

Supplementary Table 1: Incidence rates of sexually transmitted infections by year among DC Cohort Participants, 2012-2016.

Year	Chlamydia		Gonorrhea		Syphilis		Any STI	
	Incidence Rate, per 100 P-Y (95% CI)	p	Incidence Rate, per 100 P-Y (95% CI)	p	Incidence Rate, per 100 P-Y (95% CI)	p	Incidence Rate, per 100 P-Y (95% CI)	p
2012 (n=4,013)	2.1 (1.7, 2.7)	0.0006	2.1 (1.6, 2.6)	<0.0001	1.7 (1.3, 2.2)	0.0042	5.3 (4.5, 6.1)	<0.0001
2013 (n=4,970)	2.9 (2.4, 3.4)		3.0 (2.5, 3.5)		2.1 (1.7, 2.6)		7.1 (6.4, 8.0)	
2014 (n=5,822)	2.8 (2.4, 3.3)		2.5 (2.1, 3.0)		1.4 (1.1, 1.8)		6.0 (5.3, 6.7)	
2015 (n=6,136)	3.4 (3.0, 4.0)		2.8 (2.4, 3.3)		2.1 (1.8, 2.5)		7.5 (6.8, 8.3)	
2016 (n=6,007)	3.4 (2.9, 3.9)		4.0 (3.5, 4.6)		2.6 (2.2, 3.1)		8.8 (8.0, 9.6)	
All 2012-2016 (n=7,810)	3.0 (2.8, 3.2)	NA	2.9 (2.7, 3.2)	NA	2.0 (1.8, 2.2)	NA	7.1 (6.7, 7.4)	NA

P-Y person years; CI, confidence interval, NA, not applicable.

Incidence rates are presented per 100 person-years of follow-up.

P-values are based on a linear test of trend across the five years.

Supplementary Table 2: Frequency of persons with 0, 1, 2, 3 or more incident sexually transmitted infections by year among DC Cohort participants, 2012-2016

	Chlamydia	Gonorrhea	Syphilis	Any STI Episode	Percent of participants with any STI who had two or more STIs
	n (%)	n (%)	n (%)	n (%)	
2012 (n=4,013)					
0	3,945 (98.3)	3,953 (98.5)	3,962 (98.7)	3,863 (96.3)	21/150 = 14.0 %
1	66 (1.6)	53 (1.3)	48 (1.2)	129 (3.2)	
2	2 (<0.1)	6 (0.1)	3 (0.1)	20 (0.5)	
3	---	1 (<0.1)	---	1 (<0.1)	
2013 (n=4,970)					
0	4,859 (97.8)	4,855 (97.7)	4,885 (98.3)	4,717 (94.9)	39/253 = 15.4 %
1	103 (2.1)	106 (2.1)	80 (1.6)	214 (4.3)	
2	5 (<0.1)	7 (0.1)	5 (0.1)	31 (0.6)	
3	2 (<0.1)	2 (<0.1)	---	6 (0.1)	
4	1 (<0.1)	---	---	1 (<0.1)	
5	---	---	---	1 (<0.1)	
2014 (n=5,822)					
0	5,696 (97.8)	5,711 (98.1)	5,754 (98.8)	5,568 (95.6)	37/254 = 14.6 %
1	115 (2.0)	97 (1.7)	65 (1.1)	217 (3.7)	
2	8 (0.1)	14 (0.2)	3 (0.1)	31 (0.5)	
3	3 (0.1)	---	---	4 (0.1)	
4	---	---	---	2 (<0.1)	
2015 (n=6,136)					
0	5,974 (97.4)	6,002 (97.8)	6,033 (98.3)	5,816 (94.8)	65/320 = 20.3%
1	144 (2.3)	119 (1.9)	94 (1.5)	255 (4.2)	
2	15 (0.2)	13 (0.2)	8 (0.1)	49 (0.8)	
3	3 (<0.1)	2 (<0.1)	1 (<0.1)	15 (0.2)	
4	---	---	---	1 (<0.1)	
2016 (n=6,007)					
0	5,859 (97.5)	5,832 (97.1)	5,885 (98.0)	5,655 (94.1)	76/352 = 21.6%
1	129 (2.1)	150 (2.5)	112 (1.9)	276 (4.6)	
2	15 (0.2)	21 (0.3)	10 (0.2)	58 (1.0)	
3	2 (<0.1)	4 (0.1)	---	15 (0.2)	
4	2 (<0.1)	---	---	1 (<0.1)	
5	---	---	---	2 (<0.1)	

All years (n=7,810)					
0	7,316 (93.7)	7,361 (94.3)	7,462 (95.5)	6,908 (88.5)	377/902 = 41.8%
1	366 (4.7)	314 (4.0)	262 (3.4)	525 (6.7)	
2	90 (1.2)	82 (1.0)	66 (0.8)	204 (2.6)	
3	19 (0.2)	33 (0.4)	14 (0.2)	92 (1.2)	
4	12 (0.2)	12 (0.2)	6 (0.1)	41 (0.5)	
5	4 (0.1)	2 (<0.1)	---	17 (0.2)	
6	3 (<0.1)	3 (<0.1)	---	10 (0.1)	
7	---	3 (<0.1)	---	6 (0.1)	
8	---	---	---	1 (<0.1)	
9	---	---	---	4 (0.1)	
10	---	---	---	0 (0)	
11	---	---	---	1 (<0.1)	
12	---	---	---	1 (<0.1)	

Participants with STIs who had two or more STIs are shown as fraction and percentage in each year.

Supplementary Table 3a: Rates of testing for sexually transmitted infections among males at DC Cohort sites by year, 2012-2016.

Year	Chlamydia			Gonorrhea			Syphilis		
	≥1 Test, n (%)	Rate, per 100 P-Y (95% CI)	p	≥1 Test, n (%)	Rate, per 100 P-Y (95% CI)	p	≥1 Test, n (%)	Rate, per 100 P-Y (95% CI)	p
2012 (n=3,077)	435 (14.1)	22.8 (21.0, 24.7)	<0.0001	359 (11.7)	19.0 (17.3, 20.7)	<0.0001	1,653 (53.7)	93.4 (90.0, 97.5)	0.90
2013 (n=3,711)	1,133 (30.5)	44.2 (41.9, 46.5)		959 (25.8)	37.2 (35.2, 39.4)		2,050 (55.2)	90.4 (87.2, 93.7)	
2014 (n=4,231)	1,168 (27.6)	44.3 (42.2, 46.5)		916 (21.6)	34.0 (32.2, 35.9)		2,005 (47.4)	79.8 (77.0, 82.8)	
2015 (n=4,434)	1,448 (32.7)	54.8 (52.5, 57.2)		1,194 (26.9)	44.7 (42.6, 46.8)		2,335 (52.7)	87.3 (84.4, 90.3)	
2016 (n=4,288)	1,434 (33.4)	56.9 (54.6, 59.4)		1,344 (31.3)	54.1 (51.7, 56.5)		2,366 (55.2)	93.2 (90.2, 96.4)	

P-Y person years; CI, confidence interval.

Rates of testing are presented per 100 person-years of follow-up. P-values are based on a linear test of trend across the five years.

Supplementary Table 3b: Rates of testing for sexually transmitted infections among females at DC Cohort sites by year, 2012-2016.

Year	Chlamydia			Gonorrhea			Syphilis		
	≥1 Test, n (%)	Rate, per 100 P-Y (95% CI)	p	≥1 Test, n (%)	Rate, per 100 P-Y (95% CI)	p	≥1 Test, n (%)	Rate, per 100 P-Y (95% CI)	p
2012 (n=936)	186 (19.9)	29.3 (25.5, 33.3)	<0.0001	154 (16.5)	24.9 (21.5, 28.7)	<0.0001	471 (50.3)	93.1 (86.4, 100.3)	<0.0001
2013 (n=1,259)	425 (33.8)	51.0 (46.9, 55.5)		316 (25.1)	39.0 (35.4, 43.0)		653 (51.9)	90.4 (84.8, 96.4)	
2014 (n=1,591)	449 (28.2)	44.8 (41.4, 48.6)		356 (22.4)	35.2 (32.2, 38.5)		603 (37.9)	62.4 (58.3, 66.7)	
2015 (n=1,702)	550 (32.3)	51.0 (47.5, 54.7)		418 (24.6)	40.8 (37.7, 44.2)		756 (44.4)	67.3 (63.2, 71.5)	
2016 (n=1,719)	590 (34.3)	51.4 (47.8, 55.2)		530 (30.8)	47.1 (43.7, 50.8)		792 (46.1)	66.0 (61.9, 70.3)	

P-Y, person years; CI, confidence interval.

Rates of testing are presented per 100 person-years of follow-up. P-values are based on a linear test of trend across the five years.

Supplementary Table 3c: Rates of testing for sexually transmitted infections among non-Hispanic Black participants at DC Cohort sites by year, 2012-2016.

Year	Chlamydia			Gonorrhea			Syphilis		
	≥1 Test, n (%)	Rate, per 100 P-Y (95% CI)	p	≥1 Test, n (%)	Rate, per 100 P-Y (95% CI)	p	≥1 Test, n (%)	Rate, per 100 P-Y (95% CI)	p
2012 (n=3,058)	465 (15.2)	23.8 (22.0, 25.8)	<0.0001	398 (13.0)	20.7 (19.0, 22.5)	<0.0001	1,653 (54.1)	97.2 (93.4, 101.1)	<0.0001
2013 (n=3,873)	1,198 (30.9)	45.3 (43.0, 47.6)		1,000 (25.8)	38.0 (36.0, 40.2)		2,080 (53.7)	90.9 (87.7, 94.3)	
2014 (n=4,630)	1,303 (28.1)	44.8 (42.8, 46.9)		1,053 (22.7)	35.6 (33.8, 37.5)		2,056 (44.4)	74.2 (71.6, 77.0)	
2015 (n=4,910)	1,595 (32.5)	52.8 (50.7, 55.0)		1,284 (26.2)	43.2 (41.3, 45.2)		2,434 (49.6)	79.0 (76.4, 81.7)	
2016 (n=4,841)	1,659 (34.3)	54.6 (52.4, 56.9)		1,486 (30.7)	49.8 (47.6, 51.9)		2,534 (52.3)	82.9 (80.2, 85.7)	

P-Y, person years; CI, confidence interval.

Rates of testing are presented per 100 person-years of follow-up. P-values are based on a linear test of trend across the five years.

Supplementary Table 3d: Rates of testing for sexually transmitted infections among non-Hispanic white participants at DC Cohort sites by year, 2012-2016.

Year	Chlamydia			Gonorrhea			Syphilis		
	≥1 Test, n (%)	Rate, per 100 P-Y (95% CI)	p	≥1 Test, n (%)	Rate, per 100 P-Y (95% CI)	p	≥1 Test, n (%)	Rate, per 100 P-Y (95% CI)	p
2012 (n=726)	120 (16.5)	25.3 (21.6, 29.7)	<0.0001	84 (11.6)	18.1 (15.0, 21.9)	<0.0001	362 (49.9)	81.7 (74.7, 89.3)	0.0034
2013 (n=784)	252 (32.1)	44.9 (40.2, 50.1)		181 (23.1)	32.3 (28.3, 36.7)		450 (57.4)	88.2 (81.6, 95.4)	
2014 (n=807)	216 (26.8)	43.0 (38.4, 48.1)		125 (15.5)	24.5 (21.1, 28.5)		386 (47.8)	80.3 (74.0, 87.2)	
2015 (n=782)	275 (35.2)	59.8 (54.3, 65.9)		172 (22.0)	37.7 (33.3, 42.6)		423 (54.1)	93.2 (86.2, 100.8)	
2016 (n=684)	228 (33.3)	63.7 (57.6, 70.5)		173 (25.3)	51.6 (46.1, 57.7)		349 (51.0)	97.0 (89.4, 105.3)	

P-Y, person years; CI, confidence interval.

Rates of testing are presented per 100 person-years of follow-up. P-values are based on a linear test of trend across the five years.

Supplementary Table 3e: Rates of testing for sexually transmitted infections among Hispanic participants at DC Cohort sites by year, 2012-2016.

Year	Chlamydia			Gonorrhea			Syphilis		
	≥1 Test, n (%)	Rate, per 100 P-Y (95% CI)	p	≥1 Test, n (%)	Rate, per 100 P-Y (95% CI)	p	≥1 Test, n (%)	Rate, per 100 P-Y (95% CI)	p
2012 (n=152)	27 (17.8)	30.0 (21.6, 41.8)	0.14	26 (17.1)	27.5 (19.4, 38.8)	<0.0001	80 (52.6)	96.1 (79.8, 115.6)	0.23
2013 (n=211)	83 (39.3)	63.0 (52.3, 76.0)		79 (37.4)	59.0 (48.7, 71.6)		122 (57.8)	95.1 (81.7, 110.8)	
2014 (n=268)	70 (26.1)	44.1 (36.1, 54.0)		75 (28.0)	47.4 (39.0, 57.5)		120 (44.8)	75.2 (64.5, 87.8)	
2015 (n=329)	95 (28.9)	56.2 (47.9, 66.0)		135 (41.0)	67.0 (59.7, 79.7)		179 (54.4)	93.7 (82.8, 106.1)	
2016 (n=357)	95 (26.6)	51.4 (44.0, 60.1)		179 (50.1)	86.8 (76.9, 97.9)		215 (60.2)	103.8 (92.0, 114.8)	

P-Y person years; CI, confidence interval.

Rates of testing are presented per 100 person-years of follow-up. P-values are based on a linear test of trend across the five years.

Supplementary Table 3. Incidence rates of sexually transmitted infections among DC Cohort participants in 2012-2016, stratified by baseline demographic characteristics (n=7,810).

	n (all years)	Incidence rate per 100 person-years (95% CI)					p
		2012 (n=4,013)	2013 (n=4,970)	2014 (n=5,822)	2015 (n=6,136)	2016 (n=6,007)	
Age							
13-17	109	3.3 (0.5, 23.4)	19.9 (10.7, 37.1)	8.8 (3.6, 21.0)	13.3 (6.3, 27.9)	13.1 (5.9, 29.2)	0.6797
18-34	1,596	13.2 (10.4, 16.6)	18.9 (16.1, 22.3)	17.7 (15.1, 20.7)	20.8 (17.9, 24.1)	23.2 (20.0, 26.9)	<0.0001
35-54	4,179	5.2 (4.3, 6.4)	5.7 (4.8, 6.8)	4.9 (4.1, 5.8)	6.6 (5.7, 7.7)	8.7 (7.6, 9.9)	<0.0001
55+	1,926	0.6 (0.2, 1.4)	1.6 (1.0, 2.5)	1.0 (0.6, 1.7)	2.1 (1.5, 2.9)	2.7 (2.0, 3.6)	<0.0001
Gender							
Cisgender male	5,542	6.5 (5.6, 7.6)	8.5 (7.5, 9.6)	7.1 (6.3, 8.0)	9.3 (8.4, 10.4)	11.5 (10.5, 12.7)	<0.0001
Cisgender female	2,120	1.1 (0.5, 2.2)	2.4 (1.6, 3.6)	2.3 (1.6, 3.3)	2.2 (1.6, 3.1)	1.5 (1.0, 2.2)	0.8788
Transgender female	138	4.9 (1.6, 15.2)	14.1 (8.0, 24.8)	16.2 (9.9, 26.5)	18.9 (12.2, 29.2)	16.0 (10.0, 25.8)	0.0756
Transgender male	10	NA	NA	NA	NA	NA	NA
Race/ethnicity							
Non-Hispanic Black	6,137	4.3 (3.6, 5.2)	6.3 (5.5, 7.2)	5.3 (4.7, 6.1)	6.8 (6.1, 7.6)	7.3 (6.5, 8.2)	<0.0001
Non-Hispanic White	1,051	8.6 (6.5, 11.3)	9.8 (7.7, 12.4)	8.2 (6.3, 10.6)	10.3 (8.2, 13.1)	16.1 (13.1, 19.7)	0.0003
Hispanic	445	10.3 (5.8, 18.1)	12.6 (8.3, 19.1)	10.7 (7.1, 16.1)	13.1 (9.4, 18.3)	16.7 (12.7, 22.0)	0.0695
Other	156	1.9 (0.3, 13.5)	5.7 (2.1, 15.1)	5.6 (2.3, 13.5)	4.2 (1.6, 11.3)	3.2 (1.0, 9.9)	0.9204
Unknown	21	NA	NA	NA	NA	13.4 (1.9, 94.9)	NA
Insurance							
Private	2,036	5.7 (4.3, 7.4)	7.2 (5.8, 8.9)	6.8 (5.5, 8.3)	9.5 (8.0, 11.3)	10.8 (9.1, 12.9)	<0.0001
Public	4,964	4.6 (3.8, 5.6)	5.7 (4.8, 6.7)	5.1 (4.4, 6.0)	6.3 (5.5, 7.2)	7.7 (6.8, 8.6)	<0.0001
Other/unknown	810	11.1 (7.1, 17.2)	16.5 (13.0, 21.0)	10.7 (7.8, 14.7)	11.6 (8.8, 15.4)	15.2 (11.2, 20.6)	0.9489
Housing							
Permanent	5,505	4.4 (3.7, 5.3)	6.2 (5.4, 7.1)	5.7 (5.0, 6.5)	7.2 (6.4, 8.1)	8.5 (7.6, 9.4)	<0.0001
Temporary/homeless	643	11.2 (7.9, 15.9)	9.3 (6.6, 13.1)	9.5 (7.0, 13.0)	13.9 (10.7, 18.0)	11.3 (8.5, 15.0)	0.3280
Other/unknown	1,662	7.3 (4.9, 10.9)	11.2 (8.8, 14.2)	5.5 (4.0, 7.5)	5.9 (4.5, 7.8)	9.0 (7.0, 11.7)	0.4196
Mode of HIV transmission							
MSM	3,810	9.3 (8.0, 10.9)	11.7 (10.3, 13.2)	10.1 (8.9, 11.5)	13.4 (12.0, 14.9)	15.7 (14.2, 17.4)	<0.0001
HRH	2,321	0.8 (0.4, 1.7)	1.4 (0.9, 2.3)	1.9 (1.3, 2.8)	2.2 (1.6, 3.1)	2.4 (1.7, 3.3)	0.0027
IDU	1,084	NA	1.3 (0.7, 2.6)	0.5 (0.2, 1.5)	0.9 (0.4, 1.9)	0.8 (0.4, 1.8)	0.3758
Other/unknown	595	2.4 (1.0, 5.7)	7.2 (4.8, 10.9)	5.1 (3.2, 7.9)	5.1 (3.3, 7.9)	7.0 (4.7, 10.4)	0.1871

CI, confidence interval; NA, not applicable (i.e., zero cases; insufficient data for calculation); MSM, men who have sex with men; HRH, high risk heterosexual; IDU, injection drug use.

P-values are based on a linear test of trend across the five years.