

HIV Testing Approaches; A Comparative Analysis of Partner Notification Services and other Methods in Anambra State: A Formative Evaluation

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Abstract

The combined effects of limited time to the deadline of the UNAIDS 95-95-95 by 2020 for the epidemic control of HIV, need for early HIV case detection and decline in funding for HIV services necessitated partners in the HIV response to seek cost effective but smarter and result oriented methods of reaching the HIV testing targets which is the gateway to prevention and treatment of HIV, using the partner notification services (PNS) as a key approach.

A descriptive cross-sectional quantitative method was employed to review the performance of PNS after eight months of implementation. A multi staged random sampling was employed to select six health facilities providing comprehensive HIV services. Data from HIV testing services registers utilized within the period were reviewed for testing approaches, gender of clients, and linkage status. The anti-retroviral therapy registers were accessed for confirmation of linkages. Data was collected in excel sheet and transferred to SPSS version 21 for statistical analysis.

A significantly higher positivity rate and linkage from PNS though low coverage was observed. More women were reached than men. PNS needs to be optimized and also prioritized while challenges such as stigma, disclosure and gender issues should be addressed.

Keywords: *Index case testing for HIV, provider-initiated testing and counseling, formative evaluation, innovative testing for HIV.*

Introduction

It is estimated that the world has about 37.9 million people living with HIV/AIDS in 2018 with 79% aware of their status (UNAIDS, 2019) This leaves a huge figure of over 8 million people (21%) who are not aware of their status.

HIV testing and counselling services is the gate way into HIV continuum of care. Testing and counselling which precedes treatment, ensures that the negative patients remain negative even in sero-discordant relationships while the positive are placed on treatment which will reduce the tendency of transmission once one becomes virally suppressed, a concept referred to as treatment as prevention. It is also known that there are benefits of early treatment following infection.

At the end of the 15 million on treatment by end of 2015, there was a need for another target which will ensure accountability during the post-2015 era. This led the vision 90-90-90 and the more recent 95-95-95 by 2020 a road map to the epidemic control of HIV/AIDS by 2030 (UNAIDS, 2014). Summarily, this target meant that by the end of the year 2020, 90% of people infected with HIV will know their status, 90% of the positives will be on sustained ART and 90% of those on drugs would have achieved virally suppression.

The clear definition of the target population for the first 90, those living with HIV and not the entire population has to change the approach to testing which hitherto general population was testing. Combining this target and the reduction in fund by about 7% for low- and middle-income countries between 2015 and 2016(AVERT) also meant that more cost-effective approaches to testing to improve yield, ensure better linkage and also facilitate better retention in care needed to be identified and implemented.

HIV testing is the gateway to services. Many approaches have been used for testing for HIV and these include provider-initiated testing and counselling (PITC), general community testing, testing in

patent medicine vendors (PMVs), private laboratories (PLs). A brief description of the processes is presented below.

a) The partner notification service (PNS) This is a voluntary process where the counsellors or health care providers ask people who are identified HIV positive to list their biological, needle sharing and sexual contacts so as to provide them with HIV counselling and testing. This gives the contacts the opportunity of getting HIV treatment if positive or to get preventive packages such as voluntary male medical circumcision, pre-exposure prophylaxis and condom provision. It encourages early active case finding of HIV in positive index cases.

b) Provider initiated testing and counselling (PITC) is a process by which the health care provider actively engages a patient, informs him/ her of the availability of testing for HIV in a confidential atmosphere with an option to opt out.

c) Testing at private medicine vendors (PMVs), private laboratories refer to the provision of HIV testing services in non-hospital locations. They serve as source of referrals for conventional ART clinics.

The latter two approaches have been in use for a while before the PNS was recommended by the WHO. Anambra state keyed into this approach in 2018.

The objective of this study was to review the PNS approach and compare it with PITC and testing in non-hospital settings. The review was on yield, referral and linkages, including bottlenecks of the process between January 2019 and August 2019 in Anambra State. The rationale is that since resources have been invested, there was need to monitor return on investment, fine tune the process and expand coverage if the yield is commendable.

Method

Located in the south East region of Nigeria, Anambra State is located at latitude 6.2758 N and longitude 7.0068 E. It is estimated to have a population of 5,527,800. (City population, 2016). It is divided into 21 Local Government within three senatorial zones. The prevalence of HIV is 2.4 (NAIIS, 2018).

The Ministry of health through the State AIDS and Sexually Transmitted Disease Control Program and State agency for Control of AIDS coordinates the HIV/AIDS response with support from implementing and donor partners. The selected facilities are Primary Health clinics from six L.G.As. The target population were patients who received HIV testing services through any of the three approaches.

A multi staged random sampling was used to select six eligible facilities. The eligibility criteria were facilities providing ART services with the three approaches as gateway for entry.

The HIV testing services registers were accessed and the following were noted: number tested, number of positives, number referred, sex, age, testing approach. The Partner notification services registers were accessed for data of index clients, number of partners elicited, number reached and offered the PNS, number that accepted to use the services, number of positives as well as gender disaggregation.

The HTS registers from the patent medicine and private laboratory testing points were also accessed. Subsequently, the enrollment and ART registers were reviewed to confirm the linkage status of the clients. The data were only for services provided between January and August 2019.

These data were collected in Microsoft excel, cleaned, coded and transferred to SPSS version 21 for statistical analysis.

Results

The result of the study on the evaluation of the effectiveness of the three testing approaches in Anambra state between the periods of study showed that:

Total patients tested was 26784 with 10,038 males (37%) and 16746 females (63%). Total positive was 804 made up of 232 males, and 572 females. Those above 18 years were 789 (224 males, and 565 females) while below 18 years were 8 male, 7 females.



Figure 1. Showing the contribution of the three testing approaches to the total tests conducted within the period

Total linkage was 727 (90.5%) 203 males, 524 females. Those below 18 linked were 6 male, 7 females while above 18 were 714 (197 males, 517 female). The breakdown are as follows.

Provider Initiated Counselling and Testing

Data from the General outpatient daily attendance register showed that 13126 patients attended the facilities for services (excluding immunization) within the eight months. 9952 were counseled and tested giving a testing coverage of 76%. More females accessed services than men and so females had a higher testing figure. 448(4.5%) people were identified positive and 404 clients (90.1%) were linked to care.

Partner Notification Service

From the partner elicitation register, 816 (245 males and 571 females) exposed sexual and biological partners were offered the notification services from 430 index clients. (60.1% of enrolled). 10 females reported intimate partner violence hence only 420 had their contacts elicited. Both traditional and assisted partner notification methods were employed. Number tested was 242 (29.7%) with 98 contacts identified as HIV positive (40.5%). More females were reached (76%). 97 identified positives were linked to care.

Testing at the patent medicine vendors and private laboratories referred to as others.

The total number of persons tested for HIV through this approach was 16590 with more females (63%) 258 were identified positive giving a case positivity of (1.6%) while 226 (87.6%) were linked to treatment. 6 clients who tested positive were previously known and on ART drugs.

Table 1. Number of patients tested.(% of total test per approach)

Testing approach	PITC	PNS PMV, PL Total
Male	3836(38.6%)	80 (33%) 6122 (37%) 10038(37%)
Female	6116(61.2%)	162(67%) 10468(63%) 16746 (63%)
Total	9952(100%)	242 (100%) 16590(100%) 26784 (100%)

Table 2. Number of positives(% positivity).(total positive/total tested x %)

Testing approach	PITC	PNS PMV, PL Total
Male	120(3.1%)	24(30%) 88(1.4%) 232 (2.3%)
Female	328(5.3%)	74 (45.7%) 170(1.6%) 572(3.4%)
Total	448(4.5%)	98(40.5%) 258(1.6%) 804 (3%)

In terms of case positivity rate, there was a significant difference in the yield at the $p < .05$ from the testing approaches [$F(2, 21) = 13.10$, $p = 0.0002$]. Post hoc comparisons using the Tukey HSD test indicated that the mean score for PNS ($M = 0.5331$, $SD = 0.1384$) was significantly different from the PITC ($M = 0.0897$, $SD = 0.0436$) and testing outside hospital settings ($M = 0.0186$, $SD = 0.0043$). But the difference between the yield from PITC and testing in non-hospital settings was not significant.

For PNS, there was no significant difference in positivity between the male and female gender ($OR = 0.5097$ 95%CI 0.2884 to 0.9007, $p = 0.0203$).

Table 3. Number linked(% linkage). (total linked/total positive x %)

Testing approach	PITC	PNS PMVs, PLs Total
Male	108(90%)	23(95.8%) 72(81%) 204 (88%)
Female	296(91%)	74 (100%) 154(90.1%) 524(92%)
Total	404(90%)	97(99%) 226(87.6%) 728 (90.5%)

In linkage, there was significant difference between the PNS and non-hospital testing approaches (OR= 13.8571 95% CI 1.8668 -102.8629, p=0.0102) as well as between PNS and the testing by PITC (OR=10.5644 95% CI 1.4376 to 77.6323, p=0.0205). There was also significant linkage difference between PITC and that from non-hospital testing (OR=1.3117 95% CI 0.8086-2.1278, p=0.2716).

Discussions

The success and sustainability of any HIV program now lies on the ability of governments, donors, implementing partners and service providers to identify, embrace and institutionalize cost effective, safe and evidence-based methods that produce results.

The yield from PNS in this study was 40.5% with 100% linkage. This is higher than a study in Zimbabwe in 2018 where the mean monthly HIV positivity from index testing was 32.6% (Malachi et al, 2018) and also higher than a Barcelona study (Garcia et al, 2015). This shows that PNS significantly yields better than provider-initiated counselling and testing and testing at non-hospital but health related facilities such as drug stores and private laboratories performs least in terms of yield. The reason for this may not be far-fetched. HIV is transmitted predominantly via sexual means in our environment and therefore the tendency of identifying positives amongst partners is high if treatment is not started early.

In terms of linkage, there was significant difference between the three approaches with PNS having the best linkage followed by PITC and lastly testing from PMVs etc. However, PITC was within the 90% WHO benchmark for linkage. This was because, those identified were given a sound pre-test and post-test counselling and they were all aware of the different outcomes of the test even before the results were released. Testing from the PMVs and PLs recorded six (6) previously known positives who were identified to be on drugs during posttest counselling. The distance barrier that arises from community interventions were excluded by ensuring that every test done outside the facility was within a two-kilometer radius from the health clinic. To further ensure that optimal referral and linkage was achieved, escort services was deployed so that client not only arrived the facility but were taken to the different service points.

The PNS coverage was about 60% for the elicited. This means that about 40% are yet to be offered the services and this amounts to missed opportunities which need to be tapped. This needs to be harnessed to further bridge the gap in testing with positive being the focus.

The PITC coverage needs to be optimized as this constitutes another source of missed opportunities.

It was also revealing that 61.94% of the tests were done in non- hospital settings. These patients were sick persons that presented to these places. The reasons for not coming to clinics include perceived high cost in accessing care from hospitals in the absence of health insurance, attitude of health staff and lack of communication at the cultural level in health facilities. There are many of such centers in Anambra and coopting them into the HIV program will be helpful.

Conclusion and recommendations

PNS is a more cost-effective approach than the others and therefore an indispensable road map to achieving the first 95. However, the other approaches should complement it. Every testing outcome in PNS is important. If the partner is positive, treatment is started, which also contributes to the treatment as prevention (TasP) concept.

If the result is negative, the partner receives prevention messages and even pre-exposure prophylaxis so as to remain negative. PNS also leads to early diagnosis and can therefore prevent development of treatment failure in the index client, if diagnosis is not made and coitus continues.

It is recommended that

1. PNS is optimized. All new clients, clients with unsuppressed viral load should be prioritized. Quality adherence counselling aimed at addressing stigma and disclosure of status should be ensured.
2. PITC should be optimized. Tests should be offered to everyone that visits the facilities in an opt out approach.
3. More awareness to be created as to the need for patients to visit health facilities for comprehensive evaluation. Getting other health system financing methods other than out of pocket spending will drive patients to visit hospitals. In the meantime, however, more of informal testing modalities (PMVs, PLs) should be engaged to provide HIV testing services to avoid missed opportunities.
4. Operations research to be conducted to evaluate the impact of family HIV centered care, a product of PNS on retention in the next few years.
5. Study on the yield from drug sharing partners should be conducted.

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