Figure S1: Mortality among patients transferred and lost to follow-up compared with patients retained, by cohort
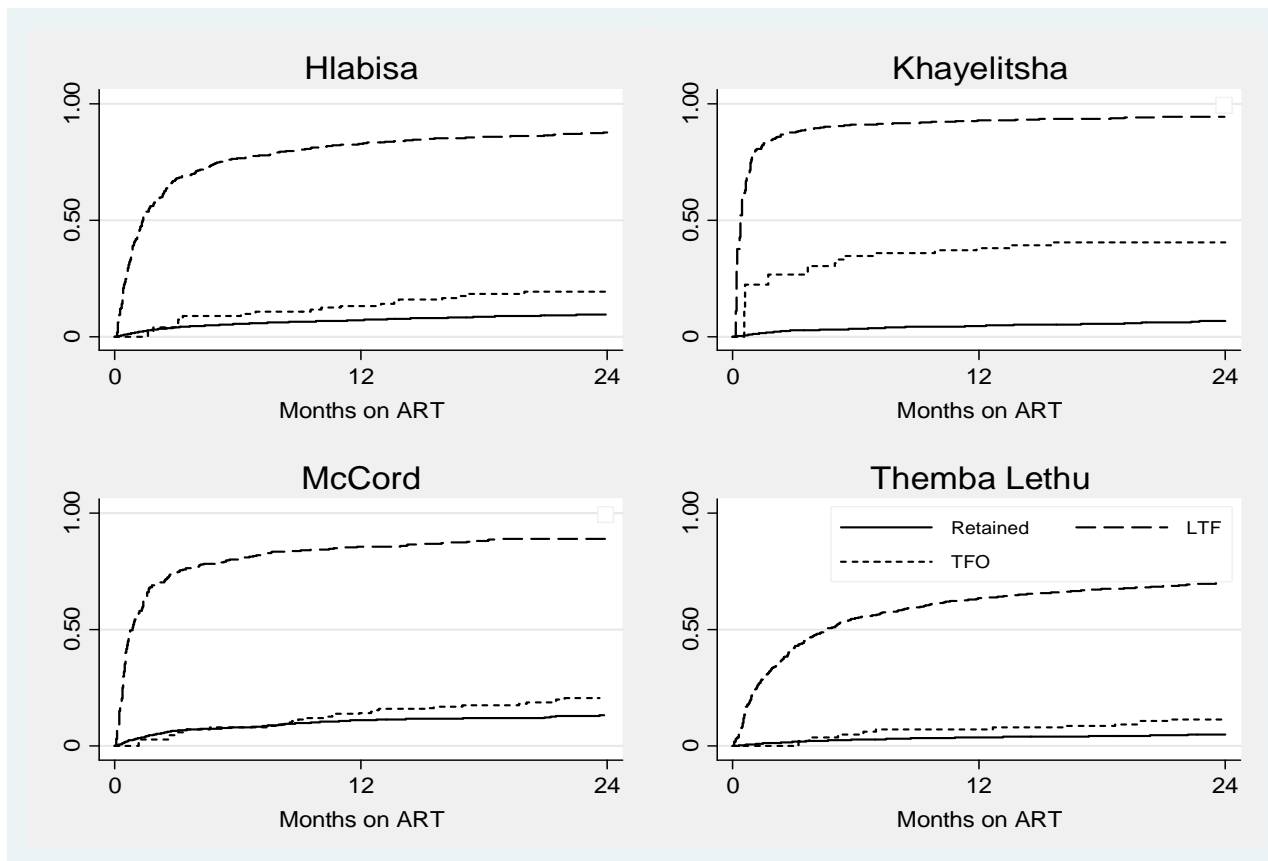
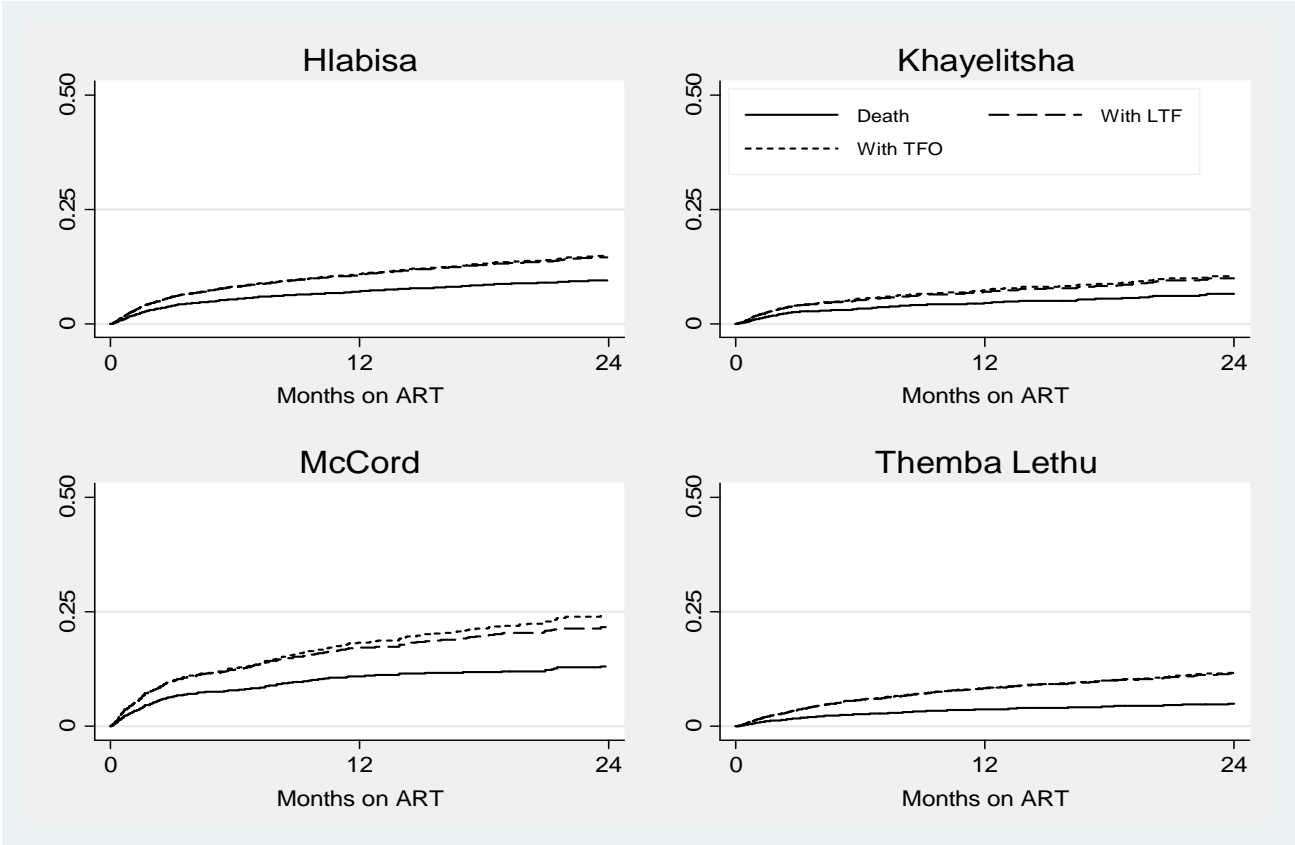# Figure S2: The impact of correction via linkage to the National Population Register, by cohort

Table S1: Baseline characteristics of patients not known to be dead at analysis closure*

Baseline characteristic	TFO n=287 (4%)	LTF n=921 (11%)	Hlabisa Retained n=6378 (78%)	p-value TFO vs ret	p-value LTF vs ret	TFO n=161 (5%)	LTF n=281 (8%)	Khayelitsha Retained n=2782 (82)	p-value TFO vs ret	p-value LTF vs ret	TFO n=349 (21%)	LTF n=265 (16%)	McCord Retained n=870 (53%)	p-value TFO vs ret	p-value LTF vs ret	TFO n=270 (4)	LTF n=1157 (19)	Themba Lethu Retained n=4553 (73)	p-value TFO vs ret	p-value LTF vs ret
Gender																				
Females, n(%)	744 (70)	1613 (61)	9939 (68)	0.244	<0.001	117 (73)	183 (65)	1948 (70)	0.475	0.089	241 (69)	157 (59)	549 (63)	0.490	0.257	198 (73)	745 (64)	3056 (67)	0.034	0.079
Age, years, median (IQR)	34 (29-41)	34 (29-41)	35 (30-42)	<0.001	<0.001	34 (30-40)	32 (28-37)	33 (29-39)	0.284	0.055	34 (30-41)	34 (29-40)	35 (30-40)	0.790	0.230	36 (30-43)	35 (30-41)	35 (31-41)	0.776	0.001
CD4+ cell count, cells/µL																				
Median (IQR)	90 (39-152)	85 (35-155)	109 (51-168)	0.027	<0.001	84 (34-136)	96 (46-159)	112 (55-168)	<0.001	0.021	85 (41-157)	66 (17-132)	92 (32-151)	0.753	0.001	79 (30-135)	81 (32-149)	91 (36-156)	0.050	0.010
Haemoglobin, g/dL																				
Median (IQR)	11 (9.6-12.1)	11 (9.2-12.1)	11.1 (10-12.6)	0.019	<0.001	10.4 (9.5-11.5)	10.6 (9.1-11.8)	11.1 (9.7-12.2)	0.023	0.002	10.8 (9.4-12.1)	10.7 (9.3-12)	11 (9.7-12.4)	0.182	0.019	11 (10-13)	11 (10-13)	12 (10-13)	0.015	<0.001
Weight, kg																				
Median (IQR)	58 (51-66)	58 (50-66)	60 (53-68)	0.006	<0.001	56 (50-65)	57 (50-65)	60 (53-69)	<0.001	<0.001	61 (51-70)	56 (49-68)	61 (54-68)	0.352	0.003	59 (50-66)	58 (50-66)	60 (52-68)	0.081	<0.001

*excluding 1207 (6%) deaths

Table S2: Cumulative incidence functions for loss to programme estimated using competing risks regression

	CIF death	CIF TFO	CIF LTF
12 months	5.5 (5.1-5.8)	3.6 (3.3-3.9)	9.8 (9.3-10.2)
24 months	7.0 (6.6-7.4)	6.0 (5.7-6.5)	14.6 (14.1-15.2)

Table S3: Predictors of transfer

Variable	Crude	AHR
Male gender	0.96 (0.84-1.09)	0.89 (0.77-1.03)
Age		
16-24	1	1
25-34	0.95 (0.75-1.20)	0.91 (0.71-1.16)
35-44	0.81 (0.63-1.03)	0.81 (0.63-1.05)
45+	0.73 (0.56-0.96)	0.83 (0.62-1.10)
CD4+ cell count, cells/µL		
<25	1	1.00
25-49	1.02 (0.81-1.29)	1.07 (0.85-1.35)
50-99	0.95 (0.77-1.16)	1.06 (0.86-1.30)
100-199	0.81 (0.67-0.97)	0.90 (0.74-1.08)
>=200	0.63 (0.47-0.83)	0.73 (0.55-0.97)
Cohort		
Khayelitsha (ref)	1	1
Hlabisa	0.67 (0.55-0.82)	0.74 (0.60-0.91)
McCord	5.09 (4.22-6.13)	5.24 (4.27-6.42)
Themba Lethu	0.68 (0.56-0.82)	0.70 (0.57-0.87)

Table S4:

Cox's models: 1) TFO and LTF censored; 2) LTF time-varying including deaths after LTF;
and 3) LTF & TFO time-varying, including deaths after either LTF or TFO

Variable	Model 1 (TF & LTF censored)		Model 2 (LTF time-varying)		Model 3 (TF & LTF time-varying)	
	Crude HR	AHR	Crude HR	AHR	Crude HR	AHR
Male gender	1.58 (1.41-1.77)	1.29 (1.14-1.46)	1.65 (1.52-1.80)	1.19 (1.08-1.30)	1.65 (1.52-1.79)	1.19 (1.09-1.31)
Age (yrs)						
16-24	1	1	1	1	1	1
25-34	1.08 (0.84-1.39)	1.11 (0.85-1.45)	1.12 (0.92-1.35)	1.29 (1.05-1.58)	1.13 (0.94-1.36)	1.29 (1.05-1.57)
35-44	1.19 (0.92-1.53)	1.17 (0.89-1.54)	1.28 (1.06-1.54)	1.50 (1.22-1.85)	1.28 (1.06-1.54)	1.50 (1.22-1.85)
45+	1.57 (1.20-2.04)	1.57 (1.18-2.09)	1.59 (1.31-1.94)	2.03 (1.64-2.53)	1.58 (1.30-1.93)	2.03 (1.63-2.53)
CD4+ cell count (cells/µl)						
0-24	1	1	1	1	1	1
25-49	0.80 (0.67-0.96)	0.76 (0.63-0.91)	0.78 (0.68-0.90)	0.73 (0.64-0.83)	0.77 (0.68-0.88)	0.72 (0.63-0.82)
50-99	0.51 (0.43-0.61)	0.48 (0.40-0.56)	0.52 (0.46-0.59)	0.51 (0.44-0.57)	0.52 (0.46-0.58)	0.50 (0.44-0.57)
100-199	0.31 (0.26-0.3)	0.28 (0.24-0.33)	0.33 (0.29-0.37)	0.33 (0.29-0.37)	0.32 (0.29-0.36)	0.33 (0.29-0.37)
>=200	0.36 (0.28-0.46)	0.32 (0.25-0.42)	0.33 (0.27-0.40)	0.30 (0.24-0.36)	0.32 (0.26-0.39)	0.29 (0.24-0.36)
Cohort						
Khayelitsha (ref)	1	1	1	1	1	1
Hlabisa	1.48 (1.25-1.76)	1.49 (1.25-1.78)	1.53 (1.33-1.75)	1.28 (1.10-1.48)	1.48 (1.30-1.69)	1.27 (1.10-1.46)
McCord	2.13 (1.71-2.64)	1.58 (1.24-2.00)	2.12 (1.79-2.51)	1.18 (0.98-1.43)	2.26 (1.92-2.66)	1.21 (1.01-1.46)
Themba Lethu	0.72 (0.59-0.87)	0.62 (0.50-0.76)	1.09 (0.95-1.26)	0.60 (0.51-0.80)	1.06 (0.94-1.22)	0.59 (0.51-0.69)
Status (time-varying)						
Retained	N/A	N/A	1	1	1	1
Lost to follow-up			20.8 (19.0-22.7)	22.7 (20.7-24.9)	20.20 (18.50-22.05)	22.03 (20.05-24.21)
Transferred					3.71 (2.96-4.65)	3.11 (2.42-3.99)

Table S5:

Sensitivity analysis: baseline characteristics of patients with and without IDs

Baseline characteristic	TOTAL (n=31733)		
	without IDs	with IDs	p-value
	10998 (35)	20735 (65)	
Gender			
Females, n(%)	7218 (66)	13731 (66)	0.29
Age, years, median (IQR)	34 (29-41)	35 (30-42)	<0.001
CD4+ cell count, cells/µL			
Median (IQR)	96 (37-163)	104 (45-165)	<0.001
0-24 n(%)	1703 (18)	2887 (15)	
25-49	1242 (13)	2204 (12)	
50-99	1957 (21)	3971 (21)	
100-199	3615 (38)	7732 (41)	
>=200	1013 (11)	1906 (10)	
missing (%)	*13%*	*10%*	
Viral load, log10 copies/ml			
median (IQR)	4.7 (4.2-5.3)	4.6 (4.1-5.1)	<0.001
missing, n(%)	*73%*	*62%*	
Haemoglobin, g/dL			
Median (IQR)	11 (9.8-12.6)	11 (9.8-12.4)	0.427
Weight, kg			
Median (IQR)	58 (51-67)	59 (52-68)	<0.001
Calendar year ART initiation, n(%)			
2004	1362 (12)	1990 (10)	<0.001
2005	1998 (18)	3612 (17)	
2006	2760 (25)	4447 (21)	
2007	3384 (31)	4223 (20)	
2008	1237 (11)	3964 (19)	
2009	257 (2)	2499 (12)	