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INCREASING ACCESS TO HIV COUNSELING AND TESTING THROUGH MOBILE SERVICES IN KENYA: STRATEGIES, UTILIZATION AND COST-EFFECTIVENESS

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Abstract

This study compares client volume, demographics, testing results and costs of three ‘mobile’ HIV counseling and testing (HCT) approaches with existing ‘stand-alone’ HCT in Kenya. A retrospective cohort of 62,173 individuals receiving HCT between May 2005 and April 2006, was analyzed. Mobile HCT approaches assessed were community-site mobile HCT, semi-mobile container HCT, and fully mobile truck HCT. Data were obtained from project monitoring data, project accounts and personnel interviews.

Results—Mobile HCT reported a higher proportion of clients with no prior HIV test than stand-alone (88% vs. 58%). Stand-alone HCT reported a higher proportion of couples than mobile HCT (18% vs. 2%), and a higher proportion of discordant couples (12% vs. 4%). The incremental cost-

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Disclaimer: The findings and conclusions in this paper are those of the authors and do not represent the official position of the US Centers for Disease Control and Prevention.

Ethics

Permissions for this study were granted by the US Centers for Disease Control and Prevention, National Center for HIV, Viral Hepatitis, STD, and TB Prevention Associate Director for Science on January 5, 2006. The study was classified as research that did not involve identifiable human subjects.

Conflict of Interest

The authors have declared no conflict of interest.

Author Roles

Kristina Grabbe oversaw study design, data collection, data analyses and interpretation, and wrote the paper. Nick Menzies contributed to the study design, analyzed and interpreted the cost data and critically reviewed the paper. Miriam Taegtmeier assisted with writing the paper and interpretation of the data. Gideon Emukule, Patrick Angala, Irene Mweiga and Geraldine Musango assisted in data collection, contributed to data analyses, and critically reviewed the paper. Elizabeth Marum conceived the study, and provided technical guidance in study design, data analyses and interpretation, and assisted with writing the paper.

effectiveness of adding mobile HCT to stand-alone services was \$14.91 per client tested (vs. \$26.75 for stand-alone HCT); \$16.58 per previously untested client (vs. \$43.69 for stand-alone HCT); and \$157.21 per HIV-positive individual identified (vs. \$189.14 for stand-alone HCT).

Conclusions—Adding mobile HCT to existing stand-alone HCT appears to be a cost-effective approach for expanding HCT coverage, for reaching different target populations, including women and young people, and for identifying persons with newly diagnosed HIV infection for referral to treatment and care.

Keywords

HIV; Voluntary Counseling and Testing; mobile services; Kenya; cost; cost-effectiveness

Introduction

HIV counseling and testing (HCT) is central to HIV/AIDS control efforts in many developing countries^{1,2}. Through HCT, individuals, couples and families can learn their HIV status and receive personalized risk reduction counseling to help prevent acquisition or further transmission of HIV. HIV-positive individuals can be enrolled in rapidly expanding services for support, care, and treatment, as well as efforts to reduce onward transmission through ‘prevention with positives’ programs. Furthermore, HCT can help communities address issues of prevention, denial, stigma and discrimination associated with HIV/AIDS, and can mobilize support for HIV/AIDS control efforts^{1,3}.

In Kenya, the number of registered HCT sites (also known as Voluntary Counseling and Testing centers) increased from 3 in 2000 to more than 900 by the end of 2007 (Kenya National AIDS and STI Control Program, *personal communication*). Most registered HCT sites are integrated into existing health facilities (79% in 2007); however, to date these facilities have had few staff dedicated specifically to HCT, and health care workers are occupied with other clinical tasks. As a result, many people receiving HCT in Kenya were tested at fixed locations in non-medical settings (“stand-alone HCT”) during the study period^{4,5}.

Despite the increasing availability of stand-alone HCT centers in Kenya, services are concentrated in urban areas, and knowledge of HIV status remains low. In 2003, only 14% of adults 15 to 49 years reported having been tested for HIV and receiving their results⁶, rising to 36% in 2007⁷. To extend HCT coverage to population groups with limited access to existing services, new models for delivering HCT have been developed beyond the familiar “stand-alone” method^{3,8–10}. These new models focus on bringing services to rural and hard-to-reach populations through a variety of “mobile HCT” approaches using trucks, vans, tents, and existing community facilities such as empty school rooms and churches. Some sites also report low utilization of their stand-alone HCT centers, and mobile HCT can be a welcome addition for increasing numbers of people reached, and utilizing staff time. Although Kenya’s HCT Quality Assurance Strategy¹¹ suggest counselors are limited to serving no more than 10 HCT clients per day, many counselors report only serving an average of 2–4 clients at stand-alone sites, indicating there is capacity to serve more.

While reports from service providers suggest that uptake and acceptance of mobile HCT is high^{3,10} (Moor J, *unpublished report* 2002), it is unclear whether it is as effective as stand-alone HCT at meeting overall HIV prevention, care, and treatment objectives, when all costs and outcomes are considered. Such objectives include: (a) increasing knowledge of HIV status, especially among persons previously untested; (b) identifying HIV discordant couples, for whom the HIV prevention benefits of HCT have been demonstrated^{12–18}; and (c) newly identifying HIV-infected persons eligible for care and treatment services. Prior

studies evaluating stand-alone HCT have reported cost per client tested ranging from \$13 to \$36^{19–23}, but little evaluation has been conducted on the cost or effectiveness of HCT outside stand-alone sites. One recent study in Uganda evaluating non-traditional HCT approaches compared stand-alone with hospital-based and home-based HCT approaches, finding that these alternative methods fared favorably in terms of cost per client, and were effective at reaching priority groups including previously untested clients and HIV-infected individuals²³.

Methods

The purpose of our study was to describe and compare stand-alone HCT with three approaches to providing mobile HCT that were being implemented in Kenya. Comparisons were made between stand-alone HCT and each of the three mobile HCT approaches, and secondarily, between stand-alone HCT and mobile HCT overall. In comparing client characteristics, HIV testing results, and costs of the four HCT approaches, we are able to draw conclusions regarding the effectiveness of these approaches in contributing to the above HIV control objectives.

Population and setting

Kenya has a generalized HIV epidemic primarily driven by heterosexual sex. National HIV prevalence in 2007 was estimated at 9.2% and 5.8% in 15–49 year old women and men, respectively, and among married persons living with HIV in Kenya, 45% had a partner who was not also infected with HIV⁷. We collected data from six stand-alone HCT centers in Kenya, all of which had been operating for 2–4 years prior to data collection. Each stand-alone HCT centre also offered one of the three mobile HCT approaches. At the time of the study, these were the only programs regularly and consistently offering these types of mobile HCT approaches. The stand-alone HCT centers were based in different geographic areas, with HIV prevalence in each of the six study areas ranging from 5% to 15%. For programmatic reasons, the types of mobile services were not evenly spread across these areas. For example, semi-mobile services focused on Central, Western, Rift Valley and Eastern Provinces where HIV prevalence was approximately 5%, and the fully-mobile truck operated only in the higher prevalence area of Nyanza province, estimated at 15%⁷.

HIV Counseling and Testing Approaches

Stand-alone and mobile HCT approaches followed standardized procedures for service delivery^{5,24}. HCT was free, voluntary, and confidential, and was delivered by trained counselors following a serial algorithm of rapid HIV antibody tests with finger-prick blood sample collection. Counselors delivered pre-test counseling to individuals, couples, families, or groups to discuss basic HIV/AIDS information, explain the HIV testing process, and to discuss client risk behavior. Immediately following rapid testing, post-test counseling was conducted with all clients to explain test results, develop personalized prevention strategies, discuss partner testing and disclosure, and offer appropriate referrals. Additional programmatic characteristics of the four HCT approaches are presented in Table 1 and are described briefly below.

Stand-alone HCT—Stand-alone HCT was developed in the mid-1980s, and has been considered the standard model for HCT service delivery in Kenya^{2,8}. Using this approach, HCT was provided at free-standing, fixed centers, which typically included rooms for at least two counselors and one reception area. These centers were not attached to a medical or health facility and were generally located in urban or semi-urban areas. Most stand-alone HCT centers relied upon Kenya's national mass media campaign for raising awareness

about HCT services²⁵. Some local community mobilization was also undertaken to encourage uptake of services.

Mobile HCT—All mobile HCT approaches assessed here operated with stand-alone HCT centers as their base, and counselors from the stand-alone center traveled to nearby rural sites to deliver the mobile services. On average, mobile HCT sites were within 50 km of the stand-alone HCT center, with semi-mobile container and fully-mobile truck HCT reaching greater distances than community-site mobile HCT. In addition to the national mass media campaign, mobile HCT approaches included advance mobilization with community leaders to generate support for HCT in host communities. Typically, 3–5 counselors provide services at each mobile HCT site. Three mobile HCT approaches were assessed in this study:

- **Community-site mobile HCT** – Community-site mobile HCT, which utilized existing community sites such as churches, empty school rooms, clinics, and other community buildings to provide temporary HCT, was introduced in Kenya around 2002. This low-technology approach relied on locally available methods of transportation (e.g. walking, riding a bicycle or motorbike, renting a vehicle) to reach nearby rural communities and hard-to-reach populations. Testing supplies were carried in bags and boxes, and hand-made posters advertising the dates and location of HCT were posted throughout the host community in advance.
- **Semi-mobile container HCT** – In 2005, the US Centers for Disease Control and Prevention (CDC) introduced this mobile HCT approach as a means of increasing HCT access to more distant rural communities. A converted shipping container was hauled to each site by a detachable four-wheel drive truck, and was placed in a community for 7–10 days before being towed to its next pre-scheduled location. The container had two counseling rooms with built-in laboratory tables and space for carrying testing supplies. Counselors traveled to the testing site by local transportation or hired vehicle, and tents were pitched alongside the container for additional counseling rooms.
- **Fully-mobile truck HCT** – Fully-mobile truck HCT (also introduced by CDC in 2005) is very similar to semi-mobile container HCT, in that a large truck moves from site to site to provide mobile HCT services in communities. The truck contains two fully-equipped HCT counseling rooms, and tents may be pitched to provide additional rooms. The primary difference is that fully-mobile truck HCT is provided via a four-wheel drive truck that is entirely self-contained, and the truck can move to a new site when client flow becomes low, typically after two or three days. The truck has seats to transport up to five counselors.

Data collection and analysis

A national data form was completed for all clients receiving stand-alone and mobile HCT in Kenya. Data for this study were anonymous unlinked data collected routinely by project monitoring systems. Each service user was issued with a unique client code and no personal identifiers were collected. Ethical approval for this study was received from the US Centers for Disease Control and Prevention. Study projects were assessed for a 12 month period from May 2005 to April 2006. Data elements including total client volume, demographics, testing history, individual or couple attendance, and HIV diagnosis were extracted retrospectively for all clients receiving HCT at one of the study sites.

Costs and cost-effectiveness

Costs were assessed from a programmatic perspective. The costs of HCT services for the 12 month study period were collected from accounting reports, receipts, and interviews with project personnel. Cost estimates were based on actual expenses for staff time, vehicles, equipment, supplies, per diems, overheads and building rental. Shared costs, including building rental costs, were divided between program components, including mobile and stand-alone activities, based on direct allocation²⁶. Input prices for items such as vehicles, equipment and testing supplies were standardized across projects, and capital costs were annuitized over a five year useful life with a discount rate of 3%²⁷. Vehicle costs specific to mobile HCT were allocated fully to these approaches. All costs were converted to 2007 US dollars (1 USD = 74.03 KSh at the time of this study). Client time and travel costs were not assessed. Potential costs or cost savings incurred by the health system through HIV treatment for individuals testing positive, or averted HIV treatment from HIV prevention, were also not included.

Descriptive analyses compared HCT utilization for different age groups, gender, and key target groups. Economic analyses calculated the incremental cost-effectiveness of adding mobile HCT to stand-alone HCT for a range of outcomes: all clients, new clients, HIV-positive clients identified, and new HIV-positive clients identified. Aggregate results were calculated using weighted average costs and outcomes across all 6 sites. Different mobile HCT approaches were compared in terms of the cost per client and cost per previously untested client. Different mobile approaches were not compared in terms of outcomes involving HIV status, as these comparisons could be biased by differences in background HIV prevalence. Analyses were conducted using SAS software, version 9.1 [Copyright (c) 2002–2003 by SAS Institute Inc., Cary, NC, USA.].

Results

Client Population Characteristics

Data were assessed for a total of 62,173 HCT clients. Population characteristics of clients attending stand-alone and mobile HCT are presented in Table 2. A total of 14,634 clients accessed stand-alone HCT and 47,539 accessed mobile HCT during the study period May 2005 – April 2006. The greatest number of clients was seen via community-site mobile HCT compared to the other approaches, and the smallest number was seen via the fully-mobile truck. However, there was only one fully-mobile truck in use during the one year study period. Although gender and age distribution were similar for both stand-alone and mobile HCT, mobile HCT attracted a greater proportion of new testers compared to stand-alone (88.0% [95% CI= 87.7–88.3] vs. 57.5% [56.7–58.3] $p<0.0001$). The breakdown by mobile HCT approach showed that semi-mobile container HCT served a greater proportion of women and young clients (15–24 years) than the other two mobile approaches, and more couples (8%). Stand-alone HCT served a greater percentage of couples compared to Mobile HCT (17.9% [17.3–18.5] vs. 1.9% [1.8–2.0], $p<0.0001$).

Client Testing Results

Table 3 shows HIV prevalence in clients receiving HCT at stand-alone and mobile HCT sites during the study period. Overall, HIV prevalence was higher among all clients attending stand-alone than mobile HCT (14.1% [13.5–14.7] and 9.0% [8.7–9.2] respectively, $p<0.0001$). HIV prevalence was also higher among females, youth 15–24 years, and new testers at stand-alone HCT sites compared to mobile HCT ($p<0.0001$). HIV prevalence was highest for clients tested at fully-mobile truck HCT (16.9% [16.1–17.6]), and lowest for clients tested at semi-mobile container HCT (5.4% [5.0–5.7]). Despite the small proportion of couples tested at fully-mobile truck HCT, a substantially high proportion of these couples

was discordant (19.7% [13.2–26.2]) compared to 11.6% [10.4–12.8] at stand-alone HCT, 4.8% [2.2–7.4] at community-site mobile HCT, and 2.8% [2.0–3.7] at semi-mobile container HCT.

Cost-Effectiveness Ratios

The incremental cost-effectiveness of adding mobile HCT to stand-alone services is presented in Table 4. Overall, the incremental cost per outcome achieved was lower when mobile HCT was added to stand-alone services. The cost per HIV-positive client identified and new HIV-positive client identified was lower for mobile HCT than stand-alone HCT. Analyzing each mobile approach individually showed the incremental cost per HCT client tested and per new HCT client tested to be lower for each mobile approach compared to stand-alone HCT at the same site. Of the three mobile approaches, community-site mobile HCT was the lowest-cost approach for each of these outcomes.

Discussion

This study assessed client characteristics, HIV testing history and results, and costs of four different approaches to providing HCT in Kenya. Although multiple approaches to HCT service delivery are used to provide access to different population groups and to meet HIV prevention, care, and treatment goals^{3,28,29}, past studies have primarily focused on describing the characteristics of traditional stand-alone HCT. This study compared stand-alone HCT with three alternative mobile HCT approaches: community-site mobile HCT, semi-mobile container HCT, and fully-mobile truck HCT. The findings demonstrate that mobile HCT approaches compare favorably with stand-alone HCT in terms of cost per client, and effectiveness for reaching key target population groups. This is consistent with the findings of another recent study, which showed that other non-traditional HCT approaches were less expensive than stand-alone HCT and were successful in reaching different populations²³.

Our data show great utilization of HCT using mobile HCT approaches, with more than three times as many clients accessing HCT via mobile approaches than at stand-alone HCT for the same time period. Although overall fewer women accessed HCT services than men, our data show comparatively higher utilization of women at community-site and semi-mobile container HCT than stand-alone. This may be related to the barriers women face in getting time away from domestic responsibilities, and cost of transport to attend distant stand-alone HCT sites. Mobile HCT approaches were also more successful than stand-alone HCT at reaching individuals who were learning their HIV status for the first time, with new clients representing more than 85% of clients at all mobile HCT approaches, compared to 58% at stand-alone HCT. Mobile HCT was introduced to improve access to HCT, to increase knowledge of HIV status in underserved communities^{3,8–10} and to identify new HIV positive individuals so that they may be referred for treatment and care services. These data indicate that mobile HCT achieved these objectives.

Our data indicate low utilization by couples at mobile HCT sites compared to stand-alone. Couples are a key target group for HCT, and couples HCT has been well-documented as an effective HIV prevention intervention, especially for discordant couples^{12–18}. In countries such as Kenya, rates of discordance among married couples can be as high as 45%^{7,30}. Targeting couples with HCT is a high priority in these countries, and more effort is needed to attract couples to receive HCT together, especially at mobile sites. The high rate of discordance among couples at fully-mobile truck HCT (20%) is likely explained by the high HIV prevalence in the geographic area in which this method was implemented, suggesting that HCT may be most effective at reaching discordant couples in areas known to have high HIV prevalence.

Other differences in utilization among couples may be explained by demographic differences as well as inherent differences in the various HCT approaches. Attending HCT as a couple requires planning, discussion, and preparation by partners. Stand-alone sites at permanent locations operate with fixed hours, allowing couples to plan for HCT services at their convenience, and they actively promote couples HCT through advertising and encouraging clients to return with their partners. Mobile services may be introduced to communities on short notices, giving partners little time to prepare for receiving couples HCT together. One exception is home-based mobile HCT, which has reported high utilization by couples and is also cost-effective compared to stand-alone HCT²³. This approach is now being scaled up rapidly in Kenya.

HCT contributes to HIV care, treatment, and prevention goals by identifying HIV-infected persons who are eligible for care and treatment, and who can prevent onward transmission to others³¹. The HCT strategies studied here showed great variation in their effectiveness at serving HIV-infected clients. It was no surprise that mobile HCT approaches implemented in areas with higher HIV prevalence reached higher numbers of HIV-infected individuals. Similarly, low reported HIV prevalence at semi-mobile HCT is likely due to the lower background prevalence in communities where this approach was used (5–7%). Since one HIV control objective is to identify HIV-infected persons, mobile HCT approaches will be more effective at achieving this objective if they are implemented in areas with high HIV prevalence.

Overall, the addition of community-site mobile HCT services is more cost-effective than stand-alone services in this study, in terms of incremental cost per client tested and per new HCT client. This is not surprising, as transport and other costs are minimal with this ‘low-tech’ approach. HCT providers typically live in the same community where stand-alone HCT operates, and from there they may walk, bicycle, or use local transportation to get to each community-site mobile HCT. However, counselors report the burden of carrying bags and boxes with testing supplies, and utilizing often unreliable means of transportation such as public transportation or faulty rental cars. Due to the transportation difficulties of this method, HCT services are often provided close to main roads or nearby the central location of the stand-alone HCT center, and counselors also report challenges related to locating temporary facilities in communities that are accessible and visible to community members but also confidential, private, and clean. Still, the two programs using this approach saw high numbers of clients, reflecting the fact that lower costs of mobile HCT are also linked to higher numbers of clients seen using these approaches. For example, one implementing partner providing community outreach served ten times as many clients using this approach than at the stand-alone HCT, with comparable service times available. Furthermore, stand-alone HCT centers reported operating at low volume during conventional business hours, whereas the mobile HCT approaches assessed here reported a constant flow of clients throughout the day, and typically extended their hours into the evening in order to serve more clients.

Limitations

Although client numbers were large and statistical tests reached significance, we were only able to evaluate a small number of projects in provinces with widely varying HIV prevalence rates. Only one fully-mobile HCT truck was functional at the time of the study, and this was based in Nyanza province in western Kenya with the highest HIV prevalence in the country (15%). Consequently, results related to HIV prevalence should be interpreted with caution. Cost per HIV-positive client and cost per new HIV-positive client were not reported for each mobile approach individually, given the possible bias from differences in background prevalence. In addition, while the prevention impact of HCT may be higher where services are targeted to HIV-positive individuals and discordant couples^{12–17}, the

extent of behavioral risk reduction after HCT is unclear, particularly for new service delivery approaches such as mobile HCT. For this reason it was not possible to calculate outcomes estimating the number of HIV infections prevented by HCT, and more research in this area is needed.

Conclusions

This study demonstrates that the cost of providing HCT through the addition of mobile services is generally lower than the cost of stand-alone HCT across four different outcomes. Mobile HCT may be an effective strategy for improving HCT access in rural and underserved urban populations, and is a cost effective approach for expanding access to HCT services. Women and youth readily access mobile HCT, though based on our data more efforts are needed to attract couples to mobile HCT, such as advertising well in advance to give couples time to prepare for testing together. Although stand-alone HCT was more expensive than mobile HCT in this study, it is necessary to support the daily activities of mobile HCT, as the mobile HCT approaches studied here relied upon stand-alone HCT sites for operational support. Policymakers need to support a variety of HCT modalities, including stand-alone HCT and mobile HCT, to expand the reach of HIV counseling and testing to a diverse range of populations and meet HIV care, treatment, and prevention goals.

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Table 1

Characteristics of three approaches to mobile HCT compared to stand-alone HCT

	Stand-Alone HCT	Community-Site Mobile HCT	Semi-Mobile Container HCT	Fully-Mobile Truck HCT
Counseling rooms	building with at least two counseling rooms; offices	already existing spaces (school rooms, churches)	2 counseling rooms built into container, tents pitched	2 counseling rooms built into truck, tents pitched
Reception area	separate room or hallway	clients wait under tree or outside site	tarpaulin pitched off container	tarpaulin pitched off truck
Privacy	rooms are private spaces with closed walls, doors	rooms may be open spaces or one large room divided into smaller rooms	rooms are private, equipped with curtains; tents zip closed	rooms are private, equipped with curtains; tents zip closed
Security	permanent security guard on-site	part of existing facility	additional security needed at night	additional security needed at night
Water	may have running water	local arrangements made	tank built into container	tank built into truck
Equipment	permanent office furniture	part of existing building	durable plastic chairs and table	durable plastic chairs and table
Supplies	obtained from district hospital or purchased locally; stored on-site for use	carried to site by counselors in bags or boxes	stored in durable plastic containers and transported to site via container	stored in durable plastic containers and transported to site via truck
Sleeping arrangements	local counselors and staff sleep in their own homes	staff return home or sleep in local accommodation	staff sleep in local accommodation, container, or tents	staff sleep in local accommodation, truck, or tents
Transporting staff	may have bicycles or vehicle for running errands, etc.	travel by foot or bike, public transport, or hired vehicle	separate vehicle or public transport to get staff to site	up to 6 staff may travel in truck
Distance from main roads	typically located in towns or village centers along well-traveled roads or highway	site locations limited due to need to return home at night and refresh supplies	truck can navigate some poor roads, likely to get stuck in rainy season	truck can navigate most poor roads to reach very rural locations
Mobilization	regular mobilization ensures sustained client flow and awareness	go to community 1–2 days in advance using drama, flyers, or informal discussions	go to community 1–2 days in advance using loud speakers on container or separate vehicle	go to community 1–2 days in advance; truck equipped with loud speakers while traveling

Table 2
 Characteristics of clients attending three mobile HCT approaches compared to stand-alone HCT

	Stand-Alone HCT	All Mobile HCT	Community-Site Mobile HCT	Semi-Mobile Container HCT	Fully-Mobile Truck HCT
Number Sites Assessed	6	6	2	3	1
<i>Characteristics of Clients (% of total, [95% Confidence Interval, (N)])</i>					
Total HCT clients*	14,634	47,539	20,599	17,227	9,713
Female	40.5% [39.7–41.3] (5931)	42.3% [41.9–42.8] (20128)	45.9% [45.2–46.6] (9457)	61.9% [61.2–62.7] (10671)	42.0% [41.0–42.9] (4076)
Male ¹	59.5% [58.7–60.3] (8703)	57.7% [57.2–58.1] (27411)	54.1% [53.4–54.8] (11142)	38.1% [37.3–38.8] (6556)	58.0% [57.0–59.0] (5637)
Age 15–24 yrs	42.1% [41.3–42.9] (6158)	46.5% [46.0–46.9] (22084)	43.1% [42.4–43.8] (8882)	51.2% [50.4–52.0] (8824)	45.1% [44.1–46.1] (4378)
New testers	57.5% [56.7–58.3] (8415)	88.0% [87.7–88.3] (41829)	90.7% [90.3–91.1] (18682)	85.2% [84.7–85.8] (14682)	87.2% [86.5–87.8] (8465)
Couples ²	17.9% [17.3–18.5] (2616)	1.9% [1.8–2.0] (902)	1.2% [1.1–1.4] (250)	8.2% [7.8–8.6] (1412)	1.5% [1.2–1.7] (142)

* Total HCT clients includes only clients completing all components of HCT.

¹ Male is defined as non-entry in female field. May include some cases where data were missing.

² Couples is number of couples testing together (i.e. spouses, partners, or polygamous groups), not individuals.

Table 3

HIV testing results of clients attending three mobile HCT approaches compared to stand-alone HCT

	Stand-Alone HCT	All Mobile HCT	Community-Site Mobile HCT	Semi-Mobile Container HCT	Fully-Mobile Truck HCT
<i>HIV Prevalence in Client Groups (% of total, [95% Confidence Interval] (# people tested positive/N))</i>					
All Clients*	14.1% [13.5–14.7] (2065/14634)	9.0% [8.7–9.2] (4265/47539)	8.2% [7.9–8.6] (1699/20599)	5.4% [5.0–5.7] (927/17227)	16.9% [16.1–17.6] (1639/9713)
Female [†]	21.2% [20.1–22.2] (1256/5931)	12.7% [12.3–13.2] (2564/20128)	12.0% [11.4–12.7] (1137/9457)	5.1% [4.7–5.5] (541/10671)	21.7% [20.5–23.0] (886/4076)
Male [‡]	9.3% [8.7–9.9] (809/8703)	6.2% [5.9–6.2] (1701/27411)	5.0% [4.6–5.5] (562/11142)	5.9% [5.3–6.5] (386/6556)	13.4% [12.5–14.3] (753/5637)
Age 15–24 yrs	7.7% [7.1–8.4] (477/6158)	4.8% [4.6–5.1] (1071/22084)	3.6% [3.3–4.1] (324/8882)	3.4% [3.0–3.7] (296/8824)	10.3% [9.4–11.2] (451/4378)
New testers	19.2% [18.3–20.0] (1612/8415)	9.0% [8.8–9.3] (3782/41829)	8.3% [7.9–8.7] (1554/18682)	5.4% [5.0–5.8] (792/14682)	16.9% [16.2–17.8] (1436/8465)
HIV Discordant (in Couples)	11.6% [10.4–12.8] (304/2616)	4.4% [3.1–5.8] (40/902)	4.8% [2.2–7.4] (12/250)	2.8% [2.0–3.7] (40/1412)	19.7% [13.2–26.2] (28/142)

* Includes only clients completing all components of HCT.

[†] Missing data for variables assessed were too small to report.

[‡] Male is defined as non-entry in female field. May include some cases where data were missing.

Table 4

Cost-effectiveness comparisons for three mobile HCT approaches compared to stand-alone HCT

	Stand-Alone HCT	All Mobile HCT	Community-Site Mobile HCT ²	Semi-Mobile Container HCT	Fully-Mobile Truck HCT
<i>Cost-Effectiveness Ratios for Different Outcomes*</i>					
Cost per HCT client	\$ 26.75	\$ 14.91	\$ 8.82	\$ 17.23	\$ 20.38
Cost per new HCT client	\$ 43.69	\$ 16.58	\$ 9.73	\$ 20.06	\$ 23.39
Cost per HIV-positive client [†]	\$ 189.14	\$ 157.21	-	-	-
Cost per new HIV-positive clients identified [†]	\$ 237.60	\$ 178.10	-	-	-

* Costs reported as 2007 US Dollars and are presented as weighted averages.

[†] *HIV-positive clients* may include persons who had already tested HIV-positive, whereas new *HIV-positive clients identified* includes only those who were learning their HIV-positive status for the first time.

² Costs per HIV-positive client and per new HIV-positive clients identified not reported for three mobile HCT approaches as results may be influenced by background HIV prevalence not related to the HCT approach.