HIV and Incarceration: Dual Epidemics and a Lesson in the Value of Aftercare

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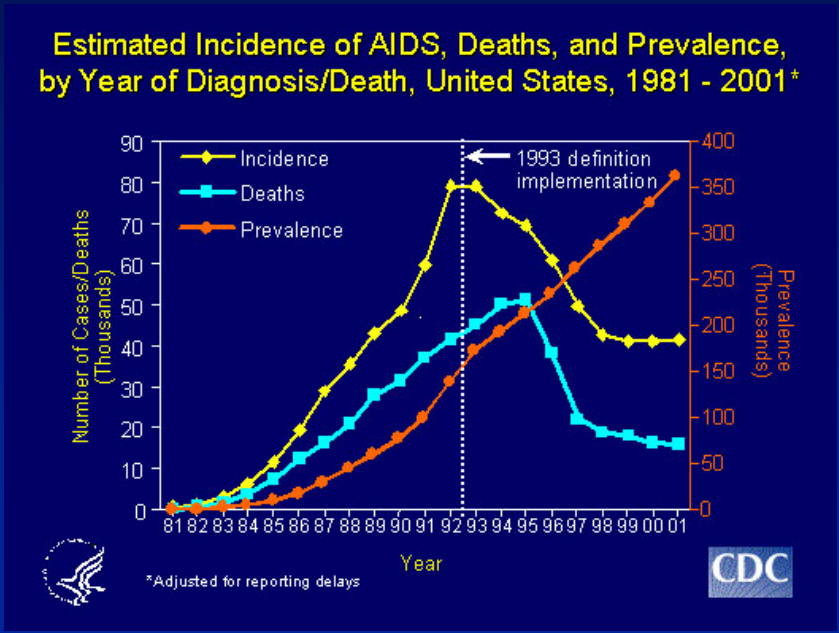
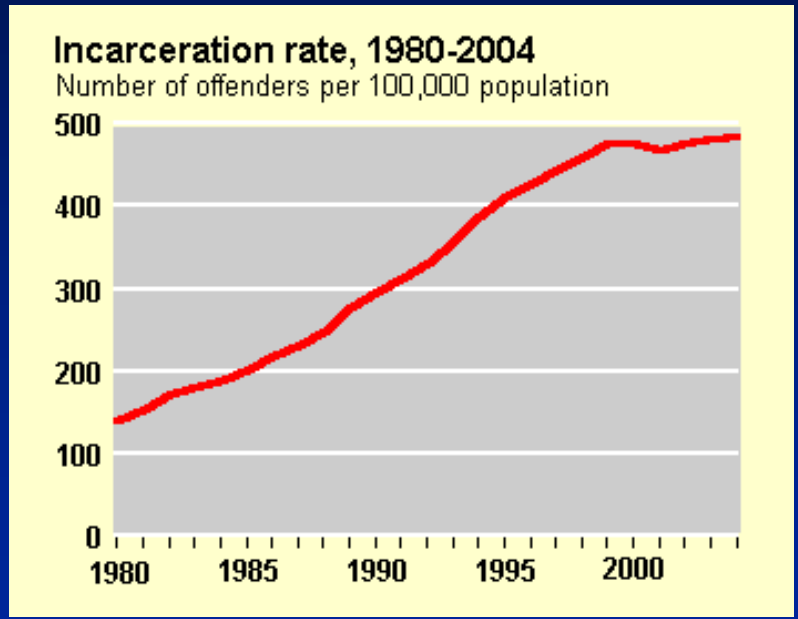
HIV and Incarceration: Take Homes

- Both HIV and Incarceration are epidemic and intertwined
- Incarceration fuels the HIV epidemic by:
  - Disrupting existing relationships
  - Prompting risk behaviors in and out of prison
  - Intramural spread of HIV
- HIV care in most prisons and some jails is good but benefits accrued during incarceration are usually lost after release.
- In the absence of a reduction in the incarceration rate of men and women at risk for HIV infection, the transition from prison/jail to community is the next best opportunity to reduce the contribution of imprisonment to the spread of the virus.

Dual Epidemics





Epidemic of Incarceration

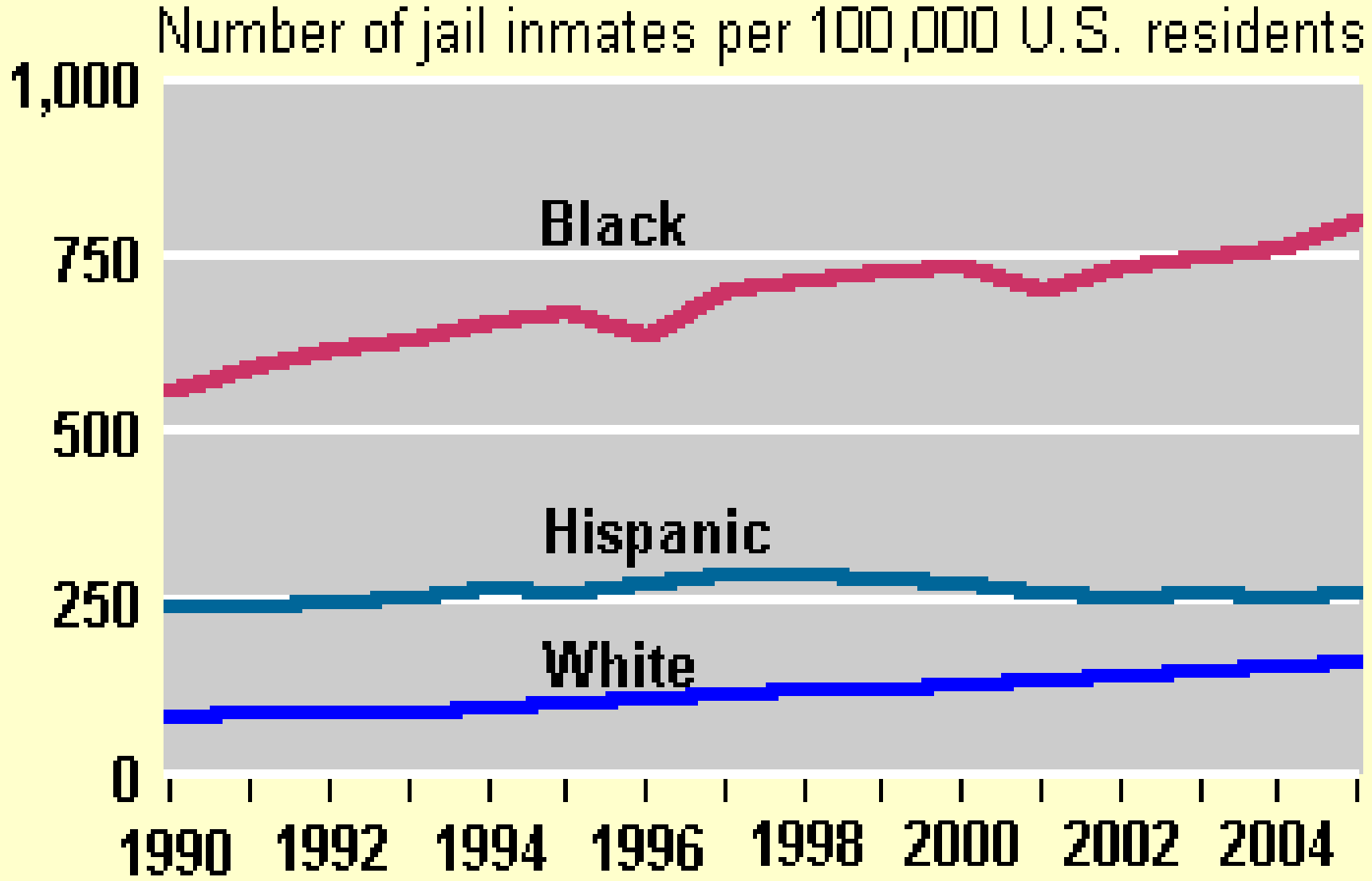
- 2 million people (1 of every 150 residents) are incarcerated at any one time in US; ~ 300% increase since 1980.
- 600,000 people released every year.
- 10,000,000 people pass through the jail system every year.

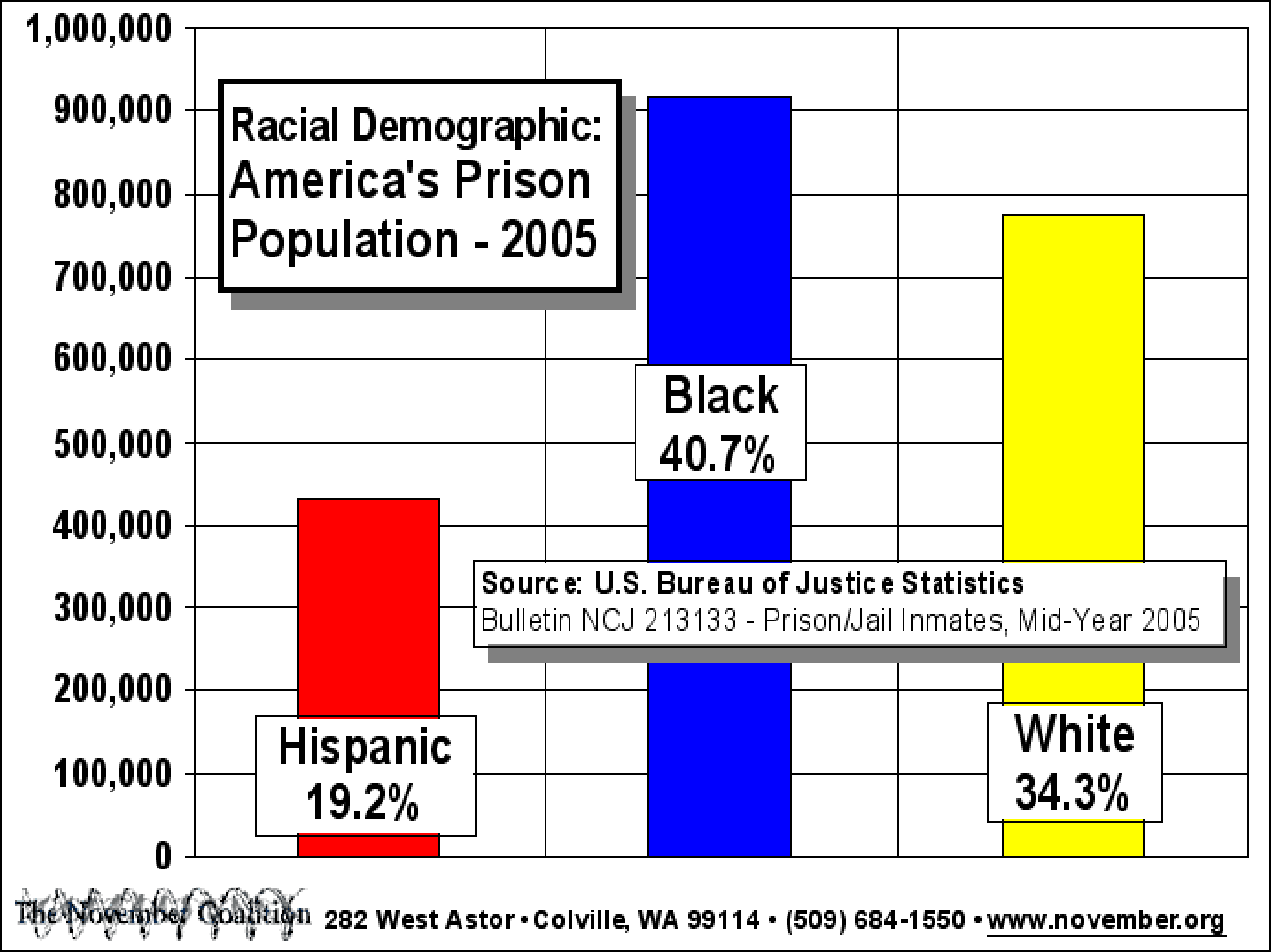
Data: US BJS

Impact of Incarceration: Society

- Diversion of resources
- 3 million children in US have a parent in prison
- Morally corrosive effect of the prison-industrial complex

Jail incarceration rates by race and ethnicity, 1990-2005





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Impact of Incarceration: Community

- African American men (13%) of US population account for 60% of prison inmates.
- 12.6% of all African-American men between 25 and 29 y are in prison or jail.
- One-third of AA men between the ages of 20 and 29 y are under correctional supervision.
- If current trends continue, 1 of 3 African-American males can expect to be incarcerated during their lifetime, according to US Dept of Justice.
- Gender ratios: Lack of available men in communities where incarceration is endemic.
- Normalization of incarceration and effect on normative community values of sex, violence and drug use. Prison as a rite of passage or expected event, equivalent to military service or college education.

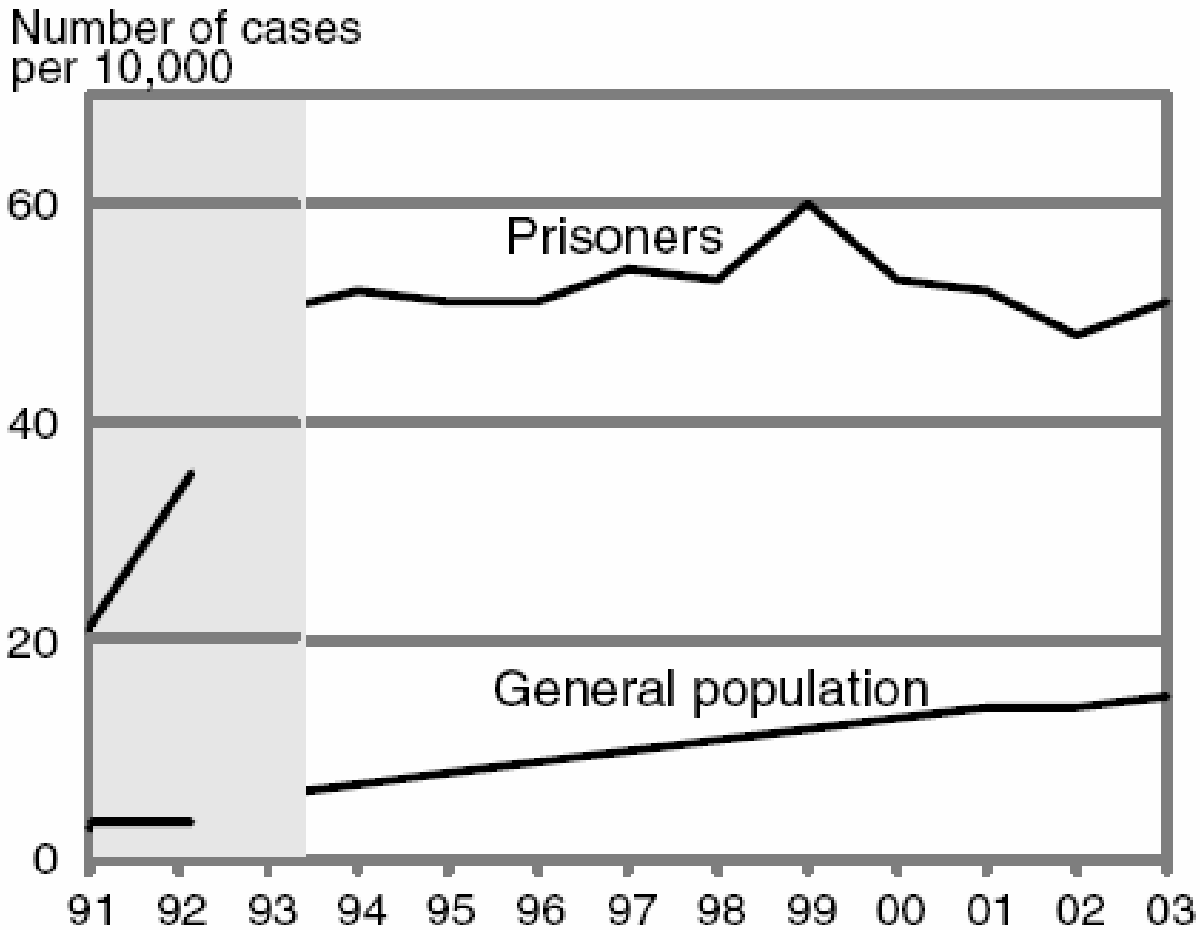
Impact of Incarceration : Individual

- The vast majority of persons who are incarcerated are released. Mean duration of sentence is 2 years (US BJS). Incarceration impacts:
- Employment prospects
- Benefit eligibility
- Disrupted social/family networks
- Brutalizing experience
- HIV transmission within prison

HIV in Correctional Settings

- HIV and incarceration target the same communities leading to the concentration of HIV within correctional facilities.
- Disproportionately, persons at risk for HIV including illicit drug users and sex workers are arrested, convicted and incarcerated. Most have had limited access to quality health care.
- Approximately 35,000 – 47,000 prison and jail inmates are HIV-infected. This is >8 times the prevalence of HIV infection among those who are not incarcerated. (Hammett T, et al, 1997).
- In 1997, at least 1 of every 5 persons (>150,000 individuals) with HIV infection in the U.S. passed through a correctional facility (Hammett T, et al, 1997).

Rate of confirmed AIDS cases, comparing the general population to State and Federal prisoners, 1991-2003



Bureau of Justice Statistics, HIV in Prisons, 2003

HIV and Incarceration

- The arrest, incarceration and release of large numbers of HIV+ persons has a number of effects on the dynamics of the HIV epidemic:
- Disadvantages:
  - Incarceration is socially disruptive
  - Removing a significant proportion of men from a community can foster behaviors associated with HIV transmission
    - In prison HIV transmission occurs but available data indicates it is not major source of HIV infection of inmates
    - Increased risk behaviors by the released inmate
    - Increased risk behavior by the partner remaining in the community

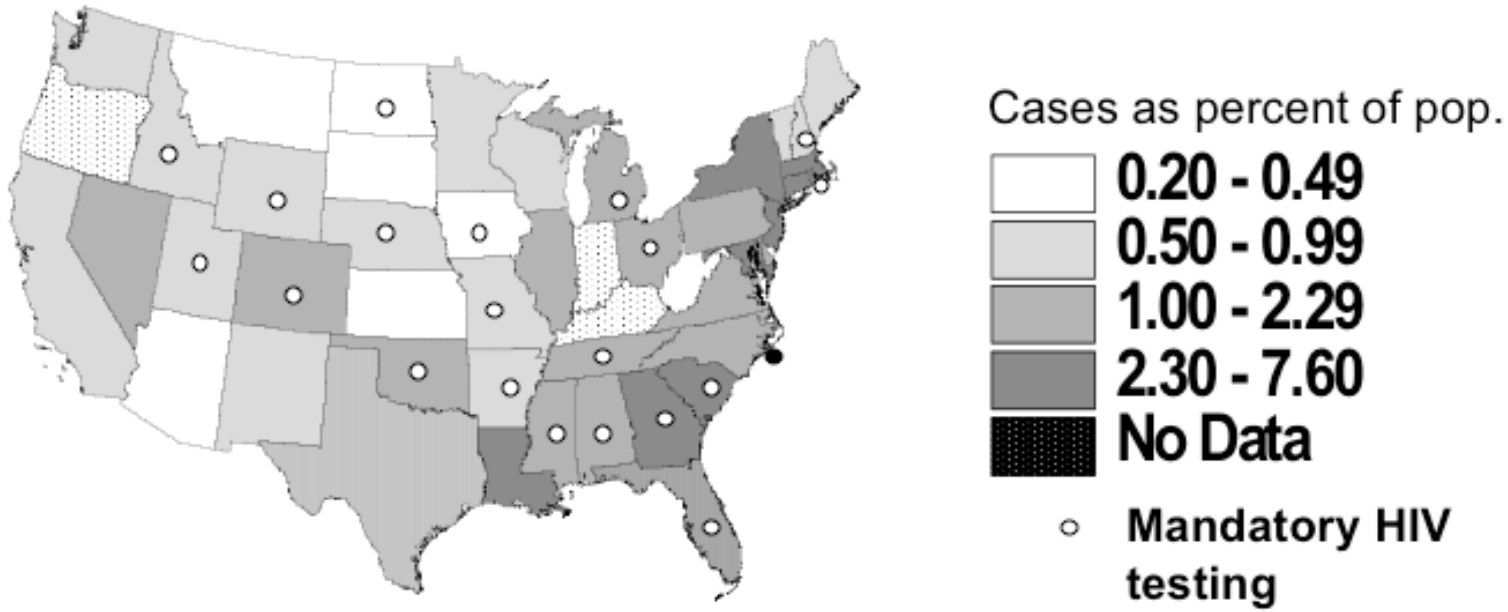
HIV and Incarceration

- The arrest, incarceration and release of large numbers of HIV+ persons has a number of effects on the dynamics of the HIV epidemic:
- Advantages:
  - Incarceration serves as a point of opportunity for HIV testing
  - Transmission risk reduction interventions can be applied in correctional settings
  - In-prison HIV treatment improves the health and potential productivity of the inmate during and possibly even after incarceration **and** reduces infectiousness
  - Discharge planning linking the patient to community resources and services can, ideally, be achieved prior to release setting the stage for long term health care

HIV Testing in Prison

- 19 state prison systems enforce mandatory HIV testing of one sort or another (at entry, at release).
- In 31 states, HIV testing is voluntary (offered at entry, offered to certain groups considered at higher risk, routinely).
- Uptake of voluntary testing varies considerably (30-70%) and some data suggest those at greatest risk are most likely to decline.

Figure 1. Prison systems with mandatory HIV testing and known HIV/AIDS cases as a percent of total custody population, 2003



Map created using data collected by the Bureau of Justice Statistics. Please see references 31 and 34.

'Mandatory HIV testing' refers to systems that tested all inmates upon entry, during custody or upon release.

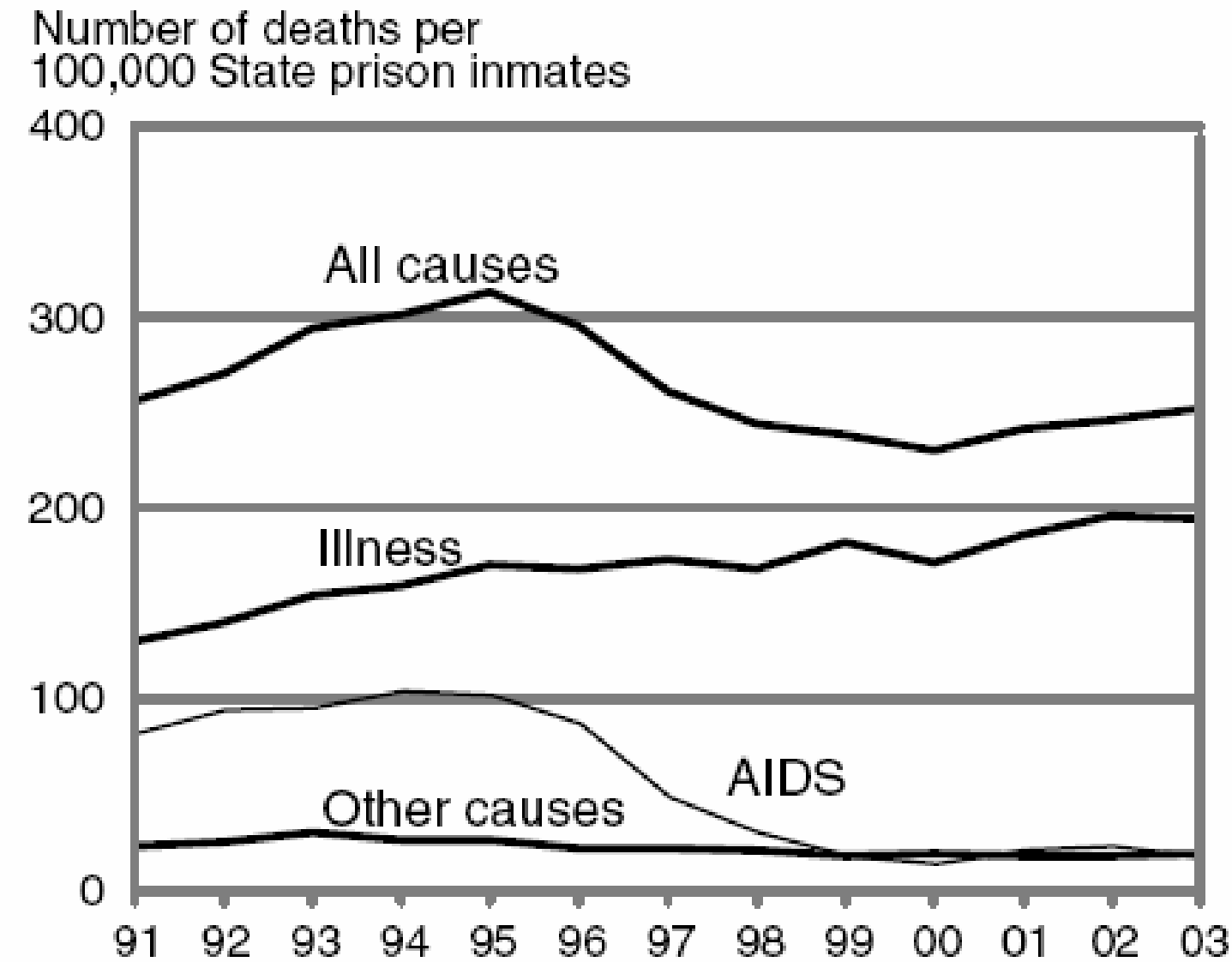
HIV Testing in Prison

- Mandatory Testing
  - Advantages:
    - Finds every chronically HIV+ inmate
    - Allows for treatment and secondary prevention
  - Disadvantages
    - Forced testing without consent
    - HIV+ inmates may face abuse, discrimination
    - Needs to be linked to quality care

- Voluntary Testing
  - Advantages
    - Allows inmate to consider risk and consent to testing
    - Preserves autonomy
    - When done right, may yield similar levels of detection as mandatory testing
  - Disadvantages
    - Uptake rates are poor
    - May miss HIV+ who will remain unaware of their infection and infect others in or outside of prison

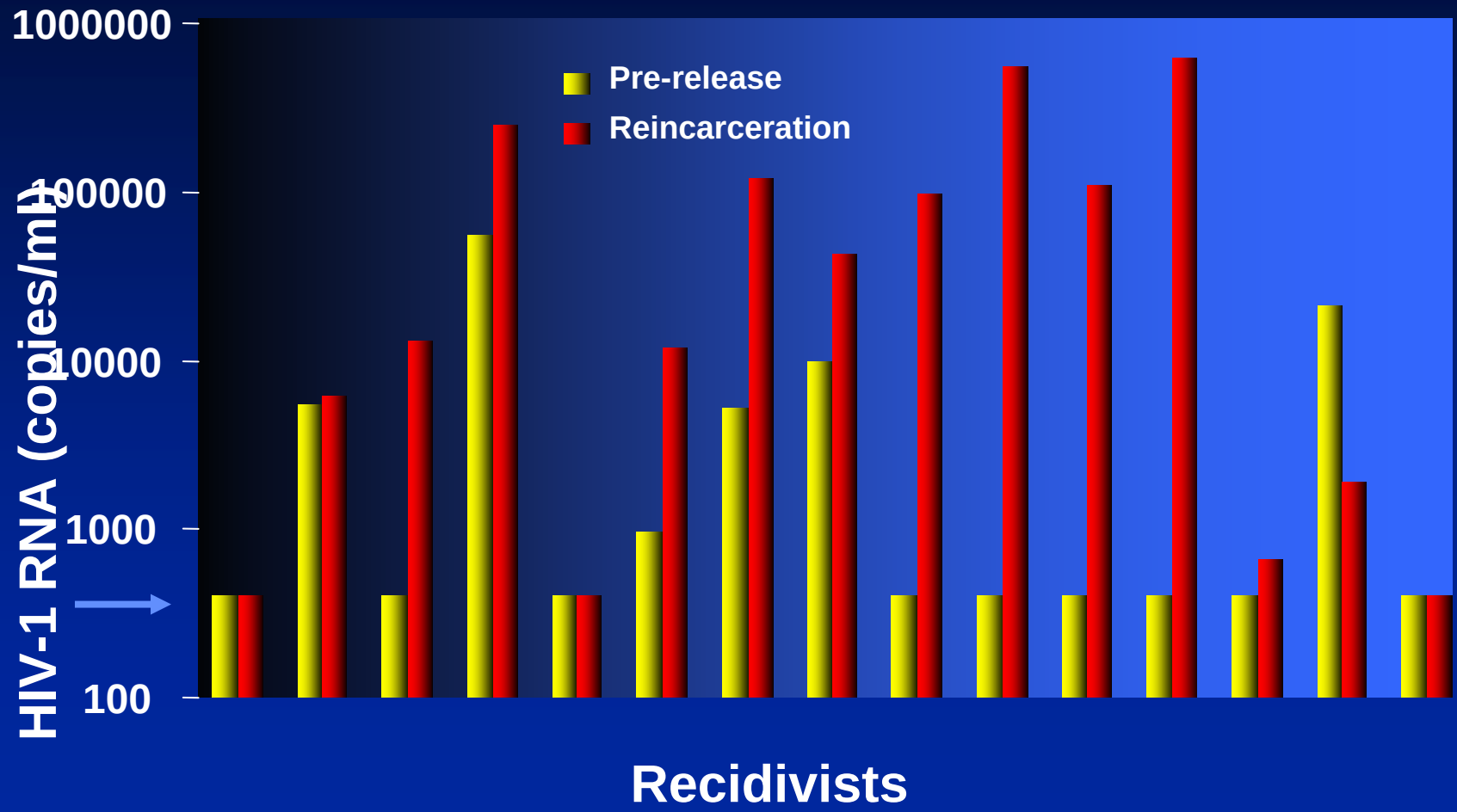
HIV Treatment in Correctional Settings

- Prisons (State and Federal)
  - Antiretrovirals are available at most every state and all federal prisons
  - Same for CD4 cell count testing and HIV viral load
  - Genotype resistance testing is not always available or are difficult to obtain. Phenotype, less available.
- Jails (Town, City, County)
  - Uneven level of care and services.



Bureau of Justice Statistics, HIV in Prisons, 2003

Viral Load Increases Among HIV+ Recidivists

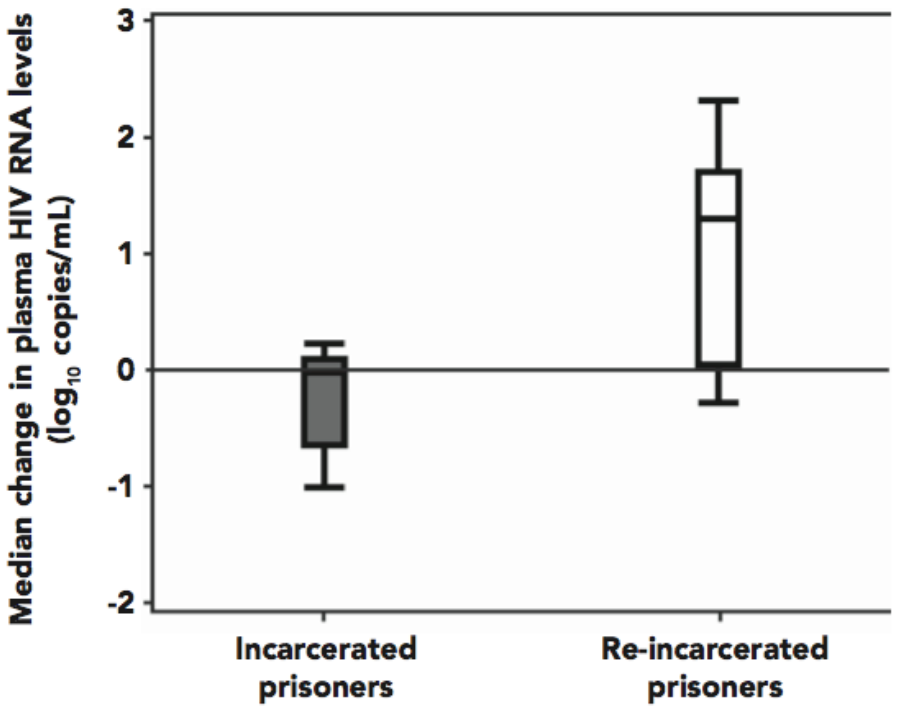


Stephenson B, Wohl D et al Public Health Reports. 2005

Median CD4+ cell counts decreased from 224/mm^3 to 157/mm^3 (p = 0.01) among releasees but,

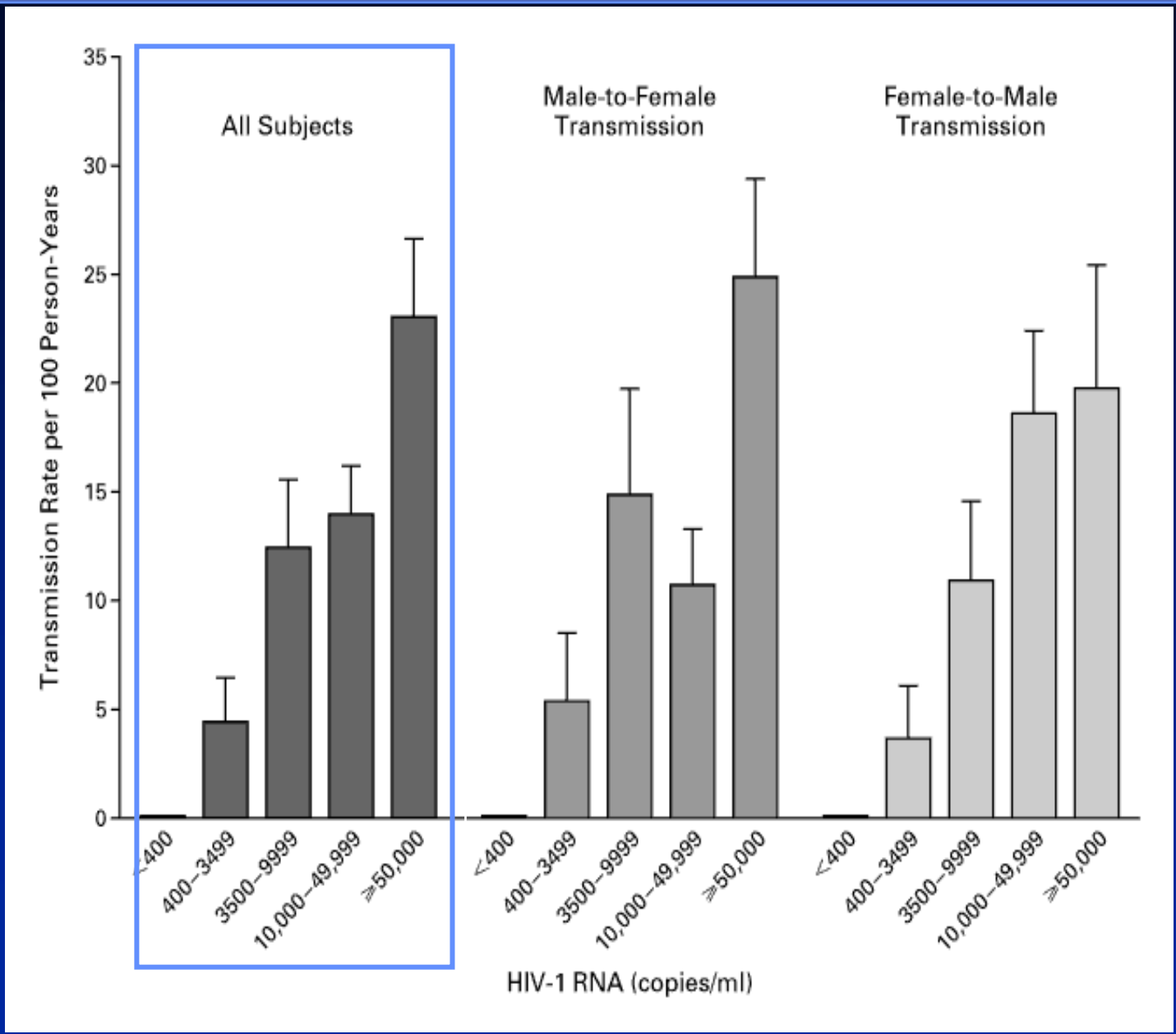
increased from 446/mm^3 to 653/mm^3 (p = 0.003) among those incarcerated.

Figure. Median changes in plasma HIV RNA levels (log_{10} copies/mL) for re-incarcerated (n=15) and incarcerated prisoners (n=30)



The figure depicts two boxplots in which the upper boundary of each box represents the 75th percentile and the lower boundary represents the 25th percentile. The upper bar shows the 90th percentile, and the lower bar shows the 10th percentile. The 50th percentile or median value is symbolized by the horizontal line within each box.

Stephenson B, Wohl D et al Public Health Reports. 2005


All Subjects
Male-to-Female Transmission
Female-to-Male Transmission
Transmission Rate per 100 Person-Years
35
30
25
20
15
10
5
0
<400
400–3499
3500–9999
10,000–49,999
≥50,000
HIV-1 RNA (copies/ml)

HIV+ men and women are more likely to have partners who have been incarcerated

In a study of 244 African-American men and women with and without HIV infection in North Carolina:

- HIV+ men were 6x more likely to have had a sexual partner who had been incarcerated in previous year than HIV- men
- HIV+ women were 4x more likely to have had a sexual partner who had been incarcerated in previous year than HIV- women
- Eighty-one percent of HIV+ women reported that one of their last 3 sex partners had been incarcerated.
- Further, 24% of HIV+ women and 65% of HIV+ men had themselves been incarcerated during the past 10 years.

Adimora A, et al, JAIDS 2003

HIV Transmission Among Inmates in the Georgia State Prison (MMWR April 21, 2006 / 55(15);421-426)

- The Georgia Department of Corrections (GDC) house 44,990 male inmates; median age is 34 years (range: 15--88 years) and 63% are black. A total of 856 (1.9%) were known to be HIV infected, of whom 732 (86%) were black.
- In 1988, the GDC initiated mandatory HIV testing of inmates upon entry into prison and voluntary HIV testing of inmates on request or if clinically indicated was initiated as a pilot program for two years.
- **From 1992-2005, 88 male inmates had a negative HIV test on entry and a subsequent confirmed positive HIV test result during incarceration.**
- **Half** of these cases were detected during a 2-year period (2003-5) when the pilot program was in place offering HIV testing annually to all inmates

HIV Transmission Among Inmates in the Georgia State Prison (MMWR April 21, 2006 / 55(15);421-426)

- 32% of the cases and 6% of the matched controls reported sex with a male **staff** member and 22% of cases and 9% of these controls stated they had sex with female prison **staff**.
- Of 43 inmates (34 cases and 9 controls) who reported engaging in consensual sex, 13 (30%) said they used condoms or other improvised barrier methods including rubber gloves and plastic wrap. Of 14 inmates who reported exchange sex, three reported using improvised barrier methods but not condoms.
- 6 inmates with HIV reported being raped.

TABLE 2. Exact multivariate conditional logistic regression analysis of characteristics and risk behaviors among prison inmates* who became HIV† positive during incarceration, compared with matched controls* — Georgia state prison system, 2005

Characteristic/Behavior	Case inmates* No.	(%)	Controls* No.	(%)	AOR§	(95% CI¶)	p-value
Any male-male sex in prison	45	(66)	9	(13)	10.1	(3.0–54.9)	<0.01
Received tattoo in prison	40	(59)	28	(41)	13.7	(1.5–390.6)	0.01
Body mass index ≤25.4 kg/m^2 at entry	51	(75)	23	(34)	3.8	(1.2–15.2)	0.02
Black race	45	(66)	40	(59)	3.7	(1.1–16.7)	0.03

NOTE: All values are statistically significant.

* Case inmates (n = 68) were male prison inmates who seroconverted to HIV in prison; controls (n = 68) were HIV-uninfected male prison inmates with comparable sentence lengths and time served.

† Human immunodeficiency virus.

§ Adjusted odds ratio.

¶ Confidence interval.

"Hi, honey! I'm at large again!"

Study Design/Methods

- Prospective, observational cohort study of 170 HIV+ prison inmates (74% AA, 57% women)
- Release=86, Recidivist=84

PRE-RELEASE → **POST-RELEASE** | **RECIDIVISTS**

Within 3 months prior to release:

In-depth face-to-face interview regarding pre-incarceration HIV transmission risk behaviors

Asked to call study coordinator using toll-free pager 30-60 days following release:

Telephone interview concerning actual risk behaviors post-release

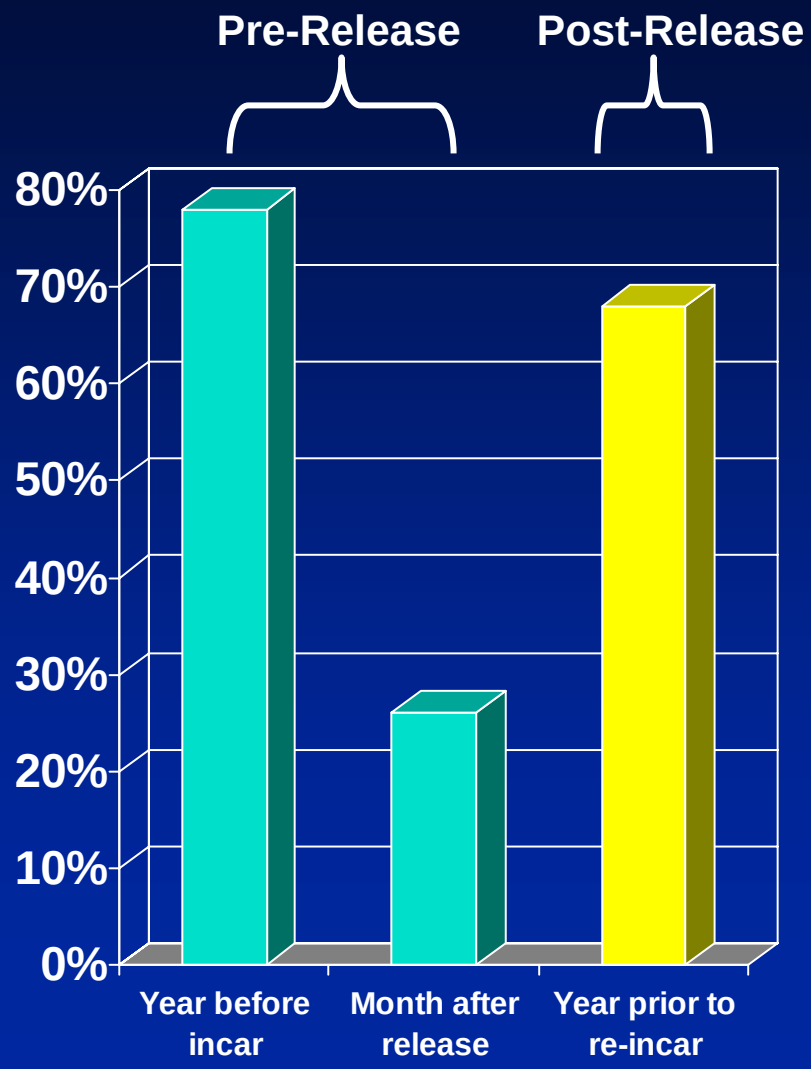
Released and now re-incarcerated

In-depth face-to-face interview regarding inter-incarceration HIV transmission risk behaviors

Stephenson BL, **Wohl DA**, McKaig R, et al. Int J STD AIDS. 2006 Feb;17(2):103-8

Unsafe sex among HIV+ prison releases

- High rate of unsafe sex especially among main partners
- Half of the partners were perceived by participant to be HIV uninfected
- One third of each group thought it somewhat or very likely they would infect a partner



Stephenson B, Wohl D, et al. Int J STD AIDS. 2006

Results: Pre-Release (n=86)

- 21% of the cohort reported *giving* someone drugs and 17% money for sex in the year before arrest
- 28% *received* money and 28% drugs for sex
- Of the 65 diagnosed with HIV prior to this incarceration, 37% had told all their sex partners they were HIV-infected.

Results: Post-Release (n=75)

- 48% of subjects reported having sex following release an average 9 days post-release (range: 1 hour to 31 days)
- 7% of subjects had a new sex partner since release
- 93% had a Main Sex Partner, of whom 56% were reported to be HIV-. 82% of releasees returned to their prior Main Sex Partner

Results: Post-Release

- 26% of subjects with a Main Sex Partner had unprotected sex with that partner following release
- 100% of subjects reported that they disclosed their HIV+ status to their Main Sex Partner but only 63% said they told all sex partners they were HIV+
- Given their current sex behavior, 29% of releasees felt that it was "*very*" or "*somewhat*" likely that they would infect their HIV- Main Sex Partner
- Since release, 15% of subjects reported using street drugs at least once a week
- 12% of releasees report using crack cocaine and 2% injected drugs (all denied needle-sharing)

Results: Post-Release

- 3 subjects (2 men) reported having sex while incarcerated all with same sex prisoners

UNC ID Clinic

- In comparison, in a recent survey of 107 HIV-infected patients attending the UNC Infectious Diseases Clinic (33% Women, 74% African-American, 44% Heterosexual, 86% Married) :
  - 44% of subjects reported having unprotected sex with their Main Sex Partner in the previous year.
  - 53% reported unprotected sex in the same time period with at least one Other Sex Partner.

(Strauss R, et al. APHA 2001)


WELCOME BACK
RECIDIVISTS!

Results: Recidivists (n=84)

- Mean time from last sex to incarceration was 204 days (1 hour-10 years)
- 36% had a new sex partner during time free
- 82% had a Main Sex Partner and 57% were reported to be HIV-
  - 60% had unprotected sex with their Main Partner while free
- 49% had at least 1 Other Sex Partner while out (mean #=7)
  - 57% of Other Partners were HIV- and 17% of unknown status
  - 43% had unprotected sex with at least 1 Other Partner while free

Results: Recidivists (n=84)

- 37% had told all their partners they were HIV+
- 31% thought it "*very*" or "*somewhat*" likely they infected someone while free
- 5% shared needles
- 11% knew of someone they infected via sex or needle sharing

Post Release (mean 36 d after release)

Medications

Received ART supply at release	100%
Mean number of days of ART supply	32d
Since release gone without HIV meds for >2d	17%

Access to Care

Since release:

Not seen a health care provider	41%
Health was better than when in prison	46%

Recidivists (mean duration free = 430 d)

Medications

Ran out of ART while free	34%
Mean time from release to running out of ART	159d
Mean length of time off ART while free	203d

Access to Care

Did not receive medical care while free	34%
Hospitalized between incarcerations	27%

Strongly Agreed **or** ***Agreed*** **that after last release:**

Covering medical costs was a problem	54%
Went without needed care because of expense	39%
I was able to get medical care when needed	62%
The clinic was conveniently located	65%

Housing and Drugs

Homeless, in a shelter or ½ way house while free	31%
Using crack cocaine between incarcerations	75%
In drug rehab between incarcerations	32%

Wohl, et al. CROI 2004

Discharge Needs

- HIV+ inmates face a host of exigent needs following release
  - Most are homeless
  - >50% require on going mental health care
  - Almost all need substance abuse counseling
  - Job training
  - Parenting classes
  - On going HIV transmission risk reduction education
  - All need HIV care

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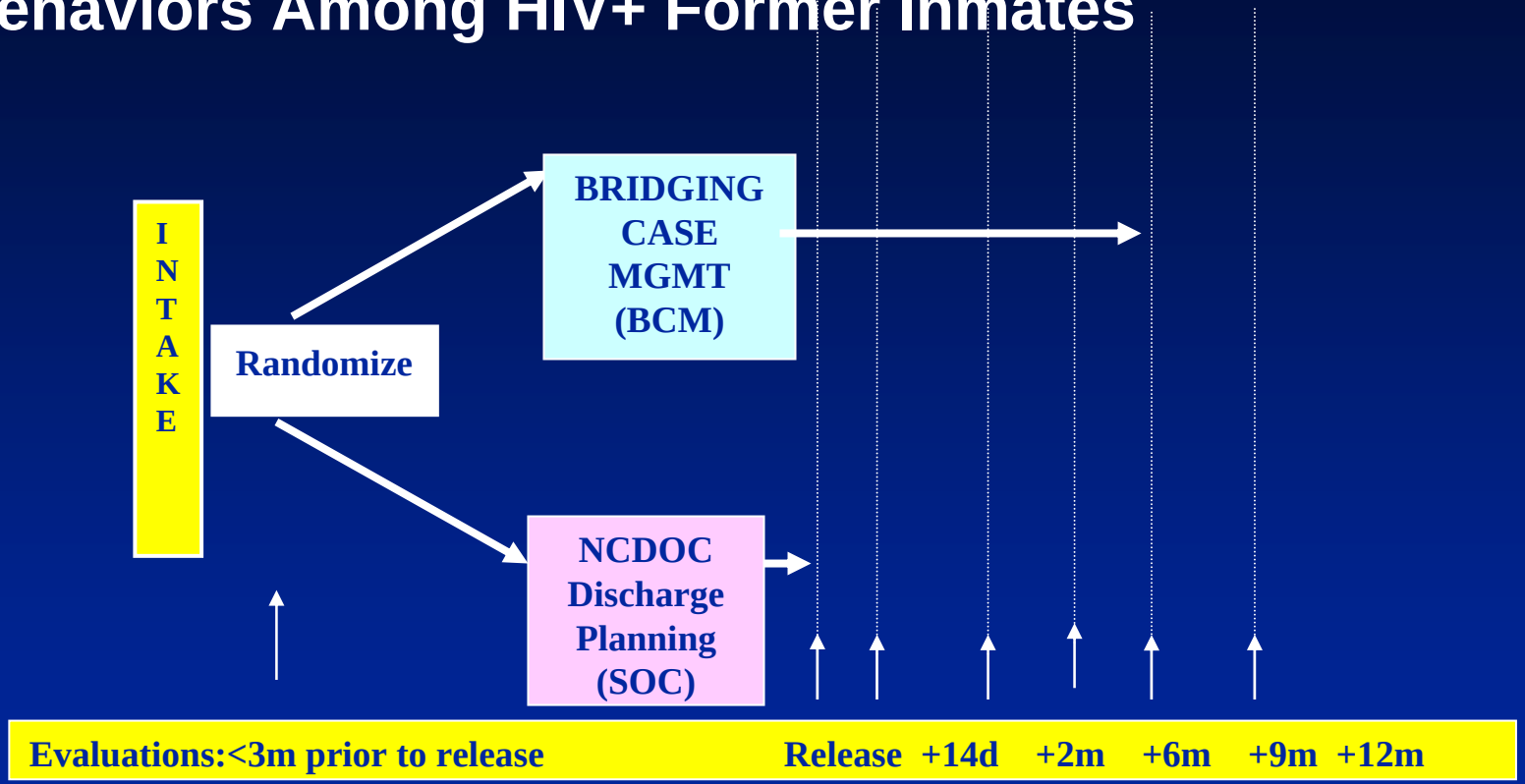
What can be done to make transition successful?

- Limited comparative data on successful approaches
  - Education (Motivational/Skill building – for HIV+ and HIV-)
    - In prison/jail
    - Post release
  - Community partnership
    - Need buy-in from community and leadership
    - e.g. faith-based programs
  - HIV Therapy – reduce viral load in genital secretions and therefore transmissibility
    - Requires access to HIV care and medications post-release and adherence
    - Inmates lose access to state ADAP
  - New approaches to traditional case management

Transition

- Case Management
  - Comprehensive approach to coordinating social, medical mental health and other services
  - ‘Glue’ that holds together a continuum of needed services
  - In setting of HIV case management has:
    - Increased access to benefits advocacy, psychological services, home health care and emotional support
      - Discharge planning reduced **recidivism** from 39% to 17% in one year among women in RI; 72% to 49% in MA over two years (Flanigan et al, 1996, Skolnick et al, 1998)
    - Higher utilization of health services and combination HIV therapy
    - Improved health outcomes

A Study of Bridging Case Management to Increase Access to Care and Reduce HIV Transmission Risk Behaviors Among HIV+ Former Inmates

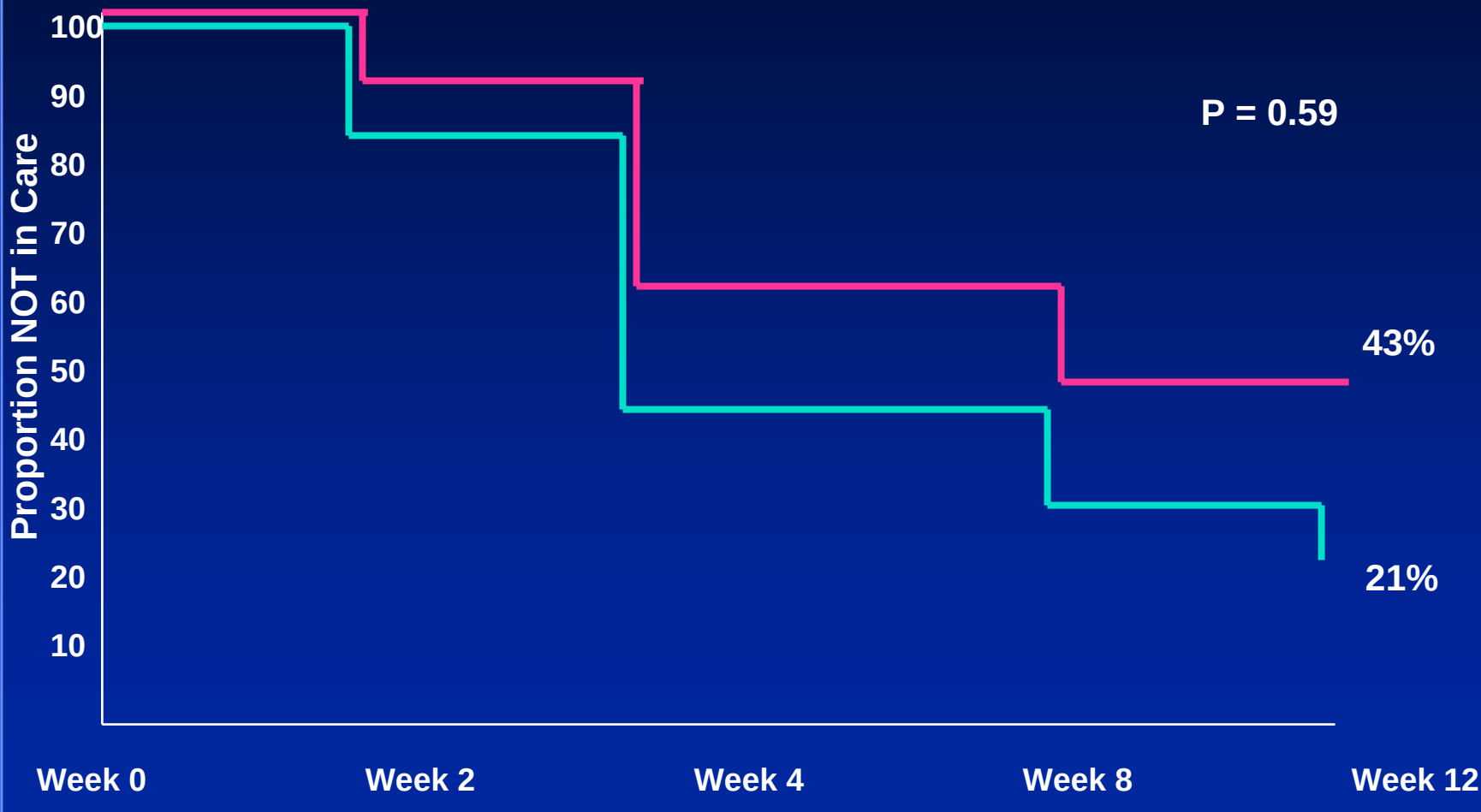


Bridging Case Management – Prelim Data

- 102 HIV+ participants enrolled
  - 76% men, 81% African-American
- 90 participants have been released (median time out 138 days)
  - Re-incarceration: SOC = 5, BCM = 1
  - Utilization of ER for care: SOC = 44%, BCM 28%
  - Access to routine HIV care:

Wohl D, Stephenson B, et al, IAC 2006

Time to Access HIV Care



Wohl D, Stephenson B, et al, IAC 2006

- Types of Crimes: Consistent with judicial standards, criminal activity falls under the following categories- Crimes Against a Person, Property Crimes and Public Order Crimes
- Class of Crimes: Consistent with judicial standards, classes of crimes include- Felony, Misdemeanors and Traffic

Table 1: Total Crimes Committed by Participants Post-Release (per Type)

Type of Crime	SOC	BCM
Crimes Against a Person	30	17
Property	8	11
Public Order	27	11

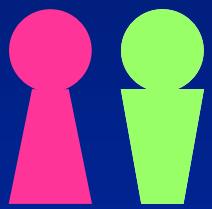
Table 2: Total Crimes Committed by Participants Post-Release (per Class)

Class of Crime	SOC	BCM
Felony	23	16
Misdemeanor	31	19
Traffic	25	7

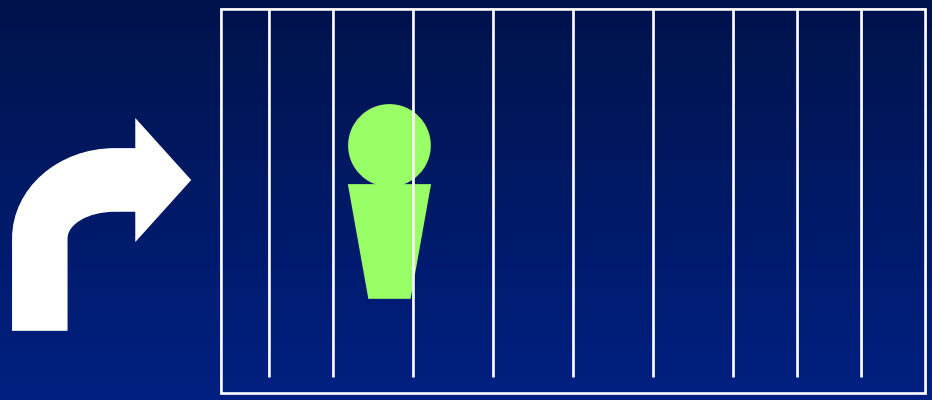
Communities of Origin

- Ratio of men to women is low
  - *Concurrency* of partnerships
- Available men often under-employed and often financially unstable
  - Sexual mixing
- A substantial proportion of HIV+ African-American women have relatively few risk factors for infection (Adimora A et al, JAIDS 2006).

Impact of Incarceration on Communities where HIV and Imprisonment are both Endemic



Nexus between HIV and Incarceration



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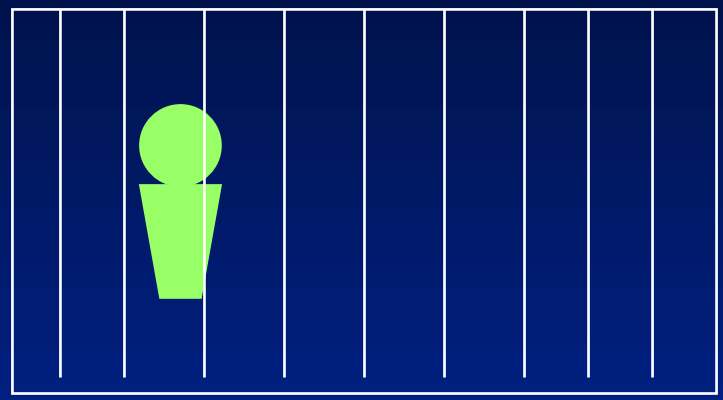

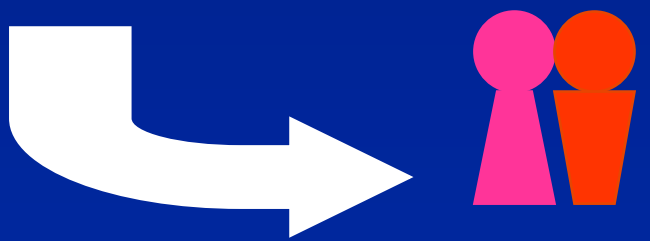

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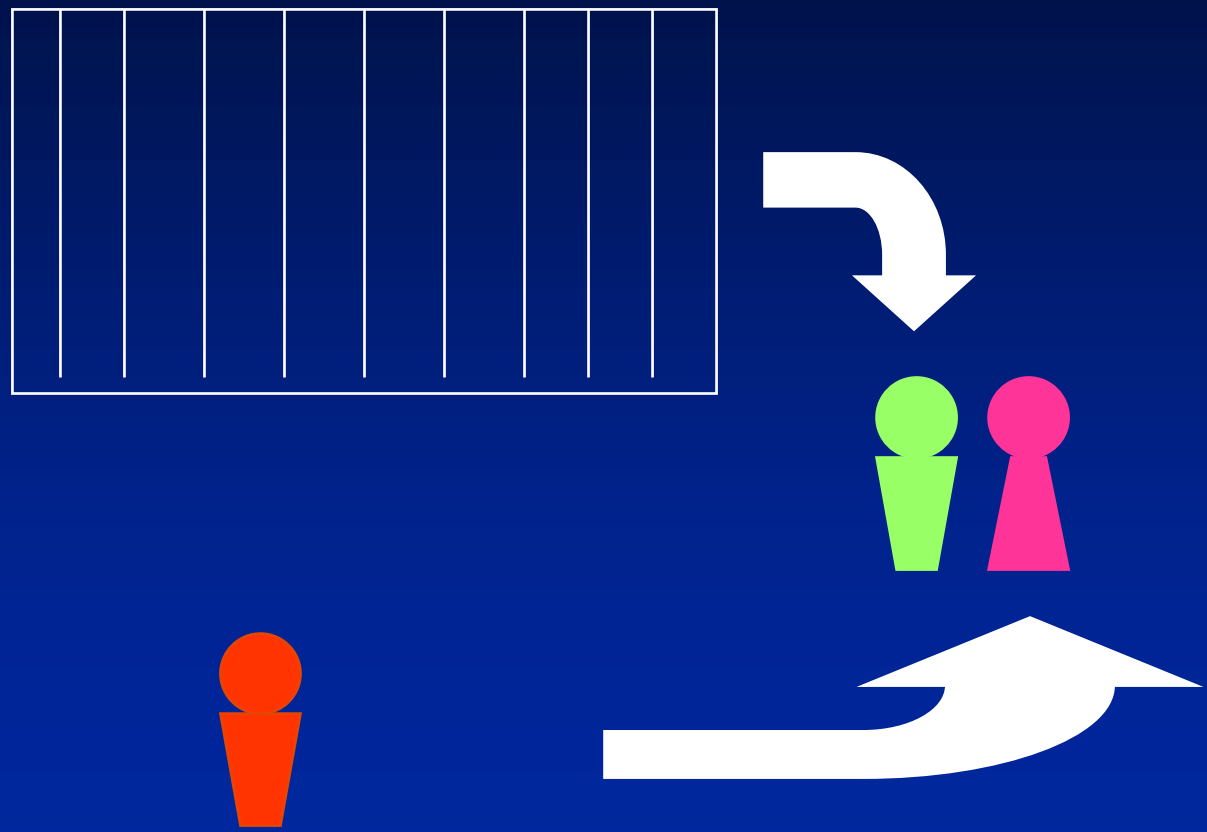

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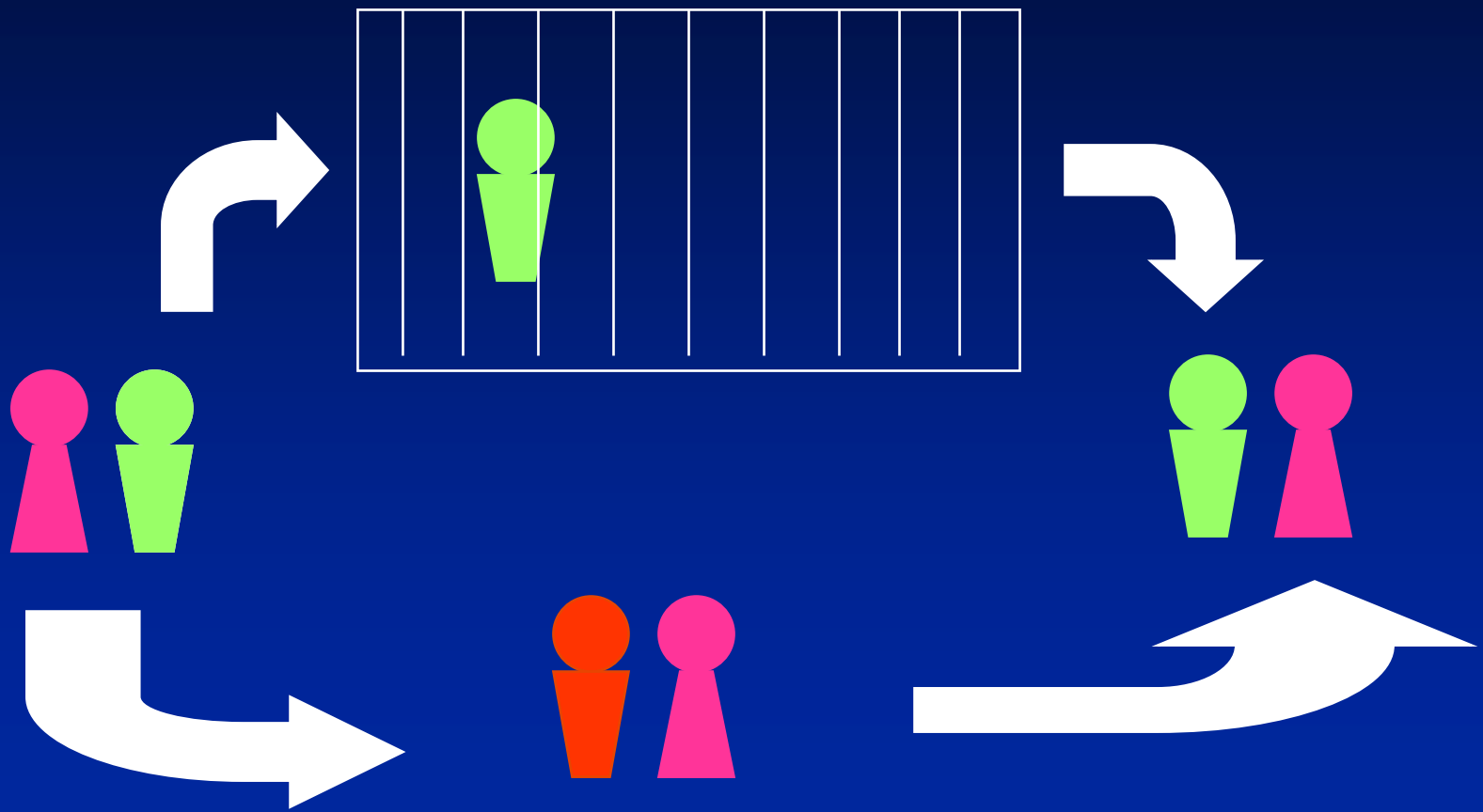

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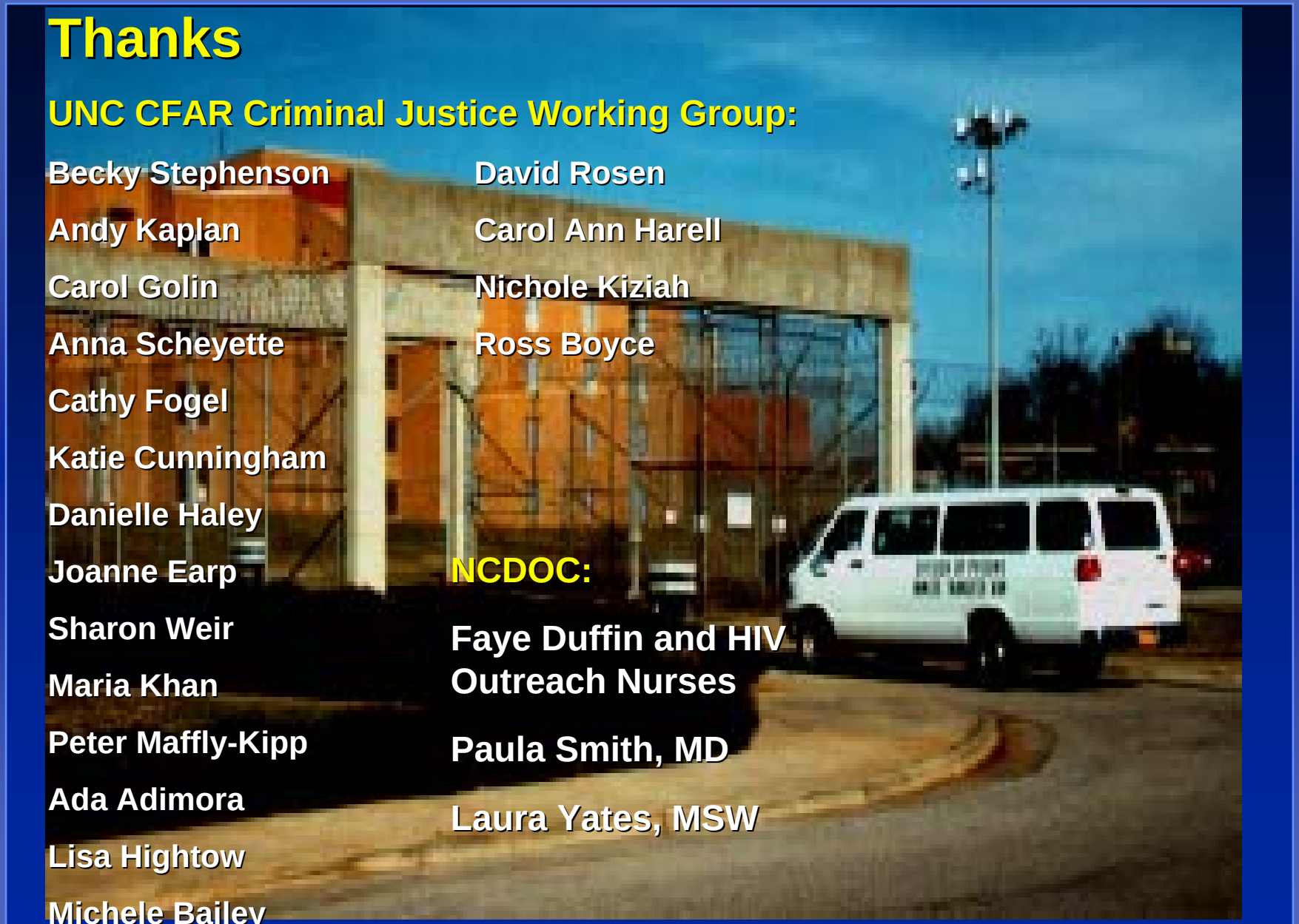

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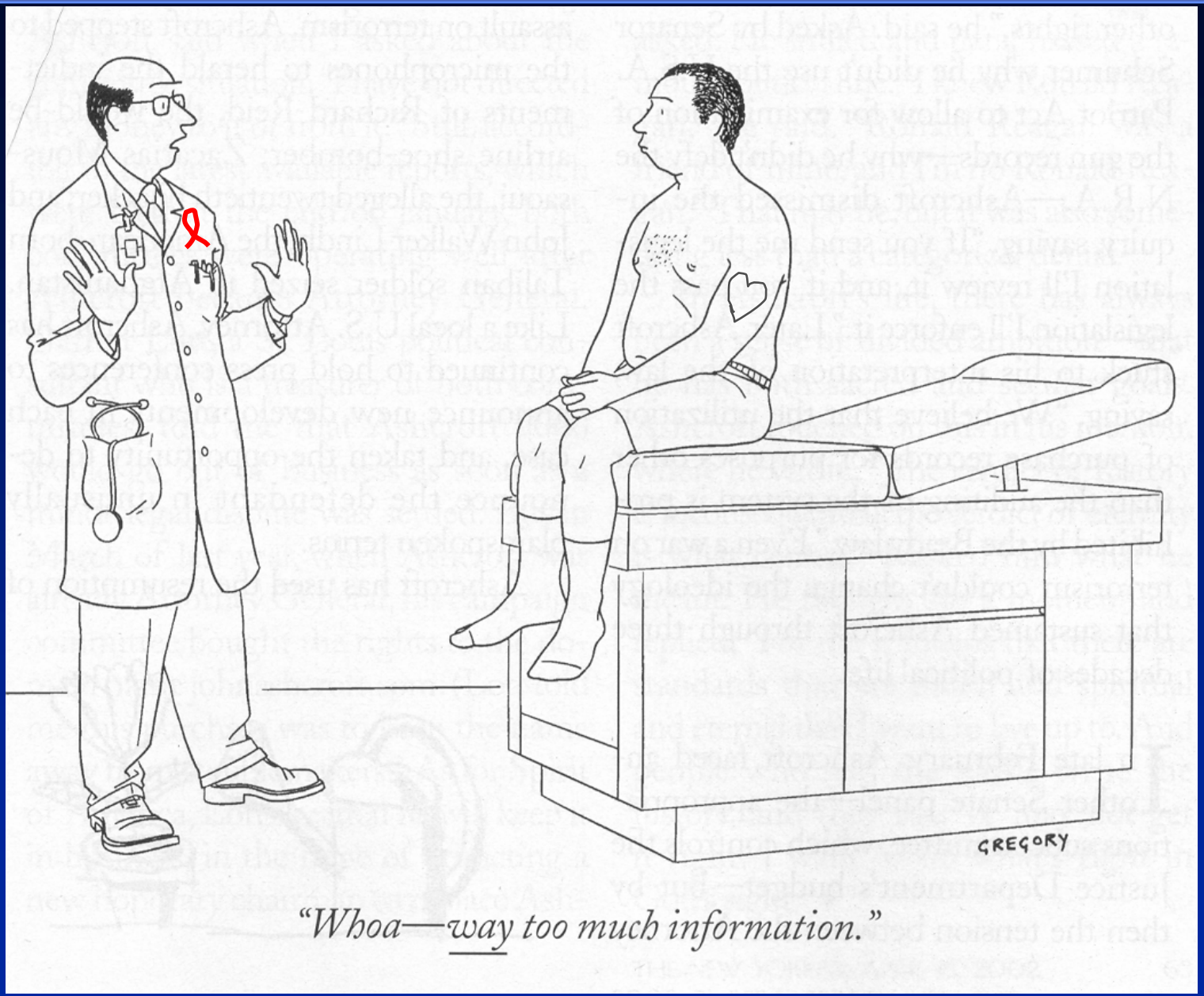

"Whoa—way too much information."

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