Infection Control: Correctional Facilities

Infectious Disease Epidemiology Section
Office of Public Health
Louisiana Dept of Health & Hospitals
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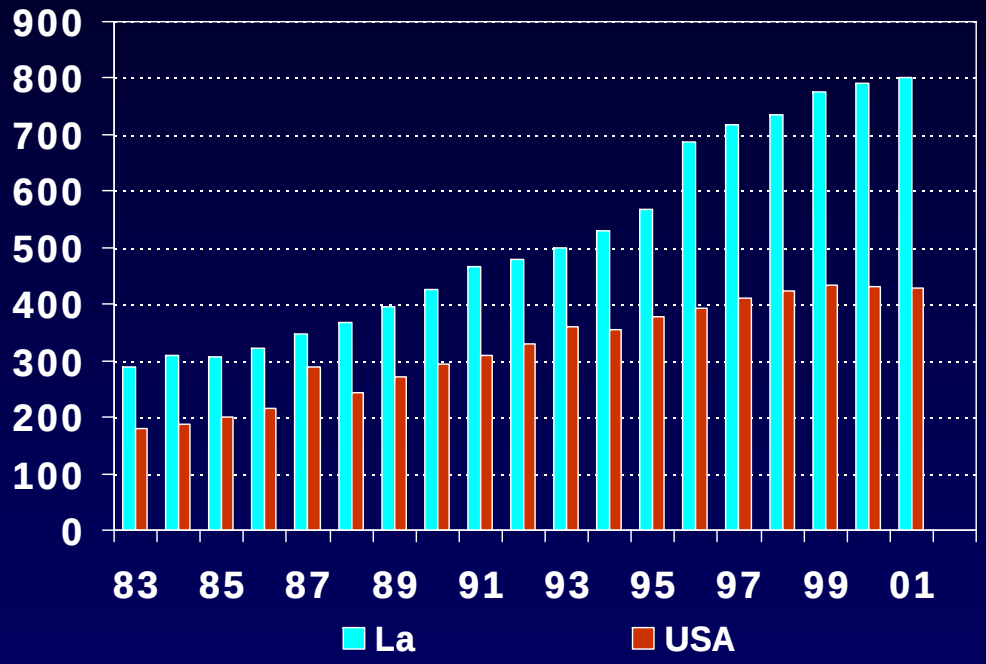
Your taxes at work

Correctional System in Louisiana

- 36,050 Inmates
  - (31% - Drug, 21% - Property, 38% - Violent crimes)
- Crime rate (Violent crime /100,000) LA - 847

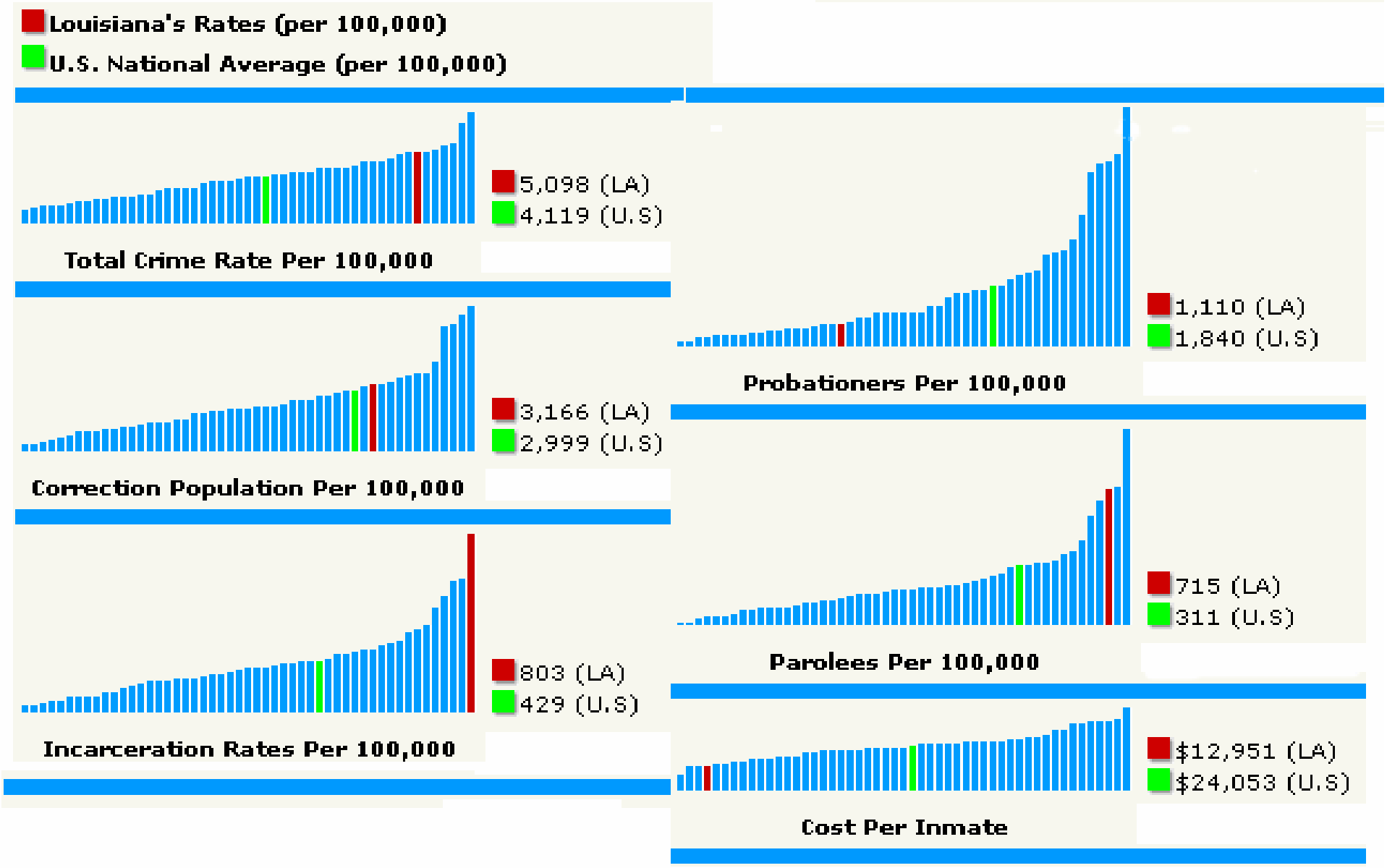
  (FL 854, SC 847, TX 560, KY 301)
- Local jails 105, 31,635 beds
- State prison system:
  - 11 State facilities + 2 privet
  - 19,400 inmates
  - +17,164 in local jails

Incarceration Rates – Violent Crimes - >1 year - /100,000 pop



From 1991 to 1998, violent crime declined by 18 % in Louisiana and the incarceration rate increased by 59%

Correctional System in Louisiana



Inmates at High Risk of Infections

- Today's inmates are older, sicker and remain imprisoned longer when compared to the inmates of 20 years ago
- Inmates come from socioeconomic groups at high risk for poor health without good access to regular medical care
- They also have a disproportionately greater number of chronic illnesses and infectious diseases than the non-incarcerated population
- TB among inmates 4 to 17 times the US population
- HCV:
  - 83% of drug users are incarcerated at some time
  - 80% inmates have substance abuse history

Infection Control Program

All correctional facilities should have an infection control program including:

- Educating staff and inmates
- Written control plan for prevention of BBF exposure
- Promote immunization (staff & inmates)
- Monitoring incidence of selected CD (staff & inmates)
- Isolation policies
- PPE available to and utilized by staff
- Evaluating and making available ‘sharps’ devices least likely to cause injury
- Overseeing an effective post-exposure program
- Ensuring reporting to PH

Standard Precautions

- **Correctional standard precautions**: Standard precautions, as defined for the hospital setting, should be adapted to the correctional setting and incorporated into institution policies and procedures.

- All inmates should be considered potentially contagious whenever direct contact is anticipated with
  - blood, body fluids (e.g., secretions, excretions, feces and urine, excluding sweat), non-intact skin and mucous membranes
  - Or in simple terms “Red, wet or dirty”

Fed Bureau of Prison 2003, MRSA Prevention Guidelines

Personal Protective Equipment (PPE)

- PPE includes masks, respirators, gloves, goggles, face shields, gowns, hoods, foot coverings
- Accessible in all patient care areas, housing units, transportation vehicles, laundry, anywhere employees come into contact with inmates
- Staff to carry gloves at all times so as to be prepared to protect themselves when responding to altercations, self mutilators, suicide attempts, other medical emergencies
- Gloves available where custody staff sign in each day

Blood Borne Pathogen (BBP) Exposures

- Needlestick and other sharp injuries can occur during a variety of activities, including:
  - Replacing cap on used needles, disposing of needles
  - Administering injections, drawing blood
  - Suturing
  - Passing sharp devices from one person to another
  - Handling trash / dirty linens
  - Intentional use of sharps as a weapon
  - Cell search or body search

- Inmates are at risk for BBP exposures
  - Injection drug use, tattooing, fights
  - Unprotected sexual activity
  - Unique risk: exposed to BBP by inmates who throw body fluids at them (known as "gassing" or "chunking")

Culinary Services and Food Handlers

- Persons in culinary department screened for excluding health conditions thru daily inspection
- Temporary exclusions:
  - sores on their hands or arms
  - active respiratory infection
  - illness with vomiting or diarrhea
- Permanent exclusions:
  - Mentally ill individuals who cannot adhere to appropriate hygiene
  - Note: HIV, hepatitis B and hepatitis C are not transmitted thru food⇨ NOT exclude otherwise qualified individuals
- Education: orientation on importance of good hygiene, comprehension of basic cleanliness

Laundry

- Insufficient access to clean clothes and linen: MRSA, lice
- In correctional environment:
  - Clothing / linen are hoarded, cut up to make non-approved clothing, curtains, escape items such as ropes and altered clothing
  - Inmates should be provided adequate supply of clothing and linens
- Laundry handlers: gloves, gowns, masks, face shields while handling / sorting contaminated laundry. Thick utility gloves OK
- Soiled linen bagged or carts at location, no sorting
- Linen contaminated with BBF in leak proof bags or biohazard labeled containers labeled
- Adequate ventilation in the laundry area
- Minimize sharps in laundry: appropriate disposal of sharps, train laundry workers
- A temperature of at least 71° C (160° F) for a minimum of twenty-five minutes was commonly recommended. Low temperature washing at 22° C - 50° C can be effective when adequate amounts of chlorine bleach used

Searching

- Searching takes place when receiving new prisoners, transporting prisoners and conducting routine cell searches
- Searching procedures should be developed
- Evidence packs should be used when searching
- Sharp objects kept in sharps container
- Always wear gloves when searching
- Do not run fingers along or under tables, beds, etc. (Sharps); Use pens, mirrors, rulers, etc. and do not place hands where you cannot see
- Torches or angled lighting to illuminate dark areas

Searching

- **Body and Strip Searches**
  - **Avoid 'pat down' technique if possible**
  - **Inmate should :**
    - **empty out their own pockets**
    - **remove and tip out their shoes**
    - **run their hands through their hair**
    - **turn down their collar, cuffs, sleeves or other parts of their clothing where sharp objects may be concealed**
    - **If this is not practicable or appropriate, use pen to search clothing**

Searching

- **Searching bags:**
  - **No hands inside**
  - **Contents tipped out onto a flat surface for examination**
- **Use Gloves, disposable forceps**
- **Wash hands**

Barbering

- Inmates perform majority of haircuts
- Inmate barbers usually little or no training
- Barbering tools reused without appropriate disinfection
- Train inmate barbers, observe periodically
- Provide disinfection supplies
- Provide containers to hold soiled linens
- Towels for each client
- Containers for disinfection of combs, brushes, clippers, scissors
- Disinfectant solution provided for complete immersion of barbering tools between haircuts
- Clippers and other electrical instruments brushed to remove all foreign matter and then disinfected by wiping with a disinfectant. Disinfected instruments should be stored in a clean, covered area

Barbering Cont.

- Barbers should thoroughly wash their hands with soap / water or approved hand disinfectant before each client
- Barbers' exclusion:
  - Disease transmitted by droplet or contact
  - Ex: Purulent conjunctivitis (pink eye), VZV, respiratory illnesses such as colds, influenza, tuberculosis, bacterial skin infection such as impetigo or cutaneous abscesses, methicillin-resistant staphylococcus infection, ectoparasites (scabies/lice)
  - HBV, HCV, HIV not transmitted during routine barbering activities ⇨ NOT preclude employment as a barber

HIV Prevention Guidelines

National Commission on Correctional Health Care
Clinical Guideline for Correctional Facilities

Management of Persons With HIV Infection

HIV in US Correctional Facilities

- AIDS rate *6 higher state/federal prisons than population
- 20% - 26% US living with HIV/AIDS spent time in correctional
- No precise count available of HIV cases in prisons and jails
- 1999 HIV seroprevalence
  - 50 state prison + fed = 2.0%
  - Jails = 1.7%
  - Higher prevalence in women prisoners = 3%

HIV Transmission in Correctional Facilities

- Homosexual activity common in prisons and jails:
  - FedBOP 1982: 30%
  - TN 1984: 17%
  - FedBOP: 9% - 20% new or MSM inmates victims of rape
  - *Prison Rape Reduction Act of 2002:* national median of 13.6%
  - Other violence (Lacerations, bites, bleeding) ➔ HIV risk
- Sharing drug injection equipment; some handmade from parts of pens and light bulbs
- Sharing toothbrushes

HIV Transmission in Correctional Facilities

- Tattooing widely practiced, performed without sterile instruments
  - Multiple skin punctures with recycled, sharpened staples, paper clips
  - Plastic ink tubes from ballpoint pens
  - Prison wisdom: tattooing with blood ooze results in best quality image and least likely to become infected
  - Homemade pigment delivered ID (sharp angle) rather than direct puncture
  - Metal points connected to battery produce vibration, increasing number of skin punctures → better tattoo → higher HIV
- Body piercing becoming more popular in prison

HIV Testing Policies

- Mandatory HIV antibody testing:
  - In 1999, 19 state prison systems and the Fed BOP
  - Less productive and probably less effective in educating prisoners and changing their behavior than voluntary testing and broad education
- Voluntary testing increasingly available to prisoners after Tx available
- True, free informed consent from prisoners ?
  - Prisoners must understand institutional consequences of HIV+, as segregation, loss of access to activity programs, visitation, jobs
- Antibody testing benefits inmates in institutions that offer antiretroviral therapy and prophylaxis against opportunistic infections

Confidentiality

- Difficult to maintain with segregation or quarantines
- Prison policies regarding disclosure vary
- Fear of disclosure & consequences discourage voluntary testing
- HIV status used to make decisions about housing /segregation, work assignments, visiting privileges, among others
- In some jurisdictions, results of HIV tests go directly to prison staff
- In 1988, California voters passed Proposition 96, an initiative authored by the sheriff of Los Angeles County requiring prison and jail physicians to give lists of known or suspected HIV-infected prisoners to prison staff. Such policies reflect the fear and misinformation prevalent in many prisons, reinforce the misinformation and undermine the message and practice of universal precautions

HIV Education

- Trend over time away from segregation and toward case by case determination of housing placement
- 50% of US prisoners are functionally illiterate, many not native English speakers; to be effective, educational programs must be modified
- Educational message:
  - No risk activity is safe
  - Exposure to semen and bloody body fluids to be avoided
  - Begin antiretroviral Tx
- Educational programs with voluntary testing and counseling services effective in identifying unknown infection, promoting acceptance and adherence to Tx

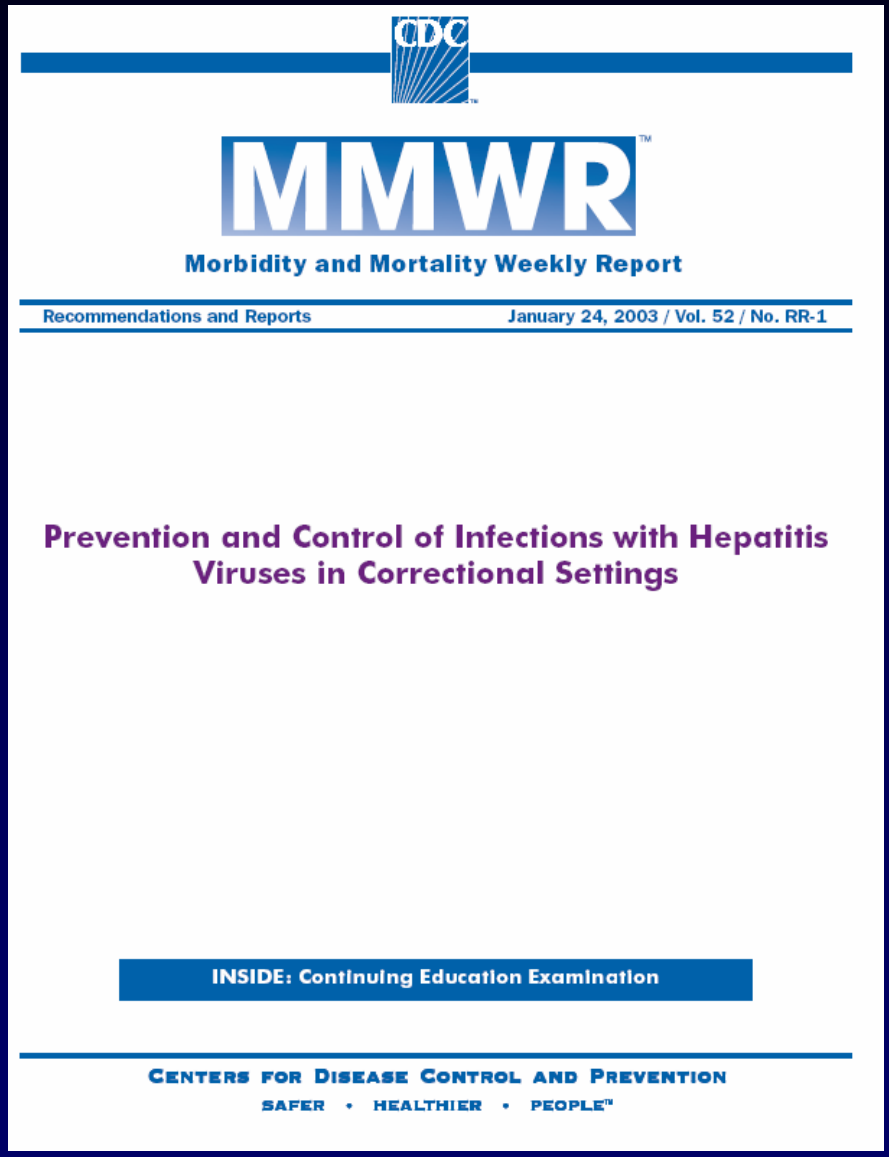
HIV Prevention: Other Measures

- Increasing staff-to-prisoner ratios, classifying and housing inmates properly, decreasing overcrowding, providing activities for inmates while preventing transmission through nonconsensual behavior (ie, violence, including rape). Preventing violence is the ongoing responsibility of prison staff
- Condom availability in prison
  - prison cells are not regarded as places of privacy
  - condoms are considered contraband (hiding container)
  - trend is to increased availability (In Mississippi, sold from vending machines at institutional canteens)
- Distribution of sterile syringes to inmates NOT in US prisons
- Disinfectant for injection materials in EU

Hepatitis in Inmates

	% jail and prison inmates with	% US population with
HBV	2%	0.5%
HCV	15%	1.3%

Hepatitis Control Guidelines



CDC

MMWR

Morbidity and Mortality Weekly Report

Recommendations and Reports | January 24, 2003 / Vol. 52 / No. RR-1

Prevention and Control of Infections with Hepatitis Viruses in Correctional Settings

INSIDE: Continuing Education Examination

CENTERS FOR DISEASE CONTROL AND PREVENTION

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Hepatitis A Virus Infection

- HAV vaccination to high risk inmates
  - Men who have sex with men [MSM]
  - Drug users
  - Chronic liver disease patients
- Initiate ASAP after incarceration
- Pre-vaccination serologic testing to identify susceptible persons to be considered if determined to be cost-effective
- Routine screening for anti-HAV not necessary, except when used to identify susceptible persons for vaccination
- Report to OPH
- Epidemiologic investigation to identify source of infection & contacts
- Unvaccinated or known susceptible close contacts postexposure prophylaxis

Hepatitis B Virus Infection

- Prevention of HB infection in newborns:
  - Screen incarcerated pregnant women
  - HB vaccine and HBIG to newborn of carriers

Hepatitis B Virus Infection

- Hepatitis B Vaccination
  - Vaccinate all unless documented immunity (sero or vaccine)
  - Catch-up vaccination of already incarcerated
  - Vaccination of contacts of known HBsAg+ persons (ex cellmates, same cell block or dormitory
  - Use 4-month schedule (0, 1-2 and 4 months)
- Pre-vaccination and Post-vaccination Testing
  - Pre-vaccination serologic testing if [pos] > 25% - 30%
  - Periodic serologic surveys of incoming inmates to determine the prevalence of HBV immunity
  - Vaccine dose 1 at same time blood drawn for screening
  - Post-vaccination testing not indicated except
    - immunodeficiency, HIV infection, chronic hemodialysis
    - sex partner of HBsAg+ person or HCW

Hepatitis B Virus Infection

- Post-exposure Prophylaxis
  - After any percutaneous (sharing injection-drug equipment or human bite) or mucosal (sexual) exposure to blood
  - Fully vaccinated victim: no vaccine
  - Susceptible victim: Vaccinate & evaluate if HBIG required
  - Test source
    - If HBsAg+, HBIG ASAP & $\leq$ 7 days after the exposure (standard practice)
- Report cases to OPH
- Investigate acute HBV infections
- Monitor HBV cases for progressive liver dysfunction and evidence of acute liver failure
- Treatment of Chronic Hepatitis B

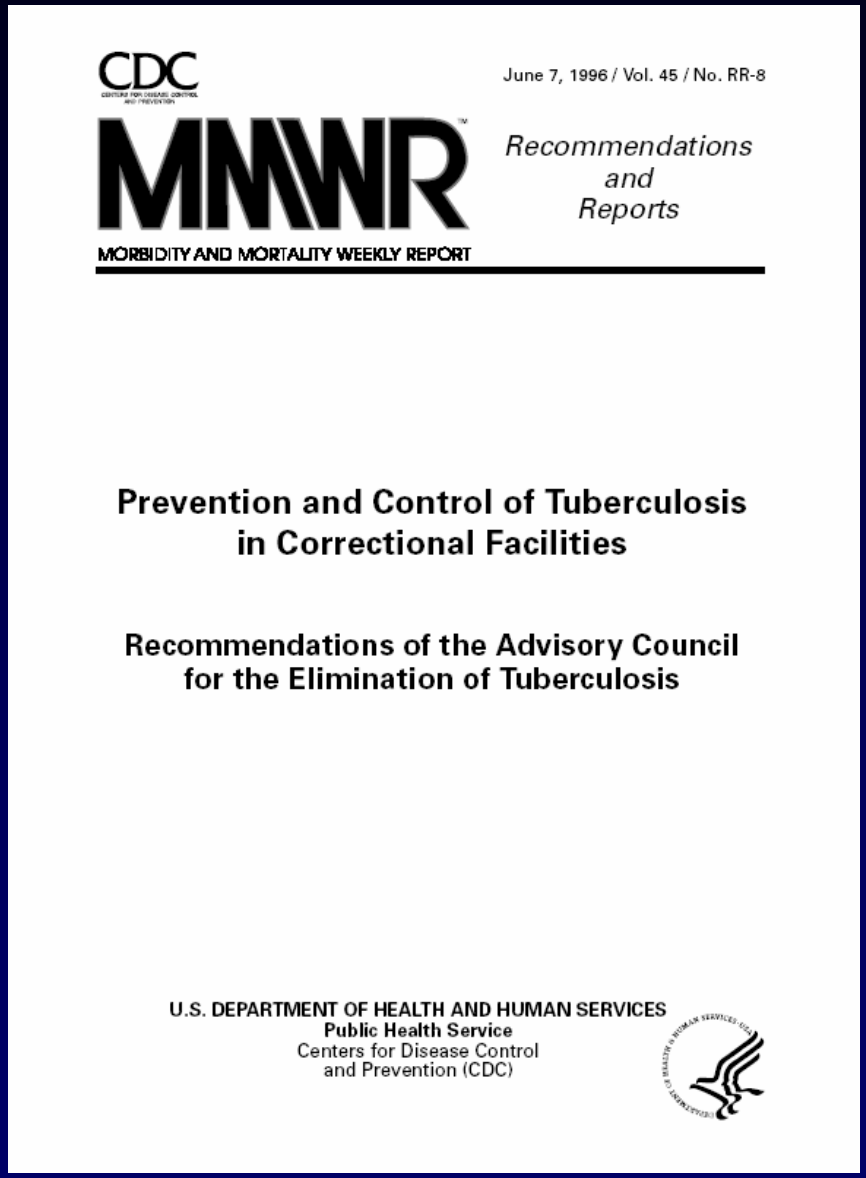
Hepatitis C Virus Infection

- Testing for Hepatitis C Virus Infection
  - Screen for risk factors for HCV infection
  - Screen all 'Yes' for anti-HCV
  - Sensitivity of risk factor-based screening periodically determined by seroprevalence surveys, in combination with ascertainment of demographic and risk-factor information
  - Serologic testing expanded when:
    - self-reported hx of risk factors < 75% of anti-HCV+ inmates
    - prevalence of HCV risk factors > 75%
      and HCV inmates who deny risk factors > 20%
- Report to OPH
- Investigation of acute HCV infection

Hepatitis C Virus Infection

- Postexposure Management for HCV
  - After percutaneous or permucosal exposure to blood
  - Test source
  - If source positive: Test exposed HCV and ALT activity
  - Baseline, 4-6 months
  - HCV RNA at 4-6 weeks
- IG and antiviral agents not recommended
- Chronic Hepatitis C Treatment
- Adult Health Education and Release Planning

TB Control Guidelines



CDC

June 7, 1996 / Vol. 45 / No. RR-8

MMWR

Recommendations and Reports

MORBIDITY AND MORTALITY WEEKLY REPORT

Prevention and Control of Tuberculosis in Correctional Facilities

Recommendations of the Advisory Council for the Elimination of Tuberculosis

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service
Centers for Disease Control and Prevention (CDC)

Tuberculosis

- Screening
  - Mantoux for employees /long-term inmates
  - Evaluated for treatment for LTBI
- Isolate suspects and cases
- Treat immediately; DOT
- Contact investigation

MRSA

BOP CLINICAL PRACTICE GUIDELINES FOR THE MANAGEMENT OF METHICILLIN-RESISTANT *STAPHYLOCOCCUS AUREUS* (MRSA) INFECTIONS
(October 2003)

PURPOSE

The BOP Clinical Practice Guidelines for the Management of MRSA infections provide recommendations for the prevention, treatment, and containment of methicillin-resistant *Staphylococcus aureus* infections within Federal correctional facilities.

REFERENCES

MRSA (General)

Centers for Disease Control and Prevention, National Nosocomial Infection Surveillance (NNIS) System report, data summary from January 1992 to June 2002, issued August 2002. Available at http://www.cdc.gov/ncidod/hip/surveill/NNIS.htm. Accessed May 2003.

Said-Salim B, Mathema B, Kreiswirth BN. Community-acquired methicillin-resistant *Staphylococcus aureus*: An emerging pathogen. Infect Control Hosp Epidemiol 2003;24:451-455.

Chambers HF. The changing epidemiology of *Staphylococcus aureus*? *Emerg Infect Dis* 2001;7:178-182.

Salgado CD, Farr BM, Calfee DP. Community-acquired methicillin-resistant *Staphylococcus aureus*: A meta-analysis of prevalence and risk factors. *Clin Infect Dis* 2003;36:131-139.

Huang SS, Platt R. Risk of methicillin-resistant *Staphylococcus aureus* infection after previous infection or colonization. *Clin Infect Dis* 2003;36:281-285.

MRSA (Outbreaks)

Centers for Disease Control and Prevention, Methicillin-resistant, *Staphylococcus aureus* infections in correctional facilities - Georgia, California, and Texas, 2001-2003. *MMWR* 2003;52(41):992-996.

MRSA Colonization / Disease

- **Colonization**: 30% of population colonized with *Staph. aureus*
  - Subset colonized with MRSA: 1-8% ???
  - Colonized persons are more likely to develop staph infections however, majority colonized remain asymptomatic
  - Staph colonization more common in injection drug users, diabetes, hemodialysis, AIDS, previously hospitalized patients
- **Infection**
- **Mild skin or soft tissue infections (furuncle, infected pimple, insect bite, spider bite, sore)**
- **More serious MRSA infections (cellulitis, deep abscesses, septic arthritis, pneumonia, sepsis)**
- **High risk: diabetes, HIV infection, chronic skin conditions**

MRSA Transmission

- From person to person by contaminated hands
  - Simple contact
  - Picking at lesions
- By objects (fomites): sharing towels, personal hygiene items, athletic equipment, close-contact sports, sharing injection drug use equipment, unsanitary tattooing practices
- Persons with asymptomatic MRSA nasal carriage when symptomatic with viral URI

MRSA Prevention

- **Education**: Provide information on transmission, prevention, treatment, containment of MRSA
- **Hand hygiene program**: hand-hygiene measures to implement
  - Education on hand hygiene importance and technique
  - Sanitize: hand sanitizer OK if not visibly soiled
  - Wash: soap/water 10-15 seconds

    job, food, toilet, soiled, inmate skin contact

MRSA Prevention: Sanitation

- **Housing areas**:
  - Housing areas /bathroom regularly cleaned with detergent disinfectant
  - Equipment /furniture must have easy to clean surfaces
  - Clean all washable (nonporous) surfaces prior to cell occupancy and during occupancy
  - Conduct sanitation inspections of living and bathroom areas to identify visibly dirty areas. Focused on cells of inmates with cognitive impairments or mental illnesses
  - All rooms of infected inmates should be decontaminated, terminally cleaned, prior to occupancy by another inmate
- **Recreation facilities**:
  - Recreational equipment, weight benches etc: wipe clean after use with clean dry towel
  - Use barriers to bare skin, towel or clean shirt, while using exercise equipment

MRSA Prevention: Sanitation

- **Healthcare units**:
  - Clean routinely countertops and other surfaces
- **Laundry**:
  - Sheets, blankets, issued clothing
  - Collect & bag at bedside, wash regularly with a detergent then thoroughly dry
  - Collected wet, saturated with urine or feces linen in plastic or impervious bag
  - No “isolation linen”

MRSA Prevention: Screening & Surveillance

- MRSA colonization by nares cultures **not** routinely indicated, unless in the context of a MRSA outbreak or inpatient surveillance program
- Intake screening: Evaluated inmates undergoing intake for skin infections with focus on recently hospitalized inmates and high risk
- Routine case finding:
  - Correctional officers to refer inmates with draining sores, wounds, boils, insect or spider bites
  - Food handlers routinely examined for visible skin infections

MRSA Prevention: Transfer

- Evaluate inmates with skin and soft tissue infections before transfer
- If transfer required: have draining wounds dressed with bandages to contain drainage
- Escort officers notified /educated on infection control measures including instructions for disposal of contaminated dressings
- Decontaminate security devices: handcuffs, leg irons, martin chains, other reusable restraints

MRSA Prevention: Containment

- **Assign to single cell room**:
  - Inmates with potentially contagious infections such as wounds with uncontained drainage, weeping cellulitis, purulent catheter-site infections, non-healing abscesses or draining skin sinuses, infected surgical wounds, multiple furuncles, infected burn sites, MRSA pneumonia
  - Uncooperative inmates with suspected or confirmed MRSA infections
  - Separate toilet and shower whenever possible, if not decontaminate

- **No isolation required**: Inmates with non-draining MRSA skin infections such as most furuncles (boils) or draining skin lesions that can be easily contained by simple dressings
  - BUT counsel on importance of hand-washing and good personal hygiene

MRSA Prevention: Heightened Surveillance

- After the diagnosis of any single MRSA infection detect any additional cases
- Investigate index cases:
  - to identify potential sources of infection and close contacts,
  - Inquire about recent hospitalizations, housing and work assignments (food handlers), sharing of personal hygiene items with other inmates, recent injection drug use, tattooing, or sexual contact with other inmates, participation in close-contact sports, exposures to other inmates with draining wounds or skin infections
- Identify contacts at risk of acquiring MRSA, examine for S&S
- Evaluating inmates during sick call for skin infections
- Monitor all bacterial cultures to detect any additional MRSA

MRSA Prevention: Containment

- Contagious MRSA inmates
  - Restrict all work assignments, maintained in single-cell housing until they are clinical improvement
  - Restrict from recreation, use of common areas
  - Access to visitations determined on a case by case
- Release from isolation
  - After healed wounds & drainage ceased for 24 hours even if antibiotic Tx not complete
  - 2 consecutive negative wound cultures, at least 72 hours apart
- Employees with suspected or confirmed MRSA infections should be removed from direct patient care until medically cleared by their HCW

MRSA Prevention

- **Antibiotic prescribing practices**:
  - Monitor antibiotic use to ensure antibiotics appropriately prescribed
  - Curtail unnecessary use of broad-spectrum antibiotics