

Best Practices and Key Issues Related to Measurement Approaches for Characterizing MARPS Epidemics and Populations

Overview

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***Interventions with Most-at-Risk Populations in PEPFAR Countries: Lessons Learned
and Challenges Ahead, Chennai, India, February 18-20, 2009***

MARPs Measurement Issues

- **Sampling**
- **Population size estimation**
- **Key measures in tracking the HIV epidemic and our response**

Sampling MARPS

- **Gold standard: Probability-based sampling**

- Representative
- Accurate
- Reproducible



- **Approximations of probability sampling (RDS, TLS, TS)**

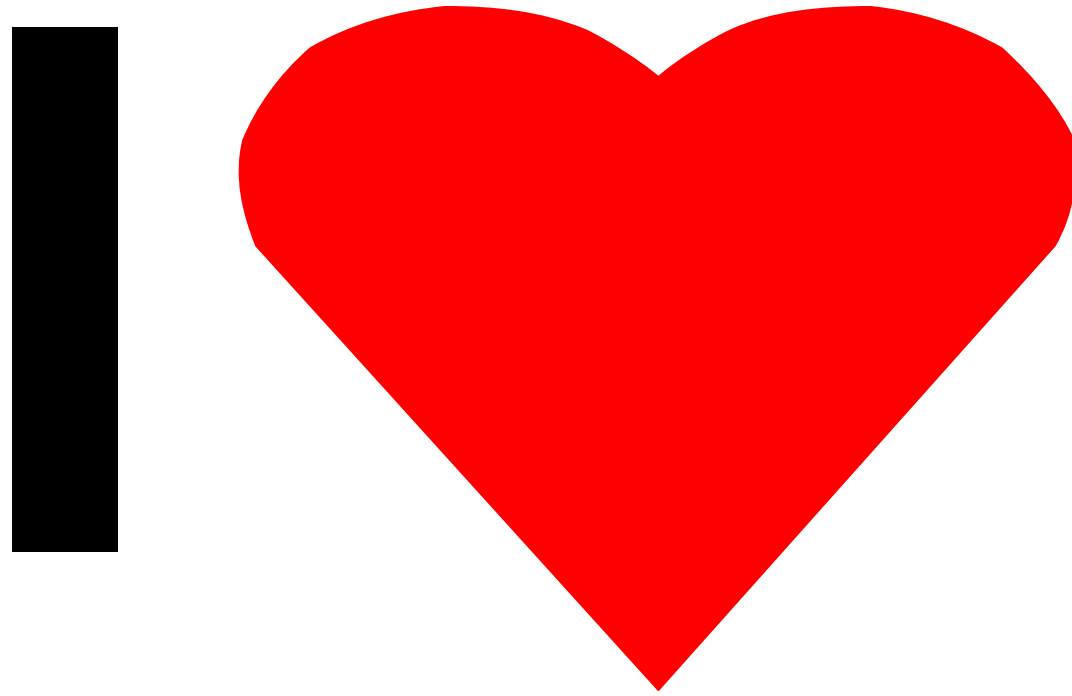
- **The best of both worlds?**

- **Or, Purgatory?**

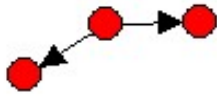
- **Down to earth: Convenience and snowball sampling**

- Inclusive
- Consistent
- Standardized

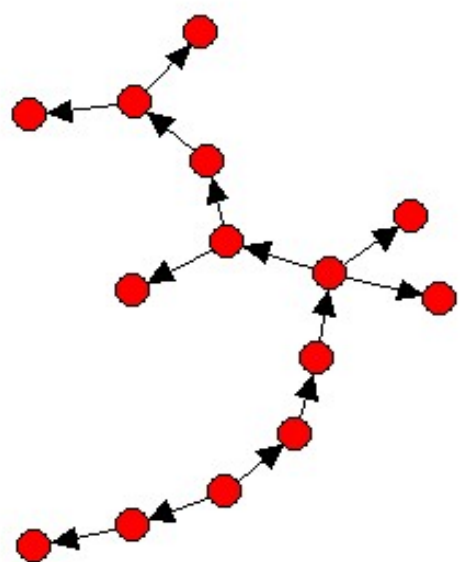
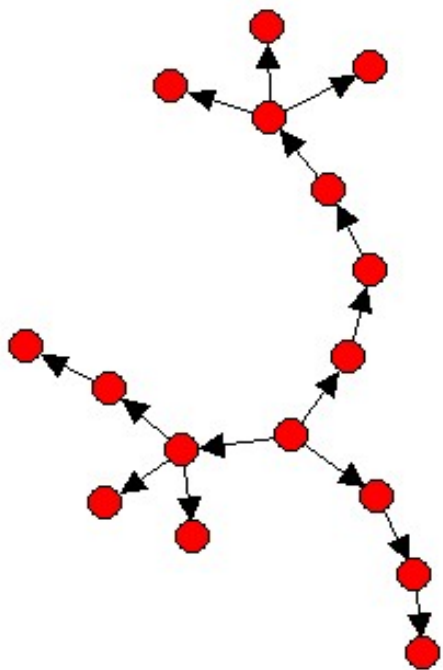
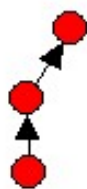
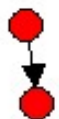
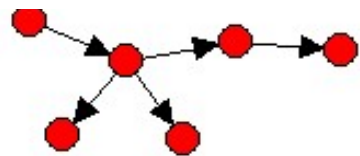
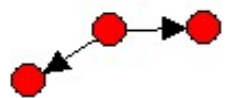


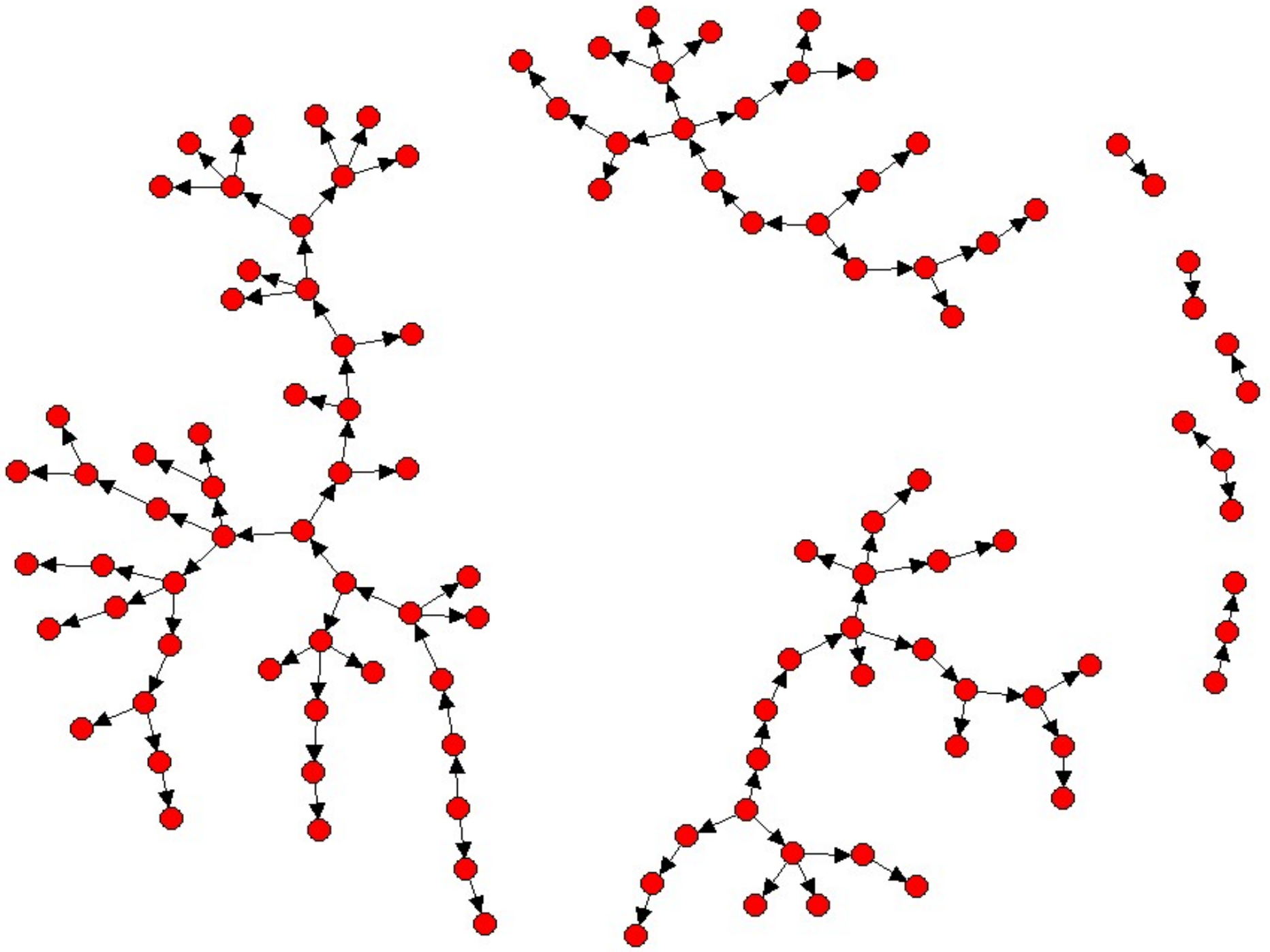


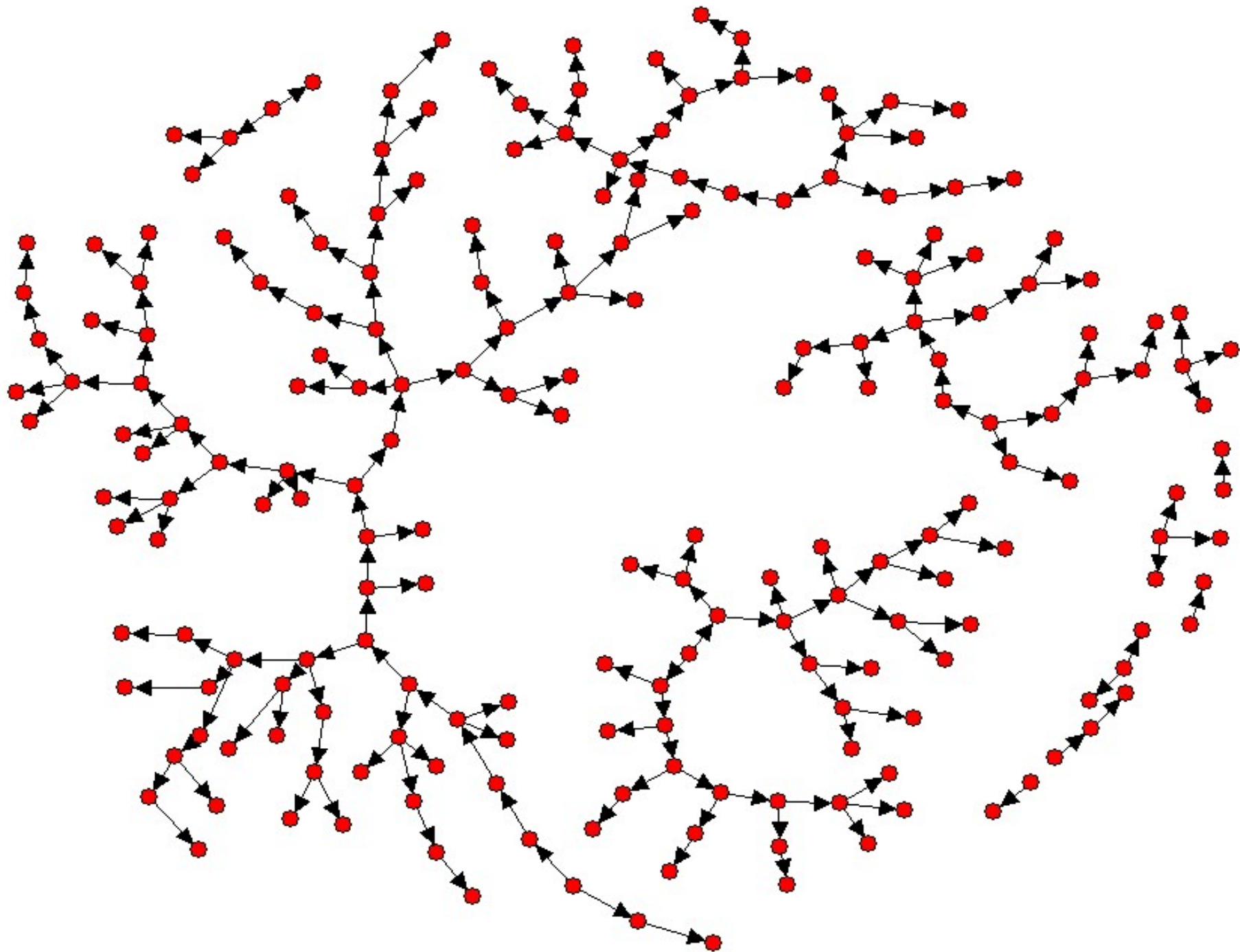
RDS



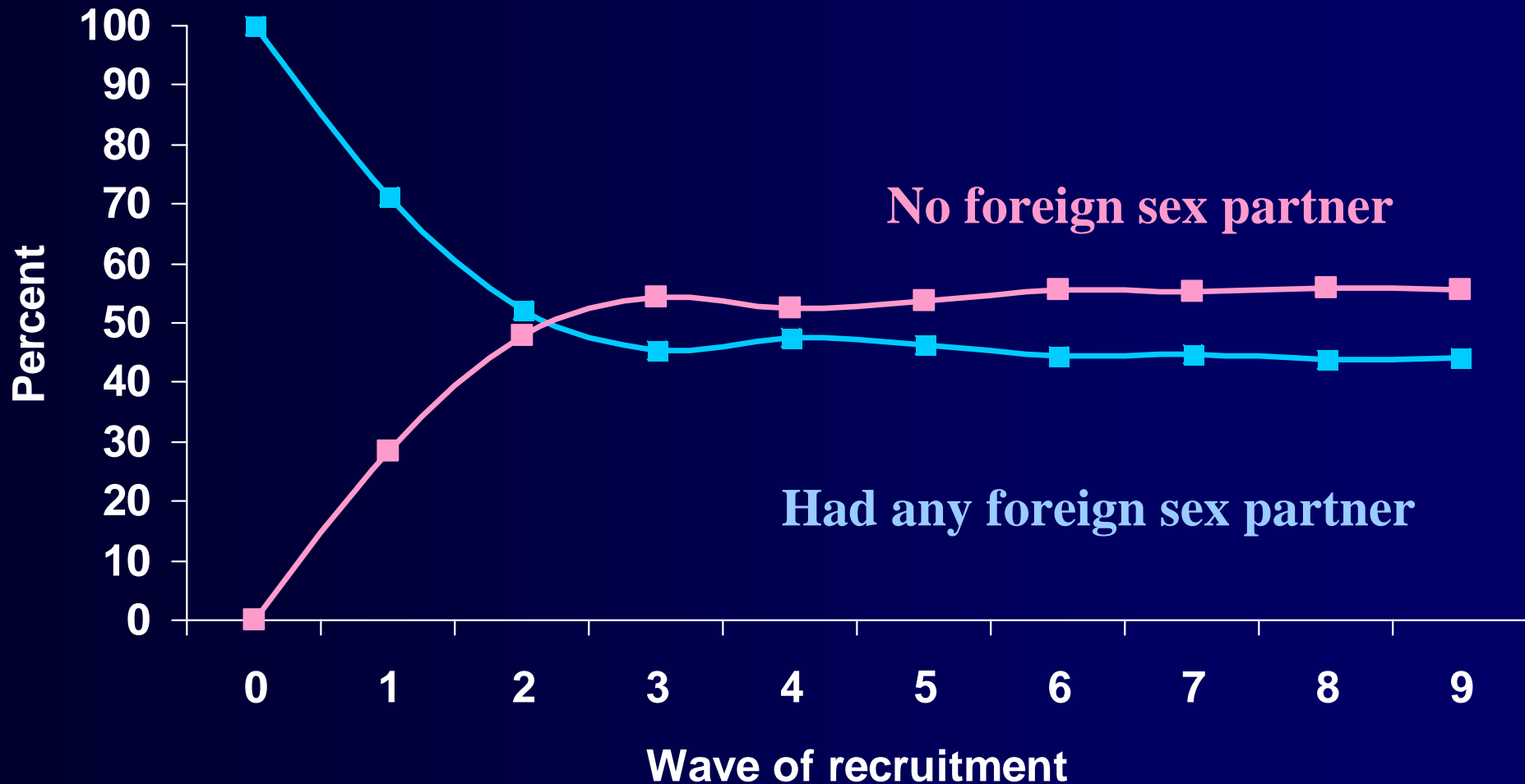
IDU in Tehran, Iran





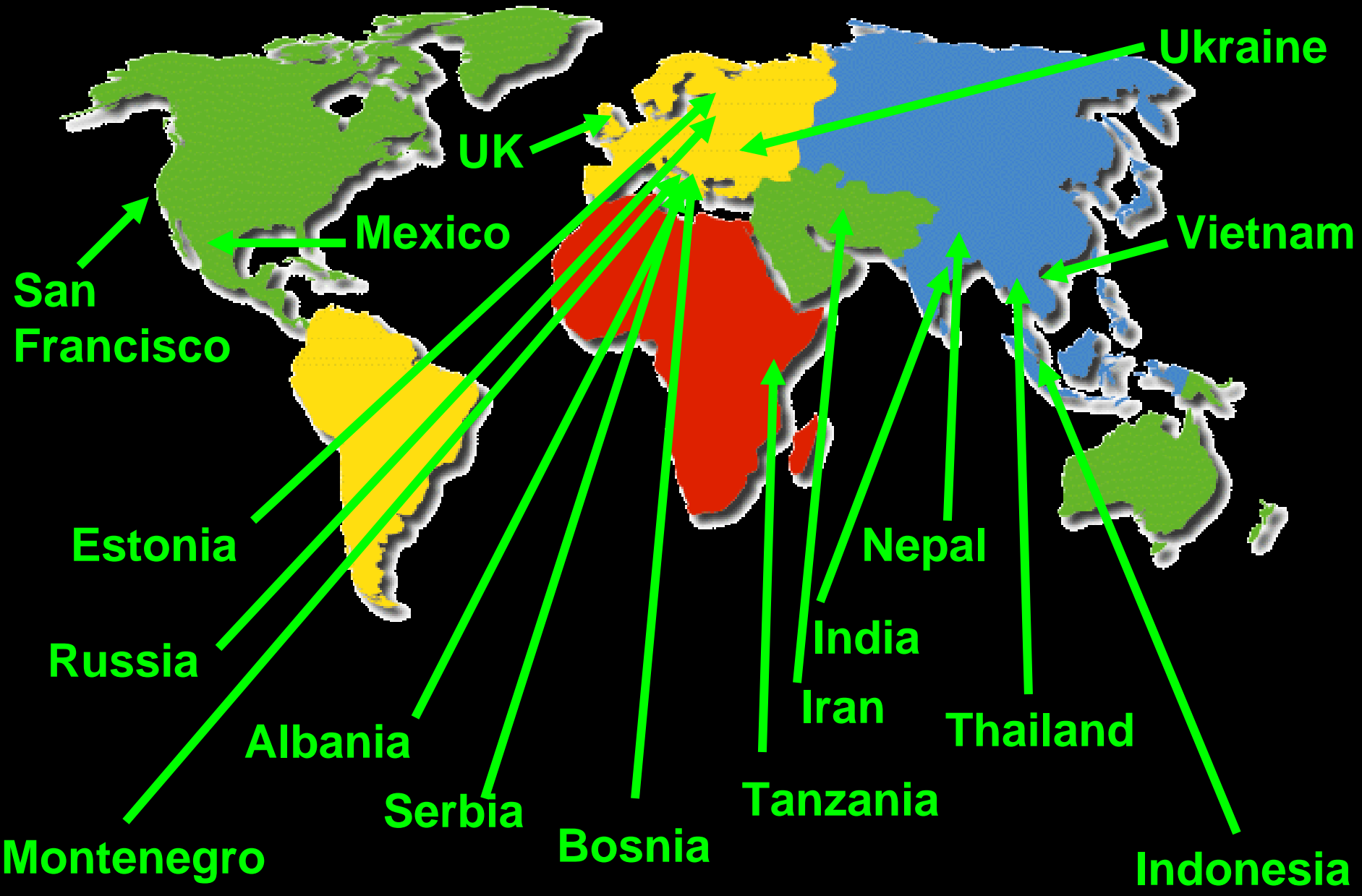


Equilibrium for sex with foreigners in RDS study of MSM, Uganda





MSM: RDS Successes from Malekinejad et al., 2008

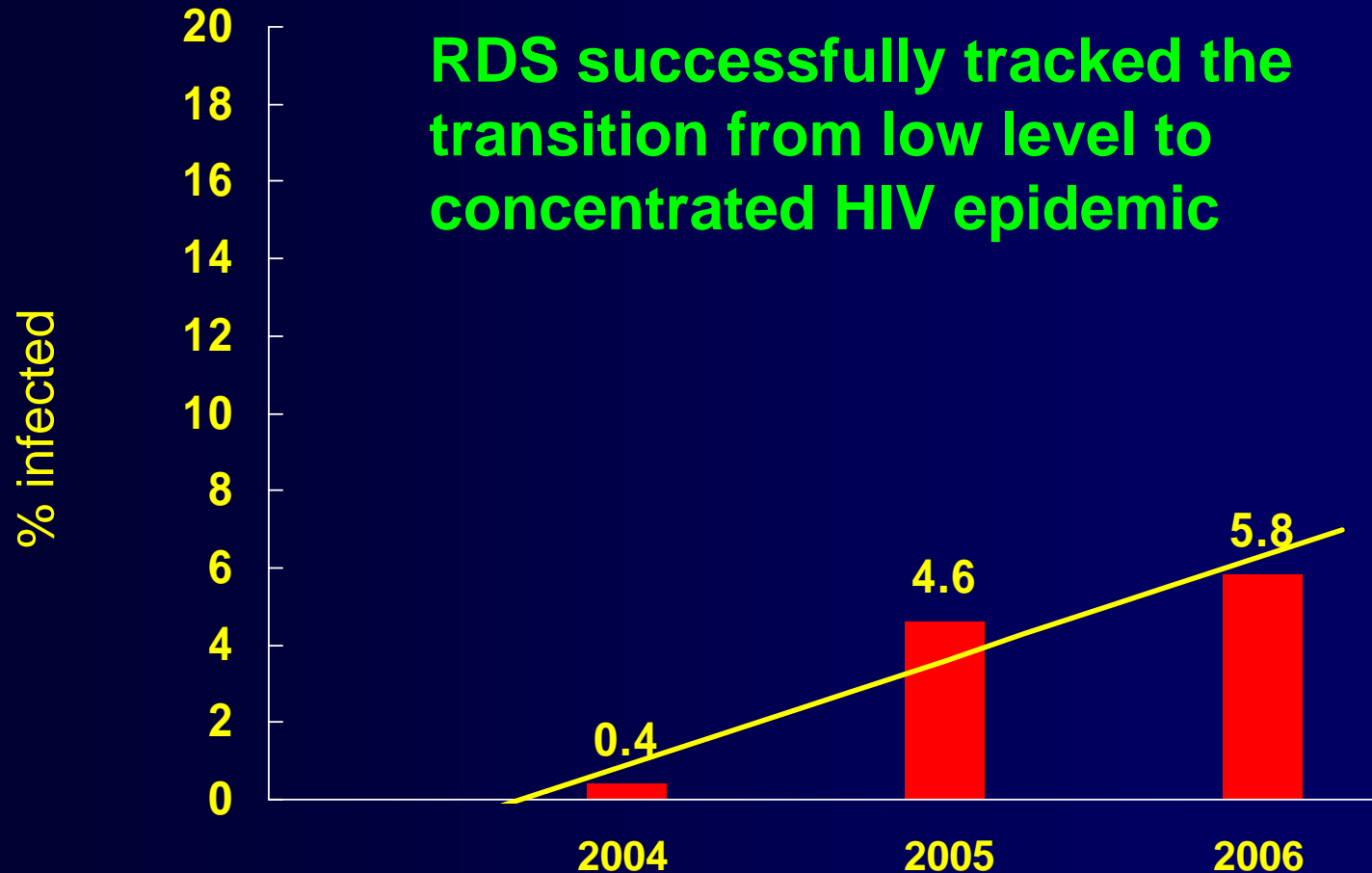


IDU: RDS Successes



Female sex workers: RDS Successes

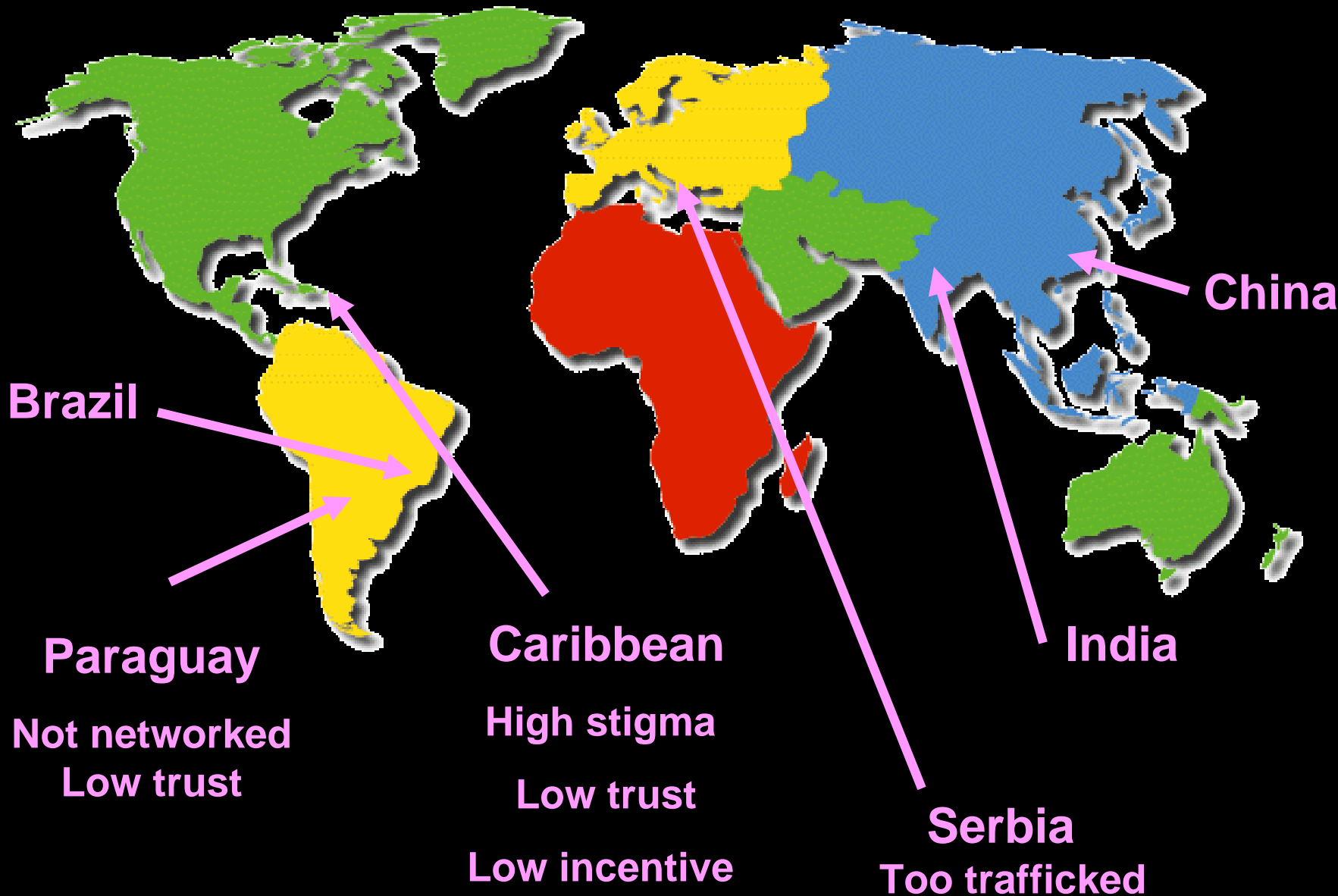
Keeping ahead of the curve: HIV prevalence MSM in Beijing, by RDS



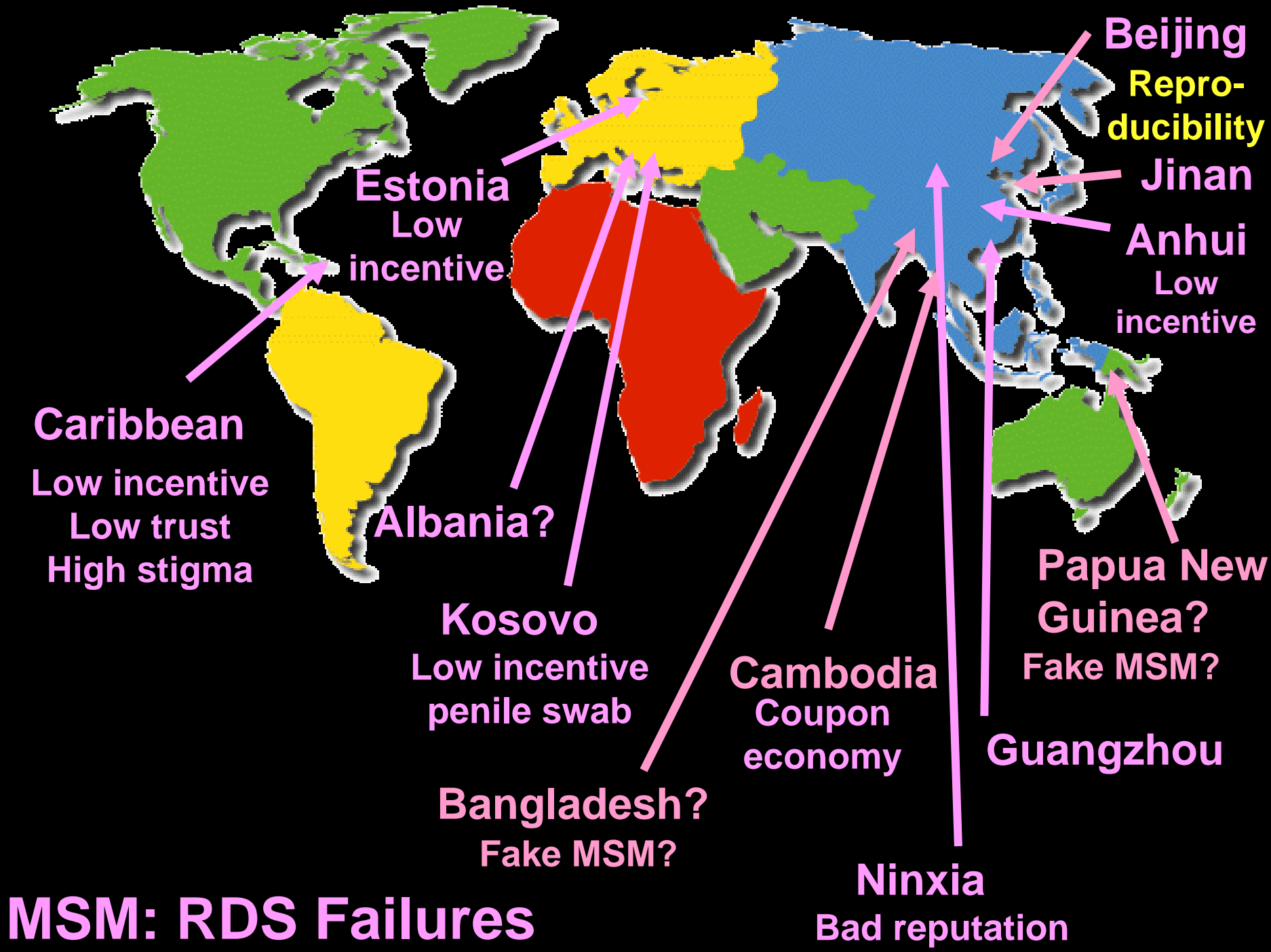
Courtesy of Xiaoyan Ma (China CDC Beijing) and colleagues



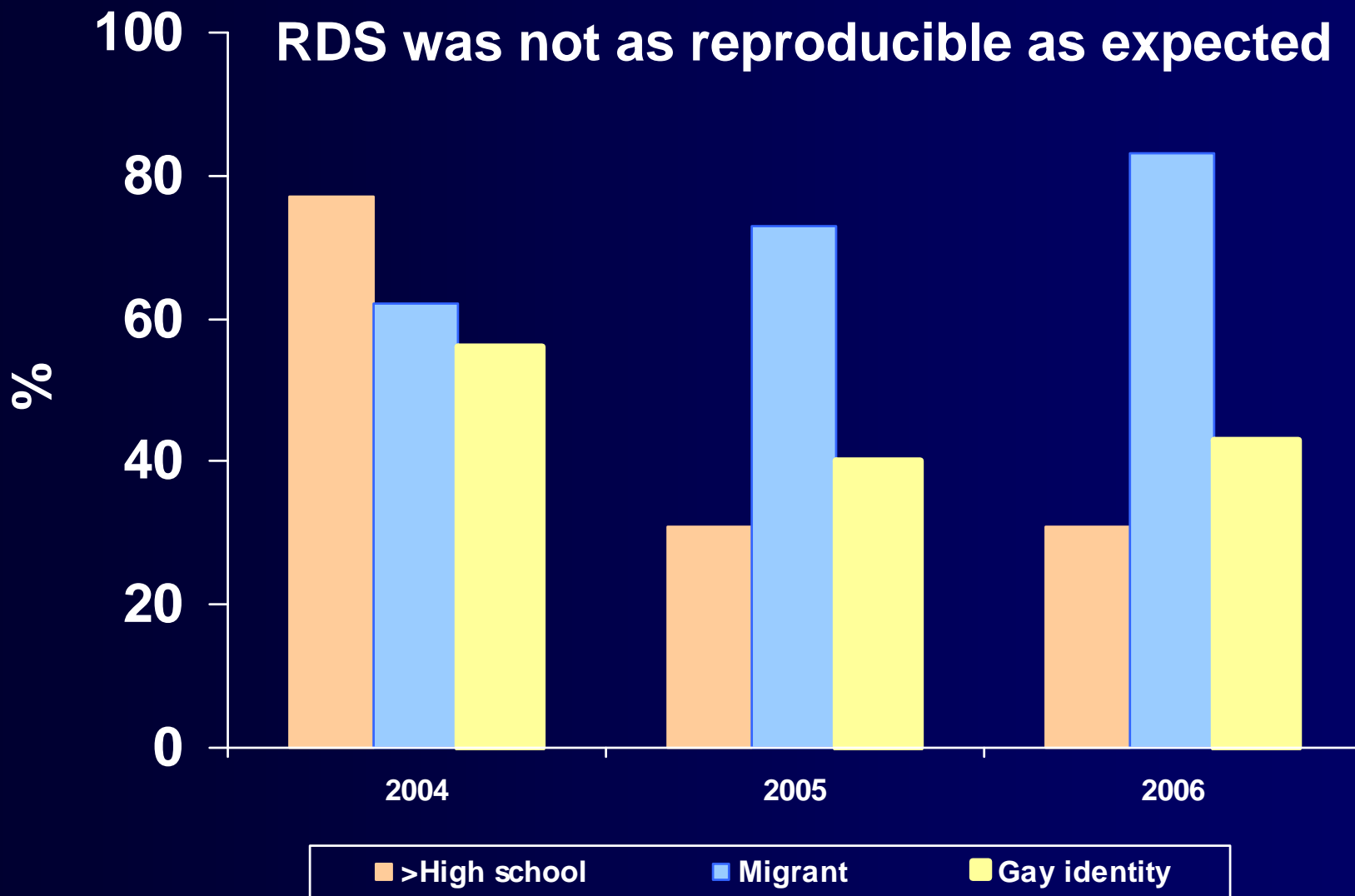
IDU: RDS Failures



Female sex workers: RDS Failures



Equilibrium levels in 3 RDS surveys, MSM, Beijing

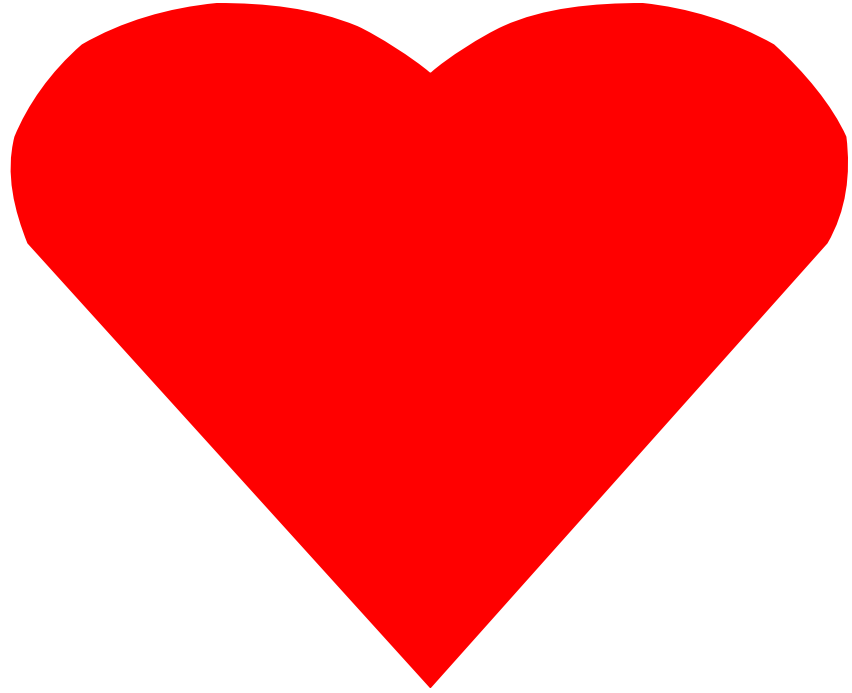


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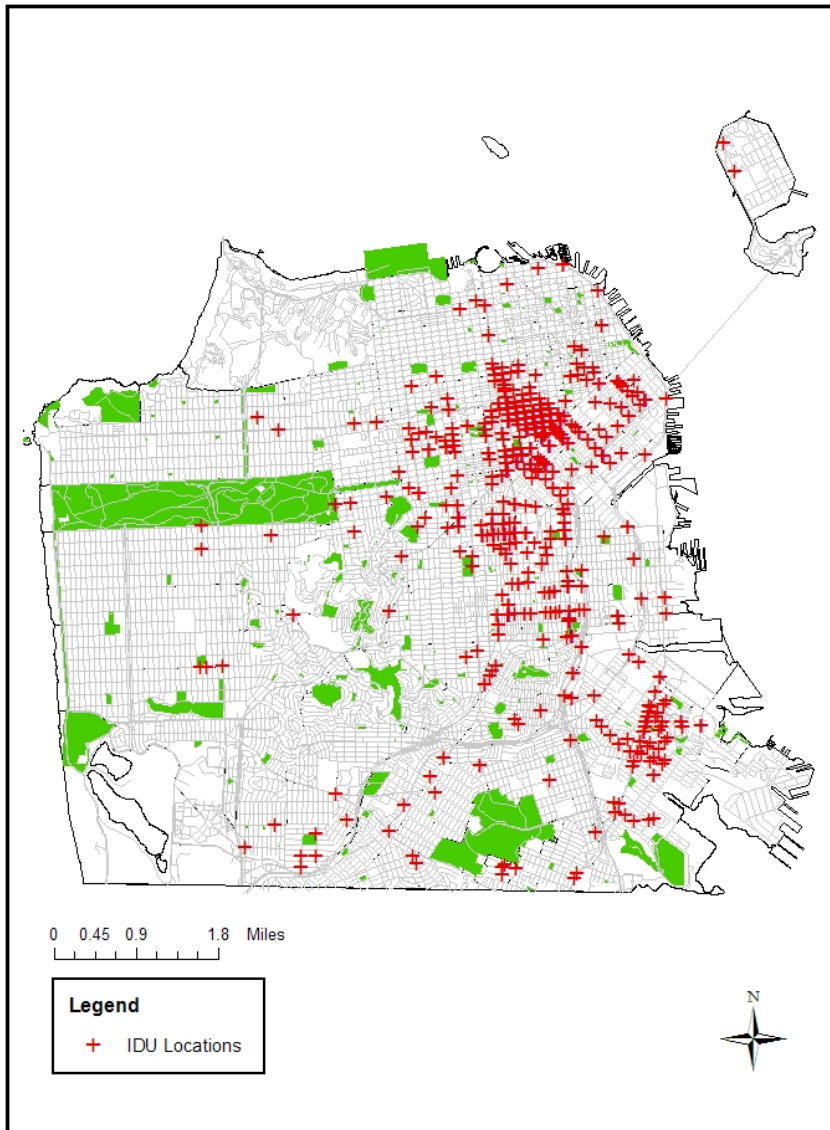
RDS

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TLS

Locations of IDU activity in San Francisco

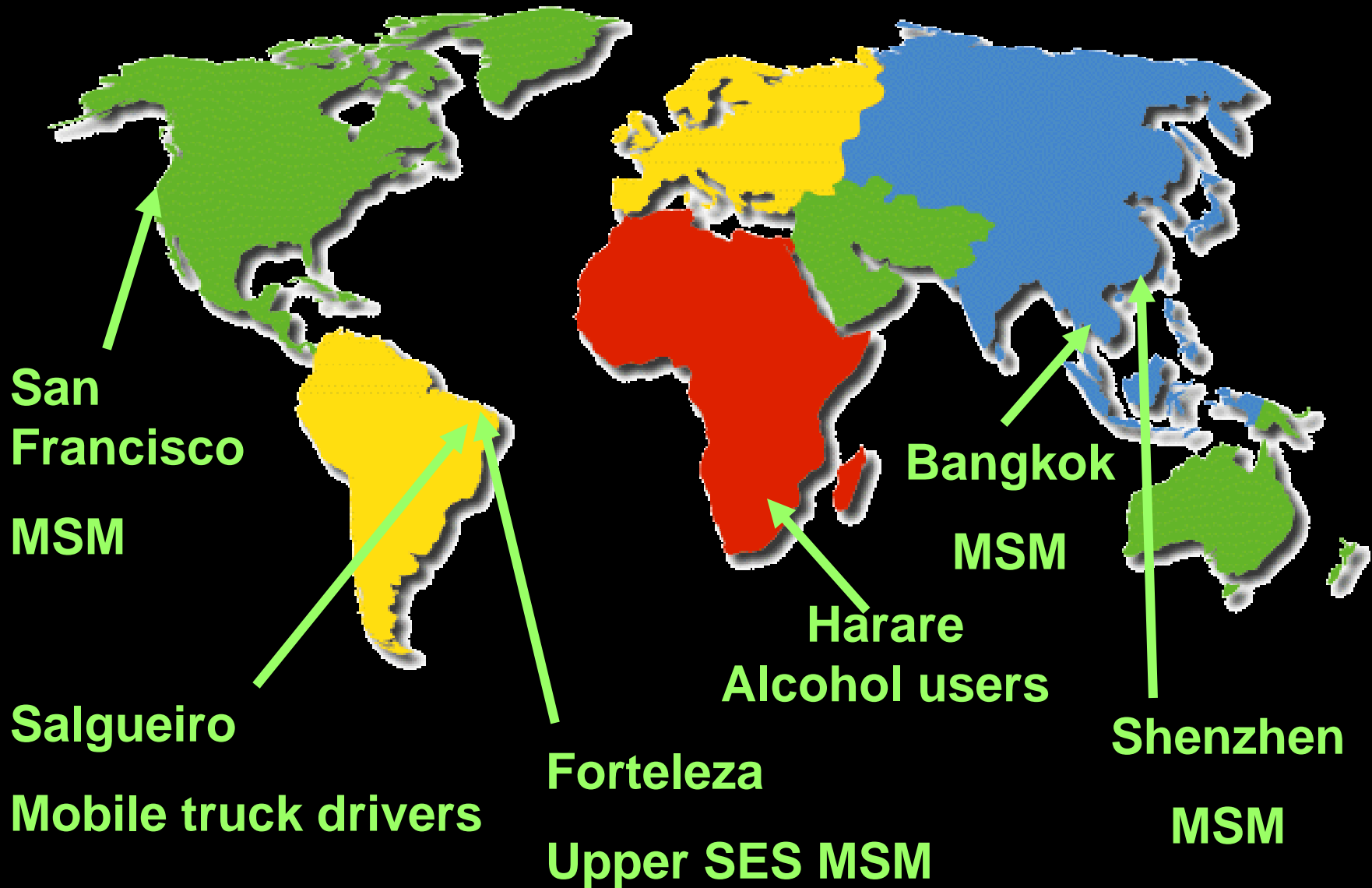


Targeted Sampling and TLS

Physical and
ethnographic
mapping

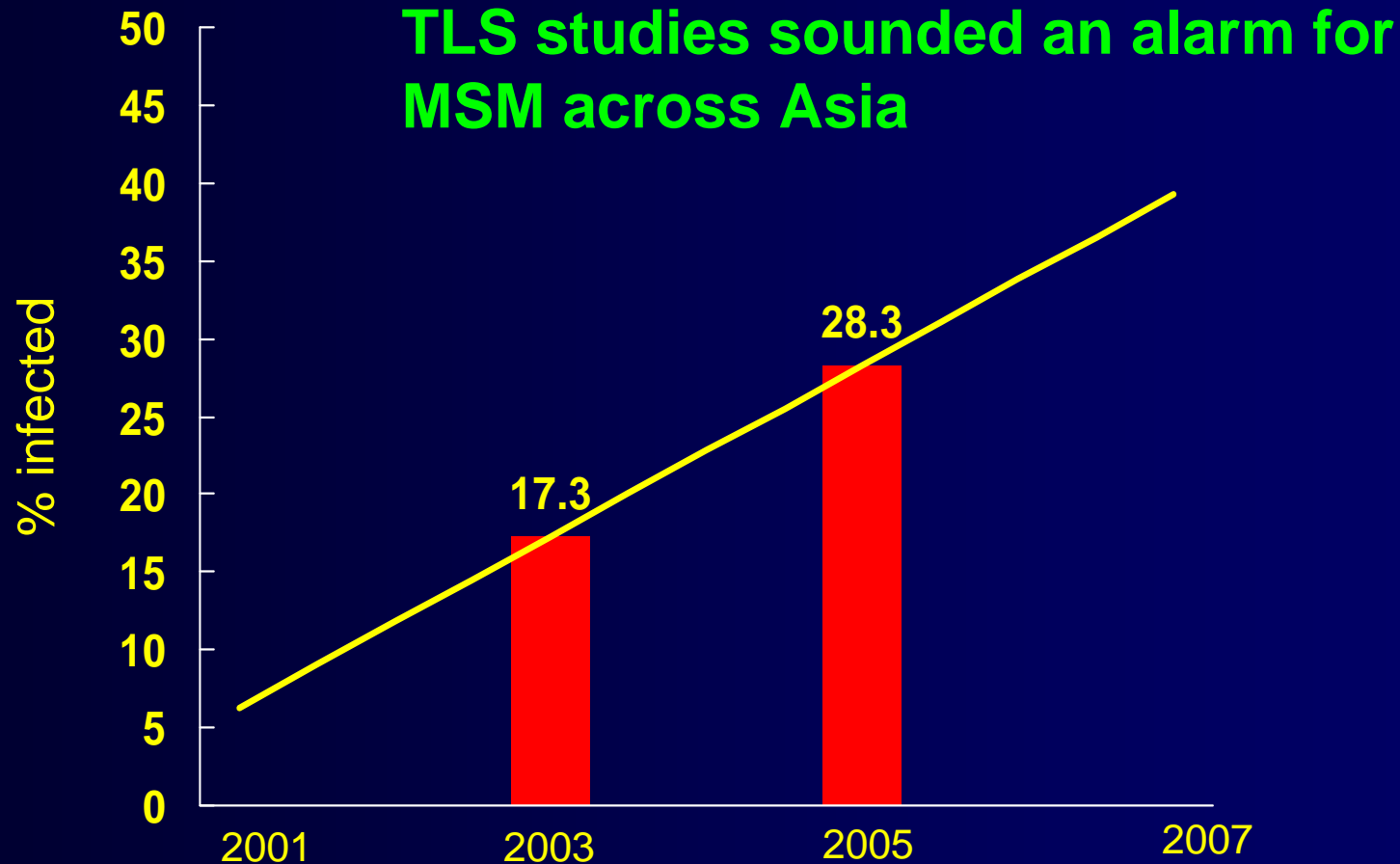
Targeted sampling -
recruit purposely to
reflect ethnography

Time-location
sampling (TLS) –
randomize venues,
days, and times to
recruit



TLS successes and lessons learned

HIV prevalence among MSM in Bangkok by TLS



Courtesy of Frits van Griensven (US CDC Thailand) and colleagues

Many TLS Issues

- **Dependent upon formative research**
- **Uncertain probabilities of inclusion**
- **Logistics, safety, time-consuming**
- **Ethical, exposure of safe venues**

Sampling Best Practices: TLS or RDS?

TLS

- “What you see is what you get”

Both require good
formative research

RDS

- “Faith-based”



MARP Population Size Estimation

- **No Census, no gold standard**
- **Definitions vary**
- **Methods vary**

Population Size Estimation Methods

- **Census method**
- **Population-based surveys**
- **Components**
- **Compartmental**
- **Truncated Poisson**
- **Nomination**
- **Network scale up**
- **Capture-recapture**
- **Multiplier method**
- **Delphi**
- **Consensus**
- **Conventional wisdom**
- **Borrow from neighbor**
- **Adjust from a neighbor**

MARP Measures Issues

- **Post ART scale-up world**
 - Increasing demand for data
 - New biological measures
 - New behavioral measures

Biological Measures

- **HIV and STI prevalence**
- **HIV incidence (e.g., BED)**
- **Post ART scale-up era:**
 - Previously unknown infection
 - CD4, unmet need for ART
 - ARV resistance

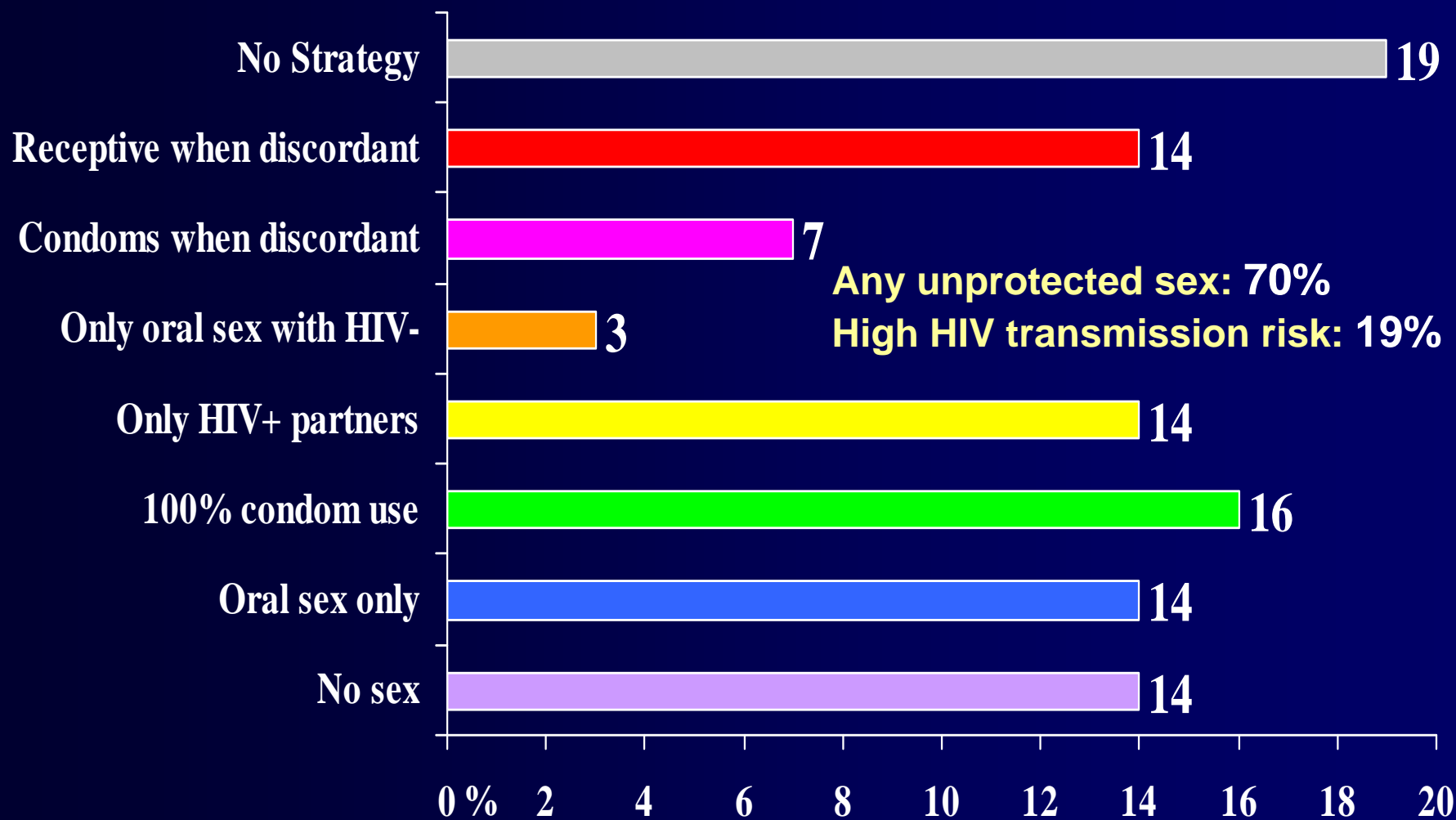
Behavioral Measures

- **Core, consistent indicators**
 - Basic transmission-related behaviors
 - Knowledge, attitudes, beliefs

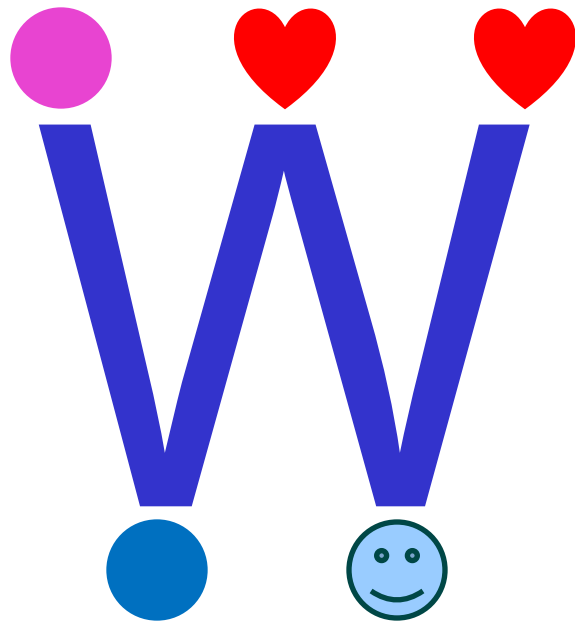


- **Post ART scale-up era**
 - Behavior affected by knowledge of serostatus, partners' serostatus, and ART use
- **New hypotheses**
 - Sexual networks rather than individual level behavior

Seroadaptation among known HIV-positive MSM, San Francisco, 2008



When there are 2+ partners, African American MSM are 3 x more likely to have concurrent partnerships than other MSM



Concurrent

African American MSM



Serial

Other MSM

Conclusions: best practices (or Purgatory?)

- **Methods:** Appropriate to the target population, resources
- **Triangulation:** Use multiple methods, measures, sources, and types of data
- **Measures:** Keep ahead of the curve

Keep ahead of the curve

