Reducing HIV and HCV Transmission among Injecting Drug Users in New York

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METHODS Risk Factors Study

- Subjects recruited from drug detoxification program at Beth Israel Medical Center
- City-wide program, approximately 7000 patients per year
- Approximately 600 subjects per year, 1990 to 2007
- Structured interview and HIV antibody test
- Serologic Testing Algorithm for Recent HIV Seroconverson (STARHS) to estimate HIV incidence
- Extra serum frozen and stored

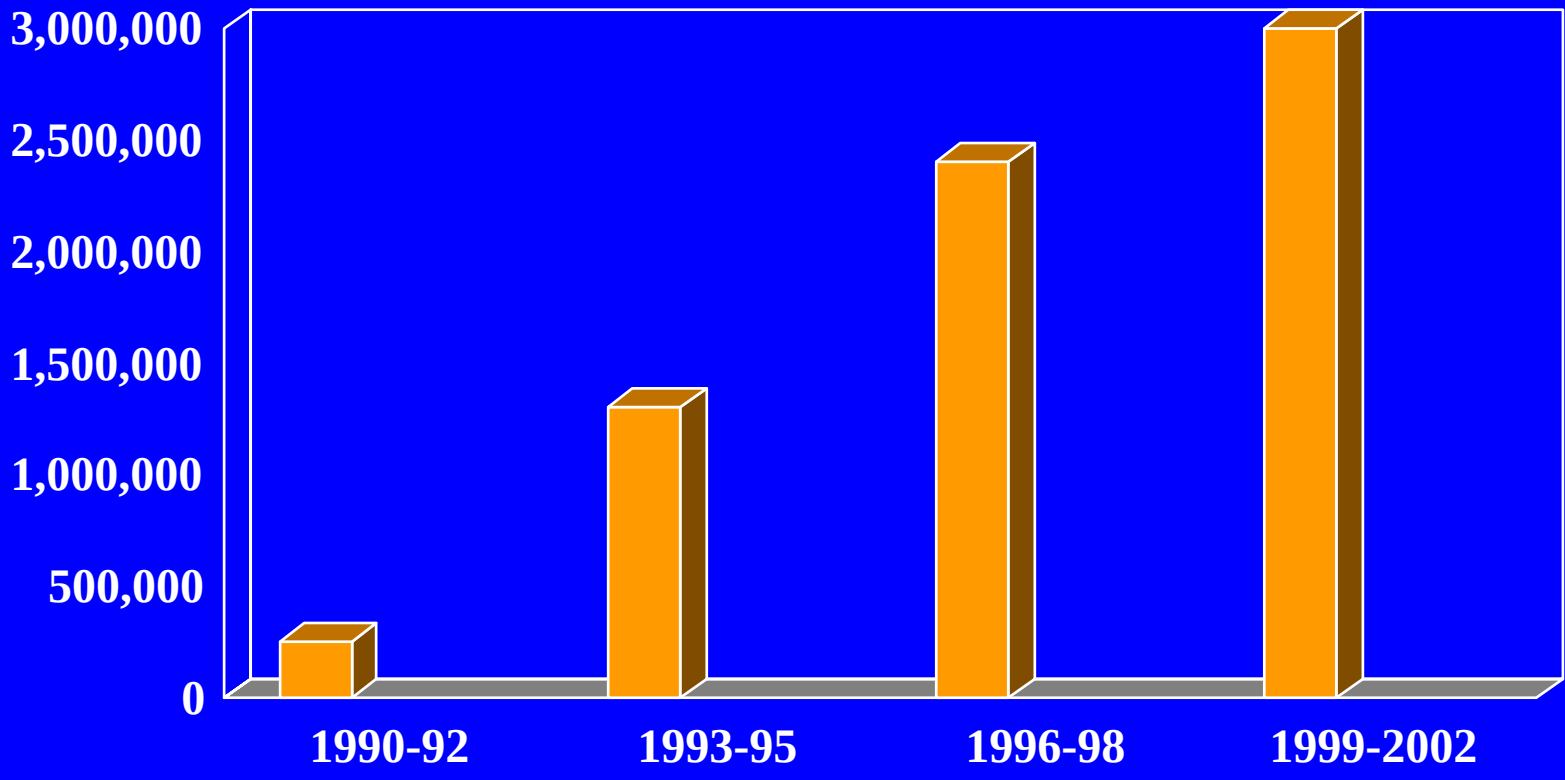
METHODS for HCV studies

- Random selection of HIV positive and HIV negative samples from 1990-91 (pre syringe exchange expansion) compared to samples from 2000-01 (post syringe exchange expansion). Plus recent samples 2004-06
- Estimated HCV incidence among new drug injectors (persons injecting for 6 years or less) with the following assumptions:
  - All IDUs are HCV seronegative with they begin injecting
  - HCV positive IDUs were exposed at midpoint between time of first injection and time of interview.
  - Incidence is number of HCV seropositives divided by sum of years injecting for HCV+s plus ½ years injecting for HCV-s

Results

- Expansion of syringe exchange from “pre-legalization (1990) to “post-legalization” stabilization
- In syringes exchanged per year

Annual Numbers of Syringes Exchanged from Des Jarlais et al. AJPH 2005



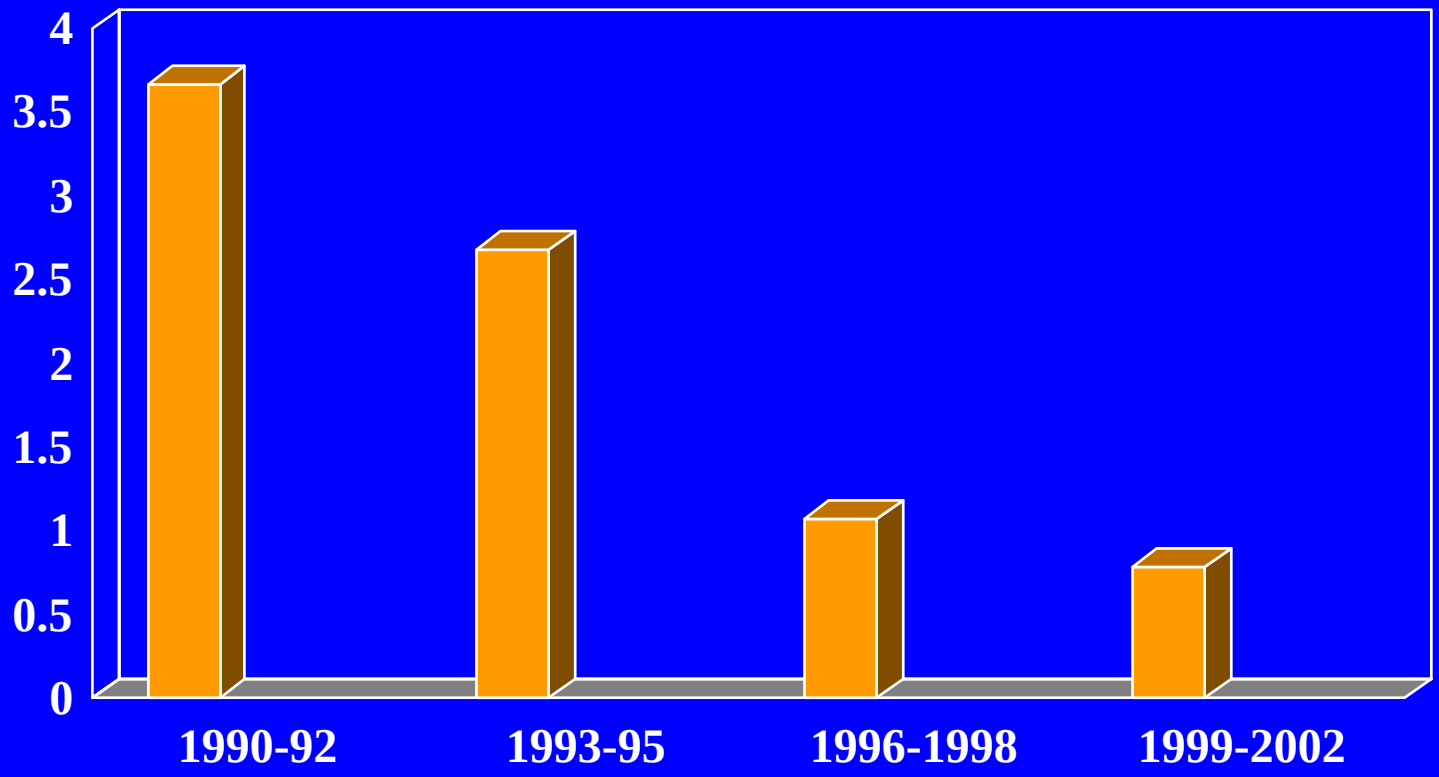
Results HIV incidence

- In number of new HIV infections per 100 person-years at risk

- Estimated with STAHRS (“detuned assay”) test to identify recent HIV seroconversions

HIV incidence STARHS Testing

from Des Jarlais et al. AJPH 2005



Results HCV prevalence among HIV+ IDUs

- 1990-91 44/44 100%
- 2000-01 58/71 82%

Results HCV prevalence among HIV- IDUs

- 1990-91 20/25 80%
- 2000-01 200/340 59%

Results HCV prevalence weighted average for HIV+ and HIV-

- 1990-91 91%
- 2000-01 62%

HCV Prevalence among New Injectors (injecting 6 yrs or less)

- 1990-91 8/10 80%
- 2000-01 48/127 38%

Estimated HCV Incidence for 2000-01 New Injectors

18/100 person-years at risk

Recent (2004-06) Subjects

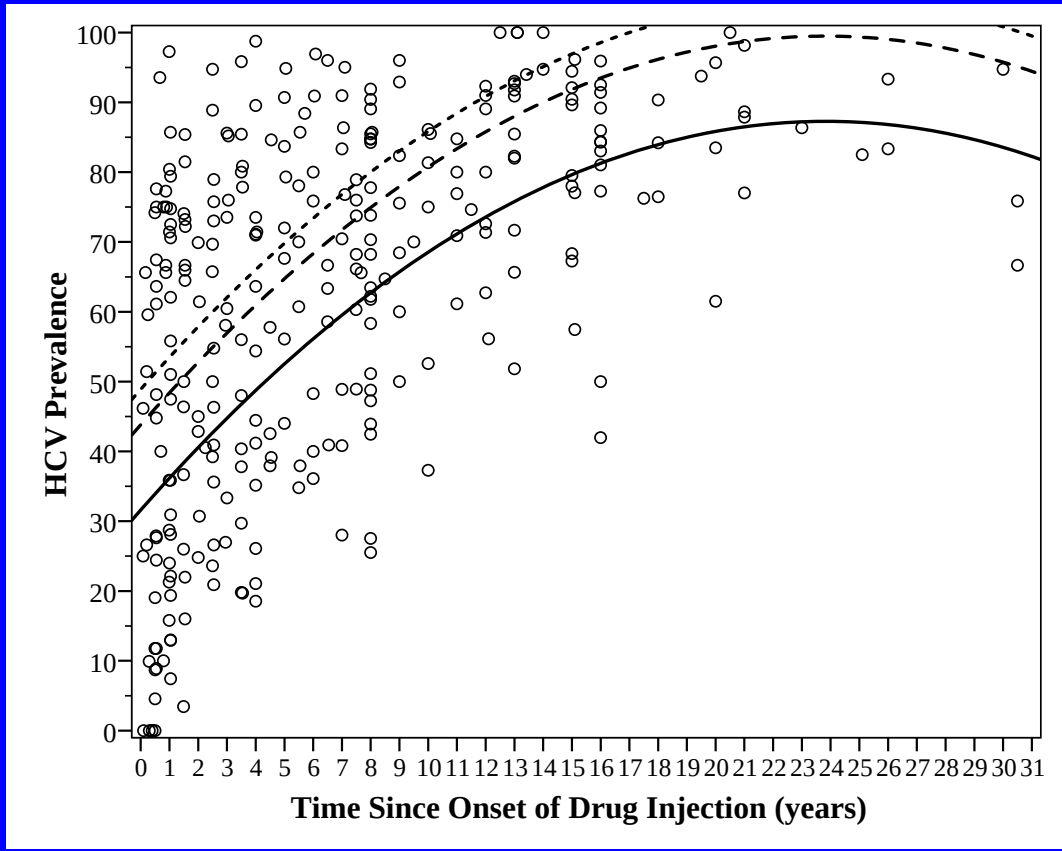
- 188 IDUs who began injecting in 1995 or later

- These IDUs would have spent entire injection careers in enviroment with relatively good access to legal syringes.

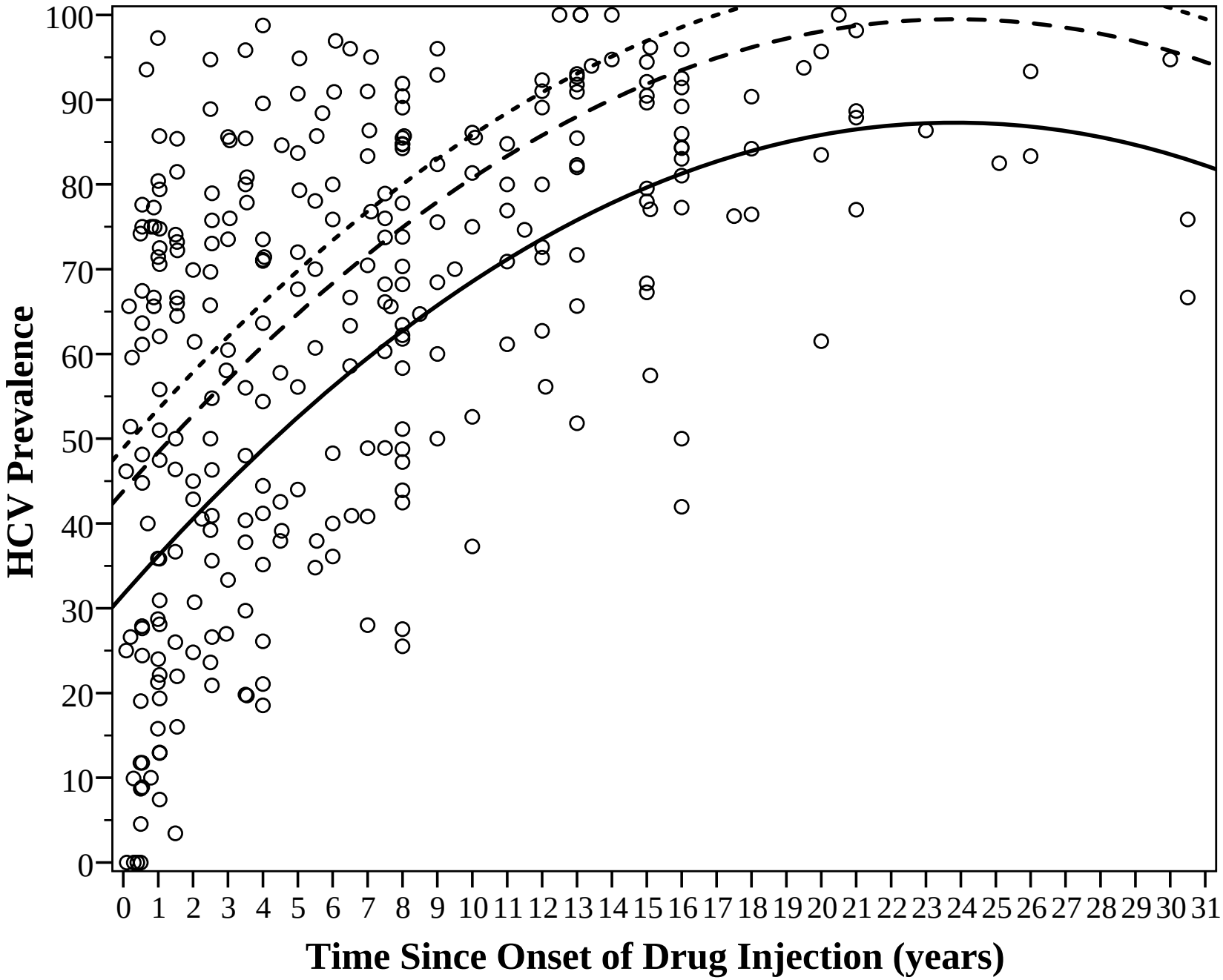
Recent (2004-06) Subjects

- HCV prevalence 56%
- Average length of injecting 4.5 years
- Estimated incidence 13/100 p-y

Figure 2. HCV prevalence by time at risk (years since onset of drug injection), and fitted regression lines.



Note. Data points represent midpoints for time at risk categories. The solid line represents model-predicted prevalence in relation to time since onset of drug injecting for studies in non-developing/transitional countries after 1995; the dashed line represents predicted prevalence for non-developing/transitional countries before 1995; the dotted line represents predicted prevalence for developing/transitional countries after 1995.


HCV Prevalence
100
90
80
70
60
50
40
30
20
10
0
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Time Since Onset of Drug Injection (years)

Discussion

- HCV infection was close to saturation levels among IDUs in NYC prior to large scale syringe exchange:
- 91% prevalence overall
- 100% among HIV+ IDUs
- 80% among new injectors

Discussion

- HCV prevalence has clearly declined since large scale implementation of syringe exchange

- Loss of HIV+ HCV+ IDUs to death and disability reduced prevalence

Discussion

- IDUs who began injecting after syringe exchange implementation probably best measure
- 56% prevalence, average 4.5 yrs injecting, est. incidence of 13/100 person-years
- Currently far below saturation levels

Discussion

- Need to continue monitoring HCV among IDUs who began injecting in good access environment
- Will HCV prevalence stabilize at level below saturation after injecting for 10+ years?
- Still need for new effective HCV prevention efforts