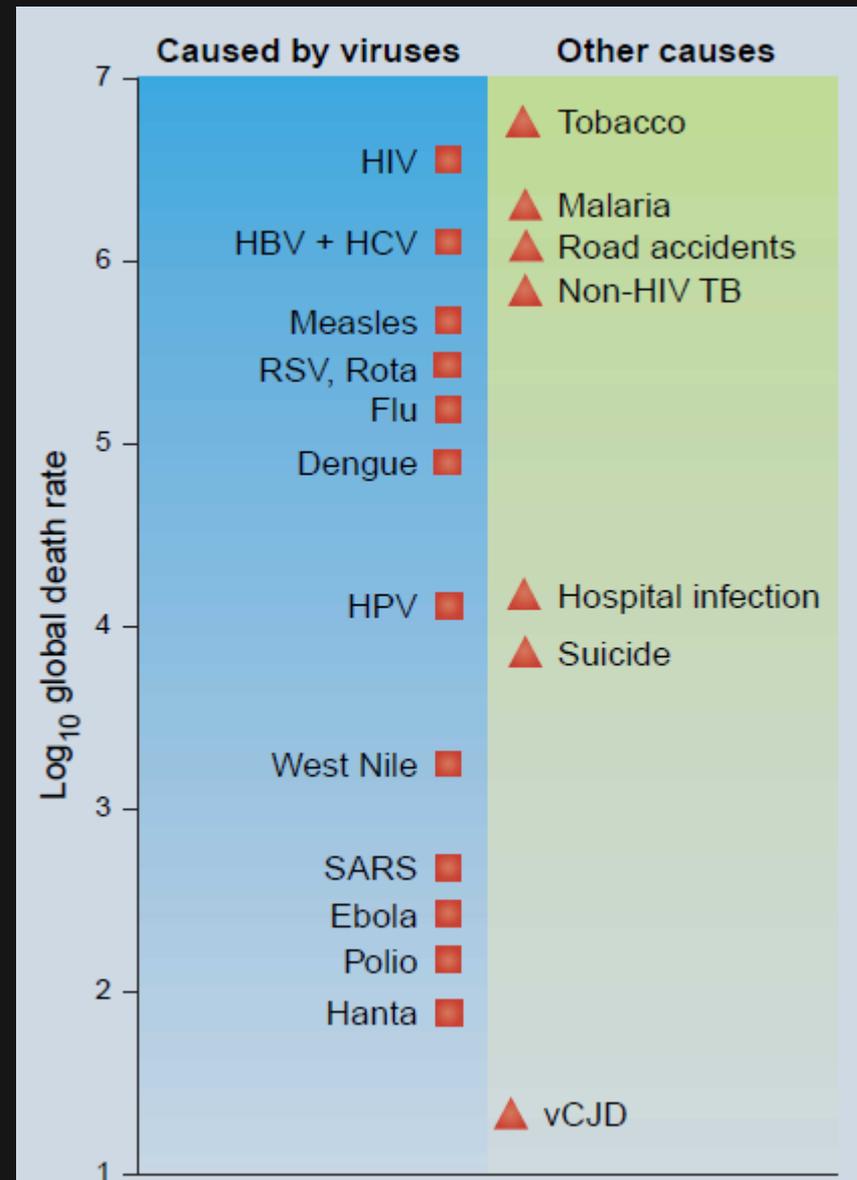


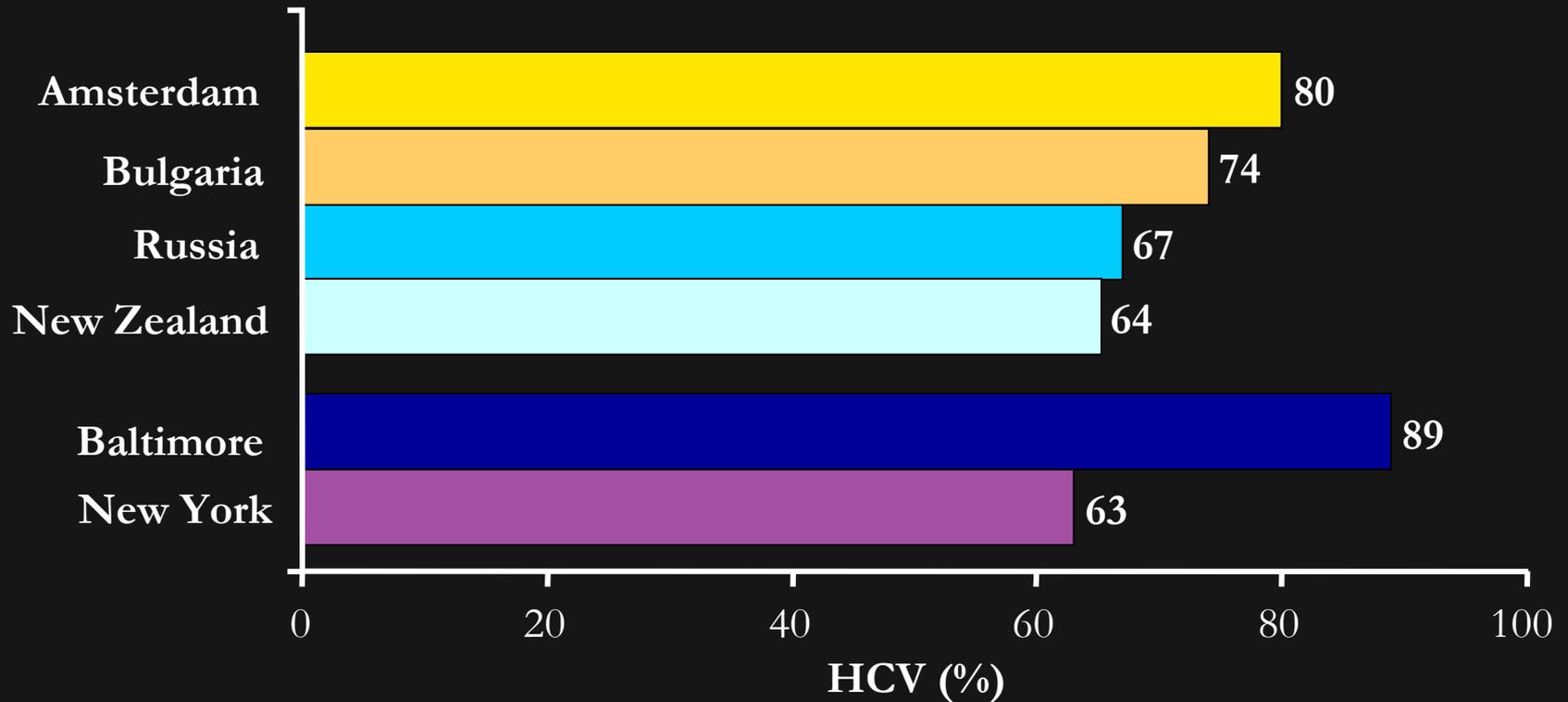
# Public Health Importance of Hepatitis B and C (Weiss, Nat Med)



# Hepatitis C in Injection Drug Users

- Most IDUs have HCV and most HCV is in IDUs
- HCV usually persists but recovery raises hopes of vaccine
- HIV coinfection is common and adversely affects natural history
- Treatment is possible, occurs rarely now, and will be more urgent in coming years

# Most IDUs have HCV Infection

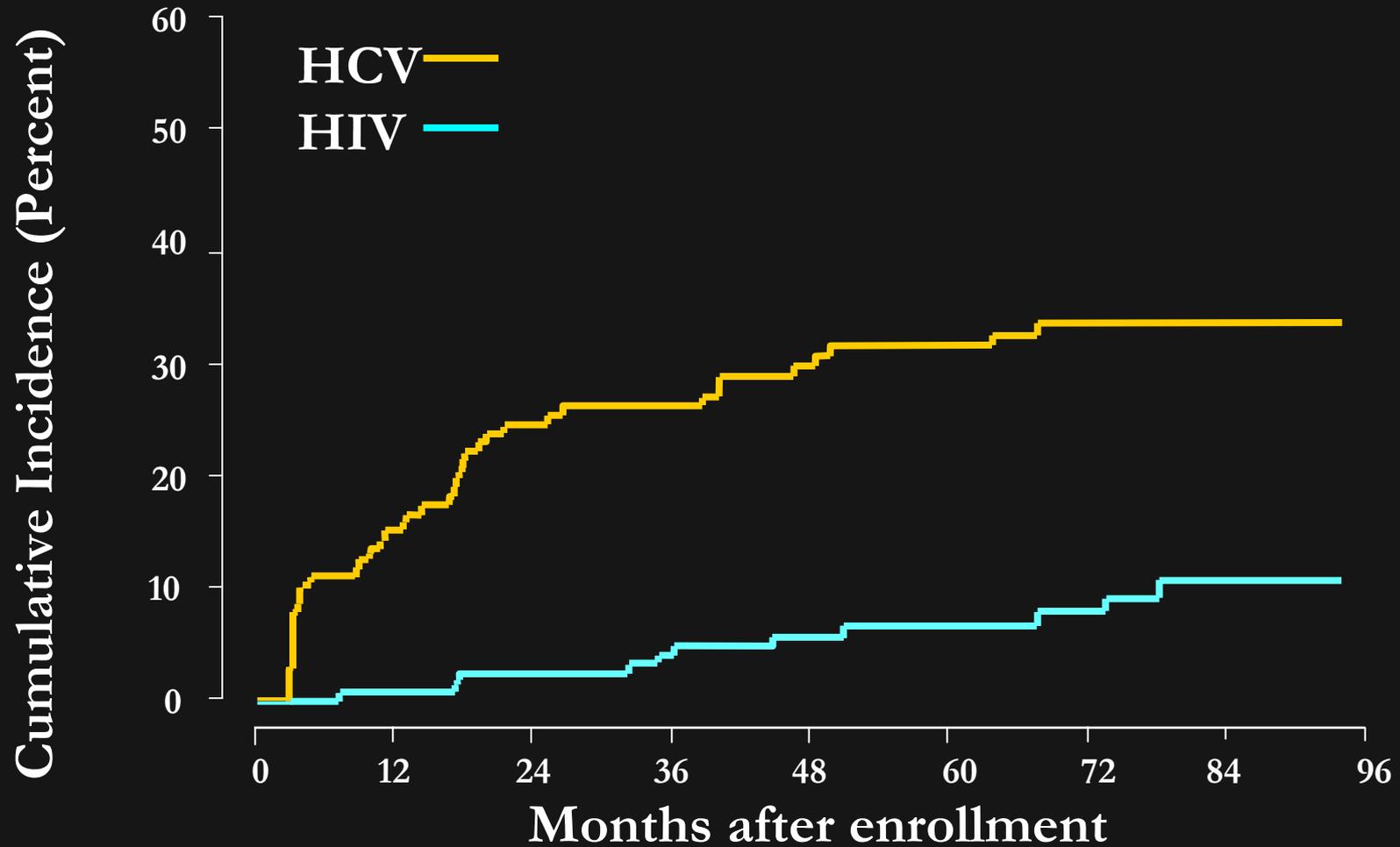


Thomas DL, et al. *Medicine (Baltimore)*. 1995;74:212-220. Des Jarlais DC, et al. *AIDS*. 2005;19(suppl 3):S20-S25. Vassilev ZP, et al. *Int J STD AIDS*. 2006;17:621-626. Kemp R, et al. *N Z Med J*. 1998;111:50-53.

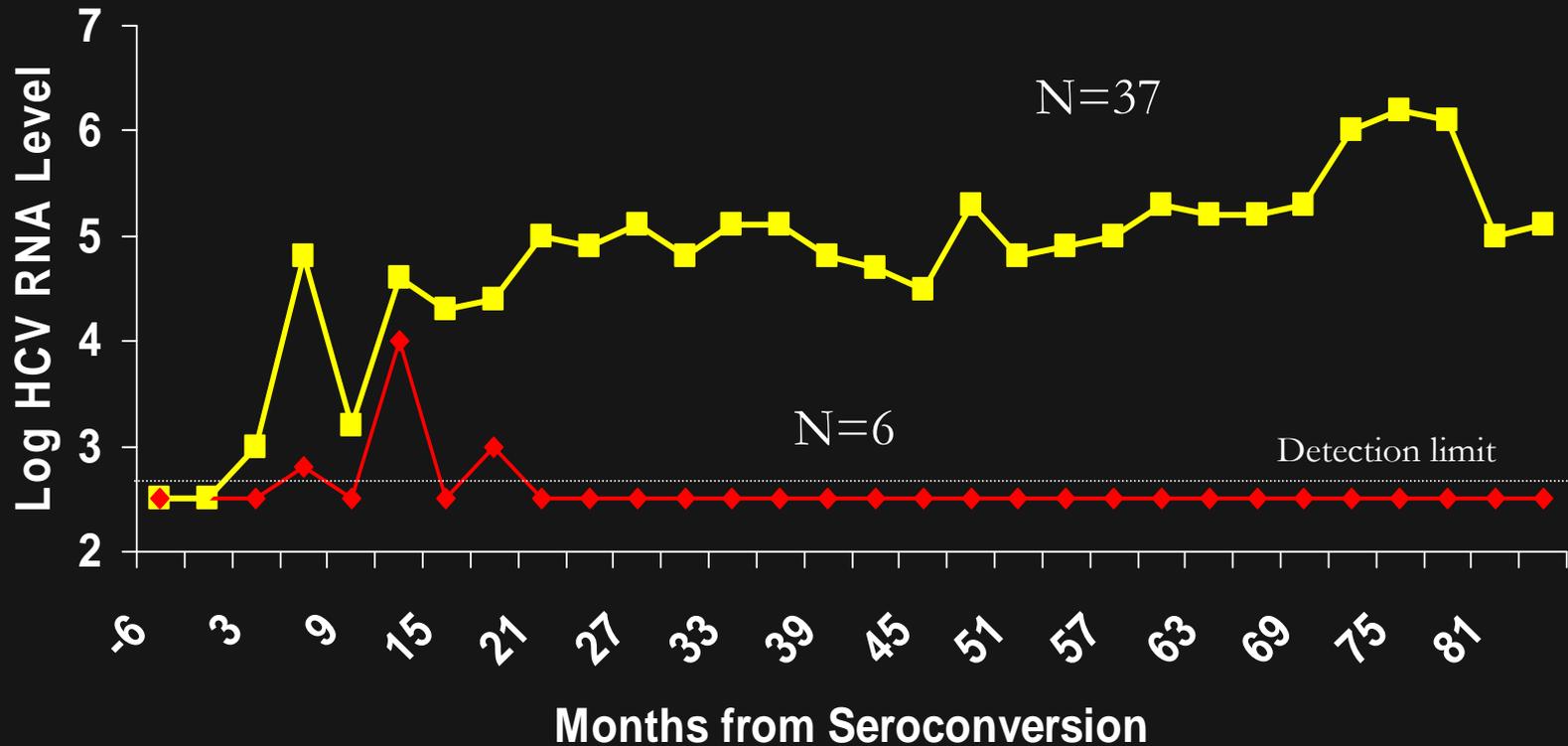
# HCV Clearance is Lower in HIV- infected Baltimore IDUs

- Cohort recruited 1989
- 1667 HCV antibody +
- 43 new infections

# Incidence of HCV and HIV Among IDUs

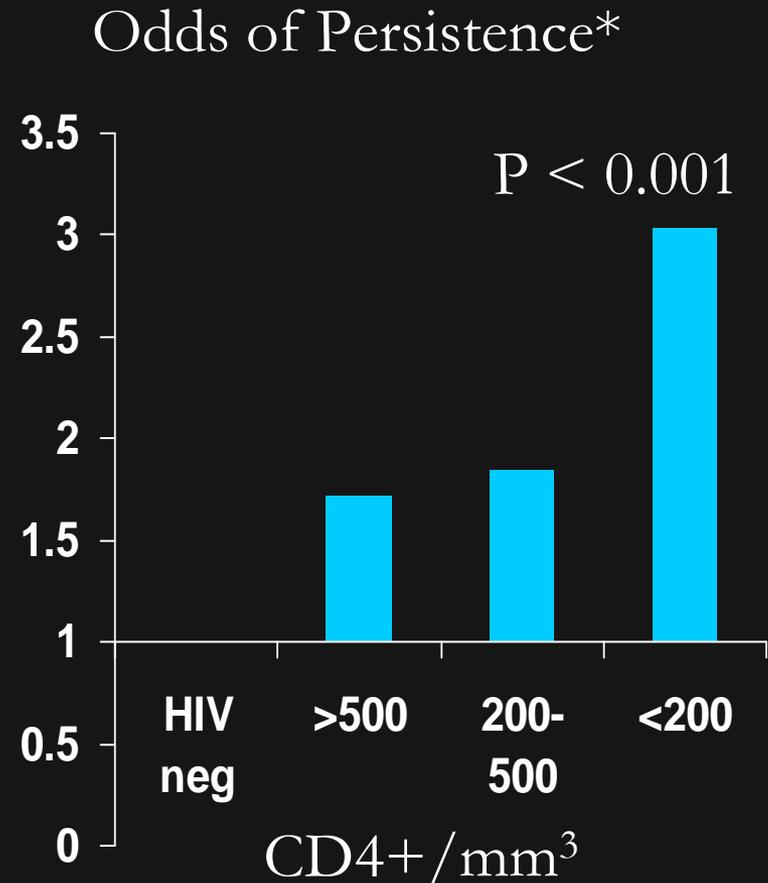


# Viremia Patterns After HCV Infection: Aggregate HCV RNA Levels in 43 Seroconverters



# HCV Clearance is Lower in HIV- infected Baltimore IDUs

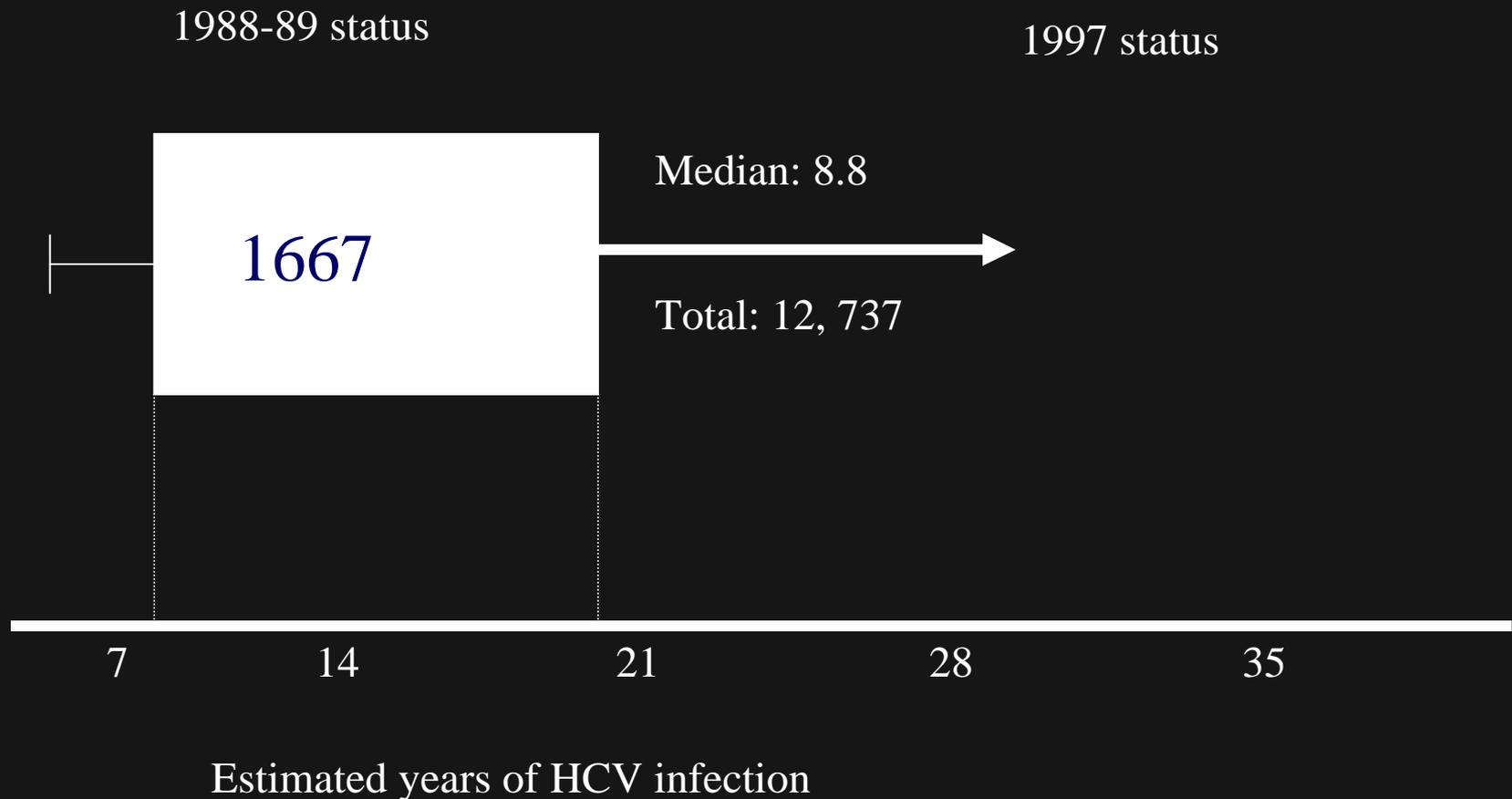
- 1667 HCV antibody +
- Clearance, N=95
  - HCV RNA <50 c/ml X2
- Persistence, N=722
- \*OR versus HIV neg, adjusted for HBsAg, age, and race.



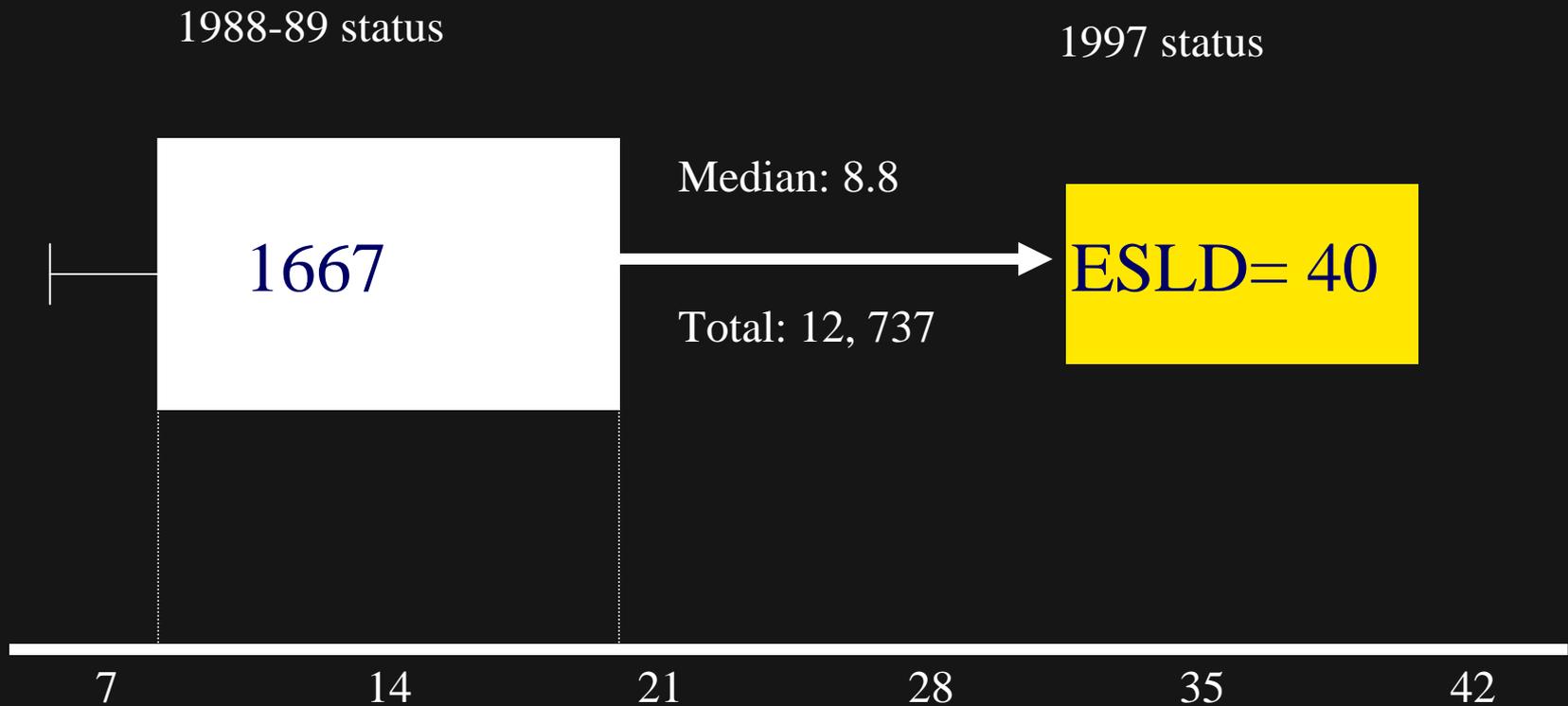
# HCV Clearance in Baltimore IDUs

- Protective immunity can be detected (and lost) (Mehta Lancet; Cox Gastro)
- No viral determinants (Ray J Virol)
- Adaptive immune correlates (Cox Hepatol, Cox J Clin Invest)
- Host genetic factors play major role (Thio J Virol, Thio JID, Khakoo Science)

# ESLD Among 1667 Anti-HCV Positive ALIVE Participants, enrollment



# ESLD Among 1667 Anti-HCV Positive ALIVE Participants



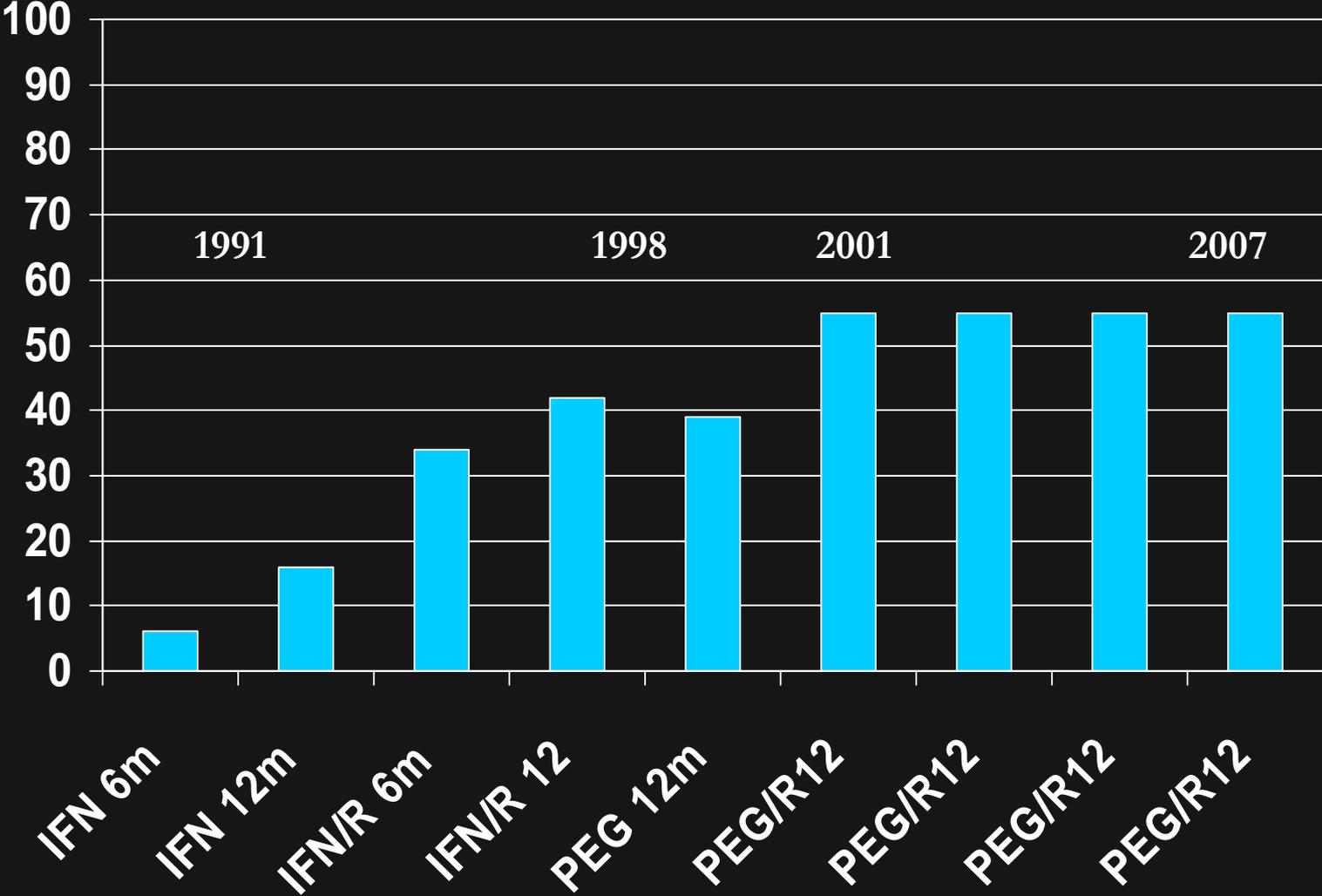
Estimated years of HCV infection

Thomas JAMA

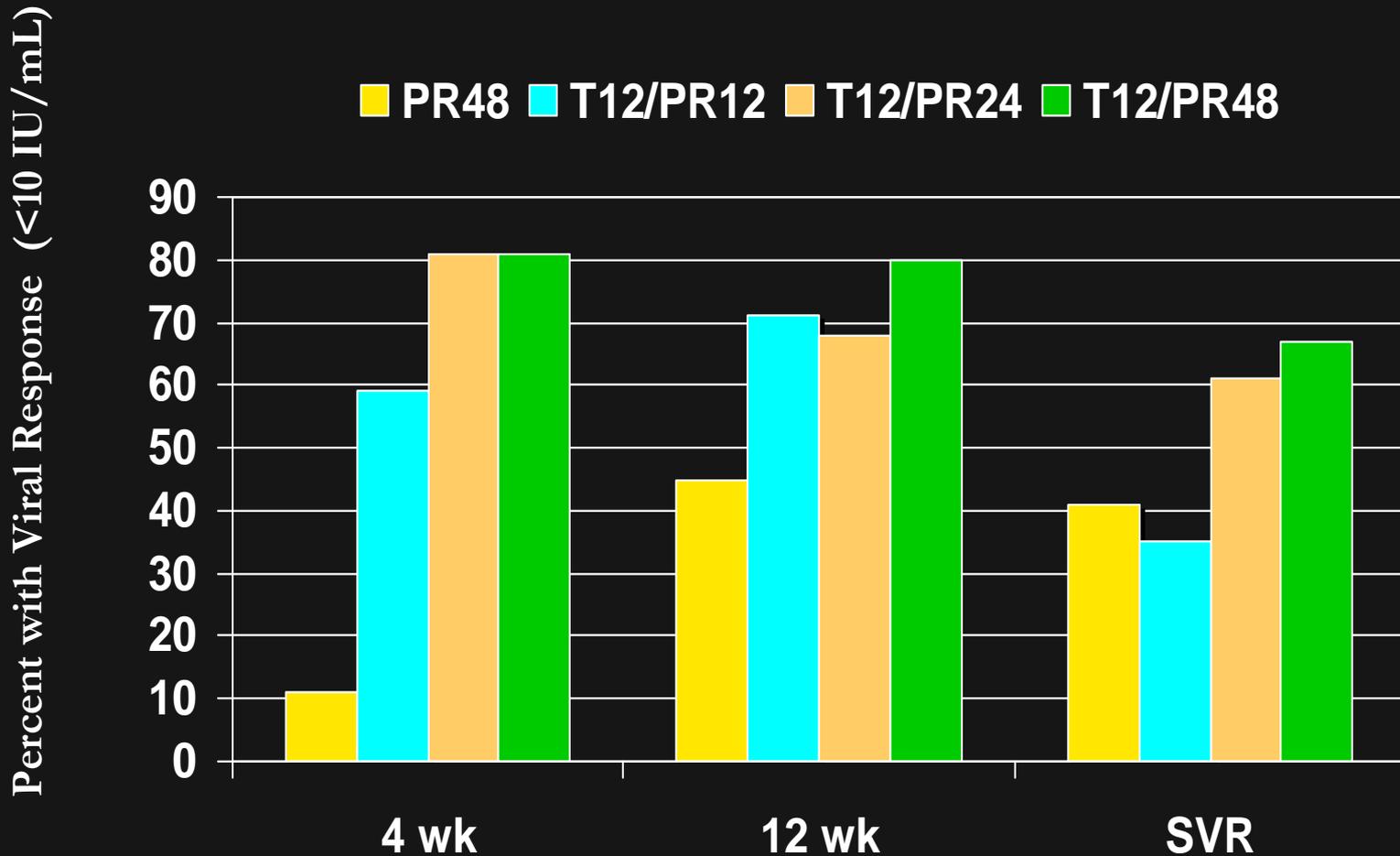
# Elastography Makes Systematic Assessment of Liver Disease Burden Possible



# 2009 Treatment for Chronic Hepatitis C is Peginterferon and Ribavirin

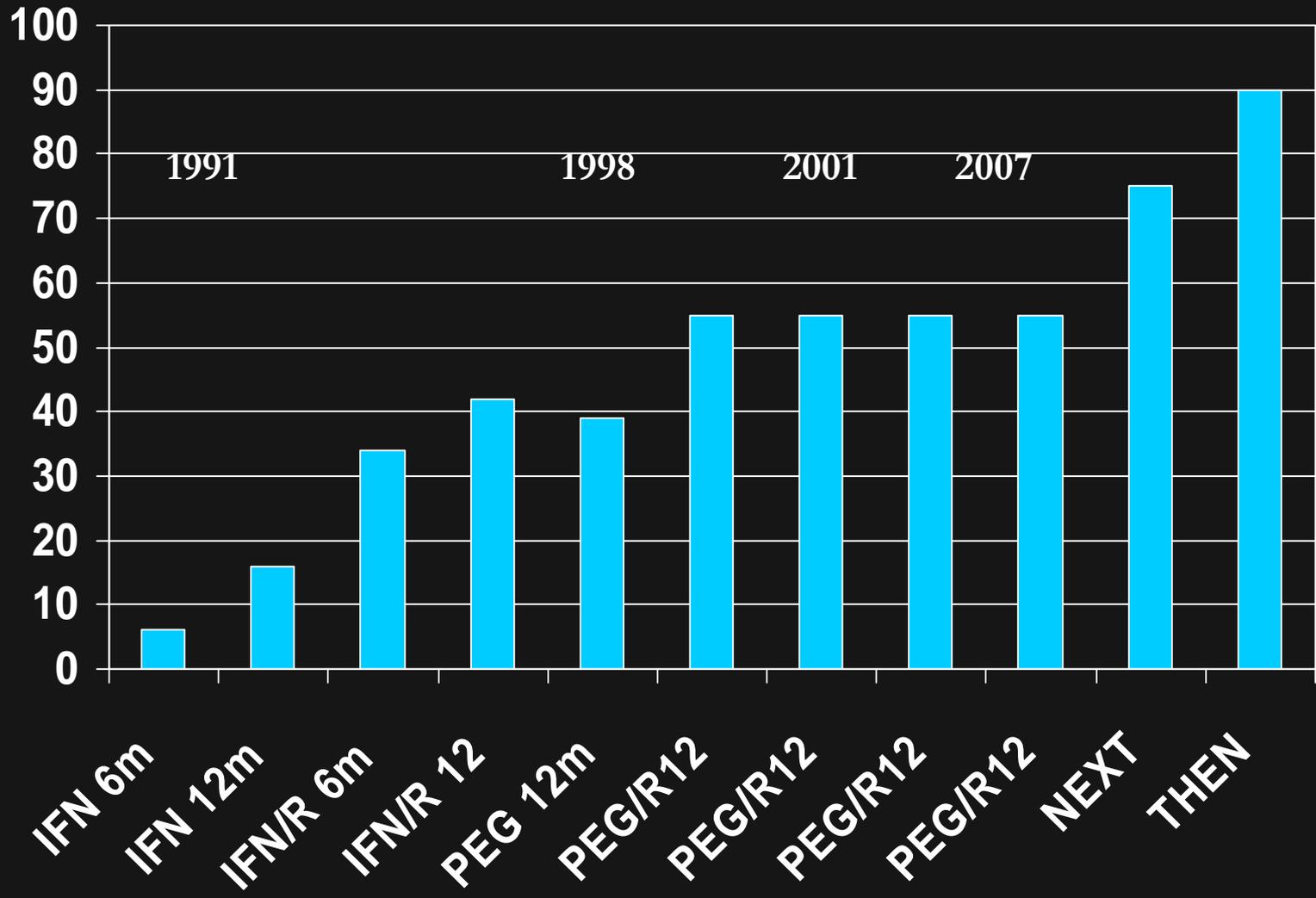


# TVR Is Associated With Rapid (4 wk) and Early (12 wk) Virologic Response



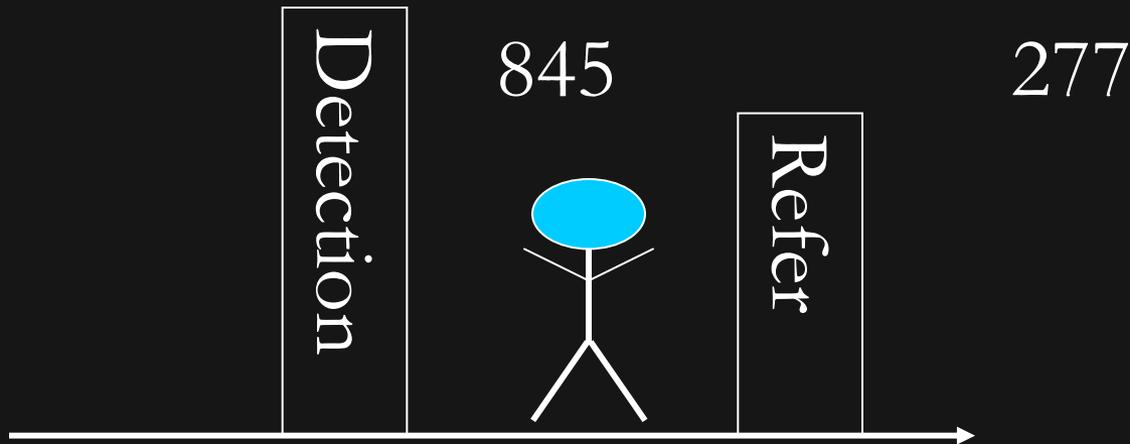
# Optimal Treatment for Chronic Hepatitis C is Peginterferon and Ribavirin

% Individuals Treated SVR

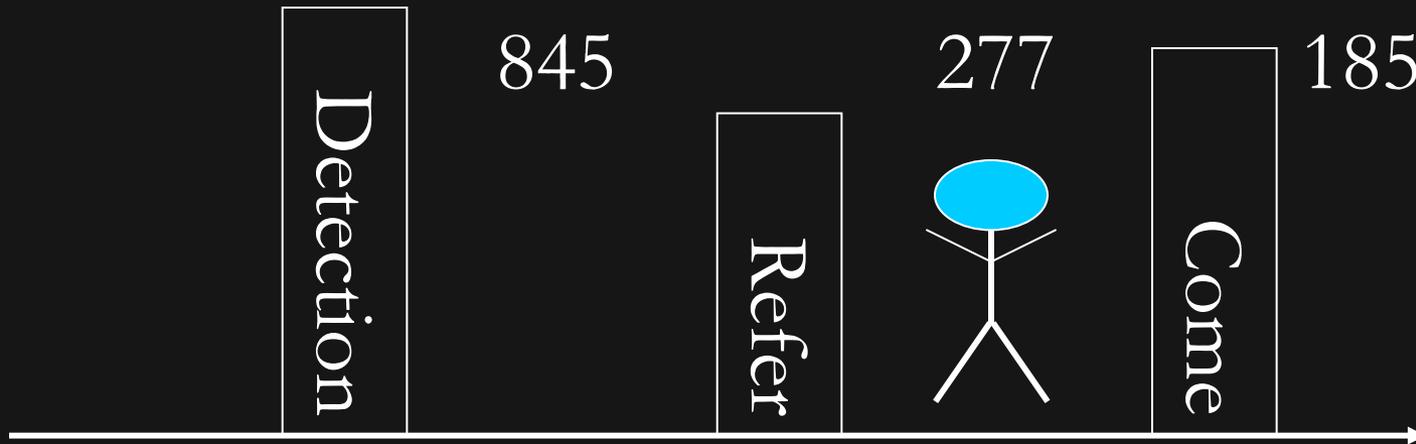


# HCV in HIV-infected IDU: Road to Cure

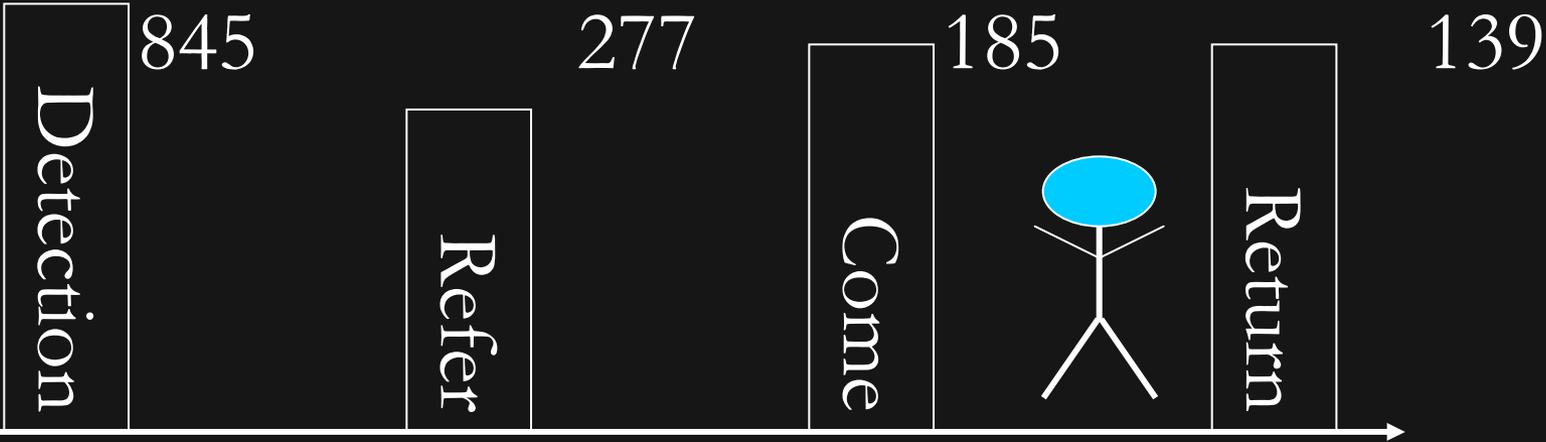
## JHU HIV Clinic Experience



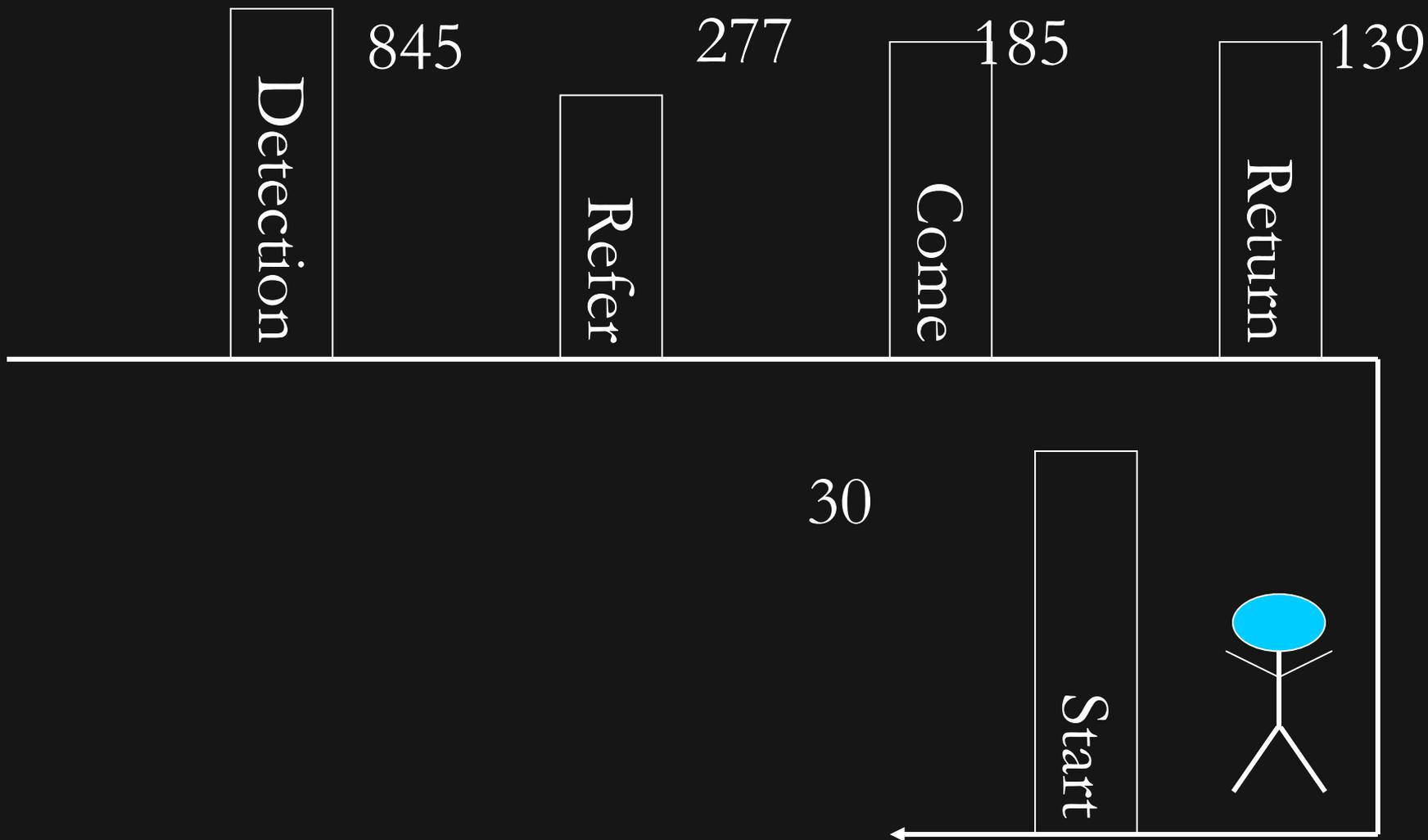
# HCV in HIV-infected IDU: Road to Cure



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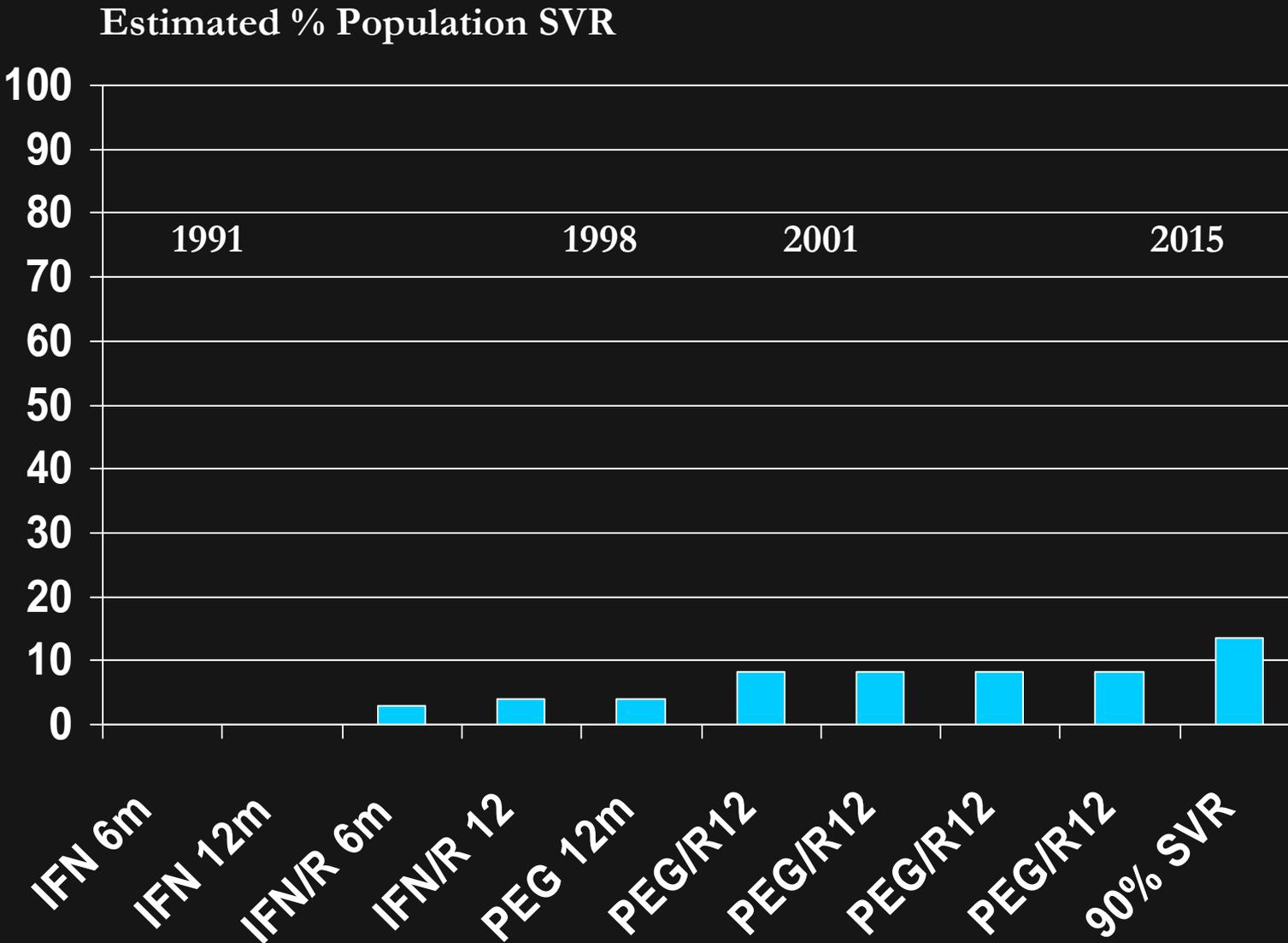
# HCV in HIV-infected IDU: Road to Cure



# HCV in HIV-infected IDU: Road to Cure



# 90% Treated SVR Has Low Population Impact Without Better Sociologic Availability



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# Thanks

- ALIVE
  - D Vlahov
  - S Mehta and G Kirk
- Immunology
  - A Cox
  - S Ray
- Genetics
  - C Thio
- Pathology
  - M Torbenson
- Virology
  - S Ray
- Funding
  - NIDA, NIAID