



SOCIETY OF
ACTUARIES®

2019 **ANNUAL
MEETING**
& EXHIBIT

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Session 040: Viruses: An Actuarial Perspective on Public Health Risks

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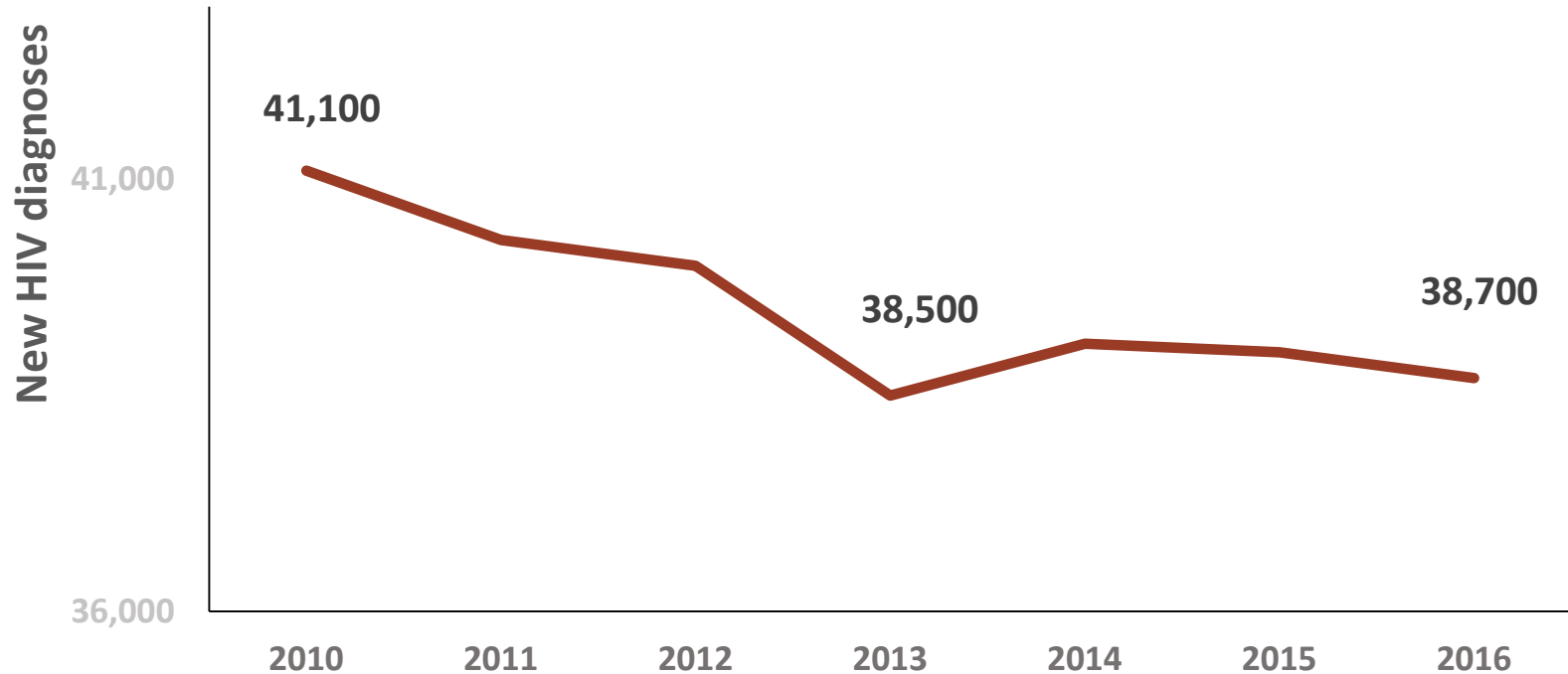
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HIV in the United States

- **People with HIV now live longer and healthier**
 - Antiretroviral therapy has improved immensely
 - Effective treatment prevents HIV transmission
- **Currently about 1.1 million people have HIV in the United States**
 - Of those, 1 in 7 do not know they have HIV
 - 60% received care
 - 50% had their HIV under control (i.e., virally suppressed)



Progress in reducing HIV incidence has stalled



Ending the HIV Epidemic: A Plan for the United States

Ending
the
HIV
Epidemic

75%
reduction
in new HIV
infections
in 5 years
and at least
90%
reduction
in 10 years.



www.hiv.gov

Ending the HIV Epidemic: A Plan for the United States



Diagnose HIV as early as possible



Treat HIV quickly and effectively



Protect people at risk



Respond quickly to clusters of new cases

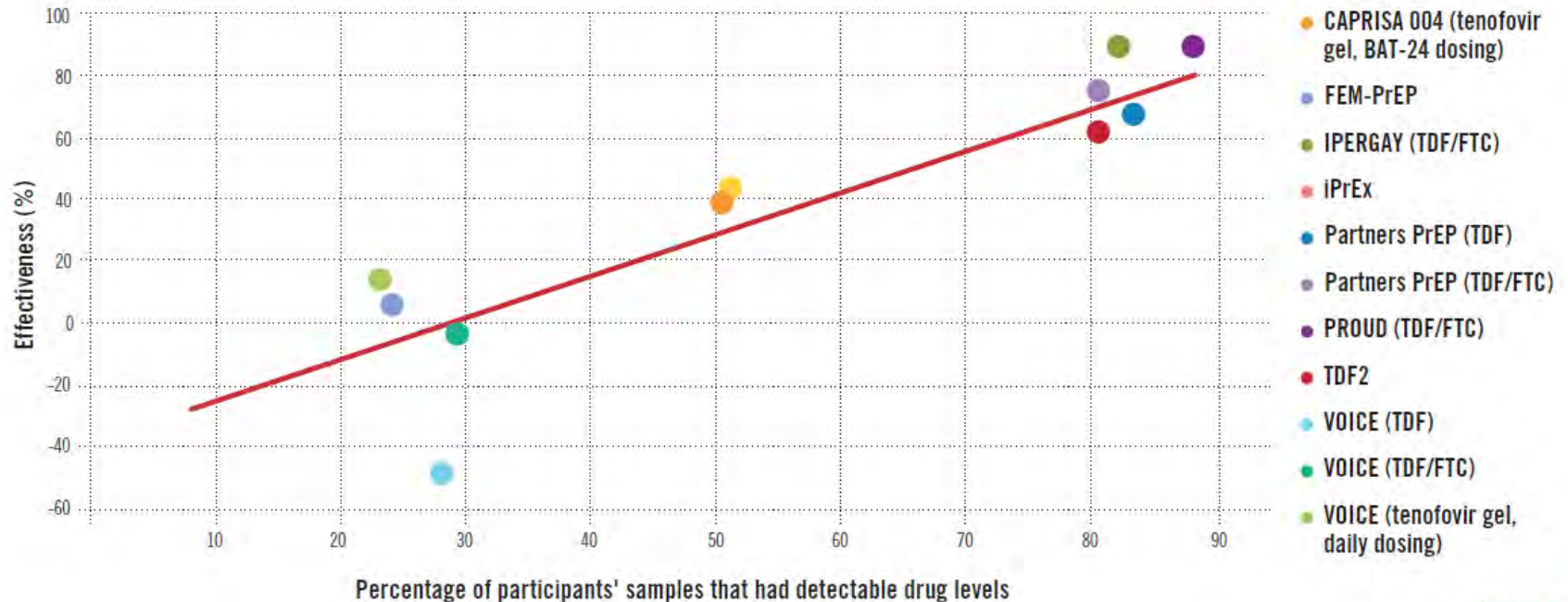
Pre-exposure prophylaxis (PrEP) is a key intervention



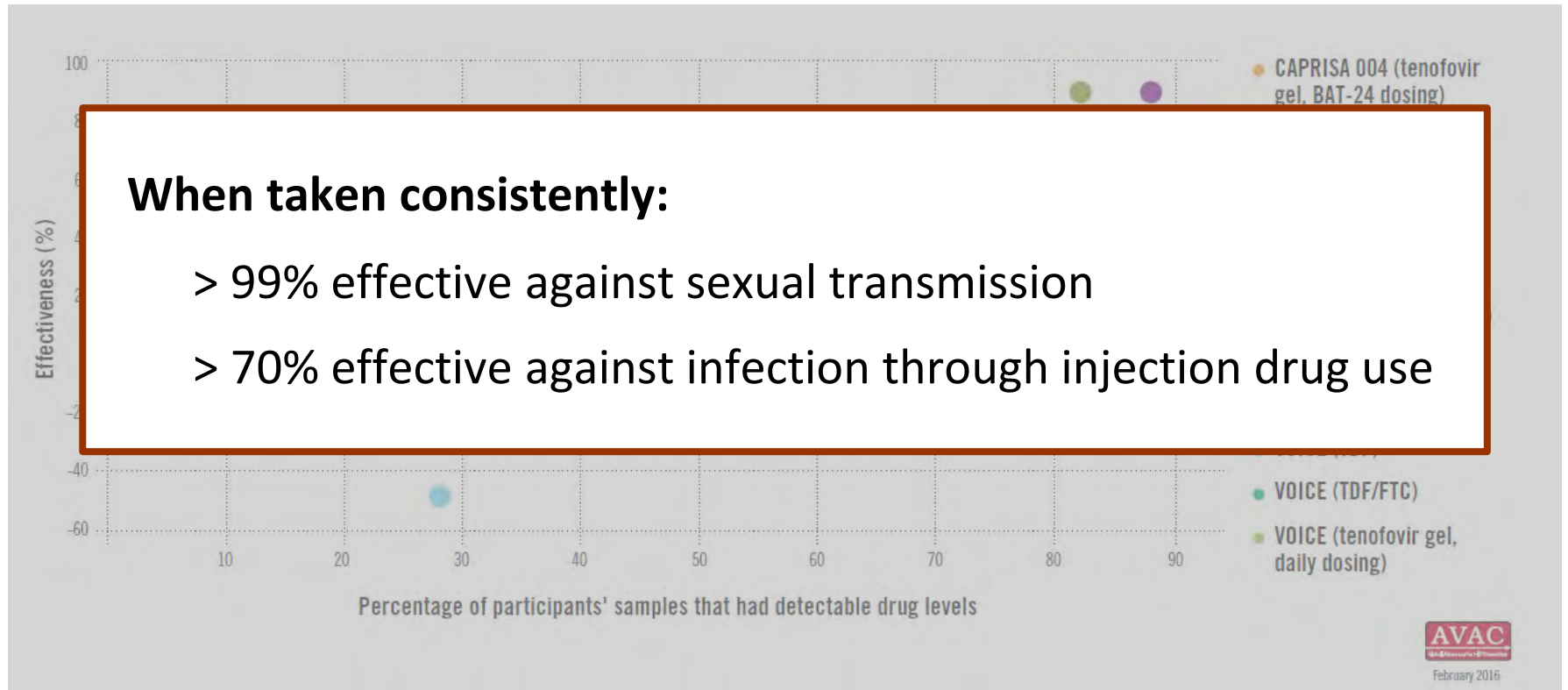
What is PrEP?

- **A pill with fixed dose combination of 2 antiretroviral medicines to prevent acquisition of HIV infection**
- **Currently 2 drugs have been approved by FDA to be used for PrEP**
 - Truvada (F/TDF; approved 2012)
 - Descovy (F/TAF; approved 2019)
- **Daily use has been shown to be safe and effective**
 - On-demand use (2-1-1 dosing) is an alternative option for only men who have sex with men

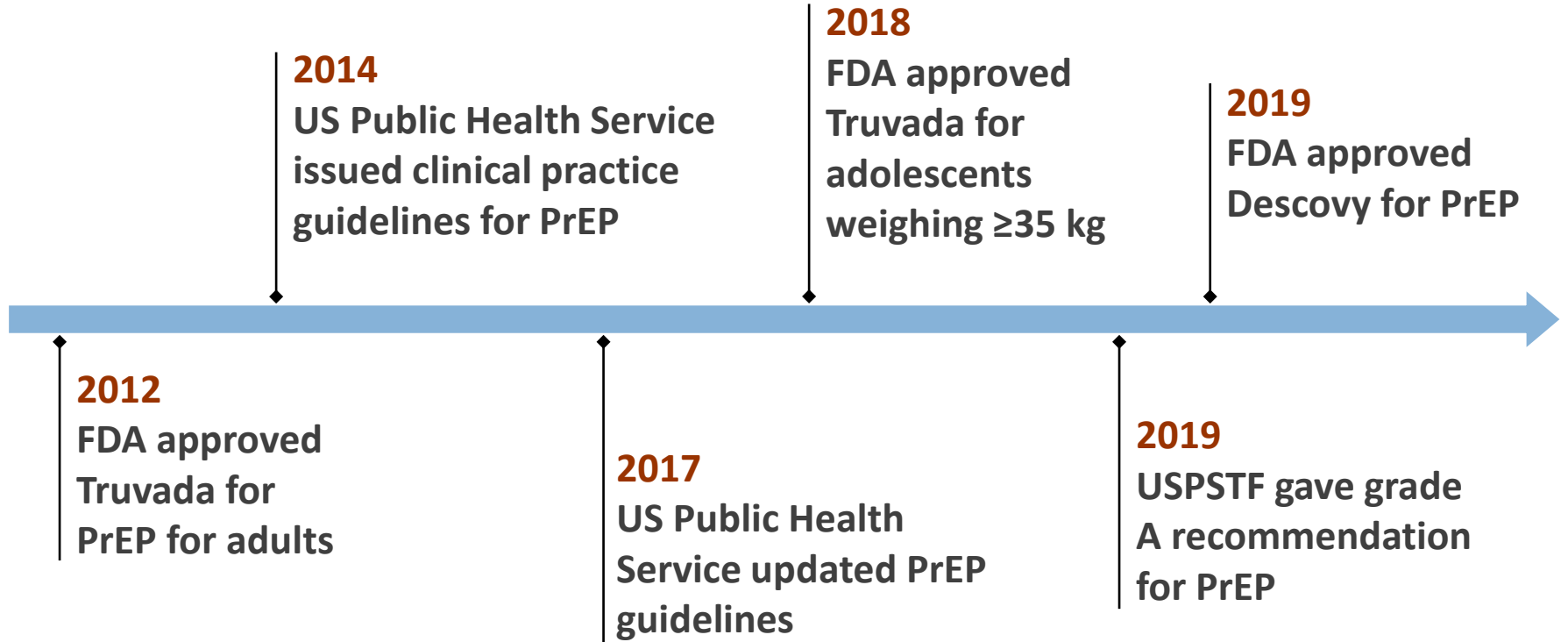
PrEP: effectiveness by adherence



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PrEP timeline



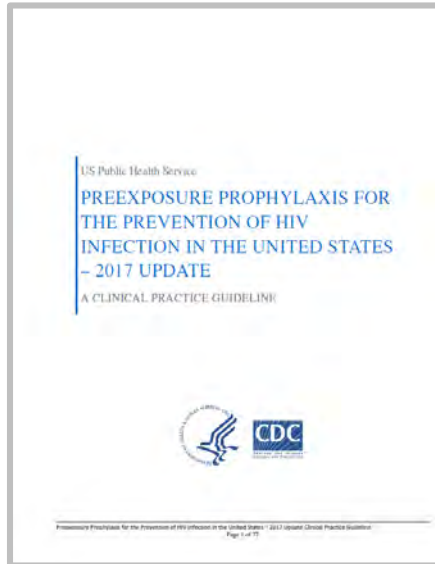
Who could benefit from PrEP?

- **CDC has recommended PrEP for**
 - Men who have sex with men (MSM)
 - Heterosexual men and women
 - Injection drug users

who report behaviors that increase HIV risk, or had a bacterial STI in past 6 months

- **Approximately 1.1 million persons in the United States have indications for PrEP**

Providing PrEP: clinical follow-up and monitoring

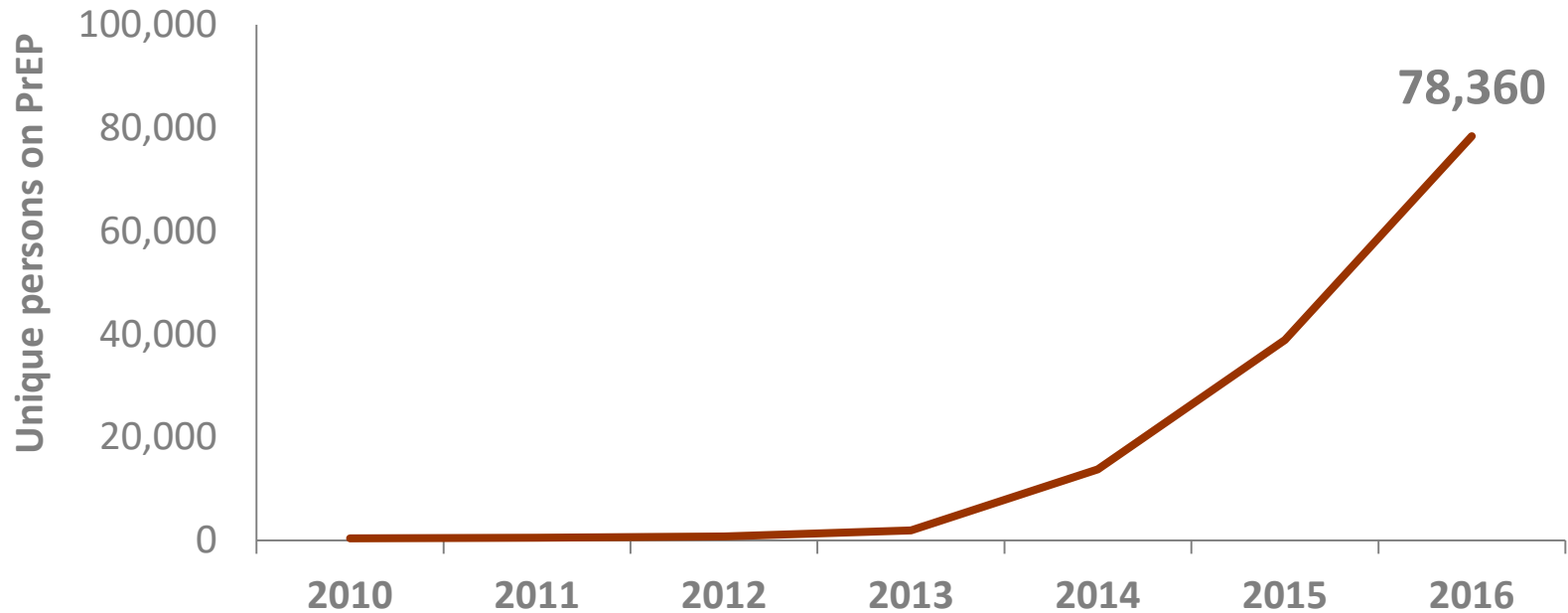


- **All patients receiving PrEP should be seen:**
 - Every 3 months for
 - HIV test, medication adherence counseling, behavioral risk reduction support, side effect assessment, STI symptom assessment
 - At 3 months and every 6 months thereafter for
 - Renal function assessment
 - Every 3-6 months for
 - Multi-anatomic site bacterial STI testing (chlamydia, gonorrhea) and syphilis testing

Monitoring nationwide PrEP use

- No specific diagnosis or procedure codes available for PrEP
- The antiretroviral drug is also used for HIV treatment, hepatitis B treatment, and post-exposure prophylaxis (PEP)
- CDC has developed an algorithm to identify PrEP user using health services data by excluding other uses

Number of individuals on PrEP has increased

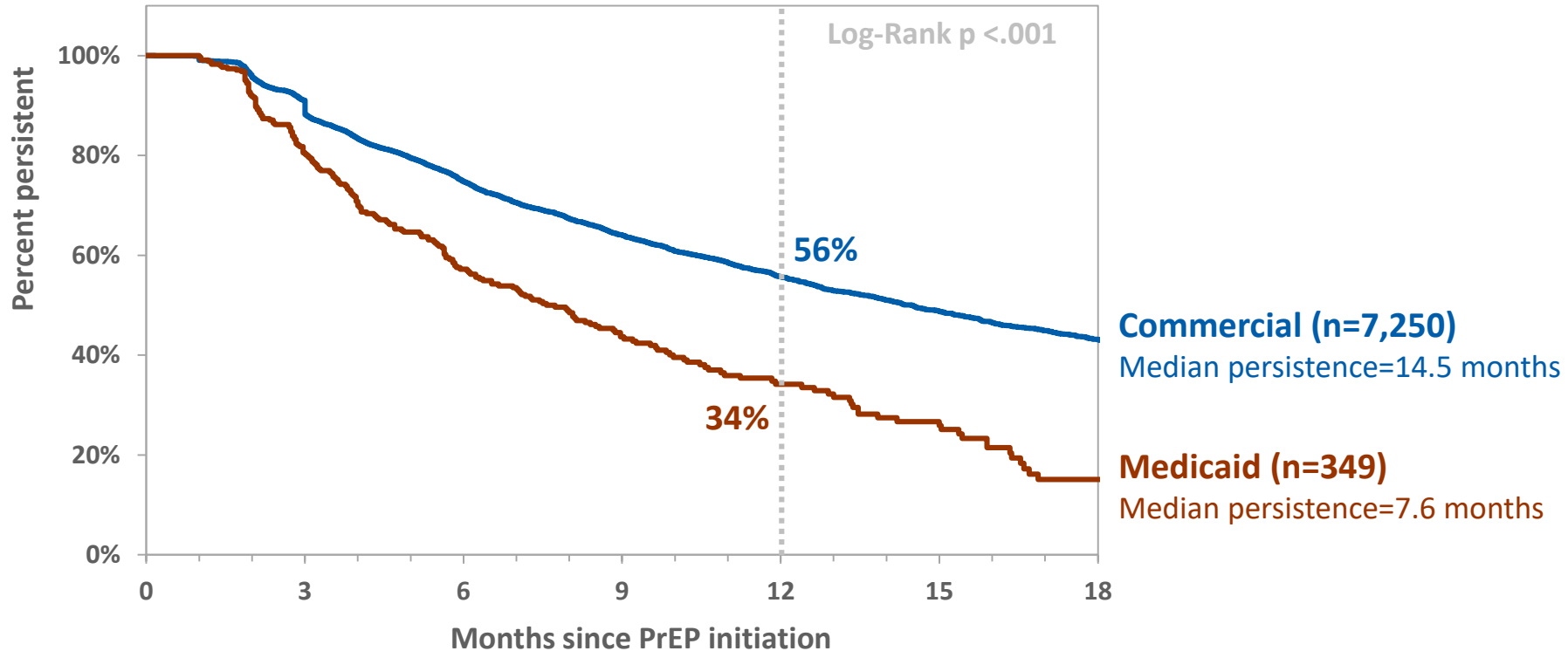


PrEP uptake among people at risk for HIV remains low



- **<10% of persons with indications for PrEP were prescribed PrEP**
- **The gap varied geographically and was greater among women and racial/ethnic minorities**

Medicaid insured PrEP users persisted for less time than commercially insured PrEP users



Barriers to PrEP

- **Multiple level barriers to PrEP delivery and access**
 - Patient-level
 - Provider-level
 - System-level
- **Cost and cost uncertainty**

Cost of PrEP

- **Antiretroviral medication**

- \$20,000 annually

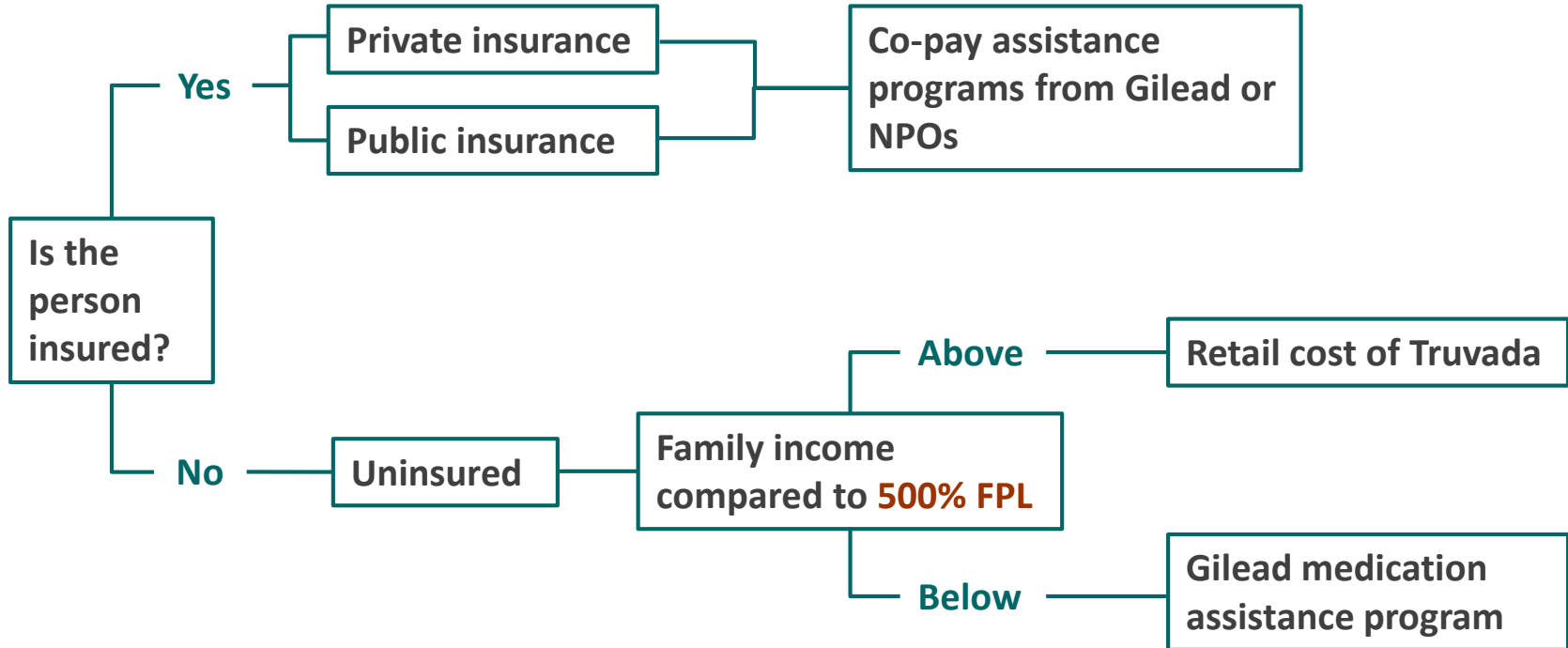
- **Laboratory services**

- HIV testing, hepatitis B testing, STI testing, creatinine testing for renal function
- \$300-\$500 annually

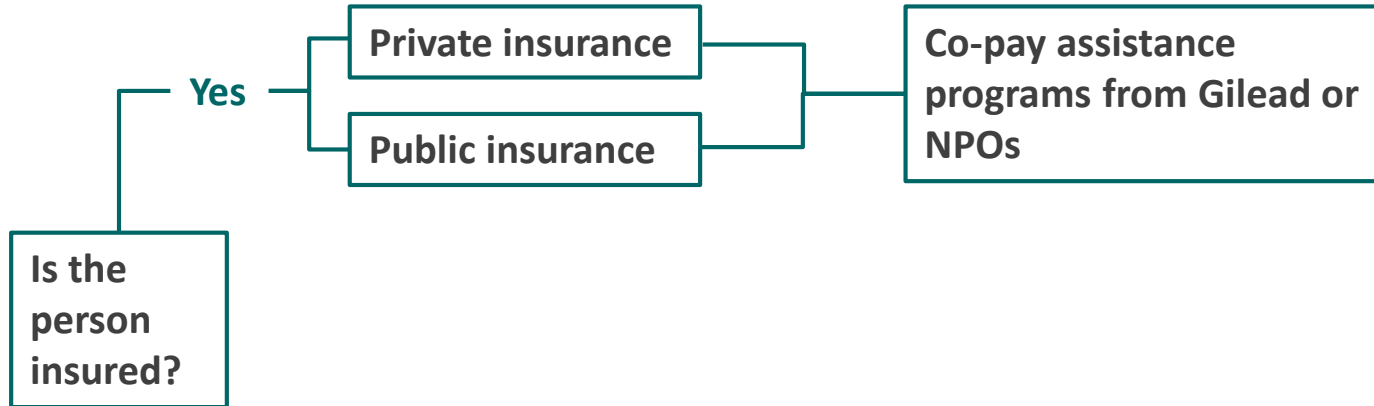
- **Office visits**

- Initial assessment and follow-ups
- \$300-\$400 annually

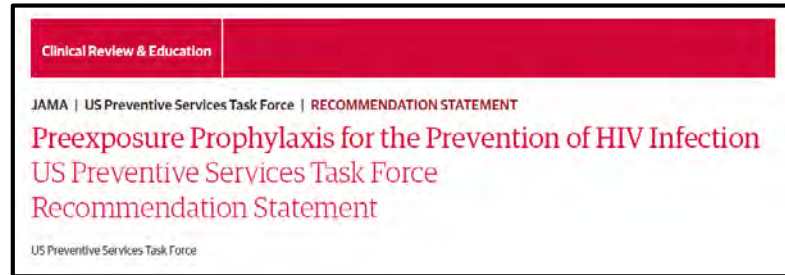
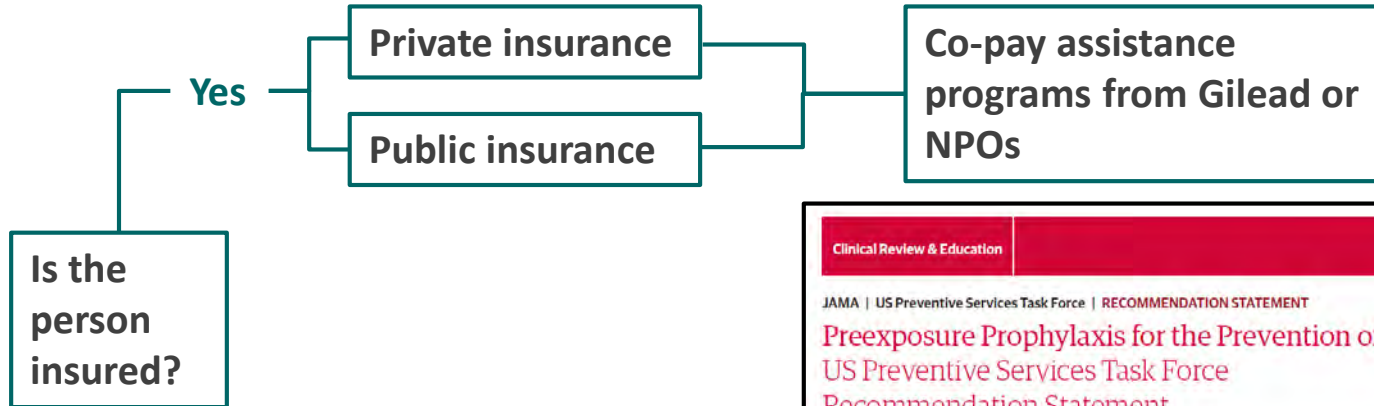
Insurance coverage and assistance programs for PrEP



Insurance coverage and assistance programs for PrEP

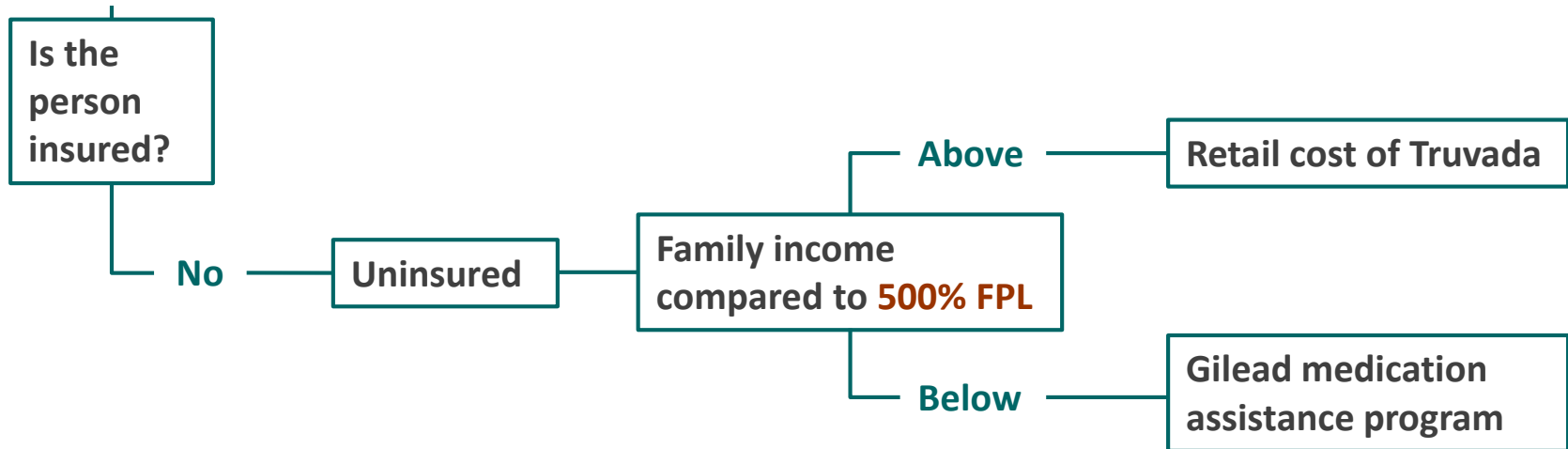


Insurance coverage and assistance programs for PrEP



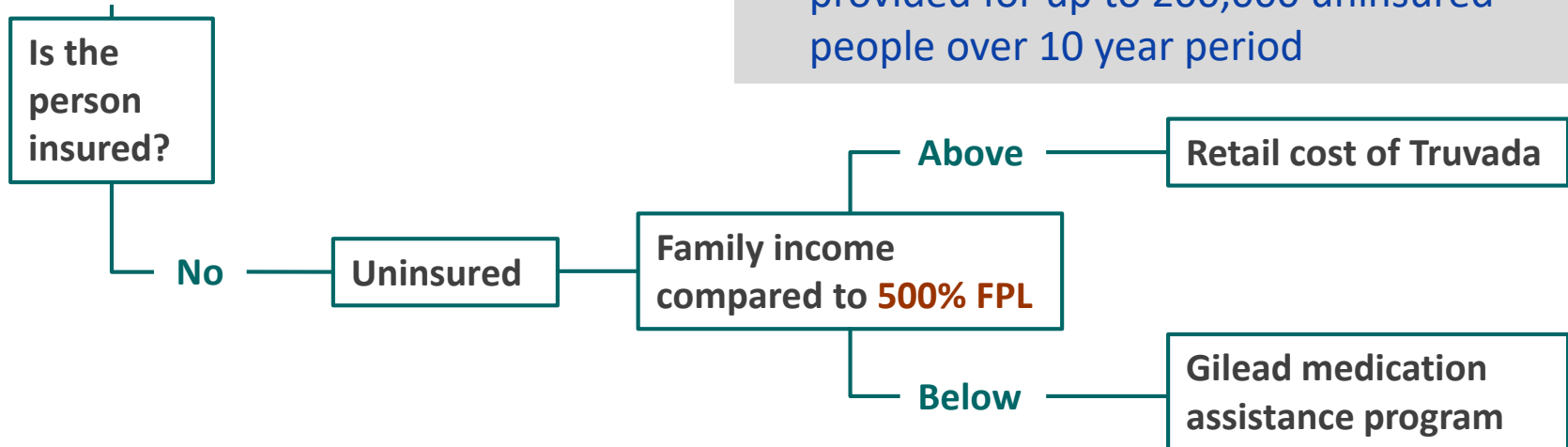
- Most health plans are required to cover grade A services with no copay

Insurance coverage and assistance programs for PrEP



Insurance coverage and assistance programs for PrEP

- Generic Truvada will be available Sep 2020
- Free Truvada or Descovy pills will be provided for up to 200,000 uninsured people over 10 year period



Actuaries' perspective

- **Scenario—suppose you have a plan**
 - that averages \$400 PMPM for medical and pharmacy with typical OOP maxes
 - Has 3% of the population at risk and gets a 25% increase in uptake
 - Pays 90% of the 1800 WAC and has medical costs of \$550 for supervision
- **Costs and offsets for providing PrEP?**

PrEP actuarial toolkit

- **A tool kit to help quantify PrEP delivery for budget and pricing**
- **Toolkit components**
 - Description of the program and interventions
 - Estimating population prevalence
 - Characteristics of the population and delivery system for uptake
 - Estimates of adherence
 - Targeted drug pricing, pipelines
 - Measure the potential for medical management contracts/contracting opportunities
 - Identify and quantify offsets

Conclusions

- PrEP is highly effective in preventing HIV acquisition, however, not enough persons at risk for HIV infection were prescribed it
- PrEP actuarial tool might help optimize PrEP delivery and access

Disclaimer

The findings and conclusions in this presentation are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

Thank you

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

