

# SATuRN: Preliminary report 2011

Southern Africa Treatment and Resistance Network

## A survey of 20 years of primary drug resistance in South Africa

### Introduction:

The development of HIV-1 drug resistance poses a major threat to sustaining the achievements of antiretroviral therapy (ART) programmes in Africa, particularly in settings where limited resources prevent regular laboratory monitoring of responses to ART and complex ARV regimens.

### Objective:

To describe the trend in the prevalence of transmitted drug resistance (TDR) in South Africa over the past 20 years and to compare the results obtained from the Africa Centre's 2010 HIV surveillance in rural KwaZulu-Natal.

### Results:

Eight published data sets (**Pillay et al, 2002; Gordon et al, 2003; Bessong et al, 2005, 2006; Seioghe et al 2007; Jacobs et al, 2008; Pillay et al, 2008; Huang et al, 2009**) were selected for analysis from a total of 32 HIV drug resistance studies. Additional sequences published through non-drug resistance articles (**Matthews et al, 2008**) were also retrieved from Genbank and included in the analysis. The total number of sequences analyzed was 1650.

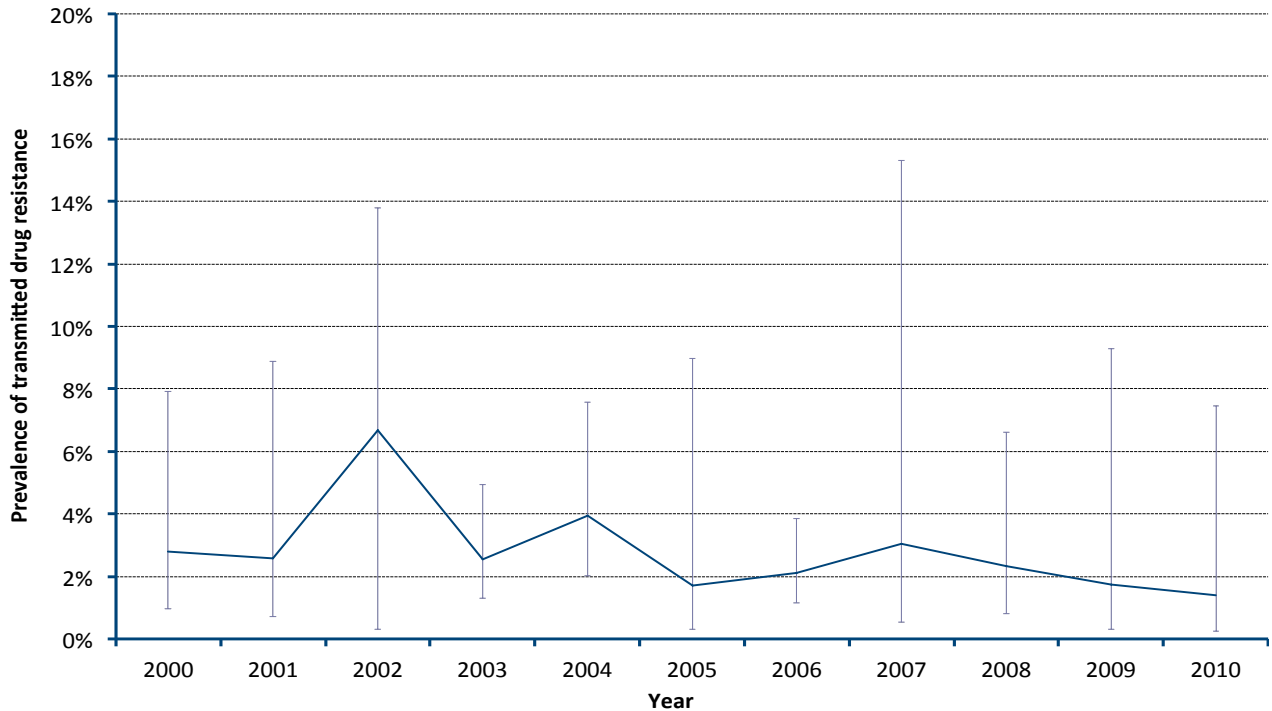
### Data source and Methods:

A comprehensive literature search was conducted on PUBMED to identify papers published on the past 20 years in South Africa on drug resistance in treatment naïve patients. The key search terms used were "HIV-1 AND Drug resistance AND South Africa". Seventy two (72) sero-positive samples from recent sero-converters from northern rural KwaZulu-Natal were genotyped. They were selected from participants of Africa Centre's 2010 annual adult population based HIV surveillance.

The prevalence in transmitted drug resistance over the past 20 years has remained low. There was no evidence of transmitted resistance prior to the year 2000 (n = 32). The year with the highest level was 2002 (6.67%, 95% confidence interval (CI):3.09-13.79%; n: 6/90). After 2002, the prevalence remained below 5% (WHO low-level threshold) and did not significantly vary statistically overtime. The Africa Centre's transmitted drug resistance surveillance among sero-converters identified in the 2010 surveillance round showed a prevalence of 1.39%, 95% CI: 0.25-7.46% (n: 1/72).

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**Figure:** Trend in the prevalence of TDR between 2000 and 2010. The 2010 results were extracted from the Africa Centre's transmitted drug resistance surveillance among seroconverters and estimated a prevalence of 1.39% (n=1/73). The unique individual had the NNRTI (Y181C) and NRTI (M184V) resistance mutation.

## Poster with complete results at SA AIDS Conference:

Manasa J, Cassol S, Seebregts C, Newell M-L, de Oliveira T. 20 years of primary drug resistance studies in South Africa. 5<sup>th</sup> SA AIDS Conference Poster (PS1-47: abstract 224).