

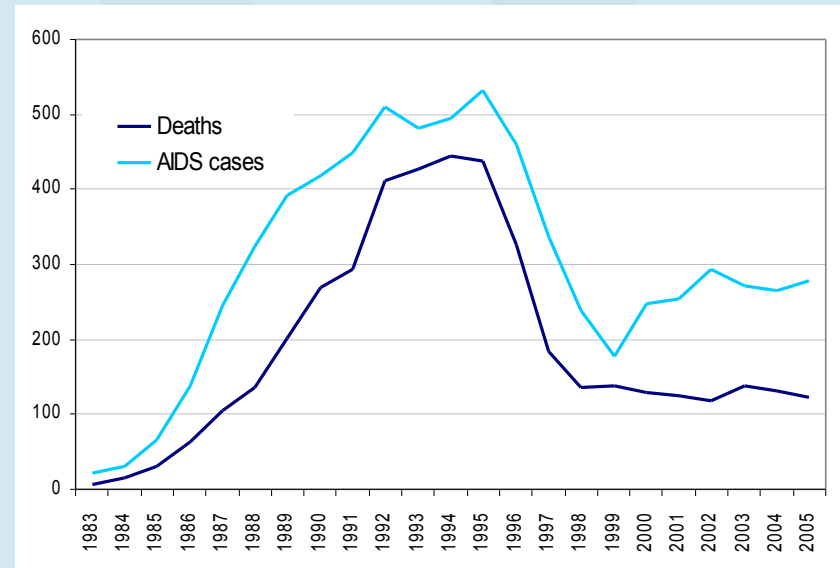
10 years HAART:

Less AIDS • Less Death • More Infections

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Introduction

- Highly active antiretroviral therapy (HAART) was introduced in 1996 as standard of care for the treatment of HIV
- Before HAART, HIV was treated with one or a combination of two anti-HIV drugs, with a limited effect.
- After introduction of HAART, the number of AIDS diagnoses and HIV death declined



De Boer et al., RIVM 2006

Sources AIDS: AIDS registration Health Inspectorate <2000, HMF ≥2000.

Sources deaths: CBS <2002, HMF ≥2002.

1996-2006: What's going on (in the Netherlands)?

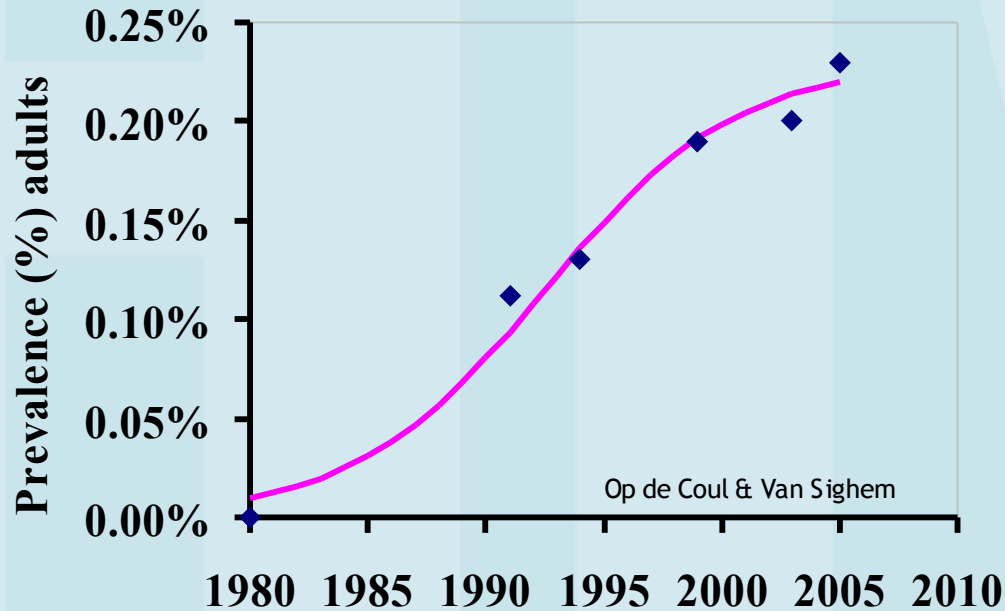
1. How many are infected?
2. How many infected are registered?
3. How many got AIDS?
4. How many died?
5. How many are treated?
6. And not treated?
7. What's the effect of HAART on the epidemic?

How many are infected?

2005 estimate: **18.500** (10.000-28.000)

Op de Coul & Van Sighem, 2006

18.500 HIV infected persons



- HIV prevalence amongst adults (age 15-49): 0.23%
- Amongst MSM: 5.3%
- Amongst iv drug users: 5.3%
- Amongst CSW: 2.7%

How many HIV positives are registered?

Number HIV+ : 18.500 (10.000-28.000)

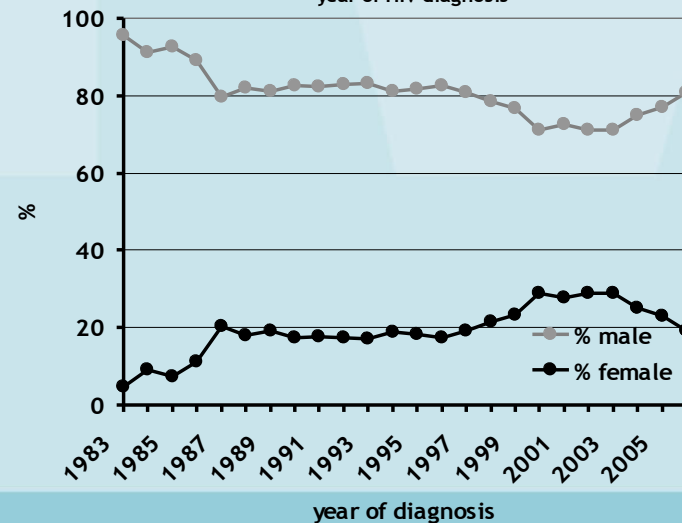
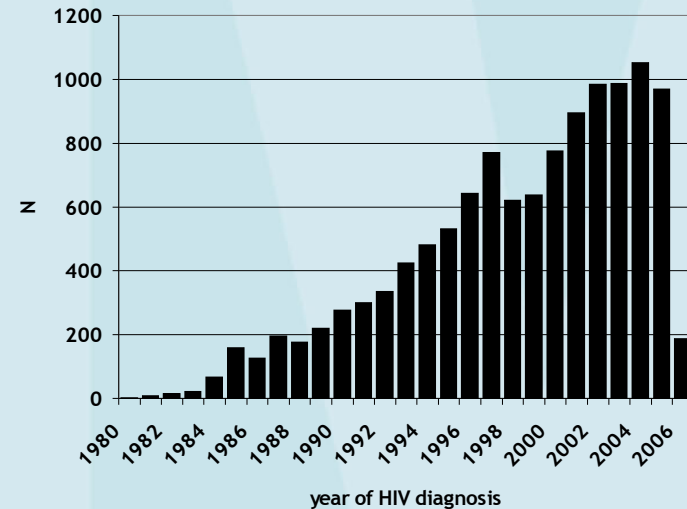
Op de Coul & Van Sighem, 2006

As per mid 2006: 12.059

Gras et al, 2006

12059 patients are registered

- In 2005 964 new HIV diagnoses
- In total 9254 men and 2699 women >13 years of age
- In addition: 106 boys and girls ≤ 13 years
- Percentage of men is increasing since 2003
- Main risk group: MSM



How many got AIDS?

Number HIV+ :

18.500 (10.000-28.000)

Op de Coul & Van Sighem, 2006

N registered:

12.059

Gras et al, 2006

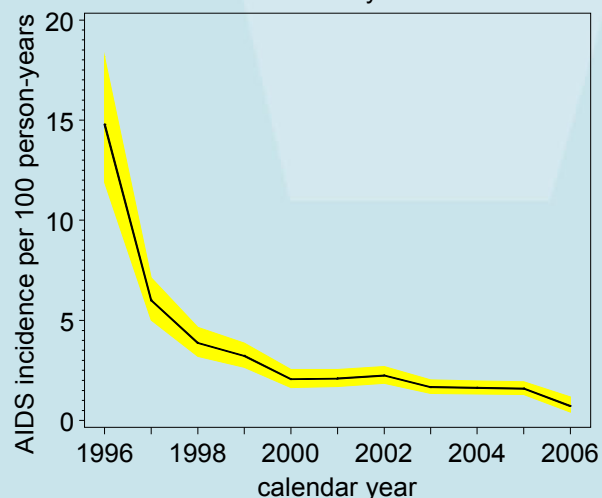
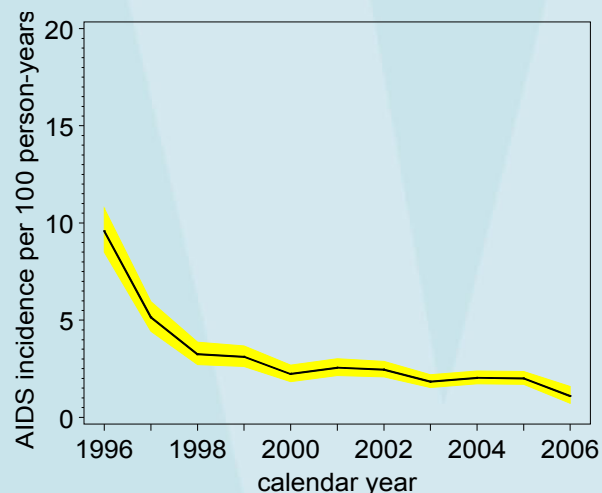
At or after HIV
diagnose:

3.468

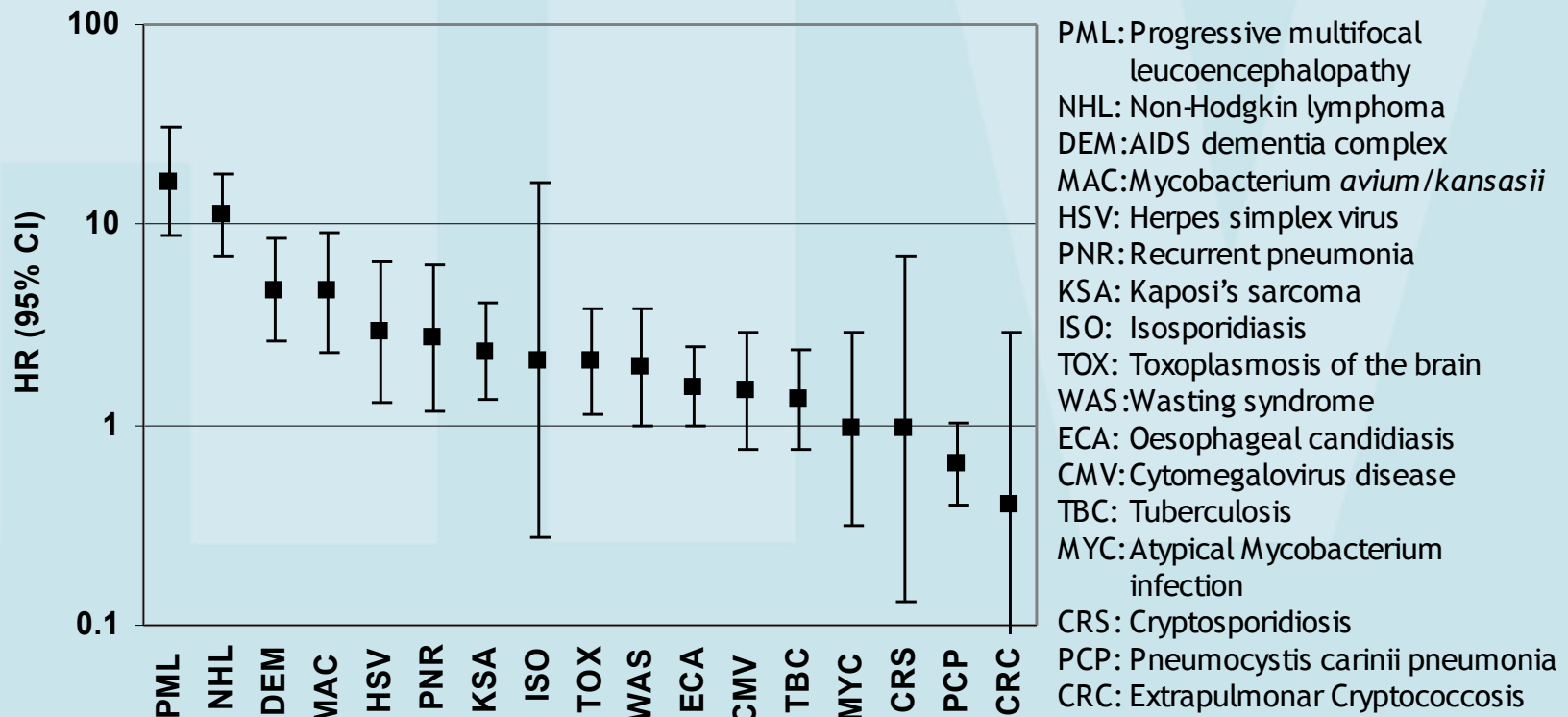
Gras et al, 2006

3468 AIDS diagnoses

- 2048 new AIDS diagnoses from 6 weeks after HIV diagnosis
- 1598 after 1996
- Average AIDS incidence: 2.9/100 person-years
- In 1996: 9.6 and in 2005: 2
- Since 2003 no major changes
- 1066 AIDS diagnoses after start HAART
- AIDS incidence after start HAART decreases sharply from 14.8 in 1996 to 2.06 in 2005.
- Numer of AIDS diagnoses in 2005: 276



Time to death within 3 years of starting HAART according to CDC-C classification



Model adjusted for calendar year of starting HAART, CD4 cell count and HIV RNA at starting HAART, age, gender and transmission risk group. Hazard ratio's of the specific CDC-C diseases are relative to no CDC-event.

How many died?

Number HIV+ :

18.500 (10.000-28.000)

Op de Coul & Van Sighem, 2006

N registered:

12.059

Gras et al, 2006

AIDS:

3.468

Gras et al, 2006

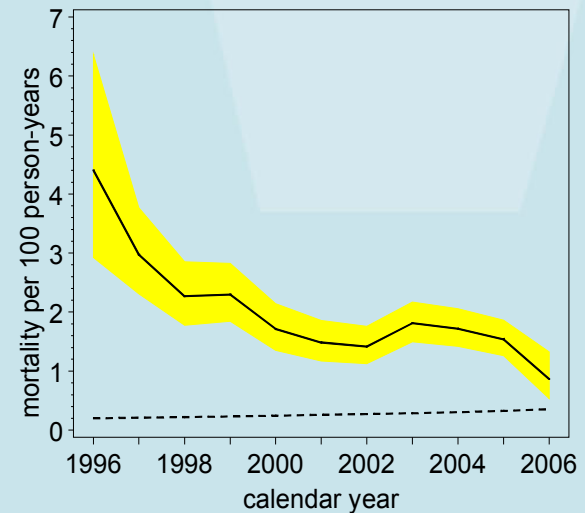
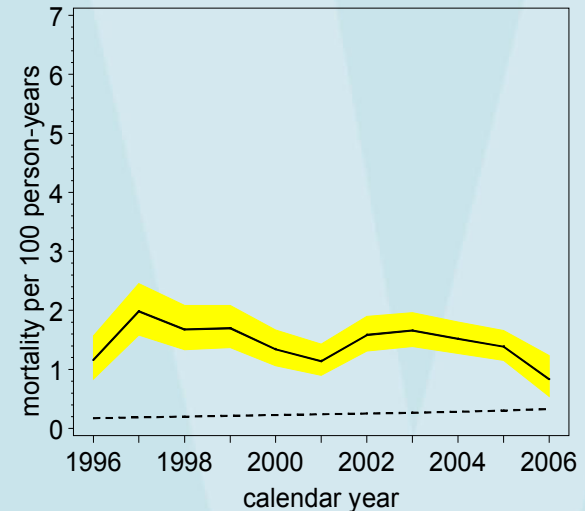
Since 1996:

985

Gras et al, 2006

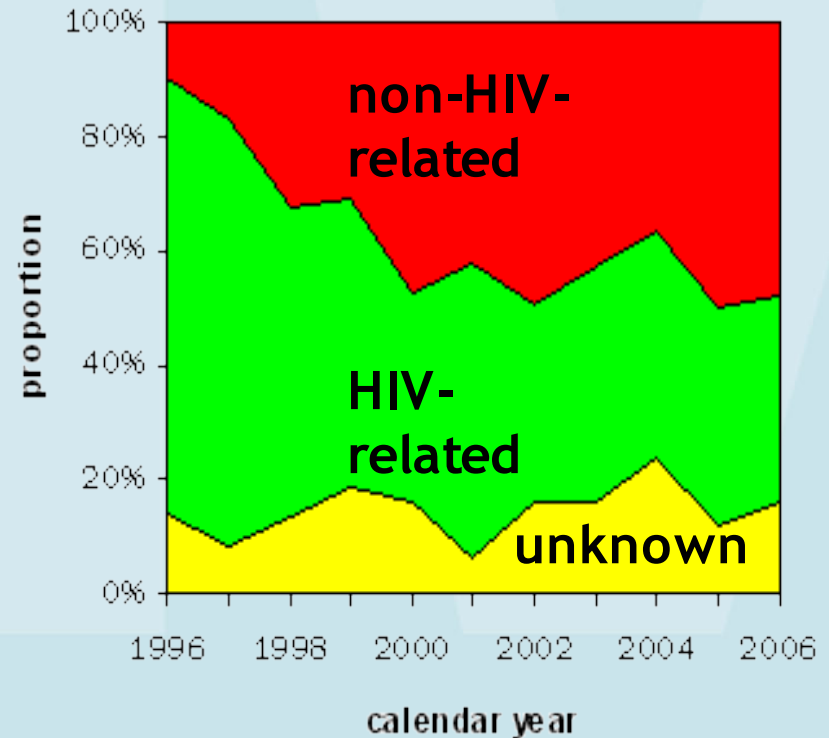
985 deaths

- Av mortality ratio: 1.48 per 100 person-years
- Mortality in the total group does not change: 1.16 in 1996 and 0.84 in 2006
- Mortality is still higher as compared to the non-infected population, but comparable to other chronic diseases
- In total 854 deaths after start of HAART
- Mortality declines after start of HAART from 4.4 in 1996 to 1.54 in 2005.



Causes of death

- In 1996:
 - 76% HIV related
 - 10% non HIV related
 - 14% unknown
- In 2005:
 - 39% HIV related
 - 50% non HIV related
 - 11% unknown



How many patients are on HAART?

Number HIV+: 18.500 (10.000-28.000)

Op de Coul & Van Sighem, 2006

N registered: 12.059

Gras et al, 2006

AIDS: 3.468

Gras et al, 2006

Deaths: 985

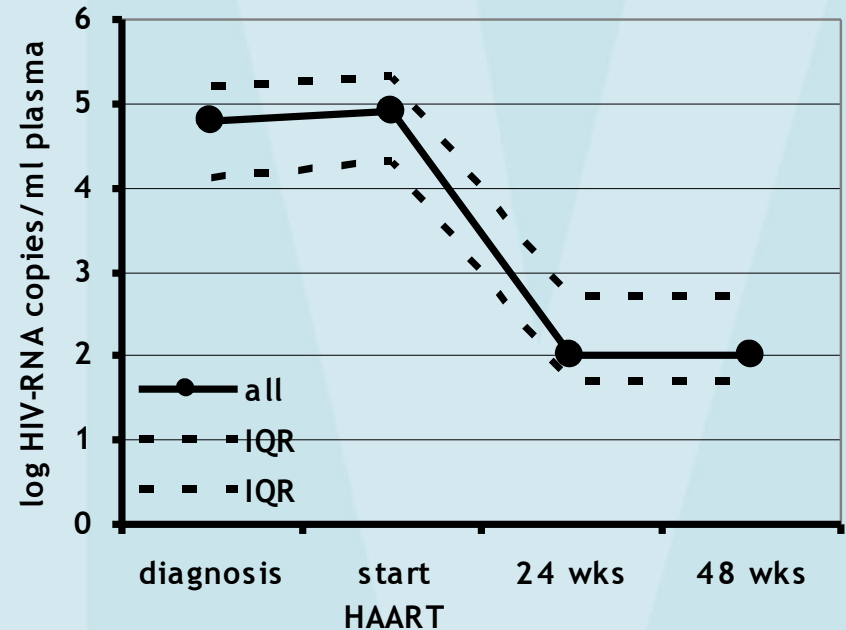
Gras et al, 2006

In 1996: 8292 Untreated: 2136

Gras et al, 2006

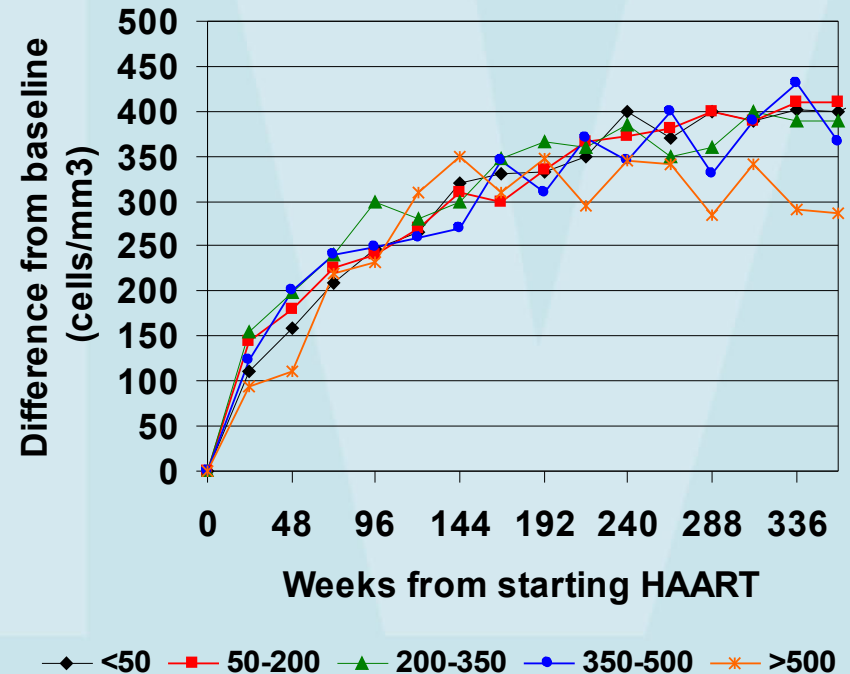
8292 HAART treated: Virologic effect

- After the first 24 weeks of HAART, the amount of HIV in blood has declined 3 logs
- 80% are below the detection threshold
- 388/5304 naïve patients show viral rebounds after initial success
- Incidence of viral rebound is 3.2 per 100 person-years of follow-up



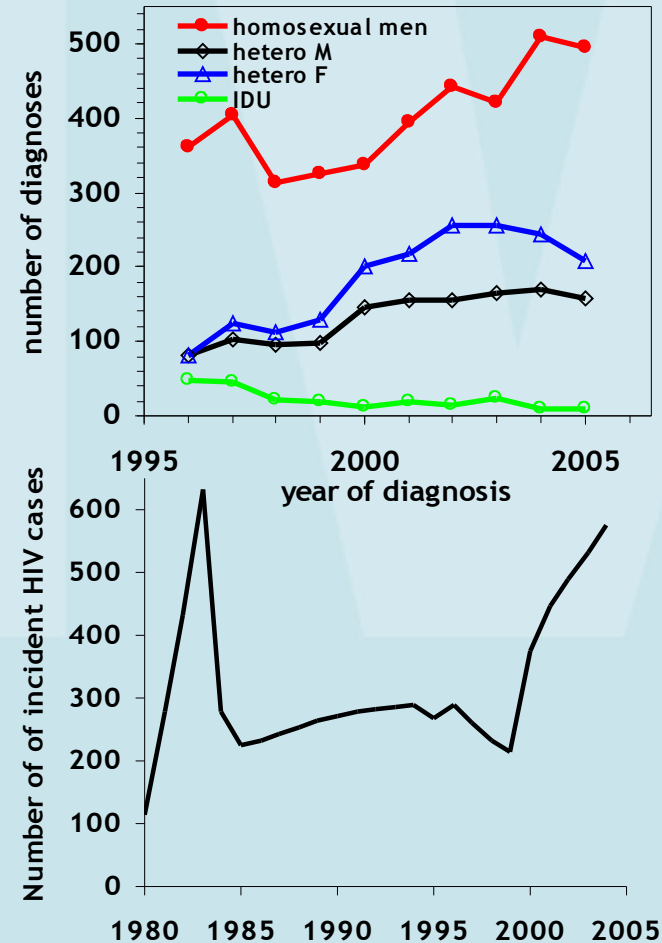
Immunological effect of HAART

- Patients continuously on HAART do show an increase of CD4 cells from median 221 /mm³ at start to 607 /mm³ after 7 years of treatment
- The highest increase is seen in the first 24 weeks, which levels of thereafter
- The increase does not differ between baseline groups
- In older patients and patients with viral rebounds after start of HAART the increase in CD4 cells is less.



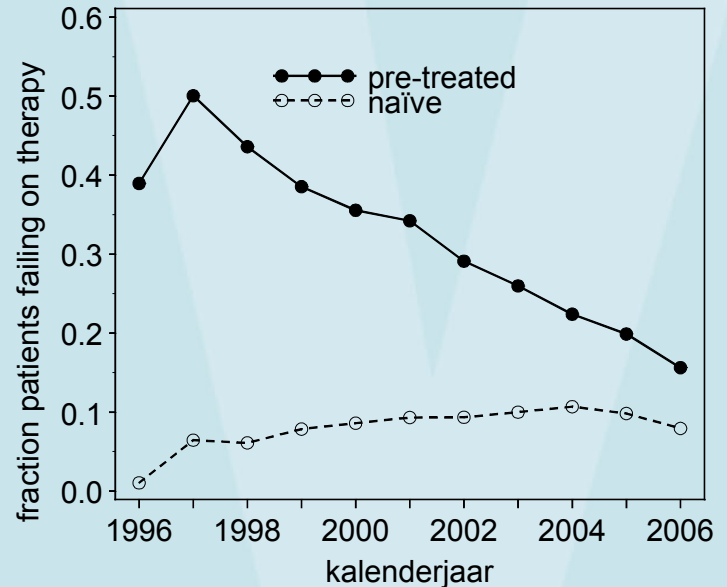
Effect of HAART on the epidemic?

- After the initial decrease following the introduction of HAART, the number of new HIV diagnoses increased again, especially amongst MSM
- The relative high CD4 cell counts found at diagnosis indicate that these new cases reflect more recent HIV infections
- The HIV epidemic seems to grow amongst MSM



HIV resistance in treated patients

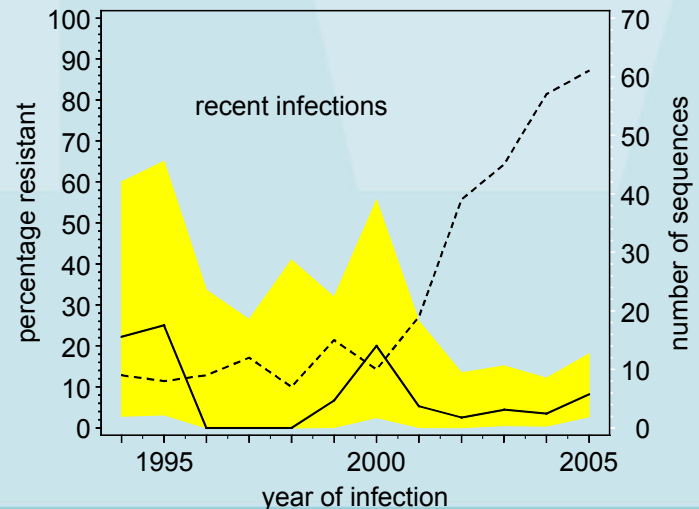
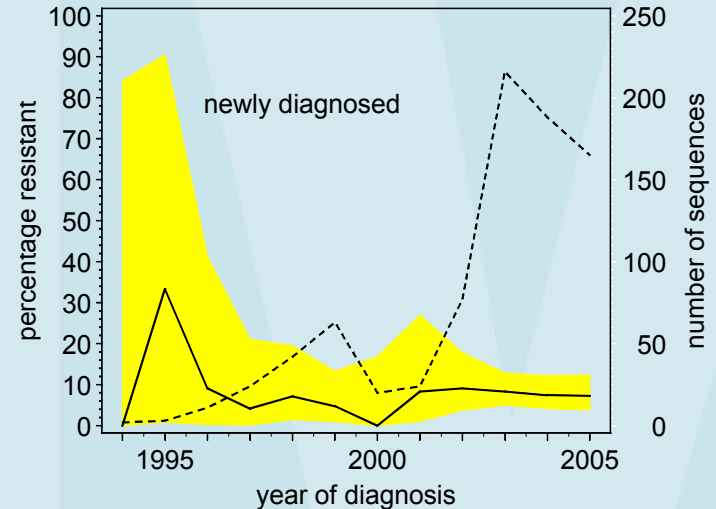
- HAART failure decreased in ART experienced patients
- Amongst naive patients the percentage of HAART failures increased slowly
- In 80% of the patients experiencing virological failure during treatment resistance is found



- However: Resistance is measured in only 17% of the patients with virological failure during HAART

Transmission of resistant HIV

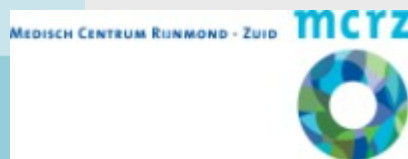
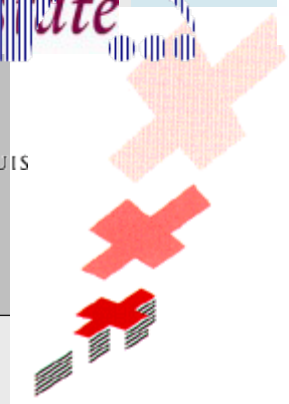
- Since 2001 resistance ids found in 7.7% of the new HIV diagnoses
- In 14 patients high-level resistance
- In 6.0% of the recent infections one or more mutations associated with resistance are found
- 3 patients with high-level resistance; 1 to all drug classes



10 jaar HAART

- **Less AIDS**
 - Sharp decline of the number of AIDS diagnoses since introduction of HAART
 - AIDS defining illnesses seem to change and are associated with survival
- **Less death**
 - Mortality has decreased since HAART
 - Percentage of HIV related causes of death has declined
 - Mortality amongst HIV positives is still higher as compared tot non HIV infected persons
- **More Infections**
 - Thers is an increase in new HIV infections , especially amongst MSM
 - Transmission of resistant HIV is still limited

HIV Monitoring Foundation



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