Health Care Personnel Prevention And Control, Influenza Vaccines and Body Substance Exposures

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March 16, 2012
St. Petersburg, FL

Influenza Immunization Program

An Influenza Immunization Program

Topics of Discussion

• Background
• Meeting recommendations
• BJC HealthCare experience
• Change model
• Policy development and implementation
• Policy implementation

Background

Influenza Facts

• Highly infectious febrile respiratory illness
• Infects up to 20% population in U.S.
  – 3,400 - 49,000 deaths in the U.S. annually*
  – More than 200,000 excess hospitalizations
• Leading cause of vaccine-preventable death in U.S. every year
• Asymptomatic infections occur
• Viral shedding precedes symptom onset
• Healthcare personnel (HCP) work ill

Deaths Due to Vaccine Preventable Disease - US, 2005*

<table>
<thead>
<tr>
<th>Disease</th>
<th>Number of Deaths</th>
<th>Infant Deaths</th>
<th>Rate per 100,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Influenza/pneumonia</td>
<td>63,001</td>
<td>265</td>
<td>21.3</td>
</tr>
<tr>
<td>Viral Hepatitis</td>
<td>5,529</td>
<td>0</td>
<td>1.9</td>
</tr>
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<td>Pertussis</td>
<td>31</td>
<td>28</td>
<td>0.0</td>
</tr>
<tr>
<td>Measles</td>
<td>1</td>
<td>0</td>
<td>0</td>
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<td>Poli, Varicella, Mumps, Tatanus and Diphtheria</td>
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Influenza Impact On Health Care

- Healthcare-associated transmission:
  - Increases morbidity, mortality and length of stay
- Increased census and employee absenteeism
- Additional $1-3 billion in health care costs in the U.S.
- Health and productivity costs are $87 billion
- Exposure evaluations are costly and labor-intensive

Influenza Immunization For HCP

- U.S. Advisory Committee on Immunization Practices of the Centers for Disease Control and Prevention (ACIP) has recommended for healthcare personnel (HCP) since 1984
- Purpose: prevent healthcare-associated transmission
- Core patient and HCP safety practice
- Nationally, HCP immunization rates remain low
  - 63.5% 2010
  - Healthy People 2020 goal – 90%

Benefits of Annual Immunization

- Improved patient safety, decreased HAIs
- Create herd immunity (80%)
- Reduce absenteeism by 50%
- 28% fewer lost work days to respiratory illness
- Employee cost savings: decreased medical costs, decreased use of antibiotics, 44% fewer doctor visits
- Healthier and more productive employees
- Critical societal workforce vaccinated during outbreaks

HCP Reasons for Not Getting Vaccinated

- Fear of adverse reactions
- Make me sick/give me the flu
- Flu is not serious
- Will not get the flu or just do not get sick
- Pain/fear of needles
- Vaccine does not work
- Not at risk of getting the flu
- Pregnant or breast feeding
- Inconvenient or too busy
- Lack of knowledge about the flu vaccine

Reasons for Declination – BJC HealthCare

Recommendations to Increase HCP Vaccination Rates

- ACIP
- HICPAC
- Joint Commission Standard
- Professional Organizations:
  - APIC
  - SHEA
  - IDSA
### Recommendations To Increase Rates

- Hold organized campaigns using effective and proven approaches to increase rates
- Measure and report vaccination rates
- Provide education
- Free, Convenient, Incentives/Rewards, Leadership
- Vaccinate HCP unless contraindication or actively decline with declination statements
- Surveillance for HAI influenza
- Evaluate reasons for non-participation
- Implement enhancements to increase participation
- Consider rates to be a measure of patient safety quality

### Professional Organizations Support Mandatory Immunization of HCP

- Society for Healthcare Epidemiology of America (SHEA)
- Infectious Diseases Society of America (IDSA)
- American Hospital Association (AHA)
- American College of Physicians (ACP)
- American Academy of Pediatrics (AAP)
- National Patient Safety Foundation (NPSF)
- Department of Defense (DOD)
- Immunization Action Coalition – Honor Roll (>150 organizations in 36 States)

### Mandatory HCP Influenza Immunization

<table>
<thead>
<tr>
<th>Pros</th>
<th>Cons</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Increased immunization rates</td>
<td>- Negative employee reaction</td>
</tr>
<tr>
<td>- Improved employee safety</td>
<td>- Perceive violation of individual rights</td>
</tr>
<tr>
<td>- Improved patient safety</td>
<td></td>
</tr>
<tr>
<td>- Shorter vaccination periods</td>
<td></td>
</tr>
<tr>
<td>- Post-exposure work-ups reduced</td>
<td></td>
</tr>
<tr>
<td>- Improved public health</td>
<td></td>
</tr>
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</table>

### Multiple Conditions Of Employment For HCP

- Immunity to:
  - Measles
  - Mumps
  - Rubella
  - Varicella
- TB skin testing
- Infection prevention activities:
  - Proper attire in the OR and isolation precautions
  - No artificial nails
- Care for patients, regardless of diagnosis

### Mandatory HCP Influenza Immunization

- Individual hospitals:
  - 1st - Virginia Mason Medical Center in 2005
    - 97.6% - 98.9% annual rates of vaccination
- Healthcare organizations
  - BJC HealthCare in 2008
  - Hospital Corporation of America (HCA) in 2009
  - Others listed on IAC Honor Roll

### Meeting The Recommendations
BJC HealthCare

- Large non-profit healthcare organization
- 13 acute care hospitals in Missouri and Illinois
  - Urban, suburban, rural
  - 3,475 staffed beds (range 40 – 1,111)
  - Two teaching hospitals (1 adult, 1 pediatric)
- 3 long-term care facilities
- Home care, medical groups, behavioral health, occupational medicine
- >27,000 employees

BJC HCP Influenza Immunization

- Comprehensive program since 1997 (always free)
- 2003 – 2006 established a “Best Practice”
  - Standardized and systematic
  - Promote maximum employee participation
  - Establish start and stop date
  - Make vaccine convenient
  - Utilize key partners to administer vaccine
  - Advertise and communicate
  - Education: benefits and risks, dispel myths
  - Offer incentives
  - Catchy themes
  - Monitor participation and report rates to key stakeholders

Challenges With A Best Practice Approach

- Time consuming
- Long immunization time period
- Easy for HCP to say “no”
- Incentives cost money
- Increase in participation was incremental

Declination Statements

- Recommendation of some professional organizations
- Meet JC Standard
  - Education
  - Survey for improvement
- HCPs not vaccinated, can transmit influenza
- Demonstrated only moderate increases

BJC HealthCare Best In Class Scorecard

- 2007, added to the Best In Class scorecard (BIC)
- Target set at 80% HCP immunization rate
  - Overall 71.1% (range 51% – 87%) vaccinated (18,039/25,380)
  - 16% (4,071) signed declination statements
  - 13% (3,270) neither vaccinated nor signed statement
- Challenges
  - Time consuming
  - Tracking down employees
  - Long campaign
- Conclusion: did not achieve established goal
Results of BIC Scorecard

Establishing A Vaccination Program

- Change the culture
  - Quality of the technical strategy – ‘Q’
  - Acceptance of change – ‘A’
- Develop policy and procedure
- Challenges to consider
- Focus on consistency and remember the mission

Acceptance Strategy: Accelerating Change and Transition, the ACT Model

Acceptance Strategy

- Lead the way:
  - Have a champion
  - Who says this is important?
- Create a sense of shared urgency:
  - The reason to change NOW
- Focus the vision:
  - Desired outcome of change is clear, legitimate, widely understood and shared
  - Vision must be compelling and vivid enough to create action
  - What does tomorrow look like?

Acceptance Strategy

- Build coalitions and commitment:
  - Consider what coalitions to build and what resistance is inevitable
  - Whose engagement and commitment do we need?
- Chart a transition roadmap:
  - Project plan for building the ‘A’ must be as real as the plan for implementing the ‘Q’
- Align systems and structures:
  - Will the organization be supported with the training, tools and rewards to take the risk and to be successful?
- Sustain the momentum:
  - Transition zone of change requires constant attention to fueling the energy for forward action
  - Is this for real?

Technical Strategy: The Policy Development
**Policy Intent – Why And Who**

- **Policy Owner** – Human Resources
- **Implementation process owner** – Occupational Health
- **Clearly define purpose**
  - Protect patients, employees, employees' family members and the community from influenza infection through annual immunization
- **Determine coverage**
  - All BJC HealthCare employees, with and without direct patient care
  - Vendors
  - Contracted clinical personnel
  - Students
  - Volunteers

**Policy Elements**

- **Free of charge**
- **Program coordination** – Occupational Health
- **Timeframe for compliance**
  - Begin October 15th
  - End December 15th
- **New hire process**
  - Vaccinated through March 31st
  - Those who refused, refer back to HR

**Policy Elements**

- Vaccinated at other locations must provide proof of vaccination
  - Receipt
  - Physician note
  - Copy of consent
- **Maintenance of records**
- **Contingency plans**
  - Vaccine shortages
  - Shipment delays

**Policy Elements**

- **Medical Exemptions**
  - Require documentation using a standardized form to indicate medical contraindication from personal licensed physician (MD/DO)
  - Standard criteria based on CDC guidelines, manufacturer recommendations
  - Temporary and permanent
- **Religious Exemptions**
  - Requests for religious accommodation must be provided in writing to Human Resources

**Policy Elements**

- Management of unvaccinated employees
  - Mask use; when and where?
- **Policy compliance**
- **Vaccination or exemption deadline**
- **Management of non-compliant HCPs**

**Collaborate In Policy Development**

- Infection Prevention
- Occupational Health
- Infectious Disease
- Human Resources
- Legal Services
- Leadership
- Others
Policy Implementation

Make It Easy For HCP

- Free vaccine
- Readily available, multiple sites and times
- Educate vaccine administrators
- Multiple brands to meet allergies and fears
  - Included thimerosal free, LAIV
- Ensure safety

Employee Influenza Immunization Rates 1997-2011

Keys to Success

- Building the case and getting buy-in
- Senior leadership support
- Plan, plan, plan, and plan again
- Key partnerships and collaboration
- Constant communication
- Remember the mission
- Willingness to compromise
- Be prepared for anything

A Note From Steve

Why is BJC requiring flu vaccinations?

"We know how to prevent flu. We know how to protect patients and co-workers from getting the flu. We should use everything we know to make sure that our patients have every opportunity to get better. After all, that's why we do what we do."

- Steve Lipstein, BJC President and CEO

Body Substance Exposures
Body Substance Exposure Management

Topics of Discussion

• Body substance exposure (BSE) background
• Exposure evaluation
• Exposure management
  – Hepatitis B
  – Hepatitis C
  – HIV
• Control of management

Body Substance Exposures (BSE)

• Definition: exposure to blood, tissue, or other body fluids that are potentially infectious
  – A percutaneous injury (e.g., a needlestick or cut with a sharp object)
  – Contact with mucous membrane or nonintact skin (e.g., exposed skin that is chapped, abraded, or afflicted with dermatitis)
• Infectious body substances:
  – Blood
  – Visible bloody fluids
  – Other potentially infectious fluid or tissue (cerebrospinal, synovial, pleural, pericardial, and amniotic fluids; semen; vaginal secretions)
  – Feces, nasal secretions, saliva, sputum, sweat, tears, urine, and vomitus are not considered potentially infectious unless they contain visible blood

Needlesticks And Other Sharps Injuries

• CDC estimate: ~384,325/year in US
  – Range (95% CI): 311,091 – 463,922
  – 1053/day (44)
  – 50% are unreported
  – Physicians under-report by up to 90%
• Bloodborne pathogens (BBP) of concern
  – Hepatitis B (HBV)
  – Hepatitis C (HCV)
  – Human immunodeficiency Virus (HIV)

Infection Risk per Exposure

• Risk depends on source, host, and injury factors
• Most infections occur after percutaneous exposures, few after mucous membrane exposures
• Cutaneous contacts pose very small risk
• Risk depends on viral load
• Larger blood transfer presents increased risk
  – larger needles, hollow-bore needles, & deeper penetration

BBP Fluid Concentrations (virions/ml)

<table>
<thead>
<tr>
<th></th>
<th>HBV</th>
<th>HCV</th>
<th>HIV</th>
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<tr>
<td>Serum</td>
<td>$10^{-12}$</td>
<td>$10^{-7}$</td>
<td>$10^{-4}$</td>
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<tr>
<td>CSF</td>
<td>+</td>
<td>+</td>
<td>-</td>
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Levy JAMA 1989

Risk Of BBP Transmission

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Occupational HIV in HCPs

- 57 documented cases
  - 48 percutaneous, 5 mucocutaneous, 2 both, 2 unknown
  - 49 HIV infected blood; 3 concentrated virus in a lab; 1 visibly bloody fluid; 4 “unspecified fluid”
- No new documented cases reported since 1999
- 140 additional possible occupationally acquired HIV infections
  - HCP found to be HIV+, without non-occupational risk factors, and opportunities for occupational exposure

Exposure Evaluation And Management

When Exposures Occur

- Treat the exposure site
  - Wash exposed area with soap and water
  - Rinse mucous membranes with water or saline
- Report and document exposure (supervisor, occupational health)
- Evaluate the exposure
- Evaluate exposure source
- Prescribe disease specific PEP management
- Follow-up and monitor exposed worker

Assessing The Risk

- Type of Exposure
  - Percutaneous
  - Mucous membrane
  - Nonintact skin
  - Intact skin
- Type and amount of fluid/tissue
  - Blood
  - Visibly bloody fluid
  - Other potentially infectious fluid or tissue (cerebrospinal, synovial, pleural, pericardial, and amniotic fluids; semen; vaginal secretions)
  - Feces, nasal secretions, saliva, sputum, sweat, tears, urine, and vomitus are not considered potentially infectious unless they contain visible blood

Assessing The Risk

- Risk factor and infectious status of source
  - Behavioral risk factors
    - Illegal drug use
    - Men who have sex with men
    - Multiple sexual partners
  - Victim of violent trauma
  - History of multiple blood products, especially before 1985
  - Presence of BBP
    - Hepatitis B (HbsAg – Hepatitis B surface antigen)
    - Hepatitis C (HCV antibody)
    - HIV (HIV antibody, viral load)
- Susceptibility of exposed HCP
  - Hepatitis B vaccine history and vaccine response status
    - (HbsAb – Hepatitis B surface antibody)

Evaluation of Known Exposure Sources

- Test source for HBsAg, HCV antibody, and HIV antibody (rapid)
  - HIV rapid ELISA +, confirm with Western blot – still true!
  - Newer HCV Elisa/antibody tests = better
    - Single positive HCV antibody test = sufficient
    - No need to confirm with RIBA
- If all tests negative, the source is not infected with a bloodborne pathogen, baseline testing and further follow-up of the exposed worker is not necessary!
HIV Window Period – No Antibody

- Window period: time from infection to antibody detection
  - with newer tests only 3 – 6 weeks (previously 3 – 6 months)
- “False negative” rates in low prevalence populations ~ 0.001% (in high prevalence ~ 0.3%)
- If source pt with illness and epidemiology c/w acute infection, consider HIV – viral load (high in acute infection)
  - (If complete panic, can consider viral load.)
    - Viral load = takes 7 – 10 days; has false positives too

Evaluation of Known Exposure Sources

- For sources whose HIV infection status remains unknown, consider medical diagnoses, symptoms, and history of risk behaviors
- Know State laws for need for consent

Exposures with Unknown Source

- Possible unknown sources – discarded needles/sharps
- Evaluate the likelihood of exposure to a source at high risk for infection, consider PEP
- Consider likelihood of BBP infection among patients in the exposure setting
- Do not test discarded needles for BBP
- Risk very low, can follow worker serology

Post-Exposure Management

- Determine if true exposure to infectious fluids has occurred… AND
- Determine if bloodborne pathogen exposure is known or suspected (source patient status)
- What next?
  - HBV
  - HIV
  - HCV

Recommended PEP for Exposure to HBV

<table>
<thead>
<tr>
<th>Vaccination and antibody response status</th>
<th>Source</th>
<th>Source</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>HBsAg Positive</td>
<td>HBsAg Positive</td>
<td>HBsAg Negative</td>
<td>Unknown</td>
</tr>
<tr>
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<td>HBsAg Positive</td>
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Follow-up Testing For HCV Exposures

- Known source, perform baseline testing for anti-HCV
- For HCP exposed to an HCV-positive source
  - Baseline Hepatitis C antibody assay and ALT activity
  - Qualitative HCV viral RNA at 4-6 weeks
  - 6 month Hepatitis C antibody assay and ALT activity
- If HCV-Ab test is positive, obtain viral load
  - If HCV viral load test is positive, repeat test (can be false positive)
  - For persistent positive tests: refer to hepatologist for consideration of IFN therapy

No two sources have been shown to be infected with HBV and share an injection and not require post exposure prophylaxis.

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**Recommended PEP**: For sources whose HIV infection status remains unknown, consider medical diagnoses, symptoms, and history of risk behaviors. Know State laws for need for consent.

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<th>HIV Management</th>
</tr>
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<tbody>
<tr>
<td>• No vaccine for HCV</td>
<td>• HIV(+) source: Obtain viral load and treatment history</td>
</tr>
<tr>
<td>• Currently, no PEP for occupational exposure to HCV because:</td>
<td>• Initiate PEP promptly</td>
</tr>
<tr>
<td>– No evidence of efficacy</td>
<td>• Follow-up testing at 6 weeks, 3 and 6 months (or with symptoms)</td>
</tr>
<tr>
<td>– Risk of acute infection is low; and spontaneous clearance may occur</td>
<td>• If source is positive for both HCV and HIV, perform follow-up HIV testing at 12 months</td>
</tr>
<tr>
<td>– Therapy for acute HCV is promising</td>
<td>• Counsel exposed worker about</td>
</tr>
<tr>
<td>– Side effects with INF</td>
<td>– Importance of post-exposure prophylaxis (PEP)</td>
</tr>
<tr>
<td></td>
<td>– Support for physical side effects of meds</td>
</tr>
<tr>
<td></td>
<td>– Support for emotional effects of exposure (EAP)</td>
</tr>
<tr>
<td></td>
<td>– No blood donation (6-12 months)</td>
</tr>
<tr>
<td></td>
<td>– Safer sex practices, no breastfeeding</td>
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<tr>
<th>HIV Sero-conversion in HCP</th>
<th>Data for HIV PEP: Human Studies</th>
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<tr>
<td>• Interval from exposure to sero-conversion – mean 46 days (median 65 days)</td>
<td>• CDC case control study of exposed HCP: PEP (with AZT alone) decreased transmission by 80%</td>
</tr>
<tr>
<td>• 95% converted within 6 months</td>
<td>• ACTG 5096: Prevention of perinatal transmission</td>
</tr>
<tr>
<td>– Most in first 6-12 weeks</td>
<td>– AZT given during pregnancy, labor and delivery decreased transmission by 67%</td>
</tr>
<tr>
<td>• 3 delayed sero-conversion (all &lt; 12 mo; 2/3 concurrent HCV)</td>
<td>– Despite 25-30% rate of resistance to AZT</td>
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<th>Data for HIV PEP: Animal Studies</th>
<th>PEP selection</th>
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<tr>
<td>• Effective protection in monkeys:</td>
<td>• Completing course is most important factor</td>
</tr>
<tr>
<td>– Duration: all macaques protected with 28 days of PEP; 50% with 10 days; 0% with 3 days</td>
<td>• 2 drugs are easier to tolerate than 3</td>
</tr>
<tr>
<td>– Timing: all macaques protected with PEP started within 24 hours; 50% within 48hrs; 25% within 72 hours</td>
<td>• For pre-treated sources, try to use drug(s) source has not had</td>
</tr>
<tr>
<td>• Other studies also show decreased efficacy with decreased duration, decreased dose or delayed initiation</td>
<td>• Ask about any other medications that exposed person is taking (drug interactions)</td>
</tr>
</tbody>
</table>
Anti-retroviral Agents

- From five classes of drugs are currently available to treat HIV infection
- Includes:
  - Nucleoside reverse transcriptase inhibitors (NRTIs)
  - Nucleotide reverse transcriptase inhibitors (NtRTIs)
  - Nonnucleoside reverse transcriptase inhibitors (NNRTIs)
  - Protease inhibitors (Pis)
- A single fusion inhibitor
- Only antiretroviral agents approved by FDA for treatment of HIV infection are included in CDC guidelines.

PEP: Basic Regimen

- Basic Regimen
  - Zidovudine (Retrovir®, ZDV; AZT) + lamivudine (Epivir®, 3TC)
  - Zidovudine (Retrovir®, ZDV; AZT) + emtricitabine (Emtriva™, FTC)
  - Tenofovir DF (Viread®, TDF) + lamivudine (Epivir®, 3TC)
  - Tenofovir DF (Viread®, TDF) + emtricitabine (Emtriva™, FTC)
  - Available as Truvada™
- Alternate Basic Regimen
  - Lamivudine (Epivir®, 3TC) + stavudine (Zerit®; d4T)
  - Emtricitabine (Emtriva™, FTC) + stavudine (Zerit®; d4T)
  - Lamivudine (Epivir®, 3TC) + didanosine (Videx®, ddl)
  - Emtricitabine (Emtriva™, FTC) + didanosine (Videx®, ddl)

PEP: Expanded Regimen

- Preferred Expanded Regimen:
  - Basic regimen plus: Lopinavir/ritonavir (Kaletra®, LPV/RTV)
- Alternate Expanded Regimen:
  - Basic regimen plus one of the following:
    - Atazanavir (Reyataz®, ATV) + ritonavir (Norvir®, RTV)
    - Fosamprenavir (Lexiva®, FOSAPV) + ritonavir (Norvir®, RTV)
    - Indinavir (Crixivan®, IDV) + ritonavir (Norvir®, RTV)
    - Saquinavir (Invirase®, SQV) + ritonavir (Norvir®, RTV)
    - Nelfinavir (Viracept®, NFV)
    - Elavir (Sustiva®, EFV)

HIV PEP Recommendation For Percutaneous Injuries

HIV PEP Recommendation For Mucous Membrane Exposures

Basic and Expanded PEP

<table>
<thead>
<tr>
<th>DRUG</th>
<th>Dose</th>
<th>SIDE EFFECTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tenofovir (combination of 300mg Tenofovir and 300 mg Emtricitabine)</td>
<td>One tablet by mouth once daily With or without food</td>
<td>Headache, nausea, diarrhea, abdominal pain, poor appetite, weakness, muscle aches</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tingling sensation of hands and feet; lowered white blood cell counts; increases in liver and muscle enzymes; rash; darkening of the skin on palms and soles.</td>
</tr>
<tr>
<td>Expanded PEP Regimen, includes Basic PEP Regimen and</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aluvィna (200 mg total dose)</td>
<td>Two 100 mg capsules by mouth once daily With food</td>
<td>Headache, rash, nausea, abdominal pain, diarrhea, vomiting, and/or hypokalemia</td>
</tr>
<tr>
<td></td>
<td></td>
<td>With chronic use, increased blood lipids and glucose, osteoporosis, body fat redistribution, liver dysfunction</td>
</tr>
<tr>
<td>Nelfinavir (Viracept®, NFV)</td>
<td>One capsule (150 mg) by mouth once daily With food</td>
<td>Headache, rash, nausea, abdominal pain, diarrhea, vomiting, and/or hypokalemia</td>
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<tr>
<td></td>
<td></td>
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</tr>
</tbody>
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Indications – BSE based on MMWR Vol. 54/No. RR-9
**PEP Toxicity In HCP**

- Most data from HIV patients (chronic use)
- Tolerated more poorly by HCP (starting out well)
- 17 – 47% stop PEP before 28 days
- On three drugs:
  - 57% of HCPs report toxicity (6X higher than patients);
  - 8X more HCPs than patients stop meds due to side effects
- 47% have at least one symptom/side effect
  - Most common: nausea (+/- vomiting), fatigue, headache, diarrhea

**Drug Side Effects**

<table>
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<tr>
<th>Side effect and toxicity</th>
<th>Data source</th>
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<td>Nausea, vomiting, nausea, headache, diarrhea</td>
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<td>47% have at least one symptom/side effect</td>
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</table>

**Drug Interactions**

**When To Begin PEP**

- Goal of PEP (vs treatment) is to prevent small amounts of virus from establishing infection in lymph nodes
- Most important to begin therapy as soon as possible (2 hours) and continue for 28 days
- If PEP is initiated, obtain baseline CBC, creatinine, and liver enzyme tests (AST, ALT, alkaline phosphatase, total bilirubin).

**Exposures With Unknown Source**

- Evaluate and consider:
  - Likelihood of exposure to a source at high risk for infection
  - Likelihood of bloodborne pathogen infection among patients in the exposure setting
  - Type of exposure (fluid, sharp device)
- **PEP usually not indicated**
- HIV does not survive well in the environment; drying decreases risk of transmission to "essentially zero"

**Overuse OF PEP**

- PEP is overused
  - Of 4000 calls to hotline, 58% recommended stopping or not starting PEP
- Use of 3 drugs may threaten efficacy due to greater toxicity
- PANIC
- PEP is potentially toxic
  - Use is not justified for exposures that pose a negligible risk for transmission
  - Must evaluate the risk of transmission against the risk of toxicity
HIV Exposure Principles

- Be certain an exposure has occurred
  - Infectious fluids, infected patient
- If a delay in initiation is >24-36 hours, seek expert consultation
- Use a regimen that will promote adherence
- Anticipate and treat side effects
- Monitor closely for adherence and adverse effects (including psychological effects)


HIV Exposure Principles

- Providing appropriate education about options for symptom management can improve adherence
- Base drug selection decisions in part on information about the source including antiretroviral therapy; response to therapy including HIV viral load, CD4 cell count, current disease stage; and any data on HIV resistance testing
- Delays in getting information should NOT delay initiation of PEP; modifications can be made later as needed

BJC Body Substance Exposure Hotline

- 24/7 response
- Six nurse specialists
- Medical director – infectious disease specialist
- Internal and external customers
- Respond to about 435 calls per year

Summary

- Body substance exposures are common
- Determine true exposures
  - Mechanism, fluid, infected source
- Provide follow-up, testing and support always
- Provide medical management when indicated
- Seek expert guidance for complicated cases

Additional Resources

- Updated U.S. Public Health Service Guidelines for the Management of Occupational Exposures to HIV and Recommendations for Postexposure Prophylaxis. MMWR, September 30, 2005/54 (RR-09)
- Updated U.S. Public Health Service Guidelines for the Management of Occupational Exposures to HBV, HCV, and HIV and Recommendations for Postexposure Prophylaxis. MMWR, June 29, 2001/54 (RR-11)
What Questions Do You Have?

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