

Pharmacy-based approaches to improving HIV and substance use related harms in high-risk communities

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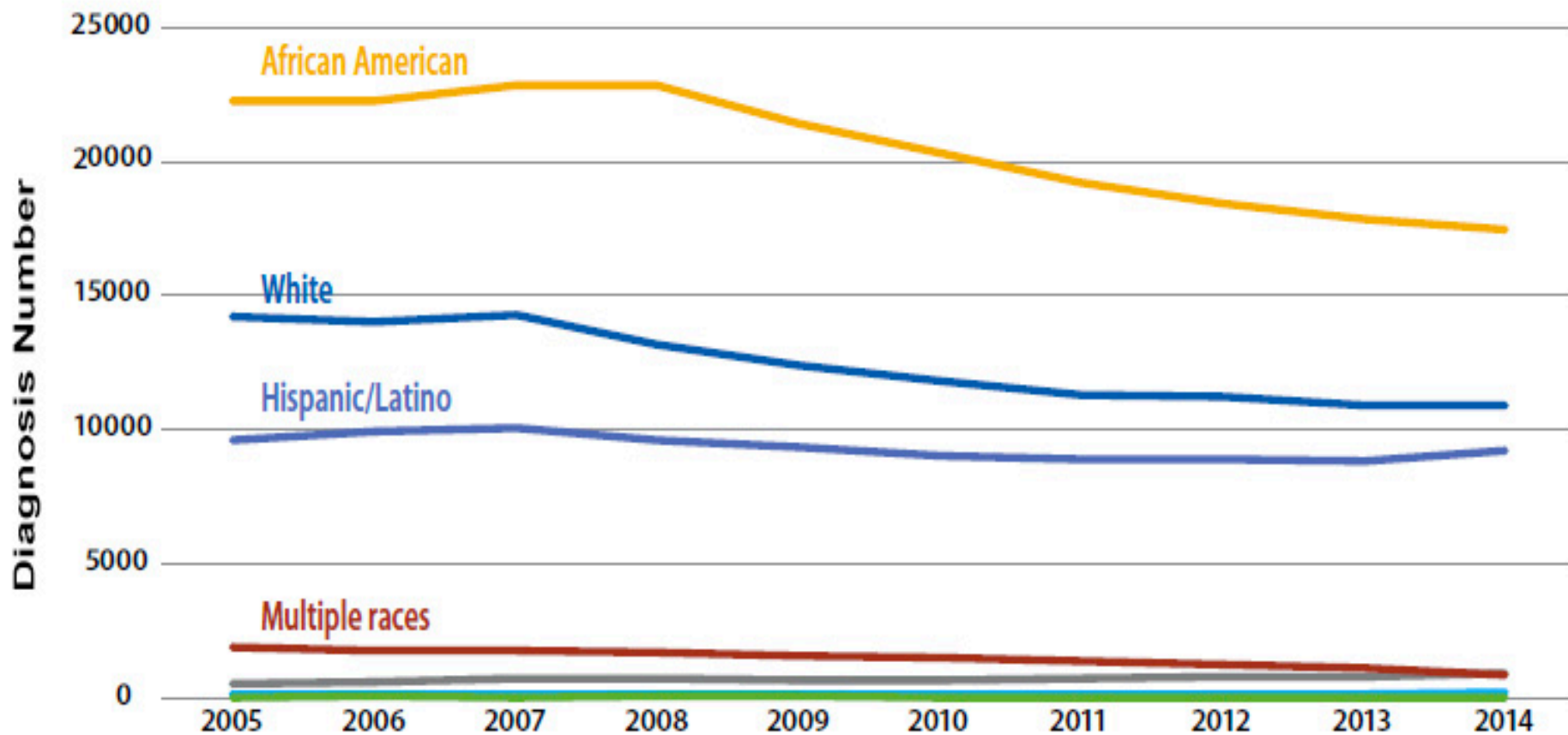
Emory University

Outline

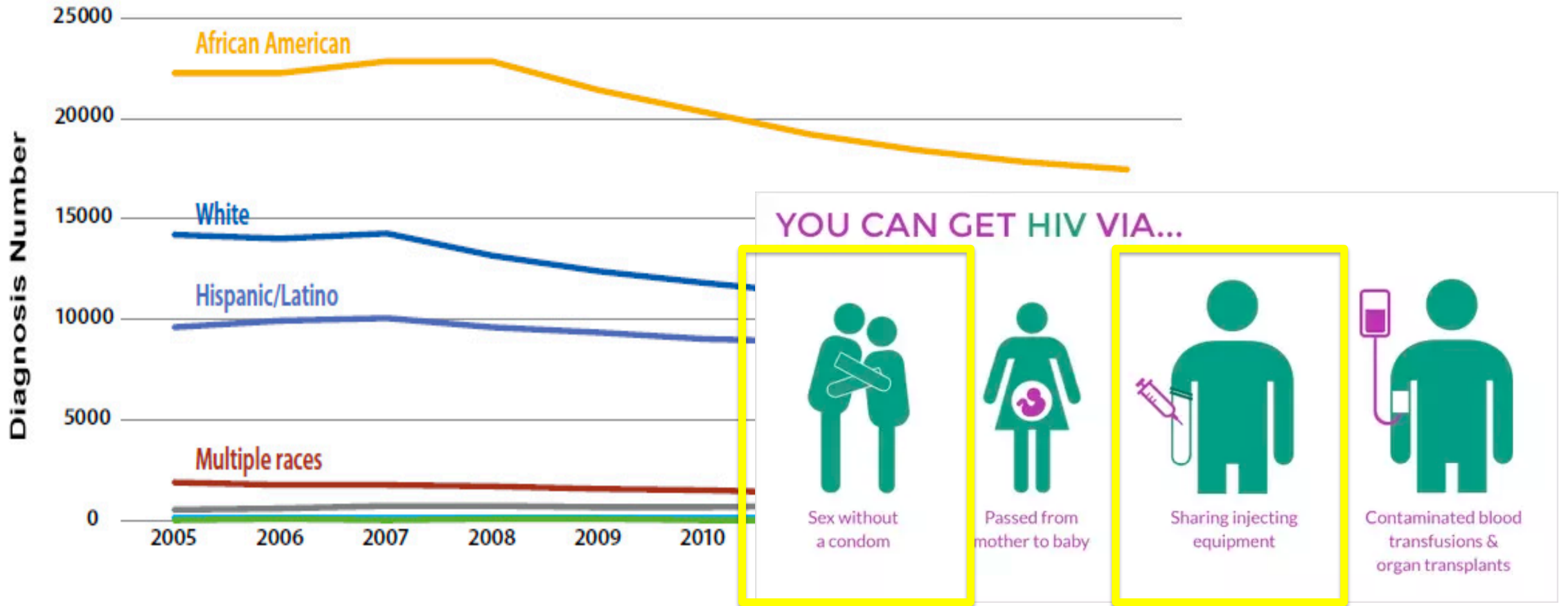
- Epidemiology of HIV by race and ethnicity
- Epidemiology of sex and substance use risk behaviors by race and ethnicity
- Pharmacy approaches to reducing racial and ethnic inequities in HIV
 - Expanded social, medical and treatment referrals
 - HIV testing
 - Pre exposure prophylaxis (PrEP)

- Racial and ethnic inequities in HIV exist

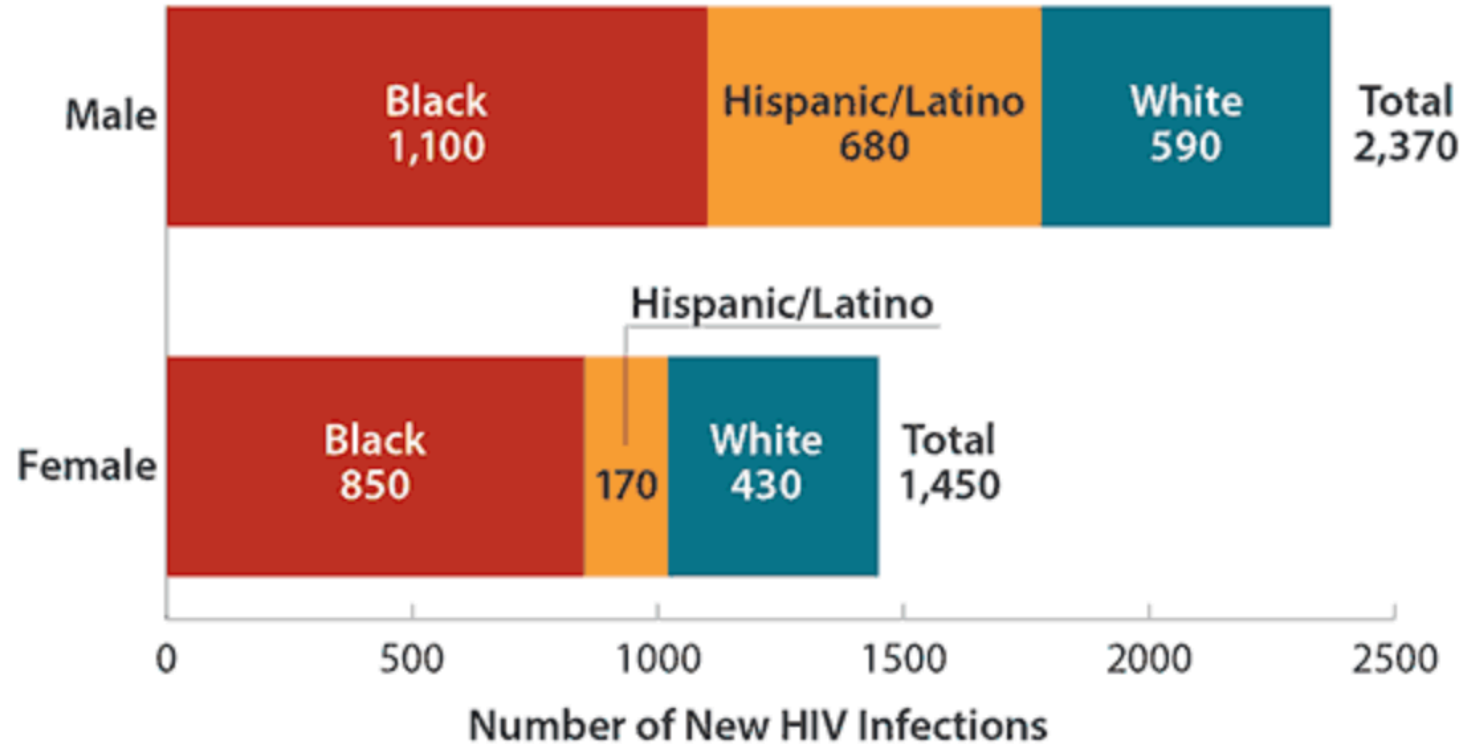
HIV Diagnosis by race and ethnicity, 2005-2014



HIV Diagnosis by race and ethnicity, 2005-2014



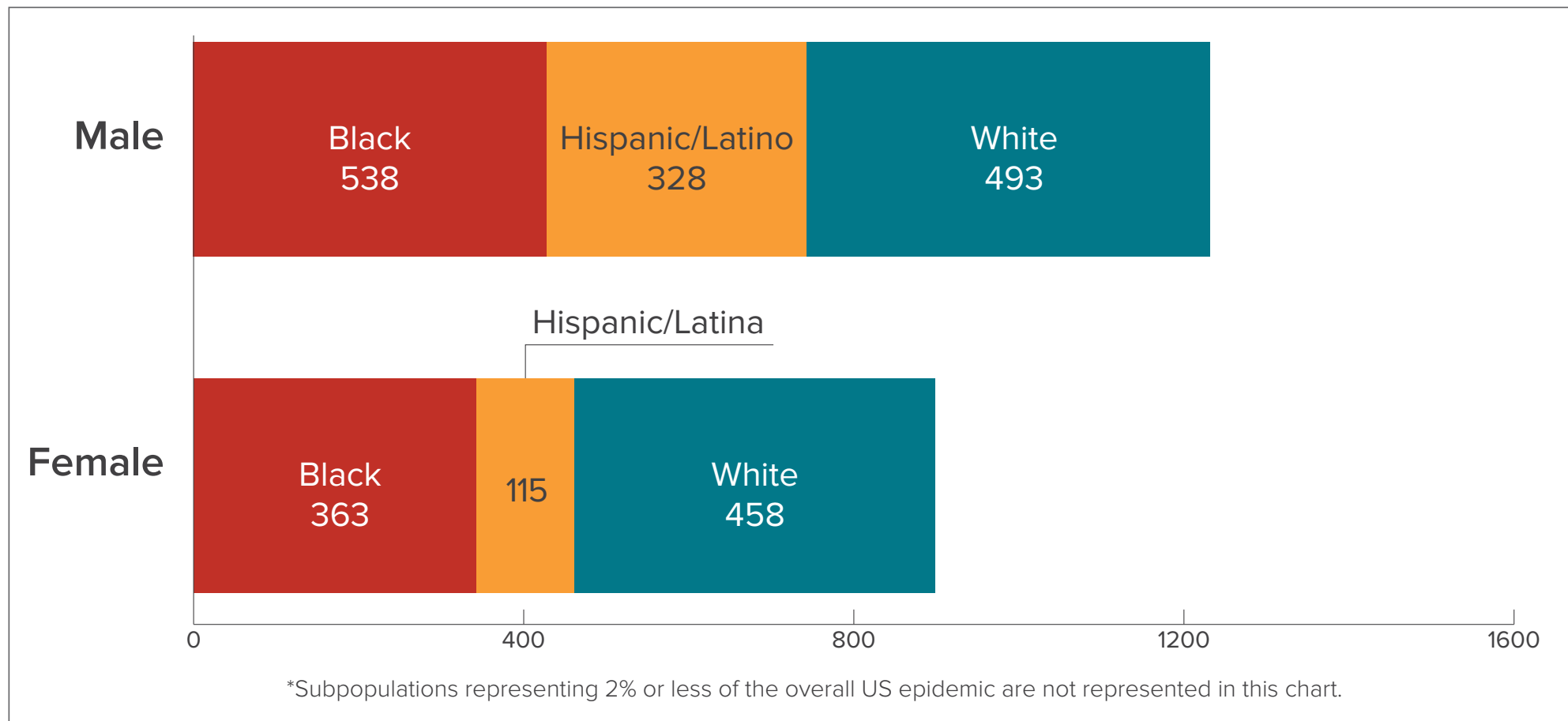
Estimated New Infections among People Who Inject Drugs by Gender and Race/Ethnicity, 2010—United States*



*Subpopulations representing 2% or less of the overall US epidemic are not represented in this chart.

Legend: Estimated HIV Incidence among Adults and Adolescents in the United States, 2007-2010, *HIV Surveillance Supplemental Report 2012*

HIV Diagnoses Attributed to Injection Drug Use by Race/Ethnicity and Sex, 2015—United States



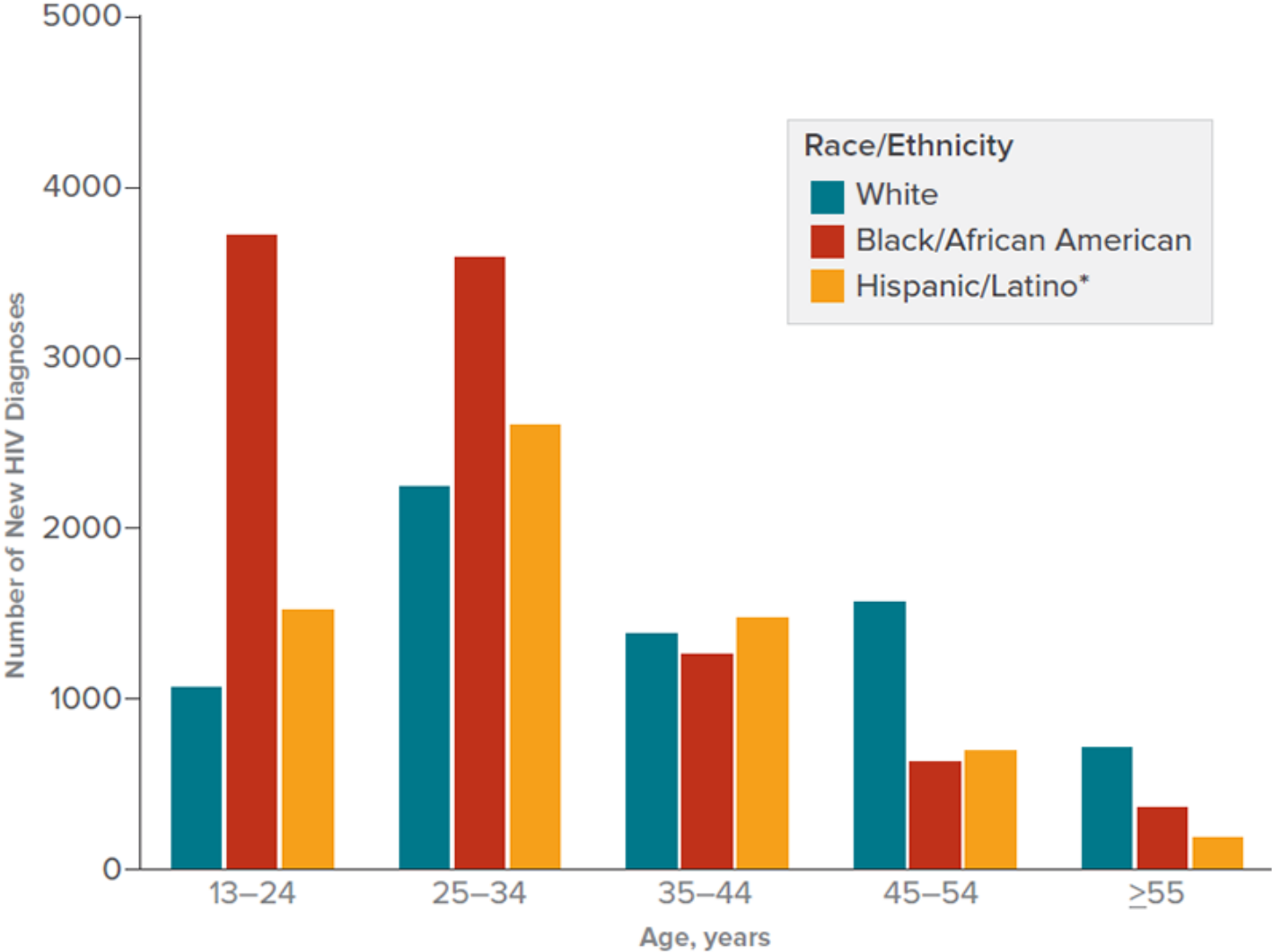
Source: CDC. Diagnoses of HIV infection in the United States and dependent areas, 2015 (<https://www.cdc.gov/hiv/pdf/library/reports/surveillance/cdc-hiv-surveillance-report-2015-vol-27.pdf>). *HIV Surveillance Report* 2016;27.



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HIV Diagnoses Among Men Who Have Sex With Men, by Race/Ethnicity and Age at Diagnosis, 2015—United States



- Racial and ethnic inequities in HIV exist
- Sex and substance use risk behaviors do not explain these disparities
- Racial minorities have lower
 - Sexual risk behaviors
 - Drug risk behaviors

Prevalence of condom use during last sexual intercourse in the past 12 months

| | Women | Men |
|--------|-------|------|
| White | 21.7 | 31.7 |
| Black | 31.9 | 42.3 |
| Latino | 23.8 | 33.2 |

Estimated proportion of persons who inject drugs in the United States by race/ethnicity

| Race/Ethnicity | Total | | |
|------------------------|--------|--------|-----|
| | % PWID | 95% CI | |
| Black/African American | 2.5 | 1.3 | 3.7 |
| White | 2.7 | 2.1 | 3.3 |
| Hispanic/Latino | 1.6 | 1.0 | 2.2 |
| Other | 1.7 | 1.0 | 2.4 |

Factors associated with receptive syringe sharing among injecting drug users: NHBS-IDU 2009

| Characteristic | Receptive syringe sharing | | | |
|--|---------------------------------|---------|--|---------|
| | Bivariate analysis ^a | | Final multivariable model ^b | |
| | PR (95 % CI) | p value | aPR (95 % CI) | p value |
| Age 18–29 years (ref: ≥30 years) | 1.42 (1.29, 1.56) | < 0.001 | 1.14 (1.07, 1.22) | < 0.001 |
| Female gender | 1.15 (1.05, 1.25) | 0.003 | – | – |
| Race/ethnicity (ref: Black) | | | | |
| Hispanic | 1.41 (1.25, 1.58) | < 0.001 | 1.36 (1.25, 1.48) | < 0.001 |
| White | 1.52 (1.35, 1.71) | < 0.001 | 1.44 (1.33, 1.55) | < 0.001 |
| Other ^c | 1.30 (1.15, 1.47) | < 0.001 | 1.27 (1.14, 1.41) | < 0.001 |
| Binge drinking, past 30 days | 1.59 (1.50, 1.59) | < 0.001 | 1.20 (1.12, 1.28) | < 0.001 |
| Age at first injection ≤18 years | 1.14 (1.06, 1.22) | < 0.001 | – | – |
| Years since first injected ≤6 years | 1.08 (0.98, 1.18) | 0.157 | – | – |
| Injected daily | 1.26 (1.15, 1.37) | < 0.001 | 1.15 (1.08, 1.22) | < 0.001 |
| Obtained syringes from unreliable sources ^e | 1.99 (1.85, 2.15) | < 0.001 | 1.70 (1.56, 1.85) | < 0.001 |
| Had unprotected sex, past 12 months | 1.70 (1.57, 1.85) | < 0.001 | 1.36 (1.24, 1.49) | < 0.001 |
| Had ≥2 sex partners | 1.58 (1.48, 1.69) | < 0.001 | – | – |
| Had exchange sex partners | 1.68 (1.55, 1.81) | < 0.001 | 1.32 (1.23, 1.42) | < 0.001 |
| Last sex partner ever injected drugs | 1.55 (1.45, 1.66) | < 0.001 | 1.24 (1.16, 1.32) | < 0.001 |
| Participated in alcohol/drug treatment program ^f | 1.11 (1.06, 1.17) | < 0.001 | – | – |
| Received counseling about ways to prevent HIV infection ^g | 1.09 (1.02, 1.17) | 0.012 | – | – |

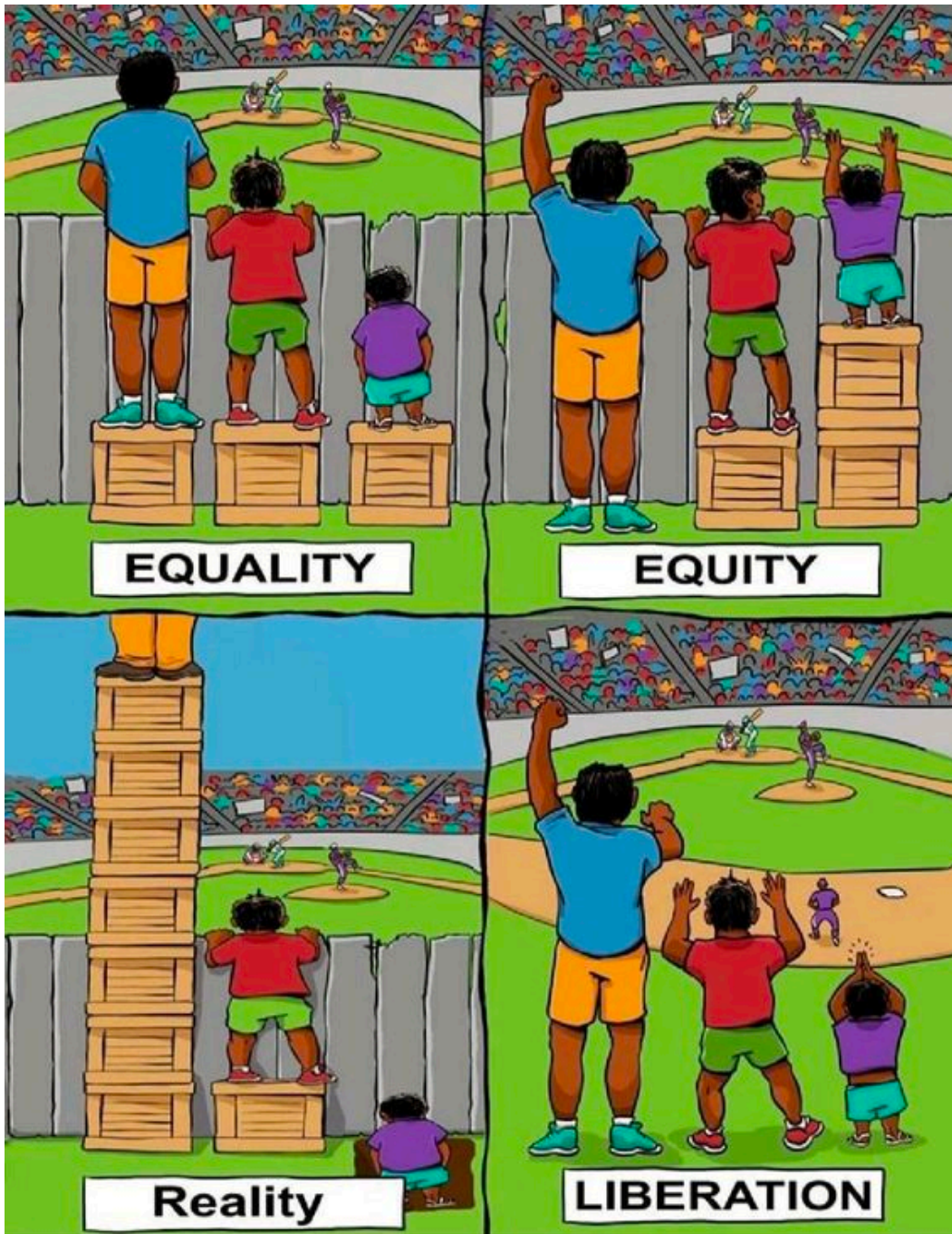


HIV Prevention Intervention strategies

- Individual level interventions are successful...but...
 - Unsustainable effects
- Unequal distribution by race
 - Syringe access
 - Pre-exposure prophylaxis

Effective HIV prevention programmes require a combination of behavioural, biomedical and structural interventions





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Structural interventions

Intervention strategies that target the economic, social, contextual, policy or organizational levels or factors that have increased risk of or protected against HIV

What's the role of pharmacies in HIV?

What's the role of pharmacies in HIV?



Medication dispensing

An upward-pointing arrow connects the text box to the 'PRESCRIBED ANTIRETROVIRAL THERAPY' stage of the flowchart.

What's the role of pharmacies in HIV?

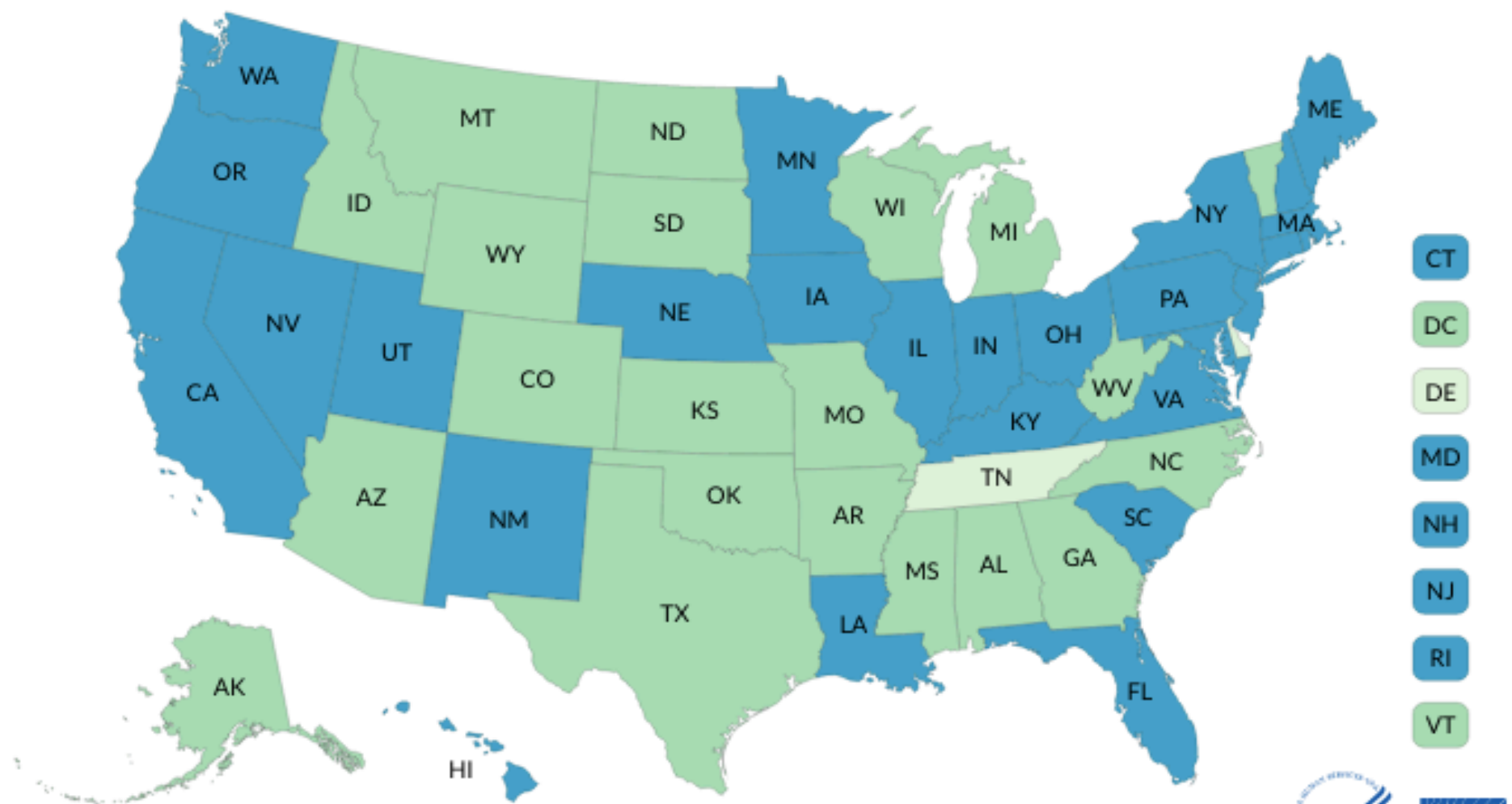


Prevention?

Medication dispensing

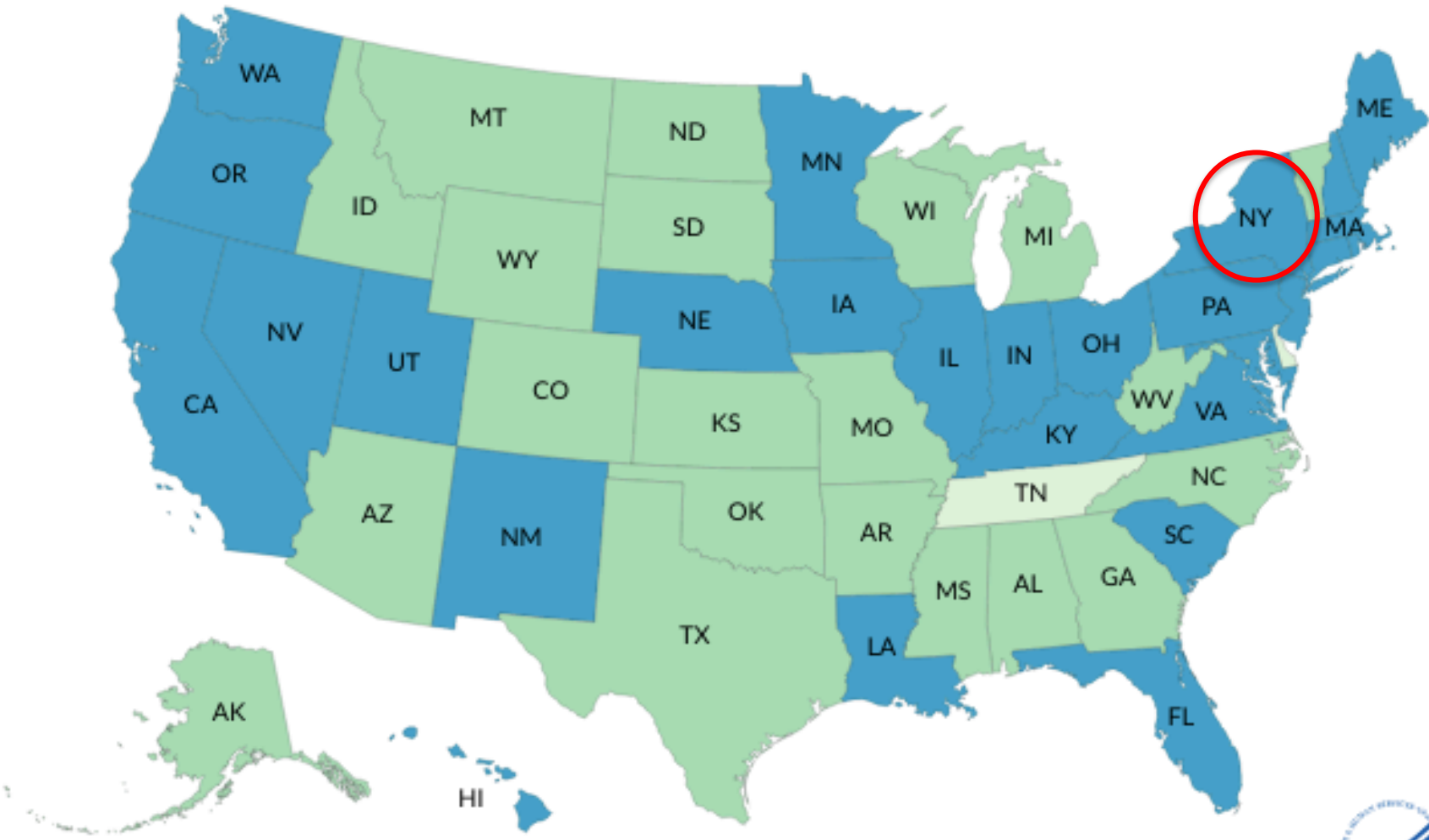
July 2016 assessment of whether a state or DC law exists that allows the retail sale of syringes and needles to a person who injects drugs

State Law Authorization



July 2016 assessment of whether a state or DC law exists that allows the retail sale of syringes and needles to a person who injects drugs

State Law Authorization



- Yes
- Potentially
- No

- CT
- DC
- DE
- MD
- NH
- NJ
- RI
- VT



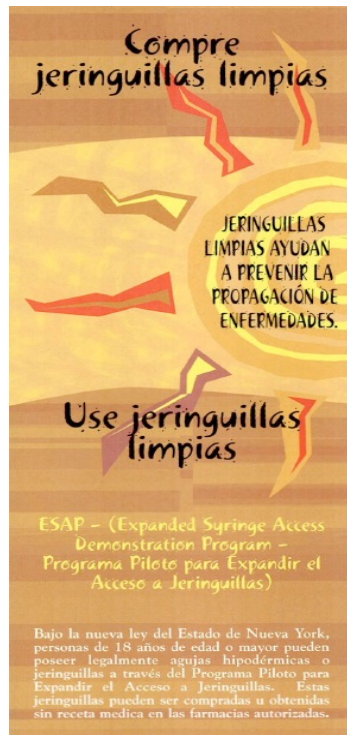
Outline

- Epidemiology of HIV by race and ethnicity
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A SUCCESS!!!

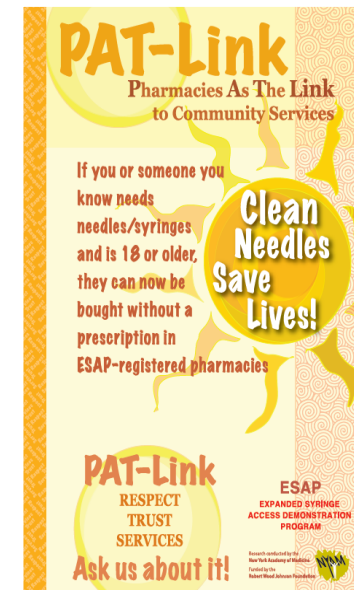
... But not reaching
Black and Latino PWID



Increased safe syringe use

- Overall by 100%
- Black PWID by 300%

2001



...but pharmacies
want to do more!

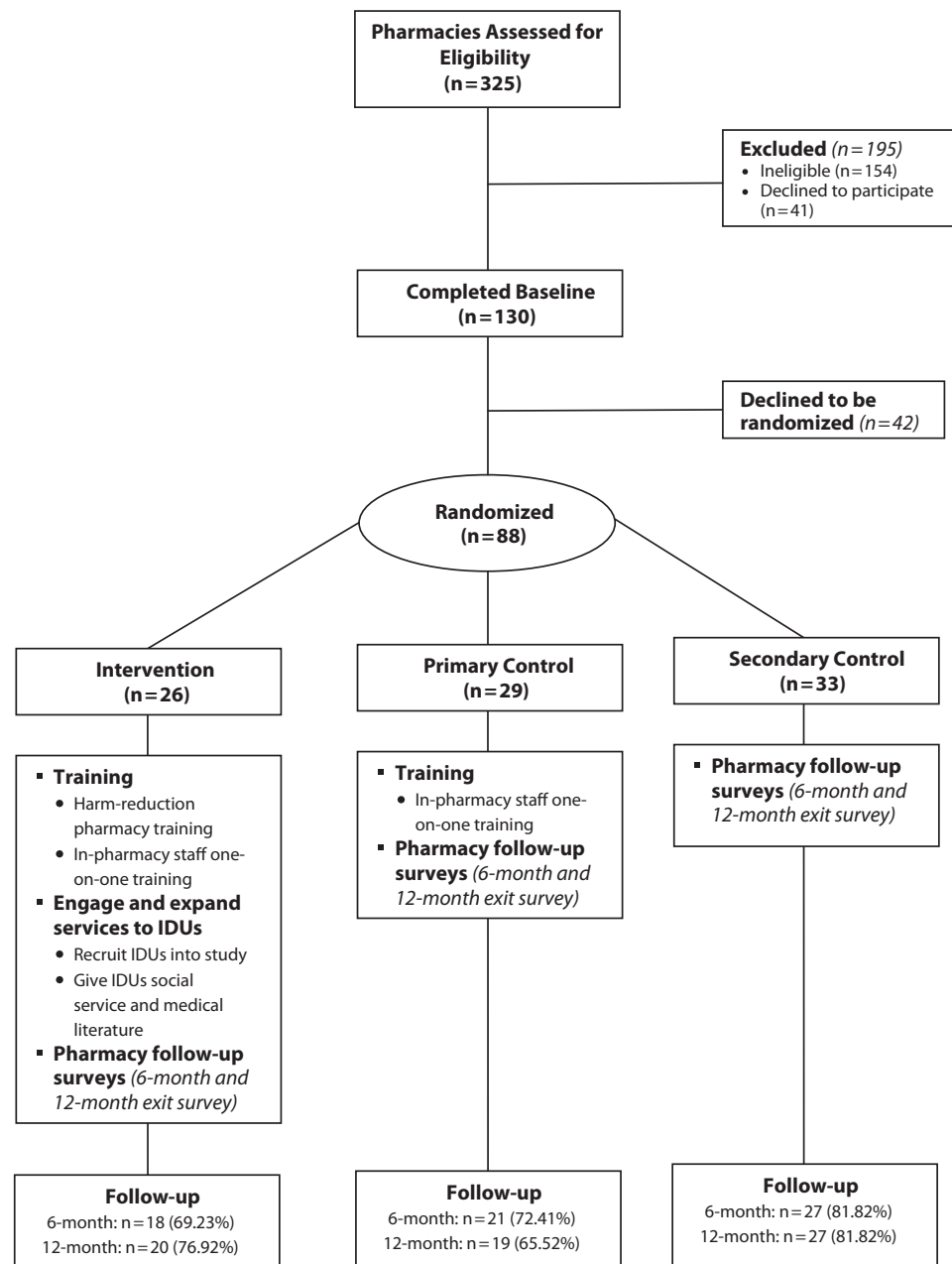
SUCCESS!!! in social,
medical and
treatment referrals!

2005

Pharmacies as Resources Making Links to Community Services



- Community-based randomized pharmacy intervention trial enrolling 88 NYC pharmacies to reduce injection risk among PWID
- PHARM-Link Working Group
 - Advisory group of health care providers, representatives of local health departments and community based organizations (CBOs)



- Eligibility criteria
1. ESAP registered
 2. 1 new ESAP customer/month
 3. 1 new ESAP customer/month become a regular customer
 4. No additional criteria to sell syringes

Note. IDU = injection drug user.

FIGURE 1—Pharmacy enrollment, randomization, and study procedures: Pharmacies as Resources Making Links to Community Services, 2009–2011.

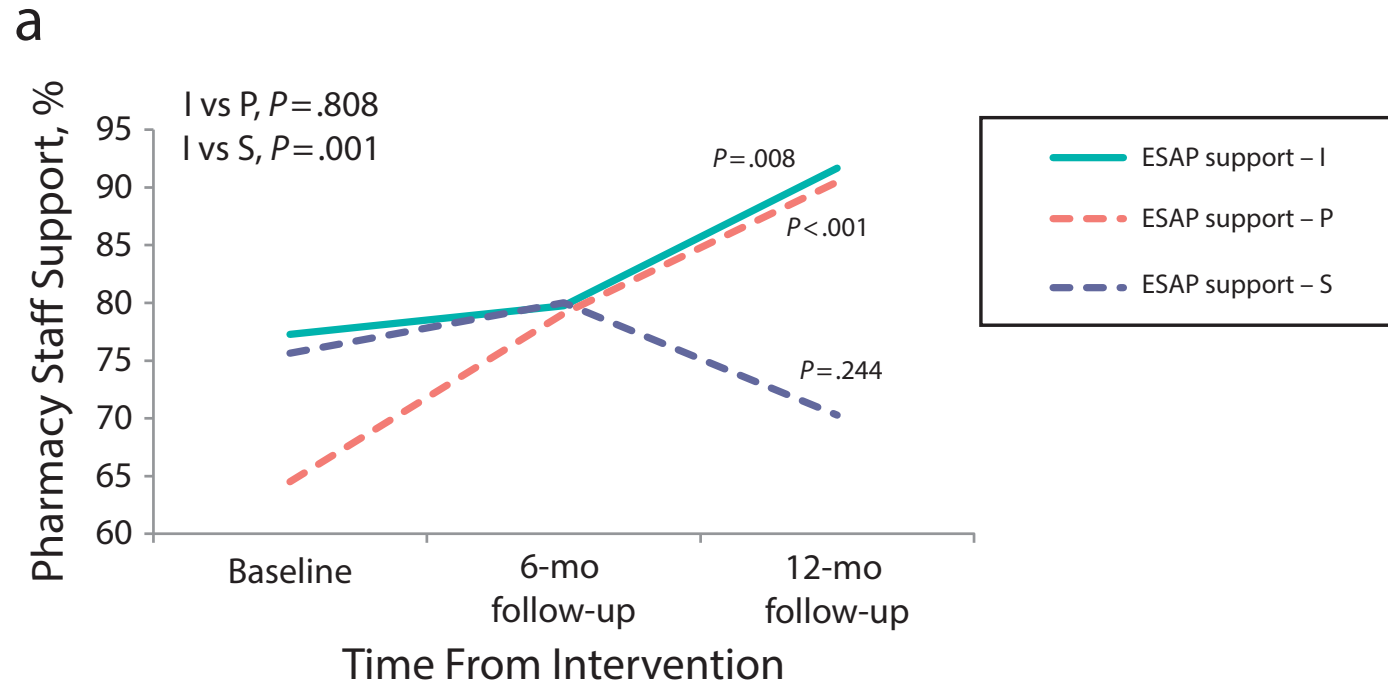


TABLE 1—Adjusted Associations of Pharmacy Staff Postintervention Support for the New York State Expanded Syringe Access Program: Pharmacies as Resources Making Links to Community Services, 2009–2011

| ESAP Support | Model 1, ^a PR (95% CI) | Model 2, ^b PR (95% CI) | Model 3, ^c PR (95% CI) |
|---|-----------------------------------|-----------------------------------|-----------------------------------|
| Intervention vs primary control group | 1.04 (0.93, 1.16) | 1.05 (0.94, 1.16) | 1.05 (0.94, 1.16) |
| Intervention vs secondary control group | 1.36** (1.15, 1.60) | 1.27** (1.11, 1.46) | 1.27** (1.11, 1.47) |

Note. CI = confidence interval; ESAP = Expanded Syringe Access Program; PR = prevalence ratio.

^aAdjusted for clustering of individuals within pharmacies.

^bAdjusted for clustering of individuals within pharmacies and baseline differences in ESAP support.

^cAdjusted for clustering of individuals within pharmacies, baseline differences in ESAP support, and race.

* $P \leq .05$; ** $P \leq .01$.

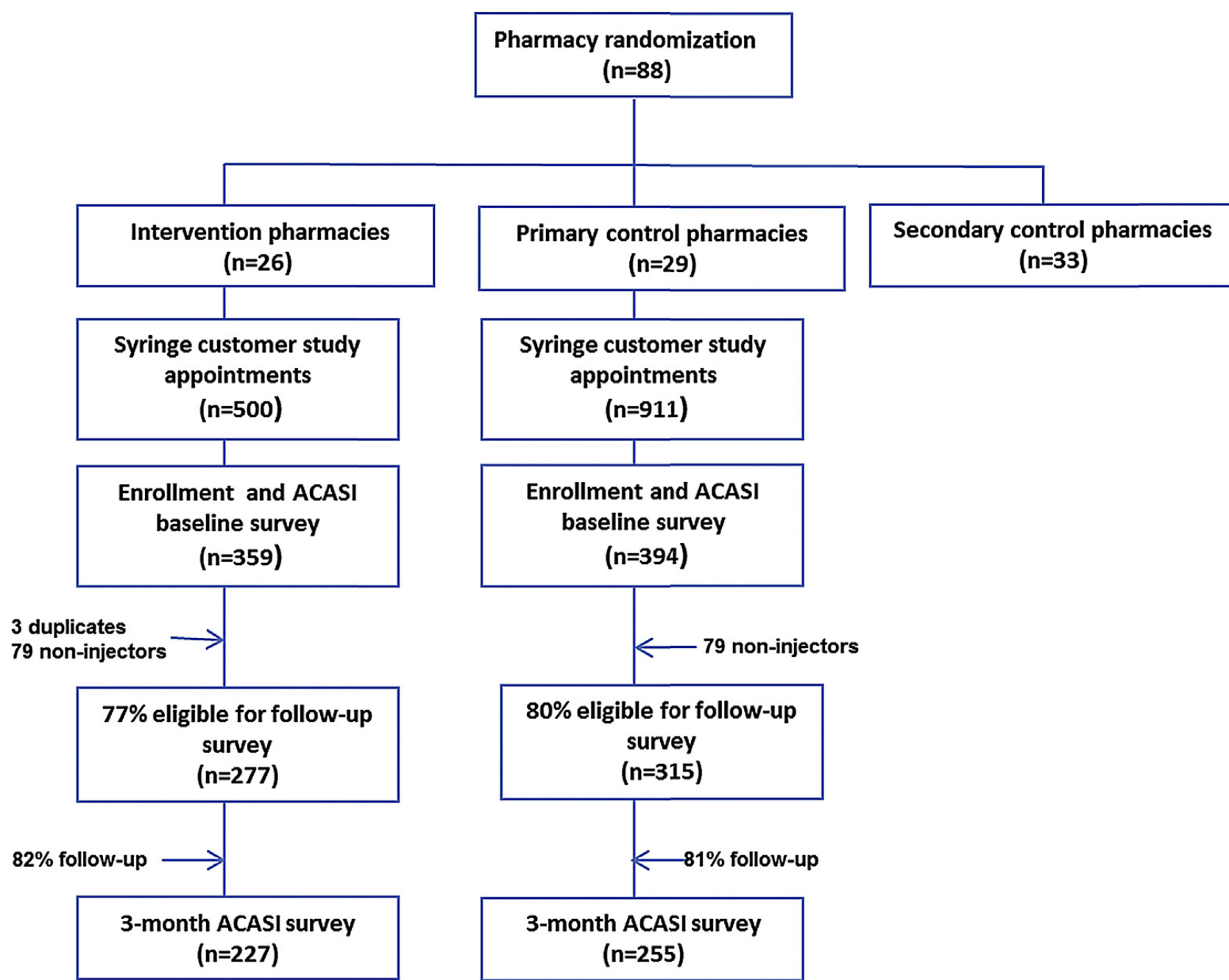


Fig. 1. Study enrollment and retention by study arm, PHARM-Link, 2009–2010.

Adjusted intervention effect on injection behavior outcomes among PWID, PHARM-Link 2009-2010 (n=482)

| Study arm | Receptive syringe sharing | Pharmacy primary syringe source | 100% sterile syringe use | Pharmacy syringe purchase barrier |
|--------------|---------------------------|---------------------------------|--------------------------|-----------------------------------|
| | OR (95% CI) | PR (95% CI) | | |
| Intervention | 0.60 (0.33 - 1.09) | 1.20 (0.99 – 1.44) | 1.24 (1.04 – 1.48) | 0.82 (0.62 – 1.09) |
| Control | 1.00 | 1.00 | 1.00 | 1.00 |

Adjusted for baseline value, baseline employment and clustering of PWID within pharmacies

What did we learn?

- PHARM-Link had a significant and positive effect on
 - Pharmacy staff beliefs about drug use
 - PWID sterile syringe use
- Pharmacy-based public health services could have an important impact on health and health behavior and transform delivery of preventive services in health care
- Pharmacists wanted to do more

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Evaluation of Pharmacy-Based HIV Testing in a High-Risk New York City Community

Silvia Amesty , Natalie D. Crawford, Vijay Nandi, Rafael Perez-Figueroa, Alexis Rivera, Madeline Sutton, Paul J. Weidle, Leigh Willis, Dawn K. Smith, Carolyn Hernandez, Katherine Harripersaud, and Crystal Fuller Lewis

- Pharmacy-based HIV testing pilot
 - 2 pharmacies in Harlem
 - Reached individuals at high risk for HIV transmission
 - racial minorities
 - drug users
 - no recent HIV test
 - lack of regular health care

40% HIV testing uptake!
....But not enough

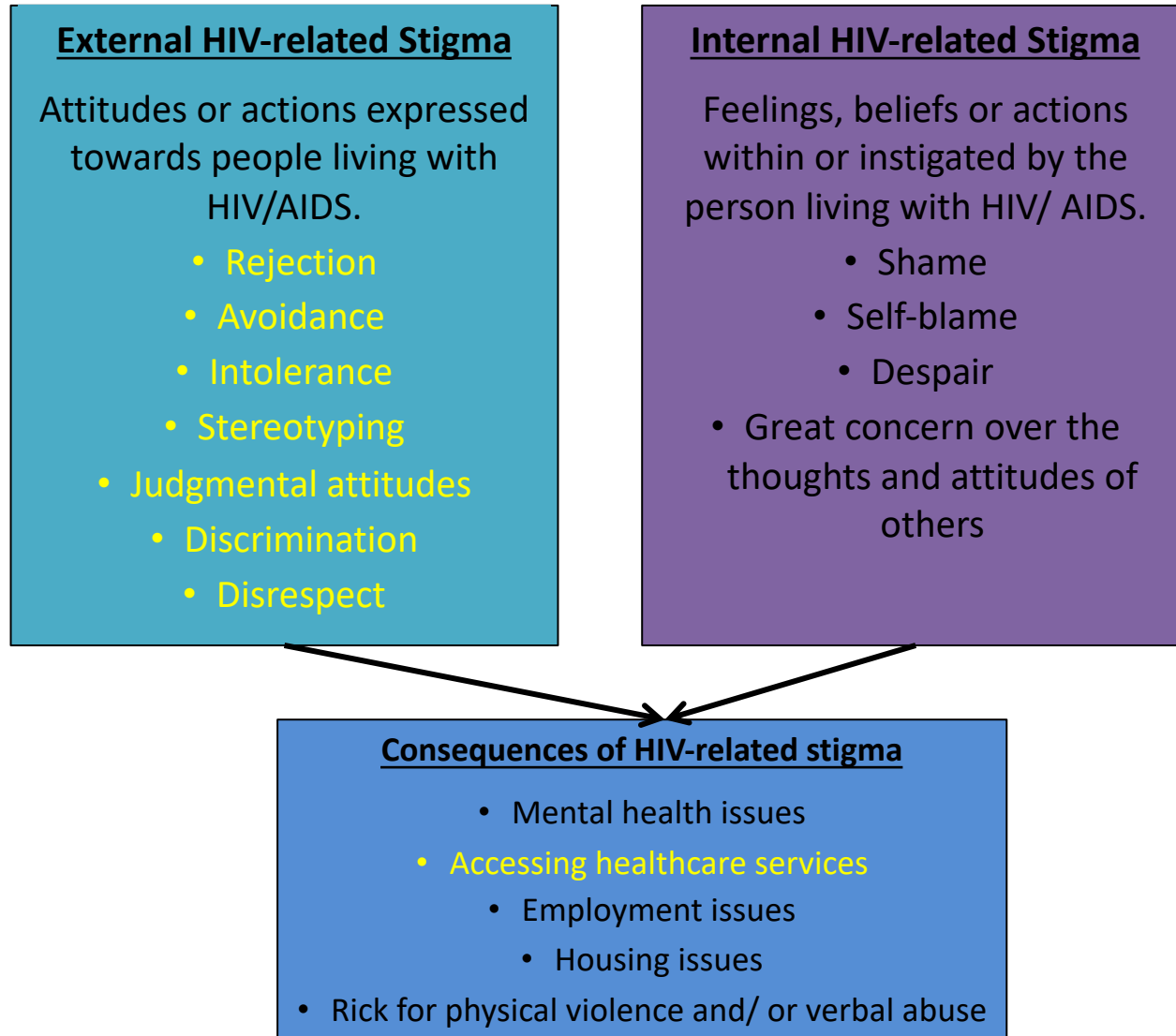


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HIV-related stigma

is an important factor for achieving successful HIV prevention



Pharmacy Intervention to Improve HIV Testing Uptake Using a Comprehensive Health Screening Approach

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CRYSTAL M. FULLER, PhD^{g,h}

Increase HIV testing access in pharmacies

Normalize HIV and HIV testing using media messages that promote comprehensive health screening

Comprehensive Arm

- HIV testing
- Healthy Lifestyles video
- Comprehensive screening package (Glucose, cholesterol and blood pressure)

Video Arm

- HIV testing
- Healthy Lifestyles video

Control Arm

- HIV testing

Pharmacy Intervention to Improve HIV Testing Uptake Using a Comprehensive Health Screening Approach

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 CRYSTAL M. FULLER, PhD^{g,h}

| <i>Intervention type^d</i> | <i>HIV testing^c</i> | |
|--------------------------------------|--------------------------------------|----------------|
| | <i>Prevalence ratio (95% CI)</i> | <i>P-value</i> |
| Control arm | Ref. | |
| Video arm | 1.59 (1.00, 2.53) | 0.052 |
| Comprehensive screening arm | 1.61 (1.03, 2.49) | 0.034 |

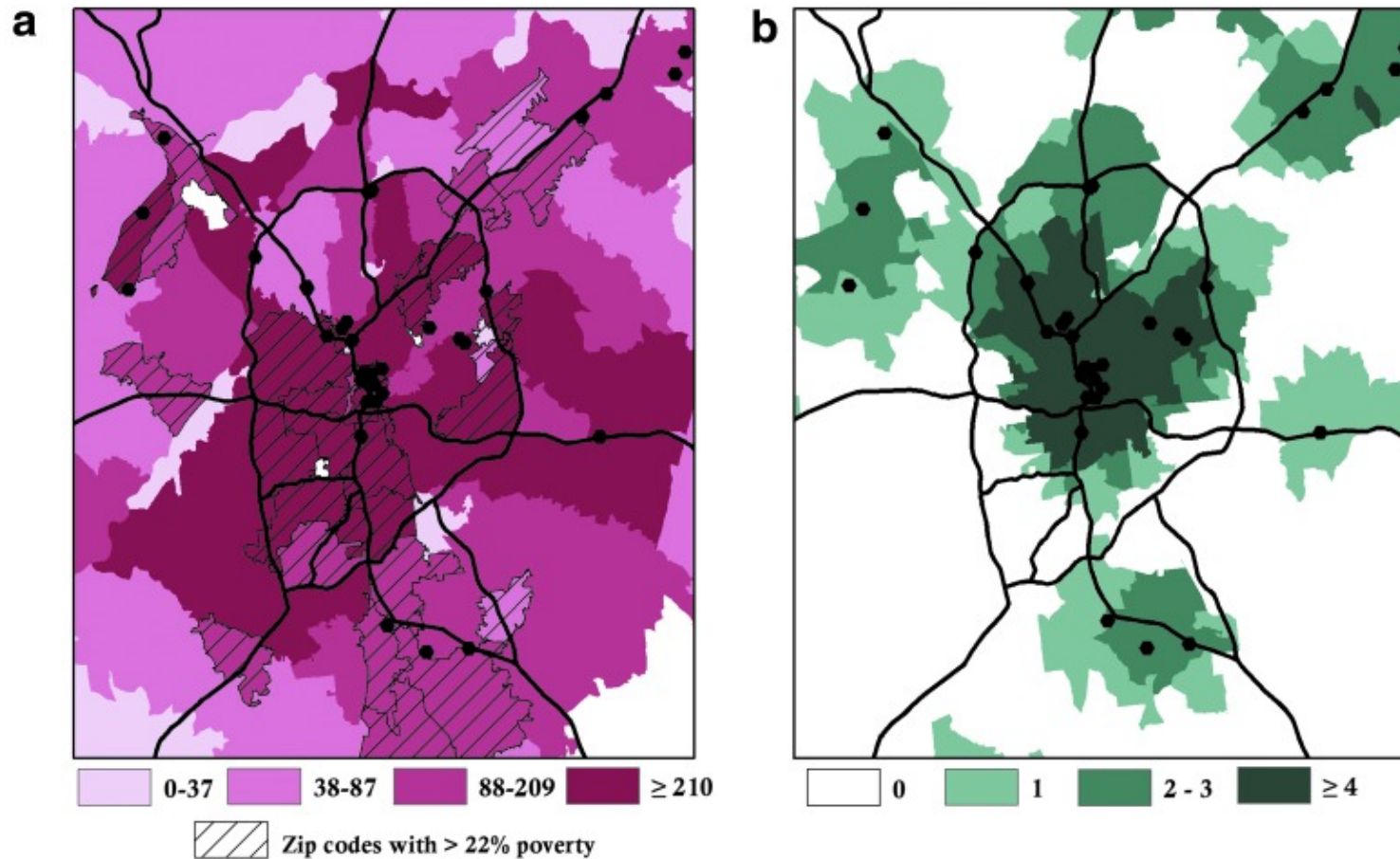
Adjusted for age and race/ethnicity

What did we learn?

- HIV testing in pharmacies could drastically improve testing availability and accessibility
- Wrapping HIV testing into existing screenings in pharmacies could
 1. reduce HIV testing specific stigma
 2. normalize HIV testing
 3. reduce HIV exceptionalism
- **Pharmacists wanted to do more**

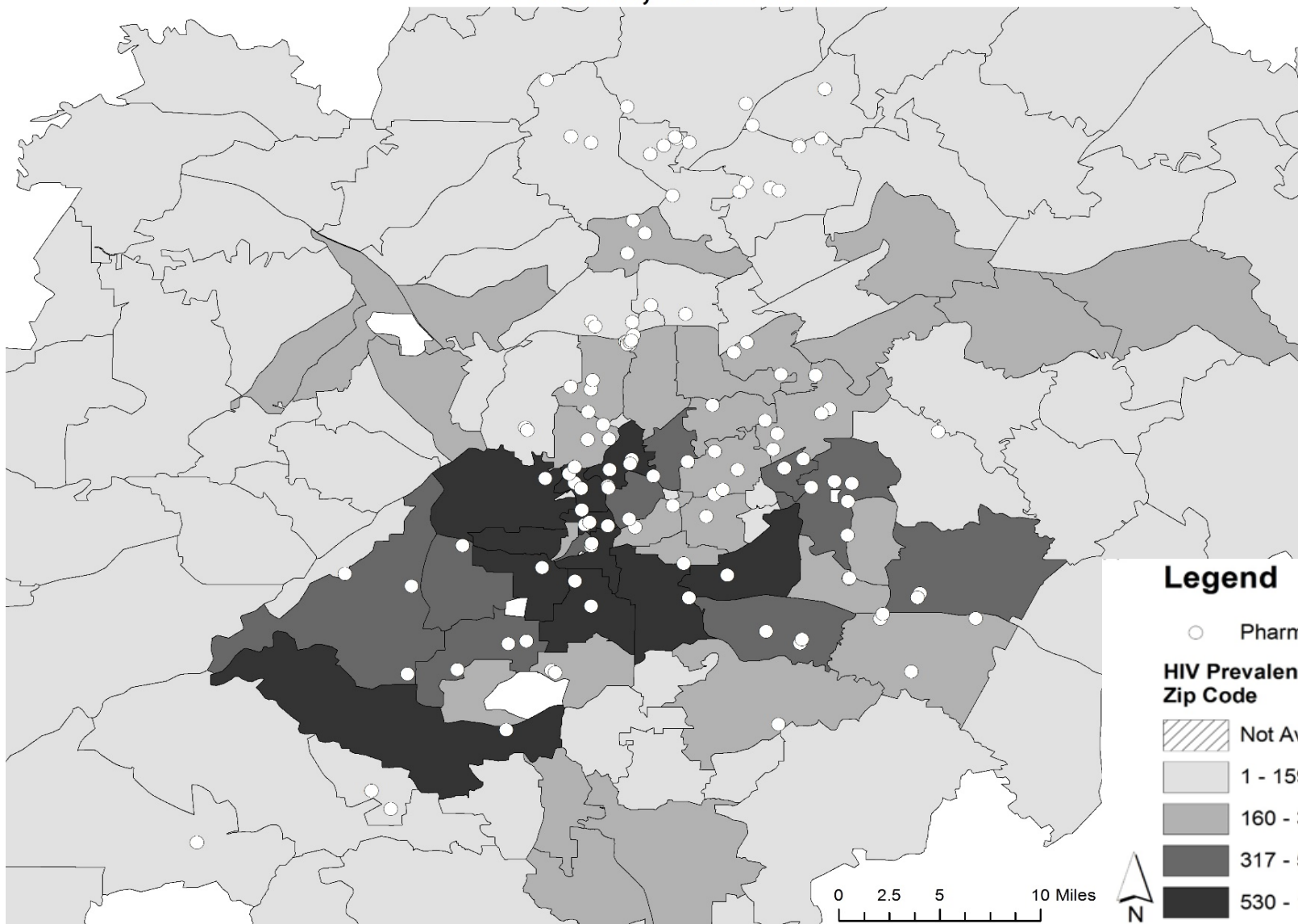
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(a) Number of HIV cases by ZCTA. **(b)** Number of major HIV providers within 5 mile driving radius of each census tract.

HIV Prevalence and Pharmacy Locations DeKalb & Fulton County Atlanta, GA - 2013



Legend

○ Pharmacy

HIV Prevalence by Zip Code

▨ Not Available

1 - 159

160 - 316

317 - 529

530 - 1,363

0 2.5 5 10 Miles



- Pharmacies can remove some barriers to PrEP uptake
 - Cost → Payment programs
 - Access → Ubiquitous locations and flexible hours
 - Distrust → Trusted health professional
 - Stigma → Neutral setting

EVIDENCE OF PHARMACIES ACROSS THE HIV PREVENTION AND CARE CONTINUUMS

| HIV Testing | Syringe services | Post exposure prophylaxis | Pre exposure prophylaxis | Antiretrovirals |
|--------------------|----------------------|---------------------------|--------------------------|-------------------------------|
| 9 | 11 | 1 | 6 | 5 |
| 1 study among PWID | 5 studies among PWID | 0 among risk population | 3 among MSM | 4 among HIV positive patients |

Willingness to Discuss and Screen for Pre-Exposure Prophylaxis in Pharmacies Among Men Who Have Sex With Men

Journal of Pharmacy Practice

1-7

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**Natalie D. Crawford, PhD¹, Taynel Albarran, BA¹, Allison Chamberlain, PhD^{2,3},
Roderick Hopkins, BS¹, Dorie Josma, MPH¹ , Joseph Morris, BA¹,
and Udodirim N. Onwubiko, MPH³**

- Over 69% were willing to discuss PrEP in a pharmacy
- Over 60% were willing to be screened for PrEP in a pharmacy
- Only significant correlate of willingness to discuss or screen for PrEP was interest in PrEP
- There were no significant differences by race and ethnicity

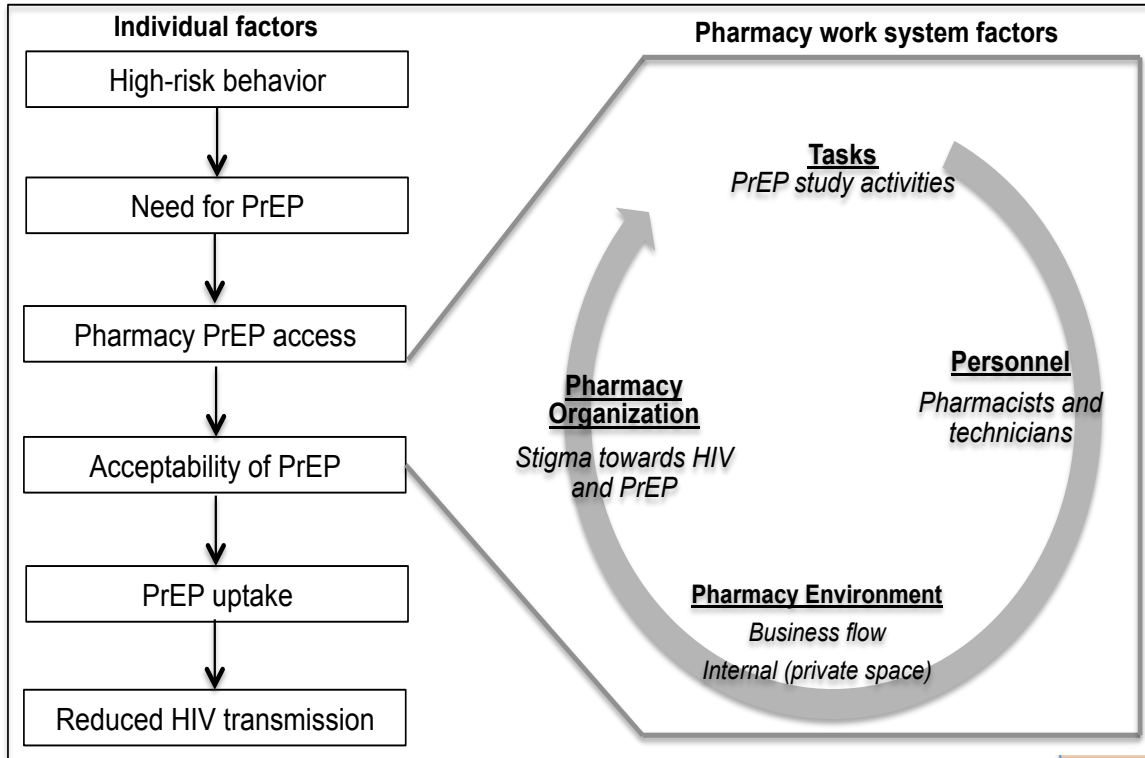
Pharmacy-based pre-exposure prophylaxis support among pharmacists and men who have sex with men

Natalie D. Crawford*, Dorie Josma, Joseph Morris, Roderick Hopkins,
Henry N. Young [Journal of the American Pharmacists Association xxx \(2020\) 1–7](#)

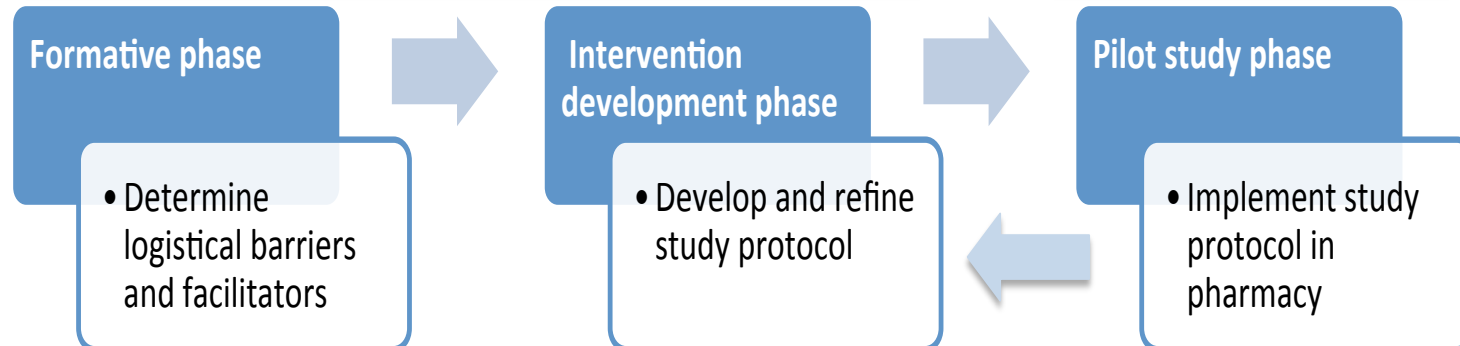
- Qualitative study among pharmacists and men who have sex with men
- Key themes
 - Strong support for in-pharmacy PrEP screening and delivery
 - Privacy and confidentiality are important to MSM
 - Pharmacy staff training is important for pharmacist

Pharmacy based PrEP model development

Figure 1. Conceptual framework integrating pharmacy work system influencing PrEP



Adaptive protocol development



- Pharmacies are viable solutions for reducing HIV and substance use related harms
- Pharmacy based HIV and substance use interventions could increase access for racial minority populations
- Future steps
 - Consider the scalability of pharmacy based interventions
 - Harness pharmacy based populations to better understand substance use and HIV risk behaviors

Thank you for your time.

Columbia University

- Silvia Amesty

Emory University

- David Holland
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