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We thank all participants and colleagues who contributed to AMPrEP! ✉ mvdelsout@ggd.amsterdam.nl

Background & objective

AMPrEP was a prospective PrEP demonstration project in Amsterdam (2015-2020) for people behaviourally vulnerable to HIV. Data on long-term trends in sexual behaviour and STIs during PrEP use are needed to inform PrEP programmes.

Therefore, we assessed **sexual behaviour** and **incidence of STIs** among MSM and transgender women on PrEP over the first **four years** of their PrEP use.

Methods

Procedures

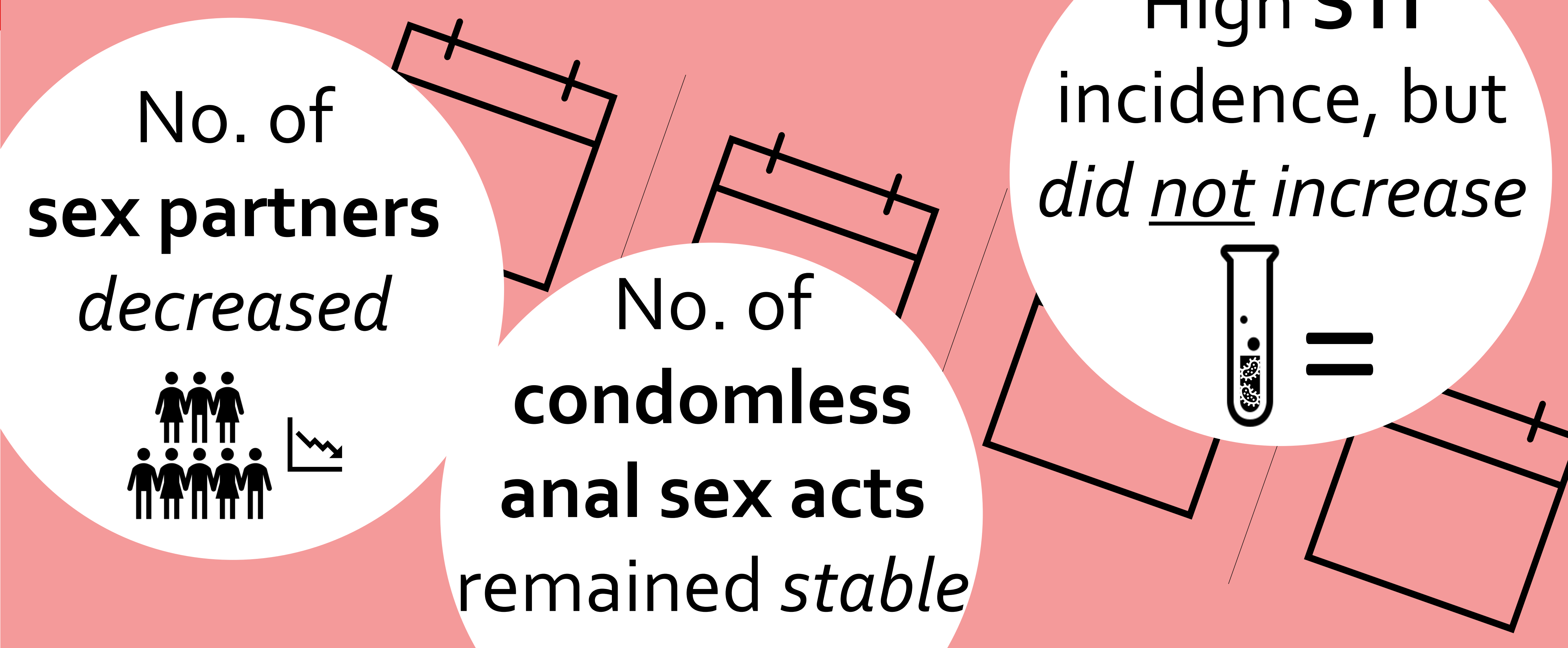
- Participants chose between daily or event-driven PrEP
- Regimen switches were allowed each 3-monthly visit
- We tested for STIs 3-monthly and, if needed, more frequently

Statistical analyses

- We censored data after 48 months of follow-up or at March 15 2020 (start COVID-19 measures in the Netherlands)
- Rate ratio's (RR) for sexual behaviour outcomes per additional year on PrEP, using negative binomial regression adjusting for age
- Incidence rates (IR) of any STI (chlamydia, gonorrhoea, or infectious syphilis), and IR ratios for any STI per additional year on PrEP, using Poisson regression adjusting for age and STI testing frequency
- IRs for HIV and hepatitis C (per consecutive year)

What happens to sexual behaviour and STIs during long-term PrEP use?

Over the course of 4 years...



Results

- 367 participants (2 transgender women) started PrEP
- Median (IQR) follow-up time was 46 (40-50) months, totalling 1249 person-years (PY)

Sexual behaviour (Figure 1)

- Number of sex partners decreased over time on PrEP (aRR=0.89/year [0.86-0.92])
- Number of condomless anal sex acts (CAS) appeared to increase after starting PrEP, and then stabilised (aRR=0.98/year [0.94-1.01])
- Event-driven users reported fewer CAS and fewer sex partners than daily users

Sexually transmitted infections

- IR of any STI was 87/100PY (95% CI 82-92)
- Among event-driven users, there was no change in the incidence of any STI over time (Table, Figure 2)
- Among daily users, STI incidence decreased in the second and third years (Table)
- Two incident HIV cases were diagnosed, both in the first year (overall IR 0.16/100PY [0.04-0.64])
- IR of HCV decreased over time, from 1.8/100PY [0.8-3.9] in the first year, to 0.4/100PY [0.1-3.0] in year 4

Table Adjusted incidence rate ratio for any STI (chlamydia, gonorrhoea, syphilis) per year participating in AMPrEP, Amsterdam, 2015-2020

	Daily PrEP		Event-driven PrEP	
	aIRR	p-value	aIRR	p-value
Y1	REF		REF	
Y2	0.82[0.69-0.98]	0.032*	0.91[0.61-1.4]	0.63
Y3	0.81[0.67-0.97]	0.026*	1.01[0.68-1.5]	0.94
Y4	0.94[0.77-1.2]	0.54	1.09[0.71-1.7]	0.70

aIRR: adjusted incidence rate ratio; AMPrEP: Amsterdam PrEP demonstration project; PrEP: pre-exposure prophylaxis

Conclusions

- Over the first 4 years of PrEP use, overall STI incidence was high but did not increase over time on PrEP
- Numbers of sex partners decreased over time in both daily and event-driven PrEP users, while number of CAS acts with casual partners appeared to increase at first, and then stabilised
- A context of reduced condom use did not result in increased incidence of STIs
- Regular testing and treatment of STIs remains a priority among PrEP users

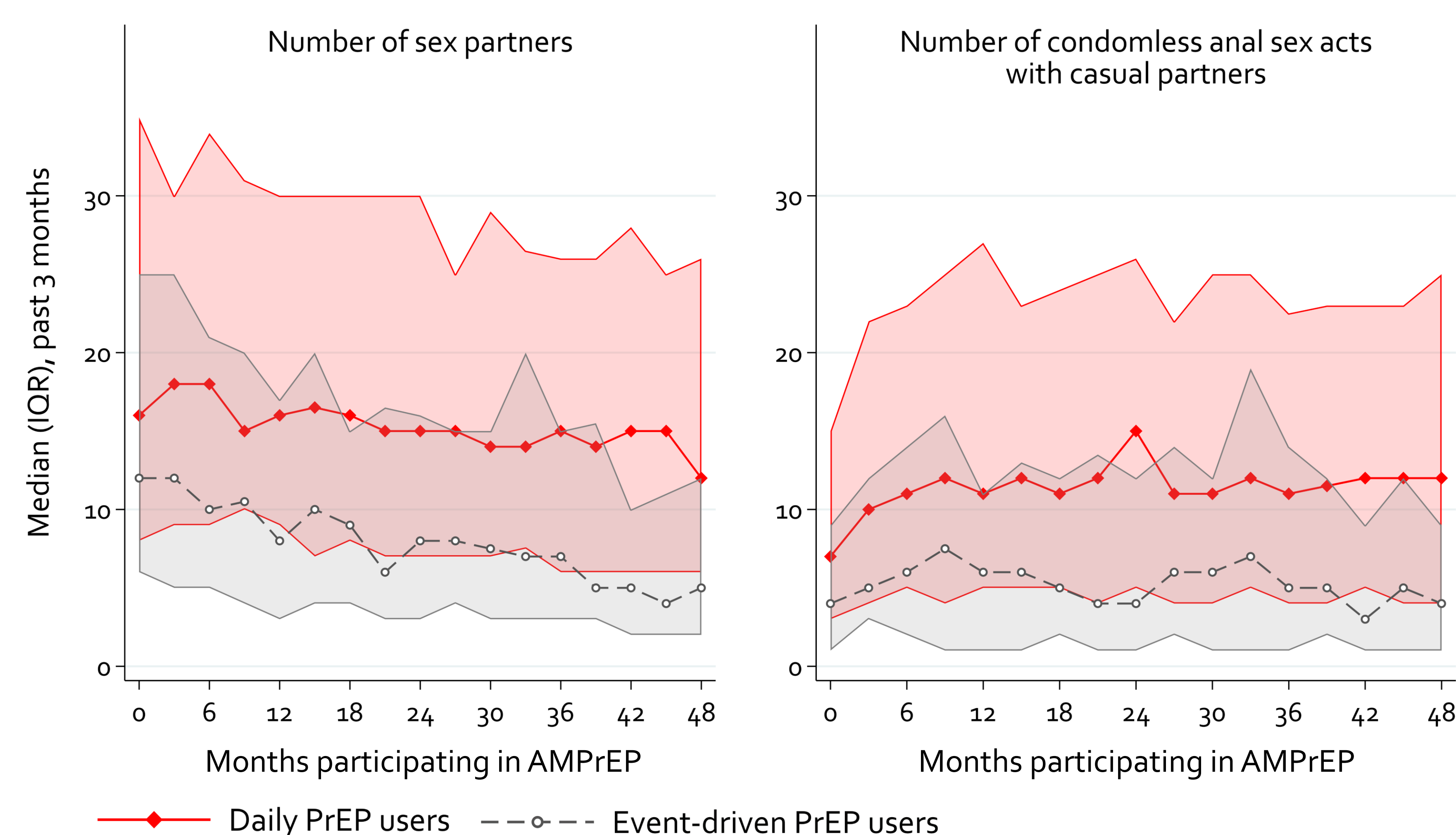


Figure 1 Sexual behaviour per 3 months among AMPrEP participants, Amsterdam, 2015-2020
Red and grey dots represent medians, the surrounding fields interquartile ranges

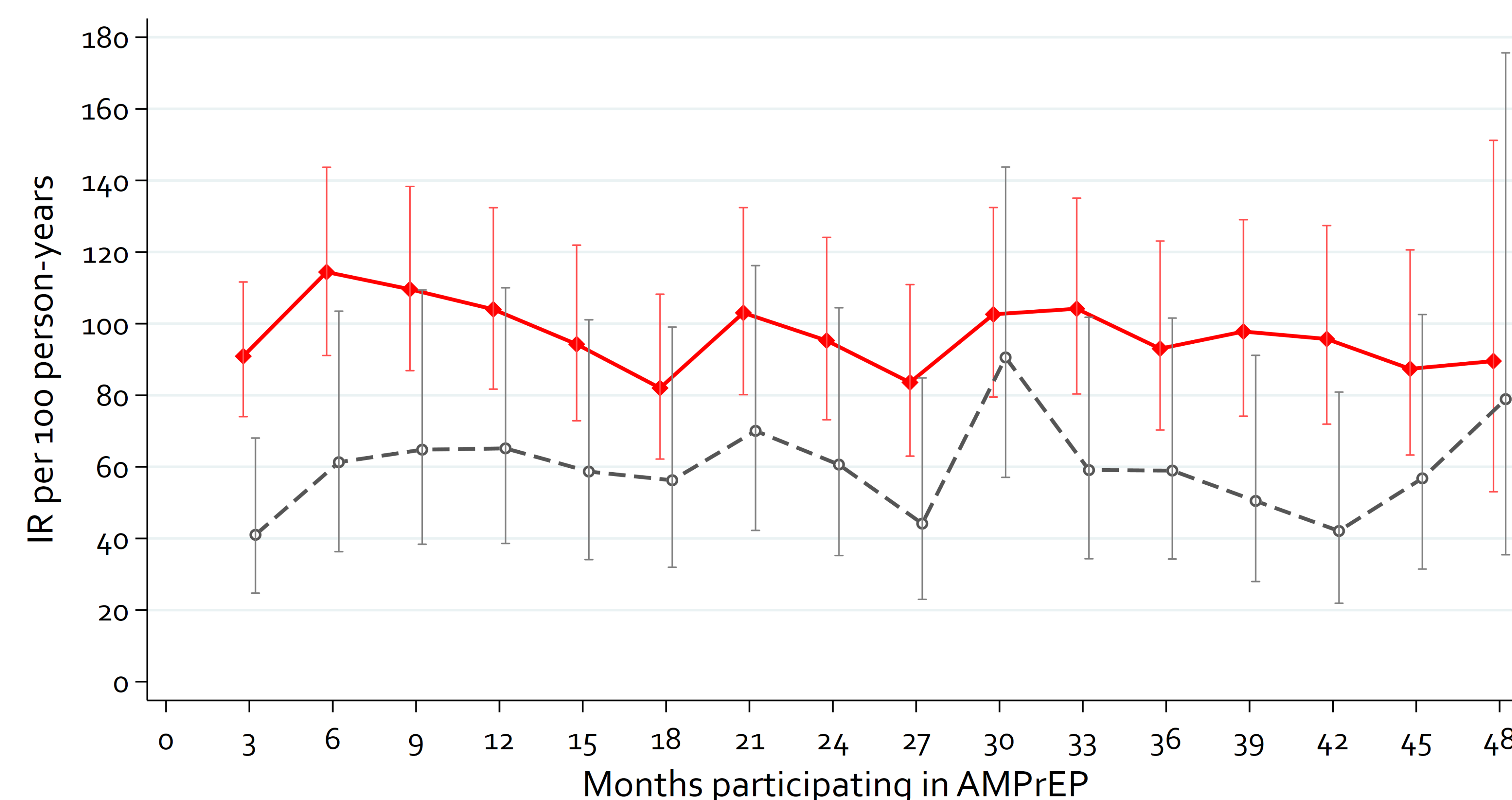


Figure 2 Incidence of any STI (chlamydia, gonorrhoea, syphilis) among AMPrEP participants, 2015-2020
Red and grey dots represent incidence rates, the whiskers 95% confidence intervals