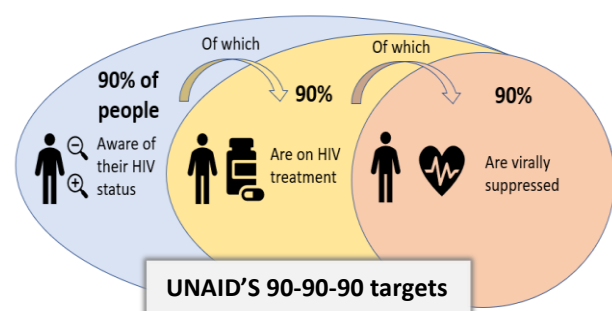


SOUTH AFRICA'S 2010 NATIONAL HIV TESTING CAMPAIGN AND NUMBERS ENROLLING IN CARE

Background

HIV testing represents the primary entry point into HIV care and treatment programs for people living with HIV and is the first of UNAID's 90-90-90¹ targets. South Africa made a large effort to expand HIV testing in April 2010 by implementing a national testing campaign². This campaign, designed to increase awareness of HIV status, sought to test 15 million people by June 2011. The monthly number of people tested for HIV increased from approximately 240,000 per month in the period prior to the testing campaign (Jan 2009-April 2010) to 550,000 per month during the testing campaign (May 2010-Dec 2011), with an estimated total of 13 million people tested³. Testing increased both through routine testing at health facilities and through expanded community-based testing services.



While important, increasing uptake of HIV testing alone will not lead to large gains in the other two 90s, (the proportion of those who know their status who have initiated antiretroviral therapy (ART) and the proportion of patients on ART who are virally suppressed). Achieving the expected benefits of population viral suppression also requires identifying those who are infected and improving linkage to HIV care and initiation of ART. Under HIV treatment guidelines in South Africa in place at the time of the testing campaign, this meant linking to an HIV care and treatment site, getting a CD4 count to determine treatment eligibility, then either initiating treatment or remaining in care until eligible for treatment initiation. If increases in testing are accompanied by increases in the numbers of patients initiating treatment and achieving viral suppression, then investments in testing can have important benefits for population health through reduced population viral load. These benefits are separate from any behavioural benefits (or harms) of expanded HIV testing and increased awareness of HIV status. We used a national linked laboratory cohort in South Africa along with data on the 2010 national testing campaign to assess the

impact of the testing campaign on the next step in the care cascade, presenting to an HIV treatment site and receiving a CD4 count to determine eligibility.

Methods

We used two primary data sources for this analysis, summary data on national HIV testing campaign (from the District Health Information System (DHIS) and the National Health Laboratory Services (NHLS) cohort⁶. Our cohort was limited to the period January 2009 to June 2011, a period which covers 18 months before the campaign began (April 2010) and 14 months after it began. During this time period, national guidelines indicated patients needed to complete CD4 staging in order to determine ART eligibility. Thus, we interpreted a patient's first CD4 count observed in the NHLS cohort as the CD4 count taken for staging for ART eligibility and thus an indicator of linkage to care. Our primary outcome was the number of first CD4 count tests in the NHLS database (indicating a new patient receiving CD4 ART eligibility screening). Our primary exposures were the number of patients who had an HIV test conducted and the number who tested positive for HIV each month.

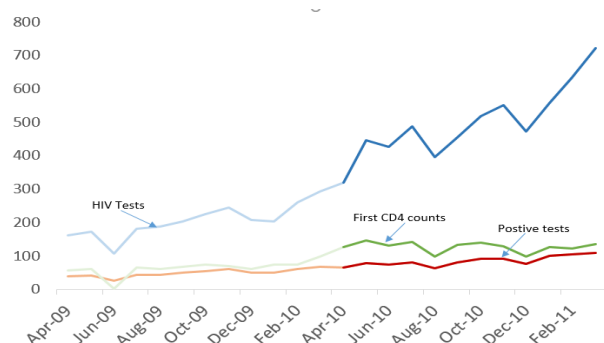
Results

Figure 1 shows the number of people who had an HIV test (DHIS), the number who tested HIV positive (DHIS), and the number of people with a first CD4 count (NHLS) over time. The number of patients testing was fairly stable, though increasing, before the campaign began in April 2010 at about 150,000 to 300,000 tests per month. Testing increased sharply in May 2010 to about 450,000 per month and then continued to increase to about 720,000 tests in March 2011. The median (IQR) number of tests done per month was 198,118 (174,318 – 234,183) before the campaign and increased to 533,349 (454,441 – 649,233) after the campaign started. The data on numbers testing fits well with the overall trend being reported by PEPFAR in their indicators database as shown in **Figure 2**, with a notable yearly increase between 2010 and 2011.

During the national testing campaign, the numbers testing positive also increased -- from a median (IQR) of 47,975 (42,866-56,230) positive tests per month before the campaign to 90,187 (78,593-100,144) per month after the campaign. However, as a percentage of those tests done, the proportion testing positive decreased over the period of the campaign, from 0.24 (0.23 – 0.25) to 0.16 (IQR: 0.15 – 0.17), demonstrating a reduced yield

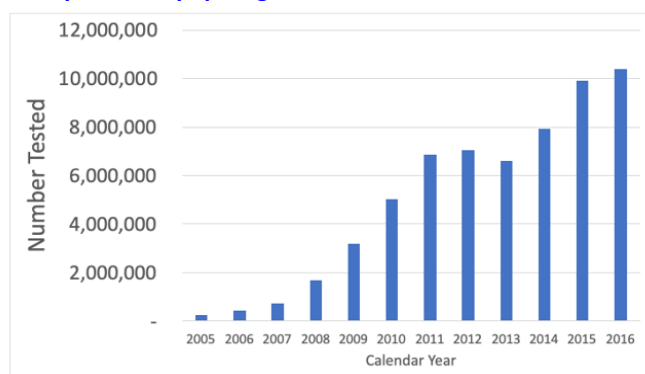
in **Figure 3**. We observed similar trends in the number of first CD4 counts, rising from a median (IQR) of 66,501 (61031 – 73,335) per month to 126,579 (103,867 – 134,065) per month; however, after an initial jump, numbers of first CD4 counts did not continue to increase over time suggesting falling yield over time.

Figure 1 – Numbers testing for HIV, Testing HIV positive and first CD4 counts in relation to the National HIV Testing Campaign in South Africa from January 2009 to June 2011 (in thousands)



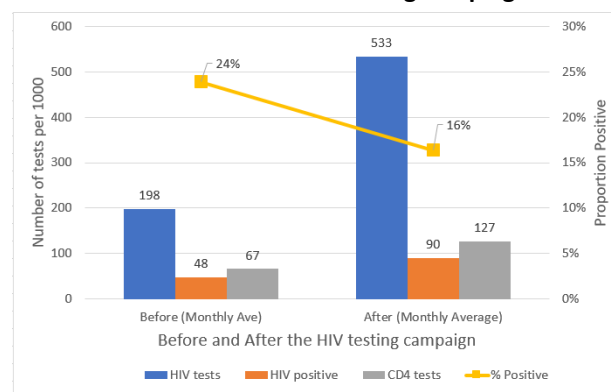
Surprisingly, we identified more first CD4 counts in the NHLS database than numbers tested positive. This may reflect an undercounting of HIV tests in the DHIS system. It could also reflect under-linking in our cohort causing us to over report the number of patients linking to care. Nevertheless both the first CD4 and positive HIV tests show that the HIV testing conducted as part of the HCT campaign was less efficient in identifying people with HIV and getting them linked to clinical care. We also are unable to confirm what share of the differences in numbers tested are duplicate re-testers.

Figure 2 – PEPFAR Indicator Data on Number of Patients Testing for HIV in South Africa 2005-2016
<https://data.pepfar.gov/dashboards>



©Health Economics and Epidemiology Research Office 2020. Recommended citation: Fox MP, Nattey C, Maskew M, MacLeod W, Brennan A, Bor J. Impact of South Africa's National HIV testing Campaign on Numbers Enrolling in Care. HE²RO Policy Brief Number 35, Health Economics and Epidemiology Research Office, 2020. This study was approved by the University of the Witwatersrand Human Ethics Research Committee (protocol M130449; approved).

Figure 3 – Proportion testing HIV positive for HIV in South Africa before and after testing campaign



Policy relevance

Testing campaigns are a logical approach to increasing access to care as testing is the first step to treatment and viral suppression. If testing campaigns are successful they would lead to an increase in indicators across the HIV care cascade. However, our results suggest that more work is needed if these benefits are to be achieved. The 2010 National HIV Testing Campaign appeared to increase testing in populations with low HIV prevalence. Despite large increases in total numbers tested, we found little evidence to support a strong impact of the testing campaign on getting more patients into care. This appears to be mediated through a lack of increase in the number of HIV positive people being identified through testing.

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