

Why Pills Alone Are Not the Silver Bullet *People Who Use Drugs*



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Global HIV Epidemic Among PWIDs

- Outside of Sub Saharan Africa, 33% of all new HIV infections are among PWIDs
- From 2001 to 2011, new annual HIV infections decreased from 3.2 to 2.5 million annually (-22%)
 - Most reductions occurred in Sub Saharan Africa
 - +25% in Eastern Europe, Central and SE Asia – low ART coverage!
- In countries where HIV incidence is increasing, 70% to 80% of HIV cases are among PWIDs
- Where comprehensive HIV prevention packages for PWIDs exist, HIV transmission has ↓

Evidence-Based Strategies to Reduce HIV Transmission Among PWUDs

Primary & Secondary

Secondary Only

NSP

HIV
C&T

MAT

PrEP

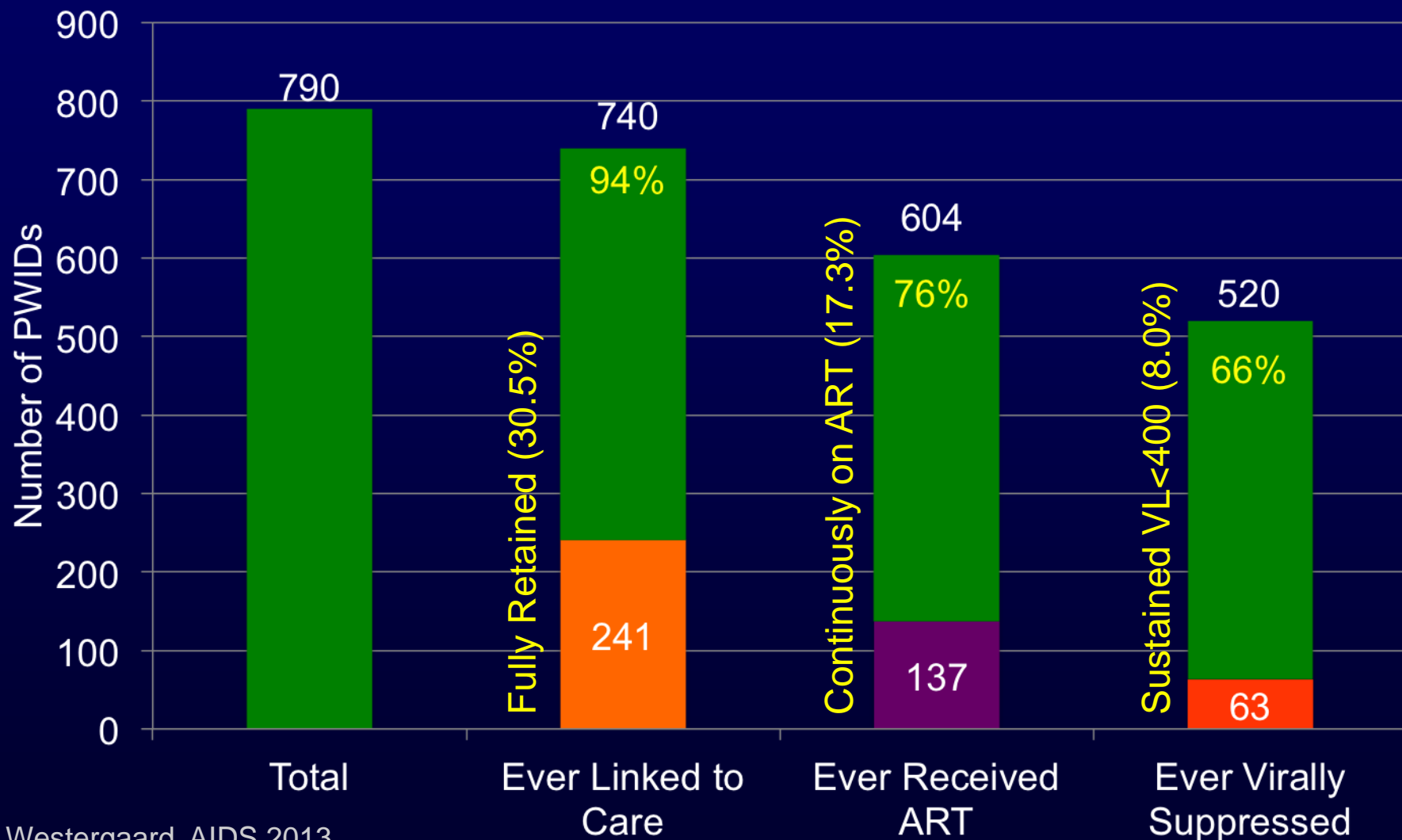


ART

Treatment as Prevention Can Work Among PWIDs, but

- Ecological studies in Vancouver and Baltimore have documented reduced transmission among PWIDs where community VL has decreased
 - The HIV Continuum of Care for PWUDs is not equal to their non-drug using counterparts
 - HIV diagnosis
 - Linkage to care
 - Retention in care
 - Receipt of ART
 - ART adherence
 - Viral Suppression
- Differs based on local context and funding priorities

Engagement in Care Among PWIDs in Baltimore, ALIVE Cohort, 1998-2011



Engagement in Care Among PWIDs in Baltimore, ALIVE Cohort, 1998-2011

Poor Retention in Care

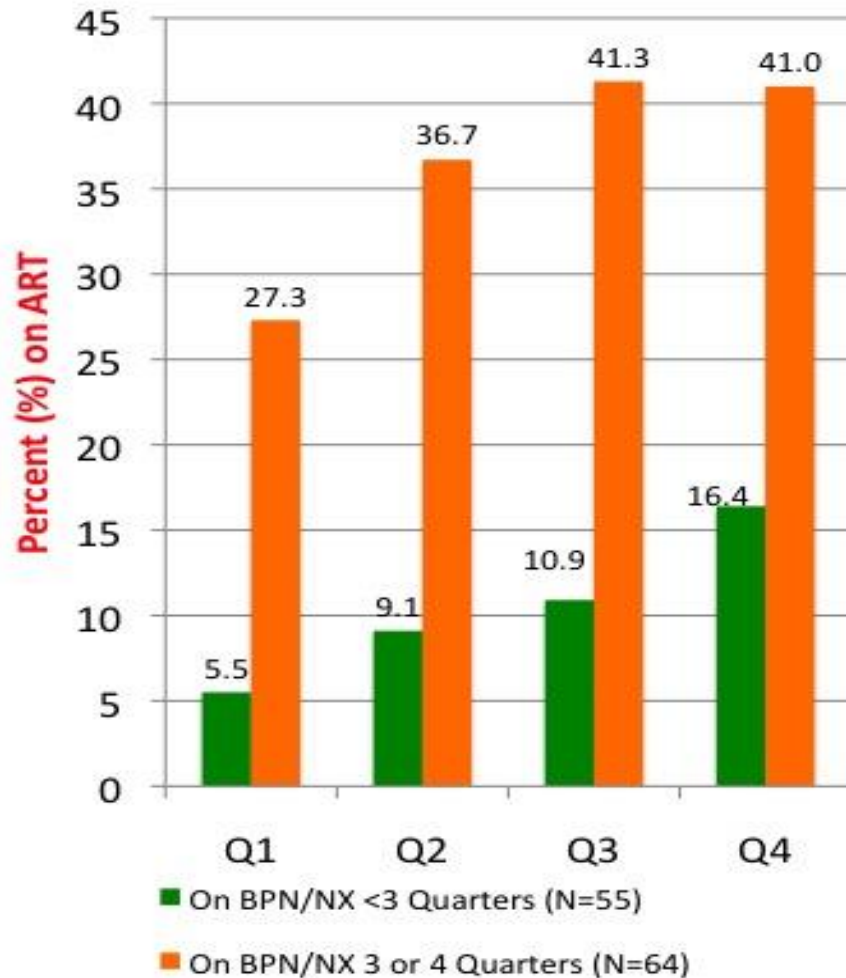
- **Active drug injection**
- **Incarceration**
- **No health insurance**
- **No usual site of care**
- **Lack of consistency in HIV care provider**

Poor Viral Suppression

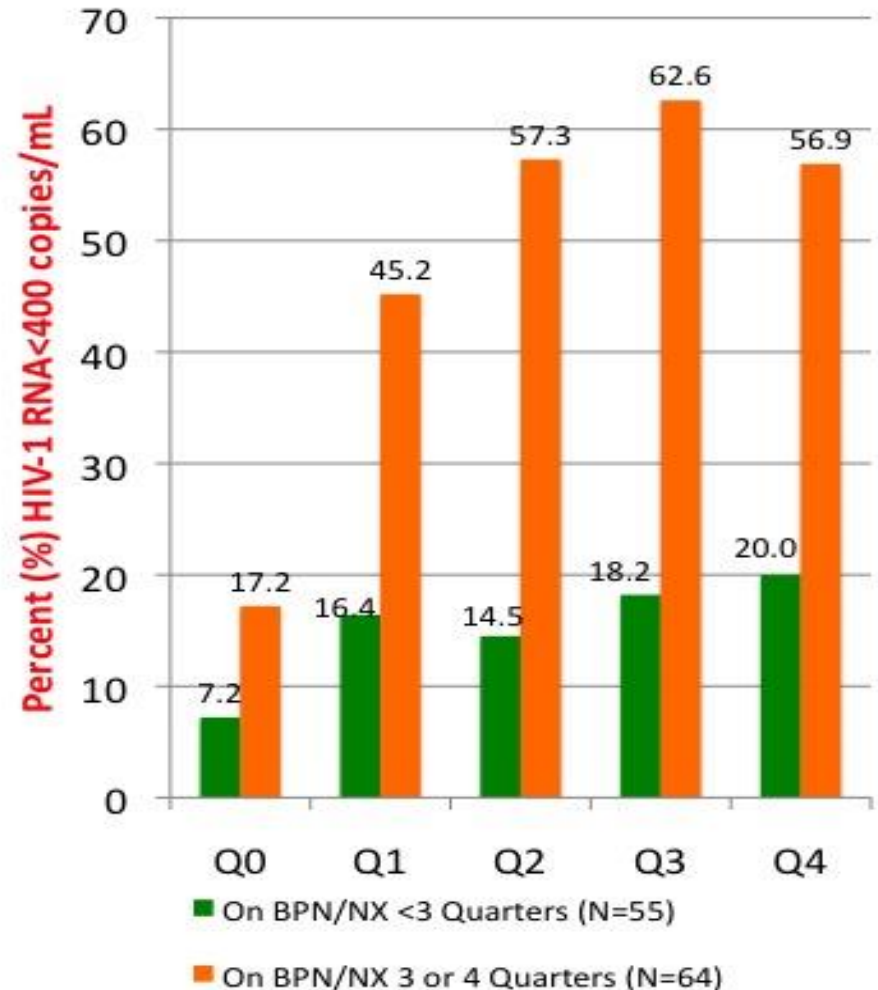
- **Active drug injection**
- **Alcohol use**
- **Crack cocaine use**
- **Incarceration**
- **Lack of consistency in HIV care provider**
- **Decreasing CD4 count**

Integrating Buprenorphine Into HIV Clinical Care Settings

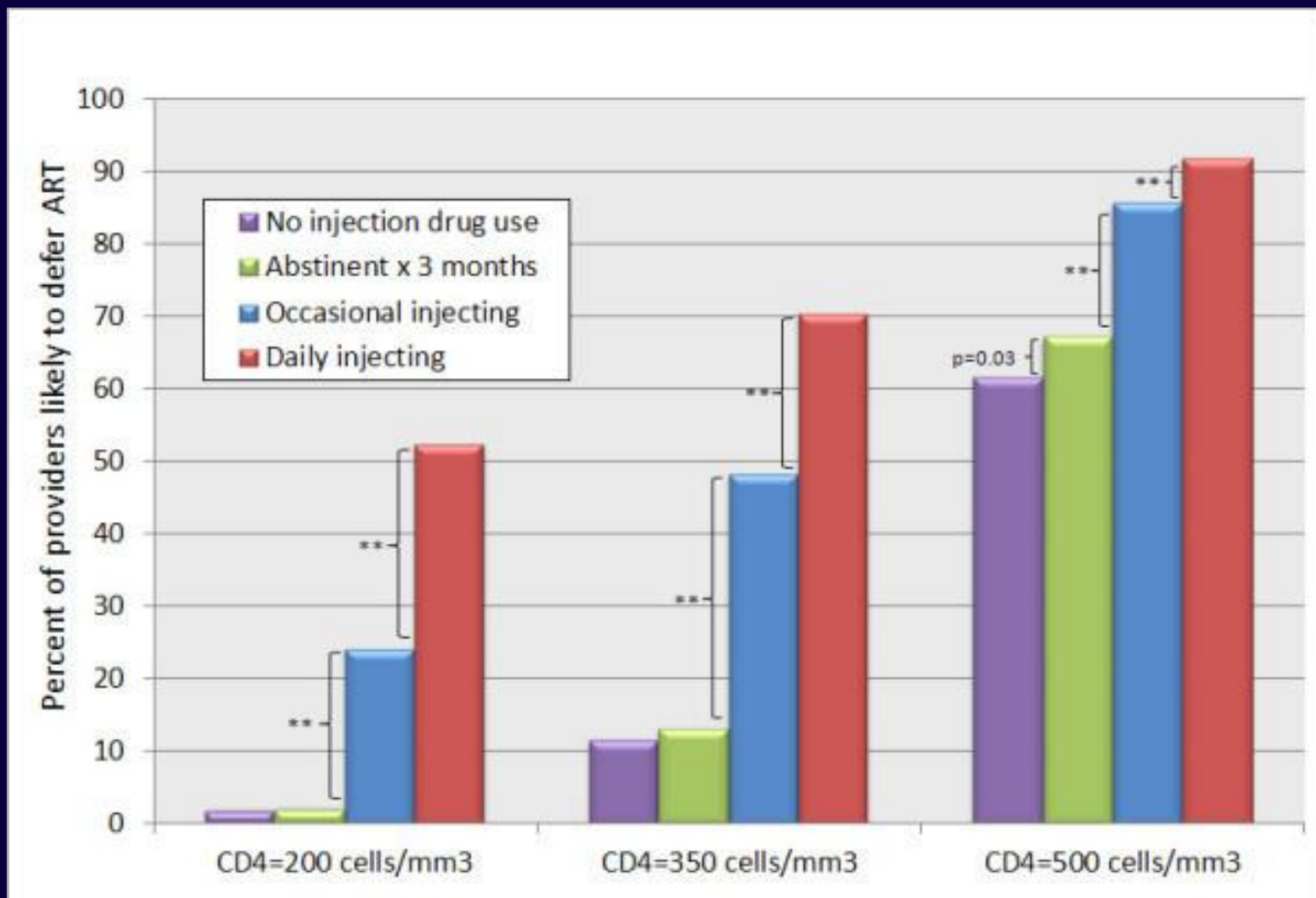
Prescribed ART



Viral Suppression



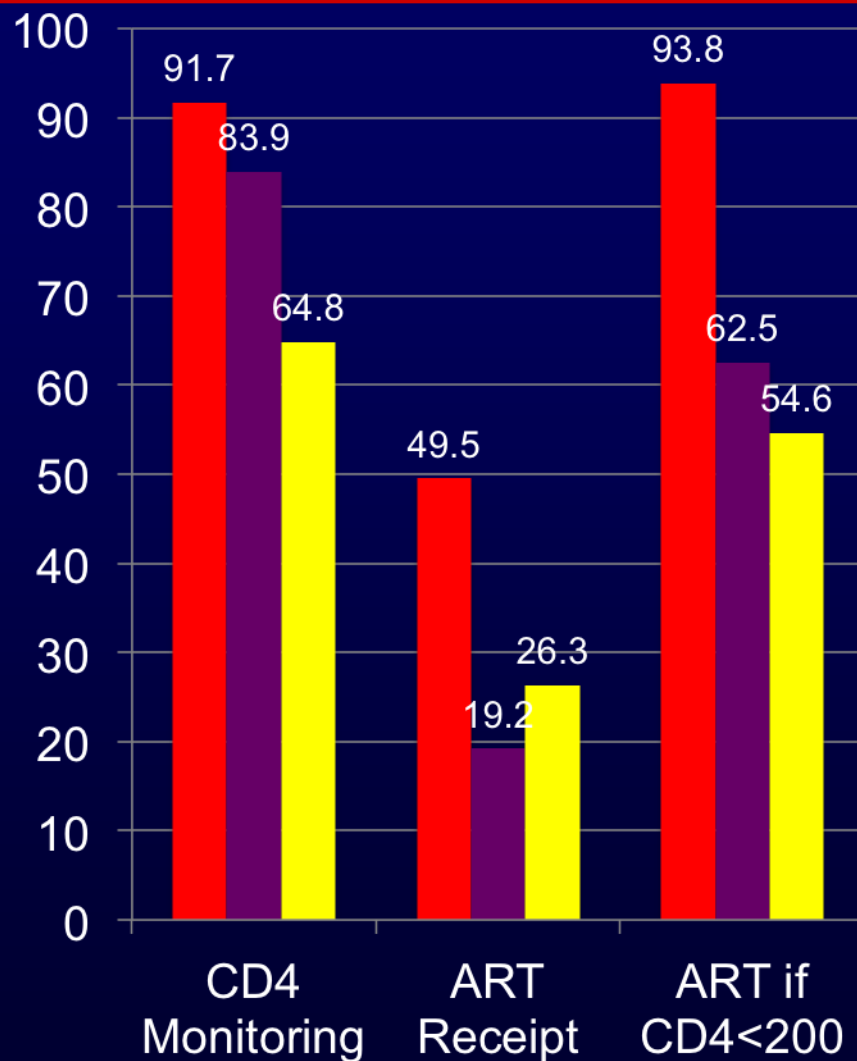
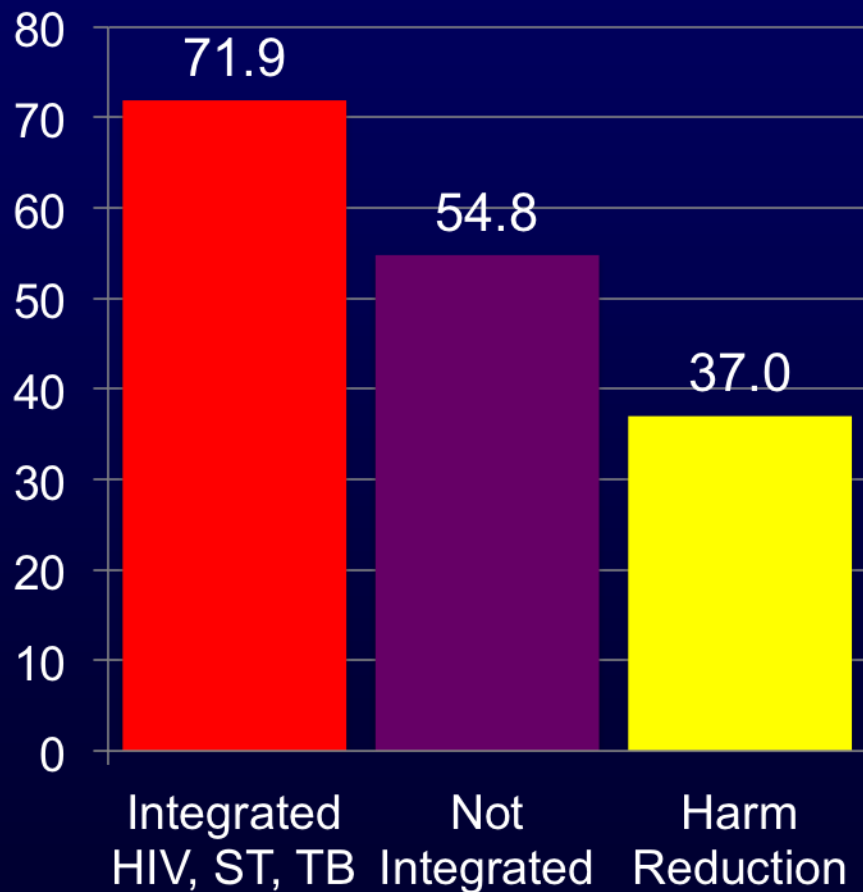
Treatment of HIV-Infected Persons for Prevention of HIV Transmission



Westergaard RP, J Int AIDS Soc, 2012

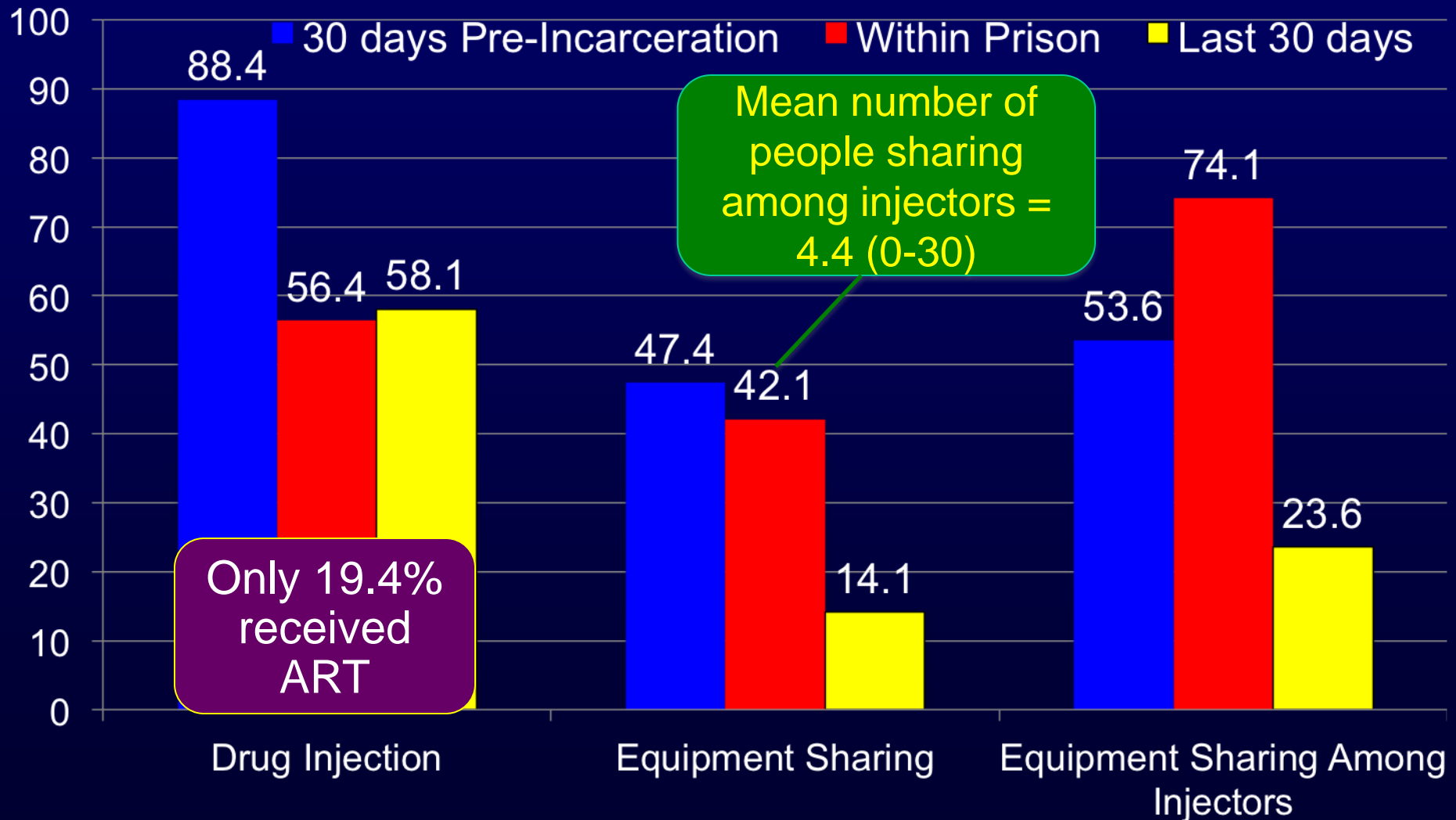
Organization of Healthcare Delivery for HIV+ PWIDs Matters (Ukraine)

Mean Quality Health Indicator Score

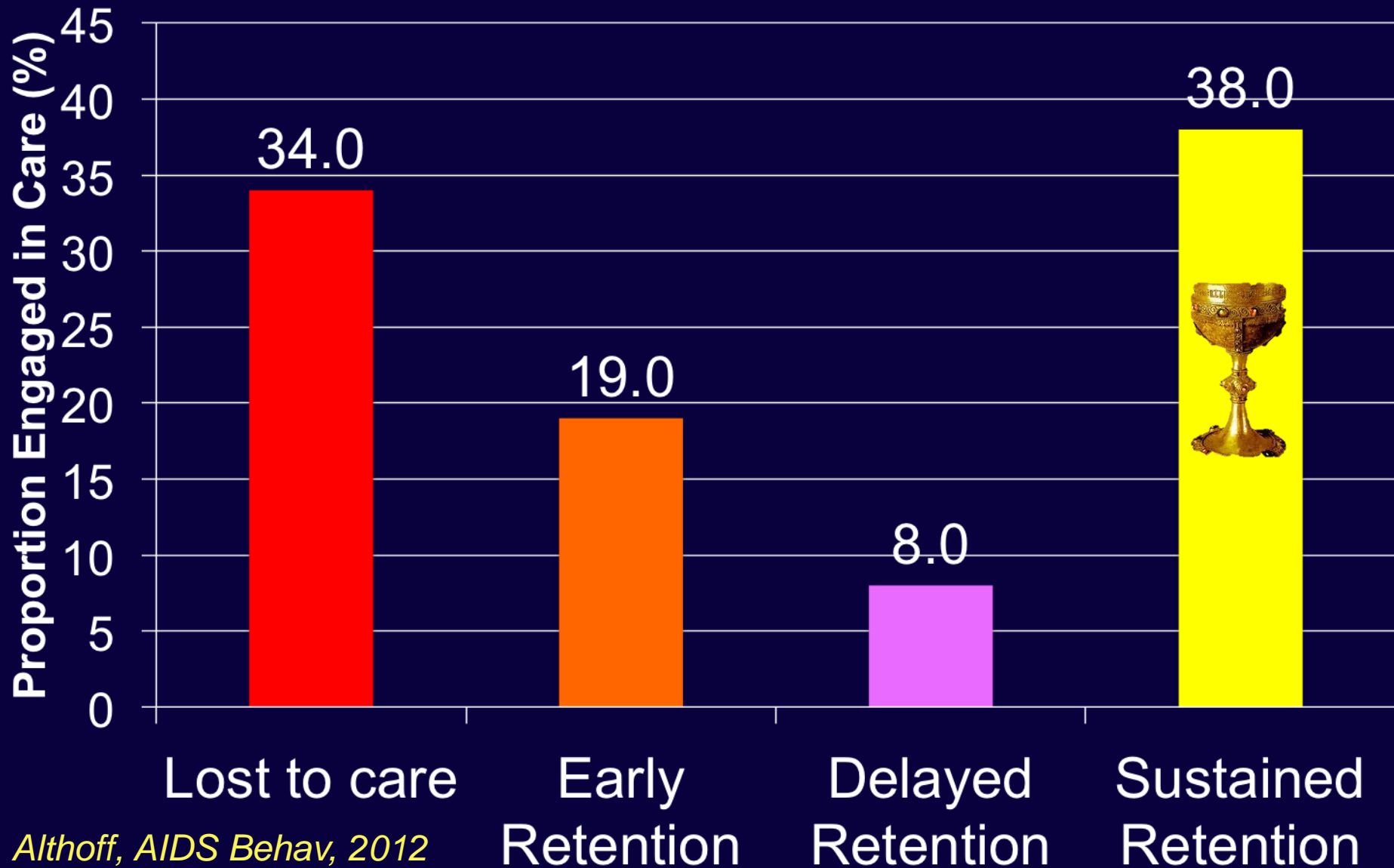


Bachireddy C, Drug Alcohol Depend, 2013

Incarceration: High Risk Transmission Environment Among HIV+s (Ukraine)

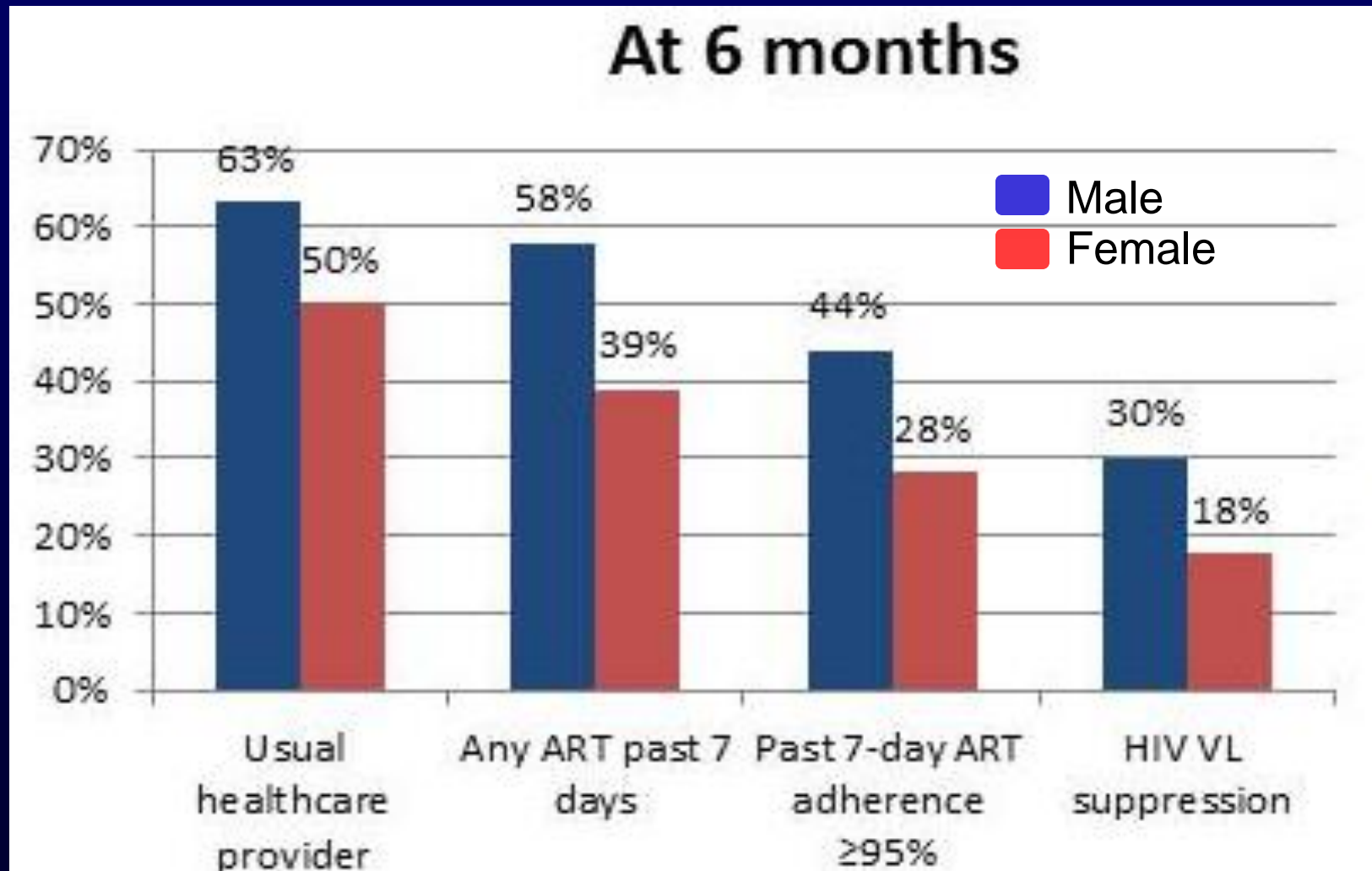


Retention in Care Among HIV+ Jail Detainees: *Results from a Multi-Site Study (N=867)*



HIV+ Jail Detainees

Heightened Instability Post-Release



Meyer JP et al, AJPH, In Press

Interventions to Improve ART Adherence Among People with SUDs

Identification of Evidence-Based Interventions for Promoting HIV Medication Adherence: Findings from a Systematic Review of U.S.-Based Studies, 1996–2011

Mahnaz R. Charania • Khiya J. Marshall • Cynthia M. Lyles • Nicole Crepaz •
Linda S. Kay • Linda J. Koenig • Paul J. Weidle • David W. Purcell •
HIV/AIDS Prevention Research Synthesis (PRS) Team

AIDS & Behavior, 2013

Annals of Internal Medicine

CLINICAL GUIDELINE

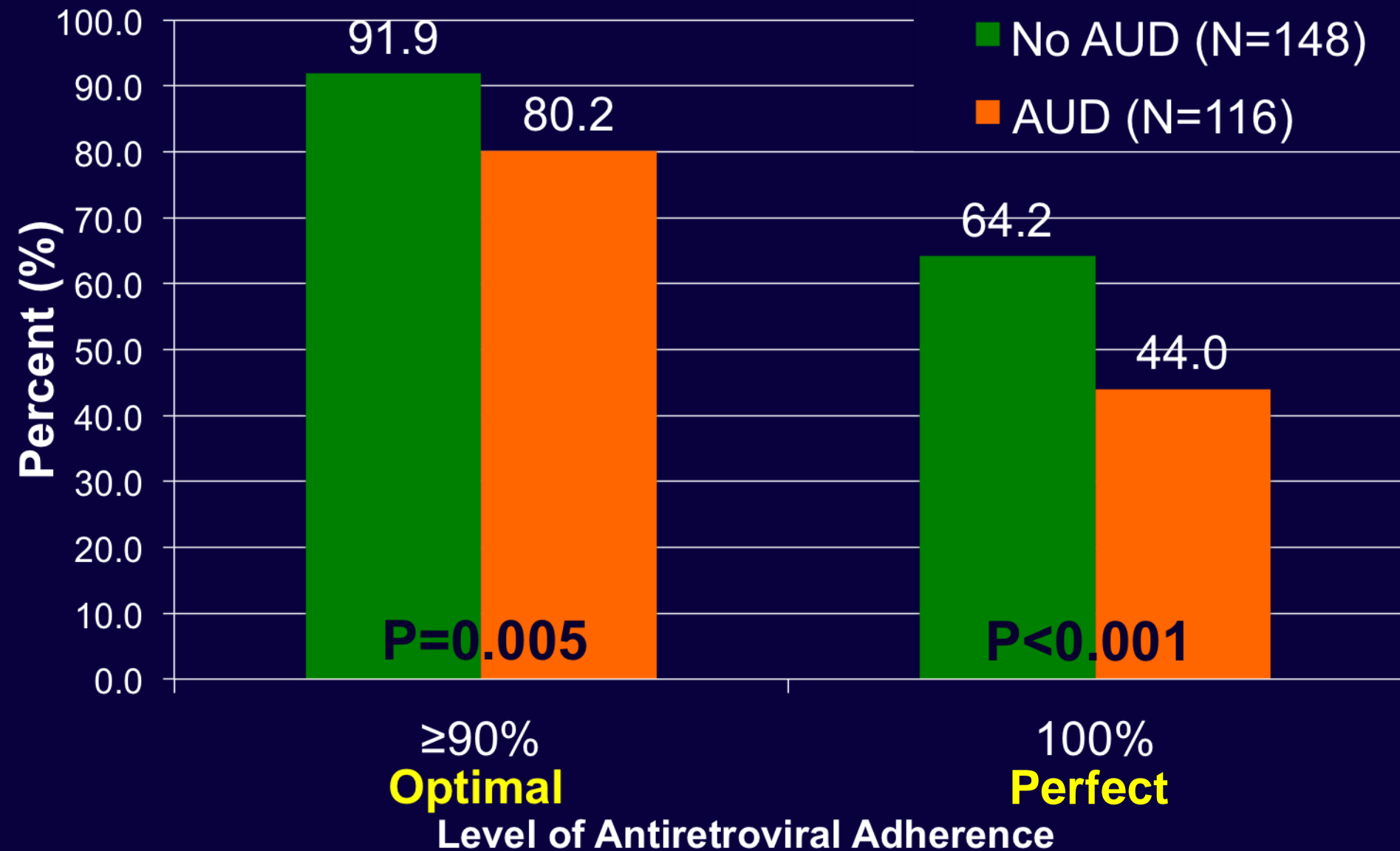
Guidelines for Improving Entry Into and Retention in Care and Antiretroviral Adherence for Persons With HIV: Evidence-Based Recommendations From an International Association of Physicians in AIDS Care Panel

Melanie A. Thompson, MD; Michael J. Mugavero, MD, MHSc; K. Rivet Amico, PhD; Victoria A. Cargill, MD, MSCE;
Larry W. Chang, MD, MPH; Robert Gross, MD, MSCE; Catherine Orrell, MBChB, MSc, MMed; Frederick L. Altice, MD;
David R. Bangsberg, MD, MPH; John G. Bartlett, MD; Curt G. Beckwith, MD; Nadia Dowshen, MD; Christopher M. Gordon, PhD;
Tim Horn, MS; Princy Kumar, MD; James D. Scott, PharmD, MEd; Michael J. Stirratt, PhD; Robert H. Remien, PhD; Jane M. Simoni, PhD;
and Jean B. Nachega, MD, PhD, MPH

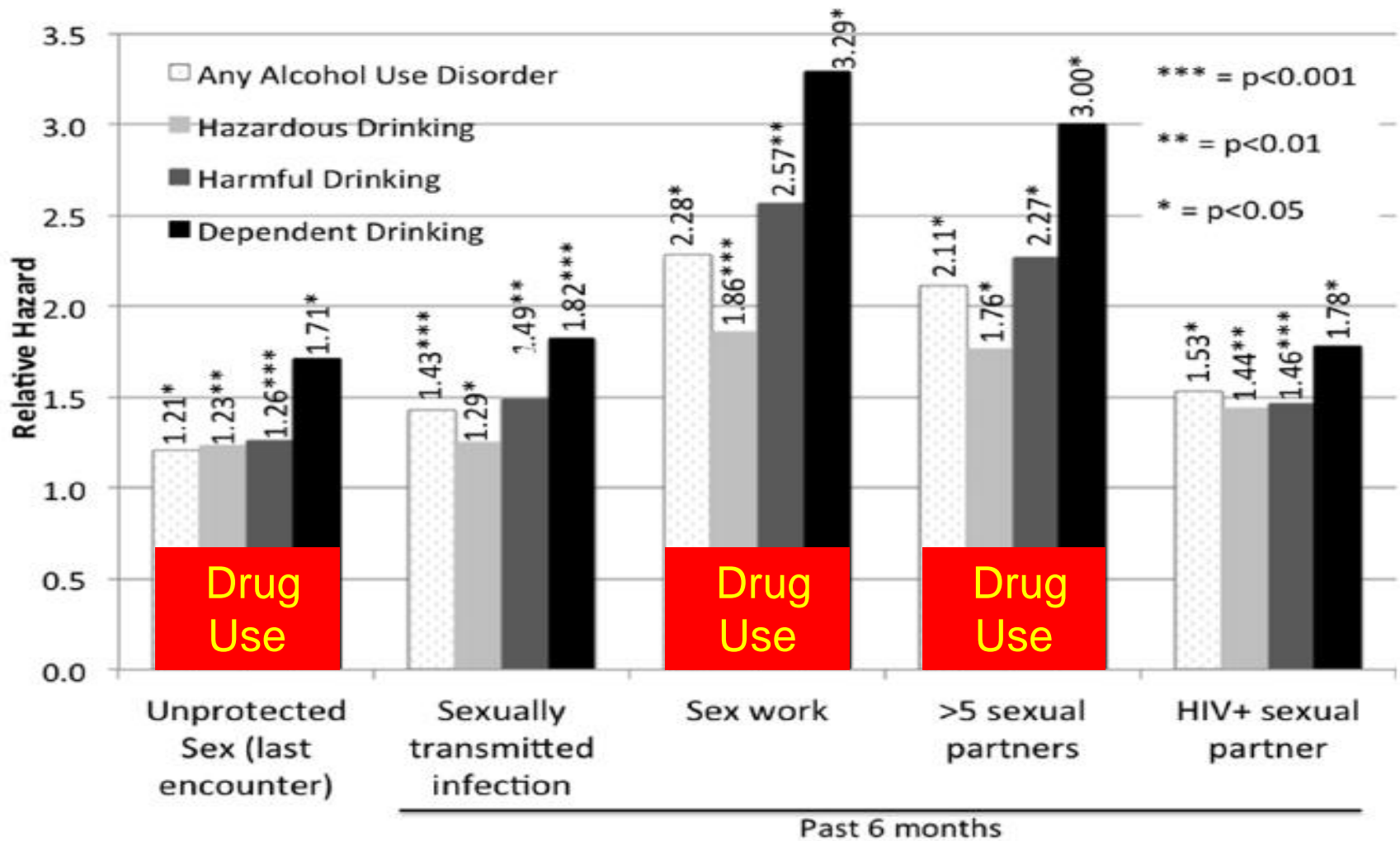
Evidence-Based Retention and Adherence Interventions for PWUDs

- **Directly administered antiretroviral therapy (DAART)**
 - Costly, time intensive, inconvenient for some
- **DAART integrated into methadone treatment**
 - Inadequate numbers on MMT, impact of take-home doses
- **Provision of opioid substitution therapy with methadone or buprenorphine**
 - Low OST coverage in many countries that need it
- **Integration of health services**

Alcohol & Adherence: Peruvian MSM



Contribution of Alcohol & Drug Use to Risk Behaviors Associated with HIV Transmission



How to Manage Risk Behaviors and/or Adherence

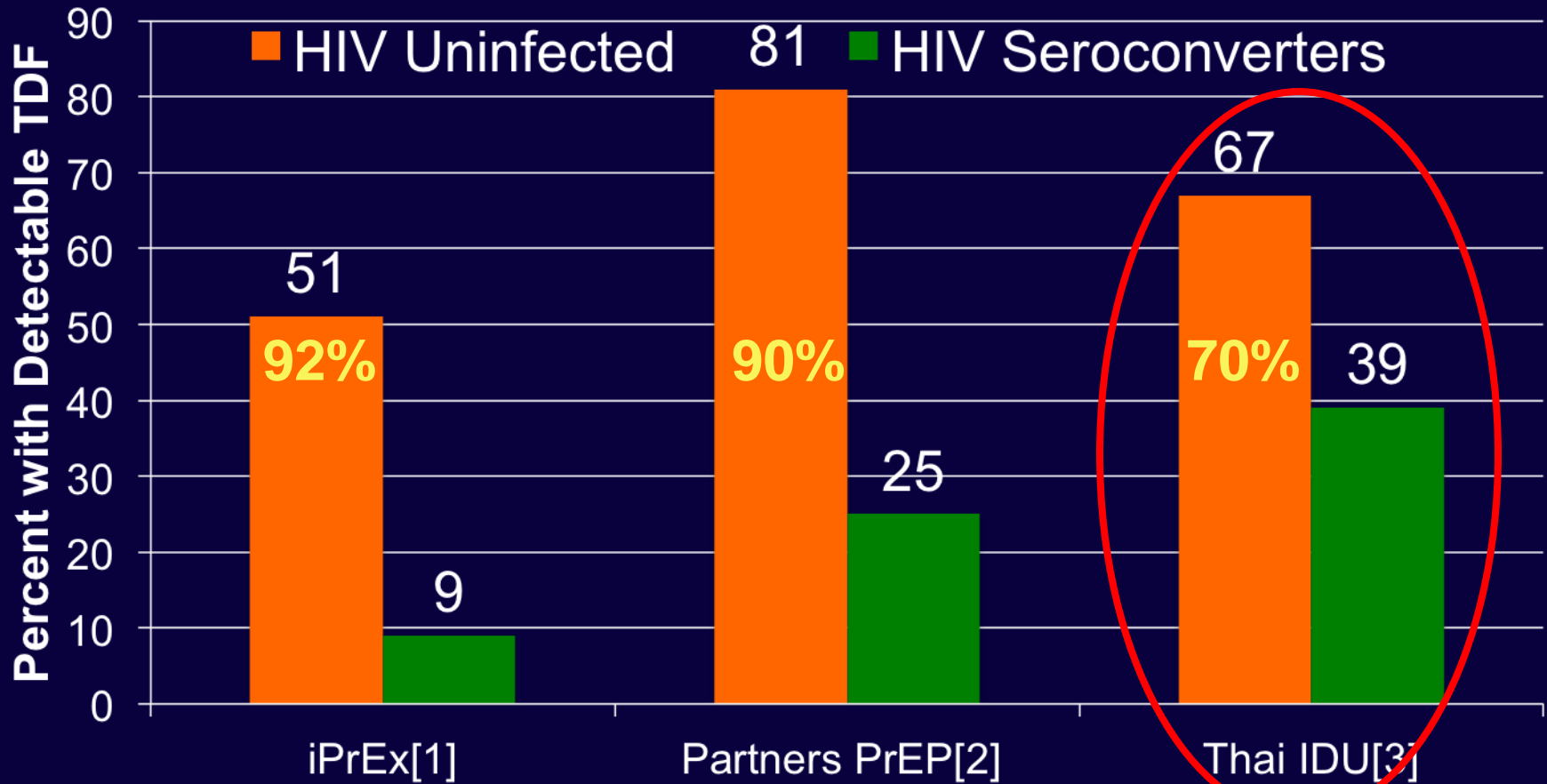
- They are often linked – but not always!
- Comprehensive behavioral intervention that incorporates alcohol & drug reduction?
 - Very few DEBIs address drug/alcohol use
- Pharmacotherapies?
 - Naltrexone
 - Oral
 - XR-NTX
 - Acamprosate
 - Disulfiram

PrEP Trials Are Efficacious in MSM, Heterosexuals, and PWIDs

Trial	Population/Setting	Intervention	HIV Infections, n		HIV Risk Reduction, % (95% CI)
			PrEP	Placebo	
iPrEX ^[1] (N=2499)	MSM, transgender women, 11 sites in US, South America, Africa, Thailand	TDF/FTC	36	64	44 (15-63)
Partners PrEP ^[2] (N=4747)	Serodiscordant couples in Africa	TDF	13	52	75 (55-87)
		TDF/FTC	17		67 (44-81)
TDF2 ^[3] (N=1219)	Heterosexual males and females in Botswana	TDF/FTC	10	26	62 (16-83)
Thai PWID ^[4] (N=2413)	PWIDs from 17 drug treatment centers in Thailand	TDF	17	33	49 (10-72)

1. Grant RM, et al. N Engl J Med. 2010;363: 2587-2599. 2. Baeten JM, et al. N Engl J Med. 2012;367:399-410. 3. Thigpen MC, et al. N Engl J Med. 2012;367:423-434. 4. Choopanya K, et al. Lancet. 2013;381:2083-2090.

Adherence: Key Contributor to Outcome in PrEP Trials (Detectable TDF Levels)

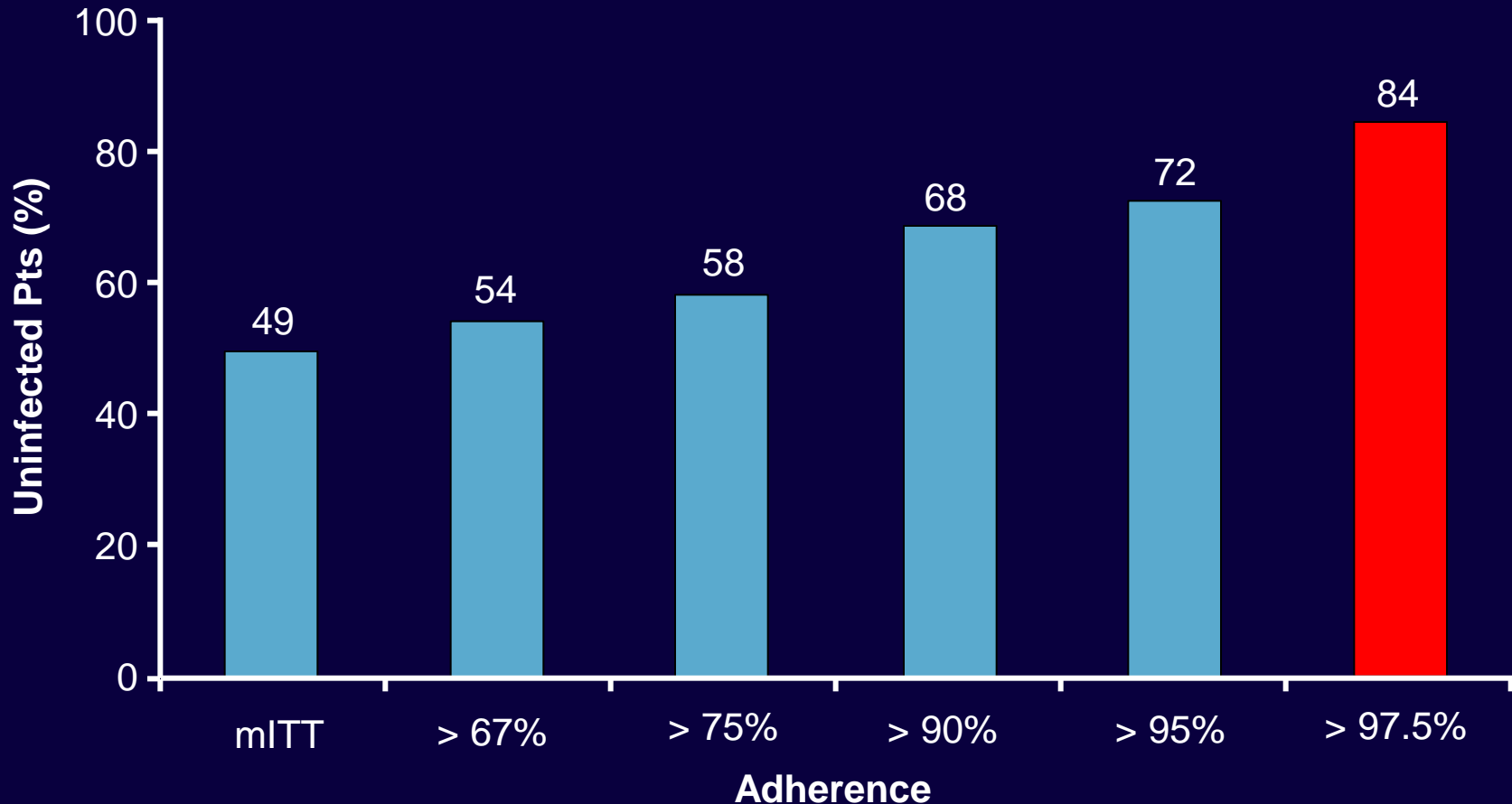


Differences in Adherence Translated to Relative Risk Reduction in Transmitting HIV

1. Grant RM, NEJM, 2010; 2. Baeten JM, NEJM, 2012; 3. Choopanya K, Lancet. 2013.

Bangkok TDF Study: Adherence to PrEP and Risk of HIV Acquisition

Patients Uninfected By Level of Adherence



Long-Acting GSK1265744 and TMC278

- Nanosuspensions: drug nanocrystals suspended in liquid
 - Increased drug dissolution rate
 - Nanocrystal design allows for low injection volume
- Potential utility as long-acting injections for ART regimens, PrEP
 - GSK1265744 (DTG analogue) dosed monthly or every 90 days
 - TMC278 nanosuspension of RPV dosed monthly

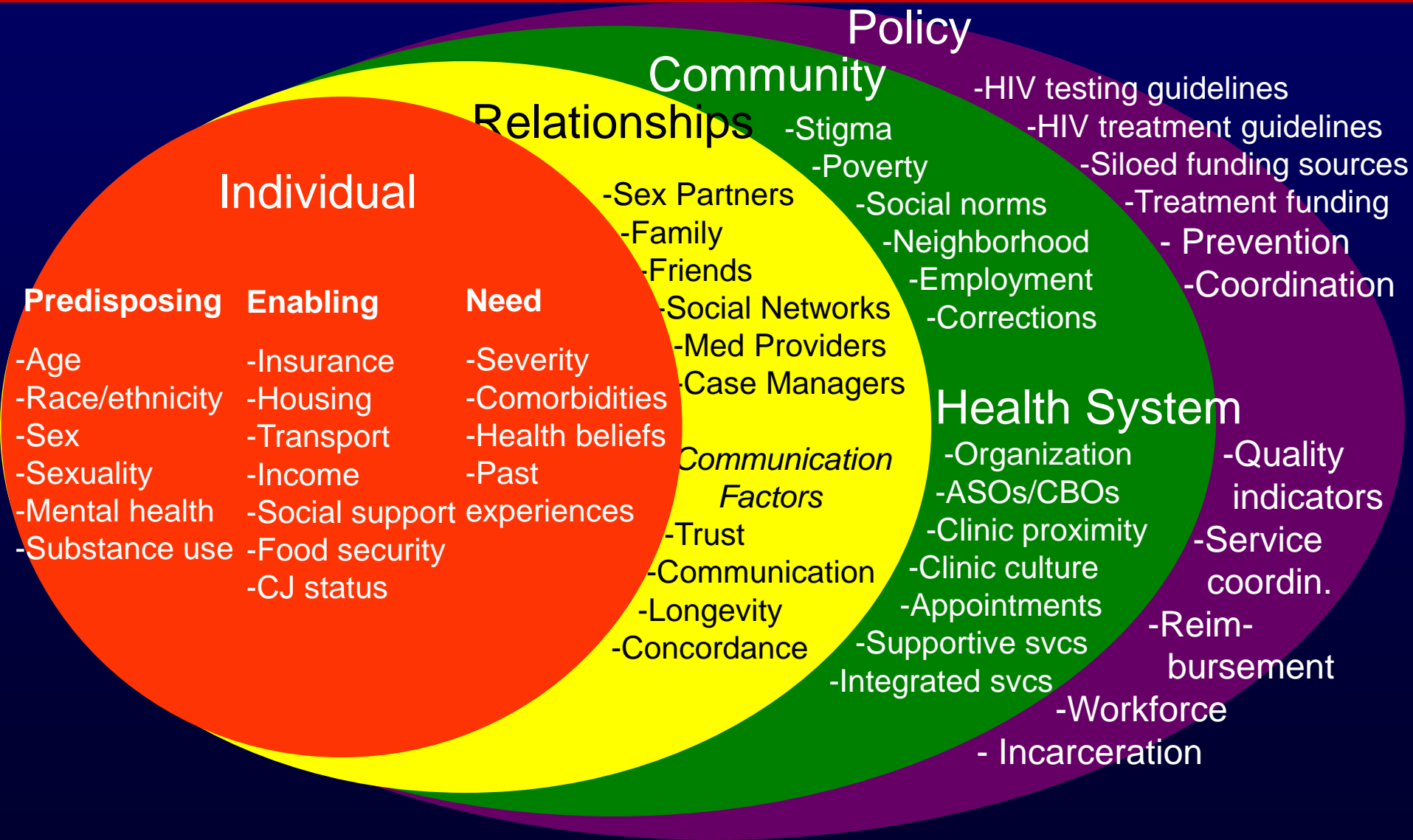
Sustained Released Pharmacotherapies

Part 1. Overview Information

Participating Organization(s)	National Institutes of Health (NIH)
Components of Participating Organizations	National Institute of Allergy and Infectious Diseases (NIAID) <i>Eunice Kennedy Shriver</i> National Institute of Child Health and Human Development (NICHD) National Institute of Mental Health (NIMH)
Funding Opportunity Title	Sustained Release of Antivirals for Treatment or Prevention of HIV (SRATP) (R01)
Activity Code	R01 Research Project Grant
Announcement Type	New
Related Notices	None
Funding Opportunity Announcement (FOA) Number	PAR -13-349

- Emerging sustained activity for treatment of substance use disorders
 - XR-NTX
 - XR-BPN
 - Implantable NTX and BPN

Eco-Social Model: Need to Address ALL Key Issues



"Half of everything we teach you is wrong... unfortunately, we don't know which half."