



# Provider-Initiated Counselling and Testing Approach: 90-90-90 Goal Achievement. Kenya Referral General Hospital Assessment

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## Abstract

**Introduction:** Despite the prevention efforts of past decades, the prevalence of HIV infection continues to grow. An estimated 46 million people were living with HIV/AIDS worldwide by the end of 2005. The HIV pandemic has become a major public health and development problem around the world. Our goal is to contribute to the knowledge of serology status and early care. **Methodology:** We conducted a cross-sectional study on the PITC approach. Our study covered 1140 cases detected at HGR Kenya from 01 January to 31 December 2018. The data were collected on the basis of the PITC register. SPSS software version 23 was used for data analysis. **Results:** The male sex was more associated with positive serology (P-value: 0.0007), single men and married men were more likely to be infected than others. September had more new cases tested than the other months. The proportion of tested positive (141 personnes) is 12.3%. Of the 141 HIV positives, 100% were put on ART and among them 72.9% achieved suppression of viral charge (less than 1000 copies/ml of blood). **Conclusion:** PITC is necessary and should be systematically, at all gateways offered to all patients with an HIV risk factor, to boost testing and knowledge of HIV status, by combining Communication for behaviour change and Information Education and Communication through the communication channels adapted to the environment, we mention churches, political mornings, youth movements, community relays.

## Subject Areas

HIV

## Keywords

PITC, HIV, Kenya, Referral, General Hospital

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## 1. Introduction

Acquired Immunodeficiency Syndrome (AIDS) is caused by the human immunodeficiency virus (HIV). For more than 15 years, the HIV/AIDS pandemic has been raging around the world. Despite the prevention efforts of past decades, the prevalence of HIV infection continues to grow. An estimated 46 million people were living with HIV/AIDS worldwide by the end of 2005 [1]. The HIV pandemic has become a major public health and development problem around the world. Women and children as well as key populations are the most vulnerable targets.

In recent years, there has been a marked increase in global commitment and action against the HIV pandemic and a significant increase in the resources devoted to it. In June 2006, the United Nations General Assembly endorsed the continued expansion of HIV prevention, care and support with the aim of achieving as close as possible universal access to HIV here in 2030 [2].

Despite recent progress, according to the UNAIDS report, 2019 is estimated around the world:

- 37.9 million [32.7 million - 44.0 million] people worldwide were living with HIV.
- 23.3 million [20.5 million - 24.3 million] people have access to treatment.
- 1.7 million [1.4 million - 2.3 million] people newly infected with HIV.
- 770,000 [570,000 - 1.1 million] people have died of AIDS-related illnesses.

In sub-Saharan Africa, at the end of 2016, about 36.7 million people were living with HIV [3].

The context of screening for the human immunodeficiency virus (HIV) has evolved in response to new conditions of patient care and changes in screening policy. Screening for HIV infection is one of the major challenges in controlling the epidemic and plays a key role in optimizing the benefits of caring for people with the disease and controlling the epidemic [4].

Human immunodeficiency virus (HIV) infection is a major public health and development challenge in sub-Saharan African (SSA) countries (EGPAF, 2016). At the end of 2016, the World Health Organization (WHO) estimated that about 36.7 million people were living with HIV, including 25.6 million in the African region. HIV is transmitted through the exchange of various body fluids such as blood, breast milk, semen and vaginal secretions from infected persons. In children, vertical transmission (mother-child) of HIV is the main route of infection in sub-Saharan Africa [5].

It should be noted that the DRC conducted in 2017 a serosurveillance pass in 60 sites spread throughout the country. This survey gave the current seropreva-

lences of HIV/AIDS and syphilis among pregnant women aged 15 - 49 seen in the CPN services respectively 2.77% for HIV and 2.12% for syphilis.

Also, it should be noted, as part of the stratification of the response to the HIV/AIDS epidemic and STIs to achieve control of the HIV epidemic by the year 2020 and the Elimination of AIDS as a public health problem by 2030, the NAPS has embarked on the implementation of differentiated models based on the prioritization approach of HIV/AIDS intervention zones and STDs [6].

## 2. Methodology

The study's source population consists of all new cases received for consultation regardless of the reason and identified by the provider's initiative (PITC) as well as voluntarily tested clients (VCT) at the General Hospital of Kenya.

The data were collected from the 2018PITC.

Our sampling is exhaustive and its size is 1140 HIV-tested clients at the Kenya general referral hospital for the duration of our study, from 01 January to 31 December 2018.

The collected data were encoded, entered with the Excel software, then processed and analyzed using the SPSS 23. Excel 2010 software was used to arrange tables and charts before being exported to Word.

Chi-square, OR and p-value were used as statistical tests.

## 3. Results

The male sex is the majority with 53% against the female sex (47%) (**Table I**).

The median age is 34 years ( $\pm 15.9$ ), the minimum age and the maximum age being respectively 1 and 85 years (**Figure I**).

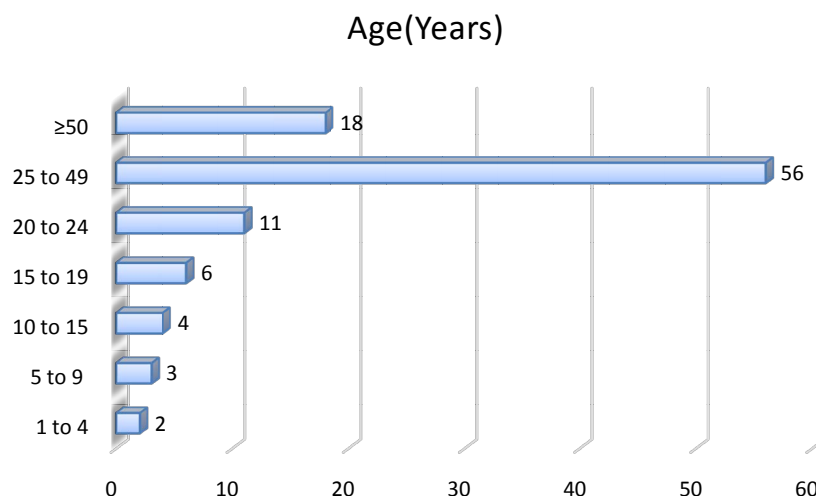
**Table II** shows that 80% of positive test respondents come from the Kenya Health District, compared to 18.4% from other Health Districts.

**Table I.** Distribution of respondents by sex.

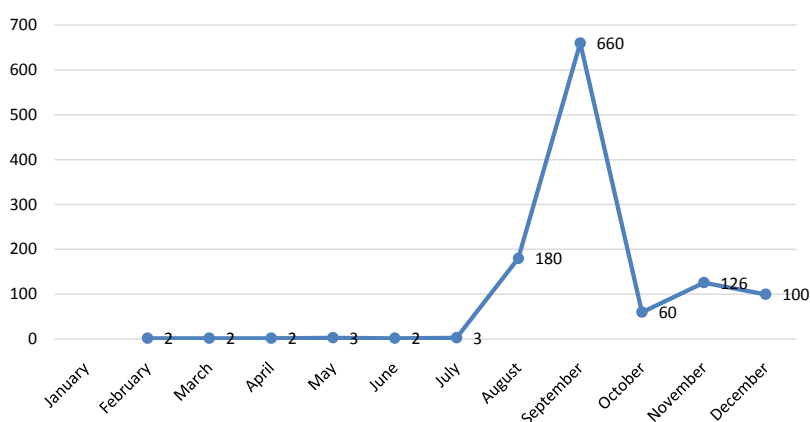
Sexe	Frequency	Percentage
Female	536	47.0
Male	604	53.0
<b>Total</b>	<b>1140</b>	<b>100.0</b>

**Table II.** Distribution of respondents by source.

SITE	RESULT		TOTAL
	POSITIVE	NEGATIVE	
OUT THE SITE	115 (81.6%)	771 (77.2%)	886
FROM THE SITE	26 (18.4%)	228 (22.8%)	254
<b>TOTAL</b>	<b>141</b>	<b>999</b>	<b>1140</b>



**Figure I.** Distribution of respondents by age.



**Figure II.** Representation of respondents by month of screening.

The majority of respondents were screened in September, (**Figure II**).

Our survey shows that 51.8% of respondents infected with HIV/AIDS are believers in the Protestant church, 41.1% of Catholic believers, and 7.1% who do not belong to any religion (**Table III**).

7039 new cases consulted, 1140 (16.2%) patients were tested for HIV against 5899 (83.8%) who were not (**Table IV**).

**Table V** shows that 82.4% of the respondents were screened during PITC and 17.6% during the VCT.

**Table VI** shows that among the socio-professional categories surveyed infected by HIV/AIDS, housewives are more infected with a proportion of 46.8% against 9.9% of civil servants.

**Figure III** reveals that 88% of the screeners were seronegative, and 12% were HIV positive.

Sex is related to test result (P-value: 0.0007) (**Table VII**).

We observe that single respondents and married couples are much more likely to be infected with HIV than divorced ( $p < 0.05$ ), but there is no statistically significant relationship between widowed and divorced. (**Table VIII**).

**Table III.** Distribution of respondents by source religion.

RELIGION	RESULT		TOTAL
	POSITIVE	NEGATIVE	
Catholic	58 (41.1%)	460 (46.0%)	518
Muslim	0 (0.0%)	3 (0.3%)	3
Protestant	73 (51.8%)	493 (49.3%)	566
Without Religion	10 (7.1%)	43 (4.3%)	53
<b>TOTAL</b>	<b>141</b>	<b>999</b>	<b>1140</b>

**Table IV.** Distribution of patients consulted and screened for HIV.

Patient having been tested	Frequencies	Percentage
<b>Yes</b>	1140	16.2
<b>No</b>	5899	83.8
<b>Total</b>	7039	100.0

**Table V.** Distribution of respondents by screening mode.

SCREENING MODE	RESULT		TOTAL
	POSITIVE	NEGATIVE	
VCT	35 (17.4%)	166 (82.6%)	201 (17.6%)
PITC	106 (11.3%)	833 (88.7%)	939 (82.4%)
<b>TOTAL</b>	<b>141</b>	<b>999</b>	<b>1140</b>

**Table VI.** Distribution of respondents by occupation.

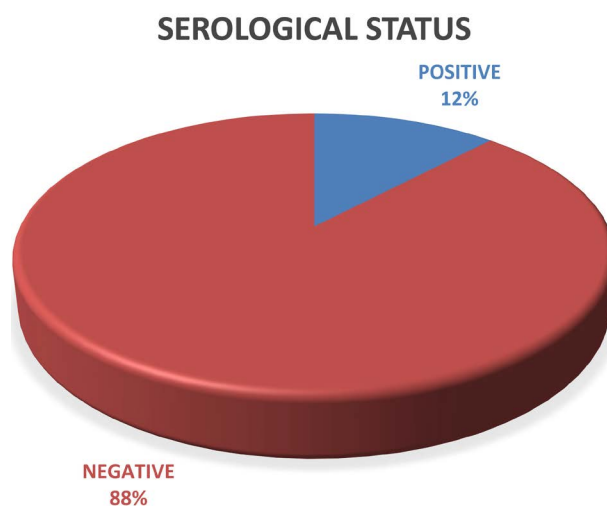
PROFESSION	RESULT		TOTAL
	POSITIVE	NEGATIVE	
Civil servants	14 (9.9%)	95 (9.5%)	109
Household	66 (46.8%)	261 (26.1%)	327
Jobless	30 (21.3%)	352 (35.2%)	382
Liberal sector	31 (22%)	291 (29.1%)	322
<b>TOTAL</b>	<b>141</b>	<b>999</b>	<b>1140</b>

**Table VII.** Association between sex and HIV test outcome.

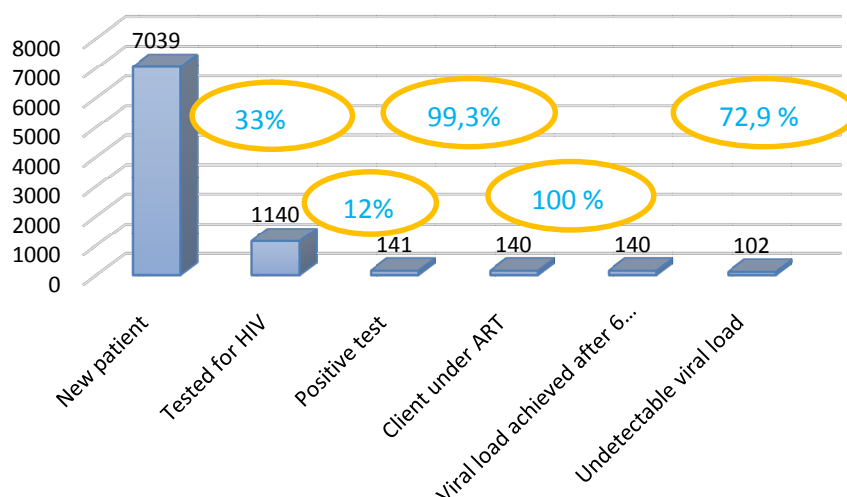
SEX	RESULT		Total	Chi2	P-value
	POSITIVE	NEGATIVE			
Male	85 (60.3%)	451 (45.2%)	536	11.4	0.0007
Female	56 (39.7%)	548 (54.9%)	604		
<b>TOTAL</b>	<b>141</b>	<b>999</b>	<b>1140</b>		

**Table VIII.** Association between marital status and HIV test outcome.

MARITAL STATUS	RESULT		Chi2	P-value
	POSITIVE	NEGATIVE		
MARRIED	73 (7.5%)	534 (92.5%)	7.2	0.007
SINGLE	30 (23.3%)	369 (76.7%)	17,1	0.0000
WIDOWER	21 (12.0%)	40 (88.0%)	2	0.15
DIVORCED	17 (34.4%)	56 (65.6%)		
<b>TOTAL</b>	<b>141</b>	<b>999</b>		

**Figure III.** Distribution of respondents by serological status.

This chart shows that among the 7039 cases received in medical consultations, 1140 clients were tested and 141 HIV positives or 34% were aware of their result test in care facilities and were all put on ART or 100%. Of these, 140 were able to access viral test 6 months after treatment. And out of 140 PLHIV, 102 reached the suppression of the viral load or 72.9% at a threshold of less than 1000 copies/ml (**Figure IV**).



**Figure IV.** Antiretroviral therapy (ART) cascade and targets 90-90-90.

#### 4. Discussion

**Table I** indicates that male sex is the majority with 53% against the female sex (47%). Our results are different from those found in a study on voluntary HIV testing among children under 15 in four VCT community centres in four health District in the Lubumbashi city of DRC (Lubumbashi, Ruashi, Kampemba and of Kenya) where the female sex was predominant (52%) [7]. They are also different from those found by Clouse in South Africa where female patients were in the majority (66.9%) [8].

In 56% of the cases, respondents aged between 25 and 49 years were in the majority with a median age of 34 ( $\pm 15.9$ ), the minimum age and the maximum age being respectively 1 and 85 years (**Figure I**). MWISONGO found that the age of the respondents between 25 and 35 years represented 50% [9]. In South Africa, the age group between 18 and 29 years was in the majority (39.5%) [8].

In 80% of the cases, the positive test came from the Kenya Health District, compared to 18.4% from other Health districts (**Table II**). In Zimbabwe, a study showed a significant link between positive serology to HIV and off-site residents [10].

The majority of respondents were screened in September (**Figure II**) (58%). Our results are different from those of the Usaid report [11] where the percentage of clients who benefited from PITC in a HGR of Upper Katanga following the initiation of the PITC to new gateways from January to June 2016 reveals that the month of June recorded more cases of screening (50.2%), followed by May (26.8%) while the low screening rate was observed in January (7.4%).

Our survey shows that 51.8% of respondents infected with HIV/AIDS are believers in the Protestant church, 41.1% of Catholic believers, and 7.1% who do not belong to any religion (**Table III**). DZAH *et al.* found that in Ghana, Christians accounted for 94.6%, Muslim 5.1% and 0.3% are animists [12]. Muslims were also in the majority in Sami's study in Ethiopia [13].

**Table IV** reveals that 82.4% of the surveyed were screened by PITC with a se-

ropositivity of 11.3% and 17.6% by VCT. Our results are different from those in Zimbabwe where the detection rate by provider-initiated testing and counselling (PITC) was 21.7% with a seropositivity of 0.7% [10]. In Botswana, a survey shows that 81% of the participants are extremely favourable to PITC [14]

**Table VI** shows that among the socio-professional categories surveyed infected by HIV/AIDS, housewives are more infected with a proportion of 46.8% against 9.9% of civil servants. In Ethiopia, government officials were more exposed (OR 2.7, 95% CI: 4.5 - 14.4) to HIV infection than other [13].

Seroprevalence in our series was 12% were seropositive (**Figure III**). In a study conducted in Durban (South Africa), Ramirez-Avila reported a seroprevalence of 17% (95% CI: 11% - 25%) [15].

In Harare (Zimbabwe), Bandasona found a low seroprevalence of 2.7% (95% CI: 2.2% - 3.1%) [16].

Sex is related to the test result (P-value: 0.0007). The male sex was 11.4 times related to the seropositivity due to HIV than the female sex (**Table VII**). Our results are contrary to those of Sami [13] who did not find a statistically significant relationship between sex and seropositivity (OR: 1.1, 95% CI: 0.75 - 1.6).

We observe that single respondents and married couples are much more likely to be infected with HIV than divorced ( $p < 0.05$ ), but there is no statistically significant relationship between widowed and divorced (**Table VIII**). Our results meet those found by Sami [13] in Ethiopia, where married women were more likely to be infected than others (OR 2, 9 and CI 1.5 - 5.5). In South Africa, Bassett found that unmarried men were at highest risk for HIV [odds ratio (OR) 6.84; 95% confidence interval (CI) 3.45 to 23.55], followed by unmarried women (OR 5.90, 95% CI 3.25 to 10.70) [17].

#### ***Antiretroviral Therapy Cascade and Targets 90-90-90***

**Figure IV** shows that among the 7039 cases received in medical consultations, 1140 clients were tested and 141 people living with HIV or 34% were aware of their serostatus in care facilities and were all put on ART or 100%. Of these, 140 were able to access viral load 6 months after treatment. And out of 140 people living with HIV, 102 reached the suppression of the viral load or 72.9% at a threshold of less than 1000 copies/ml.

Our results are different from those of Adawaye, Aubry, Kalla and Kampo *et al.* who found that the proportion of detectable plasma viral charge (90.6%) was higher in patients on ART for 7 to 12 months than in those under treatment for 6 months [18] [19] [20] [21].

## **5. Conclusions**

We conducted an analytical cross-sectional study of 1140 patients screened (VCT, PITC) at the Kenya General hospital from 01 January to 31 December 2018. 1140 individuals were included in our study. A total of 7039 new cases in consultation were reported during our study, which gives a test acceptability rate equal to 16.2% and a seropositivity of 12.3% with 75.2% screened by PITC.



The male sex was the majority (53%) and September saw more new cases (57.9%).

The CDV approach has shown its limitations in that it has not made it possible to reach a large number of the screened patients at the end of an early start on anti-retroviral treatment. Hence, to achieve the UN/AIDS 90-90-90 goals by 2020, the PITC approach was introduced to boost testing and knowledge of HIV status in health facilities by 9% of new cases across all the entrance doors. Good counseling is essential to further persuade patients to accept this IPPC approach.

### Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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