

Supplementary Table S1. International Classification of Diseases for Oncology (3rd Edition) Histology and Site Codes for Cutaneous Tumors.

Primary Cutaneous Tumors	ICD-O-3 Histology and Site
Melanoma	
Superficial Spreading Melanoma	[8743/3] <u>AND</u> primary site [C44.0-C44.9]
Lentigo Maligna Melanoma	[8742/3] <u>AND</u> primary site [C44.0-C44.9]
Nodular Melanoma	[8721/3] <u>AND</u> primary site [C44.0-C44.9]
Acral Lentiginous Melanoma	[8744/3] <u>AND</u> primary site [C44.0-C44.9]
Desmoplastic Melanoma	[8745/3] <u>AND</u> primary site [C44.0-C44.9]
Merkel Cell Carcinoma	8247/3 <u>AND</u> primary site [C44.0-C44.9]
Adnexal Carcinomas	
Sebaceous Adenocarcinoma	8410/3 <u>AND</u> primary site [C44.0-C44.9]
Adenoid Cystic Carcinoma	8200/3 <u>AND</u> primary site [C44.0-C44.9]
Apocrine Adenocarcinoma	8401/3 <u>AND</u> primary site [C44.0-C44.9]
Sclerosing Sweat Duct Carcinoma	8407/3 <u>AND</u> primary site [C44.0-C44.9]
Skin Appendage Carcinoma	8390/3 <u>AND</u> primary site [C44.0-C44.9]
Eccrine Poroma	8409/3 <u>AND</u> primary site [C44.0-C44.9]
Eccrine Adenocarcinoma	8413/3 <u>AND</u> primary site [C44.0-C44.9]
Ceruminous Adenocarcinoma	8420/3 <u>AND</u> primary site [C44.0-C44.9]
Mucinous Adenocarcinoma	8480/3 <u>AND</u> primary site [C44.0-C44.9]
Sarcomas	
Dermatofibrosarcoma Protuberans	[8832/3, 8833/3] <u>AND</u> primary site [C44.0-C44.9]
Cutaneous Leiomyosarcoma	[8890/3, 8891/3, 8893/3, 8896/3] <u>AND</u> primary site [C44.0-C44.9]
Lymphangiosarcoma	[9120/3, 9125/3, 9170/3] <u>AND</u> primary site [C44.0-C44.9]
Kaposi Sarcoma	[9140/3] <u>AND</u> primary site [C44.0-C44.9]
Lymphomas	
Mycosis Fungoides	9700/3 <u>AND</u> primary site [C44.0-C44.9]
Adult T Cell Leukemia-Lymphoma	9827/3 <u>AND</u> primary site [C44.0-C44.9]
Anaplastic Large Cell Lymphoma	9718/3 <u>AND</u> primary site [C44.0-C44.9]
Extranodal NK/T Cell Lymphoma, Nasal Type	9719/3 <u>AND</u> primary site [C44.0-C44.9]
T Cell Lymphoma, NOS	9709/3 <u>AND</u> primary site [C44.0-C44.9]
Follicle Center Lymphoma	9597/3 <u>AND</u> primary site [C44.0-C44.9]
Diffuse Large B Cell Lymphoma	[9680/3] <u>AND</u> primary site [C44.0-C44.9]

Abbreviations: ICD-O-3, international classification of diseases for oncology, third edition; NOS, not otherwise specified

Supplementary Table S2. Unadjusted Risk Estimates for Kaposi Sarcoma in People Living with HIV.

Characteristic	No. (%)	IRR (95% CI)	P-value
Total	2252 (1.00)		
Sex			
Male	2092 (0.93)	5.13 (4.37-6.02)	<0.001
Female	160 (0.07)	Reference	
Sex and Risk Group			
MSM	1602 (0.71)	9.48 (7.68-11.7)	<0.001
Male PWID	172 (0.08)	3.29 (2.55-4.24)	<0.001
Male Other/Unknown	318 (0.14)	3.99 (3.16-5.03)	<0.001
Female Other/Unknown	91 (0.04)	Reference	
Female PWID	69 (0.03)	2.55 (1.87-3.49)	<0.001
Race/Ethnicity			
Non-Hispanic White	618 (0.27)	Reference	
Non-Hispanic Black	1086 (0.48)	0.91 (0.82-1.00)	0.06
Hispanic	548 (0.24)	0.91 (0.81-1.02)	0.11
Calendar Year			
1996-2002	533 (0.24)	Reference	
2003-2010	1178 (0.52)	0.57 (0.52- 0.63)	<0.001
2011-2018	541 (0.24)	0.38 (0.34-0.43)	<0.001
Trend			<0.001
Attained Age, Years			
0-39	1078 (0.48)	Reference	
40-49	807 (0.36)	0.70 (0.64-0.76)	<0.001
50-59	297 (0.13)	0.40 (0.35-0.45)	<0.001
60+	70 (0.03)	0.27 (0.21- 0.34)	<0.001
Trend			<0.001

Attained Time Since HIV Diagnosis, Years¹			
≤5	845 (0.38)	Reference	
5.01-10	665 (0.3)	0.76 (0.69-0.84)	<0.001
10.01-15	310 (0.14)	0.53 (0.46-0.60)	<0.001
>15	160 (0.07)	0.39 (0.33- 0.46)	<0.001
Missing	272 (0.12)	0.74 (0.65-0.85)	<0.001
Trend			<0.001
AIDS Status			
HIV-Only	433 (0.19)	Reference	
AIDS	1819 (0.81)	2.94 (2.65-3.27)	<0.001

Abbreviations: HIV, human immunodeficiency virus; AIDS, acquired immunodeficiency syndrome; IRR, incidence rate ratio; CI, confidence interval; MSM, men who have sex with men; PWID, people who inject drugs

¹Cases with missing information regarding attained time since HIV diagnosis were excluded from univariate trend analysis.

Supplementary Table S3. Unadjusted Risk Estimates for Melanoma, Merkel Cell Carcinoma, and Lymphoma in People Living with HIV.

Cancer Type	Melanoma			Merkel Cell Carcinoma			Cutaneous Lymphomas ¹		
	No. (%)	IRR (95% CI)	P-value	No. (%)	IRR (95% CI)	P-value	No. (%)	IRR (95% CI)	P-value
Characteristic									
Total	339 (1.00)			20 (1.00)			71 (1.00)		
Sex									
Male	291 (0.86)	2.38 (1.75- 3.23)	<0.001	18 (0.9)	3.53 (0.82-15.2)	0.09	54 (0.76)	1.25 (0.72-2.15)	0.43
Female	48 (0.14)	Reference		2 (0.1)	Reference		17 (0.24)	Reference	
Sex and Risk Group									
MSM	221 (0.65)	3.31 (2.33-4.70)	<0.001	13 (0.65)	7.00 (0.92-53.5)	0.06	32 (0.45)	1.43 (0.74-2.79)	0.28
Male PWID	15 (0.04)	0.73 (0.40-1.32)	0.30	3 (0.15)	5.22 (0.54-50.2)	0.15	5 (0.07)	0.73 (0.26-2.06)	0.55
Male Other/Unknown	55 (0.16)	1.74 (1.15-2.65)	0.01	2 (0.10)	2.28 (0.21-25.2)	0.50	17 (0.24)	1.62 (0.77-3.38)	0.20
Female Other/Unknown	36 (10.6)	Reference		1 (0.05)	Reference		12 (0.17)	Reference	
Female PWID	12 (0.04)	1.12 (0.58-2.16)	0.73	1 (0.05)	3.37 (0.21-53.9)	0.39	5 (0.07)	1.40 (0.49-3.98)	0.52
Race/Ethnicity									
Non-Hispanic White	280 (0.83)	Reference		14 (0.7)	Reference		23 (0.32)	Reference	
Non-Hispanic Black	29 (0.09)	0.05 (0.04- 0.08)	<0.001	3 (0.15)	0.11 (0.03-0.39)	0.001	32 (0.45)	0.72 (0.42-1.23)	0.23
Hispanic	30 (0.09)	0.11 (0.08- 0.16)	<0.001	3 (0.15)	0.22 (0.06-0.77)	0.02	16 (0.23)	0.71 (0.38-1.35)	0.30
Calendar Year									
1996-2002	36 (0.11)	Reference		2 (0.1)	Reference		20 (0.28)	Reference	
2003-2010	174 (0.51)	1.25 (0.87- 1.79)	0.22	9 (0.45)	1.16 (0.25-5.39)	0.85	34 (0.48)	0.44 (0.25-0.76)	0.004
2011-2018	129 (0.38)	1.34 (0.93 - 1.94)	0.12	9 (0.45)	1.69 (0.36-7.81)	0.50	17 (0.24)	0.32 (0.17-0.61)	0.001
Trend			0.14			0.39			0.001
Attained Age, Years									
0-39	46 (0.14)	Reference		0 (0)	Reference ²		16 (0.23)	Reference	
40-49	96 (0.28)	1.94 (1.37-2.76)	<0.001	5 (0.25)				29 (0.41)	1.69 (0.92-3.10)
50-59	111 (0.33)	3.48 (2.47- 4.91)	<0.001	6 (0.3)	3.59 (1.10-11.8)	0.04	19 (0.27)	1.71 (0.88-3.33)	0.11
60+	86 (0.25)	7.78 (5.44- 11.1)	<0.001	9 (0.45)	15.5 (5.21-46.4)	<0.001	7 (0.1)	1.82 (0.75-4.42)	0.19
Trend			<0.001			<0.001			0.10

Attained Time Since HIV Diagnosis, Years³									
≤5	96 (0.28)	Reference		4 (0.2)	Reference		22 (0.31)	Reference	
5.01-10	77 (0.23)	0.78 (0.58-1.05)	0.10	2 (0.1)	0.48 (0.09-2.64)	0.40	19 (0.27)	0.84 (0.45-1.54)	0.57
10.01-15	53 (0.16)	0.79 (0.57-1.11)	0.18	3 (0.15)	1.08 (0.24-4.82)	0.92	14 (0.2)	0.91 (0.47-1.79)	0.79
>15.01	67 (0.2)	1.43 (1.05-1.95)	0.03	6 (0.3)	3.07 (0.87-10.9)	0.08	6 (0.08)	0.56 (0.23-1.38)	0.21
Missing	46 (0.14)	1.11 (0.78-1.58)	0.57	5 (0.25)	2.89 (0.78-10.8)	0.11	10 (0.14)	1.05 (0.50-2.22)	0.90
Trend			0.12			0.02			0.92
AIDS Status									
HIV-Only	133 (0.39)	Reference		5 (0.25)	Reference		20 (0.28)	Reference	
AIDS	206 (0.61)	1.09 (0.87-1.35)	0.46	15 (0.75)	2.10 (0.76-5.78)	0.15	51 (0.72)	1.79 (1.07-3.00)	0.03

Abbreviations: HIV, human immunodeficiency virus; AIDS, acquired immunodeficiency syndrome; IRR, incidence rate ratio; CI, confidence interval; MSM, men who have sex with men; PWID, people who inject drugs

¹This category included all cutaneous lymphomas (T-and B-cell).

²For univariate analysis of MCC, the reference age group was <50 years due to few cases in age groups 0-39 and 40-49.

³Cases with missing information regarding attained time since HIV diagnosis were excluded from univariate trend analysis.