

Additional Table S2: Comparison of Syphilis multilevel multivariable regression model with Syphilis multivariable model, impact of partner notification.

	Syphilis, univariate N=158,604				Syphilis multilevel multivariable, all diagnoses N=184,977				Syphilis multivariable, all diagnoses N=184,977			
	OR	95% CI	p	aOR	95% CI	p	aOR	95% CI	p			
	ref.											
Region	Central/West Europe	ref.										
	West Europe	1.78	1.05 2.93	0.033	0.81	0.45 1.46	0.483	0.86	0.65 1.15	0.312		
	Northwest Europe	1.46	0.84 2.54	0.177	1.32	0.80 1.94	0.449	1.24	1.09 1.42	0.001		
	Northwest Europe	0.81	0.29 0.88	0.016	0.79	0.39 0.80	0.011	0.83	0.51 0.78	<0.001		
	Northwest Europe	0.54	0.25 1.16	0.113	0.77	0.40 1.49	0.438	0.98	0.53 0.96	0.034		
	Central/East Europe	0.78	0.48 1.34	0.011	1.15	0.78 1.60	0.471	1.48	1.26 1.78	<0.001		
	Southeast Europe	0.69	0.42 1.12	0.132	0.87	0.63 1.27	0.626	1.02	0.79 1.07	0.281		
	East Europe	0.97	0.55 1.71	0.908	0.94	0.60 1.48	0.781	0.89	0.66 0.86	0.001		
	Middle East	0.76	0.38 1.62	0.478	0.73	0.41 1.32	0.209	0.98	0.40 0.83	0.001		
	Mediterranean	0.46	0.20 1.10	0.086	0.60	0.31 1.17	0.152	0.78	0.28 0.51	<0.001		
	Canada	1.05	0.46 2.42	0.902	0.59	0.27 1.20	0.187	0.76	0.54 1.05	0.006		
	Mexico	1.48	0.65 3.38	0.346	1.54	0.84 2.82	0.161	0.92	0.77 1.11	0.407		
	Central America (CH, GT, HN, NI, PA, SV)	1.84	0.98 2.74	0.057	2.02	1.32 3.09	0.001	1.48	1.19 1.81	<0.001		
	Andean region (BO, EC, CO, PE and VE & SR)	1.84	1.11 3.05	0.019	1.89	1.28 3.10	0.002	1.64	1.29 1.78	<0.001		
	South/Central (AR, CL, LV, and PY)	2.94	1.18 3.53	0.011	1.92	1.22 3.01	0.004	1.39	1.15 1.68	0.001		
	Brazil	3.83	1.58 8.02	0.003	1.85	0.84 4.08	0.126	1.40	1.15 2.22	0.006		
	Survey artefacts	French translation	ref.									
		Yes	1.92	1.66 2.23	<0.001	2.03	1.73 2.37	<0.001	2.33	2.03 2.68	<0.001	
	Discrepant data	No	ref.									
		Yes	1.35	1.28 1.43	<0.001	1.30	1.22 1.38	<0.001	1.30	1.22 1.38	<0.001	
	Sample composition	<25 y	ref.									
		25-29	1.69	1.58 1.80	<0.001	1.33	1.24 1.43	<0.001	1.32	1.23 1.42	<0.001	
	Age group	30-39	1.85	1.84 2.08	<0.001	1.30	1.21 1.39	<0.001	1.29	1.20 1.39	<0.001	
40-49		1.99	1.88 2.13	<0.001	1.13	1.08 1.24	<0.001	1.14	1.08 1.23	0.001		
50+		1.84	1.52 1.77	<0.001	0.97	0.89 1.06	0.494	0.96	0.88 1.05	0.469		
Settlement size (inhabitants)	Village/Countryside (<10,000)	ref.										
	Small town (10,000-49,999)	1.04	0.94 1.14	0.435	1.04	0.94 1.15	0.507	1.02	0.92 1.13	0.663		
	Medium town (50,000-499,999)	1.17	1.07 1.28	0.001	1.07	0.97 1.18	0.173	1.03	0.96 1.16	0.288		
	Big city (500,000-999,999)	1.48	1.27 1.74	<0.001	1.17	1.08 1.29	0.002	1.17	1.08 1.29	0.001		
	Very big city (>1 million)	1.99	1.48 1.74	<0.001	1.18	1.05 1.27	0.002	1.13	1.03 1.24	0.011		
Diagnosed HIV	No	ref.										
	Yes	6.27	5.05 5.60	<0.001	3.84	3.65 4.03	<0.001	3.69	3.50 3.88	<0.001		
Financial coping	unaffordable	ref.										
	neither struggling nor comfortable	1.03	0.98 1.07	0.252	1.07	1.02 1.12	0.010	1.07	1.02 1.12	0.002		
	struggling	1.18	1.09 1.21	<0.001	1.10	1.04 1.17	0.001	1.10	1.04 1.17	0.001		
STI screen	No screening	ref.										
	6-12 months ago	0.74	0.68 0.80	<0.001	0.81	0.56 0.67	<0.001	0.80	0.55 0.68	<0.001		
	1-6 months ago	1.84	1.46 1.62	<0.001	0.96	0.90 1.01	0.107	0.94	0.89 0.99	0.023		
	Within the last 4 weeks	2.81	2.46 2.77	<0.001	1.43	1.34 1.52	<0.001	1.40	1.31 1.49	<0.001		
Sexual behaviour	None or one	ref.										
	2-4	1.25	1.15 1.34	<0.001	1.05	0.94 1.18	0.365	1.05	0.94 1.18	0.390		
	5-7	1.92	1.78 2.08	<0.001	1.46	1.29 1.65	<0.001	1.46	1.29 1.65	<0.001		
	8-10	2.28	2.07 2.47	<0.001	1.87	1.37 1.70	<0.001	1.58	1.38 1.80	<0.001		
	11-20	2.89	2.78 3.01	<0.001	1.87	1.68 2.11	<0.001	1.86	1.65 2.10	<0.001		
	>20	5.86	5.58 6.38	<0.001	2.73	2.42 3.08	<0.001	2.78	2.39 3.05	<0.001		
Anal intercourse, condom use with last non-steady partner	No anal intercourse with non-steady partner	ref.										
	never condom with rmp	3.25	2.95 3.58	<0.001	1.54	1.34 1.77	<0.001	1.54	1.34 1.77	<0.001		
	sometimes condom with rmp	6.82	6.35 6.93	<0.001	1.94	1.72 2.24	<0.001	1.96	1.72 2.24	<0.001		
	sometimes condom with rmp	4.72	4.38 5.10	<0.001	1.80	1.58 2.04	<0.001	1.80	1.58 2.04	<0.001		
	mostly condom with rmp	2.83	2.73 3.14	<0.001	1.41	1.25 1.60	<0.001	1.42	1.28 1.60	<0.001		
	always condom with rmp	1.34	1.24 1.44	<0.001	0.83	0.74 0.94	0.003	0.84	0.74 0.94	0.004		
PIEP use	never/doesn't know	1.18	1.08 1.31	0.002	0.98	0.84 1.10	0.007	0.97	0.88 1.11	0.887		
	when needed	2.09	1.78 2.46	<0.001	1.49	1.25 1.77	<0.001	1.43	1.20 1.70	<0.001		
	former daily use	2.88	2.10 3.42	<0.001	2.18	1.88 2.83	<0.001	2.09	1.61 2.70	<0.001		
	current daily use	3.39	3.02 3.72	<0.001	1.85	1.65 2.07	<0.001	1.78	1.57 1.97	<0.001		
Multipartner sex	No	ref.										
	Yes	2.47	2.36 2.60	<0.001	1.31	1.23 1.38	<0.001	1.31	1.24 1.38	<0.001		
Country level rates	11.28%	ref.										
	26.37%	1.81	1.01 2.96	0.044	1.11	0.86 1.43	0.422	1.11	0.99 1.25	0.081		
	30.27%	1.78	1.24 2.46	0.001	1.18	0.91 1.63	0.208	1.18	1.03 1.31	0.011		
	41.74% -100%	2.86	1.57 4.19	<0.001	1.88	1.00 3.46	0.050	1.88	1.16 2.15	0.006		
	0.00%	ref.										
Partner notification rates after syphilis diagnosis	53.84%	1.35	0.91 2.00	0.131	1.03	0.81 1.31	0.814	0.83	0.74 0.92	0.001		
	67.84%	1.00	0.68 1.49	0.984	1.17	0.84 1.61	0.366	0.85	0.59 0.78	<0.001		
	78.76% -100%	0.86	0.44 0.99	0.044	0.91	0.62 1.32	0.610	0.48	0.40 0.58	<0.001		
	constant	ref.			0.01	0.01 0.01	<0.001	0.01	0.01 0.02	<0.001		
Random part	68 countries?	ref.										
	Random intercept	0.99	0.93 0.99	<0.001	0.99	0.93 0.99	<0.001	0.99	0.93 0.99	<0.001		

1 This study includes 68 countries, with four European microstates included in neighbouring (Andorra, Lichtenstein) or surrounding (Monaco, San Marino) countries, and with Albania, Montenegro and Kosovo merged to form a region; this results in 62 country-like entities included in the random part of the model.