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Sexually transmitted infections among female sex workers in Amsterdam between 2011 and 2016: does risk vary by work location?

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Supplementary Material

Supplementary Table 1. Laboratory tests used to diagnose five STIs (January 2011-October 2016)

<i>C. trachomatis</i>	Pharyngeal swab Aptima Combo 2 assay (Hologic, Marlborough, MA, USA)
	Cervical/vaginal swab <2014: NAAT Aptima CT assay (Hologic, Marlborough, MA, USA) ≥2014: Aptima Combo 2 assay (Hologic, Marlborough, MA, USA)
	Anal swab <2014: NAAT Aptima CT assay (Hologic, Marlborough, MA, USA) ≥2014: Aptima Combo 2 assay (Hologic, Marlborough, MA, USA)
<i>N. gonorrhoeae</i>	Pharyngeal swab Aptima Combo 2 assay (Hologic, Marlborough, MA, USA)
	Cervical/vaginal swab <2014: Culture (OXOID, CHOC, Wesel, Germany) ≥2014: Aptima Combo 2 assay (Hologic, Marlborough, MA, USA)
	Anal swab <2014: NAAT Aptima CT assay (Hologic, Marlborough, MA, USA) ≥2014: Aptima Combo 2 assay (Hologic, Marlborough, MA, USA)
HBV	Anti-HBc test <June 2013: Axsum (Abbott Laboratories, Illinois, USA) ≥June 2013: LIAISON® XL (Diasorin, Saluggia, Italy)
HIV	HIV Ag/Ab Combo test <May 2013: AxSYM, Abbott Laboratories, Illinois, USA ≥May 2013: LIAISON® XL, Murex Diasorin, Saluggia, Italy Confirmed by Western Blot: Inno-Lia™ HIV I/II Score [Line ImmunoAssay] (Innoetics N.V., Ghent, Belgium)
<i>T. pallidum</i>	< March 2013: Treponema pallidum particle agglutination assay (Fujirebio, Tokyo, Japan) ≥ March 2013: Treponema screen (LIAISON® XL, Diasorin, Saluggia, Italy) VDRL test (Wellcome, Dartford, England) and FTA-absorption test (Trepo-sport IF, Biomérieux, Marcy l'Etoile, France) to differentiate between active and non-active syphilis

Abbreviations: STI = sexually transmitted infection; *C. trachomatis* = chlamydia trachomatis; *N. gonorrhoeae* = Neisseria gonorrhoeae; HBV= Hepatitis B Virus; HIV= Human Immunodeficiency Virus; *T. pallidum* = Treponema pallidum; NAAT= Nucleic Acid Amplification Test; VDRL= Venereal Disease Research Laboratory; FTA= Fluorescent Treponemal Antibody

Supplementary Table 2. Characteristics of unique FSW (N=2,529) at first STI consultation by P&G2g2, 2011-2016

	No.*	%*
Demographics		
Year of first consultation		
2011	365	14%
2012	632	25%
2013	424	17%
2014	430	17%
2015	418	17%
2016 (January – September)	260	10%
Median age in years [IQR]	27	[23-34]
Age		
<25 years	825	33%
25-29 years	708	28%
30-34 years	379	15%
35-39 years	246	10%
40-44 years	145	6%
≥45 years	226	9%
Region of birth		
Netherlands – without parent with immigrant background	390	15%
Netherlands – with parent with immigrant background	232	9%
Eastern Europe	1,076	43%
Latin America	442	17%
Other**	389	15%
Work location		
Window prostitution	1,056	42%
Escort/working from home	547	22%
Club/brothel/private house/massage salon	670	27%
Other#	220	9%
Missing	36	
Sexual behavior		
Median number of sex partners (preceding 6 months) [IQR]	250	[60-500]
Number of sexual contacts in preceding 6 months (oral, vaginal and/or anal)		
<100	701	28%
100-299	667	26%
300-499	514	20%
≥500	647	26%
Oral sex with a steady partner in preceding 6 months		
No (oral sex with) steady partners	1,294	51%
Always with a condom	49	1.9%
At least one condom failure¶	1	0.0%
At least once without a condom	1,178	47%
Missing	7	
Vaginal sex with a steady partner in preceding 6 months		
No (vaginal sex with) steady partners	1,255	50%
Always with a condom	131	5%
At least one condom failure¶	7	0.3%
At least once without a condom	1,129	45%
Missing	7	
Anal sex with a steady partner in preceding 6 months		
No (anal sex with) steady partners	2,246	89%
Always with a condom	37	1.5%

At least one condom failure¶	0	0.0%
At least once without a condom	239	9%
Missing	7	
Oral sex with clients in preceding 6 months		
No (oral sex with) clients	118	4.7%
Always with a condom	1,859	74%
At least one condom failure¶	11	0.4%
At least once without a condom	534	21%
Missing	7	
Vaginal sex with clients in preceding 6 months		
No (vaginal sex with) clients	89	3.5%
Always with a condom	1,656	66%
At least one condom failure¶	607	24%
At least once without a condom	170	7%
Missing	7	
Anal sex with clients in preceding 6 months		
No (anal sex with) clients	2,175	86%
Always with a condom	271	11%
At least one condom failure¶	10	0.4%
At least once without a condom	66	2.6%
Missing	7	
Oral sex with a casual partner in preceding 6 months		
No (oral sex with) casual partners	2,182	87%
Always with a condom	20	0.8%
At least one condom failure¶	0	0.0%
At least once without a condom	320	13%
Missing	7	
Vaginal sex with a casual partner in preceding 6 months		
No (vaginal sex with) casual partners	2,164	86%
Always with a condom	62	2.5%
At least one condom failure¶	11	0.4%
At least once without a condom	285	11%
Missing	7	
Anal sex with a casual partner in preceding 6 months		
No (anal sex with) casual partners	2,446	97%
Always with a condom	16	0.6%
At least one condom failure¶	0	0.0%
At least once without a condom	60	2.4%
Missing	7	
STI diagnoses		
Oropharyngeal chlamydia diagnosis	36	1.4%
Genital chlamydia diagnosis	171	7%
Anal chlamydia diagnosis	134	5%
Oropharyngeal gonorrhea diagnosis	37	1.5%
Genital gonorrhea diagnosis	28	1.1%
Rectal gonorrhea diagnosis	20	0.8%
Infectious hepatitis B infection	16	0.6%
HIV infection (includes new and known cases)		
No	2,026	99%
Yes	13	0.6%
Missing	490	
Infectious syphilis diagnosis	3	0.1%
Chlamydia and/or gonorrhea	287	11%

* Unless stated otherwise

- ** Includes FSW from Asia, South and Western Europe and Africa
 - # Includes FSW working in forced prostitution, on the streets, in the porn-industry (movies/sex shows), via the internet (webcam), on sex boats, as hostesses, in hotels, in other countries and FSW not practicing sex work at time of STI consultation
 - ¶ If a FSW reported at least one condom failure in the preceding 6 months, she is included in the category condom failure
- Abbreviations: FSW = female sex worker; STI = sexually transmitted infection; IQR = interquartile range; HIV = human immunodeficiency virus

No (oral sex with) casual partners	6,624	88%	3,305	93%	1,195	81%	1,749	85%	278	80%	97	87%	
Always with a condom	47	0.6%	21	0.6%	7	0.5%	15	0.7%	4	1.2%	0	0.0%	
At least one condom failure¶	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	
At least once without a condom	880	12%	224	6%	272	18%	305	15%	65	19%	14	13%	
Missing	7		0		0		0		7		0		
Vaginal sex with a casual partner in preceding 6 months													<.001
No (vaginal sex with) casual partners	6,577	87%	3,297	93%	1,188	81%	1,728	84%	268	77%	96	86%	
Always with a condom	148	2.0%	37	1.0%	47	3.2%	46	2.2%	16	4.6%	2	1.8%	
At least one condom failure¶	33	0.4%	5	0.1%	10	0.7%	12	0.6%	6	1.7%	0	0.0%	
At least once without a condom	793	11%	211	6%	229	16%	283	14%	57	16%	13	12%	
Missing	7		0		0		0		7		0		
Anal sex with a casual partner in preceding 6 months													<.001
No (anal sex with) casual partners	7,349	97%	3,497	99%	1,413	96%	1,995	96%	335	97%	109	98%	
Always with a condom	38	0.5%	10	0.3%	14	1.0%	11	0.5%	2	0.6%	1	0.9%	
At least one condom failure¶	1	0.0%	0	0.0%	0	0.0%	1	0.0%	0	0.0%	0	0.0%	
At least once without a condom	163	2.2%	43	1.2%	47	3.2%	62	3.0%	10	2.9%	1	0.9%	
Missing	7		0		0		0		7		0		

* Indicates consultations with FSW (repeated observations for FSW included)

** Includes FSW working in forced prostitution, on the streets, in the porn-industry (movies/sex shows), via the internet (webcam), on sex boats, as hostesses, in hotels, in other countries and FSW not practicing sex work at time of STI consultation

Differences in variables by work location were assessed using χ^2 tests for categorical data

¶ If a FSW reported at least one condom failure in the preceding 6 months, she is included in the category condom failure
Abbreviations: FSW = female sex worker

Supplementary Table 4. Characteristics and STI diagnoses of FSW* (N=7,558) tested by P&G2g2 in Amsterdam, the Netherlands, 2011-2016, by year of consultation

Year of consultation	2011		2012		2013		2014		2015		2016 (Jan – Sep)		P-value#
	(N=402)		(N=1,518)		(N=1,277)		(N=1,484)		(N=1,664)		(N=1,213)		
	n	%	n	%	n	%	n	%	n	%	n	%	
Median age in years [IQR]	26	[23-33]	27	[23-34]	28	[23-35]	28	[24-35]	29	[24-36]	29	[25-36]	<.001
Age													<.001
<25 years	155	39%	487	32%	405	32%	437	29%	418	25%	273	23%	
25-29 years	105	26%	425	28%	332	26%	422	28%	480	29%	390	32%	
30-34 years	53	13%	251	17%	203	16%	237	16%	280	17%	212	17%	
35-39 years	38	9%	138	9%	124	10%	151	10%	164	10%	116	10%	
40-44 years	21	5%	80	5%	94	7%	91	6%	138	8%	81	7%	
≥45 years	30	7%	137	9%	119	9%	146	10%	184	11%	141	12%	
Region of birth													<.001
Netherlands – without parent with immigrant background	39	10%	200	13%	168	13%	239	16%	312	19%	254	21%	
Netherlands – with parent with immigrant background	32	8%	145	10%	135	11%	143	10%	142	9%	123	10%	
Eastern Europe	237	59%	774	51%	618	48%	699	47%	767	46%	509	42%	
Latin America	63	16%	241	16%	203	16%	253	17%	247	15%	182	15%	
Other**	31	8%	158	10%	153	12%	150	10%	196	12%	145	12%	
Work location													<.001
Window prostitution	206	52%	806	54%	663	53%	685	46%	714	44%	476	40%	
Escort/working from home	57	14%	190	13%	186	15%	302	20%	424	26%	315	26%	
Club/brothel/private house/massage salon	119	30%	393	26%	340	27%	430	29%	431	26%	356	30%	
Other†	15	4%	103	7%	61	4.9%	58	3.9%	63	3.9%	54	4.5%	
Missing	5		26		27		9		32		12		
Median no. of sex partners (preceding 6 months) [IQR]	350	[150-500]	300	[200-500]	300	[150-500]	300	[100-500]	300	[100-500]	250	[100-450]	<.001
Number of sexual contacts in preceding 6 months (oral, vaginal and/or anal)													<.001
<100	56	14%	241	16%	228	18%	305	21%	354	21%	295	24%	8

100-299	112	28%	366	24%	332	26%	373	25%	435	26%	362	30%	
300-499	80	20%	398	26%	336	26%	401	27%	373	22%	260	21%	
≥500	154	38%	513	34%	381	30%	405	27%	501	30%	296	24%	
Missing	0		0		0		0		1		0		
Oral sex with a steady partner in preceding 6 months													<.001
No (oral sex with) steady partners	154	38%	626	41%	561	44%	680	46%	779	47%	657	54%	
Always with a condom	5	1.2%	41	2.7%	28	2.2%	26	1.8%	31	1.9%	18	1.5%	
At least one condom failure¶	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	0.2%	
At least once without a condom	243	60%	846	56%	686	54%	778	52%	854	51%	536	44%	
Missing	0		5		2		0		0		0		
Vaginal sex with a steady partner in preceding 6 months													<.001
No (vaginal sex with) steady partners	149	37%	606	40%	544	43%	663	45%	755	45%	643	53%	
Always with a condom	17	4.2%	96	6%	93	7%	80	5%	93	6%	50	4.1%	
At least one condom failure¶	3	0.8%	8	0.5%	3	0.2%	6	0.4%	2	0.1%	4	0.3%	
At least once without a condom	233	58%	803	53%	635	50%	735	50%	814	49%	516	43%	
Missing	0		5		2		0		0		0		
Anal sex with a steady partner in preceding 6 months													.008
No (anal sex with) steady partners	344	86%	1,286	85%	1,111	87%	1,319	89%	1,473	89%	1,085	89%	
Always with a condom	5	1.2%	38	2.5%	23	1.8%	24	1.6%	26	1.6%	13	1.1%	
At least one condom failure¶	0	0.0%	0	0.0%	0	0.0%	1	0.1%	0	0.0%	2	0.2%	
At least once without a condom	53	13%	189	12%	141	11%	140	9%	165	10%	113	9%	
Missing	0		5		2		0		0		0		
Oral sex with clients in preceding 6 months													<.001
No (oral sex with) clients	11	2.7%	55	3.6%	38	4.3%	46	3.1%	48	2.9%	40	3.3%	
Always with a condom	334	83%	1,219	81%	1,037	78%	1,159	78%	1,263	76%	905	75%	
At least one condom failure¶	2	0.5%	3	0.2%	4	0.3%	5	0.3%	3	0.2%	8	0.7%	
At least once without a condom	55	14%	236	16%	196	18%	274	18%	350	21%	260	21%	
Missing	0		5		2		0		0		0		
Vaginal sex with clients in preceding 6 months													<.001
No (vaginal sex with) clients	9	2.2%	35	2.3%	31	2.4%	30	2.0%	39	2.3%	28	2.3%	
Always with a condom	289	72%	963	64%	830	65%	1,025	69%	1,149	69%	839	69%	
At least one condom failure¶	96	24%	462	31%	369	29%	370	25%	378	23%	293	24%	

At least once without a condom	8	2.0%	53	3.5%	45	3.5%	59	4%	98	6%	53	4%	
Missing	0		5		2		0		0		0		
Anal sex with clients in preceding 6 months													.372
No (anal sex with) clients	357	89%	1,310	87%	1,103	87%	1,271	86%	1,443	87%	1,048	86%	
Always with a condom	42	10%	184	12%	148	12%	173	12%	195	12%	136	11%	
At least one condom failure¶	1	0.3%	3	0.2%	3	0.2%	8	0.5%	5	0.3%	5	0.4%	
At least once without a condom	2	0.5%	16	1.1%	21	1.7%	32	2.2%	21	1.3%	24	2.0%	
Missing	0		5		2		0		0		0		
Oral sex with a casual partner in preceding 6 months													<.001
No (oral sex with) casual partners	370	92%	1,336	88%	1,147	90%	1,313	88%	1,437	86%	1,021	84%	
Always with a condom	3	0.8%	13	0.9%	6	0.5%	11	0.7%	9	0.5%	5	0.4%	
At least one condom failure¶	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	
At least once without a condom	29	7%	164	11%	122	10%	160	11%	218	13%	187	15%	
Missing	0		5		2		0		0		0		
Vaginal sex with a casual partner in preceding 6 months													<.001
No (vaginal sex with) casual partners	365	91%	1,326	88%	1,140	89%	1,306	88%	1,431	86%	1,009	83%	
Always with a condom	8	2.0%	32	2.1%	23	1.8%	24	1.6%	24	1.4%	37	3.1%	
At least one condom failure¶	1	0.3%	9	0.6%	4	0.3%	8	0.5%	4	0.2%	7	0.6%	
At least once without a condom	28	7%	146	10%	108	8%	146	10%	205	12%	160	13%	
Missing	0		5		2		0		0		0		
Anal sex with a casual partner in preceding 6 months													.092
No (anal sex with) casual partners	396	99%	1,475	97%	1,245	98%	1,455	98%	1,612	97%	1,166	96%	
Always with a condom	1	0.3%	6	0.4%	5	0.4%	4	0.3%	9	0.5%	13	1.1%	
At least one condom failure¶	0	0.0%	0	0.0%	0	0.0%	1	0.1%	0	0.0%	0	0.2%	
At least once without a condom	5	1.2%	32	2.1%	25	2.0%	24	1.6%	43	2.6%	34	2.8%	
Missing	0		5		2		0		0		0		
Oropharyngeal chlamydia diagnosis	9	2.2%	19	1.3%	7	0.6%	19	1.3%	11	0.7%	14	1.2%	.028
Genital chlamydia diagnosis	25	6%	77	5%	73	6%	69	4.7%	67	4.0%	50	4.1%	.164
Rectal chlamydia diagnosis	17	4.2%	49	3.2%	51	4.0%	67	4.5%	64	3.9%	52	4.3%	.577
Oropharyngeal gonorrhea diagnosis	6	1.5%	15	1.0%	21	1.6%	23	1.6%	25	1.5%	9	0.7%	.253
Genital gonorrhea diagnosis	5	1.2%	18	1.2%	14	1.1%	19	1.3%	18	1.1%	4	0.3%	.194
Rectal gonorrhea diagnosis	1	0.3%	11	0.7%	9	0.7%	18	1.2%	19	1.2%	1	0.1%	.008

Infectious hepatitis B infection	1	0.3%	5	0.3%	4	0.3%	3	0.2%	2	0.1%	1	0.1%	.601
HIV infection													.867
No	359	100%	1,390	100%	1,178	100%	1,375	99%	1,538	100%	1,127	100%	
Yes	0	0.0%	6	0.4%	5	0.4%	8	0.6%	7	0.5%	6	0.5%	
Missing	43		122		94		101		119		80		
Infectious syphilis diagnosis	0	0.0%	0	0.0%	1	0.1%	1	0.1%	1	0.1%	0	0.0%	.903
Chlamydia and/or gonorrhea	46	11%	122	8%	121	9%	132	9%	119	7%	81	7%	.008

* Indicates consultations with FSW (repeated observations for FSW included)

Differences in prevalence of STI were assessed by year using χ^2 tests for categorical data. When expected values were <5 in one or more cells, Fisher exact tests were used. For continuous data, Kruskal-Wallis tests were used.

** Includes FSW from Asia, South and Western Europe and Africa

† Includes FSW working in forced prostitution, on the streets, in the porn-industry (movies/sex shows), via the internet (webcam), on sex boats, as hostesses, in hotels, in other countries and FSW not practicing sex work at time of STI consultation

¶ If a FSW reported at least one condom failure in the preceding 6 months, she is included in the category condom failure

Abbreviations: FSW = female sex worker; STI = sexually transmitted infection; IQR = interquartile range; HIV = human immunodeficiency virus

Supplementary Table 5. Bivariable associations of variables with chlamydia (n=621/7,558) by anatomical location (oropharyngeal, genital and rectal) in FSW* working in Amsterdam, 2011-2016

	Oropharyngeal chlamydia (n=79/7,558)			Genital chlamydia (n=361/7,558)			Rectal chlamydia (n=300/7,558)		
	OR	95% CI	p	OR	95% CI	p	OR	95% CI	p
Consultation year			.054			.163			.624
2011	Ref			Ref			Ref		
2012	0.54	0.25-1.16		0.81	0.51-1.27		0.76	0.45-1.29	
2013	0.24	0.08-0.66		0.91	0.59-1.40		0.93	0.55-1.56	
2014	0.54	0.25-1.17		0.73	0.47-1.15		1.07	0.65-1.76	
2015	0.27	0.11-0.69		0.63	0.40-1.00		0.89	0.54-1.48	
2016 (January – September)	0.47	0.21-1.07		0.63	0.39-1.02		0.98	0.58-1.64	
Age			.007			<.001			.002
<25 years	Ref			Ref			Ref		
25-29 years	0.52	0.29-0.92		0.59	0.45-0.77		0.74	0.54-1.00	
30-34 years	0.34	0.15-0.80		0.39	0.27-0.56		0.48	0.32-0.73	
35-39 years	0.15	0.04-0.63		0.25	0.15-0.41		0.56	0.35-0.90	
40-44 years	0.52	0.17-1.56		0.28	0.15-0.53		0.47	0.26-0.86	
≥45 years	0.36	0.14-0.90		0.44	0.24-0.79		0.51	0.26-1.01	
Region of birth			.077			.239			.007
Netherlands – without parent(s) with immigrant status	Ref			Ref			Ref		
Netherlands – with parent(s) with immigrant status	0.46	0.20-1.05		0.73	0.46-1.15		0.79	0.48-1.28	
Eastern Europe	0.47	0.29-0.76		0.77	0.57-1.05		0.59	0.42-0.81	
Latin America	0.39	0.18-0.85		0.68	0.46-0.99		0.55	0.35-0.85	
Other**	0.59	0.30-1.15		0.95	0.61-1.48		0.91	0.58-1.47	
Work location***			.111			.015			.003
Window prostitution	Ref			Ref			Ref		
Escort/working from home	2.03	1.12-3.67		1.58	1.17-2.14		1.68	1.20-2.36	
Club/brothel/private house/massage salon	1.30	0.70-2.42		1.43	1.08-1.89		1.72	1.26-2.36	
Other†	1.82	0.70-4.72		1.37	0.82-2.29		1.41	0.81-2.47	
Number of sexual contacts in preceding 6 months (oral, vaginal and/or anal)			.412			.352			.109

<100	Ref		Ref		Ref	
100-299	1.25	0.64-2.44	0.86	0.64-1.16	0.72	0.52-1.00
300-499	0.72	0.32-1.61	0.88	0.64-1.20	0.91	0.65-1.27
>500	1.20	0.61-2.38	0.75	0.55-1.03	0.73	0.52-1.01
Oral sex with a steady partner in preceding 6 months						
No (oral sex with) steady partners	Ref		N.E.		N.E.	
Always with a condom/condom failure	1.34	0.32-5.66				
At least once without a condom	1.10	0.67-1.79				
Vaginal sex with a steady partner in preceding 6 months						
No (vaginal sex with) steady partners	N.E.		Ref		Ref	
Always with a condom/condom failure			0.98	0.62-1.57	0.93	0.58-1.50
At least once without a condom			1.06	0.84-1.34	0.86	0.67-1.11
Anal sex with a steady partner in preceding 6 months						
No (anal sex with) steady partners	N.E.		Ref		Ref	
Always with a condom/condom failure			0.52	0.18-1.48	1.41	0.67-2.95
At least once without a condom			1.05	0.72-1.53	1.48	1.05-2.07
Oral sex with clients in preceding 6 months						
No (oral sex with) clients	Ref		N.E.		N.E.	
Always with a condom/condom failure	2.43	0.26-22.31				
At least once without a condom	4.47	0.48-41.73				
Vaginal sex with clients in preceding 6 months						
No (vaginal sex with) clients	N.E.		Ref		Ref	
Always with a condom/condom failure			0.81	0.42-1.54	0.78	0.39-1.57
At least once without a condom			1.71	0.80-3.65	1.83	0.82-4.07
Anal sex with clients in preceding 6 months						
No (anal sex with) clients	N.E.		Ref		Ref	
Always with a condom/condom failure			1.13	0.82-1.55	1.45	1.04-2.01
At least once without a condom			1.42	0.65-3.10	2.55	1.23-5.29
Oral sex with a casual partner in preceding 6 months						
No (oral sex with) casual partners	Ref		N.E.		N.E.	
Always with a condom/condom failure	1.93	0.21-17.36				
At least once without a condom	1.54	0.83-2.86				
Vaginal sex with a casual partner in preceding 6 months						
No (vaginal sex with) casual partners	N.E.		Ref		Ref	
Always with a condom/condom failure			0.82	0.39-1.74	1.33	0.68-2.59

At least once without a condom		1.37	1.01-1.85	1.51	1.08-2.12
Anal sex with a casual partner in preceding 6 months					
No (anal sex with) casual partners	N.E.	Ref		Ref	.117
Always with a condom/condom failure		2.23	0.78-6.39	2.68	0.95-7.51
At least once without a condom		1.14	0.57-2.64	1.37	0.69-2.73
Gonorrhea at same anatomical site					
No		Ref		Ref	<.001
Yes	7.12	2.77-18.26		4.45	2.47-8.02

* Indicates consultations with FSW (repeated observations for FSW included: corrected for in analyses using GEE)

** Includes FSW from Asia South and Western Europe and Africa

*** FSW with a missing work location were not included in the univariable analysis of work location

† Includes FSW working in forced prostitution, on the streets, in the porn-industry (movies/sex shows), via the internet (webcam), on sex boats, as hostesses, in hotels, in other countries and FSW not practicing sex work at time of STI consultation

N.E. not estimated due to theoretically unlogical associations

Abbreviations: FSW = female sex worker; STI = sexually transmitted infection; OR = odds ratio; CI = confidence interval; GEE = generalized estimating equations

Supplementary Table 6. Bivariable associations of variables with gonorrhoea (n=149/7,558) according to different anatomical locations (oropharyngeal, genital and rectal) in FSW* working in Amsterdam, 2011-2016

	Oropharyngeal gonorrhoea (n=99/7,558)			Genital gonorrhoea (n=78/7,558)			Rectal gonorrhoea (n=59/7,558)		
	OR	95% CI	p	OR	95% CI	p	OR	95% CI	p
Consultation year			.307			.276			.064
2011	Ref			Ref			Ref		
2012	0.67	0.27-1.68		0.94	0.37-2.37		2.95	0.41-21.03	
2013	1.08	0.45-2.59		0.82	0.32-2.08		2.86	0.39-20.71	
2014	1.01	0.41-2.43		0.94	0.35-2.50		4.71	0.67-33.03	
2015	0.99	0.41-2.40		0.81	0.31-2.11		4.38	0.63-30.50	
2016 (January – September)	0.48	0.17-1.32		0.24	0.07-0.89		0.29	0.02-4.58	
Age			.170			.092			.710
<25 years	Ref			Ref			Ref		
25-29 years	0.88	0.52-1.49		0.61	0.34-1.11		0.77	0.39-1.52	
30-34 years	0.65	0.32-1.32		0.55	0.25-1.21		1.04	0.47-2.28	
35-39 years	0.81	0.39-1.65		0.29	0.09-0.89		0.39	0.11-1.40	
40-44 years	0.34	0.10-1.17		0.25	0.06-1.02		0.92	0.31-2.67	
≥45 years	0.32	0.11-0.89		0.65	0.23-1.81		1.18	0.40-3.47	
Region of birth			.357			.925			.318
Netherlands – without parent(s) with immigrant status	Ref			Ref			Ref		
Netherlands – with parent(s) with immigrant status	1.07	0.46-2.45		1.10	0.42-2.90		0.70	0.25-1.93	
Eastern Europe	1.19	0.65-2.19		0.95	0.44-2.02		0.55	0.26-1.16	
Latin America	0.61	0.27-1.39		0.78	0.32-1.93		0.33	0.11-0.96	
Other**	1.40	0.66-3.01		0.76	0.28-2.02		0.66	0.25-1.72	
Work location***			.221			.205			.018
Window prostitution	Ref			Ref			Ref		
Escort/working from home	1.72	1.00-2.96		1.88	0.85-2.72		2.74	1.38-5.45	
Club/brothel/private house/massage salon	1.50	0.89-2.53		0.99	0.60-1.92		1.50	0.74-3.03	
Other†	1.42	0.55-3.67		1.35	0.57-3.47		2.88	1.08-7.73	
Number of sexual contacts in preceding 6 months (oral, vaginal and/or anal)			.937			.441			.130

<100	Ref		Ref		Ref	
100-299	1.07	0.58-1.97	1.16	0.55-2.43	1.39	0.66-2.92
300-499	1.07	0.56-2.03	0.82	0.38-1.77	0.43	0.15-1.20
>500	1.21	0.66-2.23	1.42	0.72-2.79	1.10	0.54-2.23
Oral sex with a steady partner in preceding 6 months		.453				
No (oral sex with) steady partners	Ref		N.E		N.E	
Always with a condom/condom failure	1.34	0.42-4.32				
At least once without a condom	0.82	0.55-1.22				
Vaginal sex with a steady partner in preceding 6 months				.229		.655
No (vaginal sex with) steady partners	N.E		Ref		Ref	
Always with a condom/condom failure			2.07	0.83-5.17	1.41	0.56-3.57
At least once without a condom			0.95	0.58-1.54	0.91	0.53-1.57
Anal sex with a steady partner in preceding 6 months				.284		.703
No (anal sex with) steady partners	N.E		Ref		Ref	
Always with a condom/condom failure			2.06	0.57-7.35	0.88	0.10-7.55
At least once without a condom			0.57	0.21-1.55	0.65	0.24-1.78
Oral sex with clients in preceding 6 months		.070				
No (oral sex with) clients	Ref		N.E		N.E	
Always with a condom/condom failure	0.70	0.26-1.92				
At least once without a condom	1.19	0.42-3.41				
Vaginal sex with clients in preceding 6 months				.614		.348
No (vaginal sex with) clients	N.E		Ref		Ref	
Always with a condom/condom failure			0.58	0.18-1.93	0.65	0.16-2.65
At least once without a condom			0.76	0.16-3.69	1.28	0.24-6.85
Anal sex with clients in preceding 6 months				<.001		<.001
No (anal sex with) clients	N.E		Ref		Ref	
Always with a condom/condom failure			2.56	1.46-4.49	2.97	1.61-5.48
At least once without a condom			4.77	1.83-12.46	5.27	1.68-16.51
Oral sex with a casual partner in preceding 6 months		.212				
No (oral sex with) casual partners	Ref		N.E		N.E	
Always with a condom/condom failure	1.74	0.25-12.23				
At least once without a condom	1.61	0.95-2.73				
Vaginal sex with a casual partner in preceding 6 months				.618		.118
No (vaginal sex with) casual partners	N.E		Ref		Ref	
Always with a condom/condom failure			1.72	0.52-5.64	2.45	0.78-7.77

At least once without a condom		1.25	0.60-2.59	1.82	0.92-3.62
Anal sex with a casual partner in preceding 6 months					
No (anal sex with) casual partners	N.E	Ref		Ref	.522
Always with a condom/condom failure		2.42	0.29-20.42	3.25	0.43-24.74
At least once without a condom		1.99	0.66-6.0	1.68	0.43-6.61
Chlamydia at same anatomical site					
No		Ref		Ref	<.001
Yes		7.06	2.79-17.90	4.55	2.48-8.82

* Indicates consultations with FSW (repeated observations for FSW included: corrected for in analyses using GEE)

** Includes FSW from Asia South and Western Europe and Africa

*** FSW with a missing work location were not included in the univariable analysis of work location

† Includes FSW working in forced prostitution, on the streets, in the porn-industry (movies/sex shows), via the internet (webcam), on sex boats, as hostesses, in hotels, in other countries and FSW not practicing sex work at time of STI consultation

N.E. not estimated due to theoretically unlogical associations

Abbreviations: FSW = female sex worker; STI = sexually transmitted infection; OR = odds ratio; CI = confidence interval; GEE = generalized estimating equations