

Supplemental Digital Content 1: Time to all-cause mortality Cox proportional hazards model estimates

	Crude Mortality Rates		All-cause mortality survival model VCY modelling		McManus et al Reported Est. ¹ Hazard Ratio (95% CI)
	Events/PY	Rate per 1000 PY	Continuous	Dichotomous	
Age					
00 – 29.99	2/527	3.8 [0.5,13.7]	-	-	-
30 – 39.99	29/3658	7.9 [5.3,11.4]	-	-	-
40 – 49.99	40/5141	7.8 [5.6,10.6]	-	-	-
50 – 59.99	37/3380	10.9 [7.7,15.1]	-	-	-
60 – 100.00	34/1642	20.7 [14.3,28.9]	-	-	-
per year increase	-		1.03 (1.02, 1.05)	1.03 (1.02, 1.05)	1.04 (1.02, 1.05)
Mode of HIV Exposure					
Not IDU	130/13629	9.5 [8,11.3]	ref	ref	ref
IDU	12/720	16.7 [8.6,29.1]	1.61 (0.86, 3.01)	1.62 (0.86, 3.05)	1.63 (1.02, 2.60)
ADI ²					
No	90/11040	8.2 [6.6,10]	ref	ref	ref
Yes	52/3308	15.7 [11.7,20.6]	1.09 (0.76, 1.55)	1.05 (0.74, 1.51)	1.62 (1.22, 2.14)
HBVsAg (ever)					
No/Not Tested	130/13726	9.5 [7.9,11.2]	ref	ref	ref
Yes	12/622	19.3 [10,33.7]	2.13 (1.19, 3.82)	2.11 (1.17, 3.81)	2.31 (1.51, 3.53)
CD4 (cells/μL)					
<350	84/3478	24.2 [19.3,29.9]	ref	ref	ref
350 to 499	25/3128	8 [5.2,11.8]	0.41 (0.27, 0.65)	0.42 (0.27, 0.65)	0.33 (0.23, 0.49)
>500	33/7742	4.3 [2.9,6]	0.26 (0.17, 0.40)	0.26 (0.17, 0.41)	0.29 (0.20, 0.40)
pVL (copies/ml)					
≤400	73/10767	6.8 [5.3,8.5]	ref	ref	ref
>400	69/3581	19.3 [15,24.4]	2.26 (1.56, 3.28)	2.30 (1.61, 3.28)	2.57 (1.94, 3.41)
Regimen number					
1st	8/3224	2.5 [1.1,4.9]	ref	ref	ref
2nd or 3rd	36/5317	6.8 [4.7,9.4]	1.64 (0.76, 3.51)	1.67 (0.79, 3.56)	1.10 (0.54, 2.21)
4th or more	98/5806	16.9 [13.7,20.6]	2.23 (1.04, 4.78)	2.30 (1.09, 4.85)	2.66 (1.38, 5.13)
VCY (per log increase)					
0 – 2.99	24/5991	4 [2.6,6]	-	-	-
3 – 4.99	52/5706	9.1 [6.8,12]	-	-	-
5 –	66/2652	24.9 [19.2,31.7]	-	-	-
per log10 increase	-		1.14 (0.94, 1.38)	n/a	n/a
VCY > 10 ⁵ copy-years					
No	76/11697	6.5 [5.1,8.1]	n/a	ref	n/a
Yes	66/2652	24.9 [19.2,31.7]	n/a	1.52 (1.09, 2.13)	n/a

¹ Hamish McManus et al., "Long-Term Survival in HIV Positive Patients with Up to 15 Years of Antiretroviral Therapy," ed. Michael Alan Polis, *PLoS One* 7, no. 11 (November 7, 2012): e48839, doi:10.1371/journal.pone.0048839.t003.

Supplemental Digital Content 2: Multivariable β (standard error) parameter estimates of viraemia copy-years, data restricted to time of ART initiation >1 January 2006.

Factors	Level	No. of Participants [yr=1, yr=5]	MODEL: Baseline		MODEL: Time-updated	
			Estimate (S.E)	p [#]	Estimate (S.E)	p [#]
Age at ART	(per 5 years)	[398, 39]	-0.03 (0.02)	0.17	-0.02 (0.01)	0.15
Sex	Female	[25, 3]	0.15 (0.20)	0.44	-0.15 (0.16)	0.34
Mode HIV exposure	MSM ¹	[277, 20]	0.00	0.24	0.00	0.28
	Heterosexual	[59, 8]	0.11 (0.14)		-0.04 (0.11)	
	IDU	[15, 0]	0.41 (0.21)		0.34 (0.16)	
	Other/Blood	[43, 11]	-0.12 (0.13)		-0.04 (0.10)	
	Unknown	[4, 0]	-0.02 (0.39)		0.19 (0.29)	
Primary Care Type	GP	[154, 21]	0.00	0.38	0.00	0.82
	Hospital	[107, 6]	-0.04 (0.10)		0.04 (0.08)	
	SHC	[137, 12]	-0.13 (0.09)		0.04 (0.07)	
HBV co-infection	Yes	[7, 2]	-0.09 (0.30)	0.77	-0.06 (0.22)	0.77
HCV co-infection	Yes	[31, 3]	0.18 (0.15)	0.22	0.13 (0.12)	0.26
Prior ARV exposure ²	Yes	[16, 3]	0.21 (0.20)	0.30	0.12 (0.15)	0.46
Initial ART anchor ³	NNRTI	[256, 25]	0.00	0.53	0.00	0.58
	PI	[104, 12]	0.10 (0.09)		-0.05 (0.07)	
	Other	[38, 2]	-0.02 (0.14)		0.06 (0.11)	
CD4 at ART start (cells/ μ L)	0 to 200	[100, 10]	0.00	0.63		
	201 to 350	[131, 15]	-0.10 (0.11)			
	351 to 500	[93, 7]	0.02 (0.12)			
	>500	[74, 7]	-0.01 (0.13)			
pVL at ART start (copies/ml)	0 to 10 ⁴	[201, 13]	0.00	0.13	0.00	0.33
	10 ⁴ to 10 ⁵	[140, 20]	0.17 (0.09)		0.08 (0.07)	
	>10 ⁵	[57, 6]	0.00 (0.12)		0.10 (0.09)	
Time Updated						
AIDS illness	Yes	[61, 8]			0.06 (0.09)	0.46
CD4 cell count (cells/ μ L)	0 to 200	[26, 1]			0.00	<0.01
	201 to 350	[74, 2]			-0.04 (0.10)	
	351 to 500	[116, 9]			-0.24 (0.10)	
	>500	[182, 27]			-0.27 (0.11)	
Number of ART changes ⁴	0	[278, 10]			0.00	0.12
	1 to 2	[104, 22]			0.04 (0.05)	
	3 to 5	[13, 5]			0.16 (0.11)	
	6 to 10	[3, 2]			-0.71 (0.34)	
	>10	[0, 0]			-	
% time ART interruption	0.0	[367, 30]			0.00	<0.01
	0.1 to 5%	[6, 4]			0.45 (0.14)	
	5 to 20%	[7, 2]			1.15 (0.14)	
	20 to 50%	[7, 1]			2.27 (0.17)	
	>50%	[11, 2]			2.57 (0.18)	
Model Fit Statistics						
(smaller is better)			1319		1051	
			1430		1201	
			635		492	<0.01 [#]

[#]Linear mixed model, unstructured correlation structure, adjusted for duration of ART and calendar year of ART initiation

[#]Analysis of Variance - Likelihood ratio test, alpha=0.05

¹MSM – men who have sex with men.

²Mono/duo ARV exposure prior to initiating ART.

³Initial ART regimen was classified as 2 N(t)RTI's + (NNRTI or PI or Other); N(t)RTI – nucleos(t)ide reverse transcriptase inhibitors; NNRTI – non-nucleoside reverse transcriptase inhibitors; PI – protease inhibitors.

⁴Includes any modification to ART regimen.