

Mortality Rate in a Cohort of People Living With HIV in Rural Tanzania After Accounting for Unseen

Mortality Among Those Lost to Follow-up

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Web Table 1. Covariate specifications for multiple imputation, weight estimation models and outcome models

Covariate	Specification for multiple imputation	Specification for weight models ^a	Specification for outcome (mortality) model
Baseline covariates			
Year of enrollment	Categorical, individual years	Categorical, individual years	2005-07, 2008-10, 2011-12, 2013-15 ¹
Sex	Female, male (logit)	Female, male	Female, male
Age, years	Natural log transformation	Linear, centred	15-24, 25-34, 35-44, ≥44
Marital status	Married/cohabiting, never married, separated/divorced, widowed/other (mlogit)	Married/cohabiting, never married, separated/divorced, widowed/other	Married/cohabiting, never married, separated/divorced, widowed/other
Partner HIV status	Positive, negative, unknown, not applicable (mlogit)	Positive, negative, unknown, not applicable	Positive, negative, unknown, not applicable
Disclosure of HIV status	No, yes (logit)	No, yes	No, yes
Referred to clinic as hospital in-patient	No, yes (logit)	No, yes	No, yes
Distance from centre of ward of residence to clinic, km	1, 2-<50, 50-<80, ≥80 (mlogit)	1, 2-<50, 50-<80, ≥80	1, 2-<50, 50-<80, ≥80
Smoking	Never, stopped, current (mlogit)	Never, stopped, current	Never/stopped, current
Pregnant	No, yes	No, yes	No, yes
BMI, ^b kg/m ²	Square root transformed (truncated regression with lower limit 3)	Linear, centred	<18.5, 18.5-<25, 25-<30, ≥30 ²
WHO stage	1, 2, 3, 4 (mlogit)	1, 2, 3, 4	1, 2, 3, 4
CD4 count, cells/mm ³	Square root transformed (truncated regression with lower limit 0)	Linear, centred	<200, 200-349, ≥350
Tuberculosis	No, yes	No, yes	No, yes
Time-dependent covariates			
Year LTFU	-	Categorical, individual years	-
Time since ART initiation during follow-up, months	0, <6, 6-<12, 12-<24, ≥24 (at end of follow-up)	0, <6, 6-<12, ≥12 (at end of follow-up)	0, <6, 6-<12, ≥12 (time-dependent)

Covariate	Specification for multiple imputation	Specification for weight models ^a	Specification for outcome (mortality) model
Number of gaps in care (periods of LTFU)	0, 1, 2, ≥3 (at end of follow-up)	0, 1, 2, ≥3 (at end of follow-up)	0, 1, 2, ≥3 (time-dependent)
Time between LTFU and attempted traced	-	Linear (model for successful tracing only)	-
Attempted traced	No (including for those not lost), yes	-	-
Successfully traced	No (including for those lost or lost but not attempted traced), yes	-	-
Outcome died	No, yes	-	-
Hazard	Nelson-Aalen estimator of the baseline cumulative hazard	-	-

ART, antiretroviral therapy.

^aModels are with outcome (a) attempted traced and (b) successfully traced.

^bBody mass index (BMI) calculated as weight in kilograms divided by height in meters squared.

Web Table 2. Characteristics of KIULARCO participants at enrollment among those lost to follow-up at database censoring on November 15, 2015, by whether tracing was attempted

Participant characteristic at enrollment	Tracing attempted		Total
	No	Yes	
Number	901 (31%)	2010 (69%)	2911 (100%)
Year of enrollment			
2005-07	325 (39%)	507 (61%)	832 (100%)
2008-09	309 (28%)	803 (72%)	1112 (100%)
2010-12	181 (25%)	531 (75%)	712 (100%)
2013-15	86 (34%)	169 (66%)	255 (100%)
Sex			
Male	337 (31%)	765 (69%)	1102 (100%)
Female	564 (31%)	1245 (69%)	1809 (100%)
Age, years			
15-24	71 (29%)	176 (71%)	247 (100%)
25-34	312 (30%)	737 (70%)	1049 (100%)
35-44	321 (34%)	629 (66%)	950 (100%)
≥45	197 (30%)	468 (70%)	665 (100%)
Marital status			
Married/cohabiting	460 (32%)	983 (68%)	1443 (100%)
Never married	186 (29%)	453 (71%)	639 (100%)
Separated/divorced	130 (29%)	325 (71%)	455 (100%)
Widowed/other	99 (34%)	188 (66%)	287 (100%)
Missing	26 (30%)	61 (70%)	87 (100%)
HIV status of partner			
Positive	93 (31%)	207 (69%)	300 (100%)
Negative	55 (30%)	126 (70%)	181 (100%)
Unknown	688 (31%)	1522 (69%)	2210 (100%)
Not applicable	23 (30%)	54 (70%)	77 (100%)
Missing	42 (29%)	101 (71%)	143 (100%)
Disclosure of HIV status			
No	287 (34%)	568 (66%)	855 (100%)
Yes	390 (27%)	1041 (73%)	1431 (100%)
Missing	224 (36%)	401 (64%)	625 (100%)
Referred to clinic as hospital in-patient			
No	782 (31%)	1761 (69%)	2543 (100%)
Yes	32 (27%)	88 (73%)	120 (100%)
Missing	87 (35%)	161 (65%)	248 (100%)
Distance of ward of residence from clinic, km			
1	121 (11%)	950 (89%)	1071 (100%)
2-<50	133 (35%)	251 (65%)	384 (100%)
50-<80	225 (58%)	160 (42%)	385 (100%)
≥80	178 (36%)	318 (64%)	496 (100%)
Missing	244 (42%)	331 (58%)	575 (100%)
Smoking			
Never/stopped	728 (32%)	1539 (68%)	2267 (100%)
Current	108 (26%)	311 (74%)	419 (100%)
Missing	65 (29%)	160 (71%)	225 (100%)
Pregnant			

Participant characteristic at enrollment	Tracing attempted		Total
	No	Yes	
No	535 (31%)	1164 (69%)	1699 (100%)
Yes	29 (26%)	81 (74%)	110 (100%)
BMI, kg/m ²			
Underweight (<18.5)	126 (33%)	260 (67%)	386 (100%)
Normal (18.5-<25)	263 (31%)	594 (69%)	857 (100%)
Overweight (25-<30)	47 (31%)	107 (69%)	154 (100%)
Obese (≥30)	11 (28%)	29 (73%)	40 (100%)
Missing	454 (31%)	1020 (69%)	1474 (100%)
WHO stage			
1	305 (30%)	728 (70%)	1033 (100%)
2	160 (29%)	388 (71%)	548 (100%)
3	230 (30%)	526 (70%)	756 (100%)
4	134 (36%)	238 (64%)	372 (100%)
Missing	72 (36%)	130 (64%)	202 (100%)
CD4 count, cells/mm ³			
<100	114 (29%)	284 (71%)	398 (100%)
100-199	82 (31%)	180 (69%)	262 (100%)
200-349	85 (28%)	218 (72%)	303 (100%)
≥350	137 (25%)	406 (75%)	543 (100%)
Missing	483 (34%)	922 (66%)	1405 (100%)
Tuberculosis			
No	834 (31%)	1874 (69%)	2708 (100%)
Yes	67 (33%)	136 (67%)	203 (100%)
Initiated ART within 30 days of enrollment			
No	618 (32%)	1306 (68%)	1924 (100%)
Yes	283 (29%)	704 (71%)	987 (100%)

Results are number (row %). ART, antiretroviral therapy; BMI, body mass index (missing for pregnant women).

Web Table 3. Characteristics of KIULARCO participants among those attempted traced, by whether successfully traced

Participant characteristic at enrollment	Successfully traced		Total
	No	Yes	
Number	1685 (84%)	325 (16%)	2010 (100%)
Year of enrollment			
2005-07	428 (84%)	79 (16%)	507 (100%)
2008-09	675 (84%)	128 (16%)	803 (100%)
2010-12	446 (84%)	85 (16%)	531 (100%)
2013-15	136 (80%)	33 (20%)	169 (100%)
Sex			
Male	646 (84%)	119 (16%)	765 (100%)
Female	1039 (83%)	206 (17%)	1245 (100%)
Age, years			
15-24	148 (84%)	28 (16%)	176 (100%)
25-34	609 (83%)	128 (17%)	737 (100%)
35-44	533 (85%)	96 (15%)	629 (100%)
≥45	395 (84%)	73 (16%)	468 (100%)
Marital status			
Married/cohabiting	827 (84%)	156 (16%)	983 (100%)
Never married	385 (85%)	68 (15%)	453 (100%)
Separated/divorced	265 (82%)	60 (18%)	325 (100%)
Widowed/other	155 (82%)	33 (18%)	188 (100%)
Missing	53 (87%)	8 (13%)	61 (100%)
HIV status of partner			
Positive	172 (83%)	35 (17%)	207 (100%)
Negative	109 (87%)	17 (13%)	126 (100%)
Unknown	1269 (83%)	253 (17%)	1522 (100%)
Not applicable	46 (85%)	8 (15%)	54 (100%)
Missing	89 (88%)	12 (12%)	101 (100%)
Disclosure of HIV status			
No	472 (83%)	96 (17%)	568 (100%)
Yes	865 (83%)	176 (17%)	1041 (100%)
Missing	348 (87%)	53 (13%)	401 (100%)
Referred to clinic as hospital in-patient			
No	1474 (84%)	287 (16%)	1761 (100%)
Yes	77 (88%)	11 (13%)	88 (100%)
Missing	134 (83%)	27 (17%)	161 (100%)
Distance of ward of residence from clinic, km			
1	796 (84%)	154 (16%)	950 (100%)
2-<50	216 (86%)	35 (14%)	251 (100%)
50-<80	119 (74%)	41 (26%)	160 (100%)
≥80	260 (82%)	58 (18%)	318 (100%)
Missing	294 (89%)	37 (11%)	331 (100%)
Smoking			
Never/stopped	1289 (84%)	250 (16%)	1539 (100%)
Current	257 (83%)	54 (17%)	311 (100%)
Missing	139 (87%)	21 (13%)	160 (100%)
Pregnant			
No	971 (83%)	193 (17%)	1164 (100%)

Participant characteristic at enrollment	Successfully traced		Total
	No	Yes	
Yes	68 (84%)	13 (16%)	81 (100%)
BMI, kg/m ²			
Underweight (<18.5)	215 (83%)	45 (17%)	260 (100%)
Normal (18.5-<25)	490 (82%)	104 (18%)	594 (100%)
Overweight (25-<30)	91 (85%)	16 (15%)	107 (100%)
Obese (≥30)	27 (93%)	2 (7%)	29 (100%)
Missing	862 (85%)	158 (15%)	1020 (100%)
WHO stage			
1	620 (85%)	108 (15%)	728 (100%)
2	318 (82%)	70 (18%)	388 (100%)
3	431 (82%)	95 (18%)	526 (100%)
4	206 (87%)	32 (13%)	238 (100%)
Missing	110 (85%)	20 (15%)	130 (100%)
CD4 count, cells/mm ³			
<100	239 (84%)	45 (16%)	284 (100%)
100-199	153 (85%)	27 (15%)	180 (100%)
200-349	177 (81%)	41 (19%)	218 (100%)
≥350	330 (81%)	76 (19%)	406 (100%)
Missing	786 (85%)	136 (15%)	922 (100%)
Tuberculosis			
No	1573 (84%)	301 (16%)	1874 (100%)
Yes	112 (82%)	24 (18%)	136 (100%)
Initiated ART within 30 days of enrollment			
No	1083 (83%)	223 (17%)	1306 (100%)
Yes	602 (86%)	102 (14%)	704 (100%)

Results are number (row %). ART, antiretroviral therapy; BMI, body mass index (missing for pregnant women).

Web Table 4. Tracing of KIULARCO participants by when lost to follow-up

	Year lost to follow-up				Total
	2005-07	2008-09	2010-12	2013-15	
Number (row %)	374 (13%)	815 (28%)	913 (31%)	809 (28%)	2911 (100%)
Attempted traced, number (column %)	219 (59%)	597 (73%)	650 (71%)	544 (67%)	2010 (69%)
Successfully traced, number (% of those attempted traced)	22 (10%)	107 (18%)	111 (17%)	85 (16%)	325 (16%)
Tracing outcome, number (% of those successfully traced)					
Died	12 (55%)	46 (43%)	51 (46%)	22 (26%)	131 (40%)
Transferred out	8 (36%)	49 (46%)	35 (32%)	38 (45%)	130 (40%)
Returned to care	0	0	2 (2%)	5 (6%)	7 (2%)
Did not want care	2 (10%)	12 (11%)	23 (21%)	20 (24%)	57 (18%)

Web Table 5. Characteristics of KIULARCO participants at enrollment among those successfully traced, by tracing outcome

Participant characteristic at enrollment	Tracing outcome				Total
	Returned to care	Died	Transferred out	Did not want care	
Number	7 (2%)	131 (40%)	130 (40%)	57 (18%)	325 (100%)
Year of enrollment					
2005-07	0 (0%)	36 (46%)	33 (42%)	10 (13%)	79 (100%)
2008-09	1 (1%)	44 (34%)	65 (51%)	18 (14%)	128 (100%)
2010-12	3 (4%)	42 (49%)	16 (19%)	24 (28%)	85 (100%)
2013-15	3 (9%)	9 (27%)	16 (48%)	5 (15%)	33 (100%)
Sex					
Male	2 (2%)	55 (46%)	30 (25%)	32 (27%)	119 (100%)
Female	5 (2%)	76 (37%)	100 (49%)	25 (12%)	206 (100%)
Age, years					
15-24	1 (4%)	6 (21%)	12 (43%)	9 (32%)	28 (100%)
25-34	4 (3%)	45 (35%)	51 (40%)	28 (22%)	128 (100%)
35-44	2 (2%)	40 (42%)	37 (39%)	17 (18%)	96 (100%)
≥45	0 (0%)	40 (55%)	30 (41%)	3 (4%)	73 (100%)
Marital status					
Married/cohabiting	4 (3%)	59 (38%)	63 (40%)	30 (19%)	156 (100%)
Never married	0 (0%)	25 (37%)	27 (40%)	16 (24%)	68 (100%)
Separated/divorced	1 (2%)	28 (47%)	24 (40%)	7 (12%)	60 (100%)
Widowed/other	2 (6%)	15 (45%)	13 (39%)	3 (9%)	33 (100%)
Missing	0 (0%)	4 (50%)	3 (38%)	1 (13%)	8 (100%)
HIV status of partner					
Positive	2 (6%)	9 (26%)	14 (40%)	10 (29%)	35 (100%)
Negative	0 (0%)	5 (29%)	8 (47%)	4 (24%)	17 (100%)
Unknown	4 (2%)	109 (43%)	99 (39%)	41 (16%)	253 (100%)
Not applicable	0 (0%)	4 (50%)	4 (50%)	0 (0%)	8 (100%)
Missing	1 (8%)	4 (33%)	5 (42%)	2 (17%)	12 (100%)
Disclosure of HIV status					
No	1 (1%)	45 (47%)	34 (35%)	16 (17%)	96 (100%)
Yes	5 (3%)	64 (36%)	75 (43%)	32 (18%)	176 (100%)
Missing	1 (2%)	22 (42%)	21 (40%)	9 (17%)	53 (100%)
Referred to clinic as hospital in-patient					
No	7 (2%)	111 (39%)	120 (42%)	49 (17%)	287 (100%)
Yes	0 (0%)	5 (45%)	4 (36%)	2 (18%)	11 (100%)
Missing	0 (0%)	15 (56%)	6 (22%)	6 (22%)	27 (100%)
Distance of ward of residence from clinic, km					
1	5 (3%)	76 (49%)	40 (26%)	33 (21%)	154 (100%)
2-<50	2 (6%)	15 (43%)	9 (26%)	9 (26%)	35 (100%)
50-<80	0 (0%)	3 (7%)	36 (88%)	2 (5%)	41 (100%)
≥80	0 (0%)	23 (40%)	31 (53%)	4 (7%)	58 (100%)
Missing	0 (0%)	14 (38%)	14 (38%)	9 (24%)	37 (100%)
Smoking					
Never/stopped	6 (2%)	102 (41%)	96 (38%)	46 (18%)	250 (100%)
Current	0 (0%)	22 (41%)	25 (46%)	7 (13%)	54 (100%)

Participant characteristic at enrollment	Tracing outcome				Total
	Returned to care	Died	Transferred out	Did not want care	
Missing	1 (5%)	7 (33%)	9 (43%)	4 (19%)	21 (100%)
Pregnant					
No	5 (3%)	71 (37%)	93 (48%)	24 (12%)	193 (100%)
Yes	0 (0%)	5 (38%)	7 (54%)	1 (8%)	13 (100%)
BMI, kg/m ²					
Underweight (<18.5)	1 (2%)	26 (58%)	11 (24%)	7 (16%)	45 (100%)
Normal (18.5-<25)	4 (4%)	43 (41%)	33 (32%)	24 (23%)	104 (100%)
Overweight (25-<30)	2 (13%)	4 (25%)	8 (50%)	2 (13%)	16 (100%)
Obese (≥30)	0 (0%)	0 (0%)	2 (100%)	0 (0%)	2 (100%)
Missing	0 (0%)	58 (37%)	76 (48%)	24 (15%)	158 (100%)
WHO stage					
1	3 (3%)	33 (31%)	49 (45%)	23 (21%)	108 (100%)
2	3 (4%)	26 (37%)	33 (47%)	8 (11%)	70 (100%)
3	0 (0%)	49 (52%)	29 (31%)	17 (18%)	95 (100%)
4	0 (0%)	14 (44%)	11 (34%)	7 (22%)	32 (100%)
Missing	1 (5%)	9 (45%)	8 (40%)	2 (10%)	20 (100%)
CD4 count, cells/mm ³					
<100	1 (2%)	23 (51%)	17 (38%)	4 (9%)	45 (100%)
100-199	0 (0%)	13 (48%)	10 (37%)	4 (15%)	27 (100%)
200-349	1 (2%)	15 (37%)	15 (37%)	10 (24%)	41 (100%)
≥350	3 (4%)	20 (26%)	37 (49%)	16 (21%)	76 (100%)
Missing	2 (1%)	60 (44%)	51 (38%)	23 (17%)	136 (100%)
Tuberculosis					
No	6 (2%)	122 (41%)	120 (40%)	53 (18%)	301 (100%)
Yes	1 (4%)	9 (38%)	10 (42%)	4 (17%)	24 (100%)
Initiated ART within 30 days of enrollment					
No	5 (2%)	82 (37%)	91 (41%)	45 (20%)	223 (100%)
Yes	2 (2%)	49 (48%)	39 (38%)	12 (12%)	102 (100%)

Results are number (row %). ART, antiretroviral therapy; BMI, body mass index (missing for pregnant women).

Web Table 6. Factors associated with mortality in KIULARCO participants under four different methods of mortality estimation, including only participants with complete baseline data, Ifakara, Tanzania, 2005–2015

	Method A: data as captured in database		Method B: incorporating tracing outcomes		Method C: Frangakis & Rubin approach		Method D: extension to Frangakis & Rubin approach	
Number deaths/ participants ^a	81/1988		115/1988		115/1486		115/1486	
Baseline covariates								
Year of enrollment								
2005-07	0.80	0.27,2.38	0.89	0.36,2.26	1.09	0.35,3.37	0.92	0.31,2.73
2008-09	1		1		1		1	
2010-12	0.85	0.45,1.63	1.18	0.71,1.96	2.05	1.07,3.95	1.79	0.98,3.28
2013-15	0.69	0.32,1.47	0.93	0.47,1.85	1.21	0.38,3.84	1.24	0.43,3.61
Sex								
Male	1.20	0.72,1.98	1.34	0.88,2.05	1.55	0.91,2.63	1.69	1.02,2.82
Female	1		1		1		1	
Age, years								
15-24	1.25	0.48,3.27	0.70	0.28,1.73	0.12	0.03,0.59	0.18	0.04,0.75
25-34	1.04	0.57,1.91	0.93	0.56,1.55	0.86	0.45,1.62	0.98	0.53,1.81
35-44	1		1		1		1	
≥45	1.42	0.80,2.51	1.43	0.90,2.29	1.38	0.75,2.52	1.40	0.79,2.49
Marital status								
Married/cohabiting	1		1		1		1	
Never married	1.11	0.55,2.25	0.96	0.52,1.77	1.22	0.61,2.42	1.08	0.59,1.95
Separated/divorced	0.70	0.35,1.42	0.83	0.47,1.44	1.22	0.62,2.39	1.18	0.62,2.26
Widowed/other	1.63	0.83,3.18	1.49	0.83,2.66	1.47	0.74,2.91	1.39	0.69,2.80
HIV status of partner								
Positive	1		1		1		1	
Negative	2.88	0.90,9.18	1.82	0.67,4.92	1.07	0.20,5.80	1.18	0.25,5.53
Unknown	2.44	0.99,6.03	2.09	1.02,4.26	1.36	0.53,3.49	1.73	0.69,4.39
Not applicable	2.89	0.99,8.48	2.78	1.12,6.91	0.45	0.96,12.3	3.23	0.95,10.9
Disclosure of HIV status								
No	1		1		1		1	
Yes	0.95	0.56,1.62	1.03	0.66,1.62	1.09	0.60,1.96	1.05	0.61,1.81
Referred to clinic as hospital in-patient								
No	1		1		1		1	
Yes	1.42	0.68,2.96	1.21	0.61,2.40	1.28	0.47,3.45	1.52	0.61,3.75
Distance of ward of residence from clinic, km								
1	1		1		1		1	
2-<50	0.48	0.26,0.91	0.45	0.26,0.77	0.75	0.34,1.67	0.70	0.35,1.44
50-<80	1.05	0.52,2.12	0.74	0.39,1.42	0.53	0.23,1.21	0.60	0.30,1.19
≥80	0.41	0.19,0.90	0.41	0.21,0.80	0.44	0.17,1.12	0.37	0.14,1.00
Smoking								
Never/stopped	1		1		1		1	
Current	0.80	0.28,2.28	0.67	0.28,1.58	0.51	0.24,1.10	0.57	0.26,1.24

	Method A: data as captured in database		Method B: incorporating tracing outcomes		Method C: Frangakis & Rubin approach		Method D: extension to Frangakis & Rubin approach	
BMI, kg/m²								
Underweight (<18.5)	1.89	1.16,3.08	1.80	1.19,2.71	1.44	0.82,2.53	1.50	0.88,2.54
Normal (18.5-<25)	1		1		1		1	
Overweight (25-<30)	0.79	0.30,2.05	0.60	0.26,1.42	0.27	0.05,1.55	0.26	0.05,1.34
Obese (≥30)	0.81	0.19,3.49	0.43	0.10,1.85	0.13	0.02,0.87	0.15	0.02,0.96
WHO stage								
1	1		1		1		1	
2	2.10	1.06,4.16	2.23	1.28,3.86	2.20	1.05,4.62	2.13	1.03,4.44
3	2.09	1.00,4.39	1.87	1.02,3.42	1.42	0.68,2.95	1.64	0.78,3.42
4	3.16	1.38,7.22	2.96	1.46,6.02	2.48	0.83,7.43	2.59	0.95,7.07
CD4 count, cells/mm³								
<100	1		1		1		1	
100-199	0.62	0.32,1.19	0.53	0.30,0.93	0.35	0.17,0.72	0.32	0.17,0.62
200-349	0.28	0.13,0.58	0.30	0.16,0.55	0.39	0.18,0.85	0.36	0.17,0.76
≥350	0.13	0.06,0.28	0.12	0.06,0.24	0.15	0.05,0.44	0.12	0.05,0.34
Tuberculosis								
No	1		1		1		1	
Yes	0.84	0.45,1.58	1.00	0.57,1.73	1.09	0.45,2.63	0.81	0.34,1.93
Time-dependent covariates								
Time since ART initiation during follow-up, months								
Not yet initiated	1		1		1		1	
>0-<6	0.25	0.13,0.49	0.40	0.24,0.69	0.67	0.36,1.24	0.63	0.34,1.18
6-<12	0.02	0.01,0.05	0.04	0.02,0.10	0.17	0.06,0.45	0.14	0.06,0.35
≥12	0.01	<0.01,0.02	0.01	<0.01,0.02	0.02	0.01,0.06	0.01	<0.01,0.05
Number of gaps in care (periods of LTFU)								
0	1		1		1		1	
1	0.16	0.08,0.32	0.58	0.35,0.96	4.94	2.43,10.1	3.55	1.79,7.04
2	0.12	0.03,0.57	0.47	0.19,1.16	3.35	1.28,8.76	2.54	1.03,6.27
≥3	0.11	0.01,0.93	0.19	0.04,0.93	1.37	0.09,20.3	1.10	0.08,15.9

ART, antiretroviral therapy; BMI, body mass index; LTFU, lost to follow-up.

Results are hazard ratios and 95% confidence intervals. "1" indicates the reference category. Results are from multivariable Cox proportional hazards models, adjusted for all variables shown in the table. Since baseline BMI was missing for all pregnant women, it was not possible to include pregnancy in the models.

^aUnweighted numbers.

Web Table 7. Factors associated with mortality in KIULARCO participants under four different methods of mortality estimation, among participants who were observed to initiate ART (from ART initiation), Ifakara, Tanzania, 2005–2015

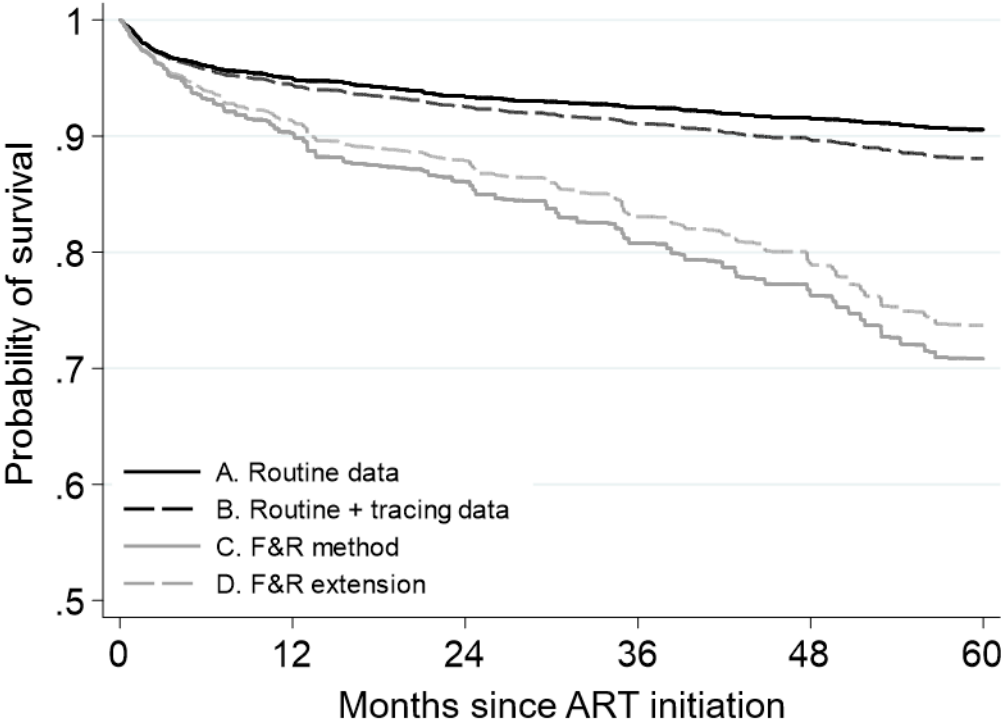
	Method A: data as captured in database		Method B: incorporating tracing outcomes		Method C: Frangakis & Rubin approach		Method D: extension to Frangakis & Rubin approach	
Baseline covariates								
Year of enrollment								
2005-07	1.24	0.92,1.68	1.20	0.90,1.60	0.99	0.66,1.50	0.97	0.64,1.48
2008-09	1		1		1		1	
2010-12	0.71	0.52,0.98	1.00	0.76,1.32	2.19	1.50,3.20	1.94	1.35,2.79
2013-15	0.40	0.23,0.70	0.57	0.34,0.94	1.65	0.76,3.57	1.32	0.60,2.91
Sex								
Male	1.16	0.91,1.49	1.24	1.00,1.55	1.66	1.22,2.24	1.85	1.34,2.55
Female	1		1		1		1	
Age, years								
15-24	1.78	1.15,2.75	1.46	0.96,2.21	0.76	0.43,1.34	0.81	0.47,1.41
25-34	1.08	0.82,1.43	1.13	0.88,1.46	1.21	0.85,1.70	1.21	0.86,1.72
35-44	1		1		1		1	
≥45	1.26	0.95,1.67	1.30	1.01,1.67	1.44	1.03,2.03	1.22	0.86,1.75
Marital status								
Married/cohabiting	1		1		1		1	
Never married	1.04	0.77,1.42	1.11	0.84,1.47	1.35	0.91,1.98	1.26	0.86,1.83
Separated/divorced	0.84	0.59,1.19	0.93	0.68,1.26	1.24	0.84,1.83	1.33	0.88,2.00
Widowed/other	0.14	0.79,1.64	1.12	0.80,1.57	1.18	0.75,1.84	1.17	0.75,1.81
HIV status of partner								
Positive	1		1		1		1	
Negative	1.25	0.72,2.17	1.19	0.70,2.02	1.21	0.52,2.82	1.08	0.46,2.54
Unknown	1.25	0.83,1.86	1.33	0.91,1.93	1.47	0.84,2.58	1.65	0.94,2.88
Not applicable	1.98	0.91,4.29	1.98	0.97,4.05	1.93	0.71,5.25	1.68	0.64,4.39
Disclosure of HIV status								
No	1		1		1		1	
Yes	1.31	1.00,1.71	1.21	0.96,1.53	1.05	0.76,1.44	1.13	0.81,1.57
Referred to clinic as hospital in-patient								
No	1		1		1		1	
Yes	1.42	0.84,2.40	1.37	0.84,2.22	1.34	0.73,2.46	1.37	0.76,2.46
Distance of ward of residence from clinic, km								
1	1		1		1		1	
2-<50	0.71	0.49,1.01	0.75	0.55,1.03	0.96	0.65,1.42	0.99	0.66,1.49
50-<80	1.14	0.80,1.63	0.97	0.69,1.36	0.53	0.34,0.83	0.55	0.34,0.90
≥80	0.82	0.58,1.17	0.82	0.60,1.13	0.95	0.60,1.50	1.04	0.65,1.68
Smoking								
Never/stopped	1		1		1		1	
Current	1.40	1.03,1.91	1.35	1.02,1.79	1.28	0.85,1.94	1.10	0.73,1.65
Pregnant								
No	1		1		1		1	

	Method A: data as captured in database		Method B: incorporating tracing outcomes		Method C: Frangakis & Rubin approach		Method D: extension to Frangakis & Rubin approach	
Yes	0.72	0.32,1.65	0.84	0.41,1.72	1.70	0.65,4.44	2.02	0.69,5.89
BMI, kg/m ²								
Underweight (<18.5)	1.63	1.17,2.29	1.63	1.20,2.22	1.58	1.13,2.23	1.53	1.08,2.17
Normal (18.5-<25)	1		1		1		1	
Overweight (25-<30)	0.65	0.35,1.22	0.66	0.37,1.18	0.66	0.31,1.40	0.69	0.33,1.44
Obese (≥30)	0.57	0.13,2.48	0.47	0.11,1.98	0.21	0.04,1.04	0.23	0.05,1.11
WHO stage								
1	1		1		1		1	
2	1.20	0.85,1.70	1.32	0.97,1.80	1.59	1.03,2.45	1.35	0.86,2.12
3	1.40	1.00,1.95	1.59	1.17,2.15	2.04	1.34,3.10	1.92	1.24,2.98
4	2.88	2.00,4.15	2.82	2.02,3.96	2.59	1.59,4.23	2.45	1.52,3.95
CD4 count, cells/mm ³								
<100	1		1		1		1	
100-199	0.75	0.54,1.03	0.75	0.55,1.04	0.76	0.46,1.26	0.69	0.43,1.12
200-349	0.64	0.43,0.97	0.67	0.47,0.96	0.72	0.46,1.12	0.67	0.42,1.07
≥350	0.64	0.43,0.97	0.59	0.41,0.86	0.49	0.28,0.84	0.46	0.27,0.78
Tuberculosis								
No	1		1		1		1	
Yes	0.83	0.58,1.20	0.78	0.56,1.10	0.71	0.43,1.20	0.74	0.45,1.23
Time-dependent covariates								
Number of gaps in care (periods of LTFU)								
0	1		1		1		1	
1	0.79	0.61,1.01	1.30	1.04,1.63	6.11	4.52,8.26	4.89	3.61,6.63
2	0.63	0.40,1.01	0.98	0.66,1.46	4.37	2.56,7.47	3.73	2.12,6.57
≥3	0.62	0.31,1.25	1.27	0.76,2.12	8.16	4.29,15.5	5.89	3.04,11.4

ART, antiretroviral therapy; BMI, body mass index; LTFU, lost to follow-up.

Results are hazard ratios and 95% confidence intervals. "1" indicates the reference category. Results are from multivariable Cox proportional hazards models, adjusted for all variables shown in the table, with multiple imputation for missing baseline covariates (see Methods section of text for details).

Web Figure 1. Probability of survival following ART initiation in KIULARCO, estimated according to four different methods, Ifakara, Tanzania, 2005–2015



See Methods section of text for more details. F&R = Frangakis & Rubin.³ One-year mortality was 5.0% (95% confidence interval 4.4,5.7), 5.6% (4.9,6.3), 9.7% (8.2,11.2), 8.6% (7.3,10.0) for methods A-D, respectively, and five-year mortality was 9.4% (8.4,10.6), 11.9% (10.8,13.2), 29.2% (25.7,32.7), 26.3% (22.9,29.7), respectively.

References

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3. Frangakis CE, Rubin DB. Addressing an idiosyncrasy in estimating survival curves using double sampling in the presence of self-selected right censoring. *Biometrics*. 2001 Jun;57(2):333–342.