicking through to the THT webpage who are eligible for a rapid HIV home test.

While other costs were not recorded, other potential cost components (and the extent to which they are fixed or vary depending on practice list size) are outlined below:

- Single text message sent to patients aged 16+ with a mobile phone number registered with the practice (variable, depending on practice list size);
- Promotional materials (a fixed cost associated with promoting HIV home testing facilitated through GP practices (i.e. not necessarily dependent on practice list size));
- Costs associated with managing brief telephone enquiries regarding the text message (variable, likely depending on practice list size).

Summary

Main findings

In this pilot covering one GP cluster in Cardiff & Vale, we found that it was feasible and acceptable to deliver an SMS text message to practice patients encouraging and signposting them to order a HIV home test.

Five out of the seven practices within the cluster took part in the pilot, and text messages were sent out over a three-month period. Informal reports indicated that the workload impact on practice staff was minimal. Over 4 out of every 10 individuals who clicked through to the THT webpage were eligible for a free rapid HIV home test from THT, as they met pre-defined eligibility criteria.

Individuals from a range of ethnic backgrounds and ages engaged in testing for HIV. Furthermore, over 80% of individuals eligible for the free rapid HIV home test through THT had either not tested for HIV before (38%) or not tested within the last year (44%).

The majority of individuals who received a free rapid HIV home test through THT reported their results back to THT and one individual tested positive for HIV.

It was anticipated that this pilot would include a limited number of individuals, and we budgeted for up to 300 rapid HIV self-tests to be allocated. Indeed, given the estimated HIV incidence in Cardiff & Vale, we did not expect to identify any individuals with a reactive test. The individual's CD4 count meant they were classified as a "very late diagnosis", had likely been living with HIV for some time, and were at risk of hospital admission for a HIV-related illness within the next two years as well as onward transmission. The financial commitment of this pilot was disproportionately more sustainable than the impact of hospitalisation on public health resources. Through this service, they have now commenced antiretroviral therapy, are managed as an outpatient, and will be managed via routine six-monthly follow-ups in the near future. Moreover, by knowing their status and being on effective and consistent treatment, they will not pass the virus to their sexual partners and can look forward to a life expectancy that would be the same if they were HIV negative.

Limitations

Key limitations of this work include:

- Practices included in this pilot were all from the Cardiff City & South GP cluster, and hence these findings may be different in practices in other GP clusters;
- 37% of individuals who received a HIV rapid home test through THT did not report their results. Further work is needed to understand why results were not returned and the potential impact of this;
- There was limited information on those directed through to the all-Wales postal test service. For example, we were unable to determine the proportion of individuals directed through this route who ordered a test, returned a test, or their subsequent test results;
- We did prospectively record the number of SMS text messages sent in each GP practice, and therefore had to estimate an upper limit of this based on data from on practice;
- We did not record details on the costs of various components involved in delivering this service.

We seek to overcome these limitations in subsequent work (see Recommendations).

Recommendations

Based on the findings of this pilot, we recommend that:

- We further explore the feasibility, acceptability, and impact of a GP-delivered text messaging service stimulating HIV home testing in other GP clusters across Cardiff & Vale;

- We explore the feasibility, acceptability, and impact of repeating the GP-delivered text messaging service within the same clusters (to understand the effect of periodically inviting individuals to request a HIV home test);
- We investigate ways to increase reporting of test results back to THT;
- We work with the all-Wales postal testing team to improve our understanding of individuals who are directed through this route. In particular, to obtain further demographic data in addition to testing history, and outcome data for those using the service;
- We investigate the feasibility, acceptability, and impact of filtering all individuals through the existing all-Wales postal testing service;
- We investigate other approaches to optimise the service (e.g. using behaviour-change theory to alter the content of text messages with the aim of increasing uptake) by utilising appropriate experimental designs;
- We underpin all subsequent pilots with a stronger data collection plan from the outset, which will ideally include the collection of both quantitative and qualitative data, in addition to accurate data related to cost components.

Conclusion

This pilot has demonstrated preliminary evidence that a GP-delivered text messaging service is feasible, acceptable, and an effective means of stimulating HIV testing in individuals who are at increased risk of acquiring HIV and are otherwise not engaging in testing. Further work is needed to expand this service and conduct further piloting whereby processes and data capture can be optimised.