

PrEP for PWID: Challenges and Opportunities

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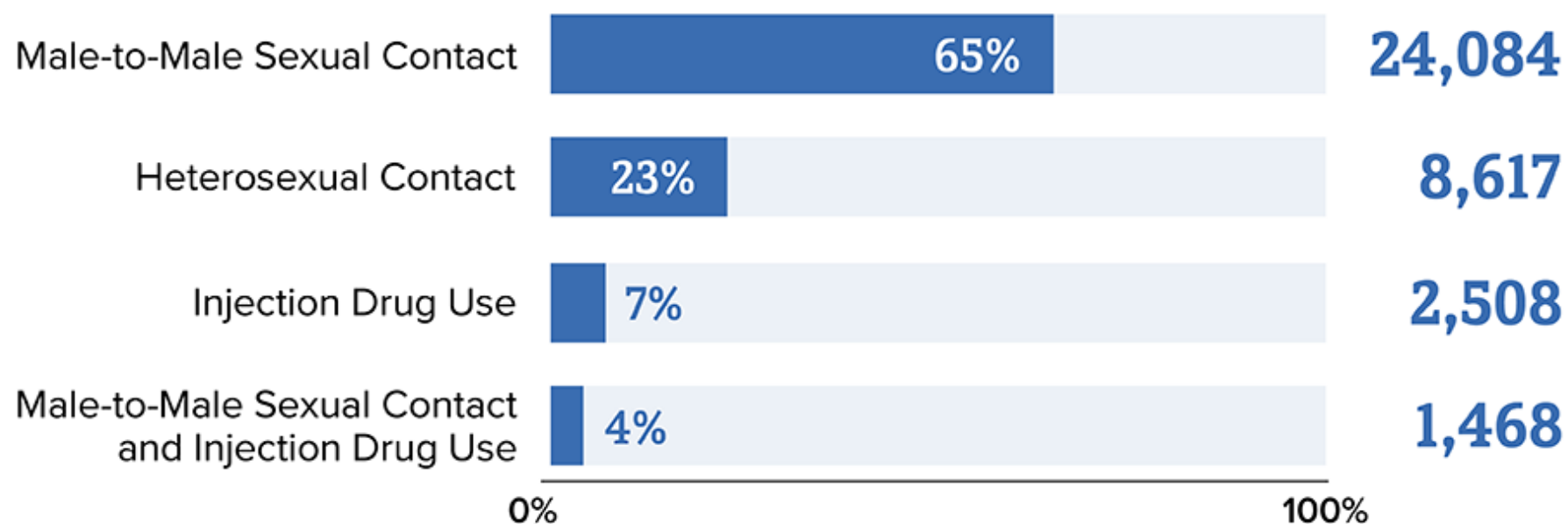
Disclosures

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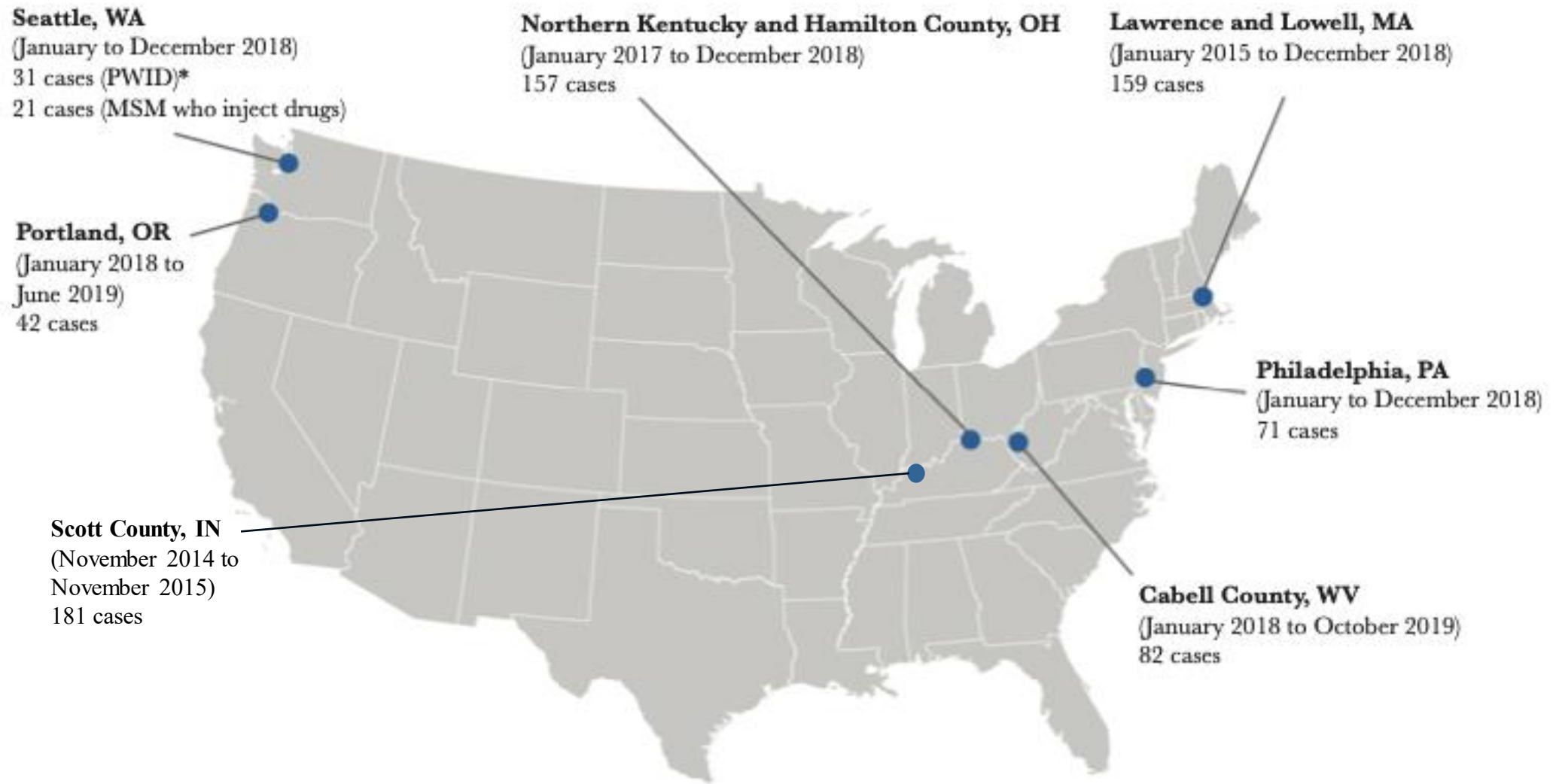
Background

New HIV Diagnoses in the US and Dependent Areas by Transmission Category, 2019



NOTE: Does not include *other* and *perinatal* transmission categories.

Source: CDC. Diagnoses of HIV infection in the United States and dependent areas, 2019. *HIV Surveillance Report* 2021;32.



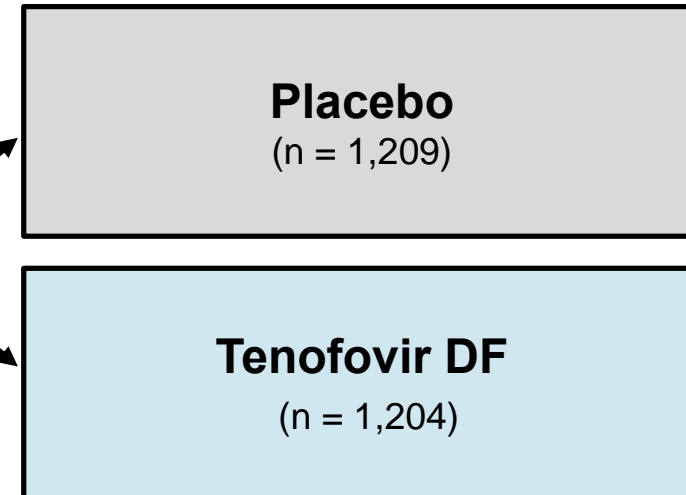
* Does not include MSM who inject drugs

Figure 1. Human immunodeficiency virus outbreaks among persons who inject drugs (United States, 2016–2019). Abbreviations: MSM, men who have sex with men; PWID, persons who inject drugs.

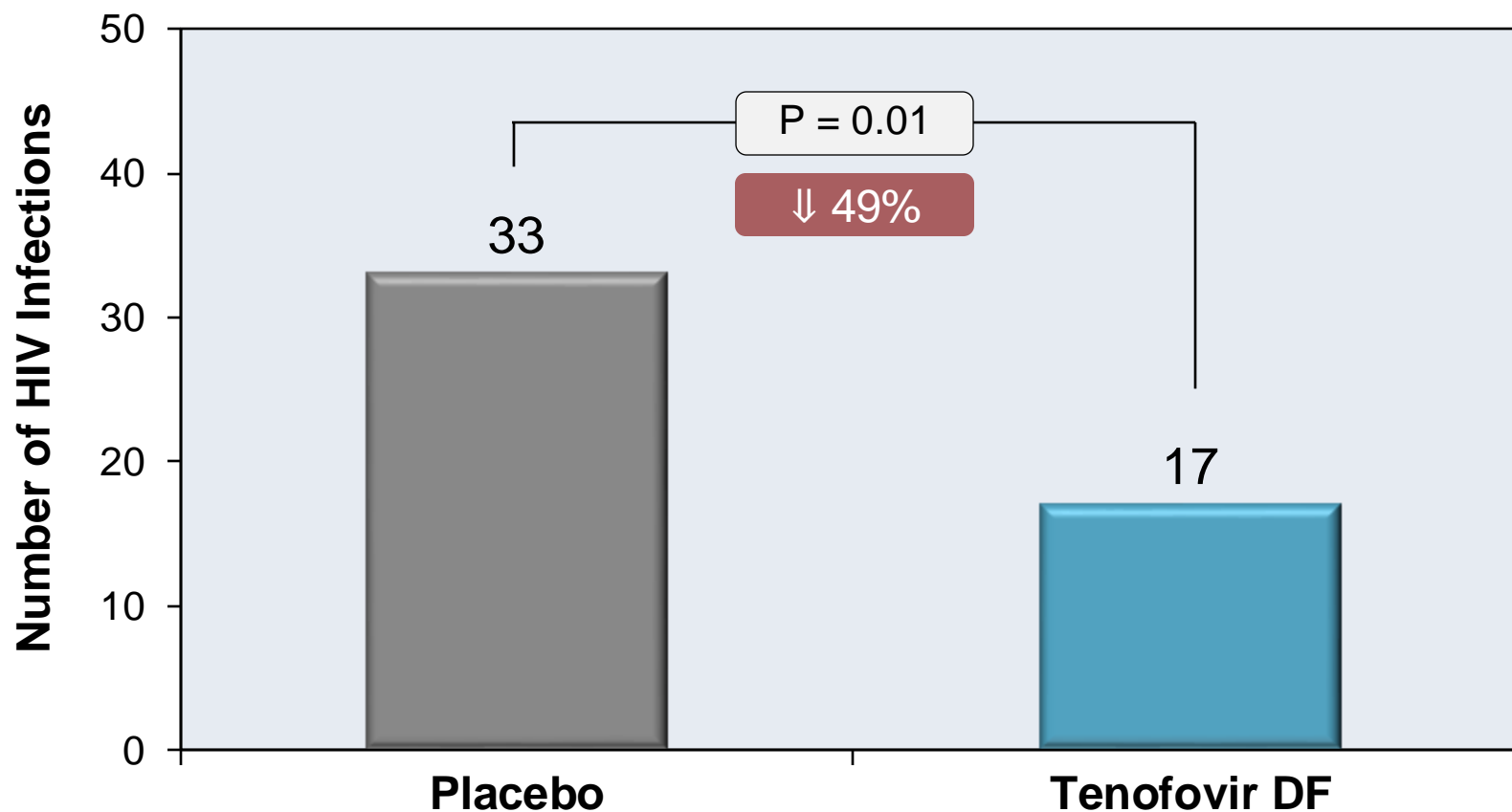
PrEP with Tenofovir DF for Persons who Inject Drugs Bangkok Tenofovir Study: Background

Study Design: Bangkok Tenofovir Study

- **Background:** Randomized, phase 3, double-blind, placebo-controlled trial conducted in Bangkok, Thailand that examined efficacy and safety of tenofovir DF as preexposure prophylaxis in persons who inject drugs
- **Inclusion Criteria** (2,413 enrolled)
 - 20-60 years of age
 - HIV-1-negative
 - Reported injecting drugs in prior year
 - All subjects received risk-reduction counseling
 - All subjects received bleach and condoms
 - Excluded if HBsAg+
 - Excluded if pregnant or breastfeeding
- **Treatment Arms:**
 - Placebo: 1 pill daily
 - Tenofovir DF: 1 pill daily

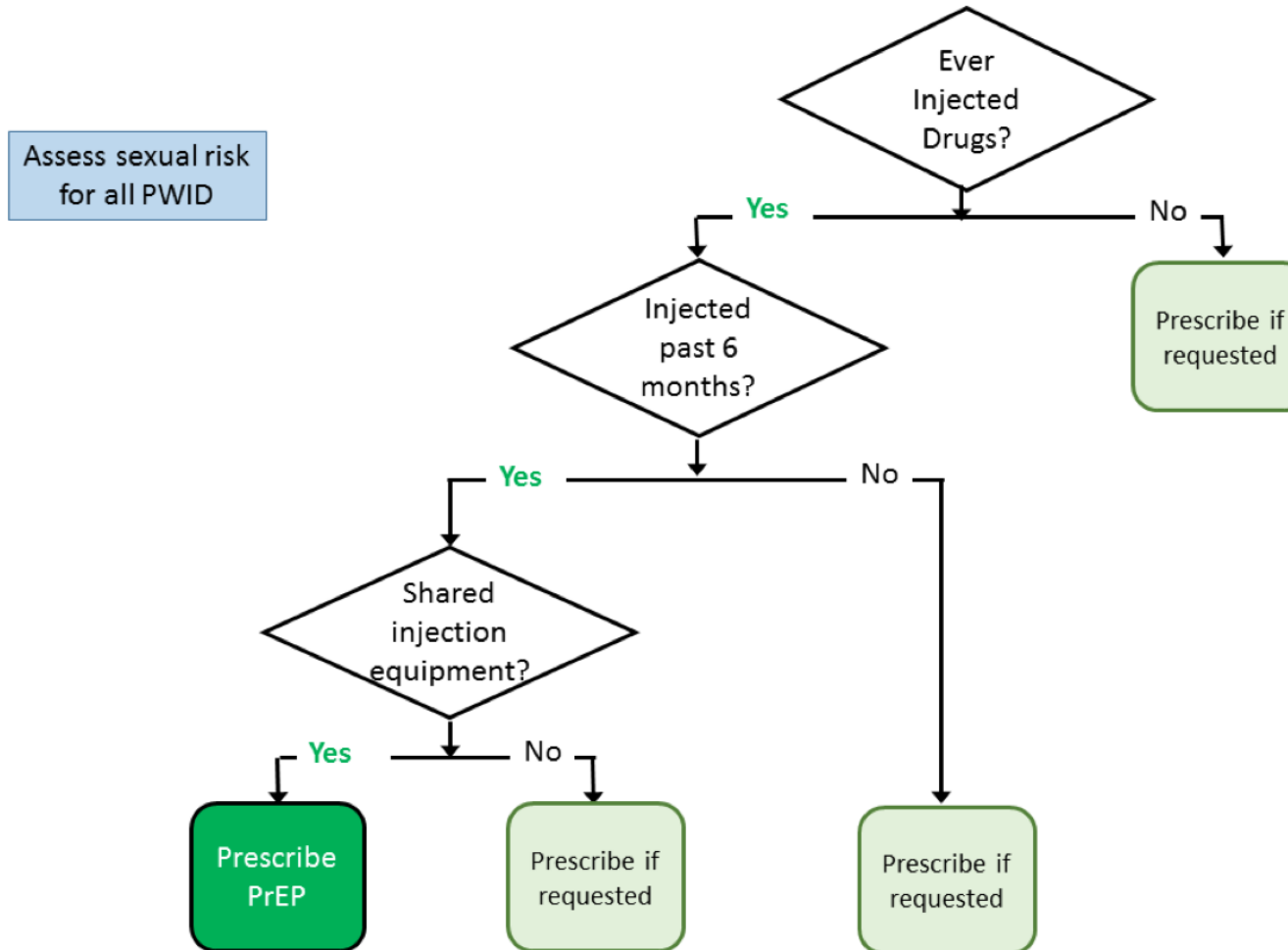


PrEP with Tenofovir DF for Persons who Inject Drugs Bangkok Tenofovir Study: Results (Modified Intent-to-Treat)



This analysis does not include 2 additional HIV infections in placebo group that were identified at enrollment
Follow-up time: mean 4.0 years (SD 2.1; max 6.9 years)

CDC Indications for PrEP: Injection Drug Use

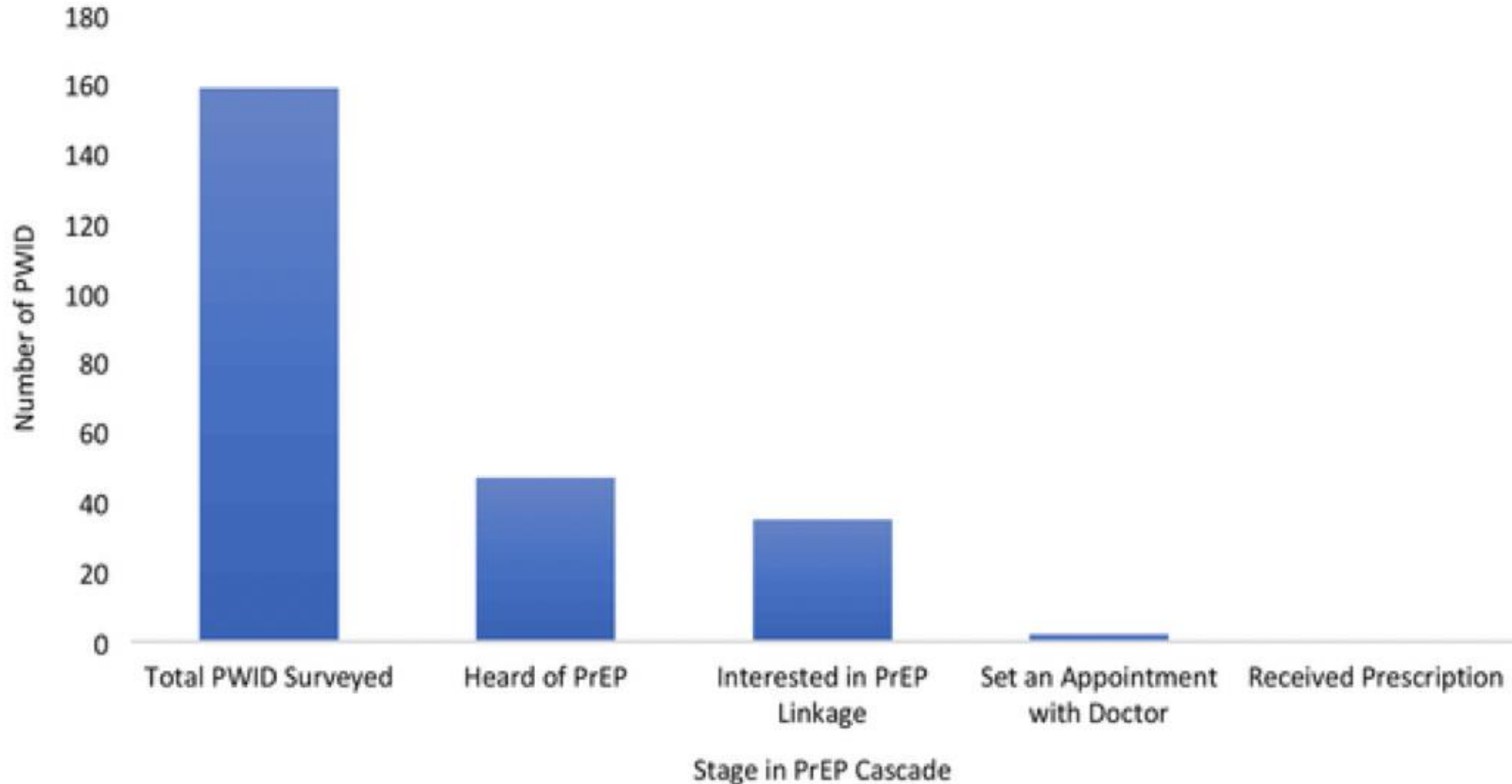


Challenges in the Implementation of PrEP for PWID

PrEP has been underutilized for PWID

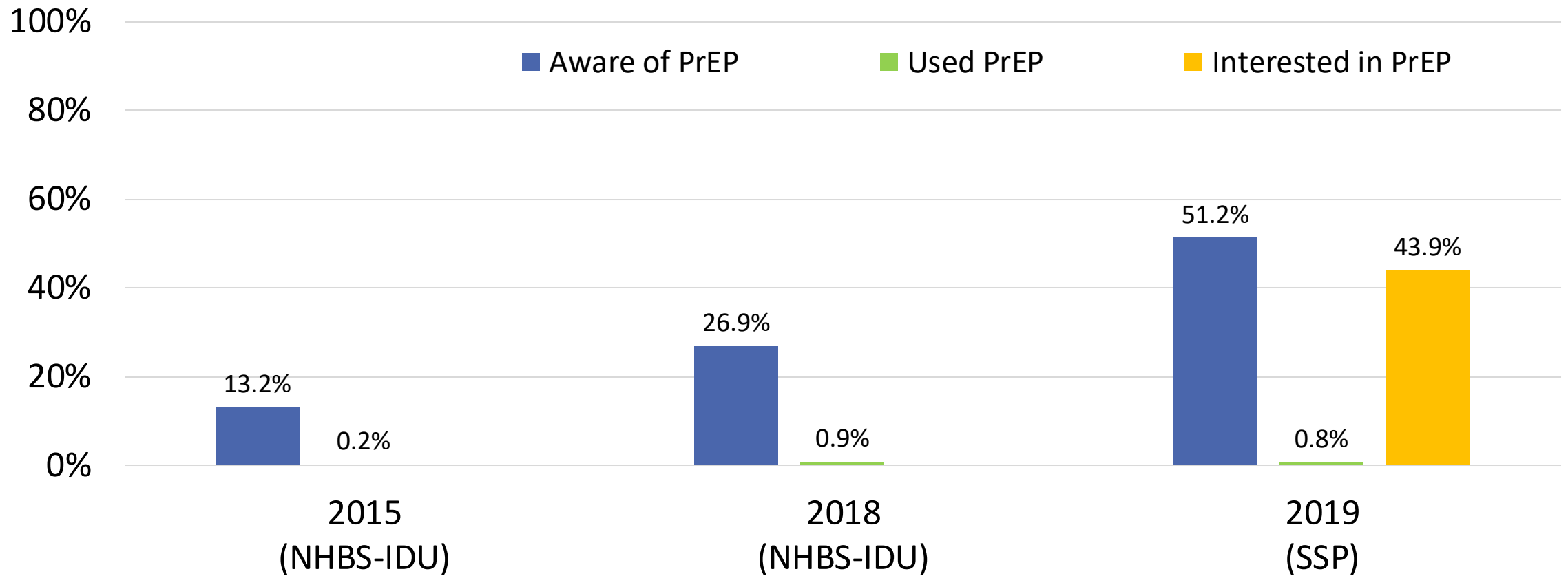
- Among 265 HIV-uninfected PWID in Baltimore, only 2 (0.75%) were currently taking PrEP despite 43% being eligible for PrEP based on injection behavior.
- 2015 NHBS data in Philadelphia showed that only 2.6% of 612 HIV-negative PWID surveyed had received a prescription for PrEP.
- A survey of PWID in San Francisco found that only 3.0% of PWID reported taking PrEP.

PrEP Cascade among PWID accessing syringe services in Miami, FL in 2019



Source: Jo 2020 PMID: 32298320

PrEP Awareness, Use, and Interest among PWID, Seattle NHBS 2015-2018 & KC SSP 2019



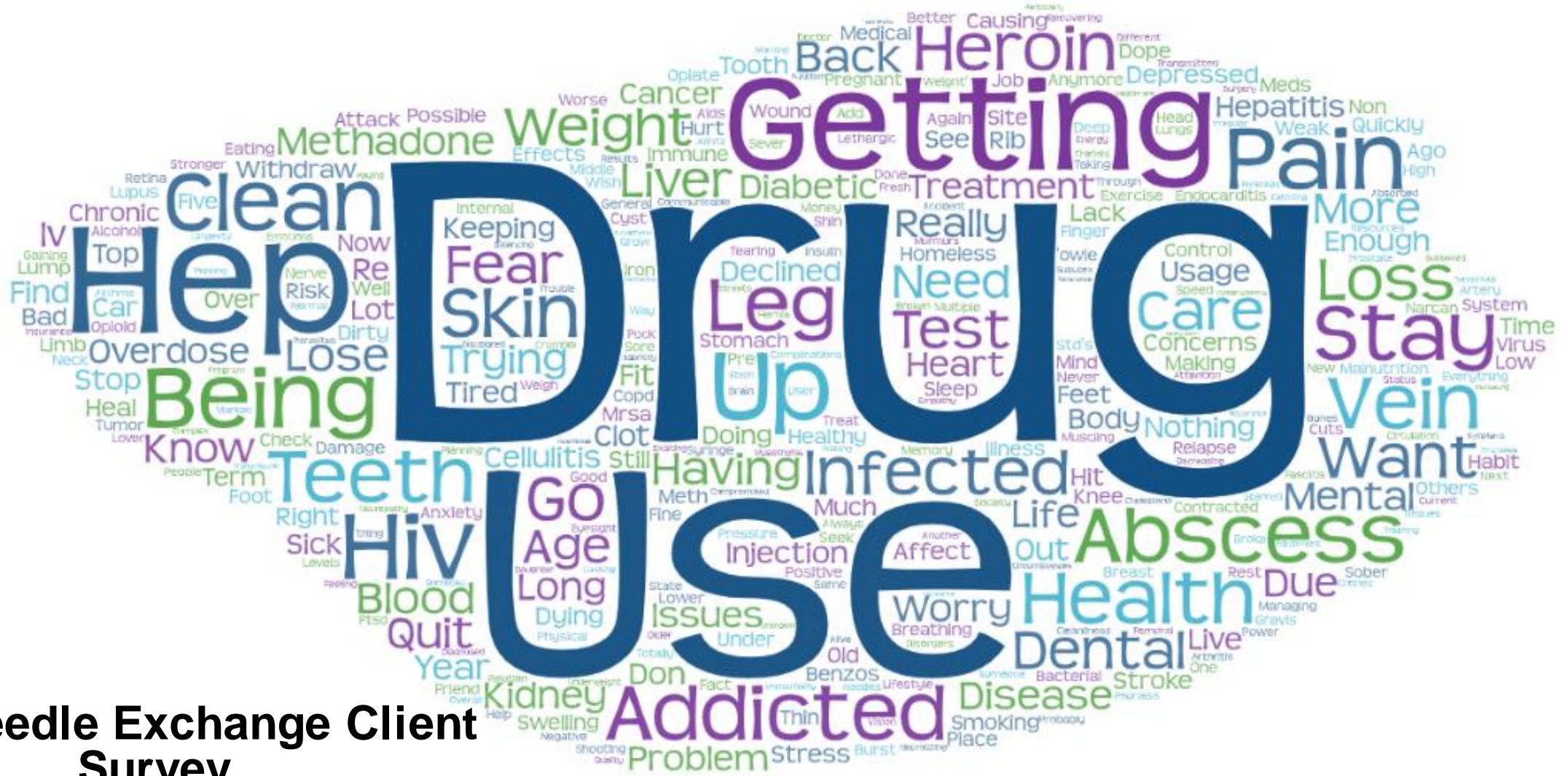
Source: Seattle area NHBS 2015, 2018; Corcorran M. et.al. Substance Use and Misuse, 2021



Awareness of PrEP and Risk Perception Among PWID

- In a systematic review of the PrEP care cascade in PWID:
 - PrEP awareness ranged from >1% to 57%
 - Risk perception range from 1.1% to 66%
 - Among the studies reviewed, factors associated with willingness to use PrEP were varied:
 - Perception of risk for HIV
 - Appropriate support services (e.g., social support, support from clinicians)
 - Female gender
 - Identifying as bisexual
 - Homelessness
 - Other medical comorbidities
 - Being PrEP eligible (e.g., risk factors for HIV)

What is your single biggest concern about your health right now?

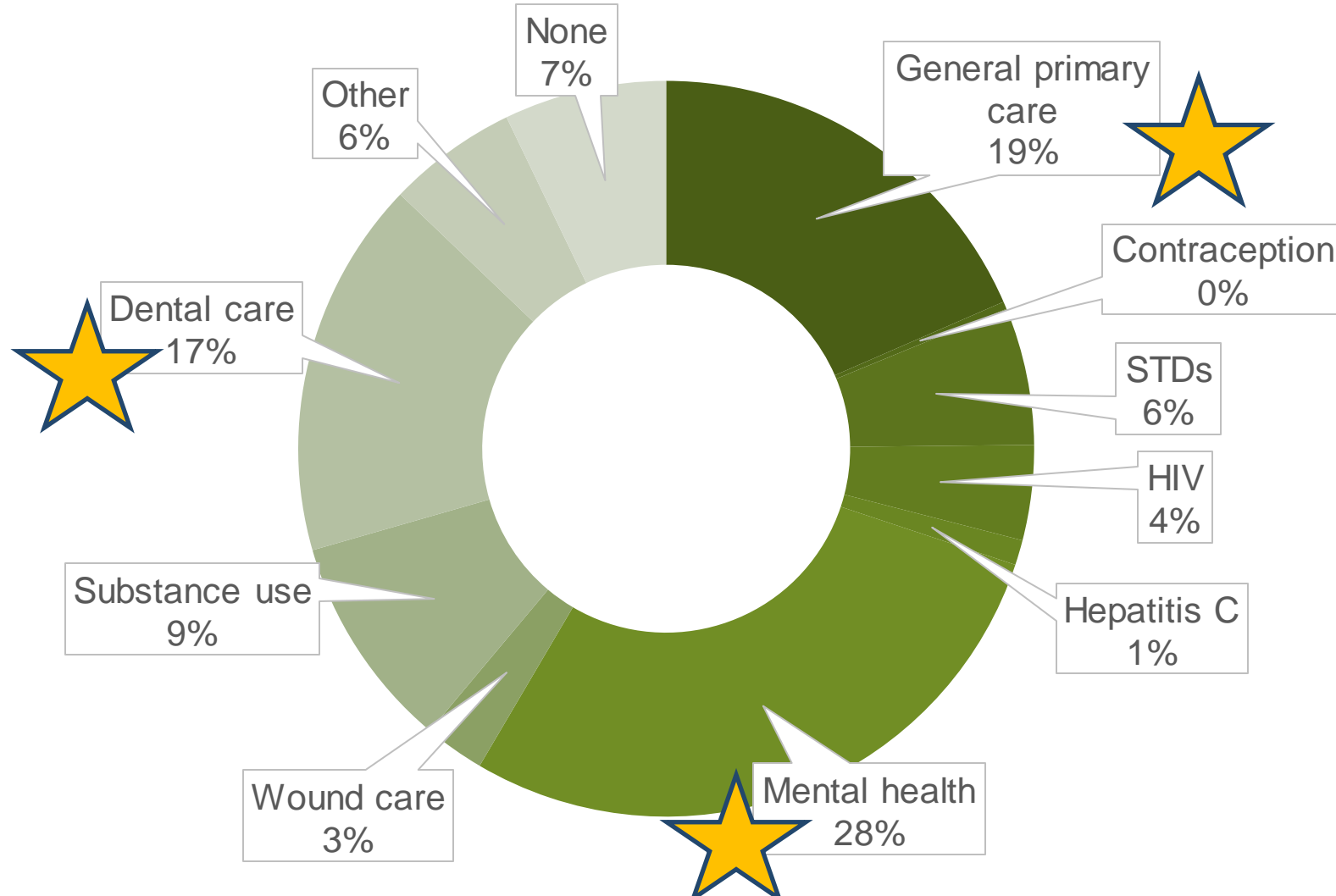


2015 Needle Exchange Client Survey

N= 410, 41 (10%) responded 'none'

What is your most important medical concern right now?

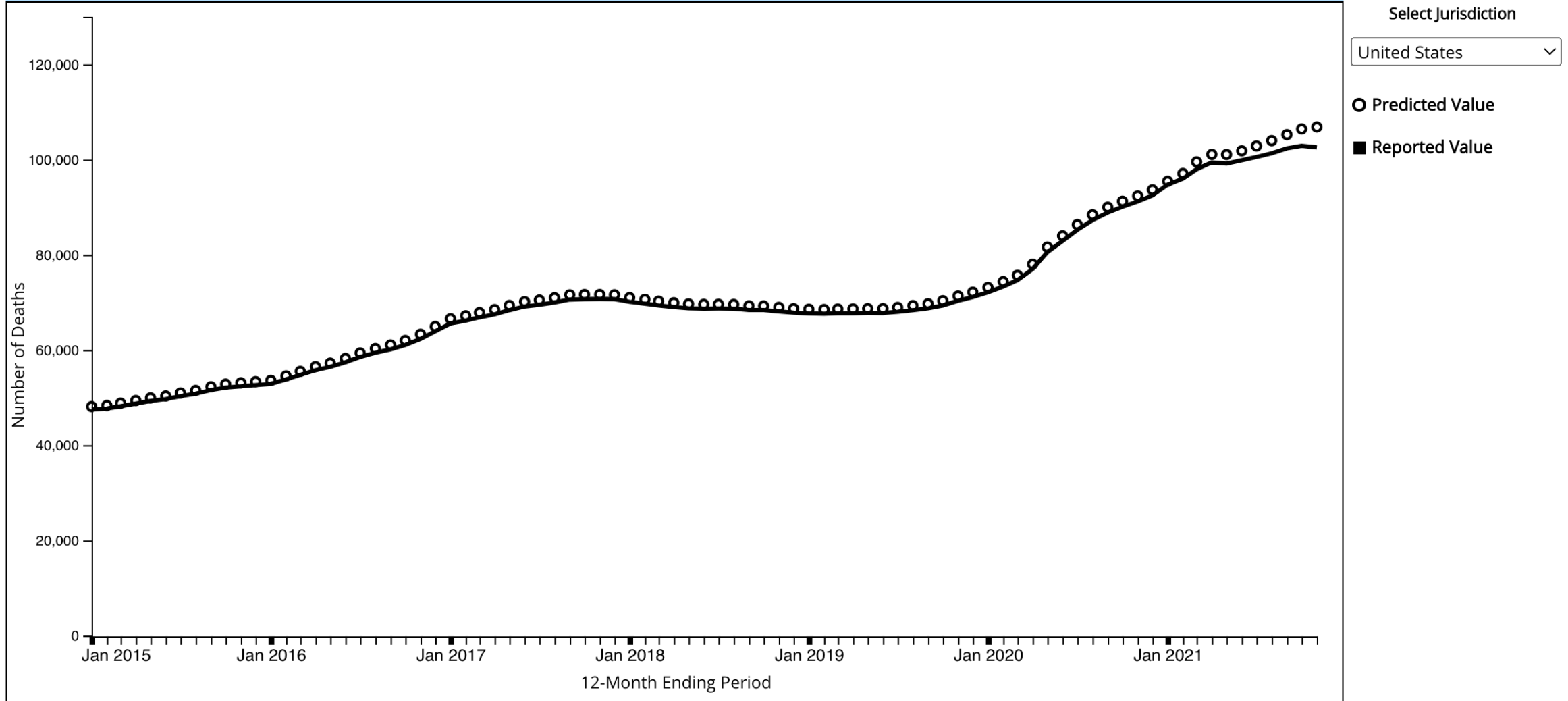
Among women who exchange sex, Seattle NHBS 2016



12 Month–ending Provisional Number and Percent Change of Drug Overdose Deaths

Based on data available for analysis on: April 03, 2022

Figure 1a. 12 Month–ending Provisional Counts of Drug Overdose Deaths: United States



Source: Ahmad FB, Rossen LM, Sutton P. Provisional drug overdose death counts. National Center for Health Statistics. 2022.



Decreased HIV Testing During the COVID-19 Pandemic

Qualitative and quantitative data from syringe service programs (SSPs) indicate that HIV (and HCV) testing was put on hold or significantly reduced at the beginning of the COVID-19 pandemic.

Unpublished data from a survey of SSPs indicate that HIV testing remains below the pre-COVID baseline for ~50% of SSPs

Future Directions for PrEP Delivery among PWID

Improving PrEP Uptake and Sustained Use Among PWID

- There is relatively few data on concrete strategies to improve PrEP uptake and sustained use among PWID
- Many novel strategies, such as “home PrEP,” “tele-PrEP,” community pharmacy-based PrEP, and “on-demand PrEP” many not be well suited towards PWID.

Qualitative Assessment of PrEP Services in King County, Washington (2019)

- 18 interviews with service providers and 3 focus groups with PWID (n=27):
 - Overall support for PrEP for PWID
 - Should be on the menu of HIV prevention options, but not at the expense of other interventions
 - More education is needed among PWID and providers
 - Three potential models:
 1. **Drug user health center** – fixed site addressing a range of services on a walk-in basis
 2. **Mobile outreach** – outreach worker-led program engaging with clients in the field
 3. **Add-on to existing service provider** (e.g., SSPs)

Integrating PrEP into Syringe Services for Women

- Demonstration project in Philadelphia aiming to integrate PrEP into existing SSP services for women who inject drugs (WWID).
- WWID ≥ 18 years of age, who were HIV negative at baseline and not pregnant or planning to become pregnant, were educated about and offered 24 weeks of daily PrEP.
- Participants completed surveys and clinical assessment at baseline and weeks 1, 3, 12, and 24.
 - TDF drug levels in urine were obtained at week 12 and 24 to assess adherence

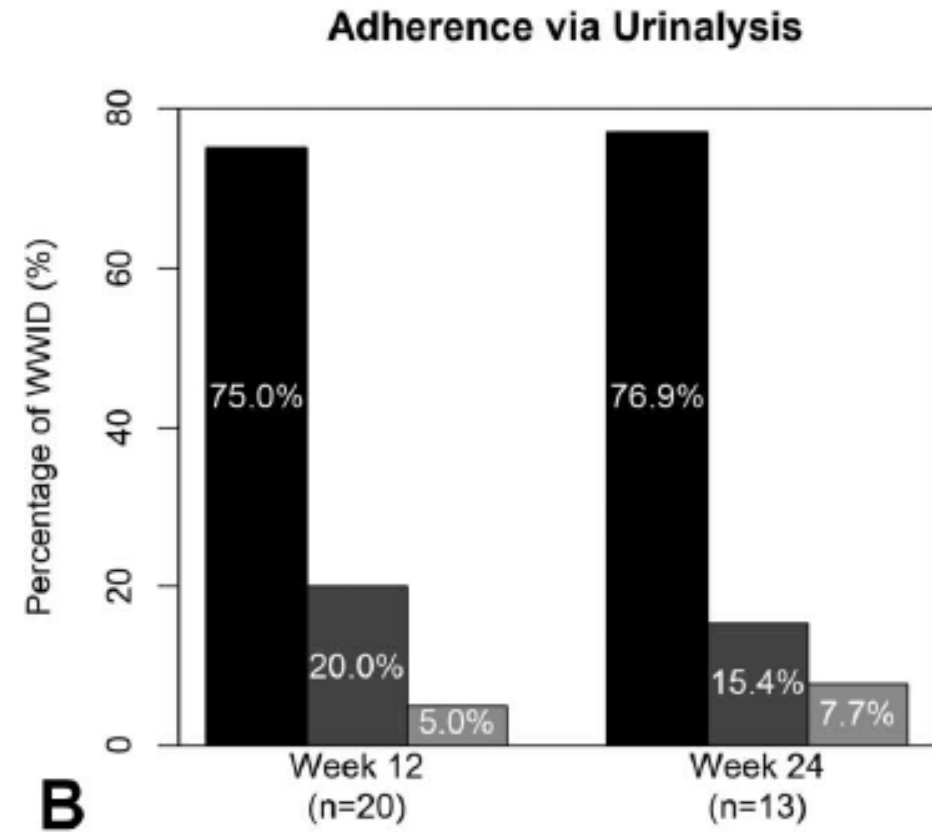
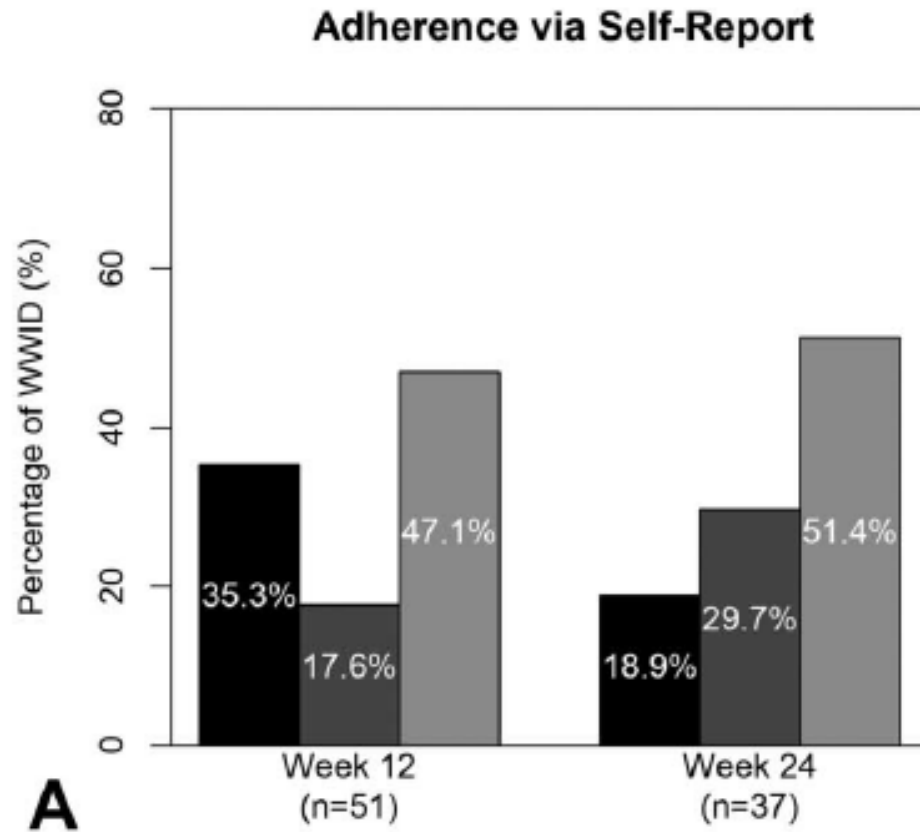
Results

- 95 women were enrolled
 - 63.4% currently homeless
 - 39.6% visited SSP a “few times a week,” 16.5% visited “daily”
 - 46.2% reported sharing syringes in the past 6 months
 - 71.6% reported transactional sex, with 78.9% reporting inconsistent condom use
 - 54.3% reported their self-perceived risk of HIV to be extremely or very low
 - 45.7% reported their self-perceived risk of HIV to be somewhat/very/extremely high

Results

- Of the 95 women enrolled, 69 received a prescription of PrEP in week 1 and 43 were maintained on PrEP by week 12.
- 5 women who initially did not receive a PrEP prescription in week 1 initiated PrEP by week 12.
- Of the 48 WWID on PrEP at week 12, 23 persistent on PrEP by week 24.

Adherence to PrEP



■ Non-adherence ■ Inconsistent adherence ■ Consistent adherence

TABLE 3. Correlates of PrEP Uptake and Retention in Care Among Women Who Inject Drugs (n = 95) Enrolled in a PrEP Demonstration Project in Philadelphia

	A. PrEP Uptake		B. Retention in Care	
	OR (95% CI)	aOR (95% CI)*	OR (95% CI)	aOR (95% CI)†
Age, yr	1.00 (0.95 to 1.05)		1.07 (1.02 to 1.13)	
Race/ethnicity				
White, non-Hispanic	Ref		Ref	
Black, non-Hispanic	0.89 (0.28 to 2.82)		0.88 (0.27 to 2.73)	
Hispanic/Latino	0.78 (0.21 to 2.84)		1.59 (0.44 to 6.01)	
Mixed race, non-Hispanic	2.68 (0.22 to 33.6)		1.32 (0.15 to 11.6)	
Education				
Less than high school	Ref		Ref	
High school grad	0.93 (0.35 to 2.45)		0.45 (0.16 to 1.17)	
Some college or higher	1.30 (0.45 to 3.72)		0.67 (0.24 to 1.85)	
Currently homeless	1.01 (0.42 to 2.42)		1.29 (0.55 to 3.07)	
Current housing				
Own home	1.20 (0.19 to 7.62)		1.29 (0.22 to 7.78)	
Staying with family/friends	0.74 (0.26 to 2.07)		0.73 (0.25 to 2.03)	
Single room occupancy	1.14 (0.28 to 4.67)		1.08 (0.27 to 4.18)	
Living in shelter/treatment facility	1.36 (0.38 to 4.98)		1.73 (0.51 to 6.16)	
Living on street	Ref		Ref	
Frequency of SSP access	1.56 (1.16 to 2.09)	1.85 (1.24 to 2.77)	1.44 (1.08 to 2.06)	1.46 (1.04 to 2.24)
Sharing syringes	0.75 (0.32 to 1.73)		0.50 (0.21 to 1.13)	
No. sexual partners	1.00 (0.99 to 1.01)		1.00 (0.99 to 1.00)	
Inconsistent condom use	2.79 (1.03 to 7.53)	3.38 (1.07 to 10.7)	0.66 (0.24 to 1.74)	
Transactional sex	0.74 (0.29 to 1.85)		0.80 (0.33 to 1.97)	
Baseline STI diagnosis	0.96 (0.32 to 2.84)		0.64 (0.20 to 1.85)	
Sexual assault (n = 67)‡	5.03 (1.14 to 22.2)	5.89 (1.02 to 33.9)	1.52 (0.47 to 4.89)	
Self-perceived HIV risk				
Extremely/very unlikely	Ref		Ref	
Somewhat/very/extremely likely	1.29 (0.56 to 3.02)		0.78 (0.34 to 1.76)	

*Model was adjusted for follow-up period, age, race/ethnicity, and current housing.

†Model was adjusted for age, race/ethnicity, and current housing.

‡Model was restricted to women who received the question on sexual assault at baseline.

Coupling PrEP with HCV Treatment for PWUD with OUD – ANCHOR Study

- Study evaluating a community-based care model, collocating HCV treatment, MOUD, and PrEP in Washington DC and Baltimore.
- Individuals were enrolled if they were HCV RNA+ and had opioid misuse within the past year.
 - Based on site characteristics, all participants receiving care at the Baltimore site were on MOUD. Participants in DC were offered MOUD.
- Patients meeting inclusion criteria (no decompensated liver disease, contraindications to DAA, pregnancy/breastfeeding) were started on DAA therapy for HCV at day 0.
- HIV negative participants were screened for interest in and knowledge of PrEP and were offered PrEP based on 2014 CDC guidelines.
 - Interest in PrEP was assessed at each study visit during a 6-month window (week 0 to 24) and participants could start at any time.
 - Participants who initiated PrEP were followed through week 48.

Coupling PrEP with HCV Treatment for PWUD with OUD – Results

- 198 participants were enrolled, 185 (93%) of whom were HIV negative.
- 62.7% met 2014 CDC PrEP eligibility criteria
 - 44.3% met IDU criteria only
 - 4.9% met sex criteria only
 - 13.5% met both criteria
- Clinicians recommended PrEP to 94 (50.8%) individuals
- 29 (15.7% of HIV- cohort) participants initiated PrEP

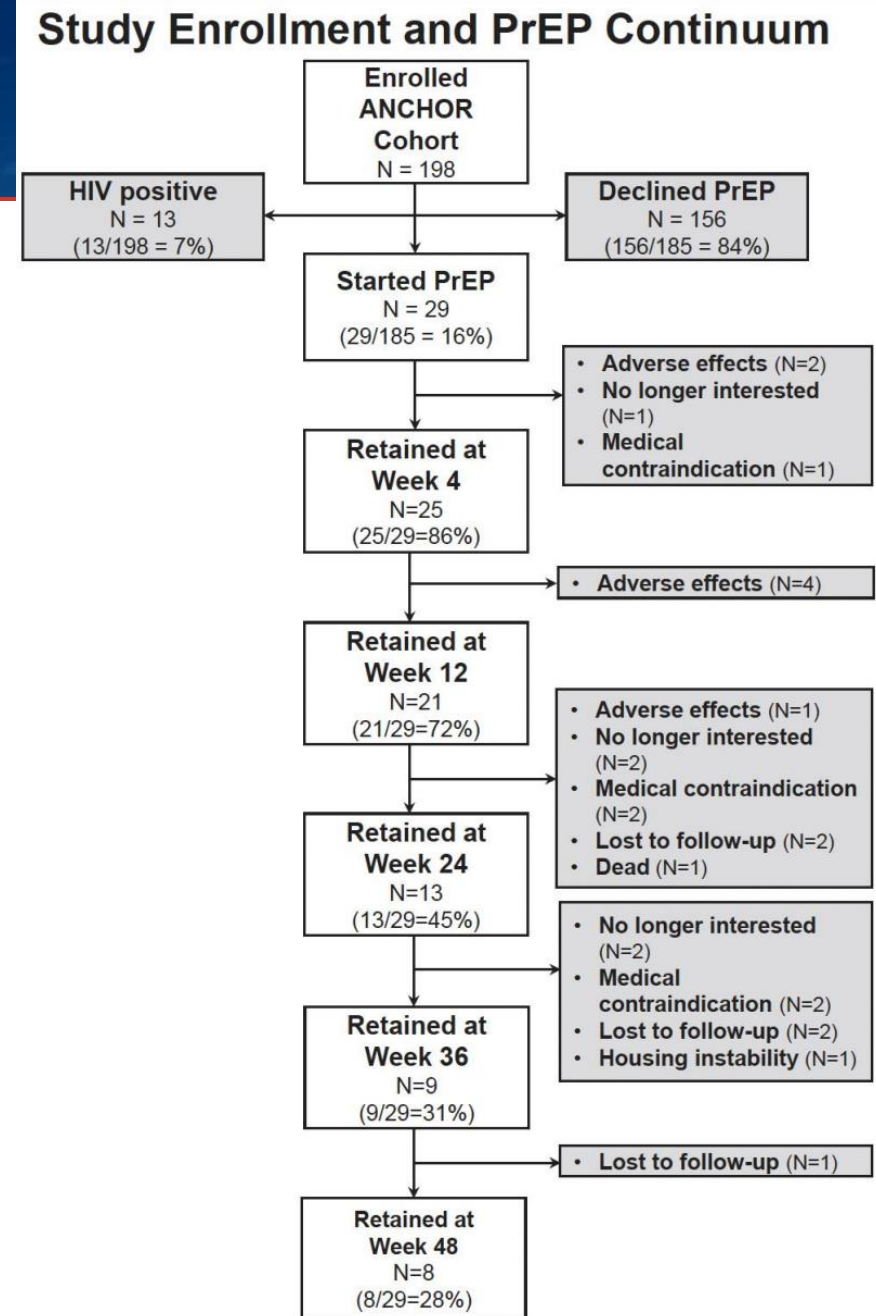
Table 1. Baseline Population Characteristics

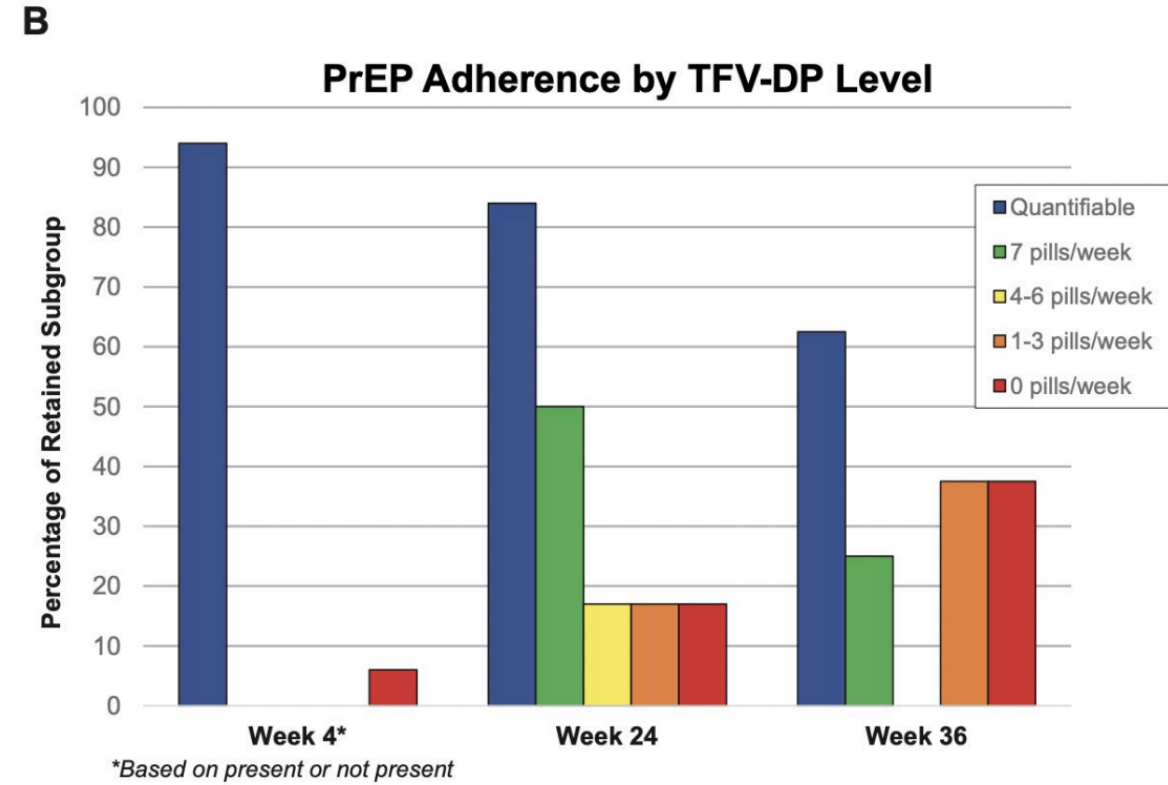
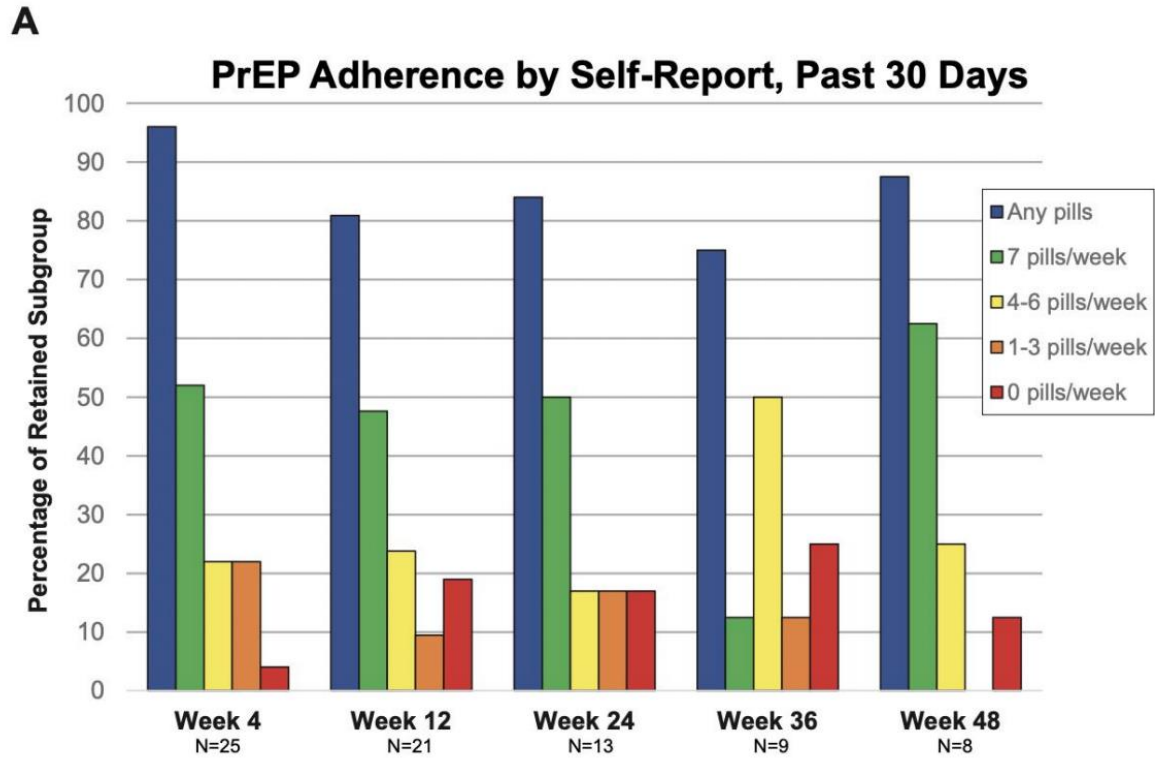
Characteristic	HIV Negative (n = 185)	PrEP (n = 29)	No PrEP (n = 156)	PValue
Demographics				
Age, y, median (IQR)	57 (52–61)	54 (52–60)	58 (52–61)	.20
Male sex	129 (69.7)	21 (72.4)	108 (69.2)	.83
Black race	155 (83.8)	26 (89.7)	129 (82.7)	.42
Heterosexual	172 (93.0)	27 (93.1)	145 (92.9)	1
Baseline epidemiology				
Unstably housed	101 (54.6)	17 (58.6)	84 (53.8)	.69
Drug use, daily or greater frequency	111 (60.0)	21 (72.4)	93 (59.6)	.22
Receptive needle sharing, past year	24 (13.0)	7 (24.1)	17 (10.9)	.07
Receptive IDU equipment sharing, past year	54 (29.2)	8 (27.6)	46 (29.5)	1
>1 sex partner, past year	33 (17.8)	8 (27.6)	25 (16.0)	.18
Condomless vaginal sex, past year	72 (38.9)	12 (41.4)	60 (38.5)	.84
Condomless anal sex, past year	11 (5.9)	2 (6.9)	9 (5.8)	.68
Transactional sex, past year	10 (5.4)	2 (6.9)	8 (5.1)	.66
2014 CDC eligibility				
Met IDU criteria only	82 (44.3)	10 (34.5)	72 (46.2)	.63
Met sex criteria only	9 (4.9)	2 (6.9)	7 (4.5)	.31
Met both criteria	25 (13.5)	9 (31.0)	16 (10.3)	.006
2017 CDC eligibility				
Met IDU criteria only	39 (21.1)	5 (17.2)	34 (21.8)	.53
Met sex criteria only	20 (10.8)	4 (13.8)	16 (10.3)	.8
Met both criteria	31 (16.8)	11 (37.9)	20 (12.8)	.002

Coupling PrEP with HCV Treatment for PWUD with OUD – Results

- Median treatment duration for those initiating PrEP was 104 days (IQR 28, 276).
- 8 participants were retained on PrEP through the 48-week timepoint.
- Most common reason for discontinuation was side effects (n/v most frequent)

Source: Brokus C. et.al. OFID, 2021





Source: Brokus C. et.al. OFID, 2021.

SHE Clinic: Co-located, low-barrier services

- SHE Clinic provides low-barrier walk-in medical services to women living unhoused, many of whom inject drugs, in north Seattle
 - Co-located within the Aurora Commons, a day drop-in center for unhoused individuals

Table 3: Utilization of HIV harm-reduction services among 76 women accessing day-shelter services in north Seattle, by care at SHE Clinic

Characteristics	SHE Clinic patients (n=41)	SHE Clinic non-adopters (n=35)	p-value
Recent STI screening	34 (83)	22 (63)	0.03
Recent STI treatment	13 (32)	3 (9)	0.06
Opioid replacement*	21/36 (58)	3/22 (14)	0.001
PrEP prescription*	18/37 (49)	0/22 (0)	<0.001

*calculated for those eligible for intervention (opiate dependent or HIV negative)

What can we learn from HIV treatment adherence strategies among PWID?

- Bazzi et.al. conducted a systematic review of HIV treatment adherence research in PWID, which included 20 studies.
- Factors enabling ART adherence included:
 - Substance use treatment, including MOUD
 - Self-efficacy, empowerment and social support
 - Stable housing
 - Health insurance
 - Trust in providers and good patient-provider relationships
 - Accessibility of health care services
 - Directly administered ART

Looking forward

- Additional work is needed to integrate PrEP into low-barrier services for PWID, including drug treatment programs, SSPs, other community-based organizations, and primary care.
- More research is needed to identify successful strategies to improve both uptake AND sustained use of PrEP among PWID.
- Cabotegravir has the potential to improve sustained use of PrEP, particularly among PWID with concurrent sexual risk factors for HIV.

Conclusions

- PWID remain disproportionately affected by HIV, with several recent outbreaks of HIV within PWID communities.
- PrEP should be offered to all PWID who have shared injection equipment in the past 6 months or who have sexual risk factors.
 - TDF/FTC remains the only guideline recommended medications for HIV prevention in PWID.
- Despite elevated risk for HIV, PWID experience a multitude of barriers to PrEP initiation and sustained use, including socio-structural barriers, stigma, low risk perception, and multiple competing needs.
- Integrating PrEP into other services for PWID (e.g., SSPs, drug treatment, low-barrier primary care) has the potential to improve uptake of PrEP but additional efforts are needed to identify strategies to retain PWID in PrEP services.

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