HEPP REPORT

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INFECTIOUS DISEASES IN CORRECTIONS

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ABOUT HEPP

HEPP Report, a forum for correctional problem solving, targets correctional physicians, nurses, administrators, outreach workers, and case managers. Published monthly and distributed by email and fax, HEPP Report provides up-to-the moment information on HIV/AIDS, hepatitis, and other infectious diseases, as well as efficient ways to administer treatment in the correctional environment. Continuing Medical Education credits are provided by the Brown University Office of Continuing Medical Education. HEPP Report is distributed to all members of the Society of Correctional Physicians (SCP) within the SCP publication, CorrDocs (www.corrdocs.org).

INFECTION CONTROL IN THE CORRECTIONAL SETTING

Joseph Bick, MD*

The crowded conditions that exist in many of the world's jails and prisons create an ideal environment for the transmission of contagious diseases. Restrictions on the availability of clean laundry, soap, water, condoms and needle exchange increase the probability that infectious diseases will be transmitted from one person to another. Furthermore, the transient status of inmates who are frequently moved from one location to another can complicate the diagnosis of infection, recognition of an outbreak, performance of a contact investigation, interruption of ongoing transmission,and eradication of disease.

Infection Control Program and Infection Control Committee

All correctional facilities should have an infection control program. Typical activities to prevent and control communicable diseases (CD) include:

- Educating staff and inmates,
- Establishing a written exposure control plan that minimizes the potential for employee exposure to blood borne pathogens,
- Encouraging staff and inmates to be vaccinated,
- Monitoring the incidence of selected CD among staff and inmates,
- Ensuring that inmates receive prompt and appropriate treatment and monitoring adherence,
- Establishing and enforcing isolation policies,
- Ensuring that personal protective equipment is available to and utilized by staff,
- Evaluating and making available sharps devices that are least likely to cause injury,
- Overseeing an effective post-exposure program, and
- Ensuring that reports are completed and submitted as required by local, state and federal laws and regulations.

The infection control program should be managed by an infection control committee that includes physicians, representatives from custody, administration, nursing, dental, housekeeping, food services, unions if applicable, and other clinical areas at the facility such as laboratory, surgery, dialysis, respiratory therapy, and physical therapy. Although smaller facilities may not require the complex program necessary in a facility with a large medical mission, the basic elements remain the same.

Personal Protective Equipment (PPE)

Personal protective equipment (PPE) applies to clothing and equipment intended to protect employees from coming into contact with blood, other body fluids and contaminated air. PPE includes masks, respirators, gloves, goggles, face shields, gowns, hoods, and foot coverings. PPE should be readily accessible in all patient care areas, housing units, transportation vehicles, the laundry, and anywhere that employees are likely to come into contact with inmates. PPE should be inventoried on a regular basis and replaced as needed. Staff should be encouraged to carry gloves with them at all times so that they are prepared to protect themselves when responding to altercations, self mutilators, suicide attempts, and other medical emergencies. Making gloves available at areas where custody staff sign in each day may facilitate their use of PPE by correctional employees.

Personal respiratory protection should be used by staff whenever they enter a room in which a person with known or suspected pathogen that can be transmitted via the air. Those who are in the area of cough- inducing procedures should also wear respiratory protection. Although no respiratory protective device will be 100% protective, when used consistently and correctly, respirators are highly reliable in the prevention of acquisition of respiratory pathogens. Respirators should be rated at least N-95 efficiency, be able to be fit-tested, and be available

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in several sizes to accommodate different facial sizes and characteristics.

Blood Borne Pathogen (BBP) Exposures

Needlestick and other sharps injuries can occur during a variety of activities, including:

- Replacing the cap on used needles,
- Disposing of needles,
- Administering injections,
- Drawing blood,
- Suturing,
- Passing sharps devices from one person to another,
- Handling trash and dirty linens,
- Intentional use of sharps as a weapon, and
- Cell search or body search.

Inmates are at risk for BBP exposures during injection drug use, tattooing, fights, and unprotected sexual activity. Correctional employees also face a rather unique risk of being intentionally exposed to blood borne pathogens by inmates who throw body fluids at them (known as "gassing" or "chunking").

Decreasing the risk of BBP exposure can be accomplished by vaccination of at-risk staff and inmates, education concerning the appropriate use of PPE, harm reduction education to inmates, implementation of policies and procedures to decrease the likelihood of sharps injuries, and operation of an effective post-exposure management program.

Safer sharps devices that have built-in features such as sheathing devices, blunted surgical needles, and retractable needles and blades are available. These devices have been shown to significantly reduce exposure to blood borne pathogens by decreasing the incidence of accidental needlesticks. Additionally, many injuries can be avoided by decreasing the use of needles (needleless intravenous connectors, using oral medications instead of injectables, consolidating diagnostic blood draws, and using urine or oral fluid tests instead of blood tests).

Many of the currently available safety syringes utilize a spring-loaded system. All safety syringes can be disassembled with minimal effort, and the springs in some of them are made of sturdy gauge wire that may pose security concerns.

Post-Exposure Prophylaxis

For an excellent review of this topic, the reader is referred to the following resources:

HEPP Report July/Aug. 2003: Hepatitis B, C, and HIV Post-exposure Prophylaxis in Correctional Settings. Available at www.hivcorrections.org/archives/julyaug03/mainarticle.html

MMWR Vol 50, No RR11; 1 06/29/2001: Updated U.S. Public Health Service Guidelines for the Management of Occupational Exposures to HBV, HCV, and HIV and Recommendations for Postexposure Prophylaxis

Isolation Concepts

Standard Precautions

Standard precautions merge essential components from both universal precautions and body substance isolation, and are to be used for all patients.

Transmission-Based Precautions

In addition to utilizing standard precautions for all patient contacts, transmission-based precautions are to be used in situations in which patients are known or suspected to have a particular CD. There are three categories of transmission-based precautions, airborne, droplet and contact, and each relates to a method of transmission.

Airborne precautions

Airborne precautions are intended to decrease the likelihood of transmission of organisms that can be carried in small sized (less than 5 µm) dust particles or droplet nuclei and should be used for patients who are known or suspected to be infected with Mycobacterium tuberculosis (MTB), measles, chicken pox (VZV), and disseminated shingles (VZV). Airborne precautions require isolation in a private room that has negative pressure relative to the hallway and at least six air exchanges per hour. The air from the room should either be vented directly to the outside or passed through a high efficiency filter prior to being recirculated. The door to the room should remain closed at all times. While in use, the room should be evaluated each day to ensure that it maintains negative pressure relative to the corridor. All those who enter the room must wear a respirator that meets the National Institute for Occupational Safety and Health's (NIOSH) N-95 standard, with an ability to filter 1 µm particles with an efficiency of at least 95%. Movement of the inmate/patient from the isolation room should be minimized. While out of the room, the patient must wear a surgical mask.

Droplet precautions

Droplet precautions are intended to decrease the likelihood of transmission of organisms that can be carried in particles that are larger than 5 µm. Droplets of this size can be created when a person talks, coughs, sings, or sneezes. Procedures such as suctioning and bronchoscopy can also create droplets of this size. These larger droplets do not remain suspended in the air and usually will travel no more than three feet. Examples of illnesses that require droplet precautions include meningitis and epiglottitis caused by Haemophilus influenza, and infections caused by N. Meningitidis, influenza, and Mycoplasma pneumonia. Patients confirmed or suspected to have these conditions should be placed in a single cell or cohorted with other inmates who are infected with the same organism. Negative pressure respiratory isolation is not required. Staff should wear a mask when they are within three feet of the infected person. If the inmate/patient must leave the room, s/he should wear a mask.

Contact precautions

Contact precautions should be used for persons known or suspected to be infected or colonized with organisms that commonly cause disease and can be transmitted by direct or indirect contact. These organisms can be acquired by direct contact with an infected or colonized person or indirectly by contact with inanimate objects. Examples include Clostridium difficile, Herpes simplex virus, Hepatitis A virus, VZV, staphylococci including methicillin-resistant Staphylococcus aureus, vancomycin-resistant Enterococcus, lice, and scabies.

Staff should wear gloves when entering the patient's room, and remove gloves and wash their hands when leaving. Gowns should be worn while in the patient's room and removed prior to leaving. Face shields and eye protection should be worn during procedures that are likely to cause splashes of body fluids. Patient care items should remain in the room and not be reused on other patients unless they are disinfected.

CULINARY SERVICES AND FOOD HANDLERS

All persons being considered for a position in the culinary department should be screened for health conditions that would preclude them from working in food services. Potential workers should be excluded if they have open sores on their hands or arms, an active respiratory infection, or an illness characterized by vomiting or diarrhea. Those who have had recent positive cultures for enteric pathogens should not be approved for food handling until cleared by infection control. Individuals with poorly controlled mental illness and those who lack the intellectual ability to adhere to appropriate standards of hygiene should not be utilized as culinary workers. HIV, hepatitis B, and hepatitis C are not transmitted through food, and the presence of these infections should NOT preclude otherwise qualified individuals from working in food services.

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Prior to beginning work in culinary services, all staff should receive an orientation concerning the importance of good hygiene. Comprehension of basic cleanliness and disease prevention concepts should be assured through testing. This education should be repeated at least annually. Supervisors should perform daily inspections of workers to ensure that they do not have active respiratory illnesses, open sores on their hands or arms, or an active gastrointestinal illness. Those who are ill should be removed from food services until cleared by infection control.

Laundry

Insufficient access to clean clothes and linen is associated with acquisition of body lice and methicillin-resistant Staphylococcus aureus among those housed in congregate living environments.

In the correctional environment, there are legitimate custody concerns regarding laundry distribution. Clothing and linen are often hoarded, and can be cut up to make non-approved clothing, curtains, and escape items such as ropes and altered clothing. These concerns notwithstanding, inmates should be provided an adequate supply of clothing and linens, and these items should be exchanged on a frequent and regular basis.

Those who handle contaminated laundry should be provided gloves, gowns, masks, and face shields for use while handling and sorting contaminated laundry. Thick utility gloves may provide workers with additional protection, and can be decontaminated and reused if they are not cracked, torn, or punctured.

Dirty linens should be rolled up to confine solid waste and to avoid aerosolization of organisms. Soiled linen should be bagged or put into carts at the location where it was used, and should not be sorted or otherwise excessively handled in any patient-care area. Linen from inmates who are on contact precautions should be handled according to published guidelines. Linen that has been contaminated with blood or other potentially contagious body fluids should be either placed in leak proof bags or containers labeled with the biohazard symbol, or placed in red bags for transportation. Because of the potential for disease transmission during handling of laundry, the sorting process should be minimized. Adequate ventilation should be maintained in the laundry area to decrease the potential for transmission of airborne diseases.

To minimize sharps being disposed of in the laundry stream, staff should be educated to adhere to procedures that detail the appropriate disposal of sharps, and laundry workers should be trained on how to handle sharps that are found in laundry. Needle containers should be readily available in laundry areas.

A temperature of at least 71° C (160° F) for a minimum of twenty-five minutes has commonly been recommended to effectively kill microorganisms. Studies have demonstrated that low temperature washing at 22-50° C can effectively reduce microorganism concentrations when adequate amounts of chlorine bleach are utilized.

Barbering

In most jails and prisons, inmates perform the majority of haircuts. In many cases, these inmate barbers have had little or no training. Barbering tools may be reused without appropriate disinfection, creating an opportunity for the transmission of bacterial, fungal, or parasitic organisms. All inmates who are to serve as barbers should receive training, undergo post-education testing, and be observed periodically to ensure adherence with infection control practices. Access to necessary disinfection supplies should be facilitated.

Barbers should be provided containers to hold soiled linens. Towels should only be used on one client before being appropriately laundered. Containers should also be provided for the disinfection of combs, brushes, clippers, and scissors. An adequate supply of a disinfectant solution should be provided to allow for the complete immersion of barbering tools between haircuts.

Before each use, all non-electrical instruments should be cleaned with soap and water and then soaked in a disinfectant with known activity against bacteria, viruses, and fungi. This solution should be changed whenever visibly dirty, but at least weekly. Before each use, clippers and other electrical instruments should be brushed to remove all foreign matter and then disinfected by wiping with a disinfectant. Disinfected instruments should be stored in a clean, covered area.

All those who perform barbering activities should thoroughly wash their hands with soap and water and/or an approved hand disinfectant before each client. Barbers who are infected with an organism that is readily transmitted to others during barbering activities should not work until they are no longer contagious. Examples of conditions that can be transmitted during haircutting include purulent conjunctivitis (pink eye), VZV, respiratory illnesses such as colds, influenza, and tuberculosis, bacterial skin infection such as impetigo or cutaneous abcesses, methicillin-resistant staphylococcus infection, and ectoparasites such as scabies and lice. Hepatitis B, Hepatitis C, and HIV are not transmitted during routine barbering activities and should NOT preclude employment as a barber.

General infection control resources

- *The Occupational Safety and Health Organization (OSHA) is part of the United States Department of Labor, and exists to develop and enforce workplace safety standards. www.osha.gov*
- *The Centers for Disease Control (CDC) is an advisory body of the federal government. The CDC creates guidelines and provides recommendations concerning health-related issues. www.cdc.gov*
- *The National Institute for Occupational Safety and Health (NIOSH) is part of the CDC. www.cdc.gov/niosh/homepage.html*
- *The Joint Commission on Accreditation of Healthcare Organizations (JCAHO) publishes performance standards and provides certification to health care organizations that meet them. www.jcaho.org*
- *The Association for Professionals in Infection Control and Epidemiology (APIC) is a professional organization for those involved in Infection Control. APIC collaborates with the CDC to publish infection control guidelines, conducts research, sponsors educational programs, and provides resource materials. www.apic.org*
- *Herwaldt LA, ed. A Practical Handbook for Hospital Epidemiology. Thorofare, NJ: SlACK Incorporated 1998*
- *Mayhall CG, ed. Infection Control and Hospital Epidemiology. Baltimore, Maryland: Williams and Wilkins; 1999*
- *MRSA information: http://www.cdc.gov/ncidod/hip/aresist/mrsa.htm, Methicillin-Resistant Staphylococcus Aureus Skin or Soft Tissue Infections in a State Prison-Mississippi, 2000. MMWR 2001;50:919-22, Outbreaks of Community-Associated Methicillin-Resistant Staphylococcus Aureus Skin Infections-Los Angeles County, California, 2002--2003. MMWR 2003;52:88., Methicillin-Resistant Staphylocccus Aureus Infections in Correctional Facilities-Georgia, California, and Texas, 2001-2003.MMWR 2003; 52(992-996)*

Disclosures:

**Nothing to disclose*

Letter from the Editor

Dear Correctional Colleagues:

A formidable challenge in correctional health, infection control is perhaps one of the most effective ways we can benefit our communities. Most of our patients have had inadequate health care before incarceration, which, combined with life patterns of risk-taking that have brought them to jail or prison, results in significantly higher rates of conditions of public health significance, particularly infections.

Incarceration, however, presents us with several opportunities: we are able to find our patients, our inmates have the time to attend to their treatment, and there is a source of payment for their care. Thus, we should be able not only to minimize transmission of disease within jail or prison, but also to release people back into the community who are in better health than before their incarceration.

The key to infection control is education of all staff. Correctional officers are not expected to know everything about a given disease. Yet, they should know what signs and symptoms should lead them to ensure that an inmate gets to health services. They should also know enough to avoid or prevent dangerous practices and when they do NOT have to be concerned about a particular health-related issue.

Health care staff must have a high index of suspicion for communicable diseases and they should know how to stop transmission. Successful disease prevention interventions must fit the culture in which they are implemented. For example, control of drug supplies in corrections is much more feasible than in the general public. Needle exchange programs, on the other hand, may not be. Acceptable interventions require joint support by both health services and security.

Infection control in corrections is very possible. With careful attention to infection control it is possible, for instance, even in prisons with congregate living, to lower tuberculosis disease rates to those seen in the outside community.

Sincerely,

Lester Wright, MD

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In accordance with the Accreditation Council for Continuing Medical Education Standards for Commercial Support, the faculty for this activity have been asked to complete Conflict of Interest Disclosure forms. Disclosures are listed at the end of articles. All of the individual medications discussed in this newsletter are approved for treatment of HIV and hepatitis unless otherwise indicated. For the treatment of HIV and hepatitis infection, many physicians opt to use combination antiretroviral therapy which is not addressed by the FDA.

SPOTLIGHT: So Your Facility Has CA-MRSA

Dean Rieger MD, MPH, Medical Director, Indiana Department of Corrections*
*Joseph Bick** MD, Chief Medical Officer, California Medical Facility*

Staphylococcus aureus (SA) is a bacterium commonly found on the skin or anterior nares in the nose of healthy individuals. Although SA often colonizes humans without causing disease, it can be responsible for minor to life-threatening infections of the skin, bone, blood, heart valves, and lungs. SA is easily spread by contact with the skin of a person infected or colonized with the bacteria. SA can also be acquired from the hands of health care workers or inanimate objects that have been in contact with a person carrying the organism.

Nursing homes and other long-term care facilities have been identified as reservoirs of MRSA. Over the past decade, MRSA has also emerged as a cause of skin and soft tissue infections in the community. Most MRSA infections are minor infections of the skin that take the form of pustules, furuncles or boils. Generally, these conditions are mild, self-limited, and do not require aggressive treatment. Not surprisingly, this organism is now being increasingly recognized as a cause of infections in residents of jails and prisons. In the correctional setting, staphylococcal skin lesions have often been mistakenly attributed to spider bites. In reality, spiders rarely bite people, and most of the bites are inconsequential.

Once community-associated methicillin-resistant SA (CA-MRSA) has a foothold in a correctional facility, it is likely to remain there indefinitely. For every identified colonized or infected inmate or staff member, there are many who are not identified. Control of outbreaks relies upon reducing the bacterial load in a facility by treating identified cases, decreasing the likelihood of bacteria being passed between individuals, and decreasing the size of the inoculum when bacteria are transmitted.

Penicillin resistance in SA is due to the production of beta lactamase, an enzyme that breaks down penicillin's beta lactam ring and renders the drug inactive. Within a few years of the first clinical use of penicillin in the 1940s, resistance due to beta lactamases was identified. Within a year of the introduction of the semisynthetic, beta lactamase-stable, penicillin methicillin in 1960, MRSA strains were identified. By the 1990s, over half of SA isolated in some hospitals were MRSA.

Methicillin resistant strains are resistant to all beta lactam antibiotics, including penicillins and cephalosporins. In addition, MRSA strains often carry plasmids that lead to resistance to aminoglycosides, fluoroquinolones, macrolides, and chloramphenicol. Many MRSA strains are susceptible to trimethoprim-sulfamethoxazole, clindamycin, and rifampin. Virtually all SA are fully susceptible to vancomycin. However, the first clinical isolate of SA with reduced susceptibility to vancomycin was reported from Japan in 1996. The first documented case of infection caused by vancomycin-resistant S. aureus (VRSA) (vancomycin MIC >32 µg/mL) in a patient in the United States was reported in 2002.

Even though SA infection may be suspected, cultures and sensitivities are required to confirm the diagnosis of MRSA. Empirical treatment can be based upon the antibiotic susceptibility pattern of organisms circulating within the facility. Cultures should be obtained even during outbreaks. Cultures should also be obtained if a patient fails to respond to treatment. The infection control officer or the infection control committee should review patient records for appropriateness of diagnosis and treatment.

Treatment

The indiscriminate use of antibiotics can lead to increased drug resistance and should be discouraged. In many cases, drainage and appropriate wound care will suffice. If used, antibiotics should be selected that are known to be effective against MRSA. Trimethoprim-sulfamethoxazole (Bactrim, Septra) in a dose of one double-strength tablet twice daily is usually effective in patients who have MRSA. Some clinicians also add rifampin in a dose of 600 mg once daily. Due to the rapid development of resistance, rifampin should not usually be used alone to treat infections due to SA. For more serious infections, vancomycin, linezolid, daptomycin, and quinupristin-dalfopristin may be used.

Vancomycin has been used for many years for the treatment of SA and MRSA. Concerns about vancomycin include hypersensitivity reactions, a histamine release syndrome (red man syndrome) related to rapid infusion, lack of availability of an oral formulation for the treatment of systemic infection, concerns about the development of vancomycin resistant enterococcus, and concerns about the emergence of vancomycin resistant staphylococcus aureus (VRSA) and strains with reduced sensitivity to vancomycin (VISA).

Eradication of Carriage

SA and MRSA are commonly found in the anterior nares of otherwise healthy asymptomatic individuals. Routine eradication of this carriage is neither efficacious nor recommended. In some cases of recurrent active disease, clearance of the organism from the nose can be beneficial. Mupirocin calcium 2% ointment (Bactroban) applied to both anterior nares bid for 5-7 days, is commonly used for this purpose.

Infection Control Measures

Once CA-MRSA infections are identified, personnel at all levels and in all disciplines in the facility need to be informed and to participate in control measures. Factors that may have contributed to outbreaks of MRSA in jails and prisons in the U.S. include poor hygiene, restricted access to medical care, uninformed medical staff, and failure to diagnose MRSA infections because of infrequent culture collection. Risk factors for MRSA that have been identified in jails and prisons have included skin lacerations, prolonged incarceration, previous antimicrobial use, self-draining of boils, performing one's own dressing changes, washing clothes by hand, sharing clothing or linen, and sharing soap.

Hygiene can be improved by patient education, improving access to soap and bathing, maintaining an adequate supply of dressing materials, and following appropriate laundry procedures. Materials coming into the laundry may be contaminated with CA-MRSA. Laundry workers must be provided with protective equipment and instructed regarding its use. CA-MRSA has the potential to produce toxins and cause food-poisoning, so special care should be exercised in carrying on "routine" daily review of workers for infections at the time of an outbreak. Access to medical care can be improved by eliminating co-payment requirement for contagious conditions, maintaining sufficient clinical staff to ensure prompt access to care, and establishing 24/7 urgent care for serious medical conditions. All correctional employees should be educated about the importance of prompt evaluation and treatment of infectious conditions. Furthermore, clinicians should be reminded to culture all skin and soft tissue infections and to not attribute skin lesions to insect bites.

CA-MRSA survives well on particularly warm, moist surfaces. Proper cleaning techniques, which should be reviewed with team supervisors, reduce the bacterial load, especially when antimicrobial cleaning agents (most often those containing quaternary ammonium compounds) are used. Facilities with CA-MRSA outbreaks should establish cleaning schedules and log their cleaning activities as part of their overall facility quality improvement activities.

A physical review of all units can therefore be very helpful in reduc-

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HIV 101: Essential Elements of Standard Precautions in the Correctional Setting

Hand washing	Hands should be washed after touching any body fluids, after removing gloves, and between patient contacts.
Personal Protective Equipment (PPE)	PPE should be readily accessible in all patient care areas, housing units, transportation vehicles, the laundry, and anywhere that staff are likely to come into contact with inmate/patients.
◆ Gloves, standard disposable	To prevent contact with blood, body fluid, mucous membranes, nonintact skin, and contaminated items.
◆ Gloves, thick utility or gloves with wire mesh	To protect staff from sharps injury during the performance of clothed body searches and housing searches.
◆ Masks & respirators	To protect mucous membranes of the mouth from splashes or sprays of blood and body fluids, and to avoid inhalation of airborne diseases.
◆ Gowns	To protect skin and clothing from intentional or accidental splashes or sprays of blood and other body fluids.
◆ Face shields, goggles	To protect mucous membranes of the mouth, eyes, and nose from intentional or accidental splashes or sprays of blood and other body fluids.
Sharps (lancets, needles, syringes, scalpels, tattoo equipment, razor blades, stabbing instruments, etc.)	Used sharps should always be placed immediately in puncture resistant containers. Sharps should not be passed from person to person. Sharps containers should be available in all areas where sharps are used. Those who conduct body searches and housing searches should be taught techniques to avoid being injured by hidden sharps. Tongs to pick up sharps and mirrors to visualize hidden areas can be used during searches. Pocket-sized puncture-proof evidence containers can be used to carry sharps discovered during searches.
Housing	Inmate/patients who cannot or will not maintain appropriate hygiene should be placed in single cell housing.
Laundry	Treat all laundry as if it is contaminated; prevent contact with skin and mucous membranes. Use PPE.
Housekeeping	Procedures for cleaning and disinfection of equipment, furniture, and the environment should incorporate the use of PPE and techniques to minimize the transfer of microorganisms

SPOTLIGHT... ***(continued from page 5)***

ing opportunities for bacterial transfer. Surfaces that become easily contaminated require special attention, such as toilet seats, sinks, bathtubs, weight room equipment, etc. that are often in direct contact with skin. Frequent use of antimicrobial products can leave a residual film that can reduce the surface load of bacteria over an extended period of time. Hand washing is the most effective way to reduce transmission of CA-MRSA. The practice of leaving a towel next to a sink should be avoided, as shared towels provide perhaps the best transfer medium of all for CA-MRSA. Paper towels should be used instead.

Terminal disinfection should be employed in housing areas and is especially important during CA-MRSA outbreaks. Materials that cannot be sanitized should be discarded. Except for patients with secretions that cannot be controlled and are likely to contaminate the environment (including prisoners who intentionally spread contamination), no special separate housing is necessary.

If inmates understand how CA-MRSA is transmitted, they are more likely to practice good hygiene and protect themselves from transmission. Inmates should be educated about personal hygiene and advised to avoid touching other individuals' wounds or wound drainage. Inmates should be provided regular access to soap, showers, and sinks. Clinical staff should follow standard precautions while providing wound care. Infection control measures can never be overemphasized; even in the hospital setting many healthcare professionals neglect hand washing. In an effort to improve hand hygiene, the use of alcohol-containing antiseptic scrubs is increasingly being encouraged. However, security concerns may lead to these particular disinfectants not being universally embraced in the correctional setting. During outbreaks prisoners need to be encouraged to present possible CA-MRSA lesions to health services personnel for examination. Barriers to health care should be reviewed and lowered or eliminated during outbreaks. For example, during a CA-MRSA outbreak a facility could waive co-payment for evaluation of skin problems.

Conclusion

An aggressive approach to the management of MRSA can be effective. In Indiana, one moderately large facility was reporting approximately 40 cases of CA-MRSA per month when basic outbreak measures were implemented; within six weeks the outbreak was terminated. In another facility, a maximum-security setting, an alert physician noted an association between infections and new tattoos. The facility was briefly locked down and searched. With confiscation of the contaminated tattoo works, the outbreak was terminated. A particularly severe outbreak occurred in one Indiana jail. It was discovered that inmates were self-inoculating in order to get a ride out of the facility to a hospital. The high-load inoculation resulted in very aggressive infections and one prisoner nearly died. In other correctional settings, intensive efforts to control MRSA have not been as effective.

The involvement of experts in infection control and infectious diseases can be useful in both managing individual patients and establishing protocols specific to the unique needs of each facility. Correctional facilities experiencing outbreaks of MRSA should seek assistance from their local and state health departments. MRSA outbreaks can be reported to CDC (TEL: 800-893-0485) through state departments of corrections and state health departments. Preventing MRSA disease in inmates might be an important measure for preventing MRSA in the community outside the correctional facility.

Disclosures:

**Nothing to disclose*

***Nothing to disclose*

Ask the Expert: Skin/Soft Tissue Infection in a Patient with HIV

Bethany Weaver, D.O., M.P.H., Acting Instructor of Medicine, University of Washington Center for AIDS & STD Research (CFAR) and Northwest Correctional Medicine Education Program.*

CASE: *A 49 year-old inmate presents on sick call with concerns about a pimple on her sacral area that has been problematic for three weeks. She has been incarcerated for one year. She has untreated asymptomatic HIV infection with a recent CD4 count of 233 and a HIV-1 viral load of 174,000 copies/mL. She says that "she popped it (the pimple)," and though it appeared to improve initially, "it came back again". She also has two similar areas on her left hand and left inner thigh. She denies fevers, chills, nausea/vomiting, headache, myalgias/arthralgias, fatigue, cough/dyspnea. She has been feeling depressed recently and has not been bathing regularly. She has a history of cocaine dependence but denies injection drug use. She takes acyclovir regularly for genital HSV suppression but is on no other medications.*

Physical exam is notable for BP 120/67, pulse 75, respirations 14, temperature 37.5° C, and weight 130 lbs. She appears disheveled and has poor dentition. She has a supple neck with full range of motion and no palpable lymphadenopathy. Her chest is clear to auscultation, and her cardiac exam reveals a regular rate and rhythm, normal S1 and S2, and no cardiac murmurs, rubs, or gallops. Her abdomen is soft, nontender with normoactive bowel sounds and no hepatosplenomegaly. Her extremities show no cyanosis, clubbing or edema. Skin examination is notable for two small 2.5 cm abscesses on the dorsum of her left hand and two similar areas on the left inner thigh. She has a 6 x 8 cm sacral abscess, with erythema surrounding induration and some oozing of thick yellow fluid. There are no vesicular lesions. Her neurological exam is nonfocal.

Q: What tests should you perform/order, if any?

A: A bacterial culture of the oozing fluid from the sacral abscess would be helpful since this is a new visit for this inmate with a new skin/soft tissue infection. This infection could be due to a variety of organisms, including community-acquired methicillin-resistant Staphylococcus aureus (MRSA). The susceptibility pattern for this organism had not been well established at the facility where she is incarcerated. If the patient appeared systemically ill with fever, chills, chest pain, cough, dyspnea, abdominal pain, nausea, vomiting, or weight loss, then bacterial blood cultures, a complete blood count, and a chest x-ray should also be obtained. One could also consider performing a PPD if any question of tuberculosis is considered.

A culture is performed, and yields two colonies of coagulase positive Staphylococcus (S. aureus). The organism is methicillin-resistant by PBP2A latex test, which indicates resistance to penicillins, cephalosporins, beta lactam/beta lactamase inhibitor combinations, imipenem and other beta lactams. The organism is reported as sensitive to Clindamycin, Gentamicin, Levofloxacin, Trimeth_sulfamethoxazole, and Vancomycin.

Q: What treatment(s) should you offer this inmate?

A: There are two important treatments to consider: antibiotics and surgical debridement. In general, empiric oral antimicrobial therapy to cover common skin/soft tissue organisms, such as Streptococcus and Staphylococcus, including MRSA, should be given pending final culture results or based on a known antibiogram within the institution, indicating known resistance patterns for MRSA. Antibiotics are not always needed if the infection is localized and good wound care is available. In this patient with advanced HIV disease, multiple abscesses, and a history of not adequately caring for herself, it is prudent to offer oral antimicrobial therapy. Once the isolate's final susceptibility pattern is known, therapy can be tailored. Unlike hospital-acquired MRSA strains, which are usually resistant to multiple antibiotics, community-acquired (CA) MRSA strains are often resistant only to beta-lactam antibiotics. Thus, the empiric regimen might include agents such as trimethoprim/sulfamethoxazole, doxycycline, or clindamycin, with or without rifampin. Rifampin monotherapy is NOT recommended, as resistance to this agent can evolve rapidly. Ideally, empiric therapy should be based on institutional resistance patterns for MRSA, if known. In the setting of an MRSA outbreak within a facility, all cases do not require a culture, if the outbreak is well defined with a known established susceptibility pattern for the etiologic isolate. The addition of rifampin for improved clinical response is often reserved for patients with recurrent infections or serious infections in which bone, blood, hardware, and/or deep tissue (i.e. fasciitis) is involved. Surgical debridement is usually reserved for deep infections and/or infections with associated fluctuance that are not draining adequately. Although this inmate had a fairly large sacral abscess, it was open and draining well without areas of fluctuance or devitalized tissue. Therefore, no surgical debridement was required. Depending on the sophistication of the facility, this patient could be managed with outpatient care with wound dressing changes and monitoring of medication in the prison/jail clinic at regular intervals, as opposed to referral to an outpatient care clinic at a local hospital or to an infectious disease clinic in the community. Whether or not the inmate took her medications on pill line as opposed to "keeping on person" is an individual decision that should be made by the provider, keeping the extent of disease, the compliance of the inmate, and the level of understanding of the problem by the inmate in mind. One last point is that this inmate should be re-examined after the lesions have cleared to be sure a cyst (e.g. pilonidal) was not missed and predisposed her to this infection.

Q: What infection-control measures, if any, should you recommend?

A: Personal hygiene and environmental sanitation practices are critical. Wound dressings must be performed with strict attention to contact precautions. Frequent hand washing, daily bathing, and proper towel hygiene should be emphasized as discussed in detail in the spotlight on MRSA article in this issue of HEPP Report. If inmates and staff understand how CA-MRSA is transmitted, then infection control efforts are more likely to be successful.

Clinical Follow-up

The inmate was treated empirically with trimethoprim/sulfamethoxazole (160-800) bid for 14 days with daily wound packing with sterile gauze and wet to dry dressing changes. The areas dried up completely within a period of 3 weeks, and she suffered no complications.

Concluding Remarks

CA-MRSA outbreaks continue to increase. Recent evidence suggests that this organism contains the Panton Valentine leukocidin gene, which codes for the production of cytotoxins that cause tissue necrosis and leukocyte destruction leading to skin and soft tissue infections or necrotizing pneumonia. Because no systematic, population-based surveillance of CA-MRSA isolates exists, the true prevalence is not known. Based on previous experience with penicillin-resistant strains, experts estimate that up to 25% of CA-SA may be MRSA within the next five to 10 years. Patients with CA-MRSA infections are at risk for life-threatening infections, particularly if a beta-lactam antibiotic is used and the infecting strain proves to be resistant. Judicious use of antibiotics, including consideration of institutional or individual resistance patterns in choosing the appropriate treatment, is very important in managing CA-MRSA infections. Use of agents such as linezolid and vancomycin should be reserved for more serious infections, such as bacteremia, endocarditis, and acute osteomyelitis.

Disclosures:

**Pfizer: Stockholder*

Save the Dates

Centerforce 5th Annual Inside/Out Summit
September 11 - 15, 2004
San Francisco Airport Marriott, Burlingame, CA
Call: Beth Houghton
415.456.9980 x124
Visit: www.centerforce.org/summit

Infectious Disease Society of America
September 30 - October 3, 2004
Boston, MA
Visit: www.idsociety.org

ProVisions IX, the Northeast Multicultural Conference on HIV/AIDS
October 13 - 15, 2004
New Haven, CT
Call: Carla Giles, Program Committee Co-Chair
203.688.3184
Email: Carla.Giles@ynhh.org or Leif.Mitchell@yale.edu.
Visit: www.provisionsct.org

Management of HIV/AIDS in the Correctional Setting: A Live Satellite Videoconference Series "Early Identification of HIV & Newer Testing Strategies"
October 19, 2004
12:30-3:30 p.m. EST
Call: 518.262.4674
E-mail: ybarraj@mail.amc.edu
Visit: www.amc.edu/patient/hiv/hivconf/index.htm

44th Annual ICAAC
October 30 - November 2, 2004
Washington, DC
Call: 800.974.3621
Visit: www.asm.org

National Conference on Correctional Health Care
November 13 - 17, 2004
New Orleans, LA
Call: 773.880.1460
Visit: www.ncchc.org

In Memoriam

Dr. Stephen Tabet 1961 - 2004

It is with great sorrow that we mourn the passing of a former HEPP Report Deputy Editor, an AIDS activist, a fellow physician, a colleague, and dear friend, Dr. Stephen Tabet, who died unexpectedly at his home on July 6 at age 42. Tabet, an associate professor of medicine at the University of Washington, physician at Harborview Medical Center's Madison Clinic, an educator at the Northwest AIDS Education Training Center, and researcher at the HIV Vaccine Trials Network, was a valued member of HEPP Report's editorial board for over five years, during which he authored countless case studies on the management of infectious diseases in the correctional setting.

Dr. Tabet spent much of the last decade of his life working to educate others about the care of HIV-infected individuals. He had a special interest and passion for caring for those with HIV in the correctional setting. It was because of his dedication and hard work that he was able to change the delivery of healthcare at several correctional institutions in Washington state. Those who worked with him in this cause were touched by his gentle spirit, empowered by his compassion and knowledge, and will be forever indebted to him for the impact he made on their lives and on the lives of their patients.

In perhaps one of his most significant contributions to those living with HIV, Tabet played a vital role as an expert witness in the Leatherwood v. Campbell case in which HIV-infected inmates at the Limestone Correctional Facility in Alabama filed a federal suit against prison officials concerning medical care. Tabet reviewed innumerable medical records, examined inmates, and finally issued a comprehensive 125-page report on the state of HIV care at the Limestone Facility. Thirty-eight HIV-infected inmates died at Limestone prior to Dr. Tabet's report; Tabet reviewed every death in detail.

His findings elicited a nationwide response from legislators, healthcare providers, and advocates. Alabama settled the suit May 27, 2004, and Alabama prison officials have agreed to improve substantially the medical care and treatment of Alabama's HIV-infected inmate population. Indeed, Dr. Tabet's contribution has set a precedent for correctional HIV healthcare in the United States and has served as a beacon of hope for prison healthcare advocates.

Unbeknownst to Dr. Tabet, HEPP Report had nominated him to receive the Canadian HIV/AIDS Legal Network's Award for Action on HIV/AIDS and Human Rights for his selfless commitment to the HIV-infected patients at Limestone. We at HEPP Report know of few individuals who have given so much to improve the care of HIV-infected persons living inside and outside prisons. We plan to commemorate his life and work by awarding the first annual Steven Tabet Prison Medicine Advocacy Award to a deserving individual at the next NCCHC meeting in October 2004. All those who had the privilege of working with Dr. Tabet, and especially those who knew and loved him, will sorely miss him. The staff at HEPP Report would like to honor the memory of Dr. Tabet by continuing his vision of improving correctional healthcare.

- Joe Bick, Annie De Groot, Beth Weaver, Julia Noguchi, and the members of the HEPP Report editorial board.

Resources

For a copy of Dr. Steven Tabet's report on the conditions of HIV infected prisoners at the Limestone facility, visit:
www.schr.org/prisonsjails/press%20releases/limestone_report.8-26-03_web.doc

Details of his personal examination of numerous HIV infected prisoners, pleadings and photographs of the prison can be viewed on the website of the Southern Center for Human Rights at:
www.schr.org/prisonsjails/press%20releases/press_limestonereport.htm
OR
www.schr.org/prisonsjails/press%20releases/Limestone_Complaint-Amended.(1).rtf

Self-Assessment Test for Continuing Medical Education Credit

Brown Medical School designates this educational activity for 1 hour in category 1 credit toward the AMA Physician's Recognition Award. To be eligible for CME credit, answer the questions below by circling the letter next to the correct answer to each of the questions. A minimum of 70% of the questions must be answered correctly. This activity is eligible for CME credit through January 31, 2005. The estimated time for completion of this activity is one hour and there is no fee for participation.

1. The primary functions of a jail or prison infection control committee are to:
   a) ensure that infection control policies are the same as other facilities of the same security level in that state
   b) minimize patient/inmate and employee risk
   c) ensure that there is an active, effective, institution-wide infection control program that develops effective measures to prevent, identify, and control infections that occur in the institution
   d) a and b
   e) b and c

2. Airborne precautions should be used for patients who are known or suspected to be infected with:
   a) Mycoplasma pneumonia
   b) Methicillin resistant staphylococcus aureus (MRSA)
   c) Varicella
   d) Heamophilus influenza meningitis
   e) None of the above

3. A condition that should not preclude an inmate from working in culinary services is:
   a) poorly controlled mental illness
   b) upper respiratory infection
   c) vomiting or diarrhea
   d) chronic Hepatitis B
   e) open sores on their hands and arms

4. Patients with wound secretions that cannot be controlled or those who intentionally spread contamination should be placed in separate housing. True or False?
   a) True
   b) False

5. Many MRSA strains are susceptible to:
   a) Trimethoprim-sulfamethoxazole, clindamycin, and rifampin
   b) penecillins
   c) cephalosporins
   d) None of the above

6. Within the next decade, experts estimate that the prevalence of CA-MRSA may be as high as:
   a) 10%
   b) 25%
   c) 30%
   d) 35%

HEPP Report Evaluation

5 Excellent 4 Very Good 3 Fair 2 Poor 1 Very Poor

1. Please evaluate the following sections with respect to:

	educational value	clarity
Main Article	5 4 3 2 1	5 4 3 2 1
Ask the Expert	5 4 3 2 1	5 4 3 2 1
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3. What future topics should HEPP Report address?

4. How can HEPP Report be made more useful to you?

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