Preventing Employee Infections

Infection Preventionist Training for Skilled Nursing Facilities

Healthcare-Associated Infections Program
Center for Health Care Quality
California Department of Public Health

Objectives

- Review essential activities of Employee Health programs
- Describe communicable disease screening and immunization guidance
- Describe prevention of bloodborne and airborne diseases
- Review priorities in post exposure management

Employee Health and Wellness

- Education of infection prevention would not be complete without recognizing the role of healthcare personnel (HCP)
- HCP may be:
  - Carriers of infections to residents
  - Recipients of infections from residents
- The most crucial aspect is to keep both residents and HCP safe and infection free

Employee Health Activities

Pre-employment	Annual
✓ Communicable disease screening: immunity by titer or vaccine history • Physical • Drug screening • Latex allergy screening • TB screening • Respirator fit-testing	✓ TB testing ✓ Vaccines • Annual influenza • Respirator fit testing

Employee Health Activities - 2

- Infectious disease exposure investigations
- Post-exposure management
- Counseling
  - Infectious disease exposure risk
  - Work restrictions
- Wellness promotion
  - Ergonomic worksite evaluation
  - Blood pressure checks
- Compliance with CA regulation
  - Bloodborne Pathogen Standard
  - Airborne Transmissible Disease Standard

HCW Immunizations

CDC Recommended Vaccines for Healthcare Workers

CDC Vaccines for HCWs
(www.cdc.gov/vaccines/adults/rec-vac/hcw.html)

California Department of PublicHealth

HCP Vaccination Recommendations

- **Hepatitis B** – If previously unvaccinated, give a 2-dose (Heplisav-B) or 3-dose (Engerix-B or Recombivax HB) series. Give intramuscularly (IM). For HCP who perform tasks that may involve exposure to blood or body fluids, obtain anti-HBs serologic testing 1–2 months after dose #2 (for Heplisav-B) or dose #3 (for Engerix-B or Recombivax HB).
- **Influenza** – Give 1 dose of influenza vaccine annually. Inactivated injectable vaccine is given IM. Live attenuated influenza vaccine (LAIV) is given intranasally.
- **MMR** – For healthcare personnel (HCP) born in 1957 or later without serologic evidence of immunity or prior vaccination, give 2 doses of MMR, 4 weeks apart. For HCP born prior to 1957, see below. Give subcutaneously (Subcut).
- **Varicella (chickenpox)** – For HCP who have no serologic proof of immunity, prior vaccination, or diagnosis or verification of a history of varicella or herpes zoster (shingles) by a healthcare provider, give 2 doses of varicella vaccine, 4 weeks apart. Give Subcut.
- **Tetanus, diphtheria, pertussis** – Give 1 dose of Tdap as soon as feasible to all HCP who have not received Tdap previously and to pregnant HCP with each pregnancy. Give Td or Tdap boosters every 10 years thereafter. Give IM.
- **Meningococcal** – Give both MenACWY and MenB to microbiologists who are routinely exposed to isolates of Neisseria meningitidis. As long as risk continues: boost with MenB after 1 year, then every 2–3 years thereafter; boost with MenACWY every 5 years.

Immunization Action Coalition, updated 3/18 (PDF)
(www.immunize.org/catg.d/p2017.pdf)

Employee Exposure Investigations

- Exposure may be patient-to-staff or visitor-to-staff
- Investigations are warranted when staff are exposed to infectious diseases
- Evaluate type of exposure and risk of transmission
- Make list who was exposed: staff, first responders, residents, visitors
- Evaluate staff for post-exposure management
  - Prophylaxis
  - Vaccination
  - TB skin testing
- Determine if local public health and state should be notified

Preventing Bloodborne Exposure in HCP

- Implement standard precautions – mandatory
- Provide Hepatitis B Virus (HBV) vaccination series to all staff with potential for blood exposure
- Apply hierarchy of prevention methods
  - Engineering controls: needleless devices
  - Work practice controls: no recapping
  - Appropriate cleaning, linen-handling, disposal of sharps

Preventing Bloodborne Exposure in HCP -2

- Provide immediate post-exposure prophylaxis (PEP)
- Require bloodborne pathogen (BBP) training annually and as needed
- Update BBP exposure control plan (mandatory)
  - Employees must be given opportunity to contribute to product evaluation for sharps safety

Post Bloodborne Pathogen Exposure: Risk for Transmission in Health Care Settings

- Hepatitis B Virus (HBV)
  - 1-6 % if e-antigen negative (HBeAg-)
  - 22-30% if e-antigen positive (HBeAg+)
- Hepatitis C Virus (HCV)
  - 1.8%, range 0-7%
- Human Immunodeficiency Virus (HIV)
  - 0.3% (1 in 300 exposures), range 0.2%-0.5%

Body Fluid Exposure Risk

Low/No Risk*

- Sweat
- Tears
- Feces
- Saliva
- Urine

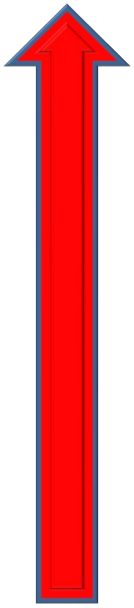
*Unless visibly contaminated with blood

Higher Risk Body Fluids

- Blood
- Amniotic fluid
- Peritoneal fluid
- Cerebrospinal fluid
- Pleural fluid
- Pericardial fluid
- Vaginal fluid/semen
- Any body fluid with visible blood (saliva after dental procedure)

Exposure Risk by Injury Type

- Infection risk dependent on type of exposure
- Examples, from highest to lowest risk:



  - Deep puncture from a used hollow bore needle
  - Laceration or wound with a dirty scalpel or instrument
  - Puncture through a bloody glove
  - Blood or body fluid on non-intact skin
  - Non-intact skin or mucous membrane contact with dried blood
  - Splash to mucous membranes

BBP Post-Exposure Management

- Immediate first aide:
  - Clean with soap and water
  - Flush mucous membranes with water
  - Flush eyes with eye irrigant or clean water
  - Avoid bleach and other agents caustic to skin
  - No evidence of benefit from application of antiseptics or disinfectants, or squeezing (milking) puncture sites

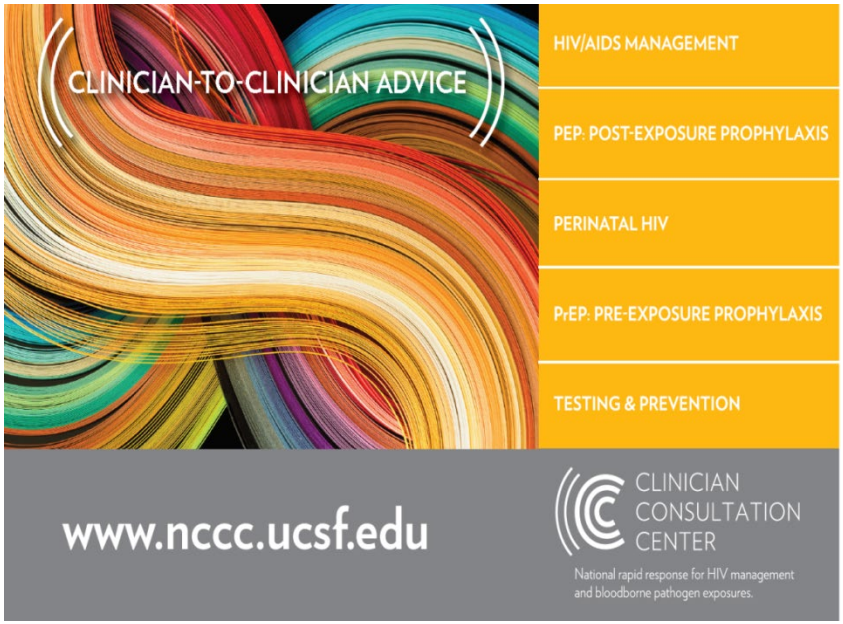
- **Promptly** test the source patient and the injured employee per facility protocol

Consider Post-Exposure Prophylaxis

- Hepatitis B
  - Treatment and prophylaxis varies depending on HCW vaccination status and if the source patient is HBsAg positive, negative, or unknown
- Hepatitis C
  - Prophylaxis is not recommended
  - Consider expert consultation
- HIV
  - Obtain physician assessment for post-exposure management soon after exposure, if indicated
    - Treat as an urgent medical concern
    - Ensure CBC, liver panel, pregnancy test done prior to initiation of medication

National Clinician Consultation Center

- Free consultation for clinicians treating occupational exposures to HIV and other bloodborne pathogens
- 9:00 am – 2:00 pm EST
- 7 days a week
- 1-888-448-4911



UCSF Clinical Consultation Center
(nccc.ucsf.edu/clinician-consultation/pep-post-exposure-prophylaxis/)

Preventing Airborne Disease Transmission in HCP: Risk Reduction Strategies

- Follow standard precautions
  - routinely wear mask if patient coughing or has uncontained respiratory secretions
- Implement cough etiquette by residents, visitors, HCW
- Apply mask on ill or coughing person for source control
- Conduct TB screening upon hire and annually
- Provide annual influenza vaccination
- Comply with Aerosol Transmissible Disease (ATD) standard, CCR Title 8

Department of Industrial Relations Title 8

(www.dir.ca.gov/title8/5199a.html)

Airborne Transmissible Disease (ATD) Standard

- Applies to all health care settings
  - Hospitals
  - Skilled nursing facilities
  - Hospices
  - Private medical offices
  - Paramedic and emergency services
  - And many others

Exceptions: dental offices and outpatient settings where ATDs are not diagnosed or treated

ATD Requirements

Written ATD Plan

- Annual review and assessment of risk of transmission
- Policies & Procedures addressing ATD
  - Education & training for prevention
  - TB Screening
  - Post exposure management
- Provide seasonal influenza vaccination to all employees with potential for occupational exposure
- Engineering controls for management of residents with ATDs
- Fit testing for respiratory protection
- Maintenance of employee health records

Department of Industrial Relations Title 8

(www.dir.ca.gov/title8/5199a.html)

ATD Requirements - Engineering Controls

- Airborne Infection Isolation Room (AIIR)
  - 12 air exchanges per hour (ACH)

    AND

  - Daily verification of negative pressure (via smoke stick or flutter test) while room is occupied
- Powered Air Purifying Respirator (PAPR) for high hazard procedures
  - Includes sputum induction, bronchoscopy, intubation, open system suctioning, aerosolized nebulizer treatment

ATD Standard in Facilities Other than Hospitals

Many health care facilities are not equipped to care for persons ill with an ATD

- If a resident develops respiratory illness
  - Transfer within 5 hours
  - Do not transfer if detrimental to resident's condition
- In absence of AIIR, place ill patient in single room with door closed
  - May cohort with other ill residents
  - Employees wear an N95 respirator to enter

TB Risk Assessment

- Review HCP included in annual TB screening program
  - Annual skin testing/TB blood test
  - Review symptoms with previously positive employees
  - Annual chest x-ray not required
- Determine HCW to be included in Respiratory Protection Program, require fit testing
- Identify areas with increased risk for TB transmission
- Assess if adequate number of Airborne Infection Isolation Rooms
- Conduct periodic reviews of TB prevention strategies

Summary

- An effective infection prevention program includes preventing disease transmission in HCP
- Preventing employee infections requires communicable disease screening and vaccination
- Healthcare facilities must have active prevention and post exposure plans to prevent transmission of bloodborne and airborne pathogens
- Identify those at risk, provide prophylaxis if indicated and provide education to review risk reduction actions

Additional References and Resources

- California Code Regulations, Title 8, Section 5193 (BBP ECP)
- Cal/OSHA Guidance for the 2010-2011 Influenza Season regarding the Application of the Aerosol Transmissible Diseases Standard, 2010
- CAL-OSHA ATD Standard
  (www.dir.ca.gov/title8/5199.html)
- CDC Guidelines for Preventing the Transmission of Mycobacterium tuberculosis in Health-Care Setting, 2005
  (www.cdc.gov/mmwr/preview/mmwrhtml/rr5417a1.htm?s_cid=rr5417a1_e)
- CDC Guidance for Evaluating Health-Care Personnel for Hepatitis B Virus Protection and for Administering Post-exposure Management *Recommendations and Reports,*62(RR10);1-19, 2013
- Kuhar et al. Updated U.S. Public Health Service guidelines for the management of occupational exposures to HIV and recommendations for post-exposure prophylaxis. CDC, 2013

Questions?

For more information, please contact

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