

# Mobile VCT: Reaching Men and Young People in Urban and Rural South African Pilot Studies (NIMH Project Accept, HPTN 043)

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**Abstract** Mounting evidence exists that mobile voluntary counselling and testing (VCT) is able to extend coverage to new localities and populations. We describe two feasibility and acceptability pilot studies conducted in rural and urban South Africa in preparation for the larger NIMH Project Accept HIV prevention trial. A total of 1,015 individuals participated in the pilot studies. Participants in rural Vulindlela were younger (median 22 years) compared to urban Soweto ( $p < 0.001$ ). Young people were more likely

to be first time testers in both sites ( $p = 0.01$  in Vulindlela,  $p < 0.001$  in Soweto), with significantly more men likely to be first time testers than women ( $p = 0.01$  in Vulindlela,  $p < 0.001$  in Soweto). User satisfaction with mobile VCT was extremely high in both sites. Our study shows that providing mobile, high-quality and easy to access services in a high prevalence context is a feasible way to engage youth, men and more rural populations in HIV counselling and testing.

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## Introduction

Africa bears the highest burden of HIV infection, yet surveys conducted in sub-Saharan Africa (SSA) in 2007–2009 showed that less than 40 % of people knew their HIV status, with a median of 34 % women and 17 % men having ever tested for HIV [1]. Recent South African surveys show an increase in the number of people aged 15 and above who have ever tested from 20 % in 2002 to around 50 % in 2008 [2], with more women (56.7 %) knowing their HIV status than men (43 %) by 2008.

Despite large investments in health facility-based HIV voluntary counselling and testing (VCT) and the recent adoption of provider-initiated testing approaches, the proportion of people aware of their HIV status has remained well below the levels required to substantially impact the pandemic [3]. Universal testing and immediate treatment of HIV infected individuals could dramatically reduce or even eliminate HIV transmission in the most affected regions of the world [4]. Health facility-based VCT alone (whether client- or provider-initiated) will not be sufficient

to achieve universal access; significantly more people—particularly hard to reach groups—such as men and young people need to learn their HIV status [5].

There is growing recognition that men in SSA face important challenges to both accessing and utilising health care facilities and, as a result, they are under-represented in HIV testing, treatment, and care [6]. In a review of testing rates in a typical South African public health facility from 2001 to 2006, females were more likely than males to be first time testers [41 vs. 29 %], and testing rates were lower for males than non-pregnant females for all years [7]. Like men, youth are reluctant users of public health facilities citing concerns about privacy and confidentiality, health care worker attitudes, cost and access to services as barriers to health facility VCT usage [8–10].

Rapid scale-up of alternative community-based models of HIV testing that improve access and coverage, and provide the entry point for combination prevention programmes as well as treatment as prevention and test and treat approaches, is urgently required. Mounting evidence exists that mobile and home-based counselling and testing models are capable of reaching a wider range of target groups than facility based VCT (men, all women, and young people). These approaches expand the geographic coverage and reach of VCT (i.e. in both urban and rural locations) and address some of the convenience factors—time, costs, distance—typically associated with health facility-based VCT [11–14].

Mobile voluntary counselling and testing (MVCT) involves the provision of counselling and testing services through tents or caravans or other temporary accommodation at convenient locations in the community. In an analysis of HIV testing uptake through different VCT strategies in Uganda, Grabbe and colleagues found that MVCT attracted a significant proportion of new testers and young clients (aged 15–24) to HIV testing and that 85 % of clients were new at mobile VCT services, compared to 58 % at stand-alone sites [14]. Similarly, in South Africa, mobile HIV testing attracted a significantly higher proportion of men compared with facility based services, and identified clients at a much lower CD count than facility based VCT [13].

At present, MVCT provision is increasing in South Africa. However, few descriptions of the feasibility and acceptability of providing mobile VCT for users in this context exist in the literature. The aim of this paper is to describe the pilot studies conducted in rural and urban South African sites participating in the larger Project Accept NIMH (HPTN 043) community-based HIV prevention trial.

## Methods

During 2005, the two South African sites participating in the Project Accept trial conducted pilot studies in

preparation for the larger trial. Project Accept is a 4-country, 5-site community randomized trial designed to assess the effectiveness and cost effectiveness of a community-based model of voluntary HIV counselling and testing [15]. Assessing cost effectiveness was not an objective of the pilot studies.

## Pilot Sites

Soweto is an urban area located 15 km southwest of the city of Johannesburg, South Africa. Soweto is comprised of several townships in an area of 63 km<sup>2</sup> with a population of 1.3 million. It is the largest African township in Johannesburg and one of the biggest cities in Southern Africa, attracting migrant workers, both men and women, from many other areas of Africa. A national HIV/AIDS household seroprevalence survey conducted at the time of the study in 2005 revealed an HIV prevalence rate of 16 % among the 15–49 age groups [16].

In contrast to Soweto, Vulindlela is a rural sub-district within the KwaZulu-Natal midlands region of South Africa, situated about 150 km north-west of Durban, with a total population of approximately 500,000. Employment opportunities exist for both men and women through widespread forestry projects in the district. Residents seek employment in nearby towns and tend to commute daily or over the week-ends; women also participate in communal income generating activities such as gardening and sewing. During the study period in 2005, KwaZulu-Natal had the highest HIV prevalence rate (22 %) amongst the 15–49 age categories [16].

## Community Preparation for Mobile VCT

Soweto and Vulindlela selected pilot communities that were demographically and geographically similar to the communities being considered for the larger intervention trial. Preparatory activities preceding the pilot included extensive consultations with traditional and political leadership, health and social services, and non-governmental and community-based organisations regarding identification of suitable venues for mobile VCT (MVCT) provision, optimal days and times for service and strategies for recruiting communities to MVCT.

## VCT Procedures

The pilots were conducted between April and September 2005. At each site a multi-disciplinary team consisting of a team leader, three trained VCT counsellors, a nurse and a driver/community outreach worker delivered the service. A mobile caravan equipped with a laboratory and counselling spaces was set up at visible, convenient community venues

such as markets, churches, community and shopping centres and transportation hubs (e.g., bus and taxi stands). The mobile VCT service rotated through different service points during the week and on weekends, mostly running from 8 am to 4 pm each day with some early evening service times. Flyers and brochures—including date, time and locations for mobile VCT services—were distributed throughout the pilot communities.

Community outreach workers approached individuals 16 years of age and older who were in the vicinity of the caravan and informed them about the study. Individuals who agreed to participate were invited into the caravan, where a study counsellor requested informed consent for the research component of the study. Participants were assigned a study identification number, received pre-test counselling and a finger-prick blood sample for same-day rapid HIV testing was taken.

Same-day rapid HIV testing was conducted using a parallel rapid testing algorithm adapted from the South African National Guidelines [17]. Samples that were concordantly positive or negative by the two rapid tests were considered to be a true positive or a true negative respectively. Discordant results were re-evaluated by a third rapid test in the field as well as a laboratory-based ELISA HIV test. In the case of discordance, participants were asked to return for the HIV ELISA result. Clients were given the option of receiving HIV test certificates documenting their HIV status should they require this to access other treatment and health care services.

Pre-and post-test risk reduction counselling was conducted according to the model and procedures developed by the Centers for Disease Control and Prevention [11]. This client-centred counselling approach promotes the use of individualised risk assessment and the development of a personalized risk reduction plan for each client. Staff took necessary steps to safeguard participants' confidentiality around the high visibility of mobile VCT services. Clients who appeared emotionally distressed following VCT were invited to remain in the caravan until such time as they felt composed enough to leave.

#### Client Satisfaction: Exit Survey

At each site a purposive sample of a maximum of forty users (20 male and 20 female) were interviewed regarding their perspectives and experiences of mobile VCT. After post-test counselling, participants who were emotionally able were invited to complete a client exit survey. If the participant agreed, the counsellor introduced the client to one of the research staff who conducted the exit interview. The qualitative supervisor at each site maintained a log of completed surveys. The required number of remaining survey participants by gender was communicated to the

MVCT counsellors daily to ensure that the required sample was recruited.

#### Data Analysis

Quantitative data arising from the utilisation forms (including client demographics, previous testing history, services received, and reasons for declining services) were formatted and coded for use with DataFax software (Clinical DataFax Systems, Inc, Hamilton, Canada) and analysed using Stata (StataCorp). Age was not normally distributed in either site, thus age distributions were compared between sites using a Wilcoxon rank sum test.  $\chi^2$  Tests were used for categorical variables. For HIV prevalence estimates, binomial confidence intervals were calculated using the Clopper Pearson method [18].

Client exit surveys assessed if clients were satisfied or not, comfortable or not with the MVCT service and if they would/would not refer the service to others. Opportunity was also provided for more qualitative responses to these questions. Data were double-entered by study staff into an Access data base. The qualitative data were coded to develop common themes and analysed using Atlas TI software.

The study received ethical clearance from the Institutional Review Boards of the University of the Witwatersrand Human Research Ethics Committee and the South General IRB at the University of California, Los Angeles.

#### Results

A total of 1,015 individuals (38 % in Vulindlela) participated in the mobile VCT services offered during the pilot study (see Table 1), with the majority testing. Five percent (21/385) in Vulindlela and 1 % (6/630) in Soweto ( $p < 0.001$ ) refused to test. Those who refused to test offered several reasons for this: (1) they feared an HIV positive result; (2) they were reluctant to test at a highly visible MVCT site and; (3) they did not have the time to complete the counselling and testing process because of work or personal commitments.

There were significant differences in participants' age between the two sites. Participants in Vulindlela were younger, with a median age of 22 years, interquartile range (IQR, 18, 34) compared to 27 years, IQR (23, 39) in Soweto (Wilcoxon  $p < 0.001$ ). The proportion of male participants was also significantly different between sites, 48 % in Vulindlela compared to 61 % in Soweto.

In both sites, a test for interaction between gender and age was significant, and the pattern observed was similar—female participants were likely to be younger than male participants ( $\chi^2$  test for interaction  $p = 0.006$  in Vulindlela

**Table 1** Characteristics of testers and non-testers by site

	Vulindlela			$p^a$	Soweto			$p^a$	Combined sites	
	Testers N = 364 n(% of N)	Non-Testers N = 21 n(% of N)	Total N = 385 n(% of N)		Testers N = 624 n(% of N)	Non-Testers N = 6 n(% of N)	Total N = 630 n(% of N)		Testers N = 988 n(% of N)	Non-Testers N = 27 n(% of N)
Gender				0.66				0.77		
Male	174 (48)	9 (43)	183 (48)		380 (61)	4 (67)	384 (61)		554 (56)	13 (48)
Female	190 (52)	12 (57)	202 (52)		244 (39)	2 (33)	246 (39)		434 (44)	14 (52)
Age				0.17				0.40		
Under 20	144 (40)	3 (14)	147 (38)		47 (8)	0 (0)	84 (13)		249 (25)	6 (22)
20–24	69 (19)	8 (38)	77 (20)		156 (25)	1 (17)	120 (19)		167 (17)	6 (22)
25–29	39 (11)	3 (14)	42 (11)		125 (20)	1 (17)	126 (20)		164 (17)	4 (15)
30–34	22 (6)	2 (9)	24 (6)		81 (13)	1 (17)	82 (13)		103 (10)	3 (11)
35–39	20 (5)	1 (5)	21 (6)		63 (10)	0 (0)	63 (10)		83 (8)	1 (4)
40–44	19 (5)	0 (0)	19 (5)		48 (8)	2 (32)	50 (8)		67 (7)	2 (7)
45 and over	51 (14)	4 (19)	55 (14)		104 (17)	1 (17)	105 (17)		155 (16)	5 (19)

One individual (0.3 %) in Vulindlela and 8 (1.3 %) in Soweto tested but declined to receive their results, and are included in the table as ‘Testers’

<sup>a</sup> Chi-square tests for comparison of testers and non-testers within a site

and  $p = 0.03$  in Soweto), in addition Vulindlela participants were generally younger than Soweto participants.

Table 2 highlights that in both sites men were significantly more likely to be first time testers than women ( $p = 0.01$  in Vulindlela,  $p < 0.001$  in Soweto). Considering age, young testers (<20 years old) were also significantly more likely to be testing for the first time compared to older testers in both sites ( $p = 0.01$  in Vulindlela,  $p < 0.001$  in Soweto). As a group, older women (>20 years) were most likely to have a previous history of testing, with younger men as a group least likely to have a previous history of testing. Older (>20 years) women as a group were more likely to have a previous history of testing, with younger men as a group least likely to have a previous history of testing. In Vulindlela, 29 % women and 18 % men had a previous history of testing compared to 59 and 42 % in Soweto, respectively. Overall, participants in Soweto were more likely to have previously tested than in Vulindlela, 49 vs. 25 %,  $p < 0.001$ .

Tables 3 and 4 present the age- and gender-specific estimates of HIV prevalence for Vulindlela and Soweto, respectively. While confidence intervals are wide in many instances, reflecting small sample sizes, the prevalence changes across age distribution within each gender are as expected given the existing literature [17]: increasing with age, peaking around age 40 and then decreasing at older ages, and generally higher in females than in males (significantly different between gender in Soweto,  $p = 0.01$ , 18.4 % in females and 11.1 % in males). In Vulindlela, overall prevalence is similar between genders, but this result is confounded by the differences in age distribution observed earlier between genders in the population who participated. In the same way, the overall prevalence across

gender of 14.7 % in Soweto and 16.5 % in Vulindlela does not reflect previously reported differences by province but again is likely confounded by the differences in gender and age distributions of participants in the two sites.

#### Clients’ Perceptions of MVCT Service

The client exit interviews, although a small purposive sample (N = 67) provided useful insights into clients’ perceptions of the mobile VCT service received at both sites. Table 5 below provides a breakdown of the sample with regards to gender, age and HIV serostatus in each site.

At both sites, user satisfaction with MVCT was extremely high—with all the rural participants feeling 100 % comfortable and satisfied with the service. Similarly, urban clients were also 100 % comfortable and completely satisfied (97 %) with the mobile VCT service. The reasons for client satisfaction at both sites was being able to receive their HIV test results on the same day, and the novel and thought-provoking nature of the risk reduction model of counselling that was used. In addition, participants commented on the quality of the counselling, the openness and impressive knowledge levels of the counsellors as key reasons for their high levels of satisfaction with the service.

A high percentage of participants (100 % in Soweto and 97.3 % in Vulindlela) said they would recommend the mobile VCT service to others. Participants said they would refer others for testing because (i) it was important for people to know their HIV status; (ii) people should be encouraged to test; (iii) everyone should be educated to behave responsibly and (iv) the service was easily available and convenient.

**Table 2** History of previous testing for testers according to their age and gender (N = 988)

	Vulindlela N = 364 n (% of age group with no history of testing)			Soweto N = 624 n (% of age group with no history of testing)		
	No previous testing history	Total	<i>p</i> <sup>a</sup>	No previous testing history	Total	<i>p</i> <sup>a</sup>
<b>Males</b>			0.004			<0.001
<20	48 (92)	52		17 (81)	21	
20–24	36 (86)	42		66 (73)	90	
25–29	15 (63)	24		47 (57)	83	
30–34	7 (78)	9		20 (48)	42	
35–39	7 (64)	11		14 (36)	39	
40–44	4 (50)	8		13 (39)	33	
45+	25 (89)	28		43 (60)	72	
Total	142 (82)	174		220 (58)	380	
<b>Females</b>			0.013			<0.001
<20	71 (77)	92		18 (69)	26	
20–24	17 (63)	27		28 (42)	66	
25–29	6 (40)	15		13 (31)	42	
30–34	6 (46)	13		7 (18)	39	
35–39	6 (67)	9		6 (25)	24	
40–44	8 (73)	11		8 (53)	15	
45+	20 (87)	23		19 (59)	32	
Total	134 (71)	190		99 (41)	244	

<sup>a</sup> Chi-square tests of age and history of testing for males and females separately within each site

**Table 3** Age and sex specific HIV prevalence for Vulindlela (N = 364)

	Males (%)	95 % CI <sup>a</sup>	Females (%)	95 % CI <sup>a</sup>
Under 20 years	0/52 (0)	0, 6.9	9/92 (9.8)	4.6, 17.8
20–24	6/42 (14.3)	5.4, 28.5	4/27 (14.8)	4.2, 33.7
25–29	8/24 (33.3)	15.6, 55.3	7/15 (46.7)	21.3, 73.4
30–34	1/9 (11.1)	0.3, 48.3	3/13 (23.1)	5.0, 53.8
35–39	7/11 (63.6)	30.8, 89.1	5/9 (55.6)	21.2, 86.3
40–44	3/8 (37.5)	8.5, 75.5	1/11 (9.1)	0.2, 41.3
45 and above	4/28 (14.3)	4.0, 32.7	2/23 (8.7)	1.1, 28.0
Total	29/174		31/190	
Overall Vulindlela prevalence (95 % CI)	16.7 (11.5, 23.1)		16.3 (11.4, 22.4)	

<sup>a</sup> Binomial confidence intervals using the Clopper Pearson method

Most participants in the exit interviews referred to the convenience and accessibility of the mobile VCT service offered in both settings. In the rural site—all except one client—reported to be within walking distance of a MVCT site, with little or no transport costs incurred in using the service. Likewise, most urban users (87 %) were able to walk to the mobile VCT site, with a few users reporting using either public transport or their own vehicles to come to the site.

A review of uptake patterns during the pilot demonstrated higher uptake on weekdays than on weekends. Average uptake on weekends ranged from between 5.6 persons in Vulindlela compared to 2.3 in Soweto. Comparatively, MVCT service on week days was almost twice

the weekend uptake in Vulindlela (9.6 persons) and up to three times more in Soweto (6.2 persons).

## Discussion

Our mobile VCT pilot studies, conducted as part of the larger NIMH HPTN 043 randomised trial, showed high acceptability and feasibility of the approach in an urban and rural South African setting. In the context of scaling up HIV testing and treatment in SSA, these findings support a growing body of literature that shows that mobile VCT approaches are successful in reaching first time testers, hard to reach target groups such as men and young people,

**Table 4** Age and sex specific HIV prevalence for Soweto (N = 624)

	Males (%)	95 % CI <sup>a</sup>	Females (%)	95 % CI <sup>a</sup>
Under 20 years	0/21 (0)	0, 16.1	2/26 (7.7)	1.0, 25.1
20–24	2/90 (2.2)	0.3, 7.8	11/66 (16.7)	8.6, 27.9
25–29	6/83 (7.2)	2.7, 15.1	11/42 (26.2)	13.9, 42.0
30–34	11/42 (26.2)	13.9, 42.0	6/39 (15.4)	5.9, 30.5
35–39	9/39 (23.4)	11.1, 39.3	7/24 (29.2)	12.6, 51.1
40–44	6/33 (18.2)	7.0, 35.5	3/15 (20.0)	4.3, 48.1
45 and above	8/72 (11.1)	4.9, 20.7	5/32 (15.7)	5.3, 32.8
Total	42/380		45/244	
Overall Soweto prevalence (95 % CI)	11.1 (8.1, 14.7)		18.4 (13.8, 23.9)	

<sup>a</sup> Binomial confidence intervals using the Clopper Pearson method

**Table 5** Characteristics of individuals who participated in the client exit interviews (N = 67)

	Vulindlela (N = 37) (%)	Soweto (N = 30) (%)
Gender		
Male	16 (43.2)	17 (56.7)
Female	21 (56.8)	13 (43.3)
Age		
18–24	17 (45.9)	7 (23.3)
25–32	7 (18.9)	9 (30.0)
33 and above	13 (35.1)	14 (46.7)
HIV sero-status		
HIV positive	12 (32.4)	1 (3.3)
HIV negative	25 (67.6)	29 (96.7)

and can increase access of HIV testing to typically underserved communities [9, 11–14].

In South Africa, as in many parts of SSA, a major challenge for HIV prevention and treatment is finding effective strategies for reaching men, who do not typically access health care services. Men and women make unequal use of public health facilities in many parts of Africa, with women having more contact with health facilities mainly through reproductive and child health services [6, 17]. As a result of this gender disparity in health care, men have fewer opportunities and disproportionately poorer access to HIV testing, prevention, care and treatment services. Subsequently, men have worse care outcomes than women—including mortality—and are not adequately engaged and retained in HIV care and treatment [6].

HIV testing and knowledge of HIV status are critical first steps in addressing some of these gender-related prevention and treatment challenges. Universal treatment access will depend on the rapid expansion of innovative HIV counselling and testing services that reach new population groups [19]. Given the low uptake of HIV testing amongst men in SSA [1], novel, accessible strategies are required to move beyond health facilities that typically favour women in their operations and their orientation [18].

In this study we showed that mobile VCT, located in convenient and accessible community locations allowed us to attract more men than women to HIV testing. Notably, both the urban and rural sites had significantly more men testing for the first time as compared to women, with Soweto seeing significantly more males compared to Vulindlela. The higher percentage of women with previous testing history in Soweto compared to Vulindlela is partly a function of older Sowetan women having tested previously tested through ante-natal clinics (ANC). Finally, women 45 and older were less likely to have previously tested compared to other age groups as they may have had less recent interaction with health services. But, this may also point to staff reluctance or delays in seeing individuals of this age as being at risk of HIV and offering them HIV testing. This is a concern as our data shows that HIV prevalence peaks at around this age.

Adolescents in South Africa are at particular risk of HIV infection, yet young people have low levels of perceived HIV risk [10, 20]. Further, while significantly more young people are infected with HIV, few youth are easily identified as HIV positive, know their HIV status and even fewer are linked to medical care and social services [21]. Like men, young people are reluctant users of public health facilities often citing several service related barriers—attitude of staff, inconvenience of clinic hours—that limit uptake of HIV testing in these facilities [8, 22]. Bell et al. [20] argue that HIV positive adolescents are often hidden from mainstream services, and that to address this services have to be developed in spaces where young people are rather than expecting them to independently seek out the service.

Our approach involved providing the MVCT service in convenient locations in the communities—outside schools, and at local social events—where young people were likely to be. We showed that young testers were significantly more likely to be testing for the first time compared to older testers in both sites, with Vulindlela attracting significantly more were younger participants (median age of 22 years) to testing. Our results indicate the success of the mobile VCT in reaching this target group.

A South African household survey in 2008 indicated that a disproportionate number of young, black African men in rural settings do not know their HIV status [23]. This has implications for equitable access to and onward referral for care and treatment services. Our study provides support for the view that MVCT approaches have the potential to improve access to HCT, to increase knowledge of HIV status in underserved rural communities and to identify new HIV positive individuals so that they may be referred for treatment and care services [9, 11–14, 24, 25].

Traditional facility-based VCT barriers include negative perceptions of test services, stigmatising beliefs, having to actively seek out the service and long distance to sites [9, 26]. Facility based VCT requires users to “*come to the service*” and involves significant investment of time, effort, and resources—all of which may act as disincentives and barriers to HIV-testing [5]. Mobile VCT approaches adopt a different service orientation in that they “*take services to people*” and in so doing potentially remove some of these barriers and disincentives to HIV testing. We found that with very little mobilisation and promotional effort, many people came forward to participate in mobile VCT services. Further, once people got to the service, a very high proportion of these users tested. Mobile VCT clients at both sites were highly satisfied and comfortable with the service, would recommend it to others and they particularly liked the convenience and accessibility of the service offered within close walking distance of them and that there were few costs associated with the service.

Van Shaik et al. [13] showed in the study of mobile VCT in South Africa, that local accessibility of MVCT was particularly important to men—not being able to leave work was the second most cited reason for not testing and was significantly associated with reduced odds of mobile VCT participation. While our pilot indicated typical usage patterns for MVCT during the week, once this service is scaled up, a key requirement will be the need for operational flexibility to expand and increase MVCT to evening hours and weekends to allow more men—typically at work—to get tested [4].

Our pilot study of MVCT in two South African locations has important implications for service programmers and planners. The message is that if HIV testing services are provided in convenient and accessible community locations such as markets, churches, community and shopping centres and transportation hubs close to where people live and work, people will make use of the service and new populations not serviced by facility based VCT, can be reached.

Our study had a few limitations. First, our study sample was primarily a self-selected population who came forward for services and may not have been representative of the general population in our study communities. Further,

those who agreed to participate may have been more motivated to test and perhaps generally more concerned about their health than non-volunteers. Third, as we did not collect any data on the characteristics of those who approached the service but who declined to participate, we do not know to what extent, and in what ways they may have differed from those who participated in the study. Despite these limitations, this study ably demonstrates the ability of MVCT to reach hard to reach populations and settings not usually accessible to facility-based VCT.

Finally, we conducted client exit surveys on mobile VCT clients using a purposive sampling framework. As with many other client exit surveys, HIV positive clients who had just received news of their HIV status, were much more difficult to recruit in the survey—as the Soweto site showed. Participants’ views on the feasibility and acceptability of the mobile VCT service may have been influenced by the non-random sample drawn as well as the views and perceptions of the majority of HIV negative clients who were surveyed.

## Conclusion

Scaling up HIV testing and treatment is a key priority in our global response to the epidemic. In the context of a growing number of strategies designed to achieve this—treatment optimisation, treatment as prevention and test and treat—there is an urgent need for alternate delivery systems to increase access to and utilisation of HIV counselling and testing, the first point in the treatment cascade. Our data, from an urban and rural South African site, supports an emerging body of literature that suggests that mobile VCT approaches, embedded in community contexts, are capable of reaching target groups thus far missed through the predominant health facility-based HIV testing approaches that currently exist. Providing mobile, high-quality and easy to access services in a high prevalence context is a feasible way to engage youth, men and more rural populations in HIV counselling and testing.

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