

Substance Abuse Treatment as HIV Prevention

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Overview

- Overview of injection drug use and the HIV epidemic
 - Small segment of the community are IDU
 - Non injection drug use facilitates HIV transmission
- Proof of Concept : Drug treatment is HIV prevention
- Minimal treatment “coverage”
- Expanding treatment options
- Targeting treatment to those most likely to become infected

Current AIDS epidemiology

- Approximately 33,000,000 living with HIV/AIDS
- Over 3,000,000 IDUs living with HIV/AIDS
- Outside of sub-Saharan Africa, over 33% of all new infections are estimated to be attributable to injection drug use
- No estimates of the major role of alcohol and non-injection drug use

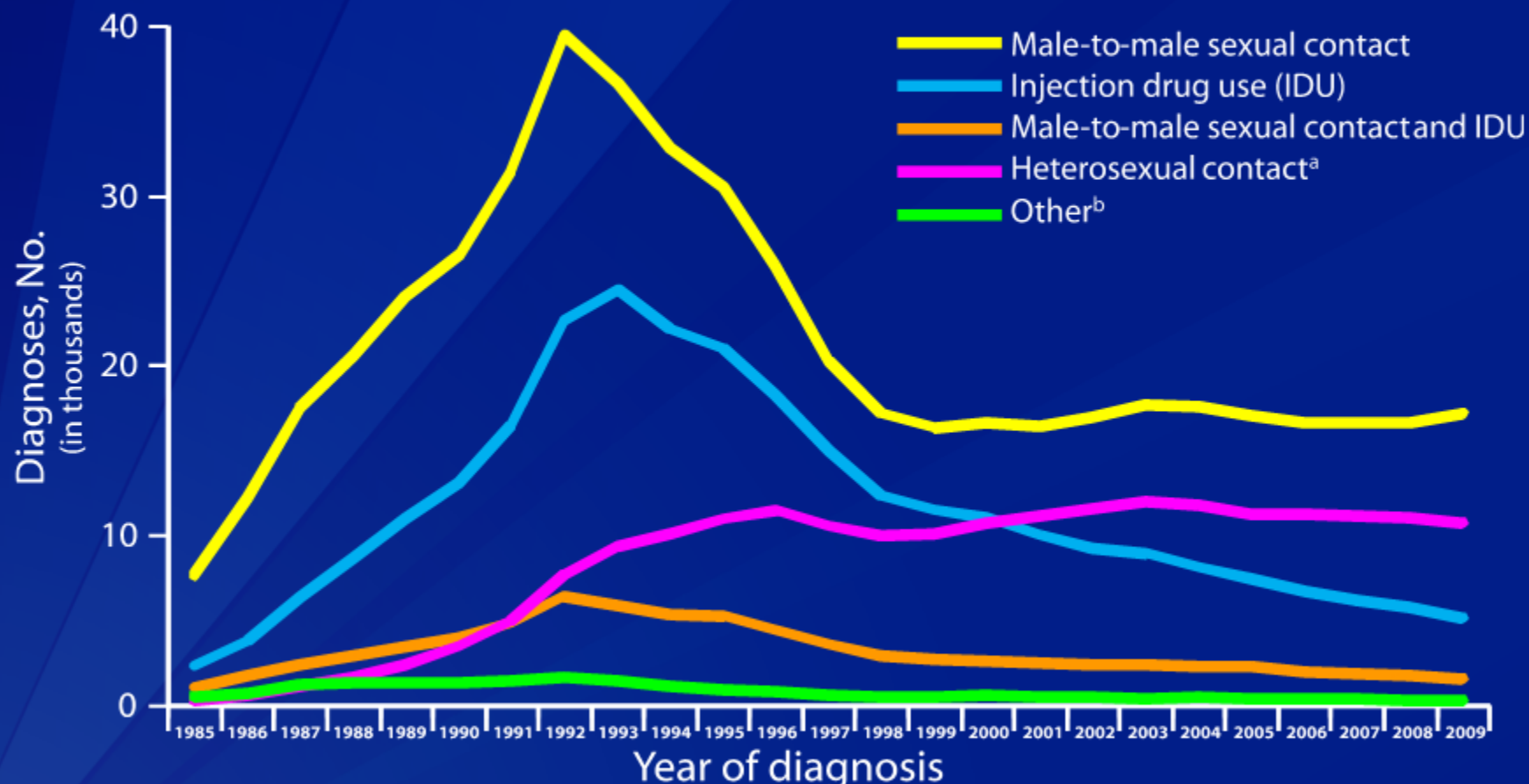
Predictors of seroconversion in Explore: drug and alcohol use

Drug	N at baseline	No. of infections	Hazard ratio*	95% CI
Heavy alcohol**	419	41	1.87	1.24, 2.81
Amphetamines	527	67	1.93	1.41, 2.64
Alcohol or drugs before sex	2952	205	1.57	1.08, 2.27

* REF = no, light or moderate use of alcohol; no speed use; no use before sex

** Heavy alcohol = 4+ drinks every day or 6+ drinks on a typical day

AIDS Diagnoses among Adults and Adolescents by Transmission Category, 1985–2009—United States and Dependent Areas



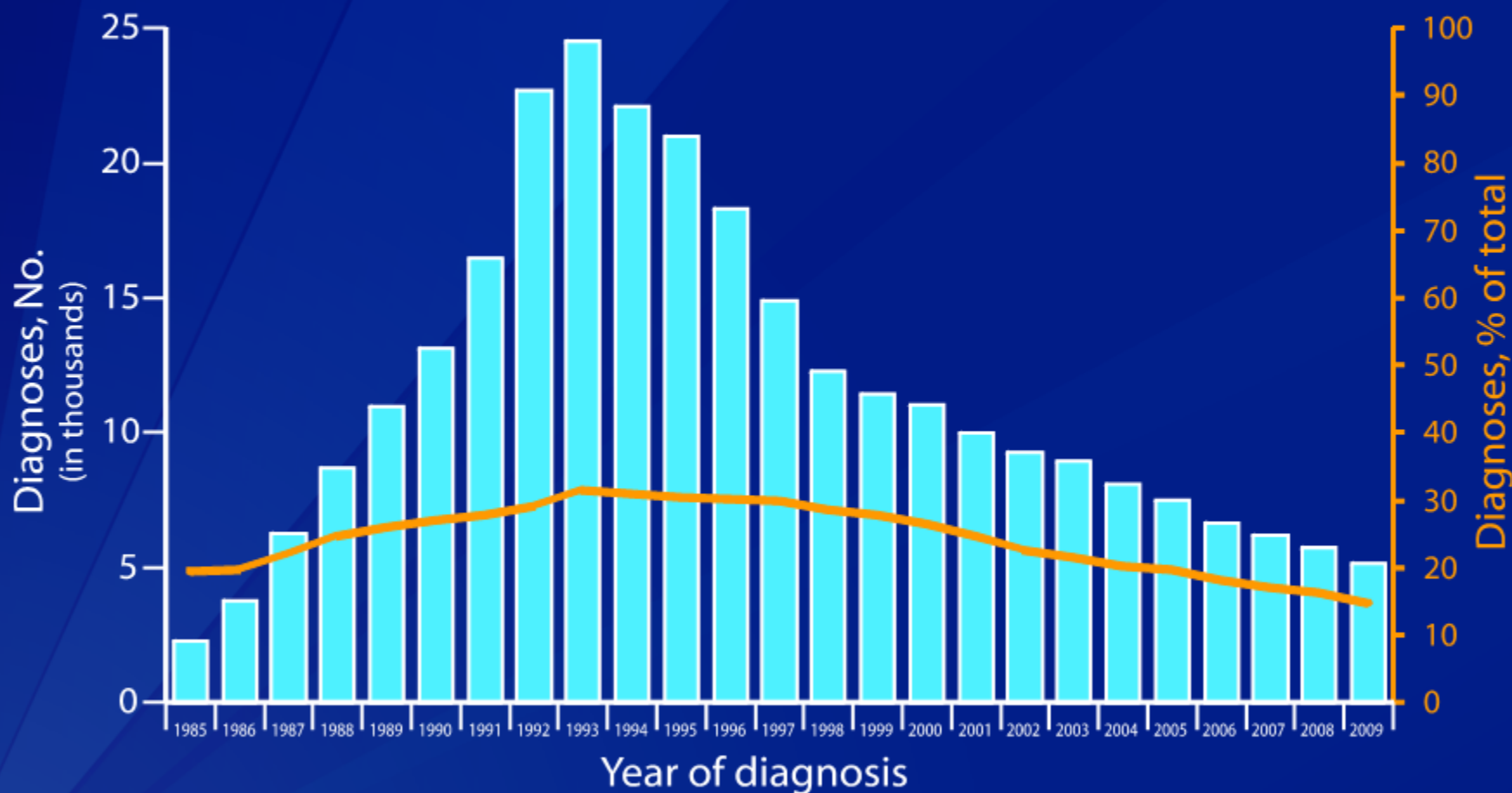
Note. All displayed data have been statistically adjusted to account for reporting delays and missing risk-factor information, but not for incomplete reporting.

^a Heterosexual contact with a person known to have, or to be at high risk for, HIV infection.

^b Includes hemophilia, blood transfusion, and risk factor not reported or not identified.



AIDS Diagnoses among Injection Drug Users, 1985–2009—United States and Dependent Areas



Note. All displayed data have been statistically adjusted to account for reporting delays and missing risk-factor information, but not for incomplete reporting. Data exclude men who reported sexual contact with other men and injection drug use.



Adults and children estimated to be living with HIV as of end 2004



Total: 39.4 (35.9 – 44.3) million

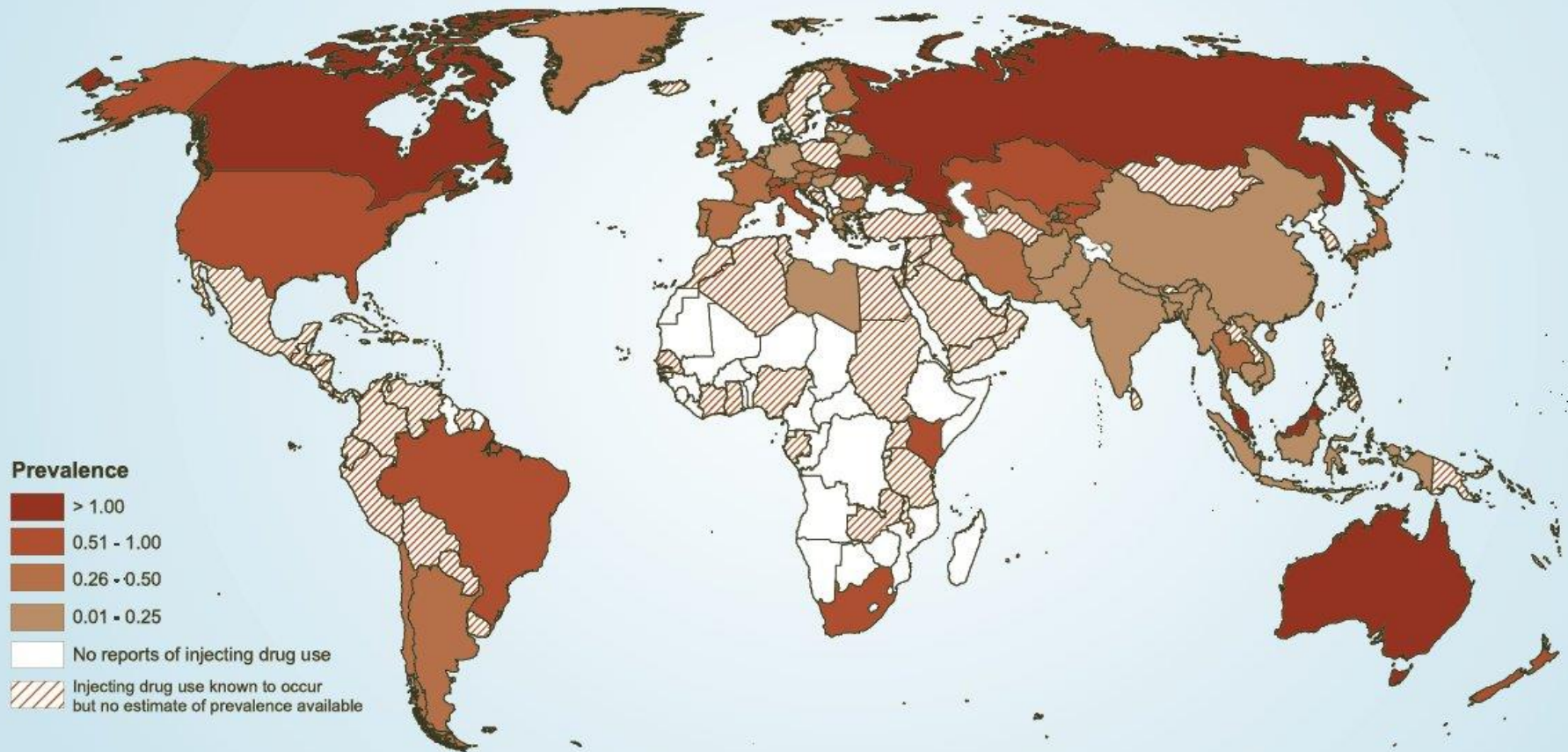
Adults and children estimated to be living with HIV, 2008



Total: 33.4 million (31.1 – 35.8 million)

Mode of use varies

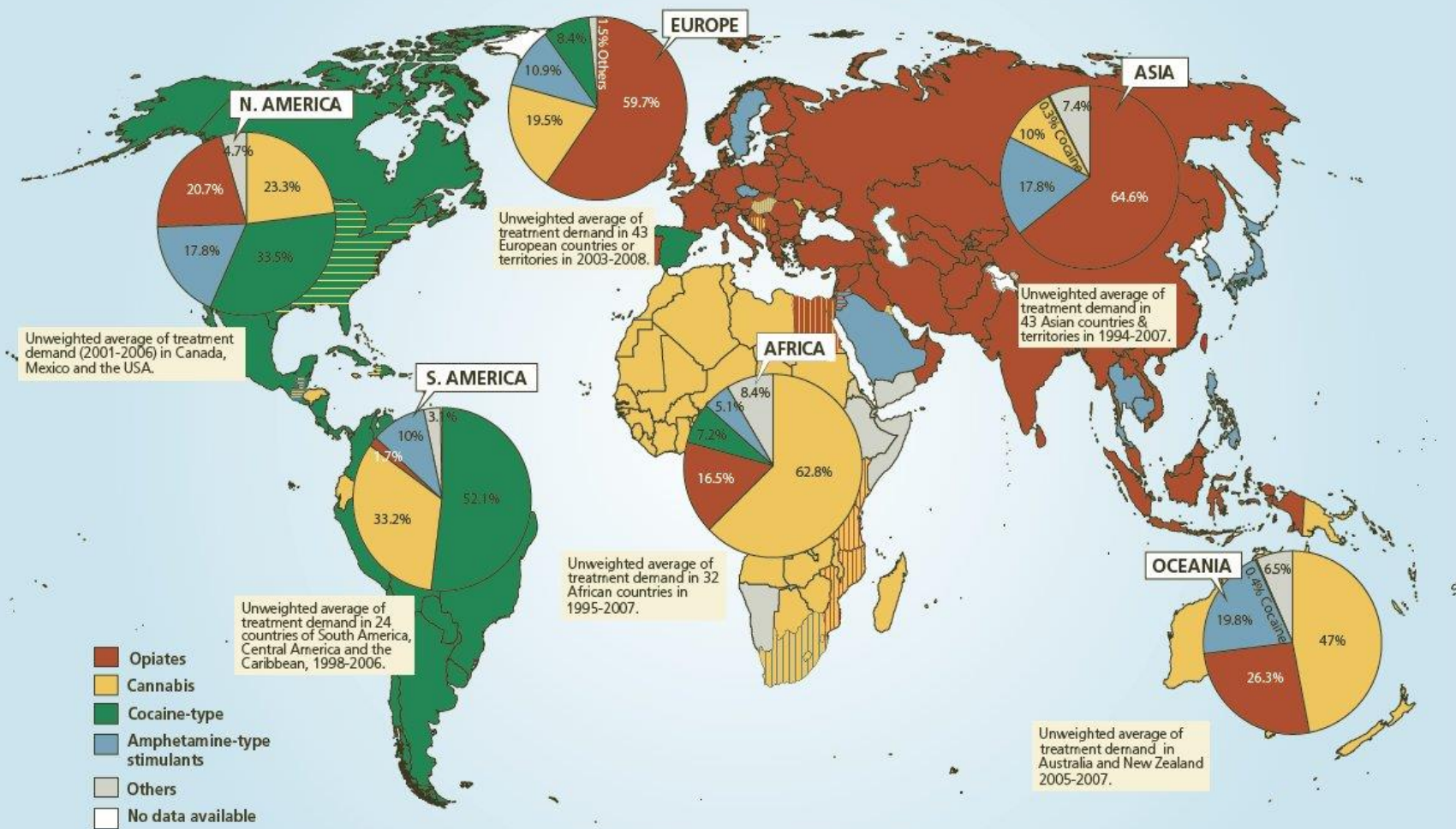
Prevalence (%) of injecting drug use among those aged 15-64 years



Note: The boundaries and names shown and designation used do not imply official endorsement by the United Nations.

Globalization of drug use

Main problem drugs (as reflected in treatment provided), 2007 (or latest year available)

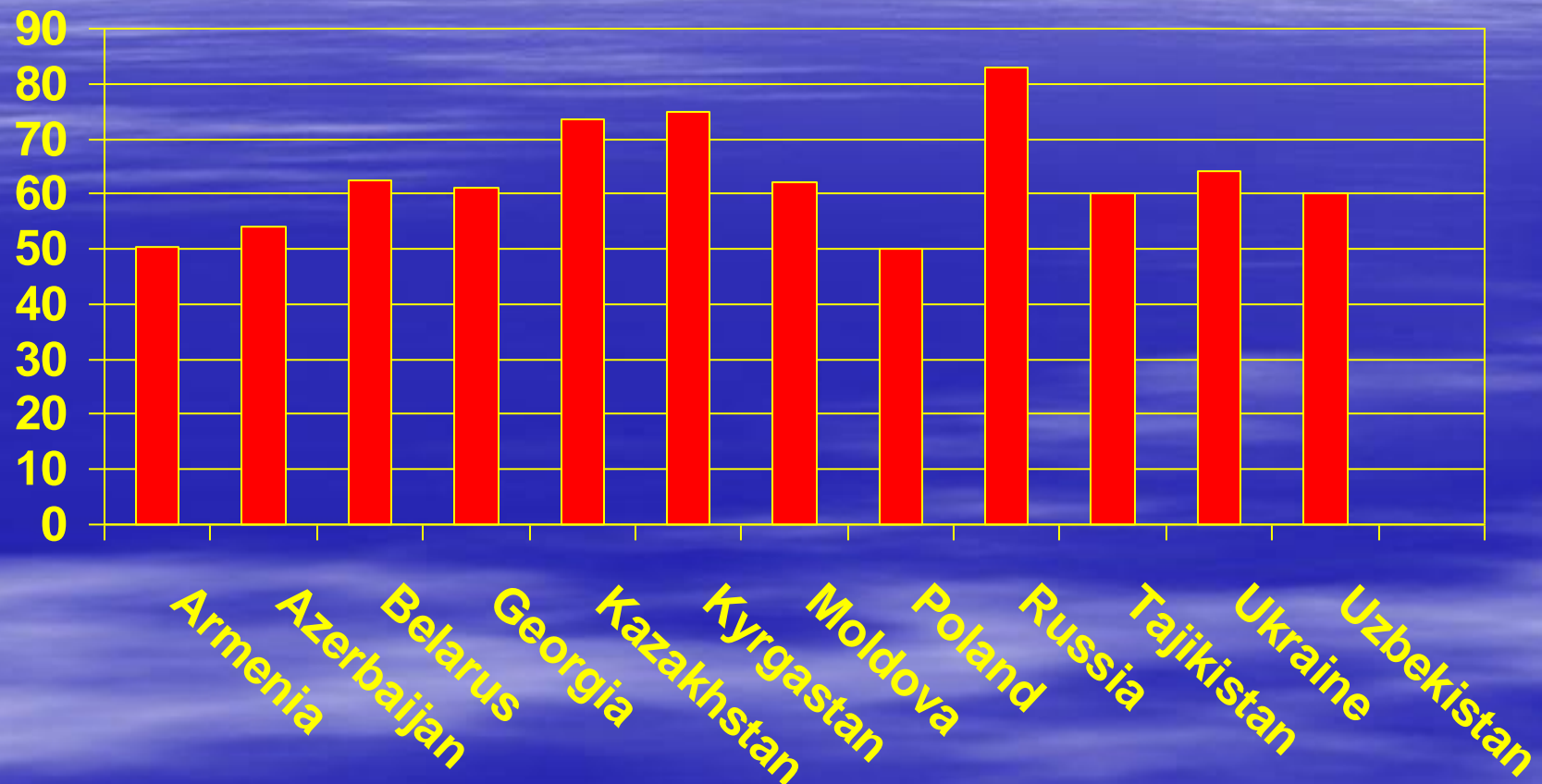


Note: Data generally account for primary drug use; therefore polydrug use may increase totals beyond 100%.

Sources: UNODC, Annual Reports Questionnaire Data/DELTA and National Government Reports.

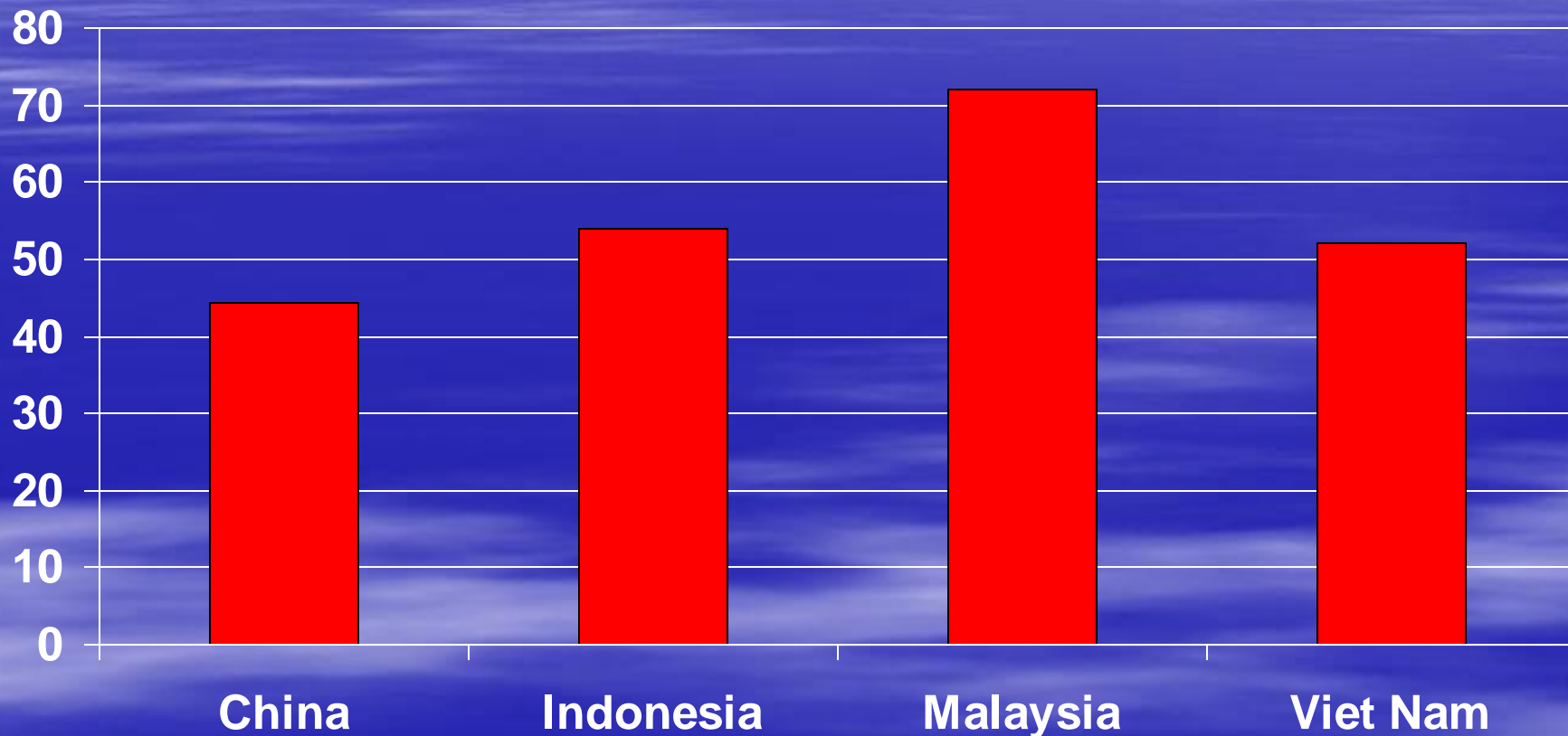
IDUs as Percent of Total Registered HIV Cases

Eastern Europe and Central Asian Countries, 2007



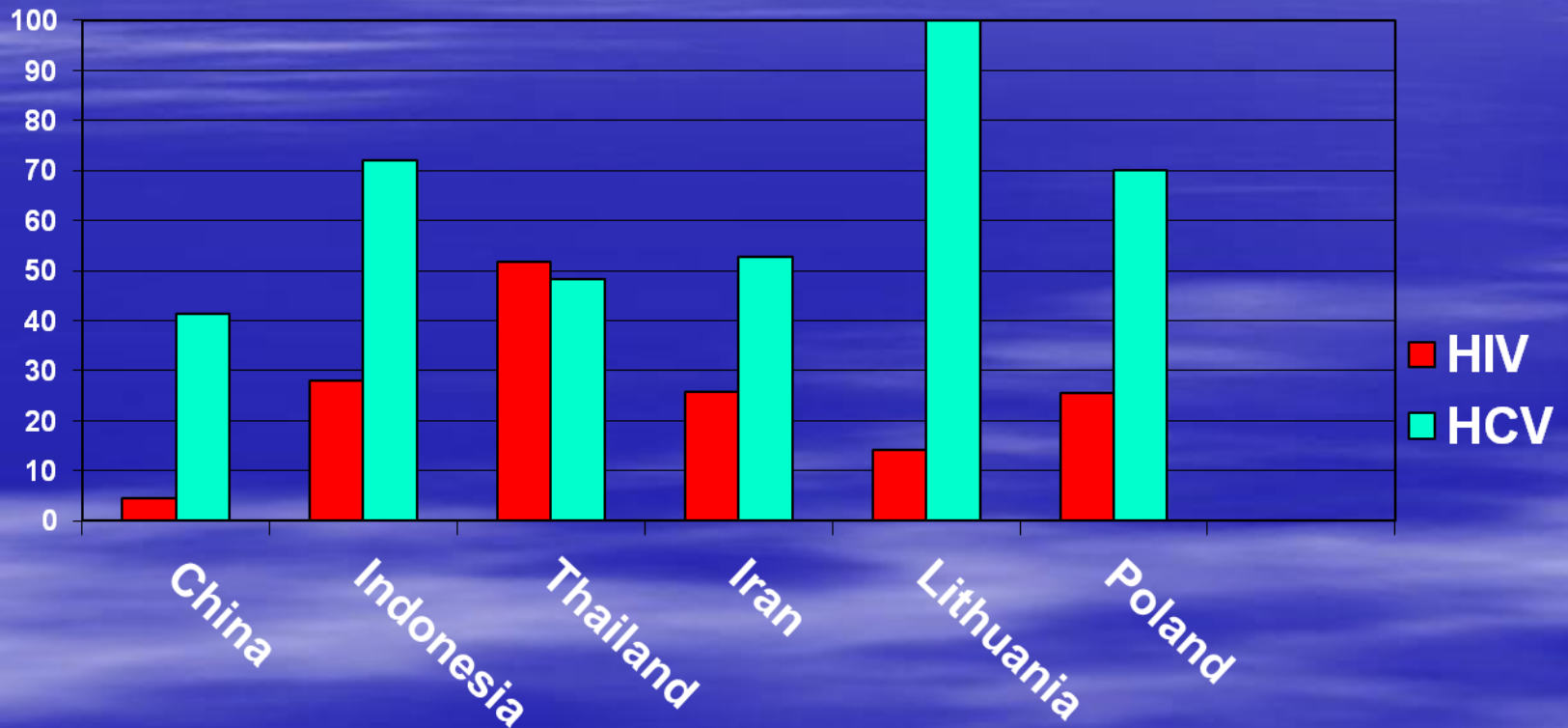
IDUs as Percent of Total Registered HIV Cases

East and South East Asian Countries, 2007



Source: UNAIDS 2008 Report on the Global AIDS Epidemic

Prevalence of HIV and HCV among WHO study participants by site



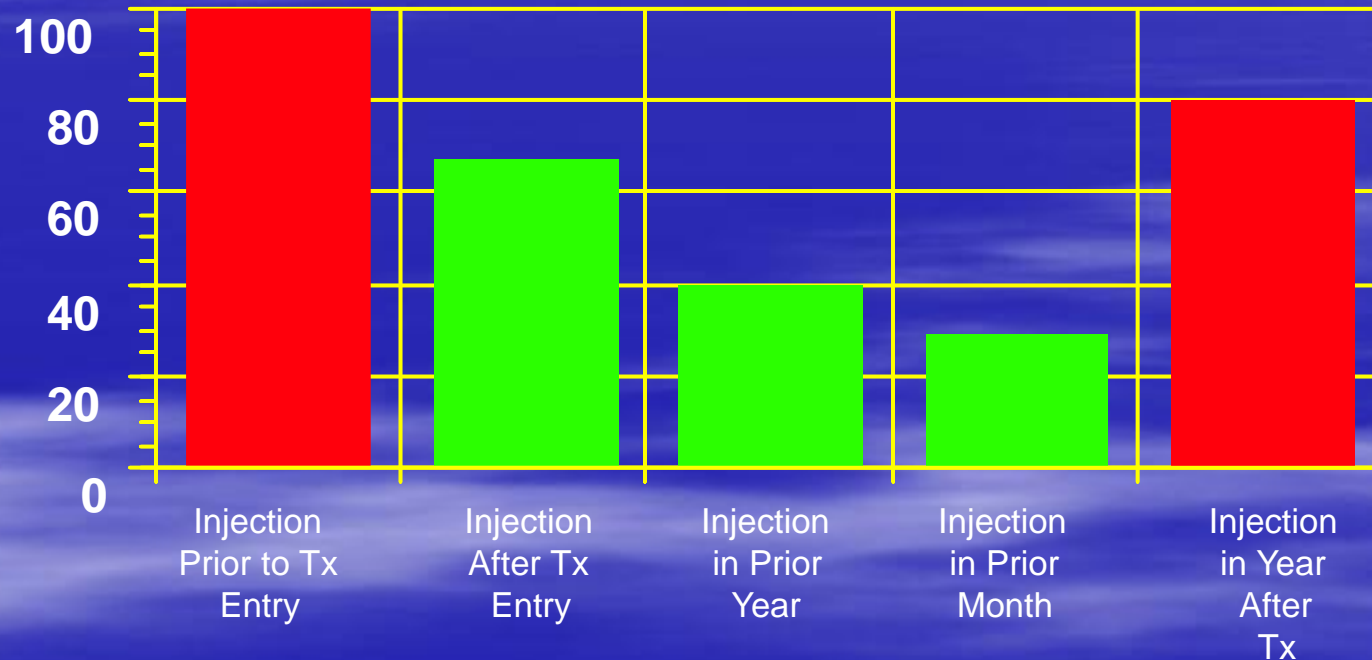
HIV prevention strategies for drug using populations

- **Education about HIV transmission**
- **HIV counseling and testing**
- **Increased access to sterile injection resources and condoms**
- **Drug treatment**
- **HIV treatment**

Addiction is a chronic medical condition

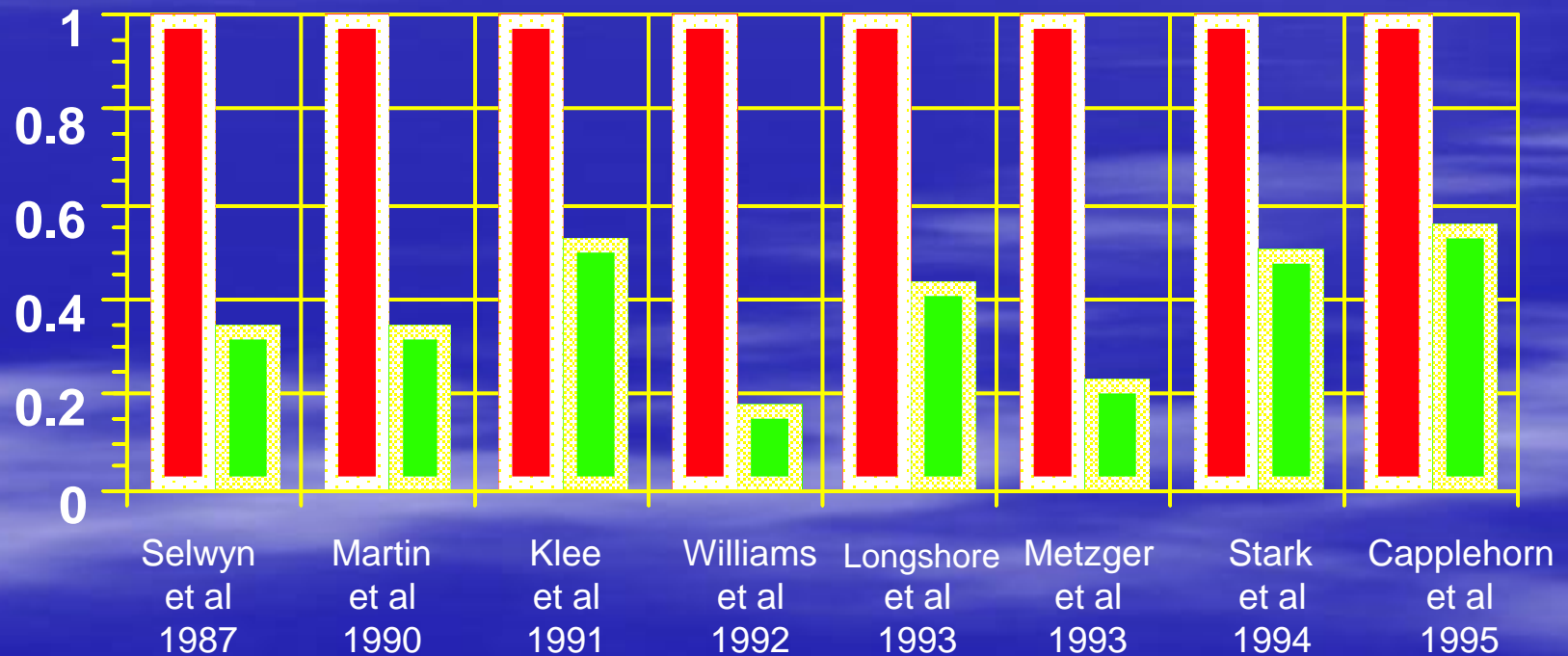
- Biological components (dependence)
- Behavioral components (addiction)
- Effective management requires attention to both--medication *assisted* treatment

Percent of subjects reporting injection prior to, during, and following methadone treatment

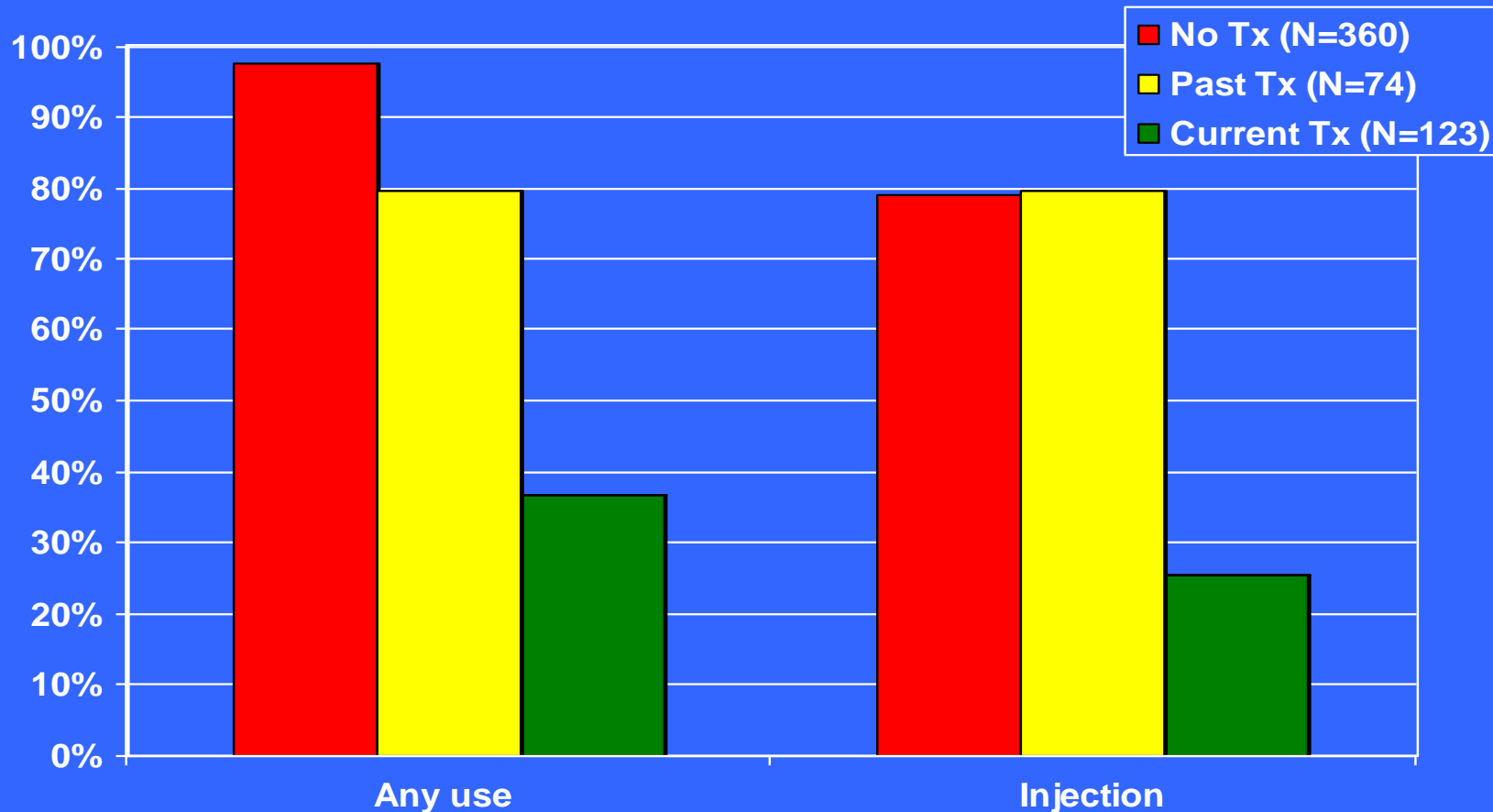


(Ball and Ross, 1991)

Rate of needle sharing reported by In-Treatment IDUs compared to Out-of-Treatment IDUs

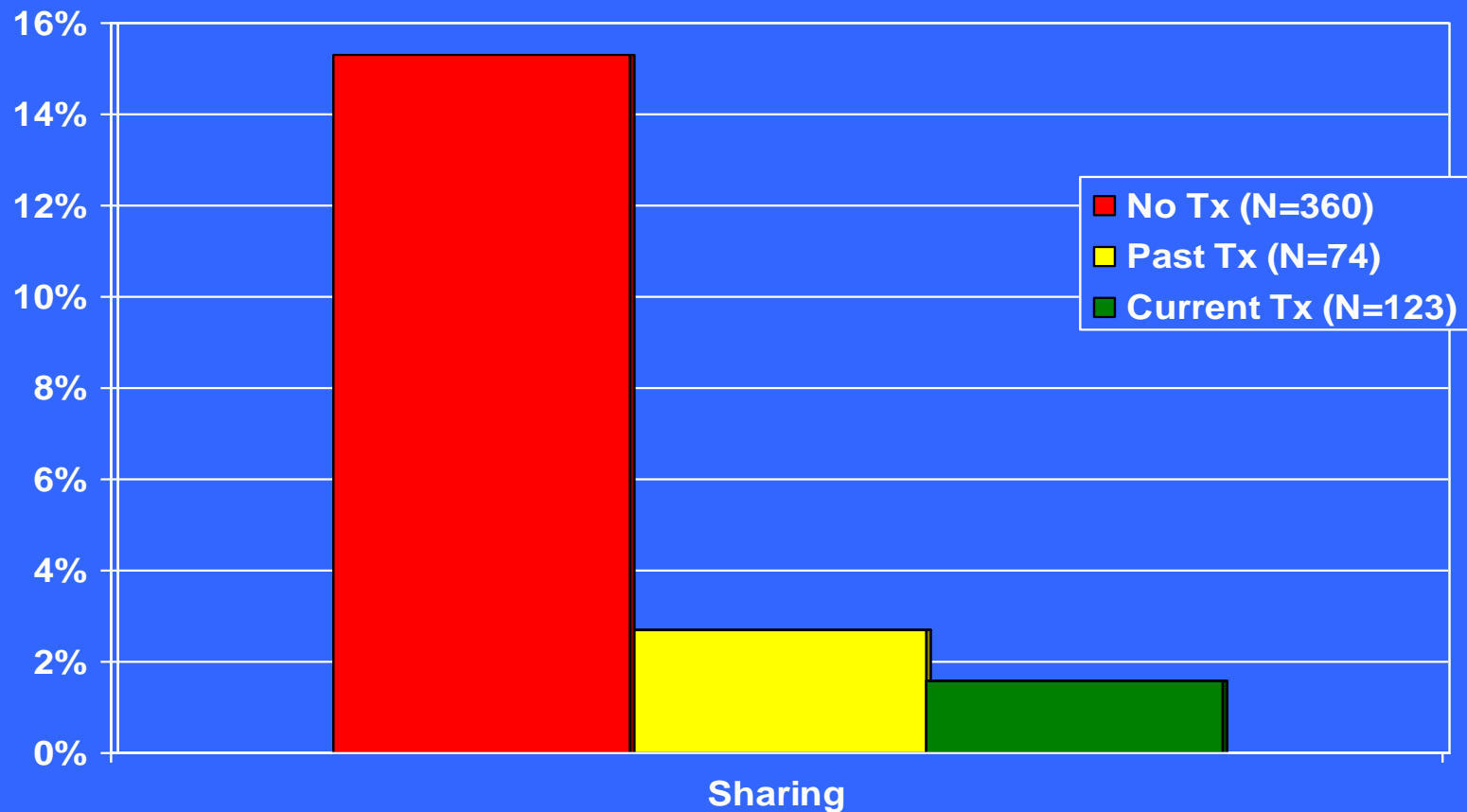


Drug use and injection among 557 heroin users by methadone treatment status, Sichuan Province, China



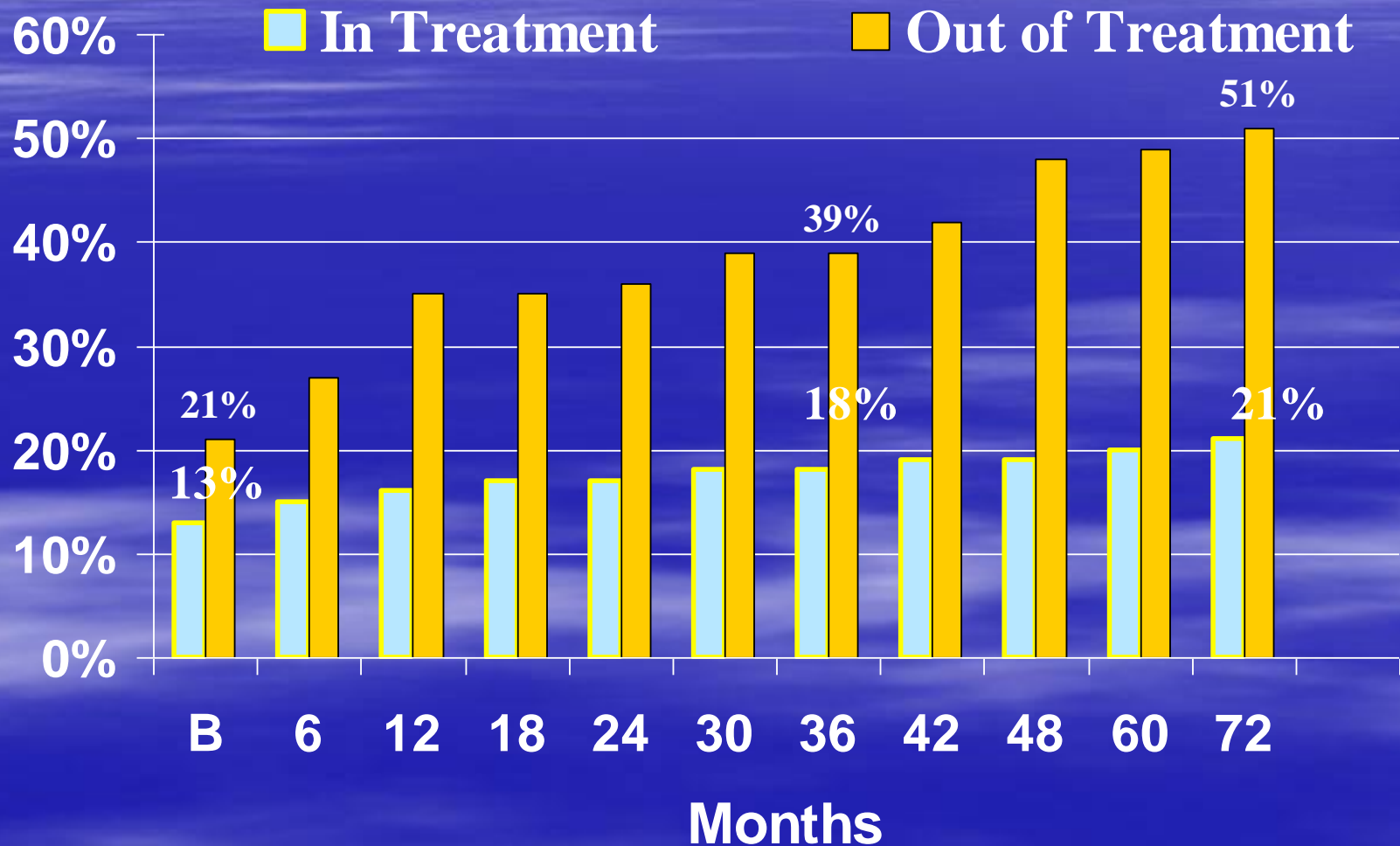
(Han-Zhu Qian et al, 2008)

Needle sharing among 557 heroin users by methadone treatment status, Sichuan Province, China



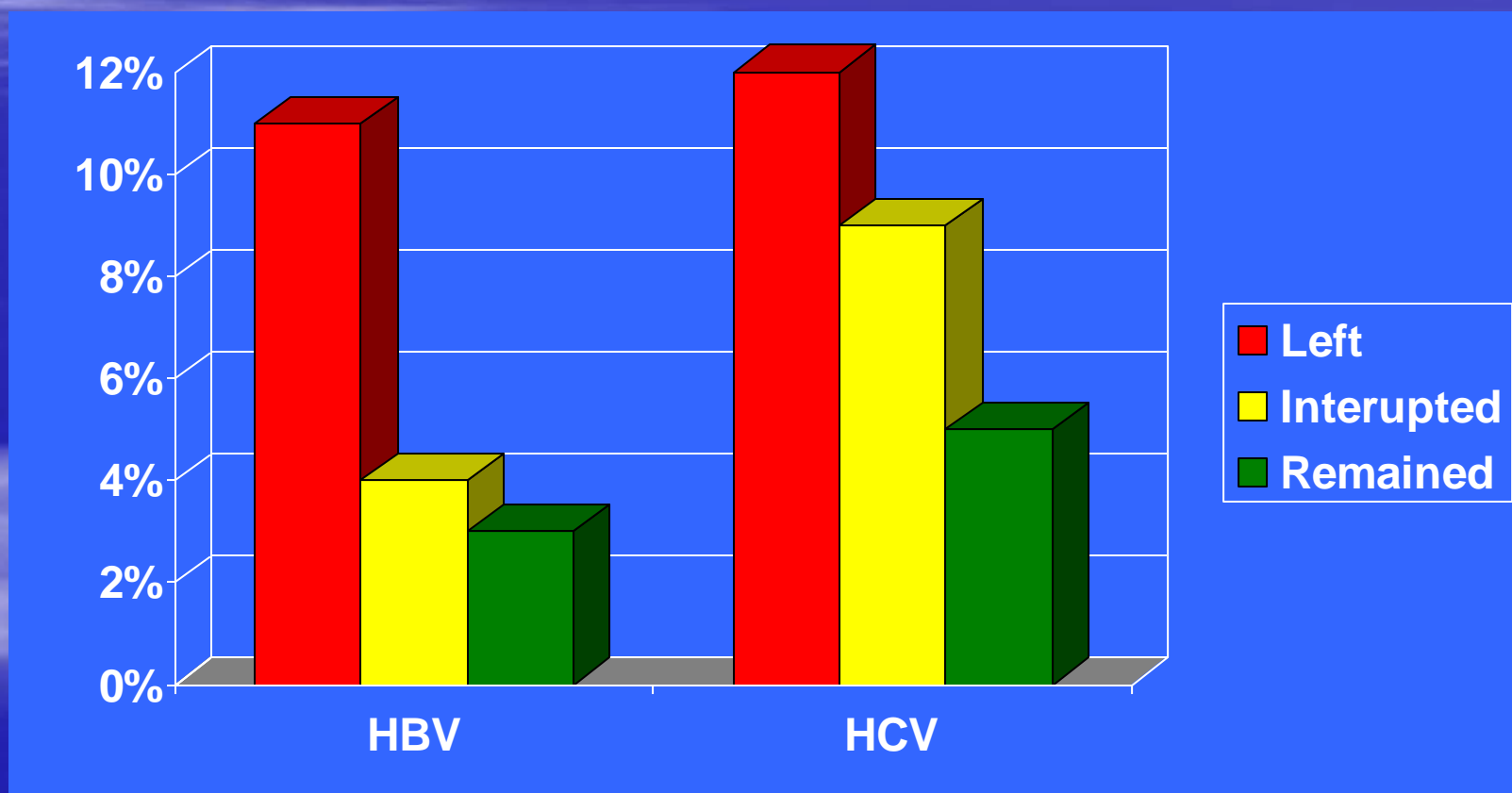
(Han-Zhu Qian et al, 2008)

Six year HIV infection rates by treatment status at time of enrollment



(Metzger et al. 1993)

Incidence of HBV and HCV 12 Months Following Treatment Entry



(Thiede, Hagan, and Murrill, 2000)

Methadone maintenance therapy promotes initiation of antiretroviral therapy among injection drug users

Sasha Uhlmann^{1,2}, M.-J. Milloy¹, Thomas Kerr^{1,2}, Ruth Zhang¹, Silvia Guillemi¹, David Marsh³, Robert S. Hogg^{1,4}, Julio S. G. Montaner^{1,2} & Evan Wood^{1,2}

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Commentary

Social and structural determinants of HAART access and adherence among injection drug users

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Antiretroviral adherence and HIV treatment outcomes among HIV/HCV co-infected injection drug users: The role of methadone maintenance therapy

Anita Palepu^{a,b,*}, Mark W. Tyndall^{b,c}, Ruth Joy^c, Thomas Kerr^{b,c}, Evan Wood^{b,c}, Natasha Press^{b,c}, Robert S. Hogg^{c,d}, Julio S.G. Montaner^{b,c}

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Review

Adherence to HIV treatment among IDUs and the role of opioid substitution treatment (OST)

Bruno Spire^a, Gregory M. Lucas^b, M. Patrizia Carrieri^{a,*}

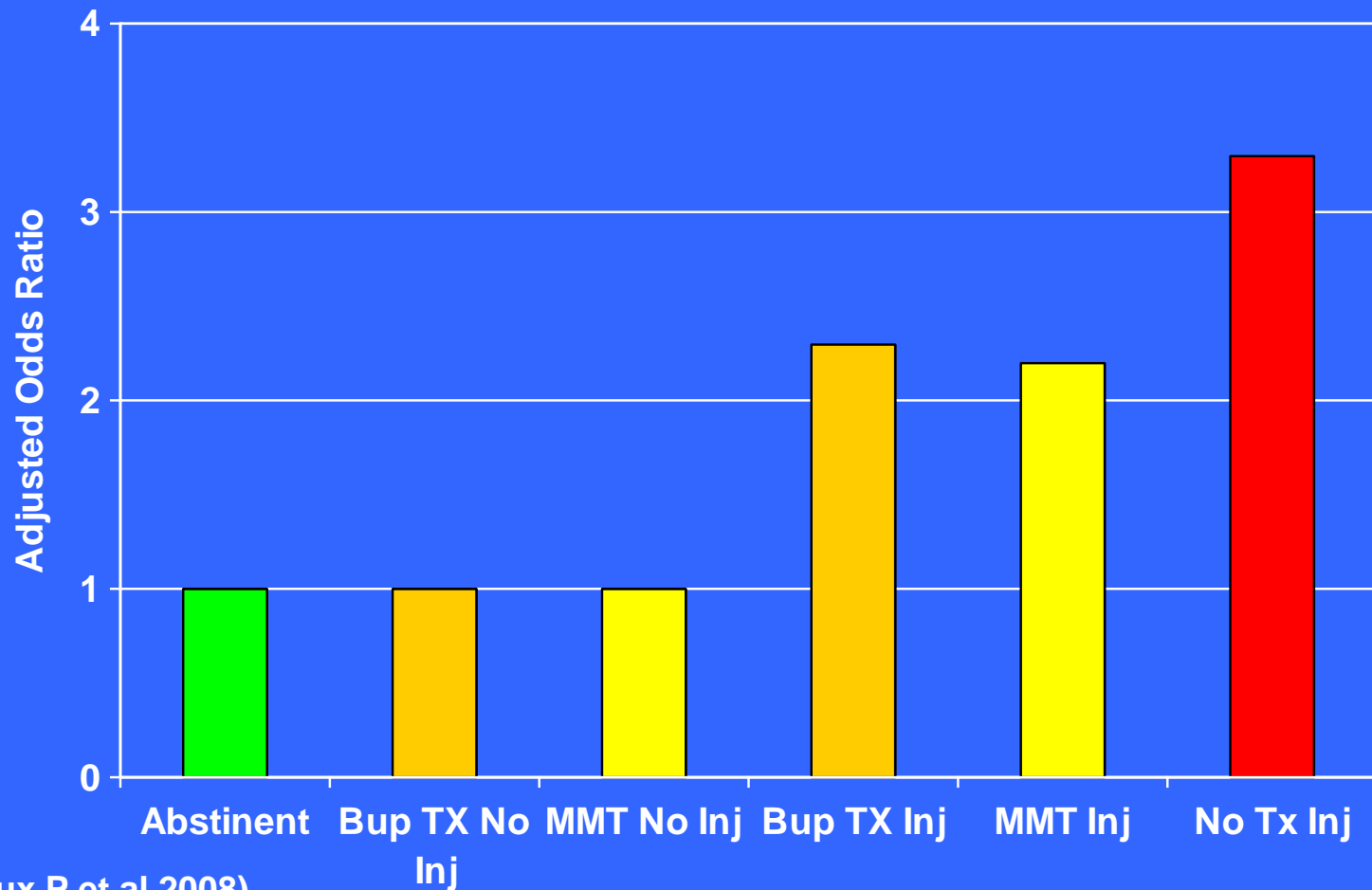
^a INSERM-U379/ORSPACA, Marseilles, France

^b Johns Hopkins University, Baltimore, USA

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MANIF 2000: Drug treatment and injection as predictors of poor adherence to HAART

(N=276; 1558 patient visits)



Adherence by past and current drug and alcohol diagnoses

	Alcohol	Drug
Current diagnoses	$p < .01$	$p < .01$
Lifetime diagnoses	NS	NS

How does drug treatment prevent HIV infection and transmission?

- Effective treatments reduce the frequency of drug use
- Fewer drug-related risk behaviors
- Fewer new infections
- Increased access to HIV treatment and primary care
- Increased adherence to HIV medications

Despite these findings

- **Selected expansion of methadone treatment**
- **Need for treatment expansion**
- **Need for improvements in efficacy of existing treatments**
- **Need for new delivery strategies**
- **Need for new medications and formulations**

Clear need for more treatment options

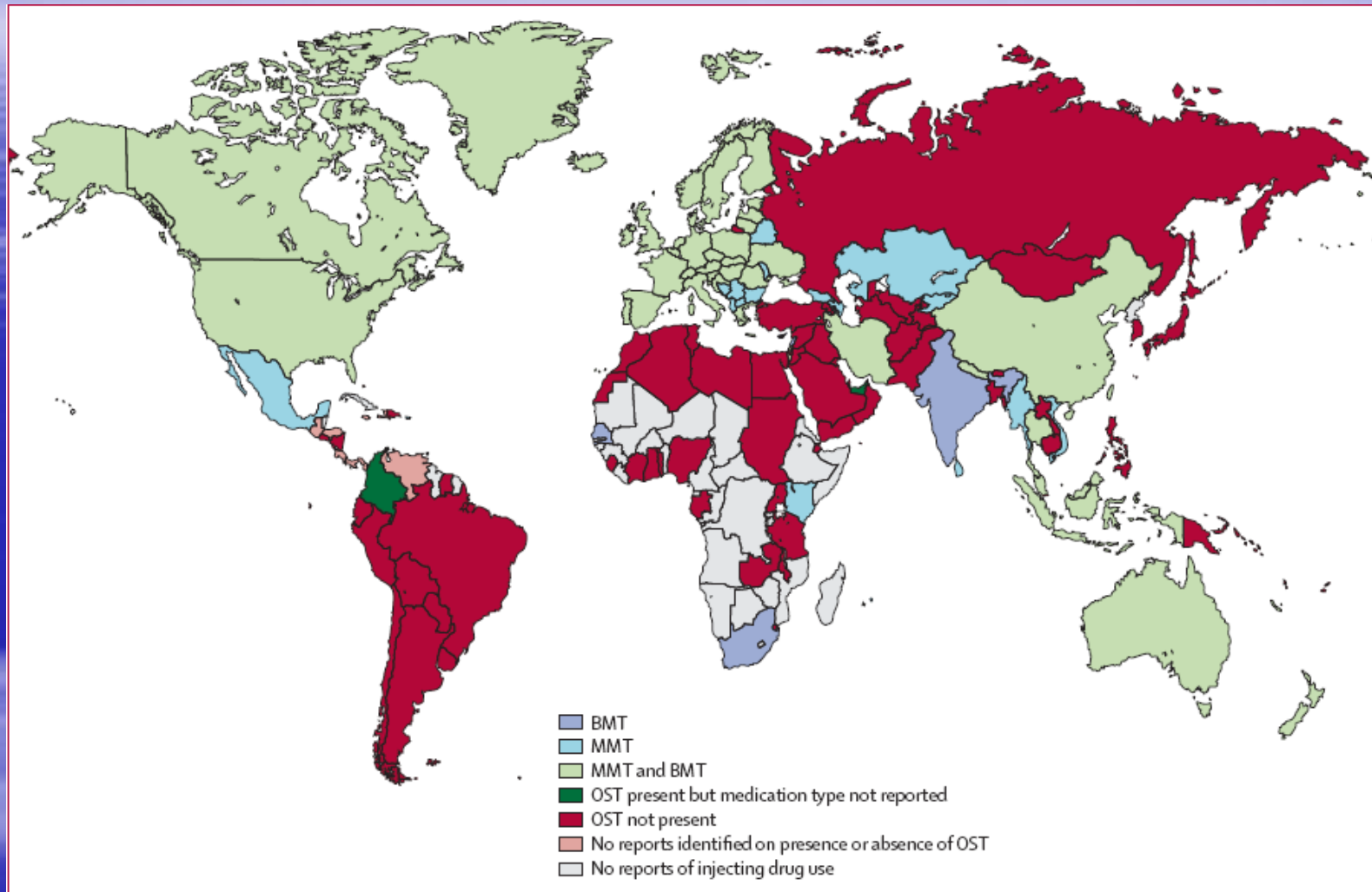
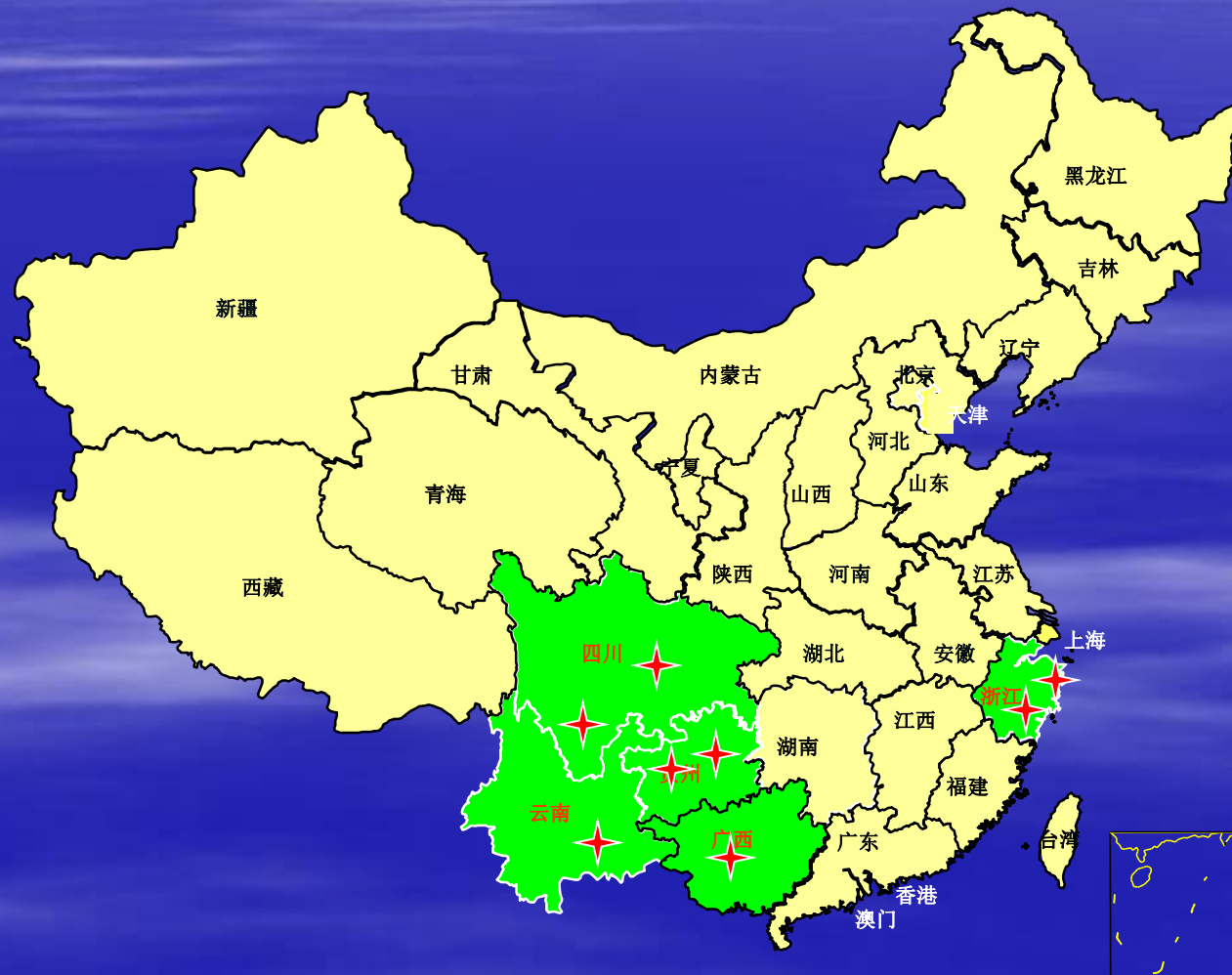


Figure 3: Availability of opioid substitution treatment

BMT=buprenorphine maintenance treatment. MMT=methadone maintenance treatment. OST=opioid substitution therapy.

Methadone Maintenance Program in China

In Dec. 2003, 8 clinics in 5 provinces were approved to be China's 1st wave of community-based methadone maintenance program

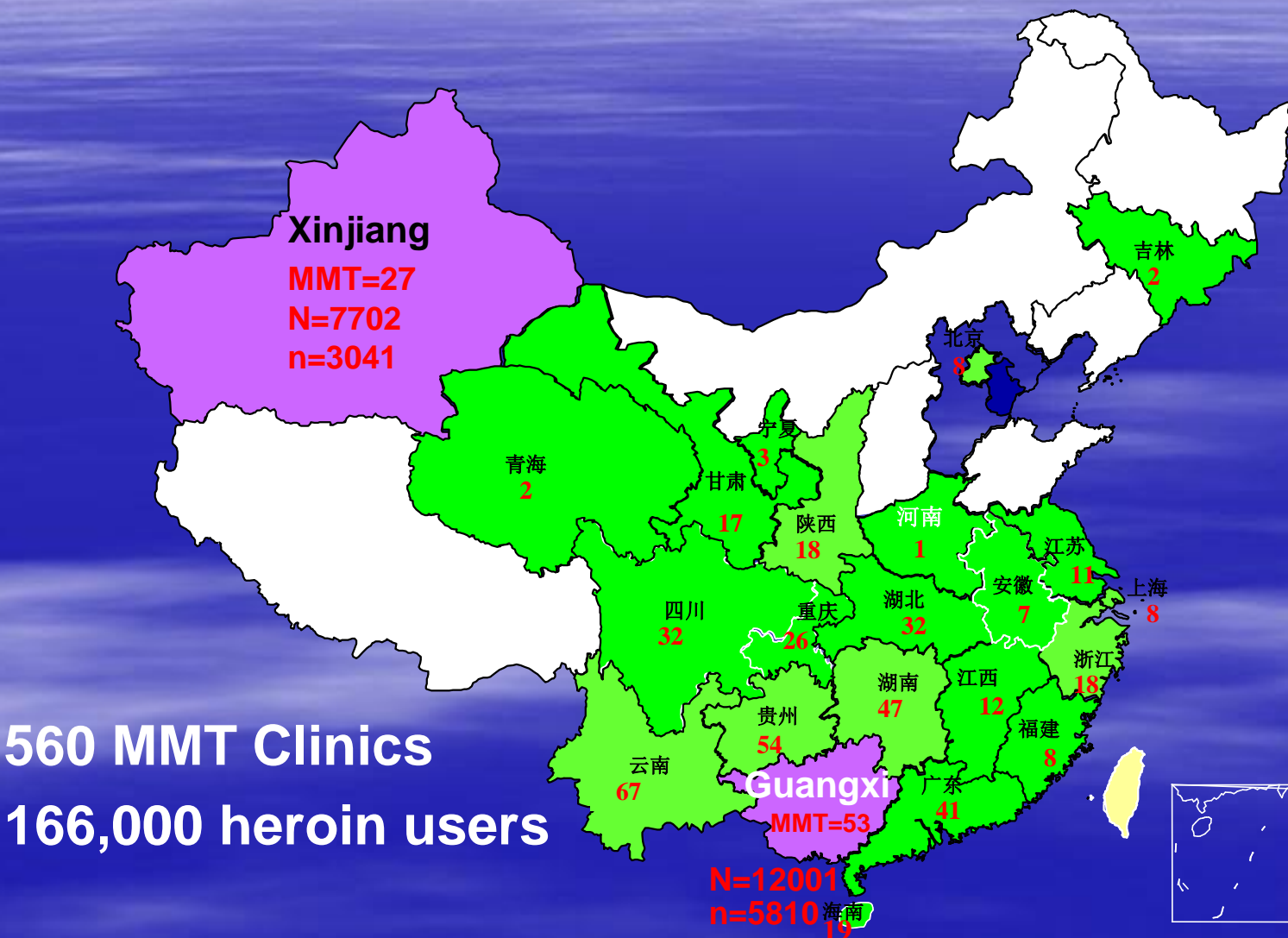


Milestones in China's National Response to HIV/AIDS & Drug Abuse

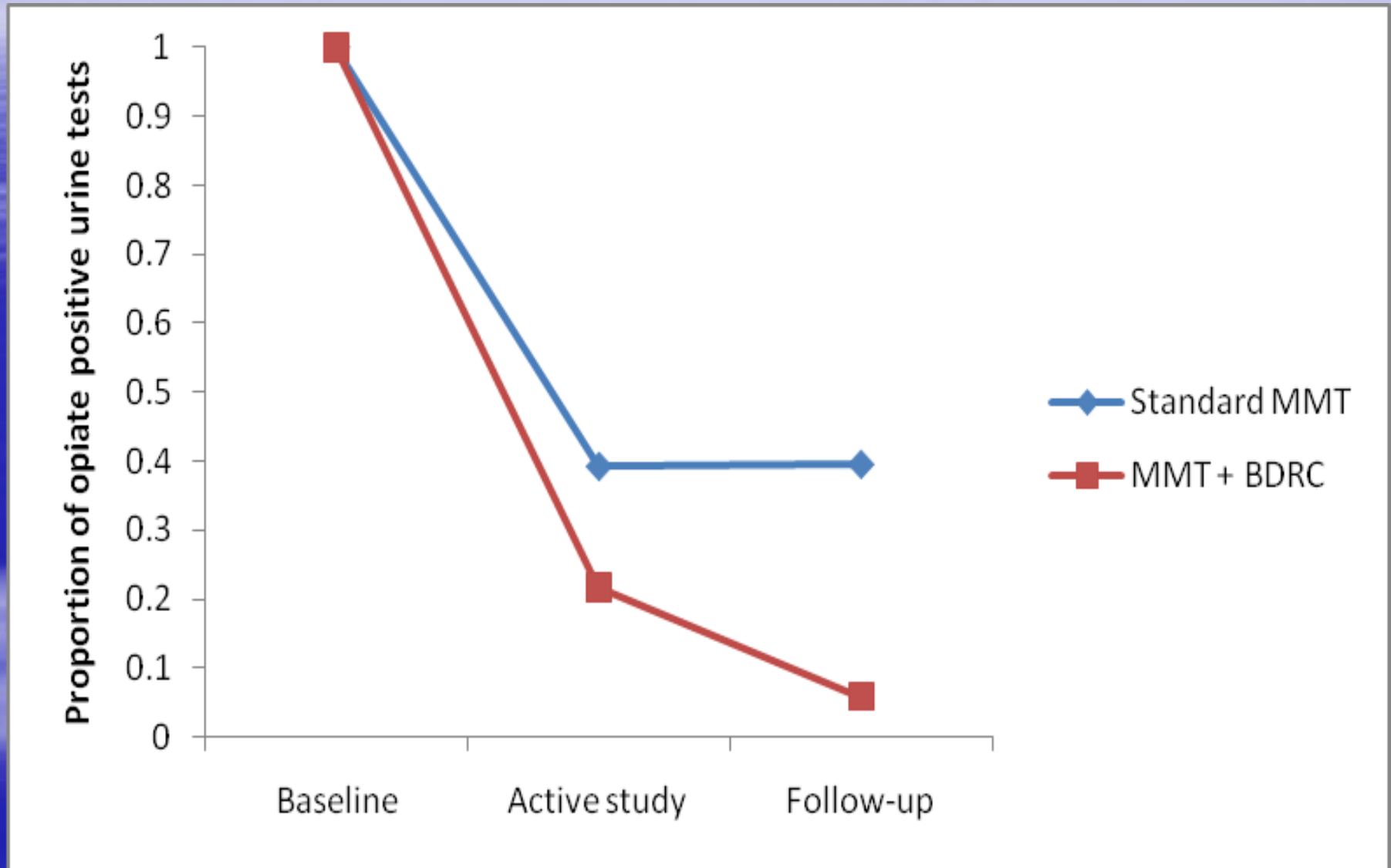


Premier Wen Jiabao, visited Wuhan Detox. Center in June 2004

Methadone treatment in 2009



Improving the efficacy of treatment: Counseling

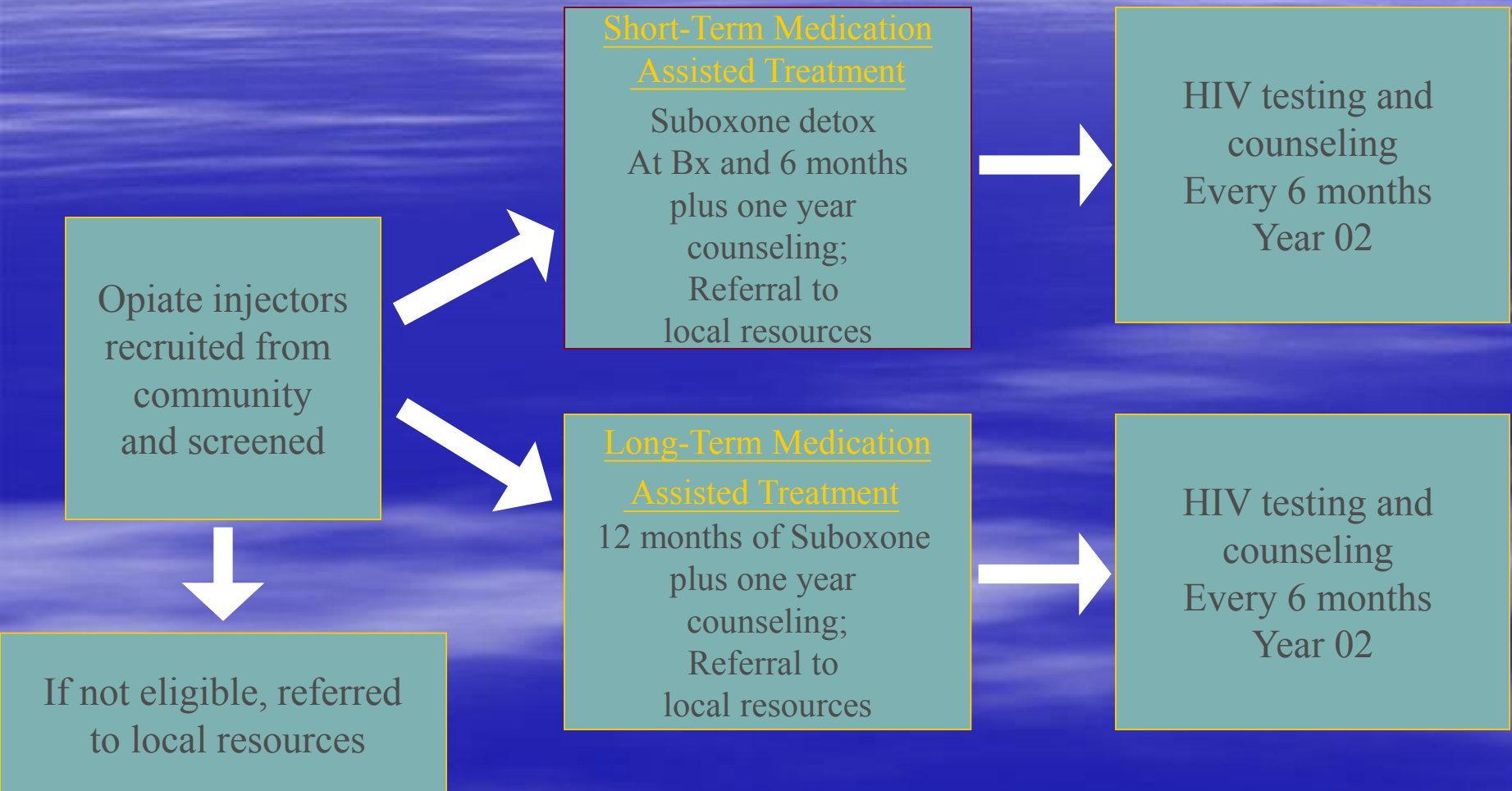


Buprenorphine/Naloxone offers new opportunities for HIV prevention and care

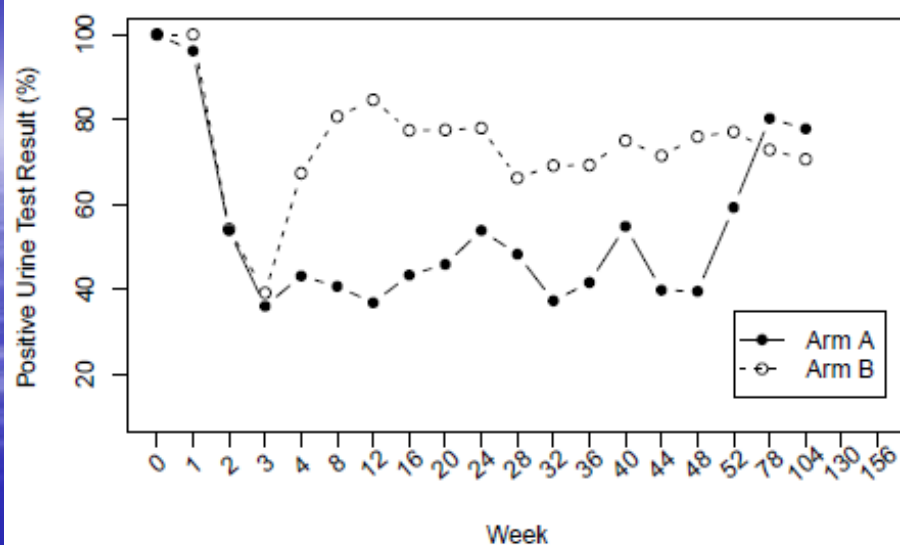


- Partial agonist, longer half-life
- Reduced risk of overdose
- Less severe withdrawal
- Fewer interactions with anti-retrovirals

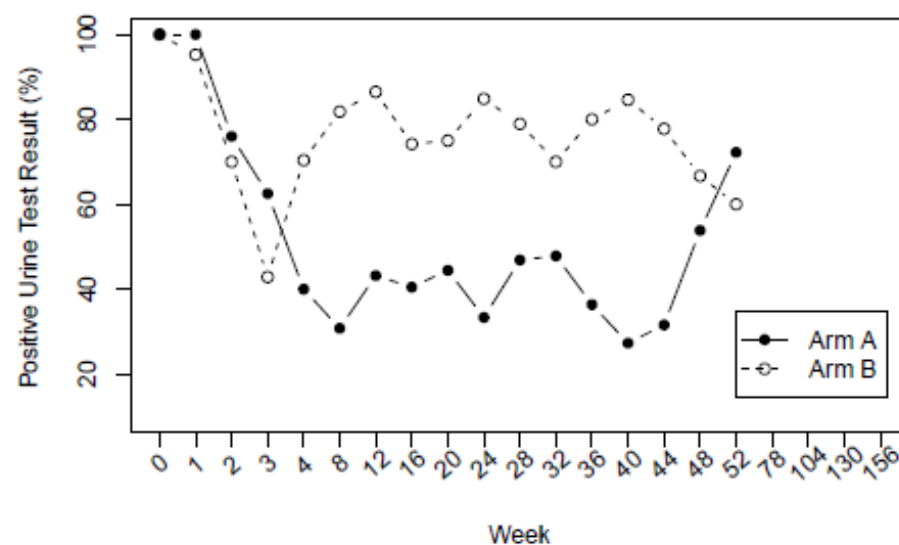
HPTN 058: comparing new delivery strategies



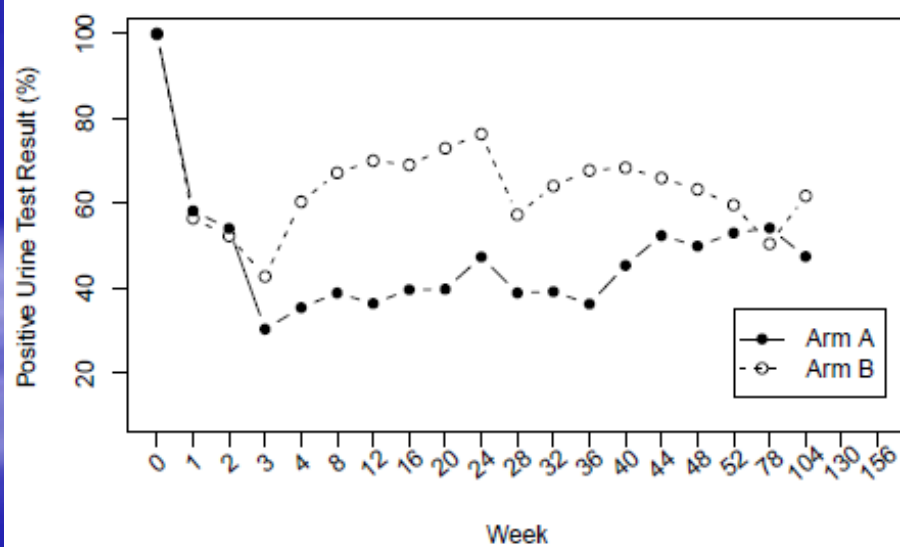
Heng County, China



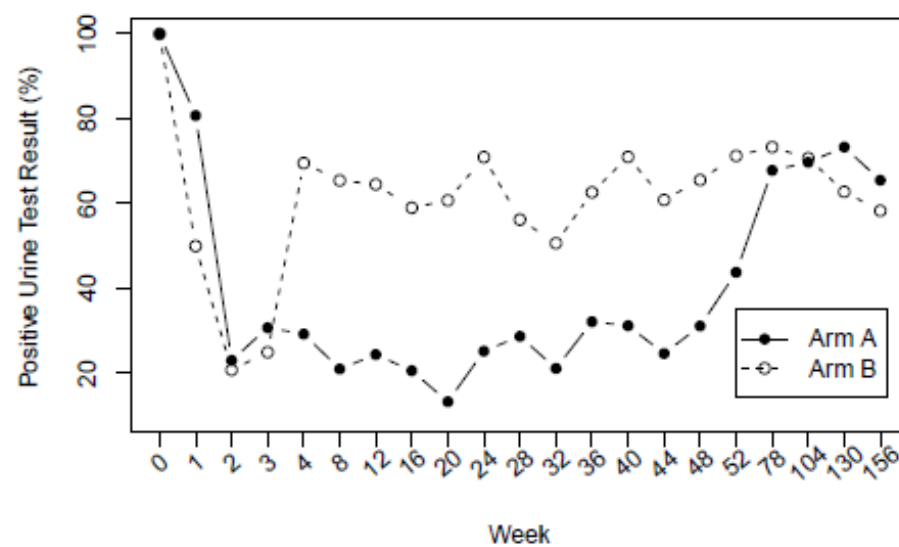
Nanning, China



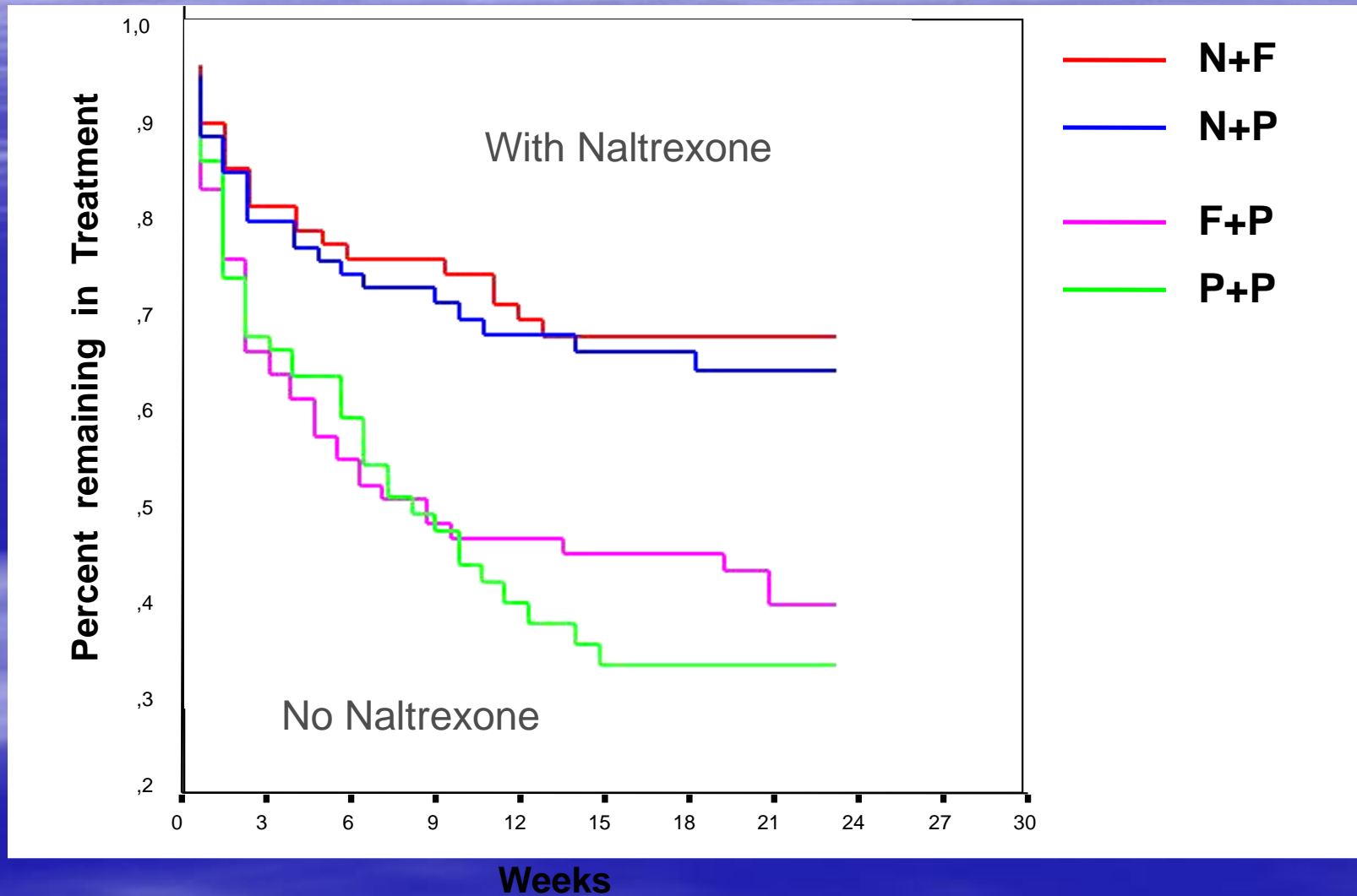
Xinjiang, China



Chiang Mai, Thailand



New treatment approaches: Oral Naltrexone treatment in St. Petersburg (N=280)



New formulations: Implantable Naltrexone

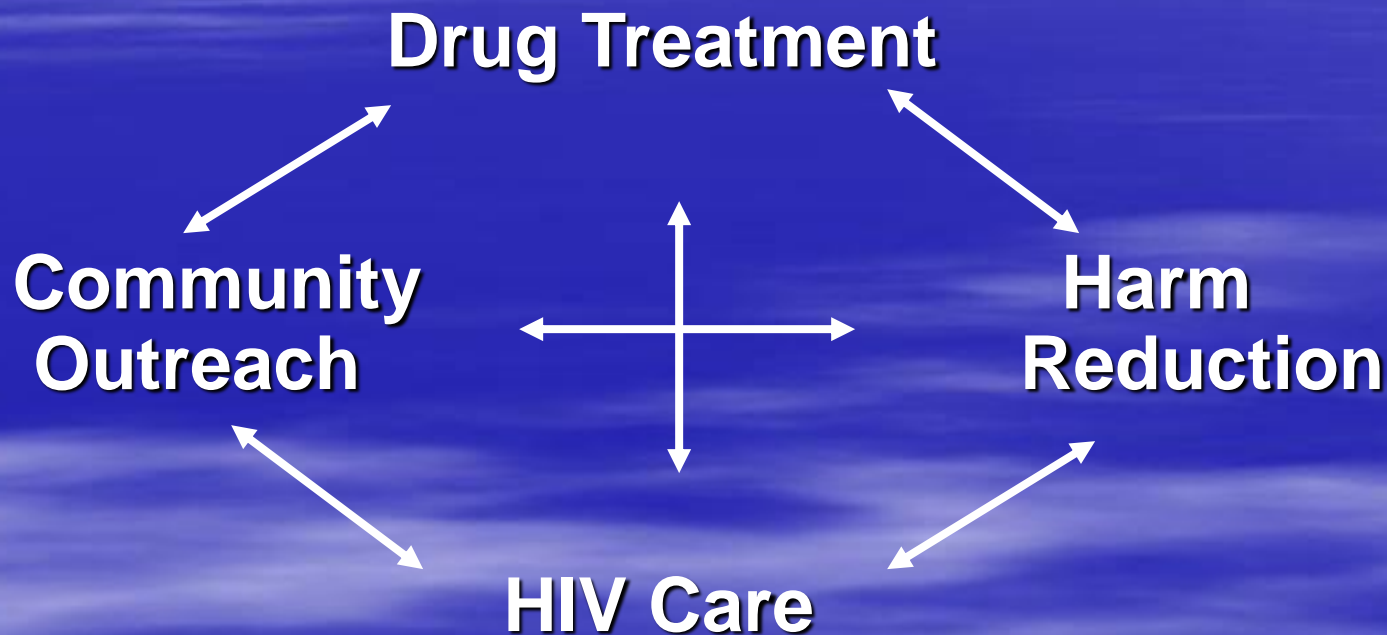


Effective drug treatments

- recognize addiction as a chronic disease
- use pharmacologic and counseling interventions
- are accessible, acceptable, and affordable
-- to those users most likely to become infected

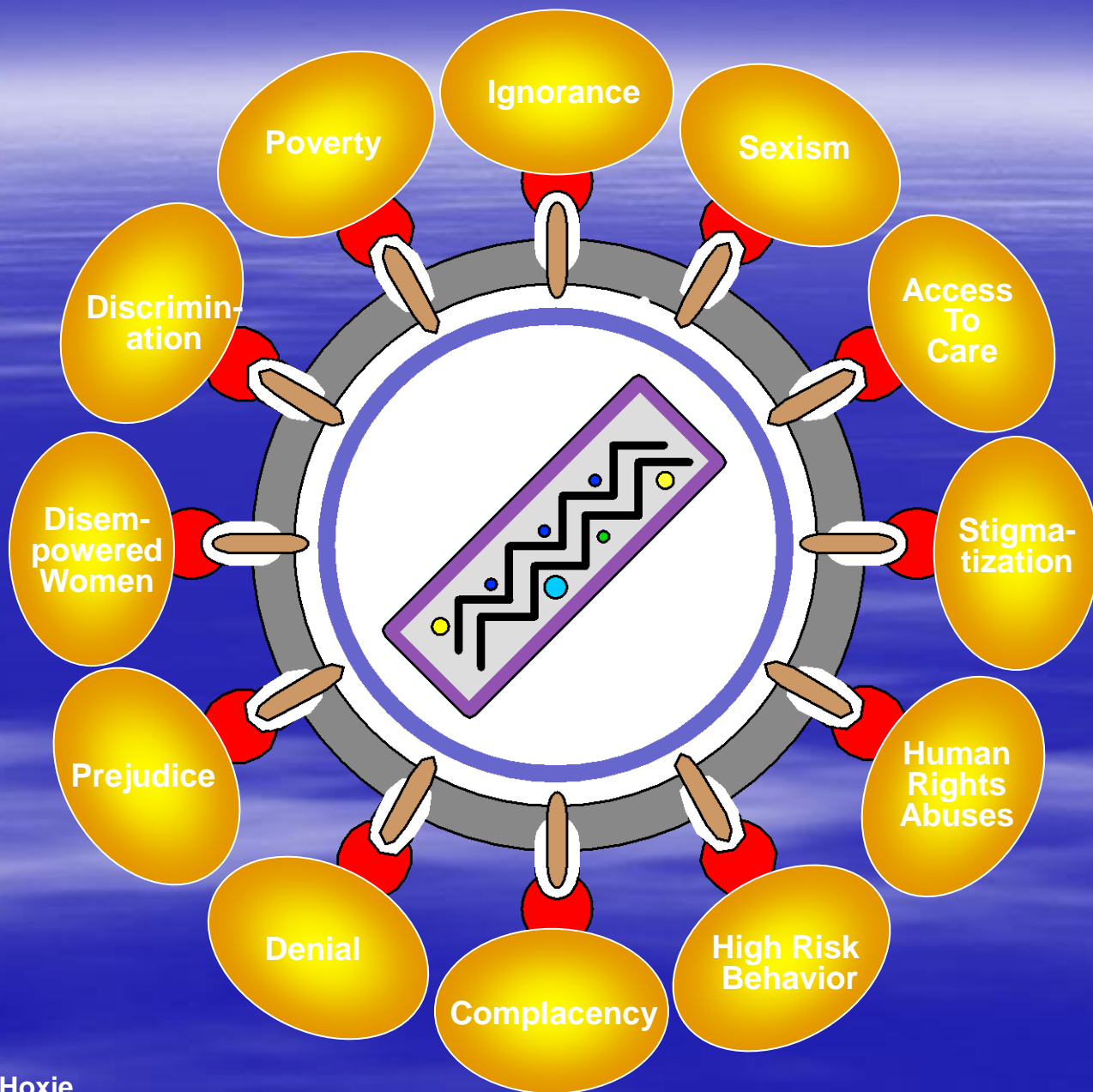


Drug treatment is necessary but not sufficient for HIV prevention in communities



Summary

- IDUs are small segment of the population but a major part of the HIV infected population
- Neglecting the health of even a small segment of the community jeopardizes the public health
- Alcohol and non-injection drug use is a major risk factor in all risk groups
- Research on opiate injectors in methadone treatment has provided “proof of concept” that drug treatment is HIV prevention
- Despite selected expansion of methadone treatment as harm reduction—coverage remains extremely limited
- Need for expanded treatments, improved efficacy, formulations and delivery strategies



Courtesy of Jim Hoxie