

Future Directions and Updates from the Division of HIV/AIDS Prevention: Surveillance, Epidemiology, and Laboratory Science

**Amy Lansky, PhD, MPH
Deputy Director**

**Surveillance, Epidemiology and Laboratory Science
Division of HIV/AIDS Prevention**

National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention
CDC

National HIV Prevention Conference, August 24, 2009



Two Areas of Focus for Today

- Monitoring the Epidemic
- Development of Biomedical Interventions

Spectrum of HIV Surveillance



HIV SURVEILLANCE

**Risk
Behavior**

**HIV
Infection**

**HIV
diagnosis**

**1st CD4
Count <200**

AIDS-OI

Death

DHAP Surveillance Systems

- Case Surveillance System

- Core
- Incidence
- Variant, Atypical, Resistant HIV (VARHS)



- Medical Monitoring Project (MMP)



- National HIV Behavioral Surveillance System (NHBS)



Spectrum of HIV Surveillance

HIV SURVEILLANCE

Risk
Behavior

HIV
Infection

HIV
diagnosis

NHBS

Incidence

1st CD4
Count <200

AIDS-OI

VARHS

Death

|----Core Surveillance, MMP-----|

Future Directions: Calculating HIV rates among MSM

To be able to calculate disease rates for MSM, we need to know the population size (what proportion of US men are MSM?)

Methods:

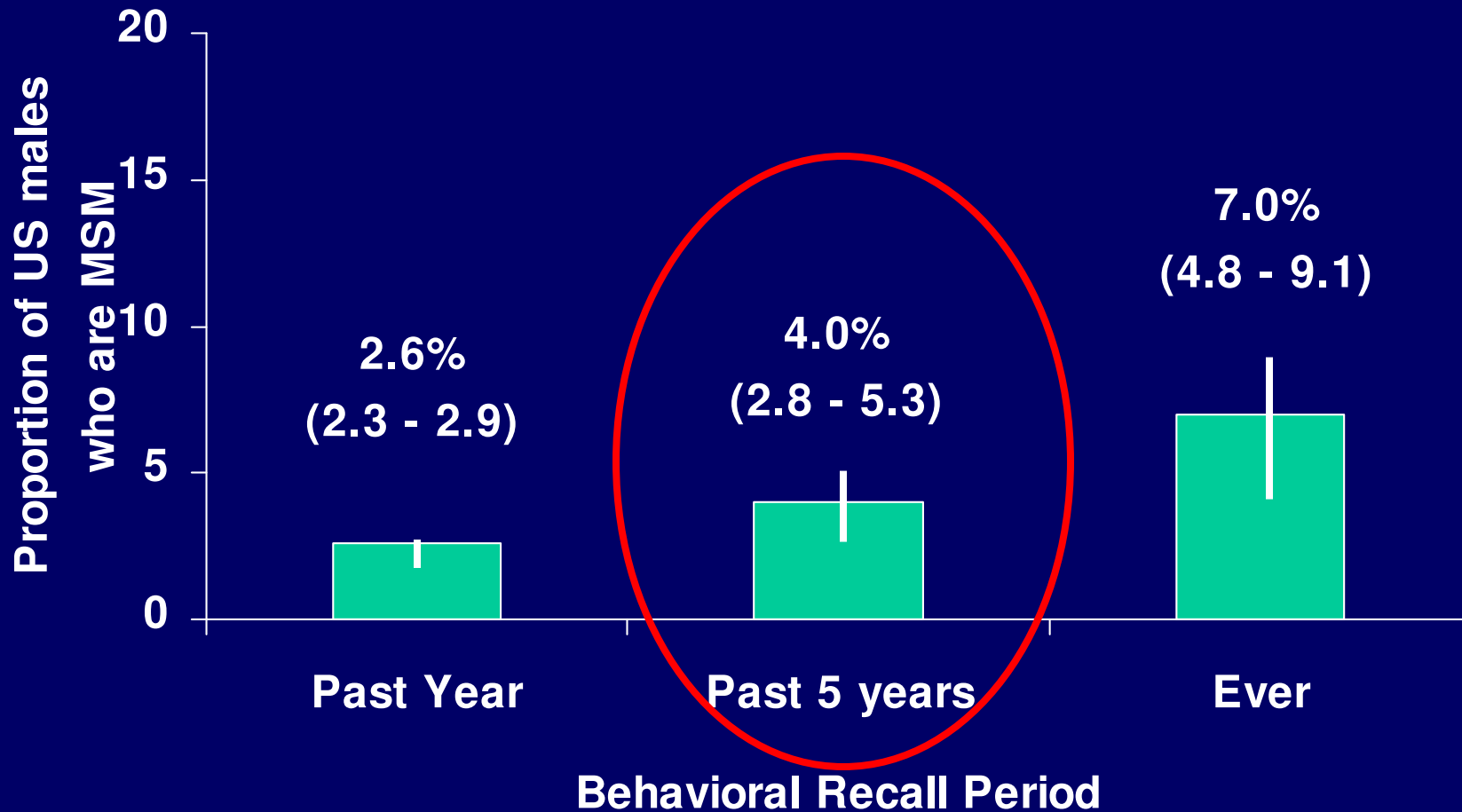
Calculating HIV rates among MSM

- Step 1: Literature review and meta-analysis to estimate the proportion of males who are MSM
- Step 2: Use HIV surveillance data and the estimated MSM proportion to calculate the rate of disease among MSM

Studies in the MSM meta-analysis

- **National Survey of Family Growth**
- **National Household Survey of Drug Abuse**
- **National Health and Social Life Survey**
- **National STD Behavioral Measurement Survey**
- **National Health and Nutrition Examination Survey (NHANES)**
- **Project HOPE International Survey of AIDS-Risk Behaviors**
- **General Social Survey**

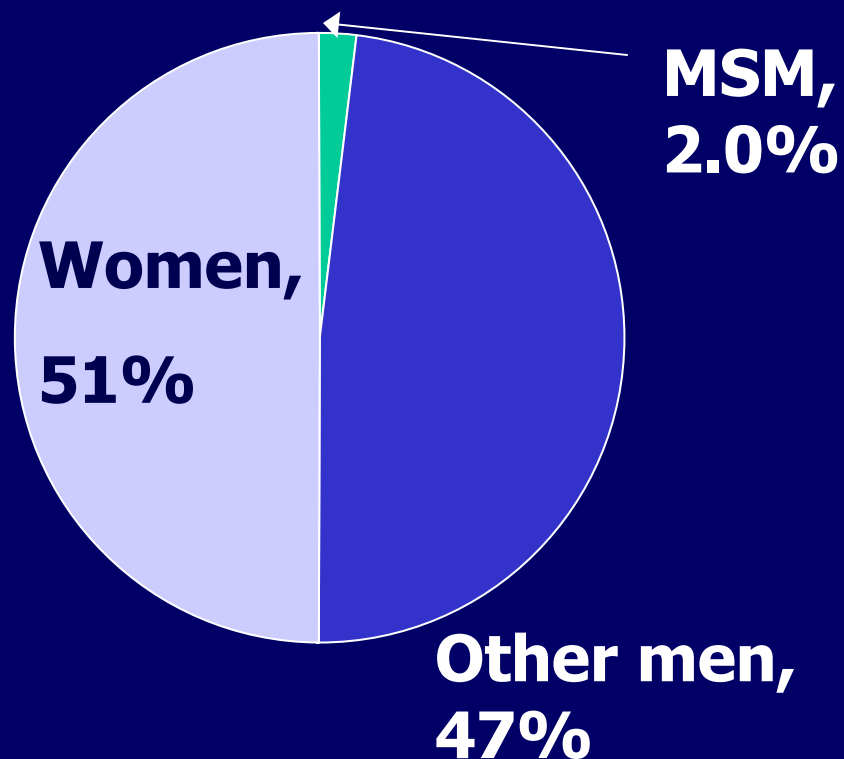
Preliminary meta-analysis results: Estimate of the proportion of males who are MSM, by behavioral time period



Preliminary Data

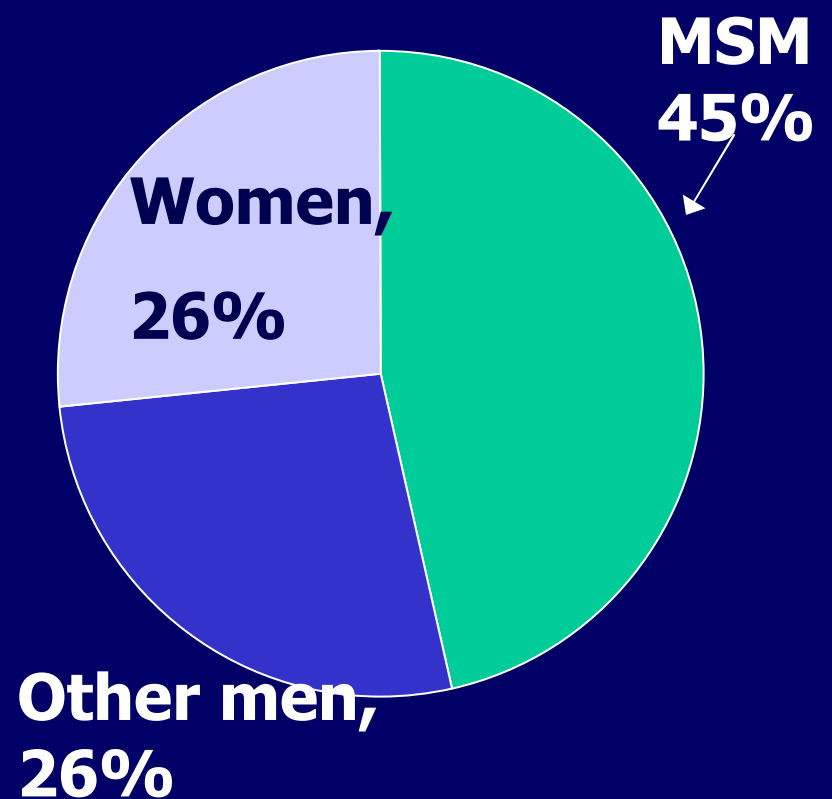
Percentages of AIDS cases and population, by gender/MSM status

US Population



Preliminary Data

AIDS Cases



Rate of HIV diagnoses per 100,000 MSM in 34 areas, 2007

MSM Prevalence

HIV Diagnosis Rate

4.0%

692.2

2.8% (lower bound CI)

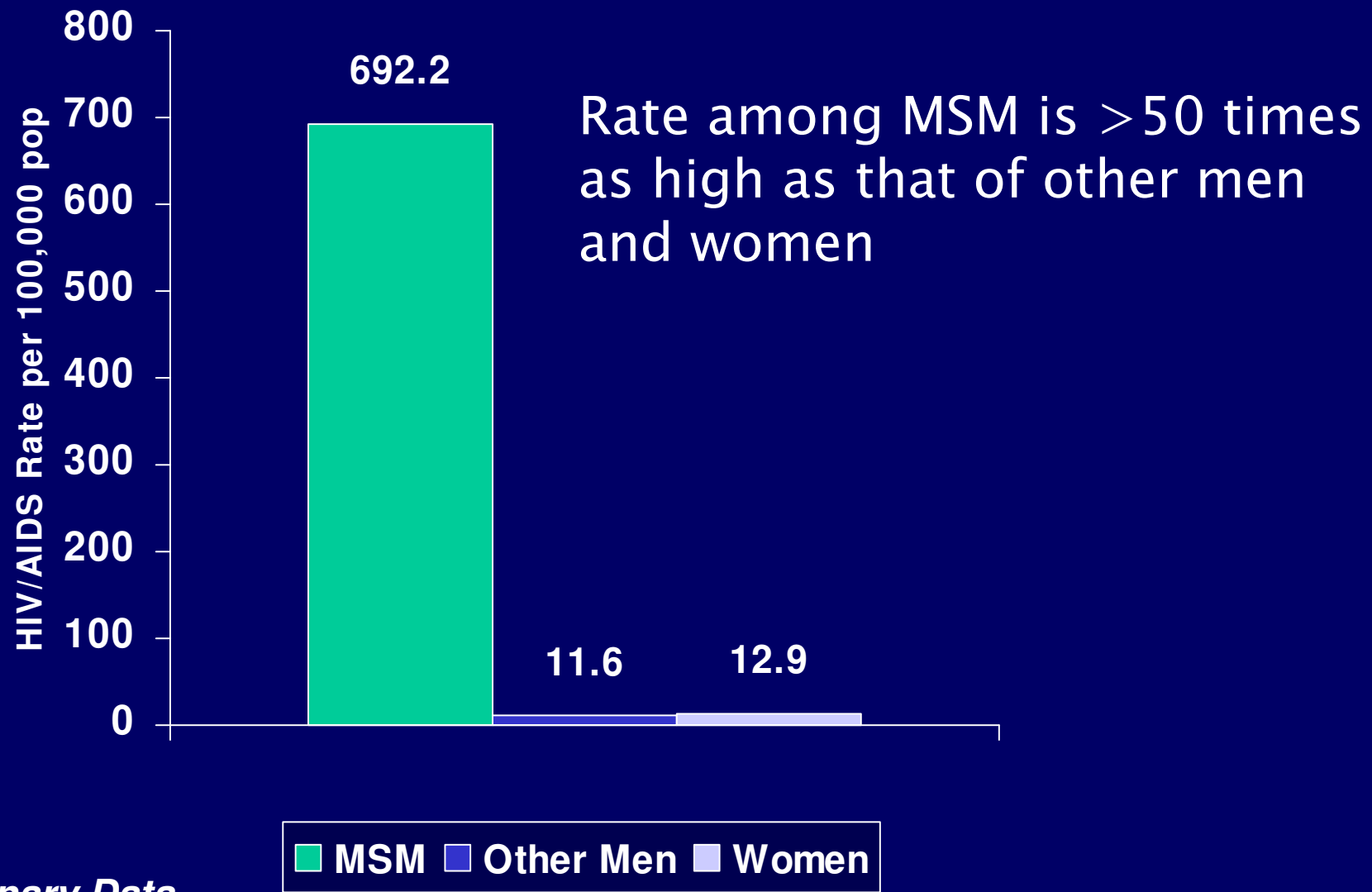
988.8

5.3% (upper bound CI)

522.4

Preliminary Data

HIV diagnosis rates among MSM, other men, and women--34 states, 2007



Preliminary Data

Next Steps

- These estimates are preliminary!
- More complete analysis
 - Refine meta-analysis estimates
 - Re-calculate rates; also do by race and age
 - May conduct separate analysis for young MSM
- Identify population estimates for IDU and HET

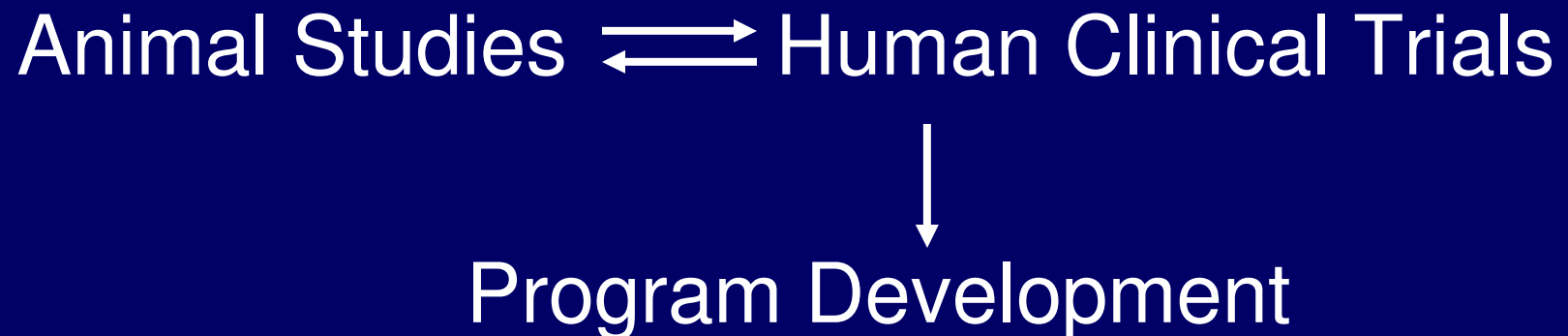
Two Areas of Focus for Today

- Monitoring the Epidemic
- Developing Biomedical Interventions

Biomedical Interventions

- **Demonstrated efficacy**
 - **Barrier methods (condoms)**
 - **Male circumcision**
 - **Prevention of Mother-Child Transmission**
 - **Post-Exposure Prophylaxis**
- **In development**
 - **Pre-Exposure Prophylaxis**
 - **Microbicides**
 - **Treatment as prevention**
 - **Vaccines**

Research to Program for Biomedical Interventions: The Example of PrEP



Oral PrEP: Animal Studies to Human Trials

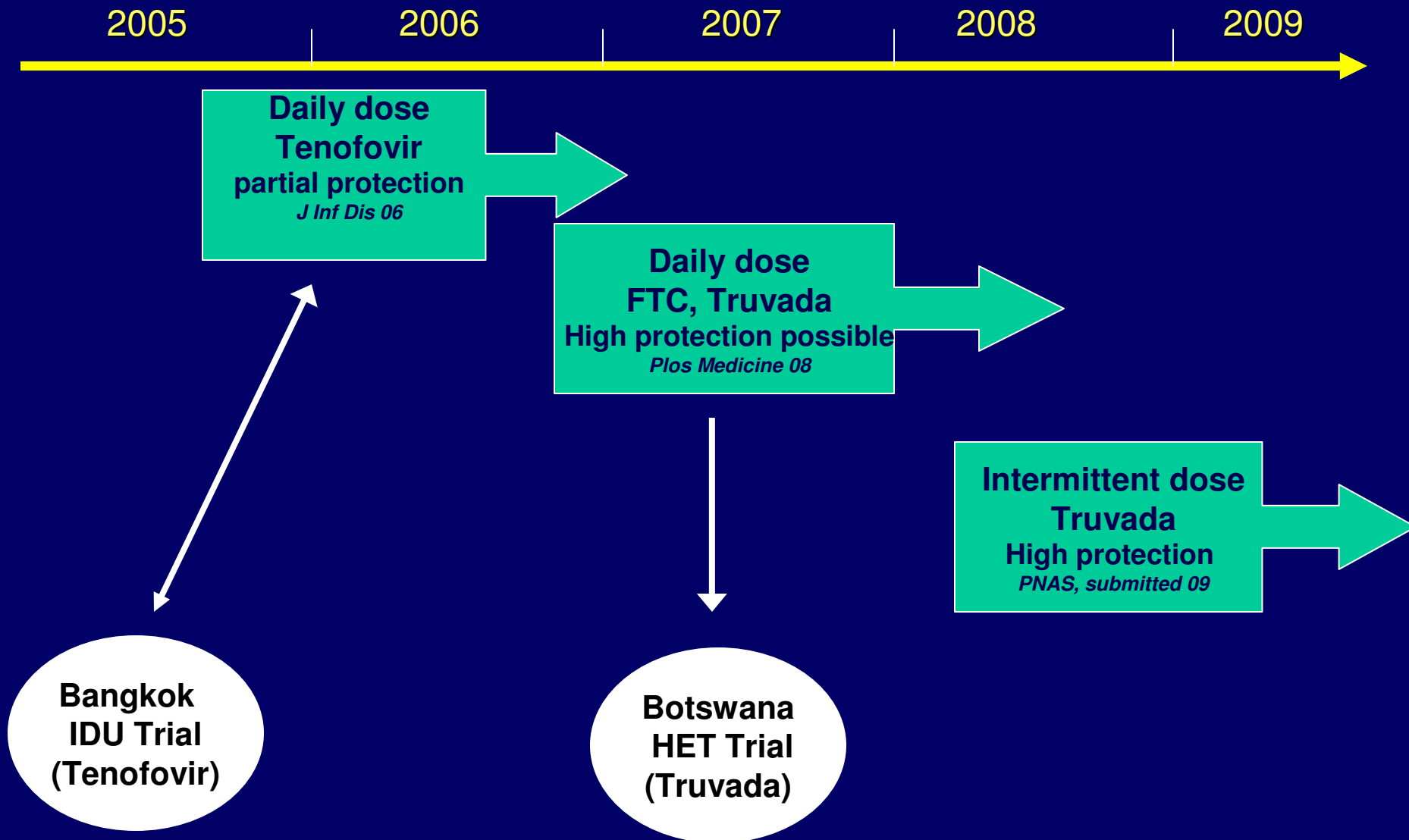
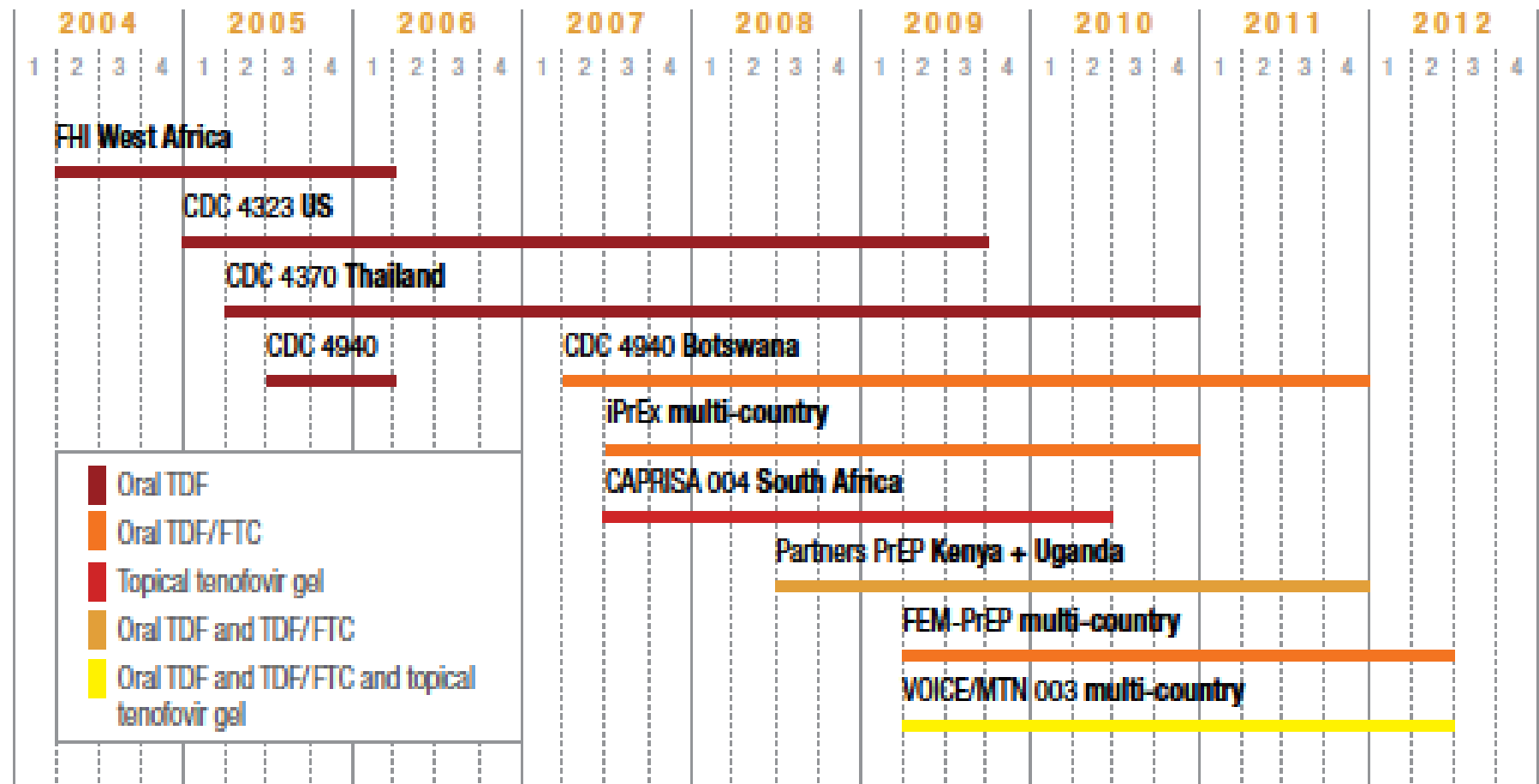


Figure 4 Timeline for Ongoing and Planned PrEP Trials* (May 2009)



* The trial end-dates listed in this table are estimates. Due to the nature of clinical trials the actual dates may change. AVAC will continue to monitor trial progress and will update the timeline accordingly. To view or download an updated timeline visit www.prepwatch.org.

PrEP: Clinical Trials to Program Development

- Based on efficacy demonstrated in the trials:
 - Guidelines for proper use of PrEP
 - Role of PrEP in portfolio of publicly-funded HIV prevention programs

Future Directions: Surveillance, Epidemiology, Laboratory Science

- New systems, new data for monitoring the epidemic
- Potential for biomedical interventions that expand our portfolio of prevention tools