Uptake of a Peer Educator Intervention for HIV Prevention Among Young Adults in Sexual and Injection Drug Use Networks

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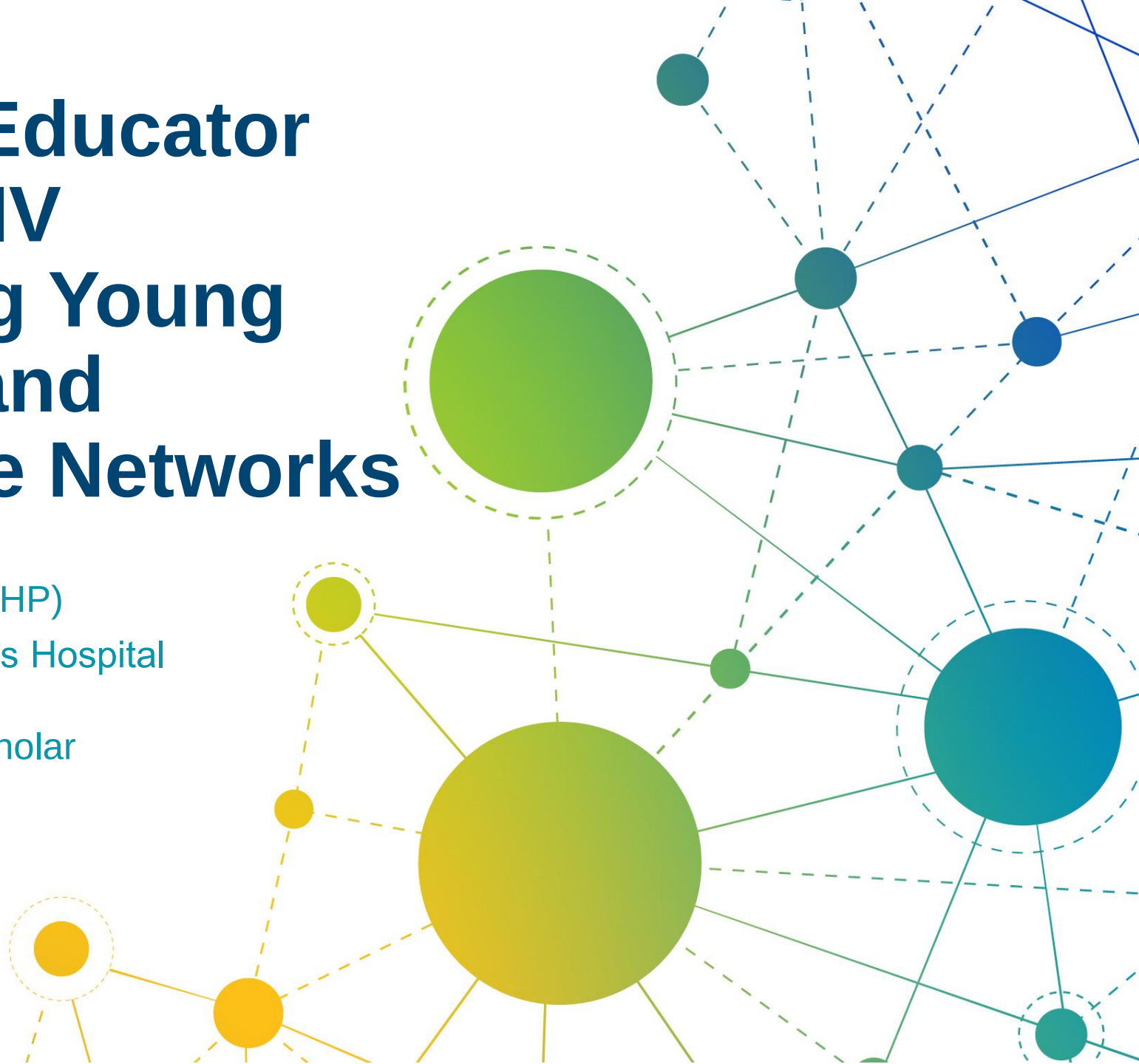
2023 HPTN Annual Meeting – HPTN Scholar Program (June 5, 2023)

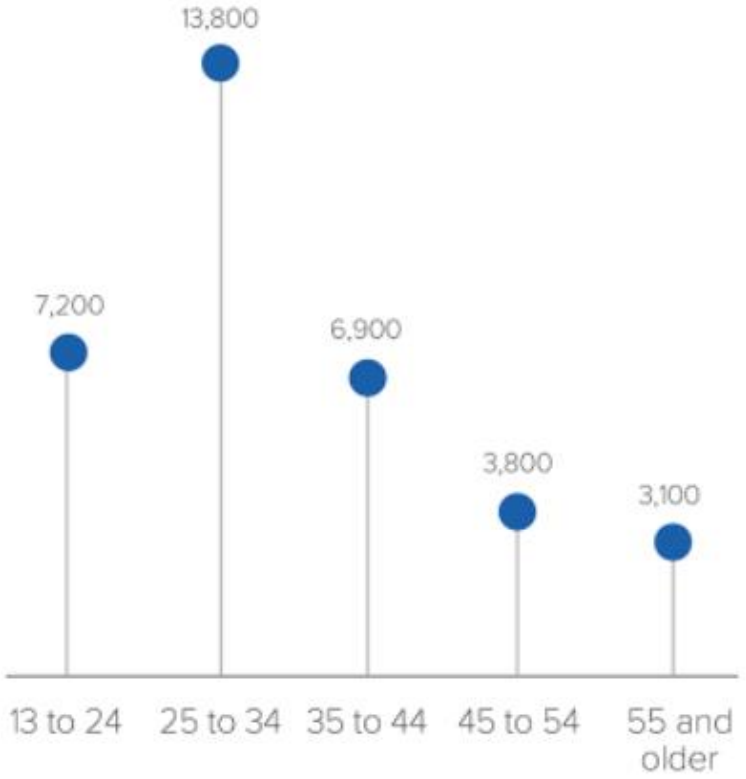
HPTN Scholars Program



Background

Estimated HIV Infections in the US by Age, 2019

There were 34,800 estimated new HIV infections in the US in 2019.



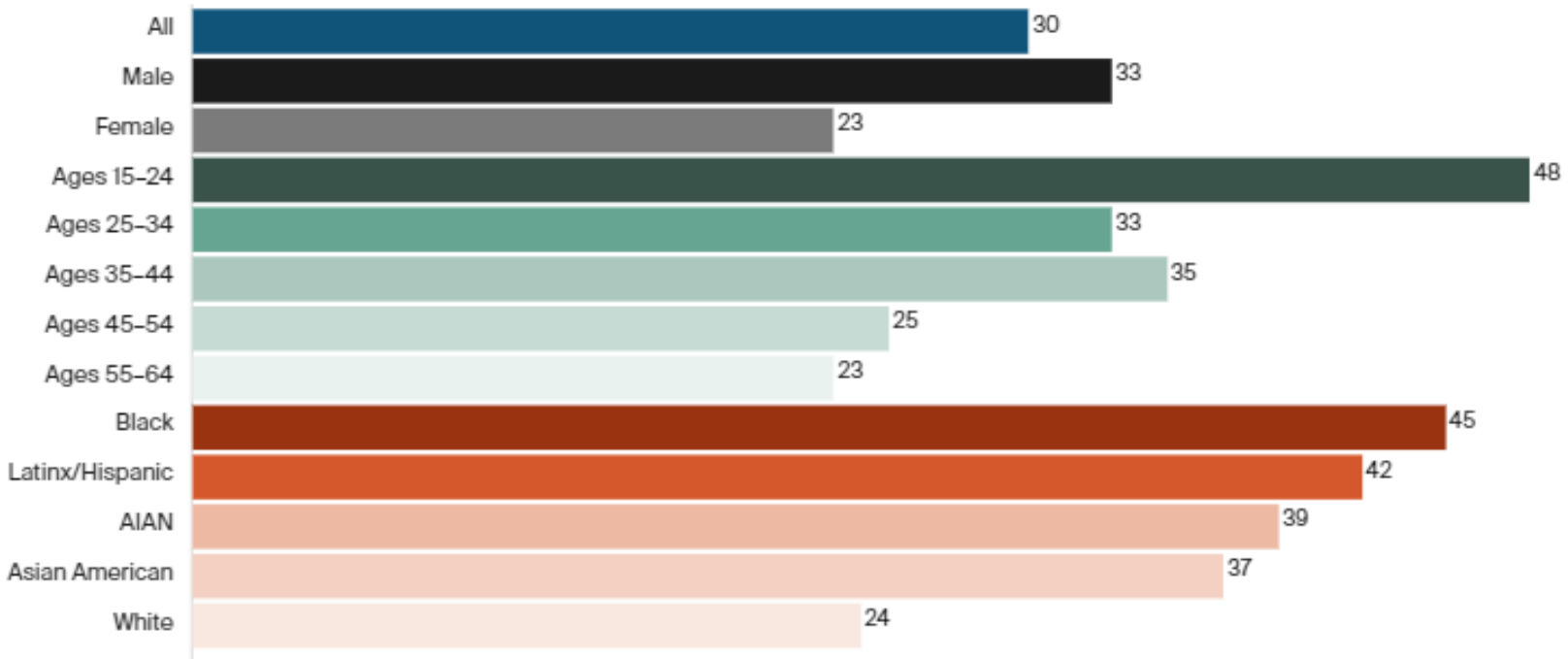
* Data not available for children aged 12 and under.

Source: CDC. Estimated HIV incidence and prevalence in the United States 2015–2019. *HIV Surveillance Supplemental Report* 2021;26(1).

Background

All demographic groups experienced more overdose deaths during 2020 — particularly males, younger age groups, and communities of color.

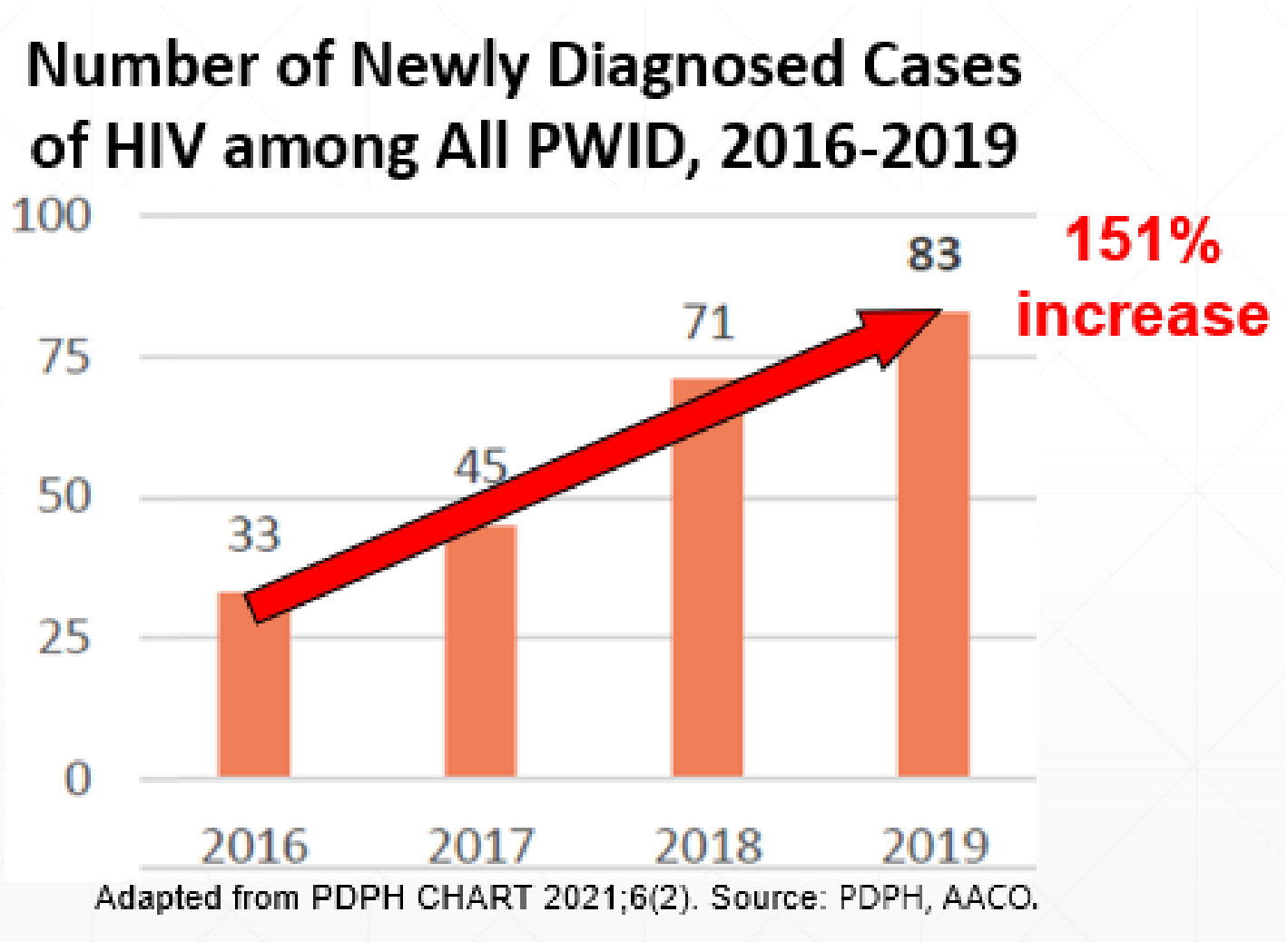
Estimated percent increase in provisional overdose deaths, Jan.–Dec. 2020 vs. Jan.–Dec. 2019



Download data

Note: AIAN = American Indian/Alaska Native.

Background



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Research Gap

- This key population merits special focus given that uptake of HIV prevention among young PWID remains low.
- Peers are important influencers in the lives of young adults.
- Need to better understand the relationship between age and the uptake of peer-delivered prevention interventions among PWID

Sub-study nested within HPTN 037

- Study #: HPTN 037

- Study Description: Phase III, multi-site, two-arm, randomized controlled trial to determine the efficacy of a network-oriented peer educator intervention for prevention of HIV infection among people who inject drugs and members of their HIV risk network through reduction of HIV risk behaviors

- Recruitment occurred from 2002-2006

HPTN 037 Study Randomization

Intervention: Index participants will be randomized in a 1:1 ratio with their network members to one of two study arms as shown below

Study Arm	Behavioral Intervention	
	Index Participants	**Network Members**
Experimental Arm **n~450 networks** (450 index participants and approximately 855 network members)	Enhanced HIV counseling and testing plus Six 2-hour network oriented peer-educator sessions during weeks 1 to 4 and Booster session at months 6 and 12	Enhanced HIV counseling and testing
Control Arm **n~450 networks** (450 index participants and approximately 855 network members)	Enhanced HIV counseling and testing	Enhanced HIV counseling and testing

Project Aims – Sub-study

Aim 1

- Analyze young adult index and network members to

  (1) identify the prevalence of injection and sexual HIV risk behavior measures

  and

  (2) examine participant demographic characteristics associated with those risk behaviors in comparison to older injectors over the age of 30 years in the study.

Project Aims – Sub-study

Aim 2

- Measure uptake of the peer-educator intervention among this key age group.

  Hypothesis: Greater uptake of the intervention will be observed for young adult participants, given the salience of peer relations for this age group, than in older participants when controlling for study site, gender, race, and ethnicity in the multivariable model.

Methods/Analysis Plan

- Key HIV Risk Variables Explored: self-reported syringe sharing, condomless sex with a non-primary partner, giving/receiving sex for money, or multiple partners

- Aim 1 Analytic Approach: Chi-square tests for categorical variables and t-tests for continuous variables

- Aim 2 Analytic Approach: Odds ratios with corresponding 95% confidence intervals

Results: Aim 1

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Table 1.1: Stratification of sociodemographic characteristics of PWID in Philadelphia, 2002 – 2006 by age categories*

Demographic Characteristics	Total (N=697) n/N (%)	</= 30 years N=131 n/N (%)	> 30 years N=566 n/N (%)
Race			
White	318/697 (46)	**106/131 (81)**	**212/566 (37)**
Black	379/697 (54)	**25/131 (19)**	**354/566 (63)**
Current Marital Status			
Single	428/697 (61)	**108/131 (82)**	**320/566 (57)**
Married	70/697 (10)	**5/131 (4)**	**65/566 (11)**
Criminal Justice Involvement			
Jail in the last 6mo	119/697 (17)	**37/131 (28)**	**82/566 (14)**
Treatment Experience			
Residential or Inpatient in last 6mo	118/697 (17)	24/131 (18)	94/566 (17)
Housing			
Live on street, in a car/park/abandoned building in last 6mo	171/697 (25)	**45/131 (34)**	**126/566 (22)**

* **Bold text indicates p-value < 0.05**

Results: Aim 1

Table 1.2: Stratification of drug use behaviors of PWID in Philadelphia, 2002 – 2006 by age categories*

Drug Use Behaviors	Total (N=697) n/N (%)	</= 30 years N=131 n/N (%)	> 30 years N=566 n/N (%)
Drink enough to get drunk			
Always/Almost Always	78/697 (11)	**21/131 (16)**	**57/566 (10)**
>/= 50% of the time	84/697 (12)	**20/131 (15)**	**64/566 (11)**
Non-injection drug use			
Cocaine in last 1 month	114/697 (16)	**29/131 (22)**	**85/566 (15)**
Heroin in last 1 month	243/697 (35)	**36/131 (28)**	**207/566 (36)**
Benzodiazepines in last 1 month	354/697 (51)	**82/131 (63)**	**272/566 (48)**
Injection drug use			
Heroin in last 1 month	604/697 (87)	120/131 (92)	484/566 (86)
Cocaine in last 1 month	238/697 (34)	**63/131 (48)**	**175/566 (31)**

* **Bold text indicates p-value < 0.05**

Results: Aim 1

Table 1.2: Stratification of drug use behaviors of PWID in Philadelphia, 2002 – 2006 by age categories*

Drug Use Behaviors	Total (N=697) n/N (%)	</= 30 years N=131 n/N (%)	> 30 years N=566 n/N (%)
Ever pass syringe/needle to someone after you used it	334/697 (52)	**86/131 (68)**	**248/566 (47)**
Ever use a syringe/needle from someone else that used it	250/697 (39)	**65/131 (52)**	**185/566 (35)**
Ever use a syringe/needle from someone you knew was HIV+	10/697 (2)	**4/131 (3)**	**6/566 (1)**

* **Bold text indicates p-value < 0.05**

Results: Aim 1

Table 1.3: : Stratification of sexual behaviors of PWID in Philadelphia, 2002 – 2006 by age categories*

Sexual Behaviors	</= 30 years Mean (95% CI)	> 30 years Mean (95% CI)
Number of different male sex partners	3.5 (-0.4,7.4)	3.2 (-0.3,6.7)
Number of different female sex partners	1.7 (1.3,2.1)	1.7 (1.4,1.9)
Number of times vaginal/anal sex with primary partner	**3.7 (3.1,4.4)**	**2.7 (2.4,3.1)**
Number of times used condom with primary partner	0.4 (0.2,0.7)	0.6 (0.4,0.8)
Number of times vaginal/anal sex with non-primary partner	1 (0.5,1.5)	1.7 (0.8,2.6)
Number of times used condom with non-primary partner	2 (0.8,3.1)	2 (1.0,3.1)
Number of times gave money/drug for exchange for sex	**0.2 (0.1,0.3)**	**0.6 (0.5,0.8)**
Number of times received money/drugs for exchange for sex	3.1 (-0.7,7.0)	3 (-0.5,6.5)

* **Bold text indicates p-value < 0.05**

Status: Aim 2

- Need to obtain the post-intervention data to work through with statistical research associate

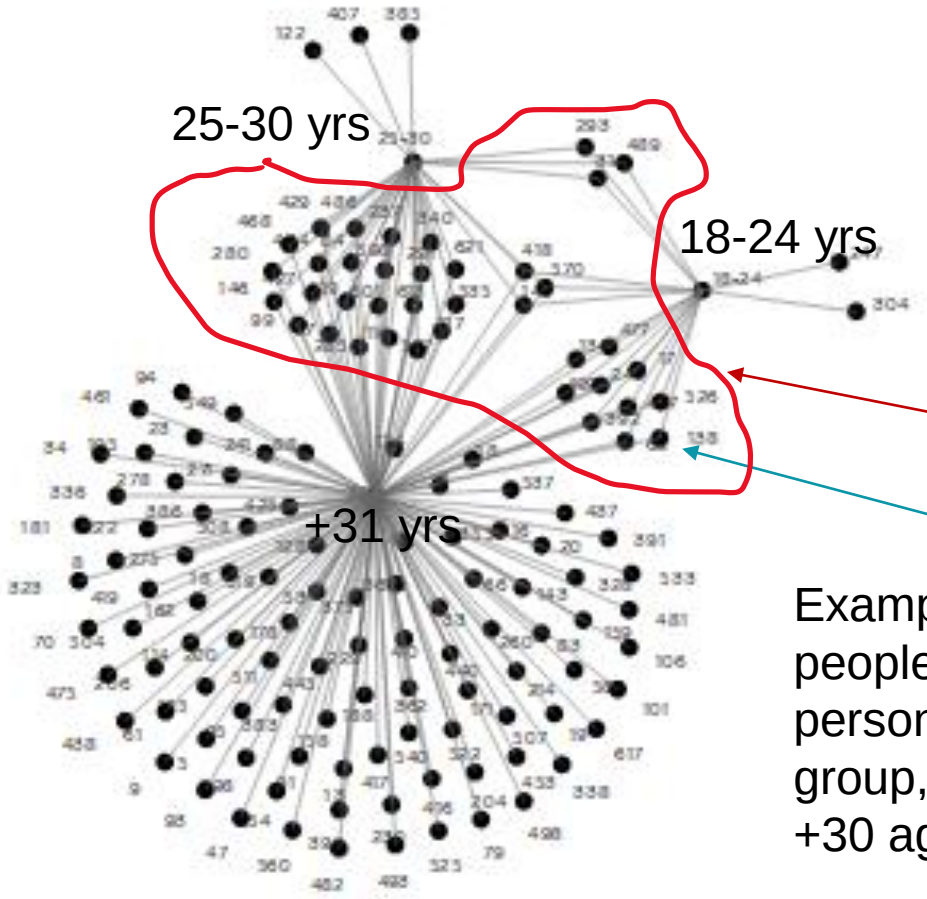
- Is age homophily within network members associated with differences in baseline risk and/or changes in risk behavior?
  - The psychological tendency of individuals to interact and associate with other similar to themselves.
  - Factors affecting Homophily: Proximity in age, sex, race, education

PREVENTION RESEARCH

Racial Inequities in HIV Prevalence and Composition of Risk Networks Among People Who Inject Drugs in HIV Prevention Trial Network 037

Momplaisir, Florence MD, MSHP[*]; Hussein, Mustafa PhD[†]; Tobin-Fiore, Danielle BS[‡]; Smith, Laramie PhD[§]; Bennett, David PhD[‖]; Latkin, Carl PhD[¶]; Metzger, David S. PhD[‡]

Full Model of Indices and Network



Legend:

- Node (index)
- Network member

Note the length of each edge is weighted by the number of occurrences of the same age group

Have more than one unique age group in their network

Example: Index 138 has 2 people in their network: one person is in the 18-24 age group, and the other is in the +30 age group

Discussion

- Although these data are from the pre-PrEP era, there is modern-day relevance
  - Young PWID in HPTN 037 had significantly higher reports of injection drug risk behaviors

- Patterns of substance use from this study reveal present dangers for young adults in the current overdose epidemic with the overwhelming presence of fentanyl in the drug supply
  - Young adults in HPTN 037 were significantly more likely to use cocaine and benzodiazepines

Implications/Future Considerations

- New research to determine optimal HIV prevention strategies that target young adults with polysubstance use is still needed

- Young adult networks hold great potential as high yield avenues for the dissemination of HIV prevention interventions

Thank you

Your questions and comments are welcome!

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Acknowledgments

- Overall support for the HIV Prevention Trials Network (HPTN) is provided by the National Institute of Allergy and Infectious Diseases (NIAID), Office of the Director (OD), National Institutes of Health (NIH), National Institute on Drug Abuse (NIDA), the National Institute of Mental Health (NIMH), and the Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD) under Award Numbers UM1AI068619-15 (HPTN Leadership and Operations Center), UM1AI068617-15 (HPTN Statistical and Data Management Center), and UM1AI068613-15 (HPTN Laboratory Center).

- The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health.