

ONLINE APPENDIX 1
TABLE 1: Baseline study characteristics.

First author (ref. no)	Cohort size	Study type	Dates of cohort	f/u date	Follow-up time, in months unless otherwise stated	Location ^a (overlapping cohorts are coded by symbol)	Medical setting	Rural versus urban	Province	Data source (public vs. research)	Age, in years unless otherwise reported	Baseline CD4, cells/mm ³ unless otherwise reported	Specific indications for cohort entry ^a		
												Median	IQR	Median	IQR
Adult studies															
3-month LTFU defn															
Brennan ^{23§}	19 699	Obs	2004– 2011	Dec 2012	12	12–12	Themba Lethu, JNB	Clinic	Urban	Gauteng	Public	36.6	31.3– 43.2	105	40– 179
Brennan ^{24§}	3940	Obs	2009– 2011	July 2013	24	10.6–24.0	Themba Lethu, JNB	Clinic	Urban	Gauteng	Public	37.6	31.8– 44.2	114	47– 185
Evans ^{25§}	8409	Obs	2004– 2009	Apr 2010	12	-	Themba Lethu, JNB	Clinic	Urban	Gauteng	Public	36.2	31.3– 42.5	82.0	31– 150
Evans ^{26§}	9399	Obs	2004– 2009	May 2010	NR	NR	Themba Lethu, JNB	Clinic	Urban	Gauteng	Public	NR	NR	NR	-
Fox ^{27§}	13 227	Obs	2004– 2010	Aug 2011	NR	NR	Themba Lethu, JNB	Clinic	Urban	Gauteng	Public	NR	NR	NR	-
Fox ^{28§}	21 101	Obs	2004– 2011	-	1.9 years	0.6–4.1	Themba Lethu, JNB	Clinic	Urban	Gauteng	Public	36	30.8– 42.6	103	39– 178
Fox ^{29§}	163	Obs	2010– 2012	Sep 2013	NR	NR	Themba Lethu, JNB	Clinic	Urban	Gauteng	Public	37.1	31.5– 43.9	158	95– 198
Maskew ^{30§}	9139	Obs	2004– 2008	2010	24.0	13.5–24.0	Themba Lethu, JNB	Clinic	Urban	Gauteng	Public	36.3	31.3– 42.5	74	27– 144
Shearer ^{31§}	2385	Obs	2010– 2011	-	12.0	0.1–12.0 person months	Themba Lethu, JNB	Clinic	Urban	Gauteng	Public	37.7	31.5– 44.1	132	-
Shearer ^{15,a§}	12 840	Obs	2004– 2011	Apr 2013	12	-	Themba Lethu, JNB	Clinic	Urban	Gauteng	Public	36.9	31.6– 43.5	98	36– 169
Westreich ^{32§}	9173	Obs	2004– 2009	Mar 2010	18	8–37	Themba Lethu, JNB	Clinic	Urban	Gauteng	Public	NR	NR	NR	-
Maskew ^{33§}	3910	Obs	2004– 2009	Apr 2010	Range 6– 12 months	-	Themba Lethu, JNB	Clinic	Urban	Gauteng	Public	37	32–43	NR	NR
Clouse ^{34,a*}	1430	Obs	Apr–Dec 2010	May 2012	12	-	Witkoppen, JNB	Clinic	Urban	Gauteng	Public	34.4	29.3– 41.2	195	103– 266
Clouse ^{16*}	842	Obs	Jan–Jun 2010	June 2011	16.5	14.8–18.1	Witkoppen, JNB	Clinic	Urban	Gauteng	Public	34	28–40	211.5	92– 350
Evangelij ^{17,a**}	380	Obs	2009– 2013	-	3.35 years	-	Hlabisa subdistrict of uMkhanyakude, KZN	Clinic	Rural	KZN	Public	35	29–43	133	76– 175

Lessells ^{35**}	19 080	Obs	2004–2012	Jan 2013	4506 psy, median 86 days	-	Hlabisa, KZN	Mixed	Rural	KZN	Public	34	28–42	139	71–198	≥ 16 years
Mutevedzi ^{36*}	8846	Obs	2004–2009	Apr 2010	14 778 psy, 12-month outcomes reported	-	Hlabisa, KZN	Clinic	Rural	KZN	Public	NR	NR	119	58–174	≥ 16 years
Evans ^{18,a}	42 427	Obs	2004–2010	July 2011	NR	NR	CCMT sites, Gauteng and Mpumalanga	Clinic	Mixed	Gauteng, Mpumalanga	Public	NR	NR	NR	NR	> 10 years
Fatti ^{37,b}	40 861	Obs	2004–2009	Mar 2010	52 602 psy		Western Cape, KwaZulu-Natal, Eastern Cape, and Mpumalanga	Mixed	Mixed	Western Cape, KZN, Eastern Cape, Mpumalanga	Public	34.4	29.3–41.1	NR	NR	≥ 16 years
Grimsrud ³⁸⁺	2113	Obs	2012–2013	-	4.4 years	2.5–6.6	Gugulethu	Clinic	Urban	Western Cape	Public	38.8	34.0–44.5	134	-	> 12 months on ART, virally suppressed
Gupta ³⁹⁺	1544	Obs	2002–2006	Jan 2011	5.0 years	2.4–5.4	Gugulethu	Clinic	Urban	Western Cape	Public	Mean 34	95% CI 33.6–34.4	98	48–155	≥ 16 years
Nglazi ⁴⁰⁺	883	Obs	2002–2009	June 2010	NR	NR	Gugulethu, Cape Town	Clinic	Urban	Western Cape	Public	NR	NR	NR	NR	9–28 years
Orrell ⁴¹⁺	2959	Obs	2002–2009	Apr 2010	1.51 years	0.99–2.64	Hannan Crusaid Treatment Centre (HCTC)	Clinic	Urban	Western Cape	Public	NR	NR	NR	NR	> 15 years, achieving virological suppression on ART
Davies ⁴²	148	Obs	2004–2008	2010	96 weeks	-	Chris Hani Baragwanath Hospital, Soweto	Clinic	Urban	Gauteng	Public	32	21–54	122	50–156	prisoners
6-month LTFU defn																
Boulle ^{43α}	30 467	Obs	2001–2010	-	1.6 years	-	IeDEA-SA (Cape Town, Durban, KZN, JNB)	Clinic	Mixed	Western Cape, Gauteng, KZN	Public	35	30–41	102	42–166	> 16 years
Cornell ^{44α}	46 201	Obs	2002–2009	2012	77 578 psy	-	IeDEA-SA (Gauteng, KZN, Western Cape)	Mixed	Mixed	Western Cape, Gauteng, KZN	Public	34.9	29.7–41.5	101	42–166	16–80 years
Cornell ^{45α}	19 481	Obs	2004–2009	2011	15.5 person months	5.7–27.5	IeDEA-SA (Hlabisa, Khayelitsha, McCord, Thembu Lethu)	Mixed	Mixed	KZN, Western Cape, Gauteng	Public	35	30–42	103	144–164	16–80 years with ID#s
Cornell ^{19,aα}	83 566	Obs	2004–2013	-	2.13 psy	0.77–4.13	IeDEA-SA (Gugulethu, Khayelitsha, Tygerberg,	Mixed	Mixed	KZN, Western Cape, Gauteng	Public	NR	NR	125	56–192	16–80 years

									McCord, Hlabisa, Themba Lethu)								
Johnson ^{46,a}	37 740	Obs	2001–2010	+ f/u	1.69 years	-		IeDEA-SA (Aurum, Hlabisa, Khayelitsha, McCord, Themba Lethu)	Mixed	Urban	KZN, Western Cape, Gauteng	Public	NR	NR	NR	NR	≥ 15 years
Wandeler ^{20,a} α	1556	Obs	2007–2010	-	NR	NR		IeDEA-SA (Aurum, Khayelitsha, Themba Lethu, Tygerberg)	Mixed	Urban	Western Cape, Gauteng	Public	NR	NR	NR	NR	≥ 16 years switching to second line ART regimen
Fairall ⁴⁷		Int	2008–2009	Jun 2010	NR	NR	Free State province	Clinic	Rural	Free State	Research	NR	NR	NR	NR	NR	≥ 16 years, some already on ART
Fatti ^{48,96}	66 953	Obs	2004–2010	Mar 2011	14.8	7.7–25.5	Western Cape, KZN, Eastern Cape, and Mpumalanga	Mixed	Mixed	Western Cape, KZN, Eastern Cape, Mpumalanga	Public	NR	NR	NR	NR	NR	≥ 16 years
Fatti ^{22,a,96}	90 071	Obs	2004–2010	2011	NR	NR	Western Cape, Eastern Cape, KZN, and Mpumalanga	Mixed	Mixed	Western Cape, Eastern Cape, KZN, Mpumalanga	Public	NR	NR	NR	NR	NR	≥ 25 years
Grimsrud ^{81,a+}	5154	Obs	2002–2011	June 2012	13 744 psy	-	Gugulethu	Clinic	Urban	Western Cape	Public	33.8	28.9– 40.2	121	60– 184		
Johnston ⁴⁹	417	Obs	2003–2008	Mar 2010	Reported outcomes at 15 months	-	Aurum Institute (Gauteng, Free State, Limpopo, Mpumalanga and North West)	Clinic	Urban	Gauteng, Free State, Limpopo, Mpumalanga , North West	Public	NR	NR	NR	NR	Switch to second line therapy, VL ≥ 400 at switch	
Leisegang ⁵⁰	7335	Obs + model	2000–2010	-	NR	NR	Khayelitsha (public) and Broadreach (private)	Clinic	Mixed	Western Cape, Eastern Cape, KZN, Mpumalanga	Public	NR	NR	NR	NR	≥ 19, CD4 < 200	
Luque- Fernandez ⁵¹	2829	Obs + model	2007–2011	-	8821 psy	-	Khayelitsha clubs	Clinic	Urban	Western Cape	Public	33	29–39	121	60– 176	≥ 18 years, on ART for ≤ 18 months, current CD4 > 200, virologically suppressed > 14 years	
Mberi ^{21,a}	595	Obs	2004–2012	-	1205 days	851–1604	Tshepang Clinic, Dr. George Mukhari Hospital, Gauteng	Clinic	Urban	Gauteng	Public	35.9	30.1– 43.5	NR	NR		
Mutevedzi ^{52*} *	4674	Obs	2004–2011	July 2012	2.77 years; 13 610 psy		Hlabisa, KZN	Clinic	Rural	KZN	Public	34	28–42	129	67– 182	≥ 16 years	
Schoffelen ⁵³	191	Obs	2004–2010	-	19 + 6 + 20	(11–31) + (3–11) + (11–35)	Ndlovu Medical Centre, Limpopo	Clinic	Rural	Limpopo	Public	33	24–40	62	18– 139	Switched to second line therapy	

Velen ⁵⁴ ∞	6196	Obs	2007–2009	June 2011	1.9 years	1.0–2.0	JNB and Gauteng, NW provinces	NR	^a NR	^a NR	Public	40	34–47	133	66–193	≥ 17 years
Westreich ⁵⁵ §	7534	Obs	2004–2011	-	2.1 years	0.8–4.3	Themba Lethu, JNB	Clinic	Urban	Gauteng	Public	33	29–38	95	36–165	Non-pregnant women
Other LTFU defn																
Brennan ⁵⁶ §	890	Obs	2004–2009	Sep 2010	35.8	21.8–51.4	Themba Lethu, JNB	Clinic	Urban	Gauteng	Public	37.1	32.5–43.2	245	115–426	TDF initiated or switch
Maskew ⁵⁷ §	7354	Obs	2004–2010	Mar 2011	35.4	20.3–54.7	Themba Lethu, JNB	Clinic	Urban	Gauteng	Public	36.7	31.6–43.0	93	36–159	Viral suppression within 6 months of initiation
Levison ⁵⁸ +	202	Obs	2002–2010	-	11 + 5	(7–18) + (3–8)	Gugulethu	Clinic	Urban	Western Cape	Public	mean 34 ± 7 s.d.	-	212	133–289	≥ 15 years starting 2nd line
Nglazi ⁵⁹ +	4511	Obs	2002–2009	Dec 2010	2.5 years	1.2–4.3	Hannan Crusaid Treatment Centre, Gugulethu	Clinic	Urban	Western Cape	Public	29.0	15.0–33.6	109	53–168	Naïve and non-naïve ≥ 15 years
Loggerenber g ⁶⁰	297	Int	2007–2009	2010	NR (9–12 months estimated)	-	CAPRISA eThekweni HIV-TB clinic, Durban	Clinic	Urban	KZN	Research	mean, s.d. 35.8	8.1	121.5	55–233	-
Hoffman ⁶¹ ∞	15 060	Obs	2003–2008	Mar 2010	1.8 years	0.5–3.0	JNB and Gauteng, NW provinces	Clinic	NR	NR	Public	38	32–45	127	58–199	-
Paediatric studies																
3-month LTFU defn																
Fatti ⁶² ¶	3007	Obs	2004–2009	Mar 2010	4209 psy	-	Western Cape, KZN, Eastern Cape, and Mpumalanga	Mixed	Mixed	Western Cape, Eastern Cape, KZN, Mpumalanga	Public	6.4	3.5–9.6	12%	7–17	< 16 years
Grimwood ⁶³ ¶	3563	Obs	2004–2009	Mar 2010	4848 psy	-	Western Cape, KZN, Eastern Cape and Mpumalanga	Mixed	Mixed	Western Cape, KZN, Eastern Cape, Mpumalanga	Public	6.3	3.3–9.5	12.0%	7.0–17.9	< 16 years
6-month LTFU defn																
Cotton ⁶⁴	377	Int	2005–2008	Jul 2011	4.8 years	95% CI 3.5–5.9	Soweto and Tygerberg research units	Research unit	Urban	Gauteng, Western Cape	Research	7.4 weeks	-	35%	-	< 12 weeks

Meyers ^{65#}	2102	Obs	2004–2008	+ f/u	17	6–29	HSCC clinic, Soweto	Clinic	Urban	Gauteng	Public	4.27	1.61–7.45	11.45%	-	< 15 years
Sengayi ^{66,a#}	4266	Obs	2004–2011	Apr 2012	24 month reported outcomes	-	HSCC in Soweto	Clinic	Urban	Gauteng	Public	4.2	1.4–7.4	mean 14.5%	s.d. 9.3	< 12 with min f/u of 6 months
Gsponer ^{67\Psi}	6749	Obs	1997–2010	+ f/u	NR	NR	IeDEA-SA (peds)	Mixed	Mixed	Western Cape, KZN, Gauteng	Public	NR	NR	NR	NR	< 10 years
Fatti ^{68\}	4853	Obs	2004–2010	Mar 2011	NR	NR	Western Cape Province, Eastern Cape, KZN, and Mpumalanga	Mixed	Mixed	Western Cape, Eastern Cape, KZN, Mpumalanga	Public	6.3	3.2–9.7	12.0%	7–17.1	< 16 years
Lilian ^{69\Sigma}	23	Obs	2008–2010	-	51.6 weeks	rg 0–112.1	Rahima Moosa Mother and Child Hospital (RMMCH), JNB	Hospital	Urban	Gauteng	Research	16 weeks	-	NR	NR	Pregnant women > 18 years + their infants
Other LTFU defn																
Chhagan ^{70,a}	151	Obs	2006–2009	2011	24	-	King Edward Hospital, Durban	Hospital	Urban	KZN	Public	61.3 months	29.6–90.1	12.6%	8.0–19.1	<12 years
Davies ^{71\Psi}	5485	Obs	1999–2008	2010	16	6–29	IeDEA-SA (peds): Harriet Shezi, Rahmia Moosa, Red Cross, Tygerberg, Khayelitsha, Gugulethu, McCord	Mixed	Urban	Gauteng, Western Cape, KZN	Public	45 months	15–82	12%	7–17	< 16 years
Kuhn ^{72\Sigma}	195	Int	2005–2007	June 2010	156 weeks	-	Rahima Moosa Mother and Child Hospital, JNB	Hospital	Urban	Gauteng	Research	10 months	-	18.50%	-	< 24 months, previously exposed to NVP, achieved virological suppression < 400 with LPV/r
Shiau ^{73\Sigma}	195	Int	2005–2010	-	Range 99–245 weeks	-	Rahima Moosa Mother and Child Hospital, JNB	Hospital	Urban	Gauteng	Research	8.8 months	5.1–13.5	NR	NR	< 24 months on LPV/r, viral suppression during first 12 months of tx
MacDonald ⁷⁴	337	Obs	2005–2009	2011	16	8.5–29	Alexandra Health Centre and University Clinic, South Africa	Clinic	Urban	Gauteng	Public	5.5	2.4–8.8	12.5%	6.2–16.9	< 15 years
Morsheimer ⁷⁵	613	Obs	2004–2009	+ f/u	28	16.5–42.6	ART clinics in Cape Town	Clinic	Urban	Western Cape	Public	26.4 months	10.2–63	16.7%	10.7–23.3	< 14 years

Smith ⁷⁶	20	Obs	2012	-	NR	NR	Mseleni Hospital, Umkhanyakude District, KZN	Mixed	Rural	KZN	Public	NR	NR	NR	NR	< 1 year
Pregnancy studies																
3-month LTFU defn																
Van Schalkwyk ^{77,a}	250	Obs	2008–2010	+ f/u	Before delivery ART: 9.0	5.1–14.1 (No other f/u listed)	Tygerberg Hospital, Cape Town	Clinic	Urban	Western Cape	Public	28	25–32	176	112–218	Pregnant women
Other LTFU defn																
Clouse ^{78,a*}	93	Obs	Jan–Jun 2010	June 2011	12	-	Witkoppen, JNB	Clinic	Urban	Gauteng	Public	27	24–31	244	171–299	Pregnant women > 18 years
Schwartz ^{79,a*}	100	Int	May–July 2013	July 2014	12	-	Witkoppen, JNB	Clinic	Urban	Gauteng	Research	NR	NR	434	297–515	Pregnant women
Phillips ⁸⁰	358	Obs	Jan 2011–Sep 2012	Mar 2013	2446 woman months	-	Gugulethu antenatal clinic	Clinic	Urban	Western Cape	Public	28	26–33	233	157–287	Pregnant women

NR, not reported; LTFU, lost to follow-up; Defn, definition; Obs, observational; int, interventional; psy, person-years; JNB, Johannesburg; KZN, KwaZulu-Natal; LPV/r, lopinavir/ritonavir; NVP, nevirapine; tx, treatment; ART, antiretroviral therapy; s.d., standard deviation; HSCC, Harriet Shezi Children's Clinic; IQR, interquartile range; CI, confidence interval.

Note: Overlapping cohorts are coded by symbol.

^a, If no indications, ART naive adults > 18 years.

Note: This is Online Appendix 1 of Kaplan S, Nteso KS, Ford N, Boulle A, Meintjes G. Loss to follow-up from antiretroviral therapy clinics: A systematic review and meta-analysis of published studies in South Africa from 2011 to 2015. *S Afr J HIV Med.* 2019;20(1), a984. <https://doi.org/10.4102/sajhivmed.v20i1.984>