

Comprehensive Care, Management & Treatment Programme for HIV & AIDS

BACKGROUND

The demand for laboratory support for the programme has grown commensurate to the increase in the number of people currently on antiretroviral treatment. We now have more than 600 000 people on treatment, and many more not yet needing treatment but being monitored with the use of CD4 testing and clinical follow up.

ACTIVITIES, HIGHLIGHTS AND ACHIEVEMENTS

Our current laboratory capacity (Figure 1) is more than sufficient for the present needs of the programme, but growth is required in order to work with the Department of Health in achieving the goals as outlined in the National Strategic Plan for 2007-2011. One of the goals as stated in this plan is to expand access to care, treatment and support to 80% of people diagnosed with HIV infection. This will translate into approximately 1,5 million people needing to be on antiretroviral treatment by 2011. In addition, infant diagnosis and good care for HIV positive pregnant women is also improved in the National Strategic Plan. Much of this care will take place in non-hospital settings and so we at NHLS need to be able to roll out the laboratory access to primary health care and EPI clinic level. This will place a high demand on our logistical support network.

As can be seen in Figure 1, there is sufficient capacity for additional testing to be performed within the NHLS. However, we will still expand further until we have 70 CD4 laboratories, 21 viral load laboratories and 11 PCR (each equipped and trained in dried blood spot testing) laboratories nationwide. Beyond this, increasing automation should permit us to build up within the existing laboratory network without necessarily having to expand into new sites (unless logistical demands dictate otherwise).

Turn-around-times have also shown improvement over the past year with nearly 99% of CD4 results completed within the 6 days stipulated by NDOH (most within 48 hours). Viral load results are generally completed within 14 days (93%), well in time for the patient's return to the clinic 1 month after collection. Ninety nine percent of PCR tests are completed in less than the month required prior to the baby and mother returning to the clinic for results. We will improve this with the improved automation that has recently been installed in each PCR laboratory.

In the course of 2008, we produced 2 401 304 CD4 results. It is interesting to note that we are now performing as many CD4 tests per month as we did in the whole of 2004! This is illustrated in the year on year growth seen in Figure 2 overleaf.

Laboratory capacity in support of the CCMT for HIV and AIDS					
	Number of laboratories	Number of instruments	Test Capacity	Number of tests per month	%Test utilization per month
CD4 tests	63	85	382 500	250 000	65
Viral load tests	18	26	113 000	90 000	80
HIV PCR tests	8	9	35 100	18 000	51

Figure 1: Current laboratory capacity per month

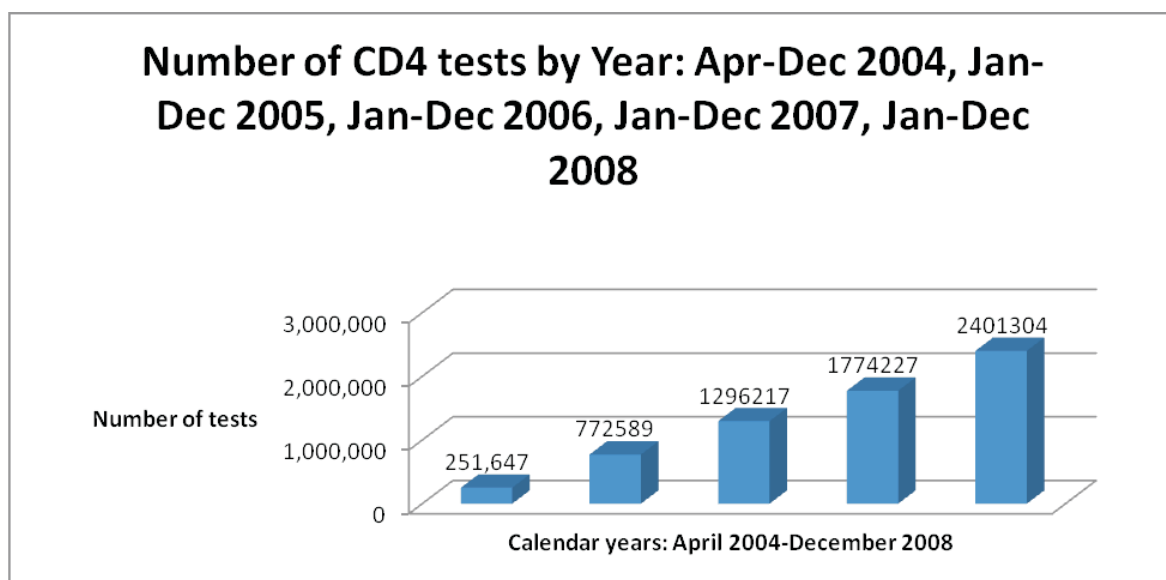


Figure 2: Number of Cd4 tests by year

A similar growth was experienced in the numbers of viral load test results produced in the laboratories. In the course of 2008, 1 011 073 tests for viral load were done. This year on year growth indicates that we are now performing 3-4 times as many viral load tests each month as were performed through 2004 at the beginning of the programme (Figure 3).

Not to be outdone, the numbers of HIV PCR tests performed for infant diagnosis of HIV infection also showed a most pleasing increase. In 2004 we barely completed testing on 15 000 babies. We now do this and more each month, as illustrated in Figure 4.

Even more encouraging is the ongoing improvements noted in terms of lower percentages of people with CD4 counts < 200 cells/mm³, greater percentages of people with undetectable viral load results, and fewer PCR positive infants. Now, 64% of CD4 tests are >200 cells/mm³, 59% of viral load assays deliver undetectable results, and 84% of infants tested are HIV negative indicating a far healthier cohort of babies protected by the pMTCT programme (Figures 5, 6 and 7).

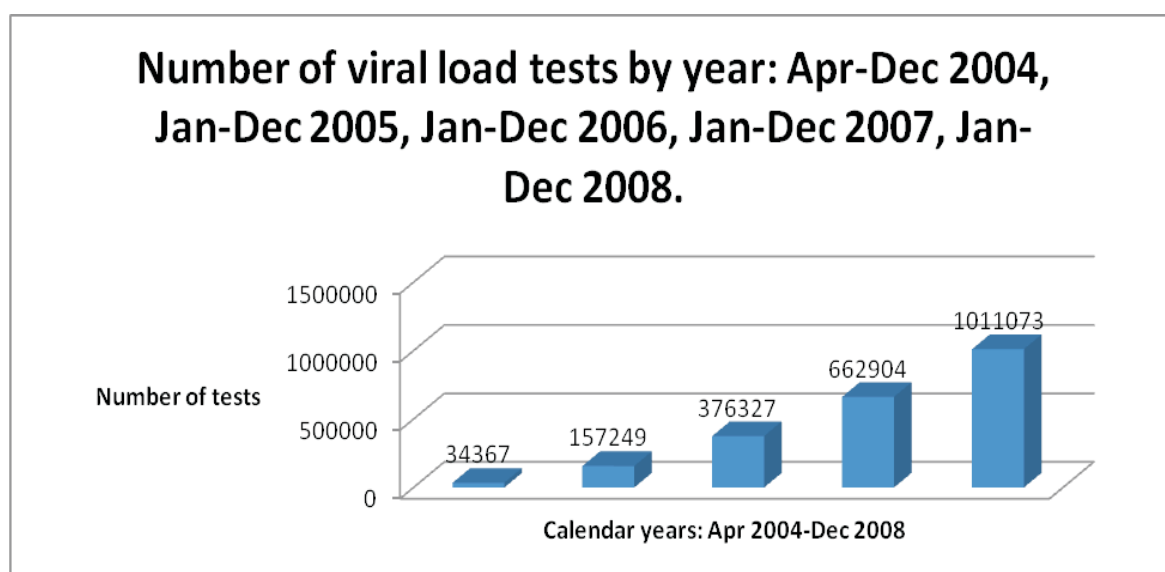


Figure 3: Number of viral load tests by year

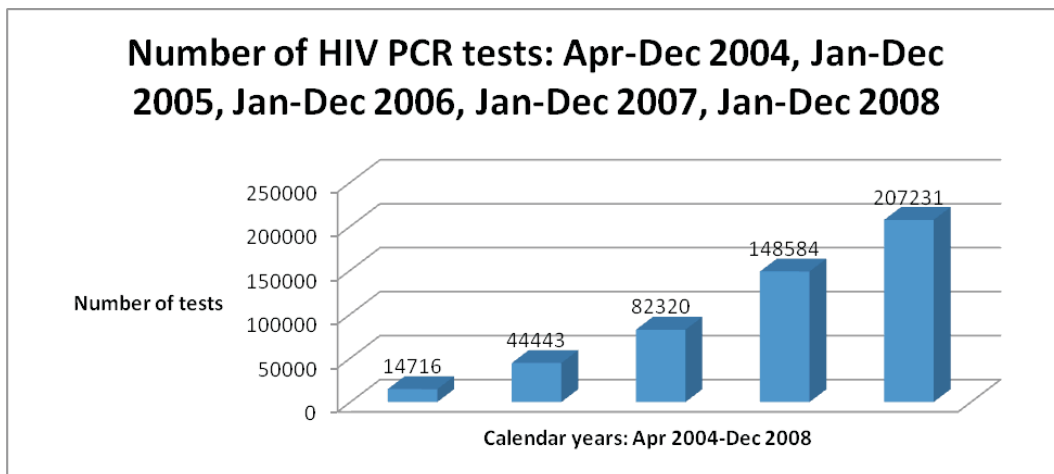


Figure 4: Numbers of HIV PCR tests performed for infant diagnosis of HIV

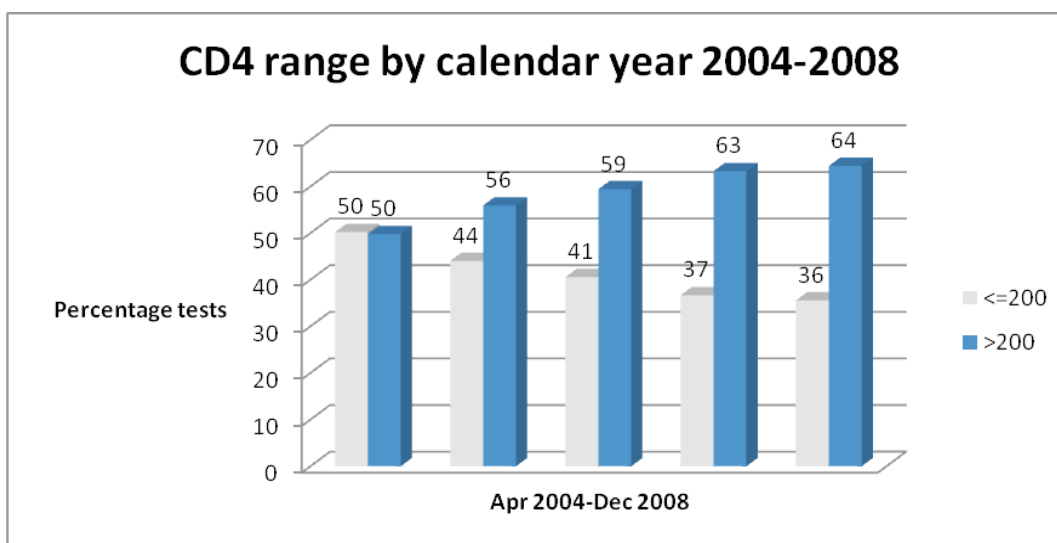


Figure 5: Percentage Cd4 tests ≤ 200, and > 200 cells/mm³

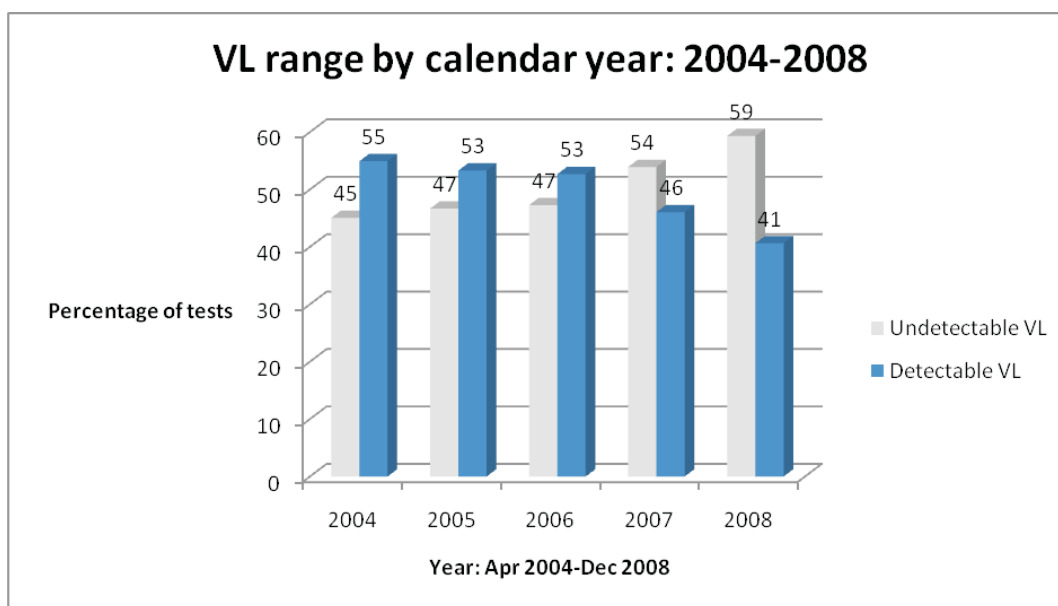


Figure 6: Percentage viral load tests that are undetectable by year

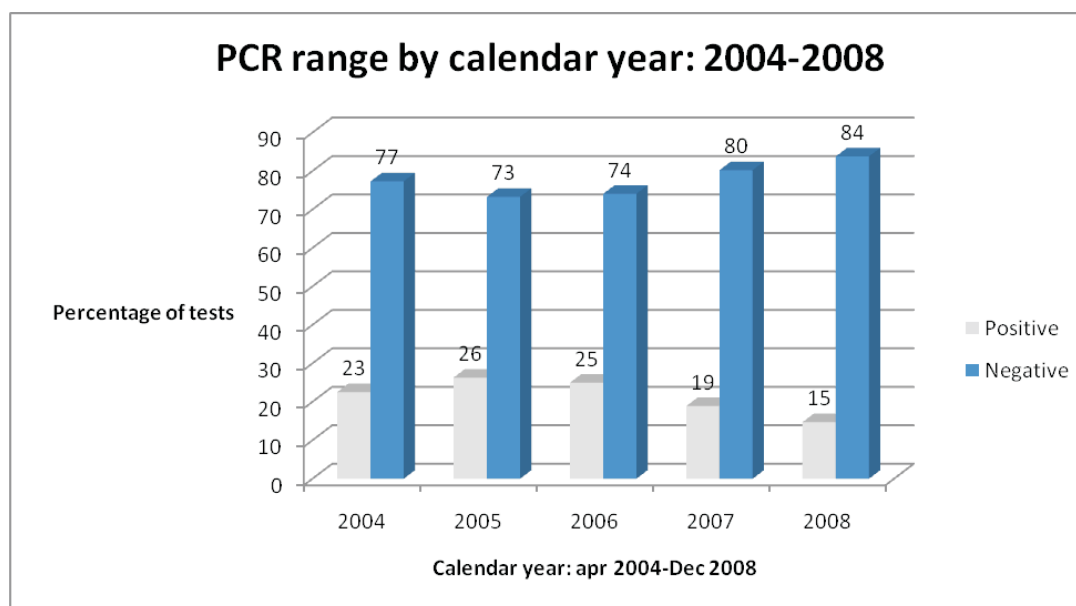


Figure 7: Percentage positive HIV PCR tests by year

CAPACITY BUILDING

Much has been achieved over the past five years of the programme. The good response to treatment and improved access to care is seen in which the general improvement in health of people accessing the programme can be inferred from the laboratory data presented above.

The National Health Laboratory Service will continue building capacity within our laboratory system to support the anticipated needs of this programme going into the future.