INTERNATIONAL JOURNAL OF ACADEMIC RESEARCH IN BUSINESS & SOCIAL SCIENCES

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ISSN: 2222-6990

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To Link this Article: http://dx.doi.org/10.6007/IJARBSS/v8-i2/3881 DOI: 10.6007/IJARBSS/v8-i2/3881

Received: *07 Feb 2018,* ***Revised:*** *25 Feb 2018,* ***Accepted:*** *27 Feb 2018*

Published Online: 04 Mar 2018

In-Text Citation: (Biancone, Secinaro, Valerio, & Bert, 2018)

To Cite this Article: Biancone, P.P., Secinaro, S., Valerio, B., & Bert, F. (2018). Analysis of Organizational Elements in the Arrangement of HIV Rapid Tests Offer. *International Journal of Academic Research in Business and Social Sciences*, *8*(2), 382–399.

Vol. 8, No.2, February 2018, Pg. 382 - 399

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ISSN: 2222-6990

Analysis of Organizational Elements in the Arrangement of HIV Rapid Tests Offer

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Abstract
The use of HIV 4rapid tests is increasingly widespread in order to raise knowledge of serological status and access to therapies especially in those populations considered more at risk. In this study, through a systematic review of literature and of the most significant projects made in the last years, we are trying to analyse the organizational elements that should be taken into consideration in order to ensure an efficient and effective service. In particular, the places of test administration, the type of staff involved, the relationship and link with a public body for the confirmation and to take charge of positivity, the counselling service offered, the costs of the service, the test type, the frequency of administration and the rate of effectiveness of the rapid test are being analysed and compared.
Keywords: *Rapid Test, HIV, Community based Service*

Introduction

HIV is a leading cause of morbidity and mortality globally (Murray et all., 2010). Despite considerable progress in controlling the epidemic, there were approximately 2.2 million new HIV infections, 1.7 million HIV-related deaths, and 34.2 million people with HIV worldwide in 2011; 1.5 million of these new HIV infections, 1.2 million of the HIV deaths, and 23.5 million of the people living with HIV were in Africa (World Health Organization, 2015). In the United States, about a quarter of the estimated 1.1 million people living with human immunodeficiency virus

(HIV) are not aware of their HIV status (Glynn et all., 2005). One way to increase the number of people who are aware of their HIV status is to expand HIV prevention efforts to reach more people and especially targets at high risk of infection, but which cannot access HIV tests at Health services. People who are unaware of their positive serological status cannot benefit from antiretroviral treatment (Dybul et al., 2002; Palella Jr. et al., 1998), and are more likely to have behaviours at risk for a person with HIV with respect to people who are aware of their serological status (Marks et al., 2005). Studies have shown that the offer of HIV counselling and HIV tests in communities with outreach settings can be an effective strategy to identify people with unidentified HIV infection (CDC 2007, 2004). Effective rapid HIV test mechanisms are already in use in the World, including some countries in Africa (Steen et al., 2007). The spread of innovative rapid tests, providing results in less than 30 minutes and over 99% in both sensitivity and specificity, represents an additional opportunity in the field of HIV prevention (Branson et al., 2007; Doyle, 2005). Besides, these tests permit the use of different specimens other than blood, saliva and urine (Wolf & Walensky, 2007). Recently, the implementation of rapid HIV tests is the tool that WHO have chosen to work more effectively by expanding your offer. Moreover, the release of newer 4.5-generation rapid tests consented to reach a specificity and a positive predictive value of about 100% (Faraoni et all., 2013). Hence, HIV rapid test is suggested as a promising way to increase the percentage of people accessing screening. Preliminary results of rapid tests are available after only 10-40 minutes of sample collection and analysis. Furthermore, a check up is not required by individuals with negative results at centres for disease control and prevention, thus reducing service costs (CDC, 2001; Branson et al., 2006). All international guidelines and studies highlight the effectiveness of HIV rapid tests use, in particular organized in collaboration with community based. But which the organizational elements must be that need to be considered and should be present in the development of diagnostic services using HIV rapid tests, have not yet been analysed.

Methodology and Aim

The study group conducted a systematic review of literature by identifying publications through the bibliographic database TUTTO. This included: Scopus (Elsevier), MEDLINE/PudMed, Science Citation Index Expanded (Web of Science), Social Sciences Citation Index (Web of Science), ProQuest Psychology Journals, ScienceDirect Journals (Elsevier), ProQuest Sociology, Sociological Abstracts, PMC (PubMed Central), SpringerLink, Social Services Abstracts, Taylor & Francis Online – Journals, Informa - Taylor & Francis (CrossRef), Directory of Open Access Journals (DOAJ), JSTOR Archival Journals, Wiley Online Library, Wiley (CrossRef), BMJ Journals (BMJ Publishing Group), Wolters Kluwer - Ovid - Lippincott Williams & Wilkins (CrossRef), Lippincott Williams & Wilkins Journals (Wolters Kluwer Health). The words "community based HIV test" have been used both individually and jointly for the research, and only the articles in English and in Italian have been selected, although the database has identified only articles in English.

The bibliography included peer reviewed periodicals, including articles and conference papers. The research considered all identifiable sources of the period between 2008 and 2017.

Quotations identified in the research of literature have been projected on the title and on the abstract. The aim is to identify the main organizational features related to the administration of HIV rapid tests in international literature and in different national contexts.

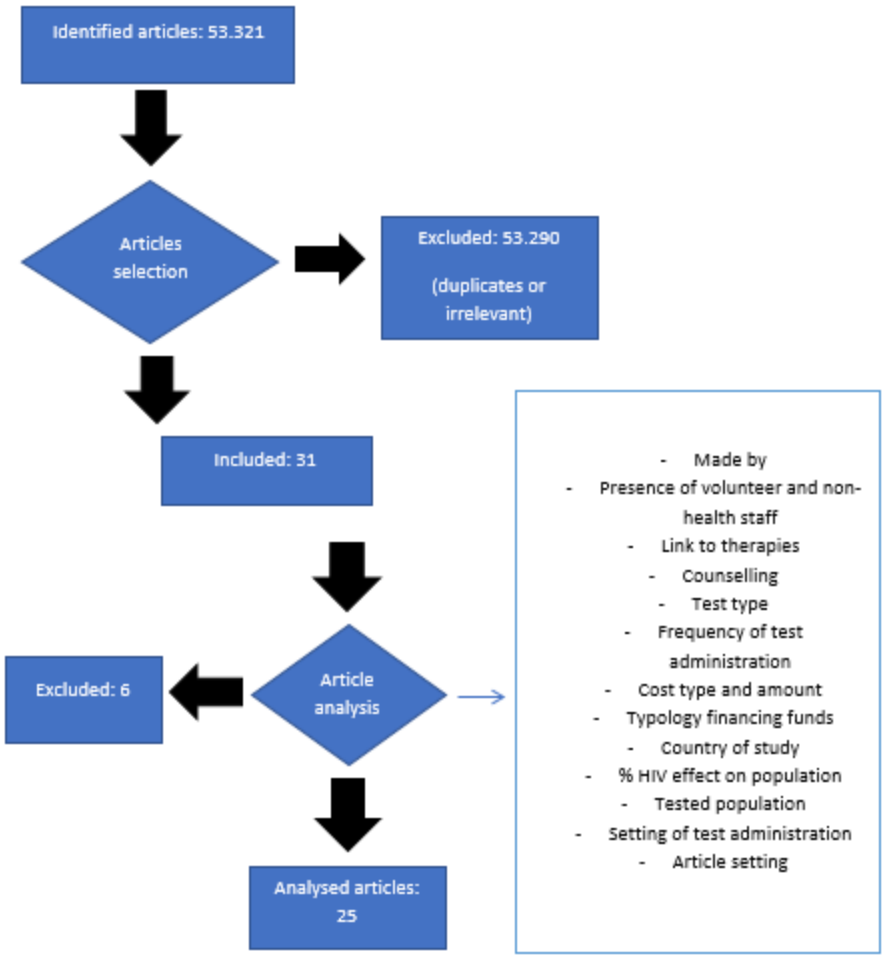
Selection of Publications

The research scored 53,321 results. After discarding the duplicates and the irrelevant results, 31 articles were selected and, after reading each document, 6 articles were discarded due to the absence of at least 3 criteria considered significant in the analysis among the analysed ones (type of test, frequency of administration, type of population to which the test was given, setting of administration), overall 25 papers were selected.

For each article, data were collected: on the country of study, on the percentage of HIV incidence on the population, on HIV test types, on test administration settings, on time horizons, on the recipient population, on types of bodies which carried out the research and on the types of financing funds used, on the presence of volunteer staff and non-health personnel, on the connection with a public body of reference for the undertaking of HIV-positive persons, on the presence of psychologists or counsellors in the service, on the frequency of test administration, on the amount and on the types of service costs.

The screening process is summarized in the flow chart (Figure 1). The articles that are considered in the conducted analysis refer to different projects with different characteristics and can be identified in the table 1.

Figure 1 Flow chart of methodological analysis



Source: Made by the Authors

Table 1: the articles that are considered in the conducted analysis:

Tracking number	Title	Publication year	Doi
1	Implementation of Rapid Testing Programsin Community and Outreach Settings: Perspectives from Staff at Eight Community-Based Organizations in Seven U.S. Cities	2008	10.1177/00333549081230s311
2	Cost-Effectiveness of Finding New HIV Diagnoses Using Rapid HIV Testing in Community-Based Organizations	2008	10.1177/00333549081230s312
3	Rapid HIV Testing in Transgender Communities by Community-Based Organizations in Three Cities	2008	10.1177/00333549081230s313
4	Scope of Rapid HIV Testing in Private Nonprofit Urban Community Health Settings in the United States	2008	10.2105/ajph.2007.111567
5	Provider-related Barriers to Rapid HIV Testing in U.S. Urban Non-profit Community Clinics, Community-based Organizations (CBOs) and Hospitals	2008	10.1007/s10461-008-9456-3
6	Knowledge of HIV status prior to a community HIV counseling and testing intervention in a rural district of south Africa: results of a community based survey	2012	10.1186/1471-2334-12-73
7	Number and timing of antenatal HIV testing: Evidence from a community-based study in Northern Vietnam	2011	10.1186/1471-2458-11-183
8	High acceptance of home-based HIV counseling and testing in a urban community setting in Uganda	2011	10.1186/1471-2458-11-730
9	Preferred HIV testing services and programme characteristics among clients of a rapid HIV testing programme	2013	10.1186/1471-2458-13-791
10	Piloting an HIV self-test kit voucher program to raise serostatus awareness of high-risk African Americans, Los Angeles	2014	10.1186/1471-2458-14-1226
11	Risk factors for HIV and STI diagnosis in a community-based HIV/STI testing and counselling site for men having sex with men (MSM) in a large German city in 2011-2012	2015	10.1186/s12879-014-0738-2
12	Same day ART initiation versus clinical-based pre-ART assessment and counselling for individuals newly tested HIV-positive during community-based HIV testing in rural Lesotho – a randomized controlled trial (CASCADE trial)	2016	10.1186/s12889-016-2972-6
13	Using participatory methods and geographic information systems (GIS) to prepare for an HIV community-based trial in Vulindlela, South Africa (Project Accept - HPTN 043)	2009	10.1002/jcop.20294

14	The prevalence and correlates of receiving confirmatory HIV test results among newly diagnosed HIV-positive individuals at a community-based testing center	2012	10.1521/aeap.2012.24.5.445
15	Counselor-Based Rapid HIV Testing in Community Pharmacies	2013	10.1089/apc.2013.0076
16	Evaluation of Pharmacy-Based HIV Testing in a High-Risk New York City Community	2015	10.1186/1471-2334-14-s2
17	Home-based HIV counseling and testing: Client experiences and perceptions in Eastern Uganda	2012	10.1186/1471-2458-12-966
18	Programmatic Evaluation of a Combined Antigen and Antibody Test for Rapid HIV Diagnosis in a Community and Sexual Health Clinic Screening Programme	2011	10.1371/journal.pone.0028019
19	Early Identification og HIV: Empirical Support for Jail-Based Screening	2012	10.1371/journal.pone.0037603
20	Biomarker-Based HIV Incidence in a Community Sample of Men Who Have Sex with Men in Paris, France	2012	10.1371/journal.pone.0039872
21	Expanding Access to Non-Medicalized Community-Based Rapid Testing to Men Who Have Sex with Men: An Urgent HIV Prevention Intervention (The ANSR-DRAG Study)	2013	10.1371/annotation/73d8610b-c201-4889-889e-db0fba5a3ddc
22	Home-Based HIV Testing for Men Who Have Sex with Men in China: A NovelCommunity-Based Partnership to Complement Government Programs	2014	10.1371/journal.pone.0102812
23	Community-Based HIV-1 Early Diagnosis and Risk Behavior Analysis of Men Having Sex with Men in Hong Kong	2015	10.5353/th_b5177298
24	Uptake of Community-Based Peer Administered HIV Point-of-Care Testing: Findings from the PROUD Study	2016	10.1371/journal.pone.0166942
25	Investigating Recent Testing among MSM: Results from Community-Based HIV Rapid Testing Attendees in France	2013	10.1155/2013/648791

Discussion and Results

Test Administration

As regards the test administration setting, in all the articles the participants tested themselves voluntarily and before doing the test, they were always required to give their informed consent and the guarantee of their anonymity; in almost all of the described projects, the compilation of questionnaires was done on socio-demographic, economic, personal variables (e.g. sexual history) and structural variables (e.g. link to therapies, housing information, health status, if it had ever been tested) of each subject; moreover, pre-test consultation was offered, proof that common guidelines are applied all over the world.

The administration strategy in all articles has always been the same (except for the home-based test project): to offer the test in places where the most at risk populations are used to meet in order to increase coverage and broaden the campaign of awareness. Many projects administered rapid tests trying to reach directly the user through vans with test area (Clark et al., 2008;

Shrestha et al., 2008; Sekandi et al., 2011; Chirowodza et al., 2009) in places with greater affluence of the target that was intended to be tested, such as parks, parking lots, council houses, high schools, communities for young people, communities of health centres, street corners, homeless shelters, syringe exchange sites, centres of substance abuse treatment, soup kitchen, health fairs, bars / nightclubs, gay pride events, prisons, SRO (Clark et al., 2008; Shrestha et al., 2008; Chirowodza et al., 2009; Feldman et al., 2012; Taegtmeyer et al., 2011; Tao et al., 2014; Liang et al., 2015; Lazarus et al., 2016). Among the other places for clinic administration (Shrestha et al., 2008), or social reference networks or associations (Schulden et al., 2008; Bogart et al.; 2008; Bogart et al., 2010; Labhardt et al, 2016; Kyaddondo et al., 2012; De Voux et al., 2012; Le Vu et al., 2012; Lazarus et al., 2016; Lorente et al., 2013B) the Internet and social network (Schulden et al., 2008; Marlin et al., 2014; Lorente et al., 2013A; Lazarus et al., 2016) or in some cases door to door by offering initiative to a defined community (Tabana et al., 2012; Hạnh et al. 2011; Hoyos et al., 2013; Marcus et al, 2015; Amesty et al., 2015; Lorente et al., 2013A) also through the administration in places of worship such as churches and mosques (Amesty et al., 2015). In one case, the tests were administered directly to the pharmacy by the staff (Calderon et al., 2013). *Geographic areas of administration are different*: Los Angeles - Long Beach, New York, Miami, Chicago, Atlanta, Boston, Indianapolis, Newark, Oakland, Riverside, San Bernardino, St Louis, Washington; Quang Ninh, a province north of Vietnam, Rurai South Africa, Sub-Saharan Africa, Butha-Buthe District, North of Lesotho, Paris, Nice and Marseilles. The geographic areas where HIV rapid test projects of use are concentrated are the US and South African ones.

The analysed articles range from 2008 to 2016. In particular, there are 5 of 2008, 1 of 2009, 3 of 2011, 5 of 2012, 4 of 2013, 2 of 2014, 3 of 2015 and 2 of 2016.

Three quarters of the studies have been carried out by public bodies, mainly by CBO (Community-Based Organization), the other public bodies involved in these studies are represented by the Vietnamese health system, United Nations programs, IRB (Institutional Review Committee), hospitals and public universities, programs approved directly by CDC (Centers for Disease Control and Prevention).

Private bodies, on the other hand, are mostly non-profit organizations, such as NGOs and private universities.

Staff Presence in the Testing Project

Apart from 10 articles where it is not specified, voluntary staff is almost always present in the others, also because the majority of the tests are rapid and are carried out within CBOs and NGOs where there are educated but volunteer people. In the article "Programmatic Evaluation of a Combined Antigen and Antibody Test for Rapid HIV Diagnosis in a Community and Sexual Health Clinic Screening Programme" held in Liverpool, UK, in 2011, however, it is specified that the staff of this study, despite being voluntary, comes from urogenital clinics and is therefore represented by professionals, although the type of test is rapid and is carried out within the CBOs, highlighting, however, that in the case of a reactive outcome a confirmation test (EIA of 4th generation) is done, followed by another line of immunological confirmation tests (LIA, Inno-Lia HIV-1 / HIV-2 Ab Innogenetics, Belgium).

Only in two articles it is clearly written that there was no voluntary staff and both studies concentrated in New York City and more specifically in the pharmacies of the Bronx, Manhattan, East Harlem and Central Harlem, where the test is carried out by pharmacists. These

neighborhoods are strategic points because with high prevalence of HIV, in fact NYC has one of the highest rates of new HIV diagnoses in the US, with 1.4% of the NYC population living with AIDS.
Instead, in the article "Expanding Access to Non-Medicalized Community-Based Rapid Testing to Men Who Have Sex with Men: An Urgent HIV Prevention Intervention (The ANSR-DRAG Study)" of 2013, held in Paris, Nice and Marseilles, which compares CBOffer (community based test, in non-clinical contexts), and SMOffer (standard healthcare offer), it explained how in the first type of offer the staff was voluntary and in the second type of offer the staff was only health.
From the comparison of the articles, it is noted that the presence of voluntary staff coincides also with the presence of non-health staff, apart from the aforementioned article "Programmatic Evaluation of a Combined Antigen and Antibody Test for Rapid HIV Diagnosis in a Community and Sexual Health Clinic Screening Programme" of the Liverpool study, where the staff were voluntary but represented by professionals, then by healthcare staff (Taegtmeyer et al., 2011). The article about research carried out in France (Paris, Nice and Marseilles) states that only health staff is present (Le Vu et al., 2012).
In all the articles where this theme was cited (19 out of 25), the counseling service was present (Shrestha et al., 2008; Schulden et al., 2008; Bogart et al., 2010; Tabana et al., 2012; Hạnh et al. 2011; Sekandi et al., 2011; Hoyos et al., 2013; Marcus et al, 2015; Labhardt et al, 2016; Feldman et al., 2012; Calderon et al., 2013; Amesty et al., 2015; Kyaddondo et al., 2012; De Voux et al., 2012; Lorente et al., 2013A; Tao et al., 2014; Liang et al., 2015; Lazarus et al., 2016; Lorente et al., 2013B); therefore in line with the norms and literature's analysis criteria. In several cases counseling is done before the test is administered, in some cases it is possible to define the type of test to be administered (HIV or other sexually transmitted infection), in others it is related to post-test counseling. Counseling is always offered in an area that guarantees privacy. Only in one case counseling is offered by phone, since the test result is sent via e-mail.

Existence of a Relationship with a public body of reference for the Undertaking in Case of Positivity

Only 7 articles deal, in the context, with this theme and in all 7 articles that mention it, this relationship exists. In particular, this theme is dealt with in various ways:
- In *"High acceptance of home-based HIV counseling and testing in a urban community setting in Uganda"*, conducted on the population of Rubaga (division of the city of Kampala, Uganda), where seropositive people to the test were invited to go to a HIV care centre of their preference, while the negatives were offered counseling service;
- In *"Counselor-Based Rapid HIV Testing in Community Pharmacies"*, conducted in NYC (Bronx and Manhattan, characterized by high prevalence of HIV infection), the pharmacy, where rapid tests were administered, put all patients who were positive at preliminary tests, in the condition to be connected to the treatment of the cure on the same day. In fact, in case of positivity, the result was immediately notified to the director of the reference HIV clinic and the patient was taken to the hospital by taxi. After that, an appointment was scheduled to come back to hospital after 3 days to get the confirmation test results. However, customers were left the discretion to refuse the connection to care;
- In *"Evaluation of Pharmacy-Based HIV Testing in a High-Risk New York City Community"* conducted in NYC (East Harlem and Central Harlem neighborhoods), within 1 week an

appointment for the confirmation test was set up to customers who were positive at preliminary tests in pharmacies, to connect them to care;
- In *"Home-based HIV counseling and testing: Client experiences and perceptions in Eastern Uganda"*, conducted on the Kumi District population in Eastern Uganda, the interviewees reported that HBHCT service (home-based hiv counseling and testing) allowed them to start treatment immediately in case of seropositive test;
- In *"Programmatic Evaluation of a Combined Antigen and Antibody Test for Rapid HIV Diagnosis in a Community and Sexual Health Clinic Screening Programme"*, conducted in Liverpool (UK), all the participants diagnosed positive to rapid test, were connected to the clinic of urogenital medicine at Royal Liverpool and Broadgreen Hospital for complete HIV care, including evaluation of antiretroviral therapy;
- In *"Early Identification of HIV: Empirical Support for Jail-Based Screening"*, carried out in prisons of several cities in the United States, one of the aims of this project was to ensure connection with doctors, when clients were out of prison. Most inmates had low stays in the jail and then began the care when they left; as far as those few patients who had a long period of stay were concerned, the ART and the subsequent stages of treatment were made within the prison itself, as the care service inside was feasible;
- In *"Home-Based HIV Testing for Men Who Have Sex with Men in China: A NovelCommunity-Based Partnership to Complement Government Programs"*, conducted on MSMs of Beijing, China, customers who were positive to rapid test in Home-Based HIV Self-Testing, were connected to a local CDC for the confirmation test.

Test type

In 20 articles out of 21 that specify the type of rapid test. In 2 articles, both the rapid test and Elisa and Western Blot tests (Feldman et al., 2012) are administered. Literature shows how rapid test is more effective in the struggle with HIV and allows direct access to the more at-risk populations (Clark et al., 2008; Shrestha et al., 2008; Schulden et al., 2008; Bogart et al.; 2008; Bogart et al., 2010; Sekandi et al., 2011; Hoyos et al., 2013; Marlin et al., 2014; Marcus et al, 2015; Labhardt et al, 2016; Feldman et al., 2012; Calderon et al., 2013; Amesty et al., 2015; Kyaddondo et al., 2012; Taegtmeyer et al., 2011; Le Vu et al., 2012; Lorente et al., 2013A; Tao et al., 2014; Liang et al., 2015; Lazarus et al., 2016; Lorente et al., 2013B).
The most commonly used rapid tests are salivary and on sample of blood collected from fingertip, while the most commonly used brands are first of all the OraQuick (subdivided into Rapid HIV-1 Antibody Test and Advance Rapid HIV-1/2 Antibody Test; Orasure Technologies, Bethlehem, Pa), followed by Uni-Gold Recombigen (Trinity Biotech PLC, Wicklow, Ireland); the other used brands are Clearview HIV 1-2 Stat-Pak (Chembio Diagnostic Systems, Medford, NY), Complete HIV 1-2 (Chembio Diagnostic Systems, Medford, NY), Alere HIV1/2 Ag/Ab Combo test, Genscreen Ultra HIV Ag-Ab (Biorad) e VIKIA HIV 1/2.

Frequency of Test Administration

The only 2 articles that deal with this theme are:
- *"Number and timing of antenatal HIV testing: Evidence from a community-based study in Northern Vietnam"*, conducted on the mothers of Quang Ninh (a province north of Vietnam),

where it is said that the first test should be done just when pregnancy started and the second before 36 weeks of gestation;
- *"Home-Based HIV Testing for Men Who Have Sex with Men in China: A NovelCommunity-Based Partnership to Complement Government Programs"*, conducted on MSMs in Beijing (China), where it is said that the guidelines dictated by the Chinese national HIV / AIDS prevention, indicate that for sexually active MSM the frequency of test administration should be 6 months.

Type and Amount of Service Cost
- In *"Cost-Effectiveness of Finding New HIV Diagnoses Using Rapid HIV Testing in Community-Based Organizations"*, conducted in Kansas City (Missouri), where both conventional and rapid tests were performed, for the "Kansas City Clinic" program costs were $ 68318 for the total $ 80 per person, $ 3637 per person for which new HIV diagnoses were diagnosed [2005 currency dollars]; for the “Kansas City outreach” project: $ 79757 for the total program, $ 113 per tested person, $ 16985 per person to whom new HIV diagnoses have been diagnosed [2005 currency dollars].
In addition, for CBOs the costs were:

- Fixed: program management costs, training, travel, purchase, movable vans’ operation, durable goods and equipment;
- Variable: recruitment, counseling and testing, non-durable goods and supplies, confirmatory Western blot test.

- In *"Scope of Rapid HIV Testing in Private Nonprofit Urban Community Health Settings in the United States"*, conducted in the four (Northeast, Midwest, South and West) US geographic areas, the costs for non-profit private clinics distributing rapid tests are represented by: feasibility, training, personal recruitment, environment and resource management, costs for MTU;
- In *"Home-based HIV counseling and testing: Client experiences and perceptions in Eastern Uganda"*, conducted on the Kumi District (Eastern Uganda) population, it was found that for associations, the HBHCT setting (the one used in this article) is the cheapest, as it costs roughly US $ 8.29 per customer, while the hospital test costs about $ 11.68 and $ 19.26 mobile units.
In most of the other articles, instead, it is only said that a rapid test for participants is free, except in a case where participants were paid $ 15 and another $ 20 CAN for their time arrangement. Concerning the conventional test, the article on the preventive study of pregnant women in Vietnam says the problem is that in this country the figure for such a test is high ($ 3 per test, i.e. 50000 VND).

In addition:

- In *"Piloting an HIV self-test kit voucher program to raise serostatus awareness of high-risk African American Americans, Los Angeles"*, conducted on the Los Angeles County MSMs, it is written that participants do the test for free and are paid homage with a voucher to buy a kit to self-test. These vouchers are redeemable at Walgreens (the largest pharmacy chain in the United States), using a third-party payment system; Walgreens then bills at UCLA (the University of California, Los Angeles, which is a US public and research university among the most important and prestigious in the world) for the cost based on negotiated cost and the number of refunded vouchers;

- In *"Home-Based HIV Testing for Men Who Have Sex with Men in China: A NovelCommunity-Based Partnership to Complement Government Programs"*, conducted on MSMs in Beijing, the test is free only for those completing and reporting the result of their test, only at this point they will be returned $ 10 for the rapid test kit. In fact, in this study, participants supported CCAVG project on home-based HIV self-testing through an advertisement on their website; at this point, they received the HIV rapid test kit home and the results had to be emailed to CCAVG staff.

Typology of Funding Sources

Most bodies use private funds, as most of them are non-profit organizations, private NGOs and private universities, and the funds come mainly from donations.

Many CDC-approved programs have both public and private funding sources, as CDCs (public bodies) are in turn financed in part by CDC Foundation (private body), which is a body independent from CDCs.

State or city of Realization of Activity and Type of Population

Most of the studies took place in the USA, especially in New York, which accounts for 6 studies out of 25 selected articles, demonstrating that the fight against AIDS is very active and this activity is facilitated by the fact that there are neighbourhoods in the city which host different ethnicities that facilitate their achievement. In addition, NYC is particularly affected by HIV, at a rate almost 3 times the national average.

MSMs, drug addicts and sex workers are the most vulnerable ethnicities, and all the studies conducted in the most industrialized countries focused their research on them, with the difference that in the USA studies were also aimed at African- Americans and Hispanics, given their wide presence in that country and their high percentages of infections.

Research in less-industrialized countries, such as some parts of Vietnam, South Africa and Uganda, was based on the achievement of poor and rural areas by providing rapid test to families with home-based test modality, so to general population and not just to some ethnicity.

Particular, instead, the Liverpool study, which offered HIV rapid test to communities where the most at risk ethnic groups are present, in a context such as that of the United Kingdom, where the prevalence of people with HIV is low.

With 10 articles out of 25, MSMs are the most popular research population and are most focused on actively offering rapid test.

Percentage of HIV Incidence on the Population

In all studies involved in these articles, a HIV prevalence higher than 0.1% has been observed, a threshold above which the HIV test has a cost / benefit (Ministry of Health, IRCCS Spallanzani of Rome, 2015).

Considering, however, studies involving only MSM population, the percentages are higher. In the description of the French project it is indicated that MSMs account for 40% of the new annual diagnosis, 60 times as much as the general population, in Beijing, 15% of the tested people were positive to the HIV self-test.

Conclusions

The analysis carried out confirms the theory that rapid tests can reduce the time of diagnosis of HIV infection and can immediately orientate to the cure, causing the cases of immunodeficiency and the related higher costs. The study confirms the community-based rapid hiv test as a useful tool for diagnosing and activating prevention activities outside the hospital context on targets that cannot be reached differently. Regardless of the State in which HIV rapid tests have been administered, these represent an excellent diagnostic tool to reach the rural or poor population where accessibility to test for various reasons is limited or to test populations where the risk behaviour has a greater incidence of HIV infection, such as most tested MSM population. The study confirms that the policies of the WHO and CDC of the introduction of the test are cost efficient and effective but only taking into account some organizational considerations taken from the literature and the projects analysed. The theoretical gap concerning the organizational and economic elements is largely healed in the analysis conducted. Almost all the projects described are either made by Public Bodies or realized and funded by universities with the approval of scientific committees of National Public Authorities, in most cases these are prevention projects related to scientific research. Articles dealing with the presence of staff, both voluntary and non-voluntary, are adequately trained, in most cases they are health professionals who carry out volunteering activities using their own clinical skills. It is logical that the employed staff have specific training as a diagnostic health service. In almost all the projects there is a counselling service, so there is at least the presence of pre-test and post-test counselling in order to increase the success of the diagnosis and prevention path even in case of non-responsiveness of the test. In articles where it is reported that there is a relationship with HIV / AIDS clinical public diagnosis and treatment bodies that are used for the undertaking, confirming the outcome of HIV rapid test and the start of the care; this kind of relationship should always be present between community based organizations and public bodies in order to integrate the diagnosis service and facilitate access to care. In all articles, there is the period of administration but not the frequency of test administration, this aspect must be consistent with the administration setting, the tested population and the reference epidemiological situation. The costs of organizing a community based service for HIV test administration are high for fixed costs (staff, rent of means or administration spaces) while being contained and sometimes lower in terms of variable costs (HIV rapid tests of 4th generation, administration material) compared to hospital ones, from cost-effectiveness point of view, this service has always the potential for early diagnosis by affecting lower hospital spending, preventing clinically aggravated cases with decreased CD4 and acquired immunodeficiency. Studies highlight that, in most cases, it is helpful to activate HIV test programs to reach the population, but these services must not be substitutes for hospitals and in some conditions, where the population is already accustomed at periodic tests, they would lead to additional costs instead of saving for the system. The organization of diagnostic services using HIV rapid tests that take into account the analysed elements can lead to the success of the various rapid-response HIV test initiatives, ensuring savings on the healthcare system and a parallel increase in the quality of the therapy. The results identified make it possible to state that rapid HIV testing projects should be implemented permanently, and that each state based on epidemiological and economic characteristics should create procedures that take into account all the elements presented.

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References

Amesty, S., Crawford, N. D., Nandi, V., Perez-Figueroa, R., Rivera, A., Sutton, M., ... & Harripersaud, K. (2015). Evaluation of pharmacy-based HIV testing in a high-risk New York City community. AIDS patient care and STDs, 29(8), 437-444.

Bert, F., Gualano, M. R., Biancone, P., Brescia, V., Camussi, E., Martorana, M., ... & Siliquini, R. (2016). HIV-screening in pregnant women: a systematic review of cost-effectiveness studies: Fabrizio Bert. The European Journal of Public Health, 26(suppl_1), ckw174-023.

Tradori, V., Biancone, P., Secinaro, S., & Brescia, V. (2017). Legislation, policies and organization of community based Centers for HIV diagnosis and prevention in Piedmont Region. International Journal Of Management Sciences And Business Research, 6(11), 17-27.

Biancone, P., Tradori, V., Brescia, V., & Migliavacca, A. (2017). Quality and control in the healthcare: a win-win mix?. International Journal of Business and Social Science, 8(7), 221-228.

Blystad, H., & Wiessing, L. (2009). Guidance on provider-initiated voluntary medical examination, testing and counselling for infectious diseases in injecting drug users. Pre-final unedited version, 5.

Bogart, L. M., Howerton, D., Lange, J., Becker, K., Setodji, C. M., & Asch, S. M. (2008). Scope of rapid HIV testing in private nonprofit urban community health settings in the United States. American journal of public health, 98(4), 736-742.

Bogart, L. M., Howerton, D., Lange, J., Setodji, C. M., Becker, K., Klein, D. J., & Asch, S. M. (2010). Provider-related barriers to rapid HIV testing in US urban non-profit community

Branson, B. M., Handsfield, H. H., Lampe, M. A., Janssen, R. S., Taylor, A. W., Lyss, S. B., & Clark, J. E. (2006). Revised recommendations for HIV testing of adults, adolescents, and pregnant women in health-care settings. Morbidity and Mortality Weekly Report: Recommendations and Reports, 55(14), 1-CE.

Branson B. M. (2007). State of the art for diagnosis of HIV infection. Clin Infect Dis.;45, Suppl4,:S221-S225. https://doi.org/10.1086/522541.

Calderon, Y., Cowan, E., Rhee, J. Y., Brusalis, C., & Leider, J. (2013). Counselor-based rapid HIV testing in community pharmacies. AIDS patient care and STDs, 27(8), 467-473.

Centers for Disease Control and Prevention, (2001). Revised guidelines for HIV counseling, testing, and referral. MMWR. Recommendations and reports: Morbidity and mortality weekly report. Recommendations and reports/Centers for Disease Control, 50(RR-19), 1. Available at: https://www.google.it/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0ahUKEwilhMrc2sHZAhWCyqQKHV0iDbQQFggnMAA&url=https%3A%2F%2Fwww.cdc.gov%2Fmmwr%2Fpreview%2Fmmwrhtml%2Frr5019a1.htm&usg=AOvVaw2Imy7RXkNiThSfIavW9MK8

Centers for Disease Control and Prevention CDC, (2007). Rapid HIV testing in outreach and other community settings--United States, 2004-2006. MMWR. Morbidity and mortality weekly report, 56(47), 1233. Available at: https://www.google.it/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0ahUKEwiup9_R2sHZAhXOyaQKHbOlBnUQFggnMAA&url=https%3A%2F%2Fwww.cdc.gov%2Fmmwr%2Fpreview%2Fmmwrhtml%2Fmm5647a2.htm&usg=AOvVaw38_mycvxhENNq_T8VoDlOU

Centers for Disease Control and Prevention, (2010). Estimated HIV incidence in the United States, 2007–2010. HIV Surveillance Supplemental Report 2012;17(No. 4). Published December. Available at: https://www.google.it/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0ahUKEwiM24PB2sHZAhUKKewKHcfrDfAQFggnMAA&url=https%3A%2F%2Fwww.cdc.gov%2Fhiv%2Fpdf%2Fstatistics_hssr_vol_17_no_4.pdf&usg=AOvVaw2Z3G_seGg11JcA3Nw5Qtnz

Centers for Disease Control and Prevention CDC, (2013). Monitoring selected national HIV prevention and care objectives by using HIV surveillance data—United States and 6 U.S. dependent areas—2011. HIV Surveillance Supplemental Report 2013;18(No. 5). Available at: https://www.google.it/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0ahUKEwidvtWX2sHZAhWFy6QKHQN3A44QFggwMAA&url=https%3A%2F%2Fwww.cdc.gov%2Fhiv%2Fpdf%2Flibrary%2Freports%2Fsurveillance%2Fcdc-hiv-surveillance-supplemental-report-vol-22-2.pdf&usg=AOvVaw1g825kUa7iAvn6X2hgbzTX

Centers for Disease Control and Prevention, (2016). Rapid HIV tests suitable for use in non-clinical settings (CLIA-waived), updates 11/07/2016. Available at: https://www.google.it/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0ahUKEwjoqeyG2sHZAhWODewKHZ50C3EQFgg0MAA&url=https%3A%2F%2Fwww.cdc.gov%2Fhiv%2Fpdf%2Ftesting%2Frapid-hiv-tests-non-clinical.pdf&usg=AOvVaw3OdFdVkF0C58dGEQ8M8uOh

Centre for Communicable Diseases and Infection Control Public Health Agency of Canada, (2010). HIV/AIDS Epi Update — Chapter 13: HIV/AIDS in Canada among people from countries where HIV is endemic. Available at: http://www.phac-aspc.gc.ca/aids-sida/publication/epi/2010/chap13-eng.php

Chirowodza, A., Van Rooyen, H., Joseph, P., Sikotoyi, S., Richter, L., & Coates, T. (2009). Using participatory methods and geographic information systems (GIS) to prepare for an HIV community-based trial in Vulindlela, South Africa (Project Accept–HPTN 043). Journal of community psychology, 37(1), 41-57.

Clark, H. A., Bowles, K. E., Song, B., & Heffelfinger, J. D. (2008). Implementation of rapid HIV testing programs in community and outreach settings: perspectives from staff at eight community-based organizations in seven US cities. Public Health Reports, 123(3_suppl), 86-93.

Cleary, P. D., Van Devanter, N., Rogers, T. F., Singer, E., Shipton-Levy, R., Steilen, M., ... & Pindyck, J. (1991). Behavior changes after notification of HIV infection. American Journal of Public Health, 81(12), 1586-1590.

Coates, T. J., Morin, S. F., & McKusick, L. (1987). Behavioral consequences of AIDS antibody testing among gay men. JAMA, 258(14), 1889-1889.

Cohen, M. S., Chen, Y. Q., McCauley, M., Gamble, T., Hosseinipour, M. C., Kumarasamy, N., ... & Godbole, S. V. (2011). Prevention of HIV-1 infection with early antiretroviral therapy. New England journal of medicine, 365(6), 493-505.

De Voux, A., Spaulding, A. C., Beckwith, C., Avery, A., Williams, C., Messina, L. C., ... & Altice, F. L. (2012). Early identification of HIV: empirical support for jail-based screening. PloS one, 7(5), e37603.

Dybul, M., Fauci, A. S., Bartlett, J. G., Kaplan, J. E., & Pau, A. K. (2002). Guidelines for using antiretroviral agents among HIV-infected adults and adolescents: the panel on clinical practices for treatment of HIV. Annals of internal medicine, 137(5_Part_2), 381-433.

Doyle, N. M., Levison, J. E., & Gardner, M. O. (2005). Rapid HIV versus enzyme-linked immunosorbent assay screening in a low-risk Mexican American population presenting in labor: a cost-effectiveness analysis. American journal of obstetrics and gynecology, 193(3), 1280-1285.

Doll, L. S., O'malley, P. M., Pershing, A. L., Darrow, W. W., Hessol, N. A., & Lifson, A. R. (1990). High-risk sexual behavior and knowledge of HIV antibody status in the San Francisco City Clinic Cohort. Health Psychology, 9(3), 253.

ECDC (2010). Guidance. HIV testing: increasing uptake and effectiveness in the European Union. December. Available at: https://www.google.it/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0ahUKEwiZncfw2sHZAhWD3KQKHaUcAdwQFggsMAA&url=https%3A%2F%2Fecdc.europa.eu%2Fsites%2Fportal%2Ffiles%2Fmedia%2Fen%2Fpublications%2FPublications%2F101129_GUI_HIV_testing.pdf&usg=AOvVaw0clYm8m8tZdPeRggKvM5Fb

ECDC, (2004). HIV testing in Europe. Monitoring implementation of the Dublin Declaration on partnership to fight HIV/AIDS in Europe and Central Asia. Progress report of February. Available at: https://www.google.it/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0ahUKEwiqyf2R28HZAhUNsaQKHSrgA3EQFggqMAA&url=https%3A%2F%2Fecdc.europa.eu%2Fen%2Finfectious-diseases-public-health%2Fhiv-infection-and-aids%2Fprevention-and-control%2Fmonitoring&usg=AOvVaw2W9cIs67Gn3r90Rm-k4NKD

ECDC, (2011). Guidance: Prevention and control of infectious diseases among people who inject drugs. Available at: https://www.google.it/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0ahUKEwiE7tb62sHZAhWosKQKHRK4DY8QFggsMAA&url=http%3A%2F%2Fwww.emcdda.europa.eu%2Fpublications%2Fecdc-emcdda-guidance_en&usg=AOvVaw0m1R_Huk5wy8_8GmepPdGp

ECDC, (2014). Technical Report Assessing the burden of key infectious diseases affecting migrant populations in the EU/EEA. May. Available at: https://www.google.it/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0ahUKEwiu7sSF28HZAhUBDuwKHRiMDJcQFggnMAA&url=http%3A%2F%2Fecdc.europa.eu%2Fen%2Fpublications%2FPublications%2Fassessing-burden-disease-migrant-populations.pdf&usg=AOvVaw02Zlq2aZnvfY-86PG7MJNS

Faraoni, S., Rocchetti, A., Gotta, F., Ruggiero, T., Orofino, G., Bonora, S., & Ghisetti, V. (2013). Evaluation of a rapid antigen and antibody combination test in acute HIV infection. Journal of Clinical Virology, 57(1), 84-87.

Feldman, M., Wu, E., Mendoza, M., Lowry, B., Ford, L., & Holloway, I. (2012). The prevalence and correlates of receiving confirmatory HIV test results among newly diagnosed HIV-positive individuals at a community-based testing center. AIDS Education and Prevention, 24(5), 445-455.

Fox, R., Odaka, N. J., Brookmeyer, R., & Polk, B. F. (1987). Effect of HIV antibody disclosure on subsequent sexual activity in homosexual men. AIDS (London, England), 1(4), 241-246.

Gibson, D. R., Lovelle-Drache, J., Young, M., Hudes, E. S., & Sorensen, J. L. (1999). Effectiveness of brief counseling in reducing HIV risk behavior in injecting drug users: final results of randomized trials of counseling with and without HIV testing. AIDS and Behavior, 3(1), 3-12.

Girardi, E., Sabin, C. A., & Antonella d'Arminio Monforte, M. D. (2007). Late diagnosis of HIV infection: epidemiological features, consequences and strategies to encourage earlier testing. JAIDS Journal of Acquired Immune Deficiency Syndromes, 46, S3-S8.

Glynn, M. K. R. P., & Rhodes, P. (2005). Estimated HIV prevalence in the United States at the end of 2003. In *National HIV prevention conference* (Vol. 205).

Hạnh, N. T., Gammeltoft, T. M., & Rasch, V. (2011). Number and timing of antenatal HIV testing: Evidence from a community-based study in Northern Vietnam. BMC Public Health, 11(1), 183.

HIV in Europe, (2013). HIV Indicator Conditions: Guidance for Implementing HIV Testing in Adults in Health Care Settings. Available at: https://issuu.com/kandrup/docs/chip_guidance?e=4233206/1998749

Hoyos, J., Belza, M. J., Fernández-Balbuena, S., Rosales-Statkus, M. E., Pulido, J., & de la Fuente, L. (2013). Preferred HIV testing services and programme characteristics among clients of a rapid HIV testing programme. BMC public health, 13(1), 791.

Kyaddondo, D., Wanyenze, R. K., Kinsman, J., & Hardon, A. (2012). Home-based HIV counseling and testing: client experiences and perceptions in Eastern Uganda. BMC Public Health, 12(1), 966.

Labhardt, N. D., Ringera, I., Lejone, T. I., Masethothi, P., Kamele, M., Gupta, R. S., ... & Glass, T. R. (2016). Same day ART initiation versus clinic-based pre-ART assessment and counselling for individuals newly tested HIV-positive during community-based HIV testing in rural Lesotho–a randomized controlled trial (CASCADE trial). BMC public health, 16(1), 329.

Lazarus, L., Patel, S., Shaw, A., Leblanc, S., Lalonde, C., Hladio, M., ... & Tyndall, M. W. (2016). Uptake of Community-Based Peer Administered HIV Point-of-Care Testing: Findings from the PROUD Study. PloS one, 11(12), e0166942.

Le Vu, S., Velter, A., Meyer, L., Peytavin, G., Guinard, J., Pillonel, J.,& Semaille, C. (2012). Biomarker-based HIV incidence in a community sample of men who have sex with men in Paris, France. PloS one, 7(6), e39872.

Liang, J., Liu, L., Cheung, M., Lee, M. P., Wang, H., Li, C. H., ... & Peng, J. (2015). Community-based HIV-1 early diagnosis and risk behavior analysis of men having sex with men in Hong Kong. PloS one, 10(4), e0125715.

Lorente, N., Preau, M., Vernay-Vaisse, C., Mora, M., Blanche, J., Otis, J., & Suzan-Monti, M. (2013A). Expanding access to non-medicalized community-based rapid testing to men who have sex with men: an urgent HIV prevention intervention (the ANRS-DRAG study). PLoS One, 8(4), e61225.

Lorente, N., Champenois, K., Blanche, J., Préau, M., Suzan-Monti, M., Mora, M., ... & Spire, B. (2013B). Investigating recent testing among MSM: results from community-based HIV rapid testing attendees in France. Journal of sexually transmitted diseases, 2013.

Marcus, U., Ort, J., Grenz, M., Eckstein, K., Wirtz, K., & Wille, A. (2015). Risk factors for HIV and STI diagnosis in a community-based HIV/STI testing and counselling site for men having sex with men (MSM) in a large German city in 2011–2012. BMC infectious diseases, 15(1), 14.

Marks, G., Crepaz, N., Senterfitt, J. W., & Janssen, R. S. (2005). Meta-analysis of high-risk sexual behavior in persons aware and unaware they are infected with HIV in the United States: implications for HIV prevention programs. JAIDS Journal of Acquired Immune Deficiency Syndromes, 39(4), 446-453.

Marlin, R. W., Young, S. D., Bristow, C. C., Wilson, G., Rodriguez, J., Ortiz, J., ... & Klausner, J. D. (2014). Piloting an HIV self-test kit voucher program to raise serostatus awareness of high-risk African Americans, Los Angeles. BMC Public Health, 14(1), 1226.

Masciotra, S., Luo, W., Youngpairoj, A. S., Kennedy, M. S., Wells, S., Ambrose, K., ... & Owen, S. M. (2013). Performance of the Alere Determine™ HIV-1/2 Ag/Ab Combo Rapid Test with specimens from HIV-1 seroconverters from the US and HIV-2 infected individuals from Ivory Coast. Journal of Clinical Virology, 58, e54-e58.

Murray, C. J., Vos, T., Lozano, R., Naghavi, M., Flaxman, A. D., Michaud, C., ... & Aboyans, V. (2013). Disability-adjusted life years (DALYs) for 291 diseases and injuries in 21 regions, 1990–2010: a systematic analysis for the Global Burden of Disease Study 2010. *The lancet*, *380*(9859), 2197-2223.

Otten Jr, M. W., Zaidi, A. A., Wroten, J. E., Witte, J. J., & Peterman, T. A. (1993). Changes in sexually transmitted disease rates after HIV testing and posttest counseling, Miami, 1988 to 1989. American Journal of Public Health, 83(4), 529-533.

Palella Jr, F. J., Delaney, K. M., Moorman, A. C., Loveless, M. O., Fuhrer, J., Satten, G. A., ... & Holmberg, S. D. (1998). Declining morbidity and mortality among patients with advanced human immunodeficiency virus infection. New England Journal of Medicine, 338(13), 853-860.

CDC (2004). Prevention, H. I. V. HIV Counseling and Testing at CDC-Supported Sites United States. https://stacks.cdc.gov/view/cdc/11961/cdc_11961_DS2.pdf

Rhodes, F., & Malotte, C. K. (1996). HIV risk interventions for active drug users: Experience and prospects. Understanding and preventing HIV risk behavior: Safer sex and drug use. Thousand Oaks, CA: Sage, 207-236.

Rietmeijer, C. A., Kane, M. S., Simons, P., Corby, N. H., Wolitski, R. J., Higgins, D. L., ... & Cohn, D. L. (1996). Increasing the use of bleach and condoms among injecting drug users in Denver: outcomes of a targeted, community-level HIV prevention program. Aids, 10(3), 291-298.

Schulden, J. D., Song, B., Barros, A., Mares-DelGrasso, A., Martin, C. W., Ramirez, R., ... & Heffelfinger, J. D. (2008). Rapid HIV testing in transgender communities by community-based organizations in three cities. Public Health Reports, 123(3_suppl), 101-114.

Sekandi, J. N., Sempeera, H., List, J., Mugerwa, M. A., Asiimwe, S., Yin, X., & Whalen, C. C. (2011). High acceptance of home-based HIV counseling and testing in an urban community setting in Uganda. BMC public health, 11(1), 730.

Shrestha, R. K., Clark, H. A., Sansom, S. L., Song, B., Buckendahl, H., Calhoun, C. B., ... & Heffelfinger, J. D. (2008). Cost-effectiveness of finding new HIV diagnoses using rapid.

Smith, M. K., Rutstein, S. E., Powers, K. A., Fidler, S., Miller, W. C., Eron Jr, J. J., & Cohen, M. S. (2013). The detection and management of early HIV infection: a clinical and public health emergency. Journal of acquired immune deficiency syndromes (1999), 63(0 2), S187.

Steen, T. W., Seipone, K., de la Hoz Gomez, F., Anderson, M. G., Kejelepula, M., Keapoletswe, K., & Moffat, H. J. (2007). Two and a half years of routine HIV testing in Botswana. JAIDS Journal of Acquired Immune Deficiency Syndromes, 44(4), 484-488.

Tabana, H., Doherty, T., Swanevelder, S., Lombard, C., Jackson, D., Zembe, W., & Naik, R. (2012). Knowledge of HIV status prior to a community HIV counseling and testing.

Taegtmeyer, M., MacPherson, P., Jones, K., Hopkins, M., Moorcroft, J., Lalloo, D. G., & Chawla, A. (2011). Programmatic evaluation of a combined antigen and antibody test for rapid HIV diagnosis in a community and sexual health clinic screening programme. PloS one, 6(11), e28019.

Tao, J., Li, M. Y., Qian, H. Z., Wang, L. J., Zhang, Z., Ding, H. F.,& Vermund, S. H. (2014). Home-based HIV testing for men who have sex with men in China: a novel community-based partnership to complement government programs. PloS one, 9(7), e102812.

Tradori, V., Biancone, P., Cardaci, A., & Brescia, V. (2017). Legislazione, politiche e organizzazione di centri community based di diagnosi e prevenzione dell'HIV nella Regione Piemonte. Sanità Pubblica E Privata, 4, 37-51.

World Health Organization, (2015). Recommends Hiv Testing By Lay Providers, World Health Organization, Policy brief of July. Available at: https://www.google.it/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0ahUKEwiu0aOd28HZAhWL2KQKHVZyAxwQFggnMAA&url=http%3A%2F%2Fwww.who.int%2Fhiv%2Fpub%2Ftoolkits%2Fpolicy-hiv-testing-by-lay-provider%2Fen%2F&usg=AOvVaw2v04QuFRHjn9BfodlUlvTO

World Health Organization, (2015). HIV and young people who inject drugs: a technical briefing. Available at: https://www.google.it/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0ahUKEwixofql28HZAhUBsaQKHSUDB-8QFggsMAA&url=http%3A%2F%2Fwww.who.int%2Firis%2Fhandle%2F10665%2F179865&usg=AOvVaw0t7UIvhLiepNOd3WsFBfqe

World Health Organization, (2015). Consolidated guidelines on HIV testing services, July 2015. Available at: https://www.google.it/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0ahUKEwjcoarn2sHZAhVPCewKHRGfC-4QFggnMAA&url=http%3A%2F%2Fwww.who.int%2Fhiv%2Fpub%2Fguidelines%2Fhiv-testing-services%2Fen%2F&usg=AOvVaw0ln7Ai7PdA0qGAIpvVfrkT

Griensven, G. J. V., Vroome, E. D., Tielman, R. A., Goudsmit, J. A. A. P., De Wolf, F. R. A. N. K., Noordaa, J. V. D., & Coutinho, R. A. (1989). Effect of human immunodeficiency virus (HIV) antibody knowledge on high-risk sexual behavior with steady and nonsteady sexual partners among homosexual men. American journal of epidemiology, 129(3), 596-603.

Wolf, L. L., & Walensky, R. P. (2007). Testing for HIV infection in the United States. *Current infectious disease reports*, *9*(1), 76-82.