

## **TRENDS IN THE PREVALENCE OF HUMAN IMMUNODEFICIENCY VIRUS AMONG PREGNANT WOMEN IN KEFFI, NORTH CENTRAL NIGERIA.**

**\*Chukwuali LI,<sup>1</sup>Eke NO,<sup>1</sup>Basse MS,<sup>2</sup>**

*<sup>1</sup>Departments of Obstetrics and Gynaecology and <sup>2</sup>Medical Microbiology, Federal Medical Centre, Keffi, Nasarawa State, Nigeria*

### **ABSTRACT:**

**Background:** Infection with the Human Immunodeficiency Virus remains a major global health challenge. Nigeria is committed to reaching universal access targets as well as meeting the MDG goal of halting and reversing the spread of the HIV epidemic by 2015. The Nigerian National HIV Sero-prevalence Sentinel Survey has recorded a decreasing prevalence since 2008. Federal Medical Centre Keffi has also made prudent strides to help attain this national target.

**Objective:** To determine the trends in the prevalence of HIV infection among antenatal clinic attendees at Federal Medical Centre, Keffi, North Central Nigeria.

**Method:** This is a cross-sectional study of women attending antenatal clinic at the Federal Medical Centre, Keffi, Nasarawa State, North Central Nigeria from 1<sup>st</sup> January 2007 to 31<sup>st</sup> December 2013.

**Results:** A total of 13,661 clients booked for ante-natal care at Federal Medical Centre, Keffi during the study period. All were counseled and tested for HIV with an opt - out rate of 0.0%. Nine hundred and fifty – three clients tested positive giving an overall prevalence of 7.0%. The number of patients tested increased by the years from 1018 in 2007 to 2886 in 2013. The prevalence of HIV infection decreased over the years from 17.8% in 2007 to 2.0% in 2013.

**Conclusion:** This study has shown a consistently decreasing prevalence in HIV infection among pregnant women despite a persistent increase in the total number of antenatal attendance over the years. There was also no opt out of HIV testing after the counseling. To maintain a decreasing prevalence, we recommend concerted efforts aimed at decreasing the incidence of HIV infection while striving to increase access to HIV/AIDS treatment, care and support.

**Key words:** Trends, HIV, Pregnant women, Keffi Nigeria

### **INTRODUCTION:**

Infection with the human immunodeficiency virus has remained a major global health challenge since the discovery of the virus in 1981. Global and national efforts have been intensified to reduce the prevalence of the disease by curbing its incidence. Generally, the results have been encouraging as evidenced by a worldwide decrease of 33% in new infections between 2001 and 2012<sup>1</sup>. In some countries such as Nigeria in sub Saharan Africa, up to 50% decrease has been reported<sup>1,2</sup>. On a global scale, however, marked reduction in AIDS-related

deaths occasioned by increased access to HIV/AIDS treatment, care and support has led to a slight increase in the number of people living with the virus<sup>1-3</sup>; the global prevalence in 2012 being put at 0.8%<sup>1</sup>.

Sub-Saharan Africa remains the region worst affected by the HIV pandemic. In 2011, sub-Saharan Africa accounted for more than two-thirds of people living with HIV worldwide with 72 per cent of the new infections among adults and children. The region also accounted for 71 per cent of the world's AIDS-related deaths in 2011. Most transmissions in Africa occur in heterosexual relationships<sup>4</sup>. In 2010, about 1.49 million pregnant women in low- and middle-income countries were living with the human immunodeficiency virus and about 75 per cent of them are concentrated in 10 countries including Kenya, Mozambique, Nigeria and South Africa<sup>5</sup>.

In Nigeria, the most populous country in Africa, with the second highest number of people living with HIV/AIDS (PLHIV)<sup>6</sup>, the National response has recorded remarkable results. The National HIV Sero-prevalence Sentinel Survey has documented a fairly constant downward trend in the prevalence of HIV infection since 2001 viz: 5.8% in 2001, 5% in 2003, 4.4% in 2005, 4.6% in 2008, 4.1% in 2010 and 3.4% in 2012. The National HIV Sero-prevalence Survey is carried out among the antenatal population in selected urban and rural sites throughout the country<sup>7, 8</sup>. Since the performance of the sites in the fight against HIV/AIDS constitutes the overall National performance, it is necessary that the trend in HIV prevalence at major PMTCT sites be monitored to ascertain if it is in the same

direction with the National records.

This study is a report of the annual trend in the prevalence of the Human Immunodeficiency Virus infection among pregnant women in Keffi, North Central Nigeria using the Federal Medical Centre, Keffi, as a point of contact. The Federal Medical Centre, Keffi has a major PMTCT centre with a wide catchment area covering the entire North Central geo-political zone.

#### **METHODS:**

This is a descriptive, cross-sectional study involving antenatal clinic attendees at Federal Medical Centre, Keffi, Nasarawa State, North Central Nigeria from 1<sup>st</sup> January 2007 to 31<sup>st</sup> December 2013. The Federal Medical Centre, Keffi has a major comprehensive PMTCT centre overseen by the Institute of Human Virology, Nigeria (IHVN), and funded by the United States President's Emergency Plan for AIDS Relief (PEPFAR). Group pre-test counseling is offered to all new antenatal clients. Thereafter, all the clients are offered voluntary HIV testing with the freedom to opt out. To minimize the time interval between counseling, testing and results, trained laboratory staff are present at the antenatal booking clinic to carry out the HIV tests. The HIV testing is based on the Nigerian National algorithm (parallel). The Centre utilizes the following reagents for the rapid test: Determine<sup>R</sup> (Alere Medical Co. Ltd, Matsudo - shi, Chiba, Japan) for screening, Uni - Gold<sup>R</sup> (Trinity Biotech Plc, Bray, Ireland) for confirmation and Stat Pak<sup>R</sup> (Chembio Diagnostic System, Medford, New York, USA) as tie breakers. Individual confidential post-test counseling and the release of results are done the same day.

The results of the HIV tests were carefully documented from 2007 to 2013 (seven years). The total number of clients and the annual prevalence was calculated for each year to determine the trend and this was compared with the national trend over the same period of time.

**RESULTS:**

A total of 13,661 clients booked for ante-natal care at Federal Medical Centre, Keffi during the seven – year study period. All the patients were counseled and tested for HIV, with opt - out rate of 0.0%. Nine hundred and fifty – three clients tested positive, giving an overall prevalence of 7.0%.

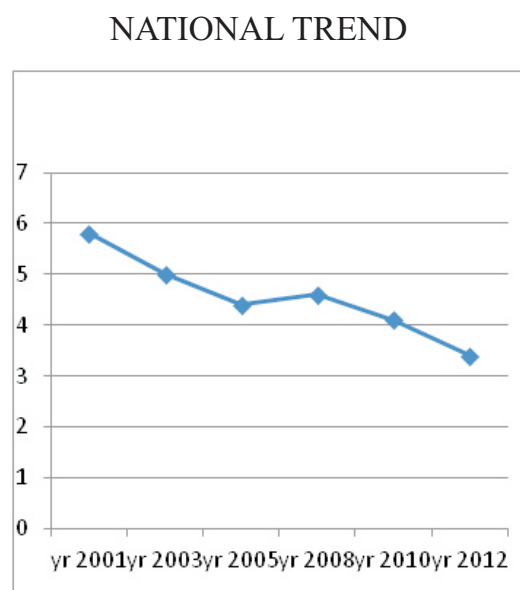
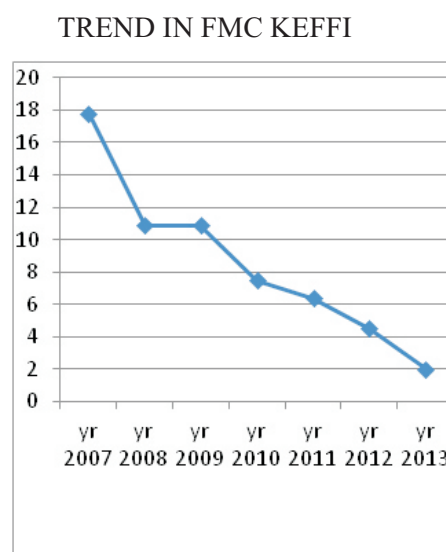
The number of clients counseled and tested for HIV per year increased consistently from 1,018 in 2007 to 2,886 in 2013. On the other hand, the prevalence of HIV among the antenatal population decreased from 17.8% in 2007 to 2.0% in 2013, although it remained at 10.9% in 2008 and 2009.

Table I shows the increasing number of clients tested for HIV and the decreasing annual HIV prevalence during the study period while Figure 1 compares the trend in HIV prevalence in Keffi, North Central Nigeria with the national trend.

**Table 1:** Decreasing HIV Prevalence Rate in Keffi, North Central Nigeria Despite Increasing Uptake of HIV Testing.

Year	Number Tested	Number Positive	Prevalence Rate (%)
2007	1018	181	17.8
2008	1230	134	10.9
2009	1490	163	10.9
2010	1658	124	7.5
2011	2564	165	6.4
2012	2815	128	4.5
2013	2886	58	2.0

**Figure 1:** Decreasing Annual Trend in HIV Prevalence Rate in Keffi, North Central Nigeria Compared with the National Trend.



**DISCUSSION:**

The overall HIV prevalence of 7% recorded during the study period is high and describes the endemicity of the HIV infection in the environment. Most states in North Central Nigeria fall within the high HIV prevalence zone of Nigeria.

The number of clients counseled and tested increased steadily from 1018 in 2007 to 2886 in

2013. This increased uptake of HIV counseling and testing in the antenatal clinic is a clear indication of the increasing awareness of antenatal care and the concerted efforts to get every booked client counseled and tested. The opt-out rate of zero per cent was achieved through an intense collaboration with the laboratory services which ensures that a team of laboratory scientists are present at the antenatal booking clinic to carry out the HIV tests at the side laboratory.

Despite the increasing rate of uptake, the prevalence of HIV in this study showed a downward trend. This is in agreement with the National trend which has maintained a downward trend since 2008. This decreasing trend may be an indication that the number of new HIV infections is decreasing markedly as supported by the reported 50% decrease in new HIV infections in Nigeria between 2001 and 2012<sup>1</sup>. Zimbabwean statistics have shown a similar trend, as the HIV-1 prevalence among women attending ANC declined from around 32% in 2000 to about 16% in 2011<sup>9</sup>. This is also in keeping with findings from a multi-national survey which showed up to 25% decrease in new infections among antenatal clinic attendees between 2000 and 2008<sup>10</sup>. This trend is also clear evidence that the efforts against HIV infection are yielding positive results. Indeed, both National<sup>7,8</sup> and global<sup>1-3</sup> reports indicate a rapidly decreasing number of new HIV infections in Nigeria and sub-Saharan Africa respectively. Increased awareness of the modes of transmission and the modalities for prevention of HIV infection, as propagated during awareness campaigns, may have a major role to play in this reduced number of new infections. Other interventions such as treatment with

Highly Active Anti-Retroviral Therapy (HAART), and voluntary male circumcision may also have contributed in decreasing the number of new infections.

The Federal Medical Centre, Keffi has both HIV and PMTCT support groups where information on preventive strategies is shared. Moreover, regular outreaches to public places and the surrounding rural communities are carried out by the PMTCT team during which emphasis is laid on preventive strategies. Furthermore, each HIV positive pregnant woman encountered at the antenatal clinic has a mentor mother attached to her. These mentor mothers are themselves HIV positive women who had benefited from our PMTCT services. They follow the HIV positive women home and continue to re-enforce preventive and positive-living strategies. This model of HIV supportive care may have a very important contribution to the reduced prevalence of HIV at the centre, despite increasing uptake of the HIV test.

However, a decreasing trend could also arise from a situation where poor access to HIV treatment, care and support has led to a decrease in the survival rate of those infected with HIV. This is unlikely the situation in this case. Data have shown that there are more people living with HIV than ever before as people are living longer due to the beneficial effects of antiretroviral therapy. The number of AIDS-related deaths has also declined significantly over the recent past years as more people gained access to the life saving treatment<sup>13,14</sup>. In 2005, the virus killed 2.3 million, and in 2011, the number of deaths dropped to 1.7 million<sup>11,12</sup>.

Although in sub-Saharan Africa, only 34% of

those eligible for HIV/AIDS treatment by the 2013 WHO treatment guidelines could access it<sup>1</sup>, concerted efforts are made in Nigeria to address the problem of access to HIV/AIDS treatment, care and support. The recent scale-up of HIV/AIDS treatment, care and support and, in particular, PMTCT services to involve rural hospitals, Primary Health Care Clinics and private health facilities is one of such efforts.

From the foregoing, therefore, it is more likely that the downward trend recorded in this study is due to a consistently decreasing number of new cases of HIV infections over the years, rather than shorter survival rate of people infected with HIV. For the sustenance of a decreasing prevalence, it is necessary that every effort should be made to sustain a decreasing incidence while persevering with efforts to increase access to HIV/AIDS treatment, care and support. The ultimate hope is that, one day, a cure for HIV/AIDS becomes a reality.

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