

Supplementary Table S1. Incidence of mortality and loss to follow-up using a) Kaplan-Meier and b) competing risks estimation.

Duration on ART	Mortality		Loss to follow-up	
	a	b	a	b
12 months	4.1 (4.0-4.2)	6.9 (6.7-7.1)	12.0 (11.8-12.2)	12.2 (12.0-12.5)
24 months	5.4 (5.2-5.6)	9.2 (8.9-9.4)	17.6 (17.4-17.9)	18.9 (18.3-18.9)
36 months	6.3 (6.1-6.5)	10.8 (10.6-11.1)	22.5 (22.2-22.8)	24.3 (23.9-24.6)

Supplementary Table S2. Patient enrolment, median age and number (%) of patients ≥50 years at ART initiation, by calendar year of enrolment.

	Calendar year of enrolment									OVERALL
	2004	2005	2006	2007	2008	2009	2010	2011	2012 /13	
Patients enrolled, n	4 999	6 793	8 521	8 696	10 129	11 201	12 088	11 482	9 657	83 566
Median age (years)	34	34	35	35	35	35	35	35	35	35
At ART initiation, patients ≥50 years old, n(%)	290 (6)	407 (6)	635 (8)	685 (8)	907 (9)	1055 (9)	1119 (9)	1236 (11)	961 (10)	7295 (9)

Supplementary Table S3. Exploring heterogeneity between cohorts: median age, number (percentage) of patients ≥50 years old at ART initiation and analysis closure, and estimates of the crude effect of age on mortality, by cohort.

	Cohort							TOTAL (n=83 566)
	Gugulethu (n=5918, 7%)	Hlabisa (n=19946, 24%)	Khayelitsha (n=23713, 28%)	McCord (n=6490, 8%)	Thembalethu (n=23328, 28%)	Tygerberg (n=4171, 5%)		
Age, median (yrs)	34 (29-40)	35 (29-42)	34 (29-40)	35 (30-42)	36 (31-43)	34 (29-41)	35 (29-42)	
Patients ≥50 years old, n(%)								
At ART initiation	407 (7)	2 167 (11)	1473 (6)	608 (9)	2 294 (10)	346 (8)	7 295 (9)	
Initiating ART at CD4 <50 cells/μL*	55 (14)	205 (9)	179 (12)	150 (25)	465 (20)	49 (14)	1 103 (15)	
At analysis closure	138 (13)	2 253 (16)	1 479 (10)	389 (14)	1 850 (16)	195 (15)	6 304 (14)	
Age categories (yrs)	Crude Hazard Ratios (HR) for the effect of age on mortality by cohort							
16-29	1	1	1	1	1	1		
30-34	0.99 (0.76-1.31)	1.16 (1.03-1.32)	1.08 (0.95-1.22)	0.84 (0.63-1.12)	1.13 (0.99-1.28)	1.15 (0.83-1.58)	1.06 (0.99-1.14)	
35-39	1.22 (0.92-1.62)	1.22 (1.07-1.38)	1.07 (0.93-1.22)	0.99 (0.74-1.31)	1.28 (1.12-1.45)	1.34 (0.97-1.85)	1.16 (1.08-1.24)	
40-44	1.69 (1.26-2.28)	1.14 (0.99-1.31)	1.30 (1.12-1.50)	1.01 (0.73-1.40)	1.38 (1.20-1.58)	1.90 (1.37-2.64)	1.29 (1.20-1.40)	
45-49	2.09 (1.52-2.89)	1.35 (1.16-1.57)	1.33 (1.11-1.60)	1.13 (0.78-1.64)	1.42 (1.22-1.65)	1.40 (0.94-2.09)	1.45 (1.33-1.58)	
50-54	2.97 (1.11-2.67)	1.41 (1.18-1.68)	1.55 (1.24-1.94)	1.61 (1.07-2.40)	1.75 (1.47-2.08)	2.72 (1.82-4.05)	1.73 (1.57-1.92)	
55-59	2.97 (1.83-4.84)	1.29 (1.01-1.65)	2.65 (2.04-3.44)	1.03 (0.55-1.92)	2.08 (1.67-2.58)	1.62 (0.82-3.23)	1.94 (1.70-2.20)	
60-64	5.53 (2.90-10.57)	2.20 (1.64-2.95)	2.91 (1.90-4.46)	1.12 (0.49-2.56)	2.45 (1.79-3.36)	3.19 (1.39-7.32)	2.63 (2.19-3.16)	
65+	2.36 (0.75-7.44)	2.00 (1.45-2.74)	4.51 (2.78-7.32)	1.40 (0.44-4.42)	3.85 (2.55-5.81)	3.54 (1.43-8.78)	3.00 (2.43-3.70)	

*As a percentage of patients ≥50 years at ART initiation

Supplementary Table S4. Hazard ratios of the interaction between the effects of baseline CD4 + cell count and age on mortality.

Age (years)	Median baseline CD4+ cell count (cells/ μ L)		
	<50	50-199	\geq 200
16-39	1	1	1
40-49	1.49 (1.24-1.80)	1.25 (1.15-1.36)	1.14 (1.03-1.27)
\geq 50	2.52 (2.04-3.11)	1.79 (1.62-1.98)	1.54 (1.33-1.78)

**Supplementary Table S5.
Crude and adjusted estimates of the hazard of loss to follow-up.**

	Crude HR	Adjusted HR (n=83,576)
Age groups (years)		
16-29	1	1
30-34	0.87 (0.84-0.90)	0.80 (0.77-0.83)
35-39	0.87 (0.84-0.90)	0.78 (0.75-0.82)
40-44	0.84 (0.80-0.87)	0.76 (0.72-0.80)
45-49	0.81 (0.76-0.85)	0.73 (0.69-0.77)
50-54	0.80 (0.74-0.85)	0.71 (0.69-0.77)
55-59	0.93 (0.85-1.01)	0.82 (0.74-0.91)
60-64	1.17 (1.02-1.33)	0.98 (0.85-1.14)
65+	0.93 (0.76-1.13)	0.90 (0.73-1.11)
Male gender	1.25 (1.21-1.28)	1.33 (1.29-1.37)
CD4+ cell count, median (cells/ μ L)		
<50	1	1
50-99	0.94 (0.90-0.98)	1.02 (0.98-1.07)
100-199	0.93 (0.89-0.96)	1.10 (1.05-1.14)
200-349	0.98 (0.94-1.03)	1.34 (1.27-1.40)
350-499	1.01 (0.90-1.14)	1.51 (1.35-1.70)
\geq 500	1.03 (0.88-1.20)	1.63 (1.38-1.93)
WHO stage		
I & II	1	1
III	0.97 (0.94-1.00)	0.86 (0.82-0.89)
IV	0.95 (0.91-1.00)	0.76 (0.72-0.81)
Anaemia		
none	1	1
mild	1.08 (1.04-1.12)	1.14 (1.08-1.20)
moderate	1.20 (1.15-1.26)	1.30 (1.22-1.38)
severe	1.27 (1.19-1.35)	1.47 (1.36-1.59)
TB at ART start	1.06 (1.01-1.11)	1.09 (1.01-1.17)
Cohort		
Gugulethu	1	1
Hlabisa	0.26 (0.24-0.27)	0.24 (0.23-0.25)
Khayelitsha	0.33 (0.32-0.35)	0.32 (0.31-0.34)
McCord	1.45 (1.39-1.51)	0.62 (0.59-0.66)
Themba Lethu	0.50 (0.48-0.52)	0.52 (0.50-0.54)
Tygerberg	0.25 (0.23-0.27)	0.24 (0.23-0.26)