Immigrants and HIV

6th Ethnic Minority Conference

14 October 2011

Amersfoort

HIV Monitoring

Region of Origin

	Men N=11,614 (80%)		Women N=2996 (20%)		Total N=14,610	
	N	%	N	%	N	%
Netherlands	7763	67	860	29	8623	59
Sub-Saharan Africa	938	8	1300	43	2238	15
Western Europe	723	6	122	4	845	6
Latin America	773	7	258	9	1031	7
Caribbean	394	3	162	5	556	4

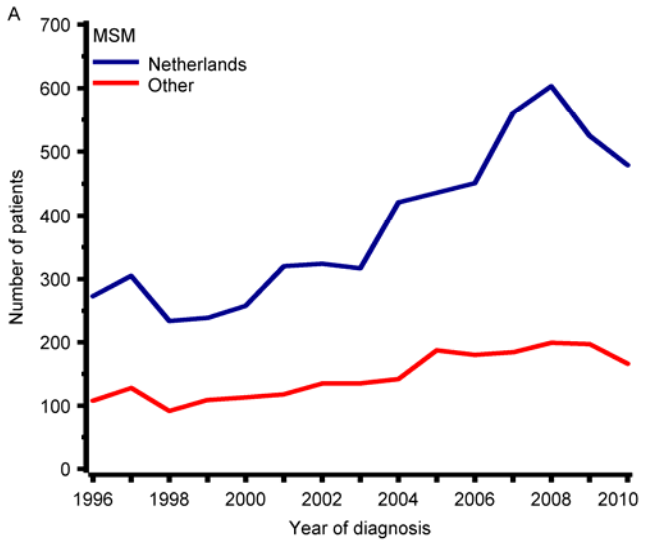
Registered region of origin outside Europe and North America:

3825 persons, 2105 (55%) men and 1702 (45%) women.

HIV Monitoring

Transmission amongst homosexual men

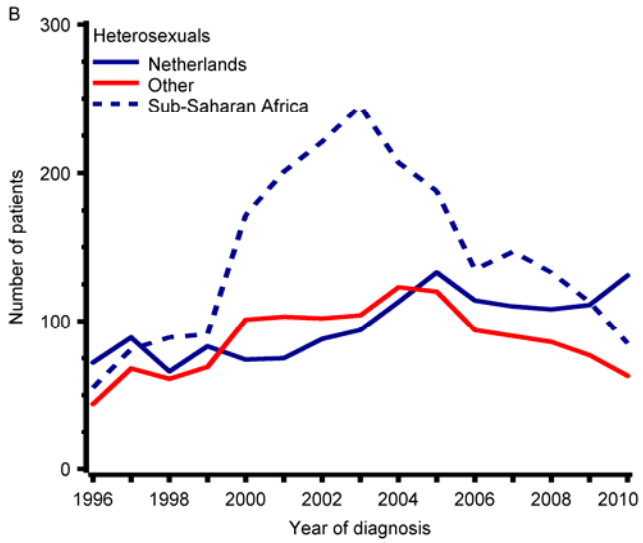
- 10,244 MSM
- 7402 (72%) NL
- 1015 (10%) from other European countries
- 667 (7%) from Latin America
- Increase in the proportion MSM from Eastern European countries
- Decrease in the proportion from Latin America



HIV Monitoring

Heterosexual transmission

- 32% originated from the Netherland
- 42% originated from sub-Saharan Africa
- N diagnosed amongst sub-Saharan Africans and patients from other regions dropped sharply after 2003
- N diagnosed amongst Dutch heterosexuals increased from 111 in 2009 to 131 in 2010 (47% of the annual number of heterosexually infected patients)
- Similar trends in diagnoses amongst patients from Central Europe and Latin America.



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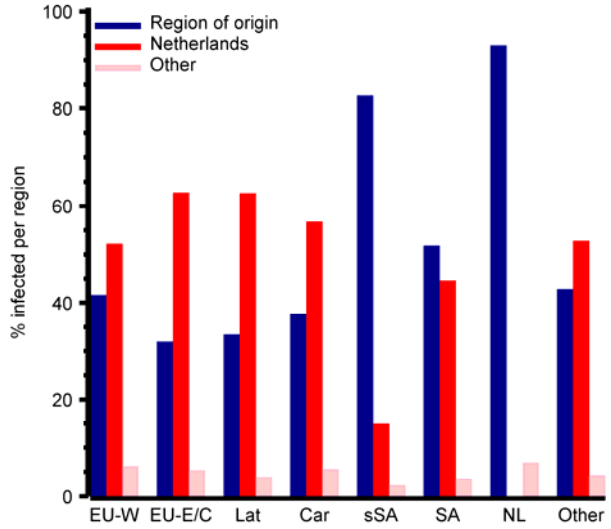
Registered region of infection

- 93% of patients born in NL have been infected in NL
- 85% of patients born in sub-Saharan Africa were infected in that region; 15% in the Netherlands.
- Patients from other regions, except South and Southeast Asia, the majority were infected in the Netherlands.



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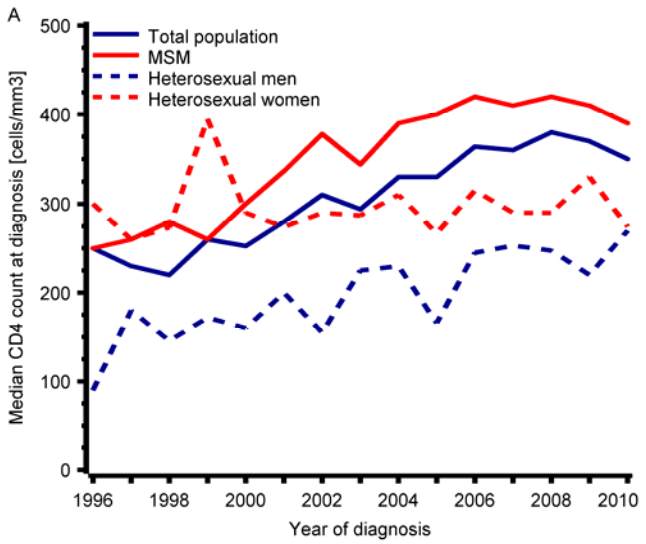
Immune status at diagnosis

- Patients of sub-Saharan African origin more often present with a late-stage infection (73%) compared to those of Dutch origin (56%)
- CD4 cell counts at diagnosis are increasing, although less so in the heterosexual population.



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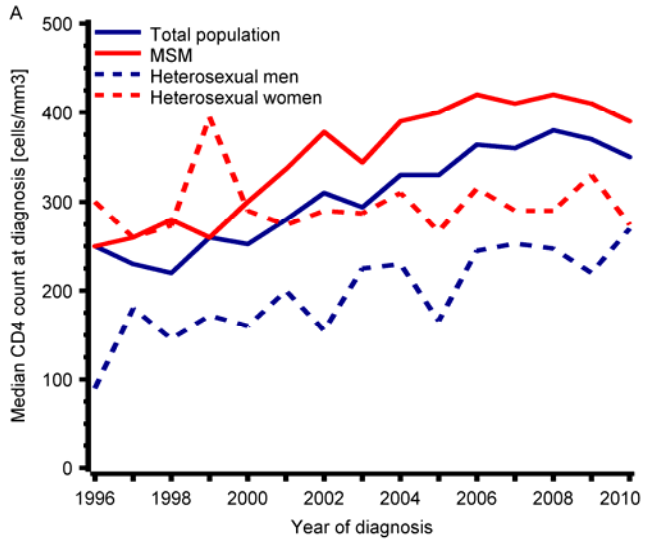
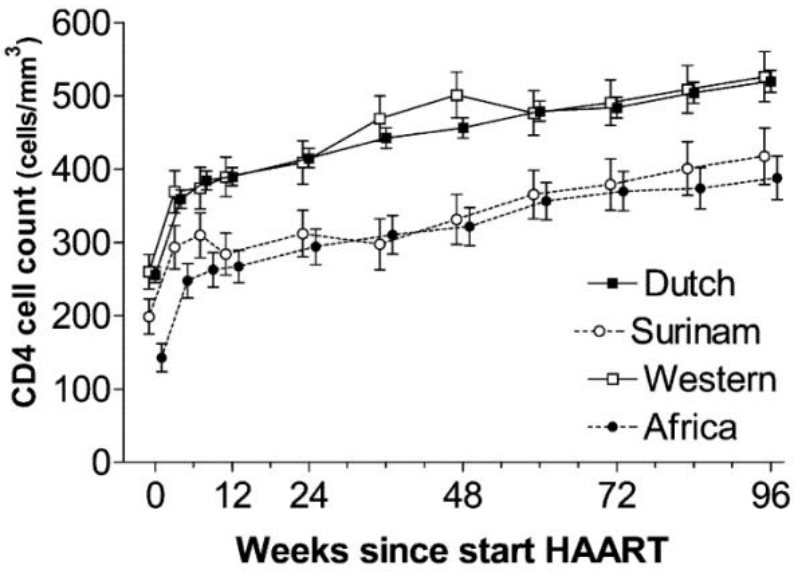
CD4 cell count after start of highly active antiretroviral therapy.



At start of antiretroviral therapy the median CD4 cell count is still low, however improving over time



Nellen, J. JAIDS 36(4):943-950, 2004.

The increase after start of cART in different patient groups are similar. Consequently, immunological improvement towards normal level take longer or cannot be reached

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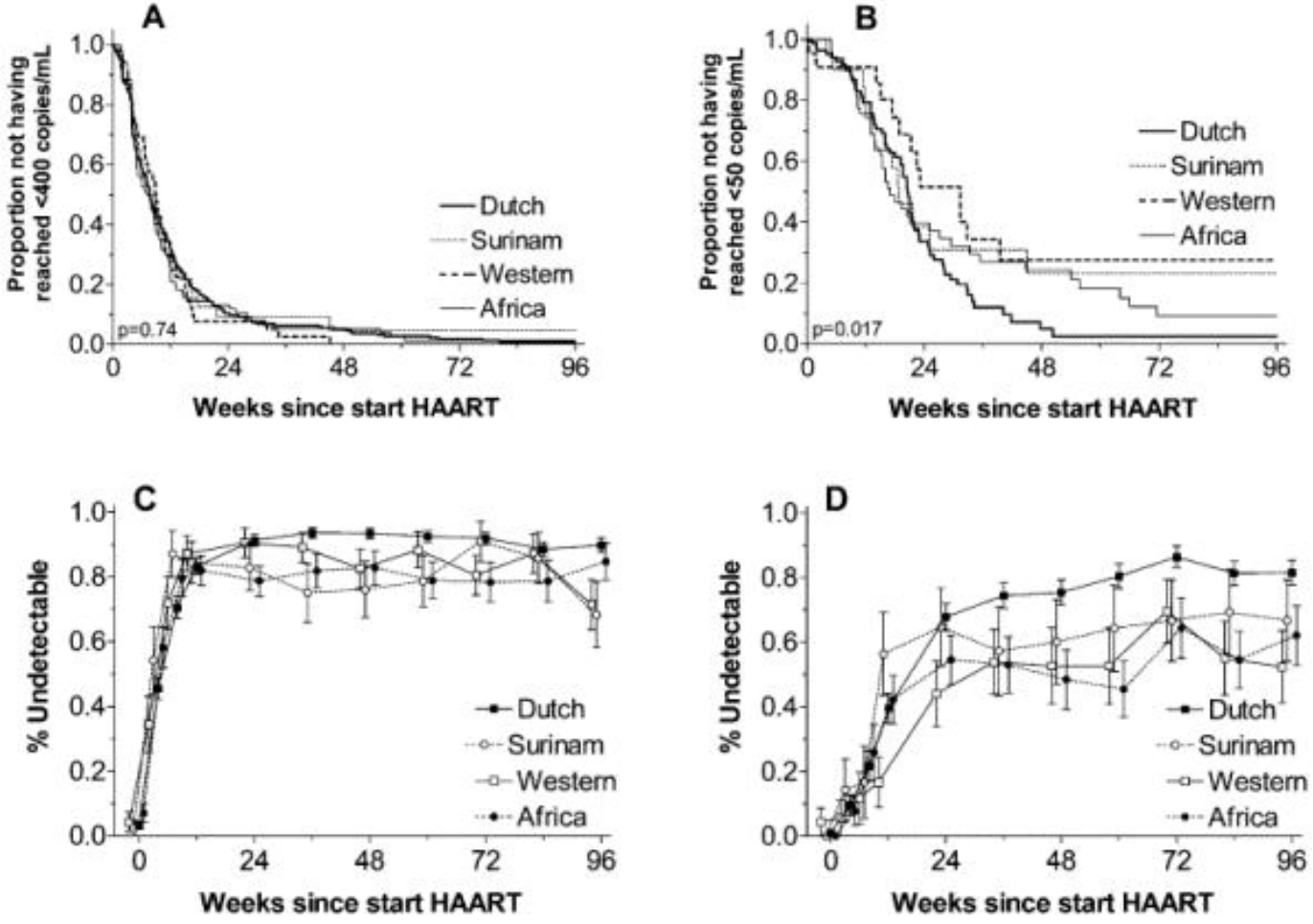
Virologic response to cART



Nellen, J. JAIDS 36(4):943-950, 2004.

Virological failure

- Virological failure: 19.7% for the immigrants and 8.6% for the non-immigrants (8.6%). OR2.6, 95%CI1.07.0, p0.056.

- When only patients who started HAART being antiretroviral naive were considered: 19.6% (of the immigrants experienced virological failure, when compared with none (0/54) of the non-immigrants (OR27.5, 95%CI1.6480,p<0.01).

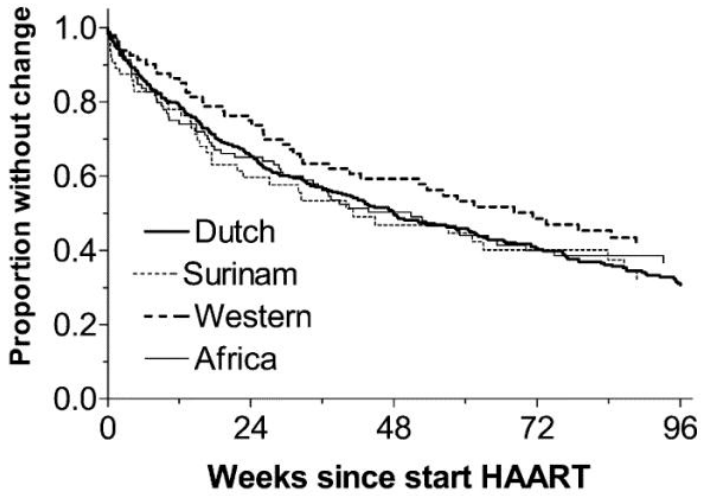
Nellen J, AIDS Care 2009, 21:7, 842-850

HIV Monitoring

Reasons for changing / stopping first cART

Reason	Netherlands	Western	SNA	SSA	Total
Toxicity	135 (60%)	18 (40%)	13 (33%)	35 (57.4%)	201
Pharmacologic	31 (13.8%)	9 (20%)	11 (28%)	10 (16.4%)	61
Patient decision	25 (11.1%)	10 (22%)	6 (15%)	10 (16.4%)	51
Therapy failure	18 (8%)	2 (4.4%)	5 (12.8%)	5 (8.2%)	30
Total	225 (100%)	45 (100%)	39 (100%)	61 (100%)	370

Western indicates Europe (excluding The Netherlands), United States, and Australia.



Jeannine F. Nellen, J Acquir Immune Defic Syndr 2004;36:943–950

Adherence to cART

Table 3. Surrogate markers of non-adherence in immigrant and in non-immigrant patients, and odds ratio of virological failure in non-adherent versus adherent patients.

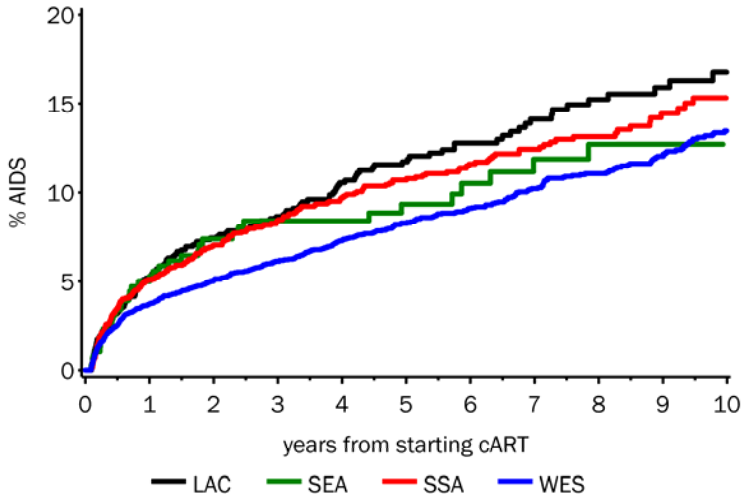
	Non-Immigrants ($n=81$)	Immigrants ($n=61$)	Virological failure in adherent patients (n,%)	Virological failure in non-adherent patients (n,%)	OR 1 (95%CI) p-value	OR 2 (95%CI) p-value
Incorrect knowledge of the regimen ($n=136$)	5/80 (6.3)	2/56 (3.6)	17/129 (13.2)	2/7 (28.6)	0.6 (0.1–3.0) 0.70	2.6 (0.5–14.7) 0.25
Treatment perceived as very difficult, difficult or neutral ($n=142$)	16/81 (19.8)	22/61 (36.1)	16/104 (15.4)	3/38 (7.9)	2.3 (1.1–4.9) 0.03	0.5 (0.1–1.7) 0.25
Reporting to take medication too late yesterday ($n=142$)[a]	8/81 (9.9)	3/61 (4.9)	19/131 (14.5)	0/11 (0)	0.5 (0.1–1.9) 0.35	0.3 (0.0–4.4) 0.36
Reporting to take medication too late the day before yesterday ($n=142$)[a]	12/81 (14.8)	2/61 (3.3)	19/128 (14.8)	0/14 (0)	0.2 (0.0–0.9) 0.02	0.2 (0.0–3.4) 0.22
Reporting to miss medication ($n=142$)[a]	24/81 (29.6)	18/61 (29.5)	15/100 (15.0)	4/42 (9.5)	1.0 (0.5–2.1) 0.99	0.6 (0.2–1.9) 0.38
Reporting to stop medication when feeling well ($n=140$)[a]	2/81 (2.5)	3/59 (5.1)	15/135 (11.1)	3/5 (60.0)	2.1 (0.3–13.1) 0.65	12 (1.9–77.7) 0.02
Reporting to take the medication later than prescribed ($n=141$)[a]	48/80 (60.0)	33/61 (54.1)	6/60 (10.0)	13/81 (16.0)	0.8 (0.4–1.5) 0.48	1.7 (0.6–4.8) 0.30
Non-adherent as assessed by Global adherence score ($n=141$)[b]	58/80 (72.5)	38/61 (62.3)	4/45 (8.9)	15/96 (15.6)	0.6 (0.3–1.3) 0.19	1.9 (0.6–6.1) 0.26
Self-Report of missing clinic visits in the last year ($n=140$)	11/81 (13.6)	11/59 (18.6)	15/118 (12.7)	4/22 (18.2)	0.8 (0.4–1.5) 0.48	1.5 (0.5–5.1) 0.50
Missed visits according the hospital registration system ($n=140$)	25/79 (31.6)	30/61 (49.2)	11/85 (12.9)	8/55 (14.5)	2.1 (1.0–4.1) 0.04	1.1 (0.4–3.1) 0.79
Plasma drug levels compatible with non-adherence ($n=136$)	3/75 (4.0)	7/61 (11.5)	17/126 (13.5)	2/10 (20.0)	3.1 (0.8–12.6) 0.11	1.6 (0.3–8.2) 0.63
Dispensed Medication/Prescribed Medication $<85\%$ ($n=115$)	25/68 (36.8)	13/47 (27.7)	7/77 (9.1)	8/38 (21.1)	0.7 (0.3–1.5) 0.31	2.7 (0.9–8.0) 0.09

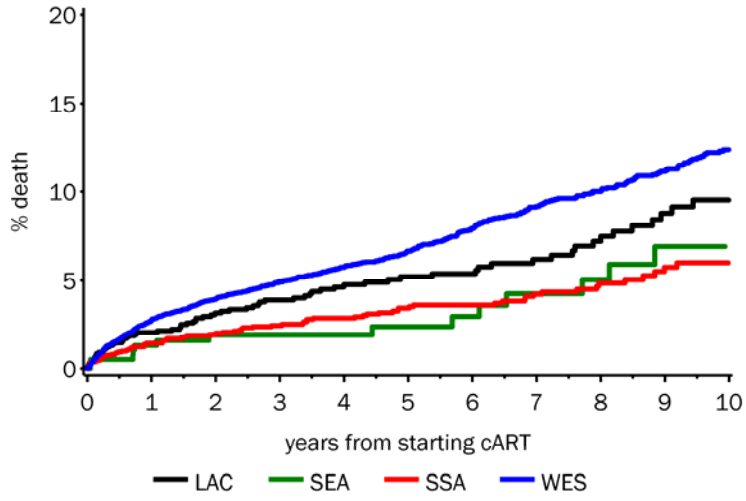
Note: Data were n (%). OR 1: Non-adherence in immigrant versus non-immigrant patients. OR 2: Virological failure in non-adherent versus adherent patients.
[a]Used in the combined adherence score.
[b]Global adherence score: patients were classified as non-adherent when one or more answer(s) on one of the questions with an asterisk was non-adherent.

Nellen J, AIDS Care 2009, 21:7, 842-850

HIV Monitoring

AIDS and death after start of cART



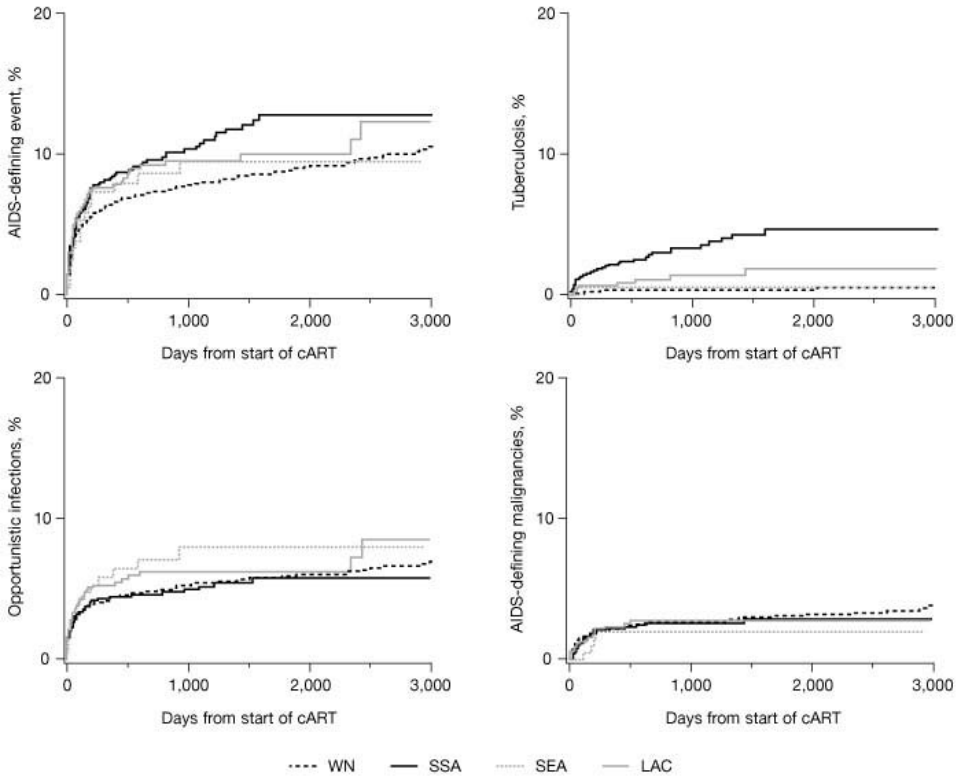


Latest CD4 cell count (cells/mm^3)	Netherlands			Sub-Saharan Africa		
	PY	Lost to fup	Incidence /1000 PY (95% CI)	PY	Lost to fup	Incidence /1000 PY (95% CI)
<200	4708	20	4.25 (2.59-6.56)	1685	82	48.67 (38.71-60-41)
200 - 350	9033	54	5.98 (4.49-7.80)	2929	108	36.87 (30.25-44.51)
350 - 500	11,026	57	5.17 (3.92-6.70)	3064	84	27.41 (21.86-33.94)
>500	21,893	93	4.25 (3.43-5.20)	4397	92	20.92 (16.87-25.66)

Legend: PY=person-years; fup=follow-up; CI=confidence interval

HIV Monitoring

AIDS after start of cART



AM Kesselring et al. *Antiviral Therapy* 2010; **15**:871-879

First AIDS-defining events, tuberculosis, other opportunistic infections and AIDS-defining malignancies in HIV type-1-infected patients during 7 years of cART

(Total *n*=6,057 treatment-naive patients. cART, combination antiretroviral therapy; LAC, Latin America/Caribbean; SEA, Southeast Asia; SSA, sub-Saharan Africa; WN, Western Europe/North America.)

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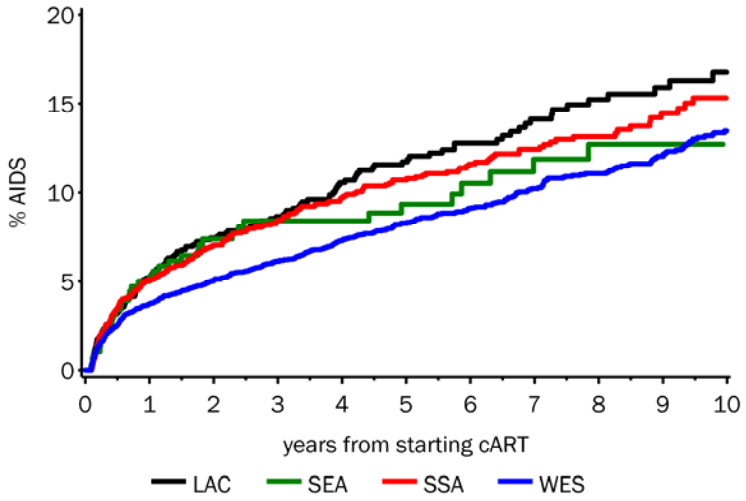
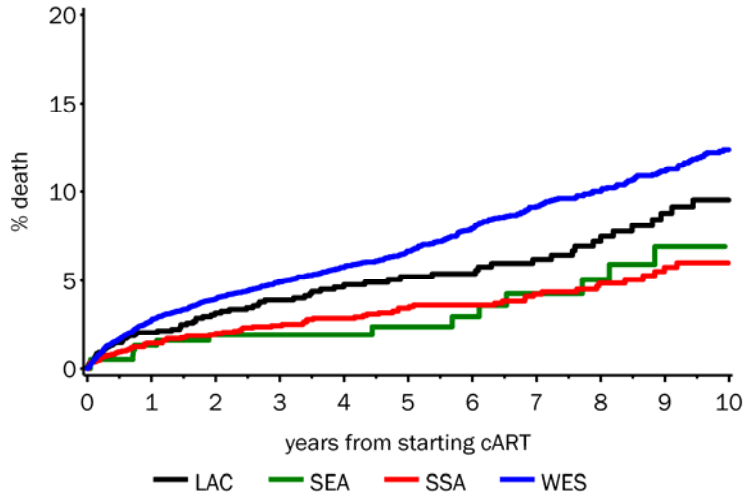
AIDS and death after start of cART





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Conclusions

- Immigrants with HIV are a substantial group within the HIV population in the Netherlands; a majority originate from sub-Saharan Africa and within that subgroup, most are infected in the region of origin
- Immigrants are still diagnosed with HIV in a late stage of infection, although that has improved over time.
- Consequently, immigrants start cART late in infection. The immune response to cART is similar to those who start earlier, but to make up for lost ground is difficult, if possible at all.
- When on cART virological failure is more frequent amongst immigrants, which seems the result of treatment interruptions when not feeling well.
- AIDS is still diagnosed after start of cART with higher frequencies found amongst immigrant HIV positive populations.
- Death occurs less frequent amongst migrant populations, which is the result of lost follow up.

HIV Monitoring

Acknowledgements

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