Implications of understanding the impact of Alcohol use on HIV outcomes

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Presentation highlights by Dr. Woolf-King:

- "In order to establish causality of alcohol and impact on adherence to ART there is an important need to identify mechanistic pathways to inform intervention development."
- *Dr. Woolf-King proposes the following*:
  - Evaluation of theory-informed hypotheses about causal mechanisms (intentional vs. unintentional ART adherence discussions)
    - Unintentional the majority (75%) - e.g. forgetting
    - Understanding the beliefs a patient has about their ART are critical- measuring their beliefs at / around alcohol intoxication event
    - Consideration of Prospective Memory- e.g ability to remember in time

Suggestions of research from this presentation :

- Test hypotheses via experimental studies
- Paired with intensive longitudinal data collected outside the lab:
  - How are cognitive mechanisms of unintentional non-adherence (e.g., PM) affected by acute intoxication among PLWH?
  - What person- and situation-level variables moderate these effects?
  - Use existing tasks that target cognitive processes relevant to unintentional nonadherence & examine under conditions of acute alcohol intoxication

What are the individual drivers of alcohol on ART adherence, what level of intoxication, what time period surrounding alcohol use/level of use ?

IMPORTANCE OF THIS RESEARCH…

HIV & ETOH: A Lethal Combination

- Prevalence rates of AUDs ≈2-4x greater in PLH (10%)(compared to HIV- ≈ 4.65%)
- ETOH increases HIV-risk taking behaviors (sexual and IDU)
- ETOH results in poor adherence to ART and increased VL and decreased CD4
- ETOH accelerates liver disease in HIV+ (direct, ART toxicity, HCV etc.)

1. Azar, Springer et al. DAD 2010.
2. Hendershot et al, JAIDS 2009
3. Grant, B.F., et al, Drug Alcohol Depend, 2004
4. Samet et al, 2007
5. Palepu & Tyndall 2003

Review

A systematic review of the impact of alcohol use disorders on HIV treatment outcomes, adherence to antiretroviral therapy and health care utilization☆

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1. AUDS ↓ ART adherence;
2. AUDS ↓health care utilization but increased episodic ED use.
3. AUDS ↓immunologic and virologic outcomes in PLH

- Other outcomes are negatively impacted as well: e.g. neurocognitive and should be considered in outcome analysis.

** Interventions that markedly decrease alcohol consumption are likely to have the greatest impact on HIV treatment outcomes.

Drug & Alcohol Dependence 112 (2010) 179-193.

What should we measure to have most impact Among PLH who Use Alcohol ?

- Adherence to ART ?;
- Persistence on ART ?;
- Viral Suppression ?
  - Newer ART regimens include integrase inhibitors and have a high genetic barrier to resistance even in setting of poor adherence [1, 2, 3]
  - *Thus, should our primary aim be ways to understand the impact of alcohol on adherence to ART and/or how we can achieve and maintain Viral suppression?*[1-3]
  - Incorporating biological with behavioral assessments

1. Bangsberg ,Clinical Infectious Diseases, 2006.
2. Parienti JJ et al., Clinical Infectious Diseases, 2009.
3. Tam LW et al., J. Acquired Immune Defic Syndr, 2008.

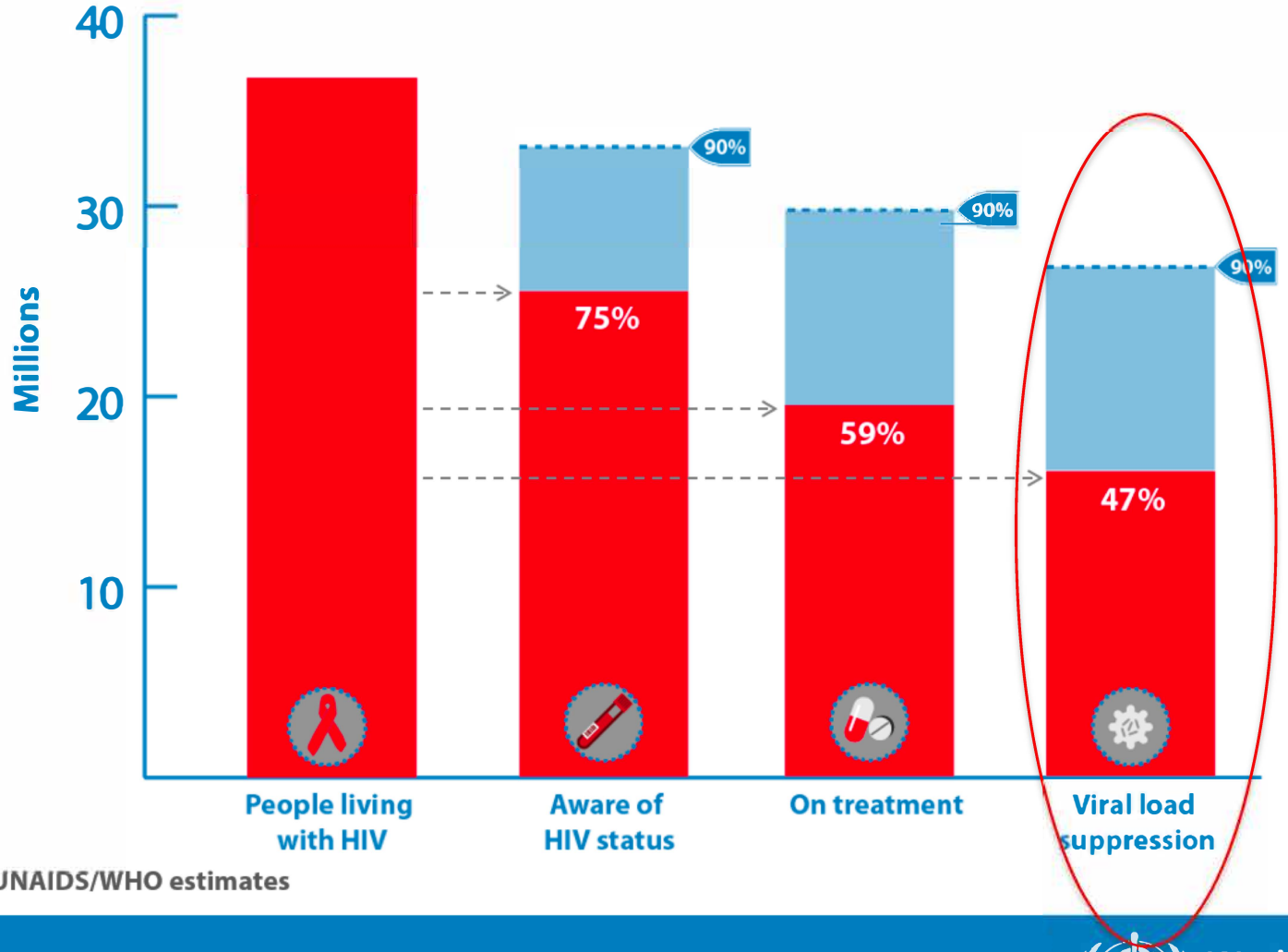
UNAIDS Goals by 2020

- 90% of all people who are HIV positive will know their HIV status
- 90% of HIV positive people will receive antiretroviral therapy
- 90% of those on ART will be **virally suppressed**

These goals cannot be achieved without special attention to persons who use drugs and alcohol

UNAIDS

HIV testing and care continuum (2017)



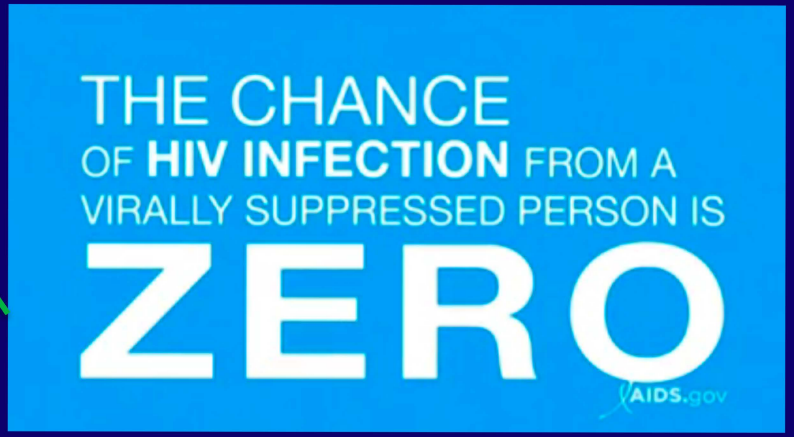
Source: UNAIDS/WHO estimates

World Health Organization

How about impact of alcohol on HIV prevention?

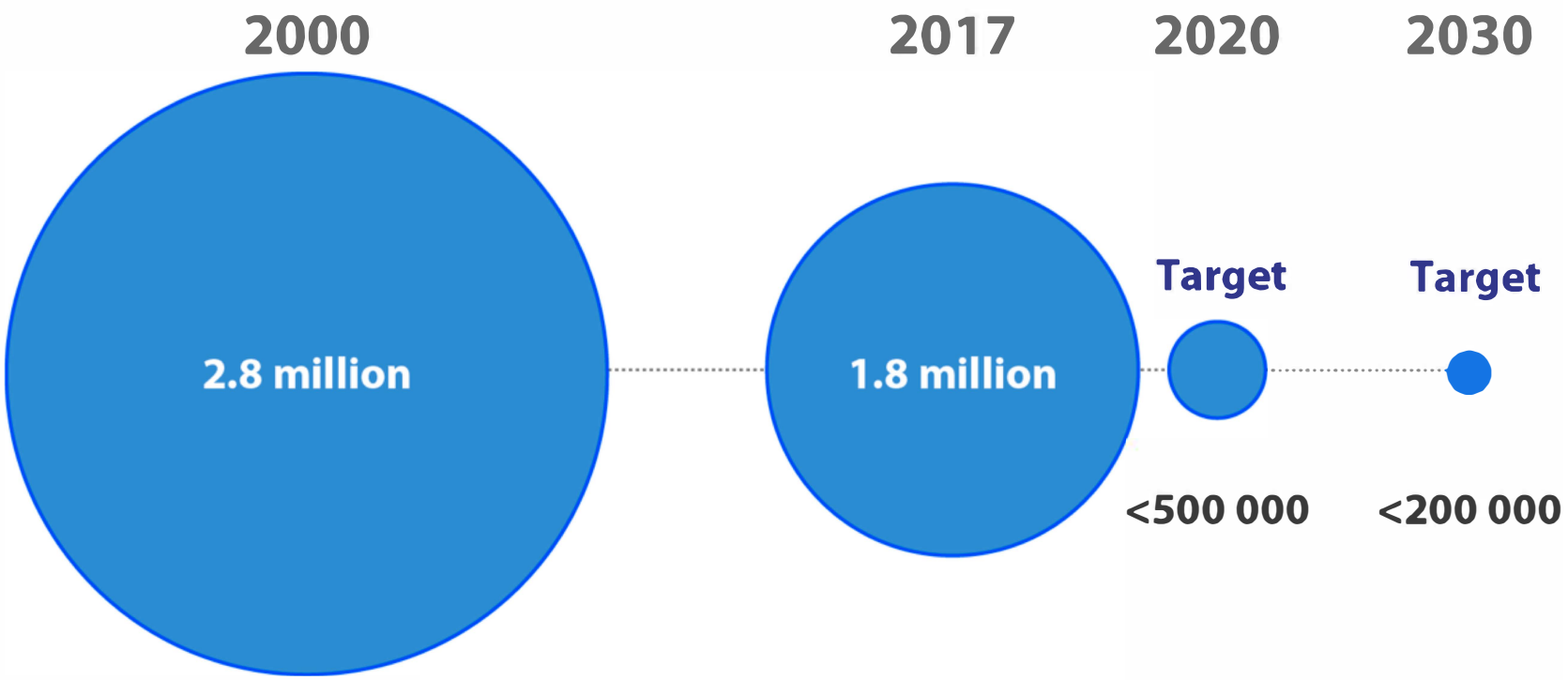
- Understanding mechanisms of alcohol use on PrEP adherence and the ultimate goal to reduce new infections (i.e. the beginning of the cascade)
  - HIV risk behaviors?
  - Adherence to PrEP?
  - Number of infections

Undetectable = Untransmittable



https://blog.aids.gov/2016/11/nihs-dr-carl-dieffenbach-discusses-viral-suppression.html

Number of people newly infected with HIV



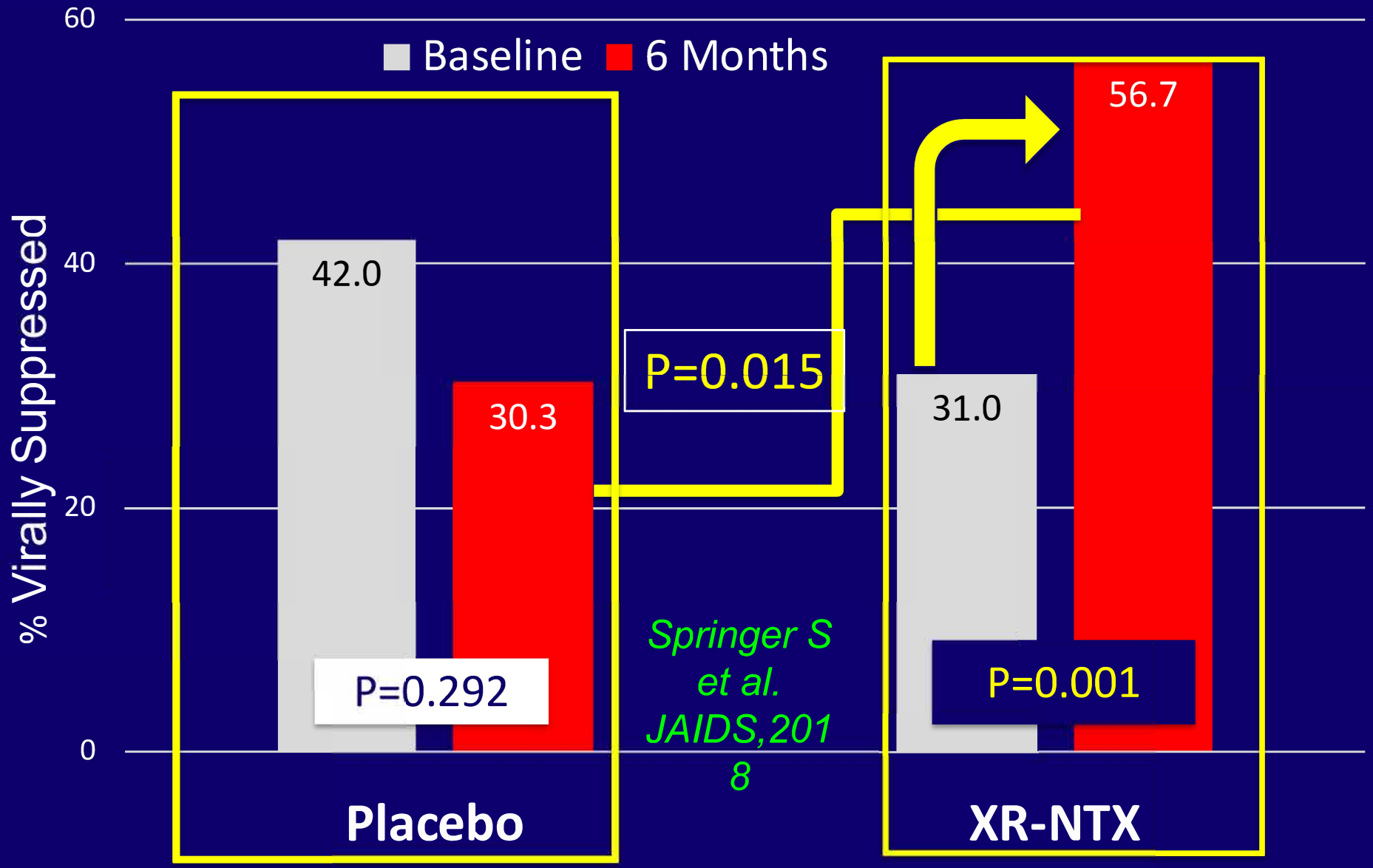
Source: UNAIDS/WHO estimates

World Health Organization

What are some ways we can use interventions that reduce alcohol use to improve adherence and Viral Suppression in PLH and also reduce new infections in those uninfected?

ONE EXAMPLE…

Extended-Release NTX can Improve VS in PLH with AUD



Next steps…

- How can we take the research proposed (individual level/ behavioral assessments event level/ theory driven) and integrate to inform improved adherence/ persistence on ART to attain viral suppression in PLH ?

- How can we use such research to also improve adherence/ persistence on PrEP to PREVENT new HIV infections?

LET'S DISCUSS….