Additional File 5 – Tables and Figures

Table 1. Visit rates among EZI-PrEP participants randomized to receive 3-monthly or 6-monthly PrEP monitoring (2021-2024, the Netherlands)

Figure 1. Distribution of additional STI testing visits among participants randomized to 3- or 6-monthly PrEP monitoring in EZI-PrEP (2021-2024).

Table 2. STI diagnosis rates among EZI-PrEP participants randomized to receive 3-monthly or 6-monthly PrEP monitoring (2021-2024, the Netherlands)

Table 3. Proportion of incident STIs diagnosed during visits with and without self-reported symptoms (EZI-PrEP, 2021-2024, the Netherlands)

Figure 2. Total number of bacterial STI diagnoses over the study period, among EZI-PrEP participants that attended respectively 0, 1, 2 or ≥3 additional STI testing visits over the study period.

Figure 3. Distribution of incident STI diagnoses across the EZI-PrEP study population.

Table 4. Positivity of grouped bacterial STI, stratified by symptoms, among EZI-PrEP participants receiving 3-monthly or 6-monthly PrEP monitoring (2021-2024, the Netherlands)

Table 5. Positivity of grouped bacterial STIs at scheduled monitoring visits over time (EZI-PrEP, 2021-2024, the Netherlands)

Table 1. Visit rates among EZI-PrEP participants randomized to receive 3-monthly or 6-monthly PrEP monitoring (2021-2024, the Netherlands)

	Number of visits[3]	PY	Visit rate per PY [95%CI]	Visit rate ratio [95%CI]	p-value
Scheduled PrEP monitoring visits[1]					
3-monthly monitoring	1551	387	4.01 [3.82-4.21]	Ref.	
6-monthly monitoring	808	373	2.17 [2.02-2.32]	0.54 [0.50-0.59]	<0.0001
Additional STI testing visits					
3-monthly monitoring	233	387	0.60 [0.53-0.68]	Ref.	
6-monthly monitoring	376	373	1.00 [0.91-1.12]	1.67 [1.42-1.98]	<0.0001
Any visit[2]					
3-monthly monitoring	1784	387	4.61 [4.40-4.83]	Ref.	
6-monthly monitoring	1184	373	3.18 [3.00-3.36]	0.69 [0.64-0.74]	<0.0001

Abbreviations: CI, confidence interval; EZI-PrEP: E-Health for Zero Infections - facilitating access to and use of Pre-Exposure Prophylaxis in the Netherlands; PrEP, pre-exposure prophylaxis; PY, person-years; STI, sexually transmitted infection

1. Including n=51 month 1 monitoring visits among participants starting or restarting PrEP

2. Including n=71 visits where no STI tests were taken

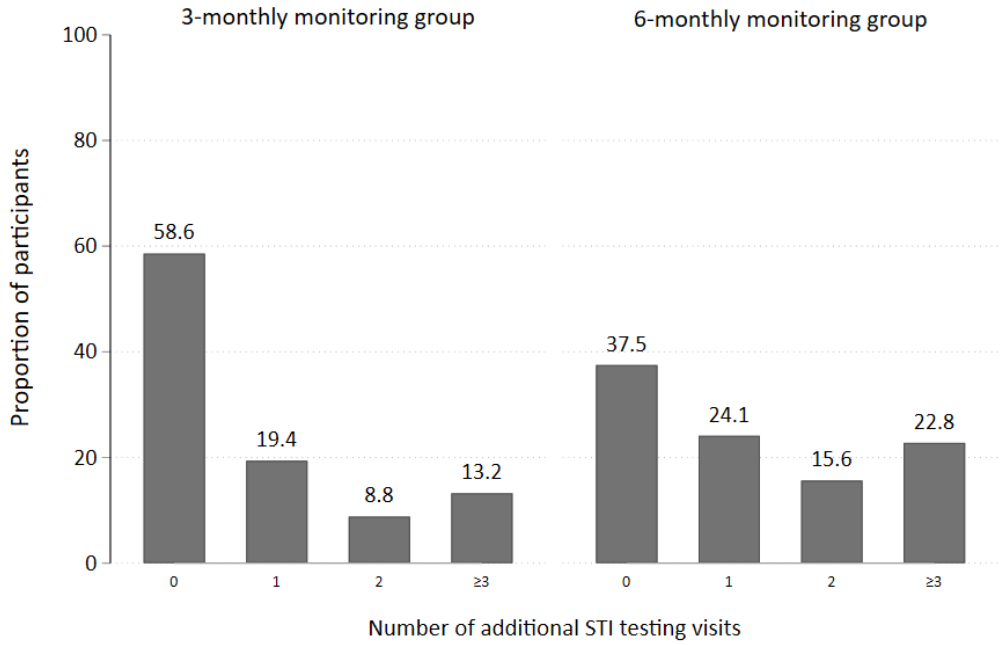

Figure 1. Distribution of additional STI testing visits among participants randomized to 3- or 6-monthly PrEP monitoring in EZI-PrEP (2021-2024).
Numbers above the bars indicate the percentage of participants of that monitoring group that attended respectively 0, 1, 2 or ≥3 additional STI testing visits during the study period.

Table 2. STI detection rates among EZI-PrEP participants randomized to receive 3-monthly or 6-monthly PrEP monitoring (2021-2024, the Netherlands)

	Total (n=451)			**3-monthly monitoring (n=227)**			**6-monthly monitoring (n=224)**						
	n (%) participants with incident diagnosis	No. diagnoses/ PY[4]	Detection rate per 100 PY	n (%) participants with incident diagnosis	No. diagnoses/ PY	Detection rate per 100 PY	n (%) participants with incident diagnosis	No. diagnoses/ PY	Detection rate per 100 PY	Crude detection rate ratio [95% CI]	p-value	Adjusted detection rate ratio[4] [95% CI]	p-value
Bacterial STIs[1]	287 (63.6%)	773/760	101.7	150 (66.1%)	444/387	114.8	137 (61.2%)	329/373	88.2	0.77 [0.66-0.89]	0.0006	0.82 [0.70-0.95]	0.0086
Anal STIs[2]	225 (49.9%)	520/760	68.4	117 (51.5%)	295/387	76.3	108 (48.2%)	225/373	60.3	0.80 [0.66-0.96]	0.015	0.85 [0.70-1.02]	0.075
Gonorrhea													
Any gonorrhea	226 (50.1%)	396/758	52.3	121 (53.3%)	235/386	60.9	105 (46.9%)	161/372	43.3	0.71 [0.58-0.87]	0.0008	0.76 [0.63-0.92]	0.0050
Anal gonorrhea	170 (37.7%)	261/758	34.4	92 (40.5%)	158/386	41.0	78 (34.8%)	103/372	27.7	0.68 [0.53-0.87]	0.0023	0.73 [0.57-0.93]	0.0099
Urogenital gonorrhea	51 (11.3%)	63/758	8.3	29 (12.8%)	40/386	10.4	22 (9.8%)	23/372	6.2	0.60 [0.36-1.00]	0.050	0.63 [0.38-1.06]	0.080
Oropharyngeal gonorrhea	158 (35.0%)	234/757	30.9	87 (38.3%)	138/385	35.8	71 (31.7%)	96/372	25.8	0.73 [0.56-0.94]	0.016	0.77 [0.60-1.00]	0.049
Chlamydia													
Any chlamydia	193 (42.8%)	326/758	43.0	100 (44.1%)	181/386	46.9	93 (41.5%)	145/372	39.0	0.83 [0.67-1.03]	0.096	0.88 [0.71-1.08]	0.23
Anal chlamydia	162 (35.9%)	259/758	34.2	82 (36.1%)	137/386	35.5	80 (35.7%)	122/372	32.8	0.93 [0.73-1.18]	0.55	0.98 [0.77-1.24]	0.88
Urogenital chlamydia	59 (13.1%)	75/758	9.9	33 (14.5%)	46/386	11.9	26 (11.6%)	29/372	7.8	0.66 [0.41-1.05]	0.077	0.70 [0.44-1.12]	0.13
Oropharyngeal chlamydia	29 (6.4%)	34/697	4.9	20 (8.8%)	24/355	6.8	9 (4.0%)	10/342	2.9	0.44 [0.21-0.91]	0.027	0.46 [0.22-0.95]	0.037
LGV	28 (6.2%)	32/758	4.2	17 (7.4%)	18/386	4.7	11 (4.9%)	14/372	3.7	0.81 [0.40-1.62]	0.55	0.90 [0.45-1.81]	0.77
Infectious syphilis[3]	47 (10.4%)	51/758	6.7	25 (11.0%)	28/386	7.3	22 (9.8%)	23/372	6.2	0.85 [0.49-1.48]	0.57	0.91 [0.53-1.58]	0.74

Abbreviations: CI, confidence interval; EZI-PrEP: E-Health for Zero Infections - facilitating access to and use of Pre-Exposure Prophylaxis in the Netherlands; LGV, lymphogranuloma venereum; No., number; PrEP, pre-exposure prophylaxis; PY, person-years; STI, sexually transmitted infection;

1. Diagnosis of gonorrhea, chlamydia or infectious syphilis. Concurrent diagnoses of infections with different bacteria were counted separately, and diagnoses of infections with the same bacterium at different anatomical sites were counted as one.

2. Anal gonorrhea or anal chlamydia. Concurrent diagnoses of anal gonorrhea and anal chlamydia were counted separately.

3. Stage 1, stage 2, recent latent syphilis.

4. Adjusted for number of sex partners, chemsex and group sex in the 6 months preceding enrolment, using inverse-propensity score weighting for allocated monitoring frequency based on logistic regression

Table 3. Proportion of incident STIs diagnosed during visits with and without self-reported symptoms (EZI-PrEP, 2021-2024, the Netherlands)

	Total	Visits without symptoms	Visits with symptoms	Visits with missing data on symptoms
	n	n (%)	n (%)	n (%)
Bacterial STIs	773	635 (82.2%)	134 (17.3%)	4 (0.5%)
Anal STIs	520	423 (81.4%)	93 (17.9%)	4 (0.8%)
Gonorrhea				
Any gonorrhea	396	317 (80.1%)	76 (19.2%)	3 (0.8%)
Anal gonorrhea	261	202 (77.4%)	56 (21.5%)	3 (1.1%)
Urogenital gonorrhea	63	31 (49.2%)	32 (50.8%)	0 (0.0%)
Oropharyngeal gonorrhea	234	185 (79.1%)	49 (20.9%)	0 (0.0%)
Chlamydia				
Any chlamydia	326	280 (85.9%)	45 (13.8%)	1 (0.4%)
Anal chlamydia	259	221 (85.3%)	37 (14.3%)	1 (0.4%)
Urogenital chlamydia	75	62 (82.7%)	13 (17.3%)	0 (0.0%)
Oropharyngeal chlamydia	34	28 (82.4%)	6 (17.6%)	0 (0.0%)
LGV	32	17 (53.1%)	15 (46.9%)	0 (0.0%)
Infectious syphilis[1]	51	38 (74.5%)	13 (25.5%)	0 (0.0%)

Abbreviations: -PrEP: E-Health for Zero Infections - facilitating access to and use of Pre-Exposure Prophylaxis in the Netherlands; LGV, lymphogranuloma venereum; STI, sexually transmitted infection.

1. Stage 1, stage 2, recent latent syphilis.

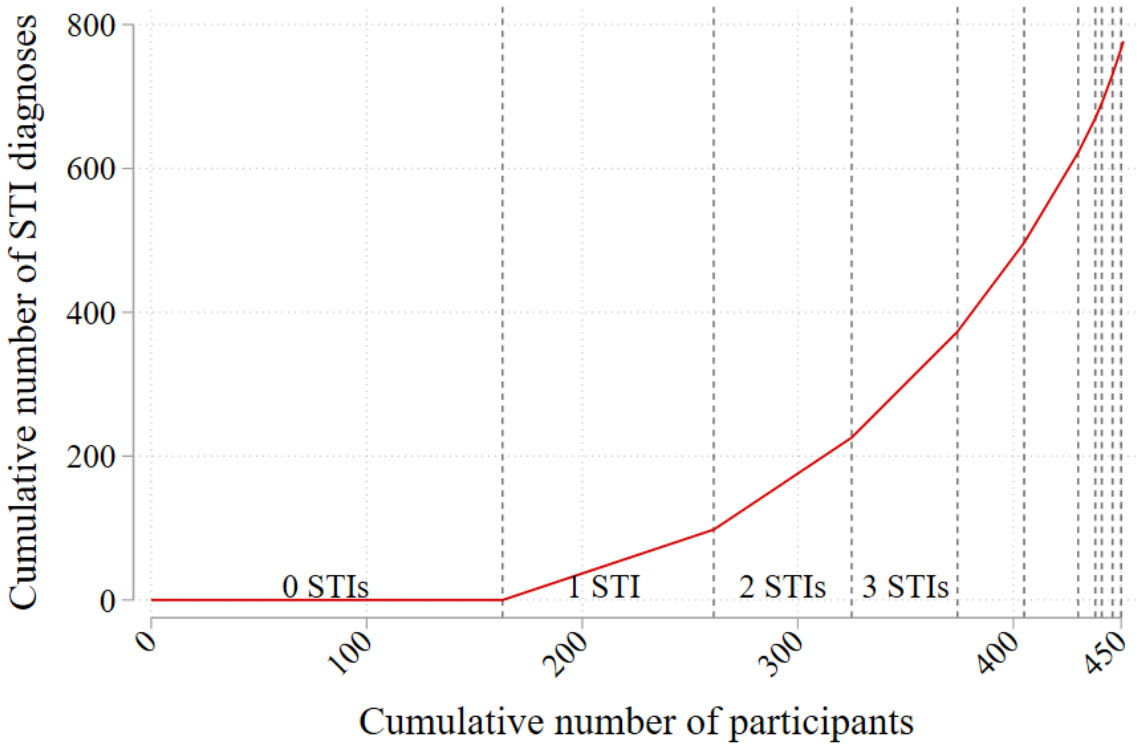

Figure 2. Distribution of incident STI diagnoses across the EZI-PrEP study population.

The X-axis indicates the cumulative number of participants, ordered by the number of incident STI diagnoses they had during the study period (minimum 0, maximum 10). The Y axis indicates the cumulative number of STI diagnoses.

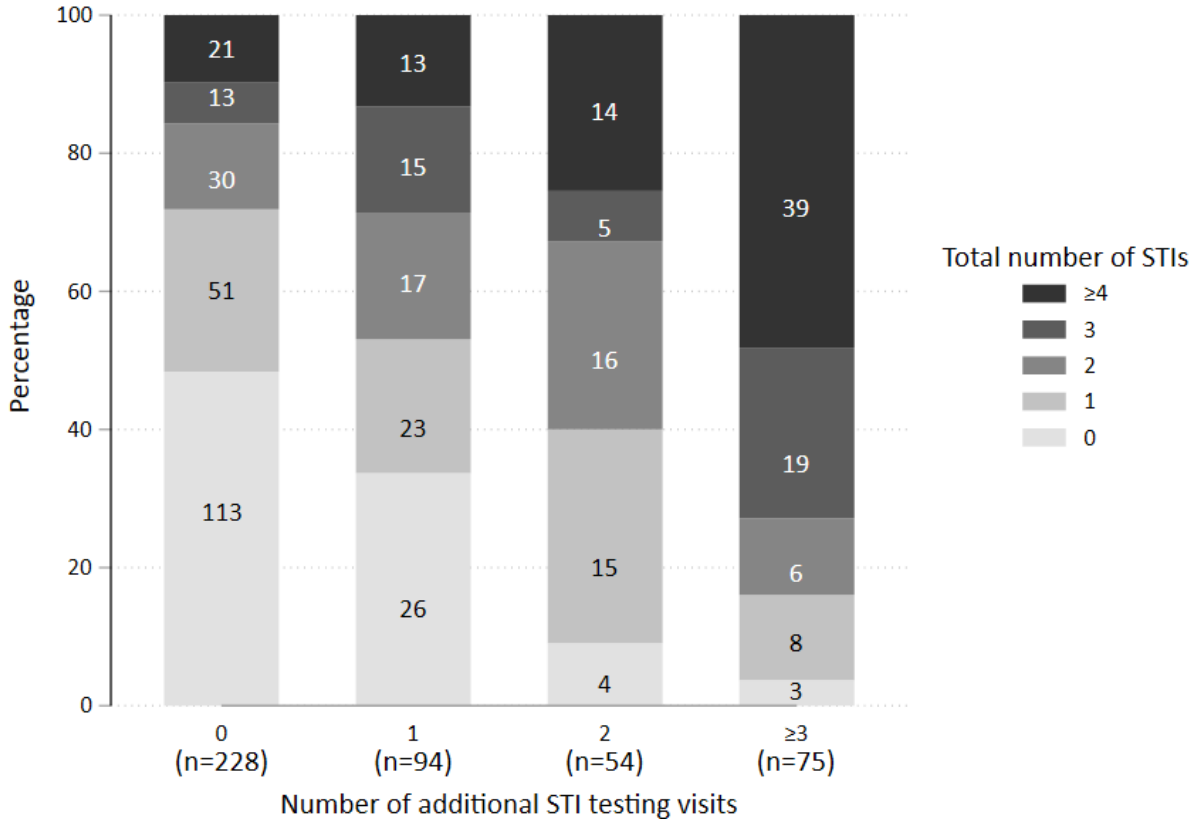

Figure 3. Total number of bacterial STI diagnoses over the study period, among EZI-PrEP participants that attended respectively 0, 1, 2 or ≥3 additional STI testing visits over the study period.
Numbers in the bars indicate the absolute number of participants with the specified number of additional testing visit and STI diagnoses. STI diagnoses include diagnoses of gonorrhea, chlamydia, and infectious syphilis (i.e., stage 1, stage 2, or recent latent syphilis) made at scheduled monitoring visit and additional STI testing visits.

Table 4. Positivity of grouped bacterial STI, stratified by symptoms, among EZI-PrEP participants receiving 3-monthly or 6-monthly PrEP monitoring (2021-2024, the Netherlands)

	Total (n=451)			**3-monthly monitoring (n=227)**			**6-monthly monitoring (n=224)**				
	No. STIs[1]	No. visits	Positivity (STIs / 100 visits)	No. STIs[1]	No. visits	Positivity (STIs / 100 visits)	No. STIs[1]	No. visits	Positivity (STIs / 100 visits)	Crude positivity ratio [95% CI]	p-value
No symptoms reported											
Scheduled PrEP monitoring visits	474	2173	21.8	303	1439	21.1	171	734	23.3	1.11 [0.91-1.34]	0.30
Unscheduled STI testing visits	161	485	33.2	59	177	33.3	102	308	33.1	0.99 [0.74-1.33]	0.95
All visits	635	2658	23.9	362	1616	22.4	273	1042	26.2	1.17 [1.00-1.37]	0.053
Symptoms reported											
Scheduled PrEP monitoring visits	61	119	51.3	48	77	62.3	13	42	31.0	0.50 [0.26-0.95]	0.034
Unscheduled STI testing visits	73	125	58.4	34	58	58.6	39	67	58.2	0.99 [0.67-1.47]	0.97
All visits	134	244	54.9	82	135	60.7	52	109	47.7	0.79 [0.57-1.09]	0.15
Missing data on symptoms											
Scheduled PrEP monitoring visits	2	5	40.0	0	0	n/a	2	5	40.0	n/a	n/a
Unscheduled STI testing visits	2	1	200.0	0	0	n/a	2	1	200.0	n/a	n/a
All visits	4	6	66.7	0	0	n/a	4	6	66.7	n/a	n/a

Abbreviations: CI, confidence interval; EZI-PrEP: E-Health for Zero Infections - facilitating access to and use of Pre-Exposure Prophylaxis in the Netherlands; No., number; PrEP, pre-exposure prophylaxis; STI, sexually transmitted infection;

1. Diagnosis of gonorrhea, chlamydia or infectious syphilis (stage 1, stage 2, or recent latent syphilis). Concurrent diagnoses of infections with different bacteria were counted separately, and diagnoses of infections with the same bacterium at different anatomical sites were counted as one.

Table 5. Positivity of grouped bacterial STIs at scheduled monitoring visits over time (EZI-PrEP, 2021-2024, the Netherlands)

	Total (n=451)			**3-monthly monitoring (n=227)**			**6-monthly monitoring (n=224)**		
Month	No. STIs[1]	No. visits[2]	Positivity (STIs / 100 visits)	No. STIs[1]	No. visits[2]	Positivity (STIs / 100 visits)	No. STIs[1]	No. visits[2]	Positivity (STIs / 100 visits)
0	90	444	20.3	46	224	20.5	44	220	20.0
3	52	222	23.4	52	222	23.4	-	-	-
6	94	436	21.6	49	215	22.8	45	221	20.4
9	45	194	23.2	45	194	23.2	-	-	-
12	83	387	21.4	39	187	20.9	44	200	22.0
15	47	184	25.5	47	184	25.5	-	-	-
18	96	361	26.6	42	177	23.7	54	184	29.3
21	41	166	24.7	41	166	24.7	-	-	-
24	76	331	23.0	35	165	21.2	41	166	24.7

NB: we examined change in STI positivity over time using Poisson regression with follow-up visit number included as linear predictor. STI positivity remained stable over time when combining monitoring groups (positivity ratio per visit later =1.02, 95%CI=0.99-1.04, p=0.16), and when stratifying by monitoring frequency (3-monthly group: positivity ratio per subsequent monitoring visit =1.01, 95%CI=0.97-1.05, p=0.63; 6-monthly group: positivity ratio per subsequent monitoring visit=1.08, 95%CI=0.98-1.18, p=0.097).

1. Diagnosis of gonorrhea, chlamydia or infectious syphilis (stage 1, stage 2, or recent latent syphilis). Concurrent diagnoses of different bacteria were counted separately, and diagnoses of the same bacterium at different anatomical sites were counted as one.