

# HIV-1 infected adolescents: treatment experience in a managed care setting in South Africa



presentation to

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## Background

- *Aid for AIDS (Afa)* is a disease management programme (DMP) available to beneficiaries and employees of contracted medical funds and companies in Africa who are living with HIV or AIDS.
- There is limited data on HIV treatment experience in South African adolescents. Adolescents with chronic diseases are regarded as being difficult to manage.
- The objectives of this study were:
  - To document the health status of adolescents at managed care entry.
  - To evaluate the efficacy and cost of treatment.

## Method

- Demographic and clinical data for HIV infected adolescents was extracted from the confidential *Aid for AIDS* database for the time period between July 1998 and January 2007.
- Inclusion criteria:
  - Adolescents, age between 10 and 19 years.
  - Age was measured relative to entry on the programme.
- Treatment costs were calculated from medical aid claims data.
- Adherence to antiretroviral therapy was measured using pharmacy claims. The method has been validated in other published studies.

# Cohort characteristics

n = 1,031

Females: 843 (82%)

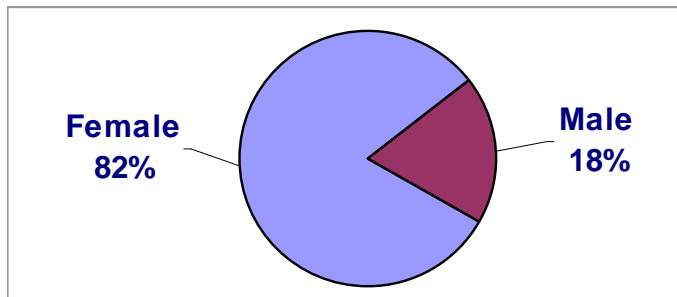
>= 15 years at entry: 86%

Started ART: 48%

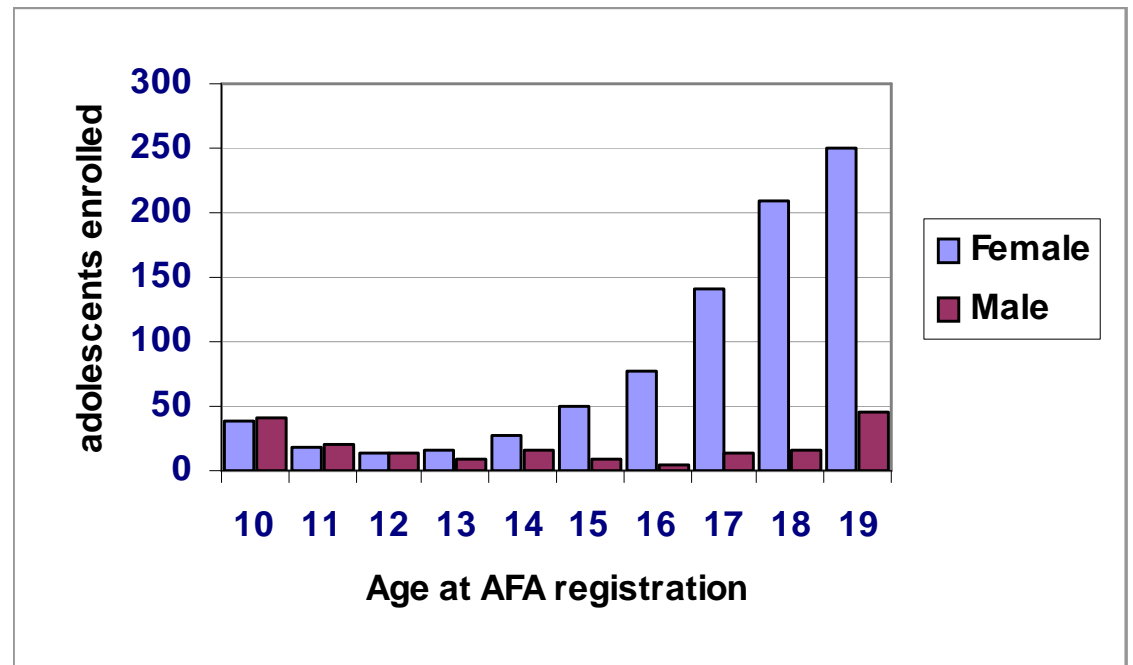
Median dur'n HAART: 18 mth

25%ile 9 mth, 75%ile 37 mth

Gender distribution



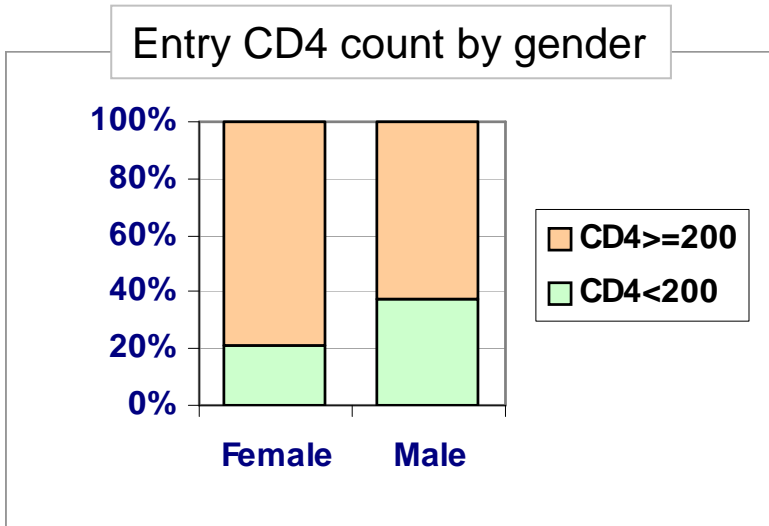
Adolescents enrolled by gender and age at entry.



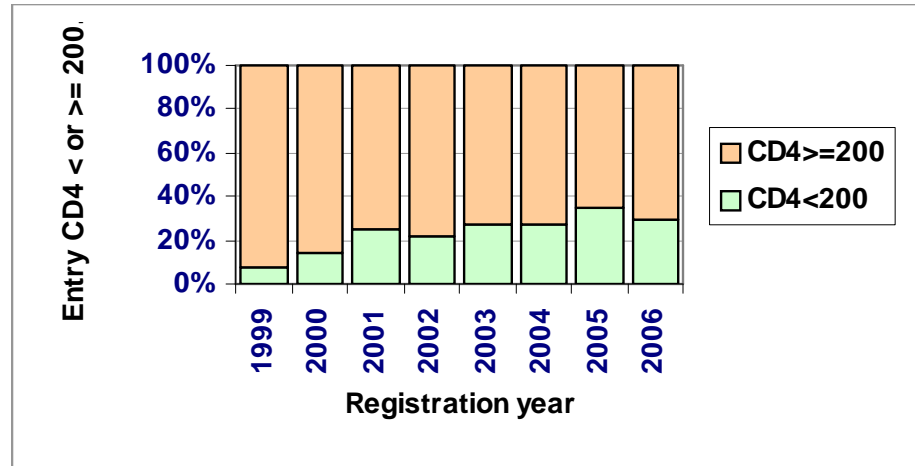


# CD4 count at entry and crude mortality

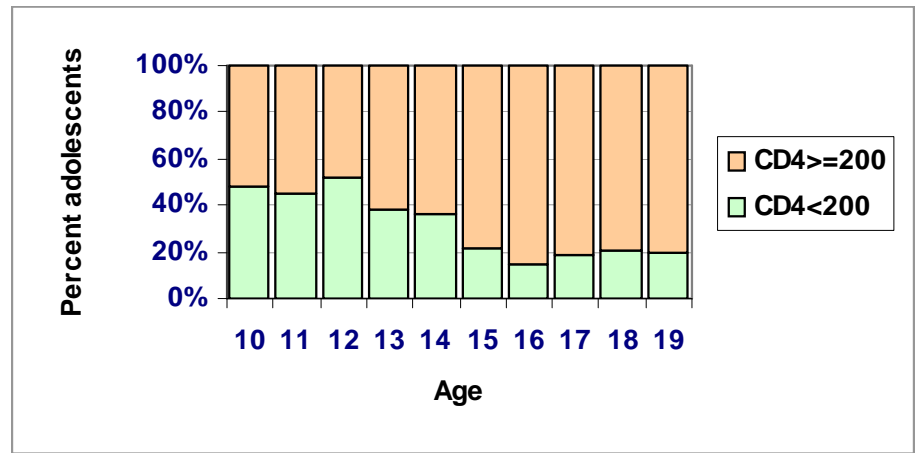
Entry CD4 < 200 cells/ $\mu$ l: **24%**  
 Entry CD4 < 50 cells/ $\mu$ l: **11%**



- Crude mortality: 3.2%
- Crude mortality higher in males (6.9%) than females (2.4%).

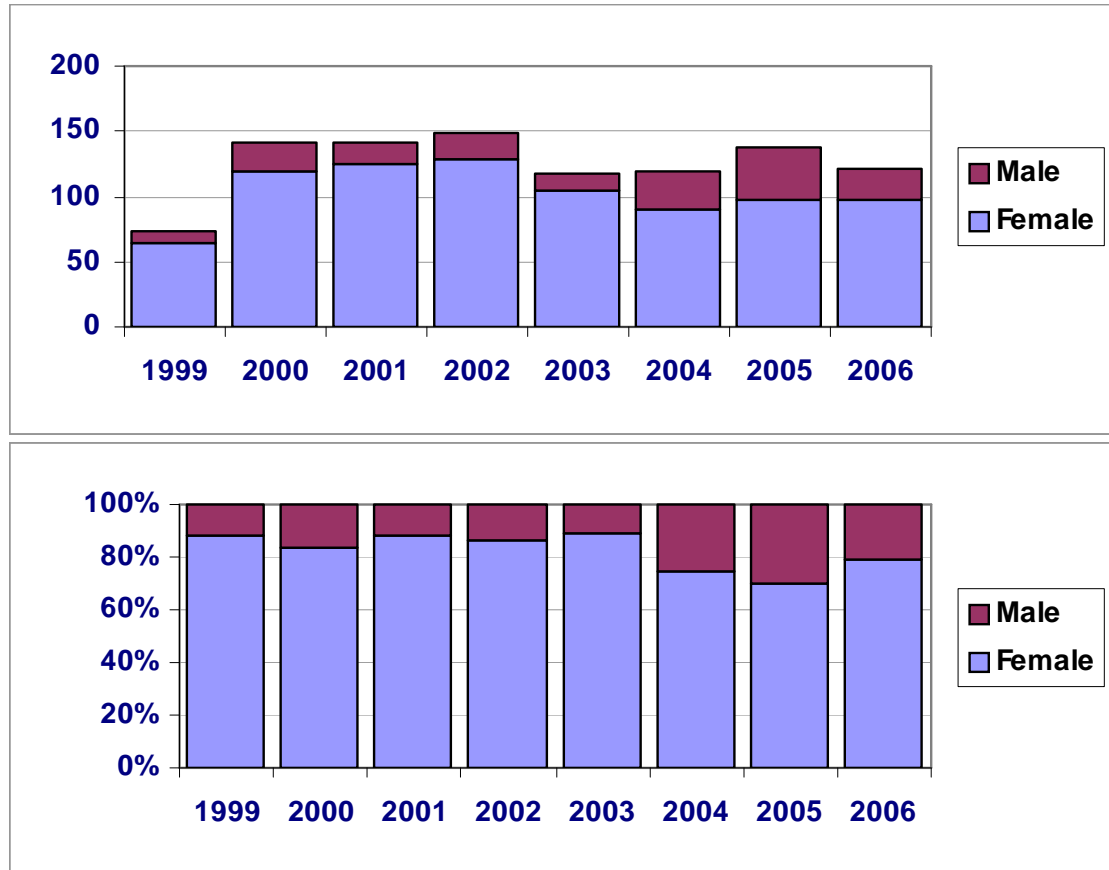


Trend toward later entry CD4 stage in recent years.



Greater % young adolescents have entry CD4 < 200.

## Enrolment trends by gender

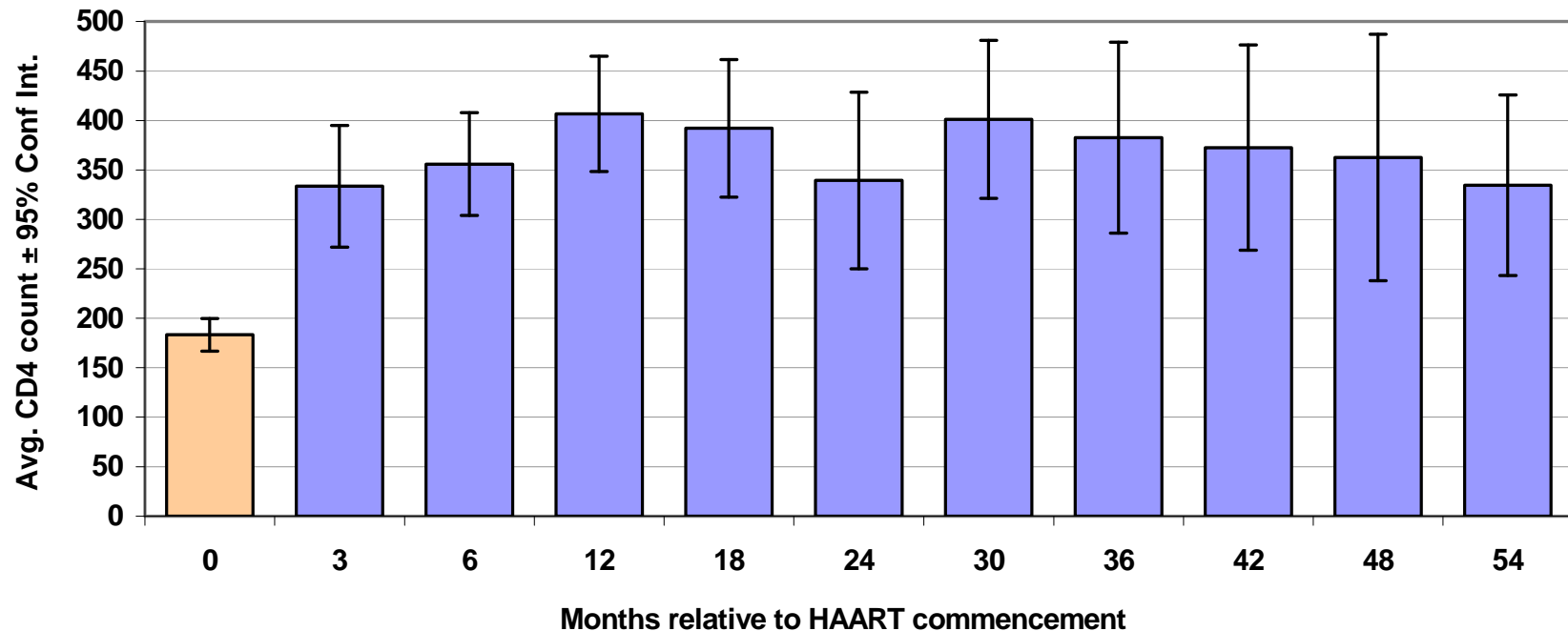


Ratio females to males enrolled:

1998 and 2002 **6.1 : 1**

2003 and 2007 **3.5 : 1**

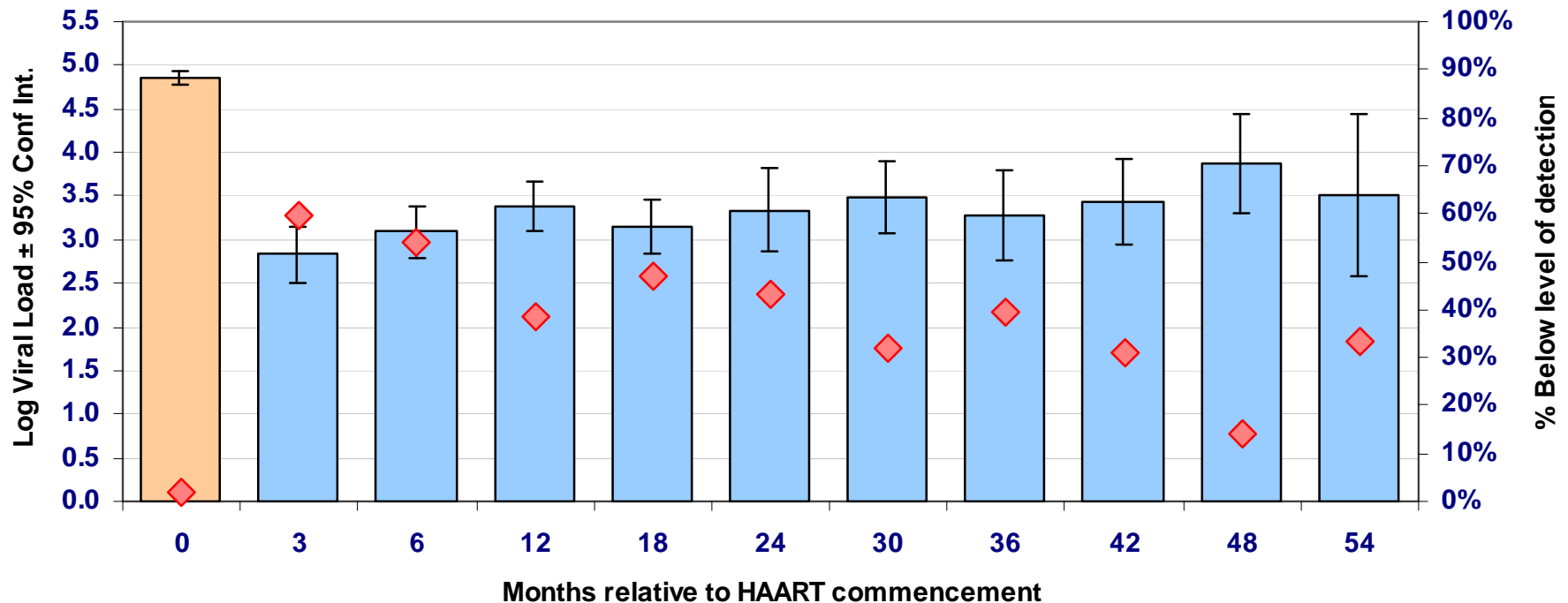
## CD4 count relative to HAART commencement



- Mean CD4 count at baseline  $183 \pm 17$  (95% CI) cells/μl.
- Steady increase in CD4 count up to 12 months ( $407 \pm 58$  cells/μl).
- Plateau thereafter with possible decline.



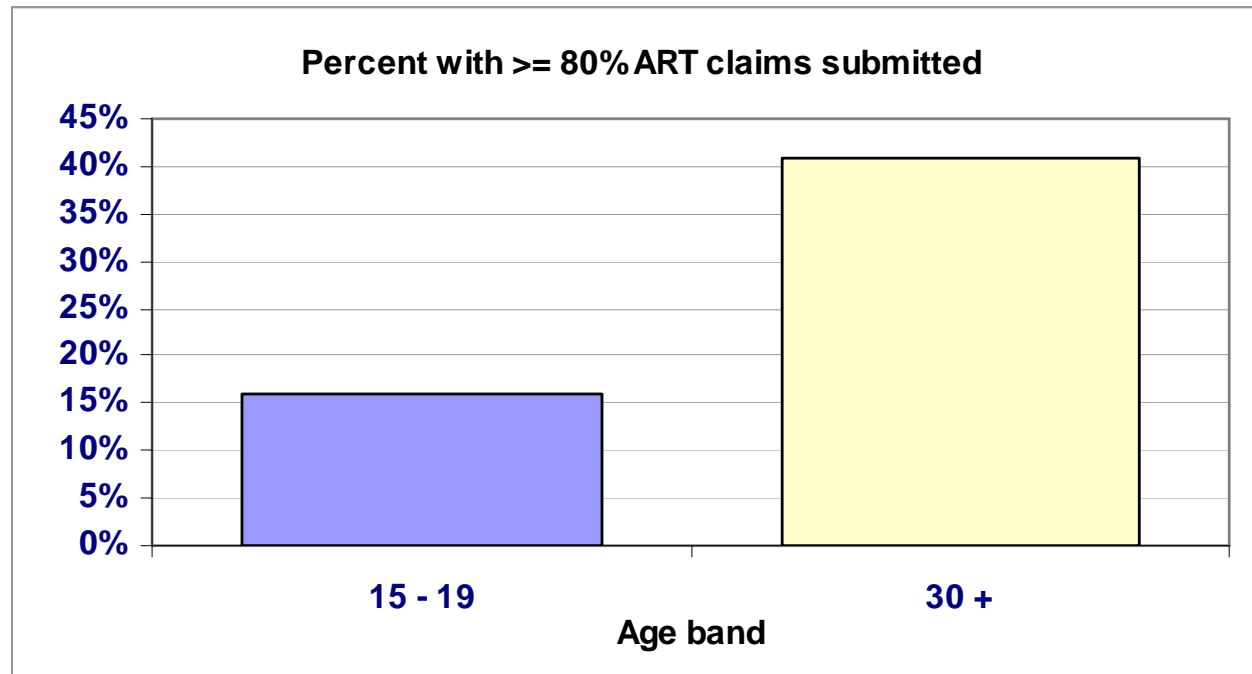
# Viral load relative to HAART commencement



- Bars show average log viral load  $\pm$  95% confidence interval.
- Red diamonds show % lives with undetectable viral load (log viral load  $<$  2.6).
- Viral load response to HAART poor, with 39% of results below level of detection at 36 months.

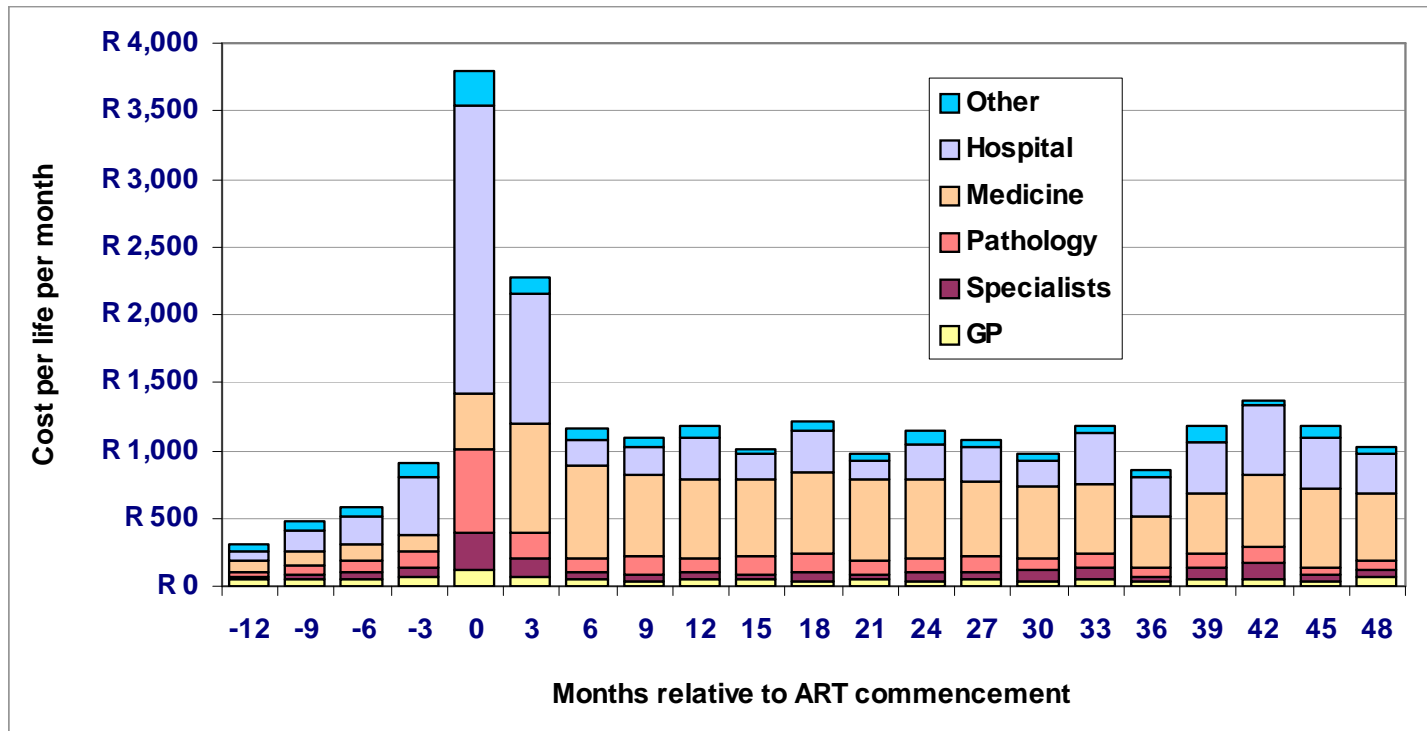


## Comparative adherence



- Adherence in adolescents age 15 – 19 compared to adults (30+).
- All patients for whom ART is requested and authorised were included in the analysis. Many of these patients are not committed to treatment and never take up the benefit.

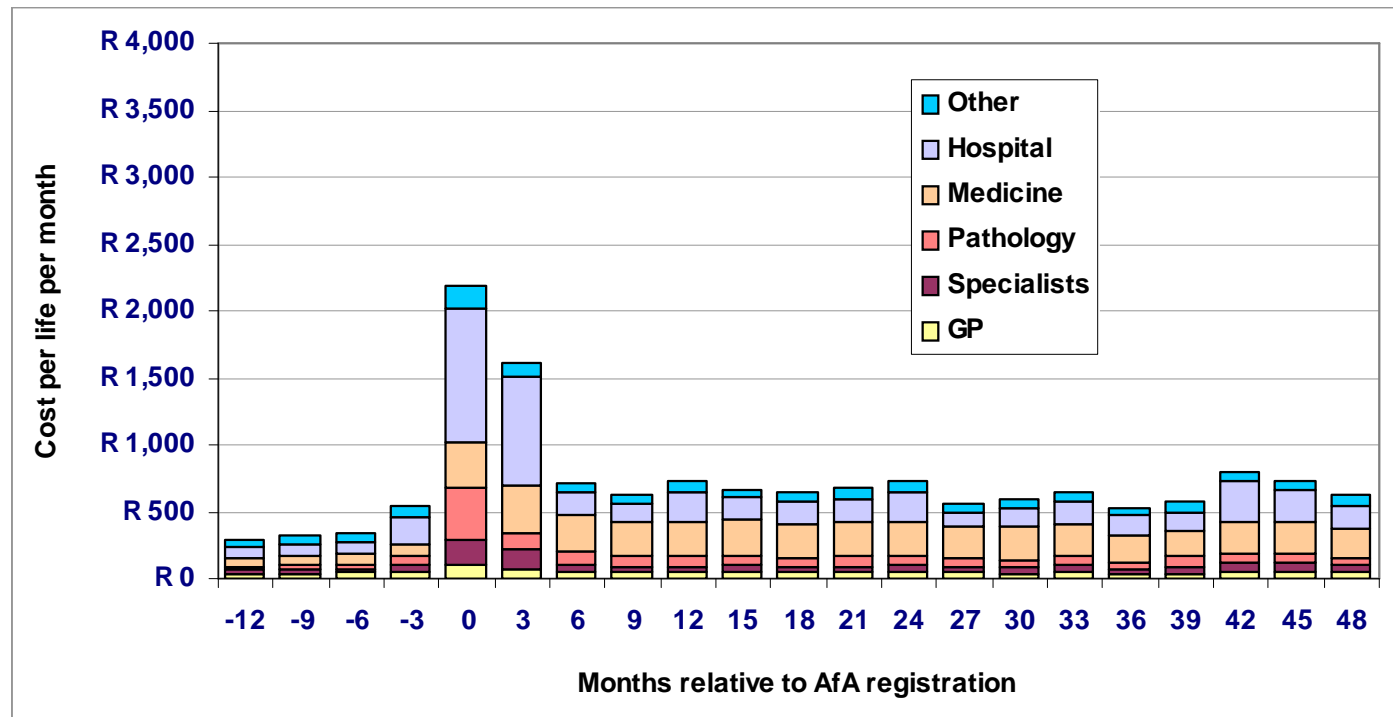
# Treatment costs relative to HAART initiation



- Many only seem to become aware of or acknowledge HIV infection at hospital admission. Therefore admission and AfA entry coincide.
- Treatment costs peak at R 3,788 in the entry quarter, and stabilise by six months post entry at an average R 1,108 per life per month.



## Treatment costs relative to entry



- Average costs relative to entry include both adolescents on ART as well as those who are pre-ART.
- Treatment costs peak at R 2,181 in the entry quarter, and stabilise by six months post entry at an average R 654 per life per month.

## Conclusions I

- Majority of adolescents enrolled are female (82%). Of all adolescents enrolled, 71% are female and age 15 - 19.
- Ratio of females to males enrolled decreased from 6:1 between 1998 and 2002 to 3.5:1 between 2003 and 2007. <sup>11</sup>
- Late enrolment defined as CD4 count < 200 cells/ $\mu$ l in 24% of adolescents. Of total adolescents, 11% had CD4 count < 50 cells/ $\mu$ l. Just under 50% have met initiation criteria for ART.
- There is a trend toward a greater percentage with entry CD4 count < 200 cells/ $\mu$ l in more recent years, from 19% (1998 - 2002) to 30% (2003 - 2007).
- A greater percentage (44%) of young adolescents (10 - 14) had entry CD4 count < 200 cells/ $\mu$ l than older adolescents (15 - 19) (19%).



## Conclusions II

- Baseline mean CD4 count was  $183 \pm 17$  (95% CI). Peak post HAART CD4 count at 12 months ( $407 \pm 58$  cells/ $\mu$ l), plateauing thereafter. <sup>12</sup>
- Viral load response to HAART poor, with 39% of results below level of detection at 36 months.
- In part likely to be due to worse adherence than adults, with 16 % having  $\geq 80\%$  claims submission compared to 41 % in adults.
- For adolescents on HAART, average costs from six months post initiation are R 1,108 per life per month. Including adolescents who are pre-ART, average costs from six months post initiation are R 654 per life per month.
- Treatment support interventions customised to the unique needs of adolescents should be prioritised.





Thank you.

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