Healthcare-Associated Infections: Epidemiology and Prevention Strategies

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Healthcare-Associated Infections (HAIs)

- Definition: Infections that patients acquire during the course of receiving treatment for other conditions within a healthcare setting

- Healthcare settings:
  - Hospitals: acute care facilities, critical access facilities
  - Long term care facilities (LTCF)
  - Outpatient settings: dialysis centers, ambulatory surgical centers, specialty clinics, physician’s offices
HAI Burden
What is Known: Acute Care Settings

- 1.7 million infections (5% of all admissions)
  - Most (1.3 million) were outside of ICUs
- $28–33 billion in excess costs
- 99,000 associated deaths
- Most common type of infections:
  - Bloodstream infections (BSI)
  - Urinary tract infections
  - Pneumonia
  - Surgical site infections

### Estimated Annual Hospital Cost of HAI by Site of Infection

<table>
<thead>
<tr>
<th>Major Site of Infection</th>
<th>Total infections</th>
<th>Hospital Cost per Infection (2002 $)</th>
<th>Total annual hospital cost (in millions $)</th>
<th>Deaths Per year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surgical Site Infection</td>
<td>290,485</td>
<td>$25,546</td>
<td>7,421</td>
<td>13,088</td>
</tr>
<tr>
<td>Central Line-associated Bloodstream Infection</td>
<td>248,678</td>
<td>$36,441</td>
<td>9,062</td>
<td>30,665</td>
</tr>
<tr>
<td>Ventilator-associated Pneumonia</td>
<td>250,205</td>
<td>$9,969</td>
<td>2,494</td>
<td>35,967</td>
</tr>
<tr>
<td>Catheter-associated Urinary Tract Infection</td>
<td>561,667</td>
<td>$1,006</td>
<td>565</td>
<td>8,205</td>
</tr>
</tbody>
</table>

# Social Costs of HAIs

<table>
<thead>
<tr>
<th>Categories of Cost*</th>
<th>Fixed Costs</th>
<th>Variable Cost:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct Hospital Costs</td>
<td>Buildings</td>
<td>Medications</td>
</tr>
<tr>
<td></td>
<td>Utilities</td>
<td>Food</td>
</tr>
<tr>
<td></td>
<td>Equipment/Technology</td>
<td>Consultations</td>
</tr>
<tr>
<td></td>
<td>Labor (laundry, environmental control, administration)</td>
<td>Treatments</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Procedures</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Devices</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Testing (laboratory and radiographic)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Supplies</td>
</tr>
<tr>
<td>Indirect Costs</td>
<td>Lost/Wages</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Diminished worker productivity on the job</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Short term and long term morbidity</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mortality</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Income lost by family members</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Forgone leisure time</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Time spent by family/friends for hospital visits, travel costs, home care</td>
<td></td>
</tr>
<tr>
<td>Intangible Cost</td>
<td>Psychological Costs (i.e., anxiety, grief, disability, job loss)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pain and suffering</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Change in social functioning/daily activities</td>
<td></td>
</tr>
</tbody>
</table>

Guidance for Control of Infections with Carbapenem-Resistant or Carbapenemase-Producing *Enterobacteriaceae* in Acute Care Facilities
Challenges of *Klebsiella Pneumoniae Carbapenemase (KPC)*

- Common cause of both healthcare and community acquired infections
- Felt by many to be more virulent than *Pseudomonas* or *Acinetobactor* bacteria
- KPCs are plasmid based and often flanked by transposon sequences:
  - Resistance can be transferred
  - Plasmids often contain other resistance genes
- Extremely drug resistant
- Becoming more widespread
Geographical Distribution of KPC-Producers, December 2008

Frequent occurrence
Sporadic Isolate(s)

Clostridium difficile: “Deadly Superbug”

Hospitals battling dangerous C. diff bacteria

By Laura Ungar
lungar@courier-journal.com

Cheryl Keplinger nearly lost her life to a germ some doctors are calling the next big bacterial threat — Clostridium difficile.

The 54-year-old Simpsonville, Ky. nurse suffered diarrhea for 19 days before being told she might need to have her appendix, gall bladder and part of her colon removed after she contracted the dangerous infection caused by bacteria known as C. diff.

Though she avoided surgery, she spent 10 days at Jewish Hospital downtown before being released last week.

"I never want to go through this again," Keplinger said.

Typically tied to hospitalization or antibiotic use, the infection is rising dramatically. As many as 3 million Americans a year suffer diarrhea, inflammation of the colon and other problems because of C. diff, which some doctors say is beginning to rival the staph infection MRSA as a deadly superbug.
Estimates of *C. difficile* Cases, by Setting

- **Hospital-acquired, hospital-onset:**
  - 165 K cases
  - $1.3 B in excess costs
  - 9 K deaths annually

- **Hospital-acquired, post-discharge (up to 4 weeks):**
  - 50 K cases
  - $0.3 B in excess costs
  - 3 K deaths annually

- **Nursing home-onset:**
  - 263 K cases
  - $2.2 B in excess costs
  - 16.5 K deaths annually

The Healthcare System — More than Just Hospitals

- Acute Care Facility
- Home Care
- Outpatient/Ambulatory Facility
- Long Term Care Facility

More than Just Hospitals
HAIs in LTCF

- 1.7 million beds with 2.5 million residents / yr nationally\(^1\)
- 1/3 of long-term care residents affected by respiratory disease outbreaks\(^2\)
- Veterans Healthcare data\(^3\)
  - 133 nursing homes; 11,475 residents
  - HAI prevalence: 5.2%
  - Indwelling medical device: 25% of all residents

\(^1\) NCHS, 2009 \(^2\) Loeb, CMAJ, 2006 \(^3\) Tsan, AJIC, 2008
Device-associated HBV Transmission Among Persons with Diabetes

Blood contamination of finger stick device used for multiple persons

Blood contamination of shared glucose testing meters

Challenge: increased point of care testing and use of over-the-counter personal care devices
Growth in Outpatient Care

- Shift in healthcare delivery from acute care settings to ambulatory care, free standing specialty care sites, and physician’s offices

- Dialysis Centers
  - 2008: 5240 (82% increase since 1996)

- Ambulatory Surgical Centers
  - 2009: 5175 (240% increase since 1996)

- Approximately 1.2 billion outpatient visits / yr
Trends in Dialysis

- Dialysis population ~350,000
- $32 billion in end stage renal disease costs
- Revised CMS conditions for coverage incorporate 2001 CDC infection control guidance
- Infections - 2nd most common cause of death
  - Catheter-related BSIs: 4.2 per 100 pt months
  - Incidence of MRSA BSIs: 100x greater than in non-dialysis populations
- Outbreaks (e.g., hepatitis C) continue
National Kidney Month and World Kidney Day

March is National Kidney Month in the United States, and March 12 is World Kidney Day. Both commemorations are intended to raise awareness of kidney disease and the importance of prevention and early detection. Kidney disease is the ninth leading cause of death in the United States (1), but persons with chronic kidney disease (CKD) are more likely to die from cardiovascular disease than develop kidney failure (2).

In 2000, approximately 26 million U.S. adults had CKD (3). However, in 1999–2004, only 42% of adults with severe kidney disease (stage 4) and fewer than 10%

Hepatitis C Virus Transmission at an Outpatient Hemodialysis Unit – New York, 2001–2008

In July 2008, the New York State Department of Health (NYSDOH) received reports of three hemodialysis patients seroconverting from anti-hepatitis C virus (HCV) negative to anti-HCV positive in a New York City hemodialysis unit during the preceding 6 months. NYSDOH conducted patient interviews and made multiple visits to the hemodialysis unit to observe hemodialysis treatments, assess infection control practices, evaluate HCV surveillance activities, review medical records, and conduct interviews with staff members. This report summarizes the results of that investigation, which found that
Surgical Procedures Moving from Inpatient to Outpatient Setting

*2005 values are estimates.
Concerns in Ambulatory Care

- Quick turnover between patients
- Increasingly invasive, complex procedures
- Expansion of services without proportionally expanded infection control oversight
- Regulatory requirements vary widely
  - ASC: average survey interval was 8.5 years
- Lack systematic surveillance to detect infections originating in ambulatory settings
Infection Control in ASCs

- 2008: CDC-CMS piloted an infection control audit tool in a sample of ASCs in 3 states to assess compliance:
  - Hand Hygiene, use of PPE
  - Injection safety and medication handling
  - Equipment reprocessing
  - Environmental cleaning
  - Handling of blood glucose monitoring equipment

Infection Control in ASCs

- 68 ASCs sampled
- 68% of the pilot ASCs had lapses in infection control
- 18% of ASCs had lapses extending across ≥3 areas of infection control
- Some concerning lapses:
  - Reusing bite blocks and syringes to flush
  - Using SDV meds for multiple patients
  - Sharing single lancing penlet device between patients

Increasing number of outbreaks associated with outpatient care

- Wide range of settings (e.g., ASCs, cancer clinics, pain medicine clinics, physician offices, etc.)
- Unsafe injections, foundation of basic safe care practices lacking
TRANSMISSION OF BLOODBORNE PATHOGENS VIA CONTAMINATED EQUIPMENT OR MEDICATIONS

SOURCE
Infectious person, e.g. chronic, acute

CONTAMINATED EQUIPMENT OR MEDICATION OR HANDS

CASE
Susceptible, non-immune person
Standard Precautions

- Assume that *anyone* might be infected with a bloodborne pathogen
- Basic infection control principles that apply *every where* and *every time* healthcare is delivered

**Safe Injection Practices**
- Never administer medications from the same syringe to more than one patient
- Do not enter a vial with a used syringe or needle
- Minimize the use of shared medications
- Maintain aseptic technique at all times
What Happens When Safe Injection Practices Are Not Followed?

Summary of U.S. experience in past decade

- >50 outbreaks of hepatitis B or C have occurred in healthcare settings
  - ~ 1/4 investigated in the last 24 months
  - Majority due to unsafe injection practices or related breakdowns in safe care

- ~ 20 outbreaks involving bacterial pathogens (e.g., drug resistant gram negatives and invasive staph infections)
  - Typically resulting in bloodstream infections
  - Prolonged hospitalization and IV antibiotics
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<th>State</th>
<th>Setting</th>
<th>Year</th>
<th>Type</th>
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<td>NY</td>
<td>Private MD office</td>
<td>2001</td>
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<td>2002</td>
<td>HBV+HCV</td>
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<tr>
<td>MD</td>
<td>Nuclear imaging</td>
<td>2004</td>
<td>HCV</td>
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<tr>
<td>FL</td>
<td>Chelation therapy</td>
<td>2005</td>
<td>HBV</td>
</tr>
<tr>
<td>CA</td>
<td>Alternative medicine infusion</td>
<td>2005</td>
<td>HCV</td>
</tr>
<tr>
<td>NY</td>
<td>Endoscopy/surgery clinics</td>
<td>2006</td>
<td>HBV+HCV</td>
</tr>
<tr>
<td>NY</td>
<td>Anesthesiologist office</td>
<td>2007</td>
<td>HCV</td>
</tr>
<tr>
<td>NV</td>
<td>Endoscopy clinic</td>
<td>2008</td>
<td>HCV</td>
</tr>
<tr>
<td>NC</td>
<td>Cardiology clinic</td>
<td>2008</td>
<td>HCV</td>
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<td>NJ</td>
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Viral Hepatitis Outbreaks - Outpatient Settings due to Unsafe Injection Practices, 2001–2009

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</table>

Nearly half of these outbreaks were caused by unsafe injection practices related to anesthesia/sedation

Direct Syringe Reuse
Patient-to-Patient Transmission of HBV and HCV

- 2002: Oklahoma pain clinic
  - Example of “multidose syringe” technique
    - Loaded a syringe with enough medication to treat multiple patients
    - Reused this “prefilled’ syringe to inject into heparin lock attached directly to an IV
  - 71 cases of HCV and 31 cases of HBV

Comstock et al. ICHE 2004;25:576-583
Direct Syringe Reuse
Provider-to-Patient Transmission of HCV due to Diversion of Fentanyl, Colorado 2009

- HCV-infected surgery technician stole fentanyl syringes that had been predrawn and left unattended in ORs
- Contaminated syringes were refilled with saline and swapped with unused syringes
- 24 patients infected; nearly 6000 notified

Hepatitis C nurse to be questioned by prosecutors

Associated Press - December 10, 2009 3:54 PM ET

DENVER (AP) - Hospital patients who say a surgery technician infected them with hepatitis C want a federal judge to let them be present during an upcoming interrogation with prosecutors and while she takes a blood test and polygraph.
• Syringes were reused to withdraw multiple doses for individual patients
• Remaining volume in single dose propofol vials was used for subsequent patients
• The vial became the vehicle for HCV spread
Ongoing Threat to Patient Safety

- Continued outbreaks associated with unsafe injections and other breakdowns in basic infection control
- Large public health patient notifications advising testing for hepatitis B virus, hepatitis C virus, and HIV
Patient Notifications due to Unsafe Injection Practices, 1999–2009

<table>
<thead>
<tr>
<th>Description of notifications</th>
<th>No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total events identified</td>
<td>22</td>
</tr>
<tr>
<td>Affected states</td>
<td>13</td>
</tr>
<tr>
<td>Estimated total no. of patients notified</td>
<td>123,817</td>
</tr>
<tr>
<td>Median no. of patients notified per event (range)</td>
<td>1,457 (36–53,000)</td>
</tr>
</tbody>
</table>
What Happens When Safe Injection Practices Are Not Followed?

Summary of U.S. experience in past decade

- >50 outbreaks of hepatitis B or C have occurred in healthcare settings
  - ~ 1/4 investigated in the last 24 months
  - Majority due to unsafe injection practices or related breakdowns in safe care

- ~ 20 outbreaks involving bacterial pathogens (e.g., drug resistant gram negatives and invasive staph infections)
  - Typically resulting in bloodstream infections
  - Prolonged hospitalization and IV antibiotics
Examples of Bacterial Outbreaks due to Unsafe Injection Practices, 2008-2009

- FL – pain clinic – 7 cases – *Mycobacterium abscessus*
  - Epidural injections; all patients required laminectomy
- FL – pain clinic – 24 cases – invasive *S. aureus*
  - Epidural + other lumbar injections; 10 required laminectomy
- NYC – pain clinic – 9 cases – *Klebsiella pneumoniae*
  - Sacroiliac joint injections; 4 patients hospitalized
- WV – pain clinic – 8 cases – invasive *S. aureus*
  - Epidural injections; 7 patients hospitalized (range 5-23 days)
- GA – primary care clinic – 5 cases – *S. aureus* (MSSA)
  - Joint injections; all patients hospitalized ≥1 week

→ Common elements: reuse of single dose contrast dye and other unsafe injection practices / infection control deficiencies
Parasitic Infection due to Unsafe Injection Practice

- Patient-to-patient transmission in pediatric ward
- Patient A with malaria acquired abroad
- Patient B developed malaria-like symptoms
  - Had *Plasmodium falciparum* identified, isolate identical to that of Patient A
  - No recent travel
- Nurses admitted to reusing saline flushes, all other routes of transmission ruled out

How Have Providers Justified Syringe Reuse?

- Mistaken belief that the following prevent contamination and infection transmission
  - Changing the needle
  - Injecting through intervening lengths of intravenous tubing
  - Always maintaining pressure on the plunger to prevent backflow of body fluids
  - Lack of visible contamination or blood
How Do We Prevent HAIs?
State of Prevention Knowledge and Science

- Evidence-based prevention recommendations
  - Major device and procedure associated HAIs (CLABSI, VAP, CAUTI, SSI)
  - Prevention of pathogen transmission (MRSA, C. difficile)
  - Standard Precautions applicable to all healthcare settings

- Suboptimal adherence to key prevention recommendations
Current State of Affairs

- Hand hygiene compliance for healthcare worker: 40-50%
- Compliance with timing of surgical prophylaxis: ~40%\(^1\)
- Many facilities have yet to implement proven prevention measures:
  - Bloodstream infections
  - Urinary tract infections
- Increasing number of outbreaks due to inattention to basic infection control

\(^1\)2005 Data from Surgical Care Improvement Project
What’s Been Missing in the Past to Promote HAI Prevention?

- Robust data on HAI Prevention
- Focused attention of policymakers
- Incentives / disincentives to promote systems change for sustainable HAI prevention
- Enhanced HAI surveillance system
- Developing partnerships
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Preventability of Infections

- Study on the Efficacy of Nosocomial Infection Control (SENIC)
  - 6% of all HAIs preventable with minimal infection control efforts
  - 32% preventable with “well organized and highly effective infection control programs”
- 20-70% of infections are preventable\(^1\)

\(^1\)J Hosp Infection 2003;54:258
Successful Implementation of CDC/HICPAC Guidelines Prevents Bloodstream Infections

Pittsburgh Regional Healthcare Initiative

Michigan Keystone Initiative

Overall rate reduction of 68%

Overall rate reduction of 66%

ICUs at 103 Michigan hospitals, 18 months

Muto C, et al. MMWR 2005;54:1013-16

Trends in MRSA Bloodstream Infections by ICU Type, NHSN hospitals, 1997-2007

- Estimated 7000 BSIs prevented
- 1800 lives saved
- $50-180 M in costs averted annually
Significant reductions:
- Surgical site infections
- Unplanned return to OR
- All complications
- Deaths

## Estimates of Preventable Infections, Deaths, and Costs

<table>
<thead>
<tr>
<th>Infection type</th>
<th>Preventable fraction</th>
<th>Preventable infections (thousands)</th>
<th>Preventable deaths (thousands)</th>
<th>Cost avoided (billions of 2009 dollars)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLABSI</td>
<td>18%–66%</td>
<td>45-164</td>
<td>6-20</td>
<td>1-18</td>
</tr>
<tr>
<td>VAP</td>
<td>38%–55%</td>
<td>95–138</td>
<td>14–20</td>
<td>2-3</td>
</tr>
<tr>
<td>CAUTI</td>
<td>17%–69%</td>
<td>95–388</td>
<td>2–9</td>
<td>0.1-2</td>
</tr>
<tr>
<td>SSI</td>
<td>26%–54%</td>
<td>75–157</td>
<td>2–4</td>
<td>0.2-0.3</td>
</tr>
</tbody>
</table>

Source: Umschied, C. University of Pennsylvania. Presentation at HICPAC, March 2009
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State Legislative Activity for HAIs (as of October 6, 2009)

Month – Date mandatory Year =

- Mandatory reporting using NHSN
- Voluntary reporting
- States with study laws
- States with no legislation
- Mandatory data collection
- Mandates public reporting using NHSN

Month – Date mandatory Year =
HHS Issues Action Plan to Prevent Health Care-Associated Infections

The U.S. Department of Health and Human Services (HHS) unveiled a plan that establishes a set of five-year national prevention targets to reduce and possibly eliminate health care-associated infections (HAIs).

Health care-associated infections (HAIs) are any infections that patients acquire while undergoing medical treatment or hospital care.

The Action Plan includes 11 goals, 41 actions, and 65 outcomes that collectively attack the root causes of HAIs through prevention, education, and research. The plan outlines cross-agency efforts to save lives and reduce HAIs.

HEALTH-CARE-ASSOCIATED INFECTIONS IN HOSPITALS

Leadership Needed from HHS to Prioritize Prevention Practices and Improve Data on These Infections

Statement of Cynthia A. Baccetta
Director, Health Care

For Balance on Delivery

GAO

Testimony
Before the Committee on Oversight and Government Reform, House of Representatives

For Balance on Delivery

Wednesday, April 16, 2008

http://www.hhs.gov/ophs
HHS Steering Committee: HAI Prevention

Charge: Develop an Action Plan to reduce, prevent, and ultimately eliminate HAIs

Plan will:

- Establish national goals for reducing HAIs
- Include short- and long-term benchmarks
- Outline opportunities for collaboration with external stakeholders
- Coordinate and leverage HHS resources to accelerate and maximize impact
## HHS Action Plan: Tier One Priorities

### HAI Priority Areas
- Catheter-associated urinary tract infection
- Central line-associated bloodstream infection
- Surgical site infection
- Ventilator-associated pneumonia
- MRSA
- *Clostridium difficile*

### Implementation Focus
- Hospitals*

*Tier Two will address other types of healthcare facilities*
What’s Been Missing in the Past to Promote HAI Prevention?

- Robust data on HAI Prevention
- Focused attention of policymakers
- Incentives / disincentives to promote systems change for sustainable HAI prevention
- Enhanced HAI surveillance system
- Developing partnerships
Centers for Medicare and Medicaid Services

- October 2008
- Non-payment rules for “Never events”
  - Preventable conditions acquired during patient’s hospital stay
  - Includes HAI bloodstream infections, urinary tract infections, and selected surgical site infections
Federal Funding for HAI Prevention

- American Recovery and Reinvestment Act of 2009 (ARRA)
  - Allocated funding to states for HAI prevention

- FY 2009 Omnibus Bill
  - States to develop HAI prevention plans to be consistent with HHS Action Plan
What’s Been Missing in the Past to Promote HAI Prevention?

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- Enhanced HAI surveillance system
- Developing partnerships
National Healthcare Safety Network (NHSN)

- Internet based reporting system through CDC’s Secure Data Network
- >2400 U.S. healthcare facilities participating from all 50 states, DC, PR
- Standard definitions, methods, protocols
  - Used in >20 countries
- Manual data entry with transition toward electronic data capture
Reporting State-specific HAI Data
Initial Report: CLABSIIs, Jan-June 2009

- Primary data for measuring impact of ARRA-funded state program
- Inform state-based prevention efforts (e.g., decisions for resource allocations)
- Enable assessment of progress toward national HAI targets in HHS Action Plan
Standardized Infection Ratio (SIR)

- Single metric for comparing risk-adjusted HAI data of facility or state with baseline U.S. experience (i.e., standard population)
- Allows aggregating of data across stratified groups (e.g., variety of healthcare settings)
- Use risk-adjusted rate from referent period Jan 2006–Dec 2008 (i.e., standard population) to calculate “predicted” number of HAIs

\[
SIR = \frac{\text{Observed HAIs}}{\text{Predicted HAIs}}
\]
What’s Been Missing in the Past to Promote HAI Prevention?

- Robust data on HAI Prevention
- Focused attention of policymakers
- Incentives / disincentives to promote systems change for sustainable HAI prevention
- Framework to extend local / regional successes across the nation
- Developing partnerships
Increasing Needs and Opportunities for Public Health Approach Across the Continuum of Care
Paradigm Shift: Building Partnerships with State Health Departments

- Expand state public health workforce to make progress toward HAI prevention
- Create and expand state-based HAI prevention collaboratives
- Improve HAI outbreak detection, reporting, and investigation capacity
- Increase HAI surveillance through facility participation in NHSN
DHQP Public Health Advisors and Prevention Liaisons

DHQP Public Health Advisors
Region 1 – Kim Zimmerman
Region 2 – Ramona Bennett
Region 3 – Ramona Bennett
Region 4 – Wendy Vance
Region 5 – Jason Snow
Region 6 – Jason Snow
Region 7 – Ramona Bennett
Region 8 – Laura McAllister
Region 9 – Kim Zimmerman
Region 10 – Wendy Vance

EIP sites – Laura McAllister

Activity Color Legend
A Only
B Only
A & B Only
A & C Only
B & C Only
A, B, & C
No Activities

Symbol Legend
EIP Sites
CSTE Fellows
HHS Regional Health Administrators HQ

CDC-DHQ, 04/30/2010
New Model of Prevention: State-based HAI Prevention Collaboratives

- Multi-facility collaborative projects have become gold standard in HAI prevention
- Fundamental principles
  - Group of facilities engaged in HAI prevention using common approach
  - Regularly discuss progress and lessons learned
- CDC toolkits available for implementing evidence-based prevention strategies
  - CAUTI
  - MRSA
  - CDI
  - SSI
  - CLABSI
Assisting and Building State Capacity for Outbreak Response

- HAI outbreak investigations in different healthcare settings
- Why we care so much about outbreaks
  - Major detriment to patient care and safety
  - Possible massive financial and public health impacts (e.g. undermine preventive care)
  - Sentinel events and can play a major role in making recommendations that improve overall patient care
  - Provide important opportunities for education
Working with Regulatory Partners: Need for Oversight and Enforcement

- Increasing efforts to strengthen regulatory and accreditation standards across healthcare settings
  - Particular focus on infection control
- Collaboration with CMS
  - Expanded incorporation of infection control requirements into conditions for coverage and inspection procedures
    - Hemodialysis
    - Ambulatory surgical centers
PART 2 – INFECTION CONTROL & RELATED PRACTICES

Instructions:

- Circle the applicable response, as well as information on the manner in which information was obtained

- Unless otherwise indicated, a “No” response to any question below must be cited as a deficient practice in relation to 42 CFR 416.51(a).

- If N/A is circled, please explain why there is no associated observation, or why the question is not applicable

I. Hand Hygiene

Additional Instructions:

- Observations are to focus on staff directly involved in patient care (e.g., physicians, nurses, CRNAs, etc.). Hand hygiene should be observed not only during the survey, but also while making other observations in the ASC throughout the survey. Provide additional evidence for what the surveyor has observed, but
Efforts Toward Enforcement at the State Level

- Periodic infection control training requirements for licensed healthcare providers (NY)
- Requirement for outpatient endoscopy and surgical centers to retain a licensed Infection Preventionist (NJ)
- Increased licensing, accreditation, and/or inspection requirements for physician offices and clinics based on levels of anesthesia or sedation provided (NY, NV)
Additional Ways to Collaborate with Regulatory Group

- Example in California
- Improve performance of Licensing & Certification surveyors in infection control surveillance
  - Training webinars provided by HAI Program
- Facilitate non-punitive reporting and requests for assistance
  - One-way firewall b/w HAI Program and L&C:
    - HAI Program will not share any issues with L&C
    - L&C may share issues with HAI Program so appropriate assistance can be rendered
Multi-Organizational Partnership: Targeted Educational Initiatives

- Safe Injection Practices Coalition

http://www.oneandonlycampaign.org/
Safe Injection Practices Coalition

Injection Safety:
What Healthcare Providers Need to Know

Some Things Should Never Be Reused

A Patient’s Guide to Injection Safety

www.ONEandONLYcampaign.org
Intra-agency Collaboration: Preventing HAIs in Cancer Patients

- Division of Cancer Prevention and Control
  - Develop interactive, online education program for patients and caregivers

- Division of Healthcare Quality Promotion
  - Develop model infection control plan for oncology clinics

COMING SOON

An evidence-based, online, interactive program for cancer patients and their caregivers.

The Centers for Disease Control and Prevention (CDC) is undertaking a national initiative to develop and launch an online program that will educate cancer patients and their caregivers with infection control measures to prevent infections.

If you’re interested in testing of this program or wish to request information about the contact:

Eric Tai, M.D., CDC
770.488.3014 or etai@cdc.gov

Developed in partnership with the CDC Foundation through an unrestricted educational grant from Amgen Inc.

Do your cancer patients worry about infections?

Do you?
Working with Industry: Engineering Safer Systems

- Discuss strategies and opportunities for prevention (e.g., product innovation, improved education and marketing)
- Industry partner meeting
  - May 3, 2010 - Sticking with Safety: Eliminating Bloodborne Pathogen Risks during Blood Glucose Monitoring
  - May 24, 2010 - Safety by Design: Innovative Approaches for Safe Injections
Still Have a Ways to Go...

- Continual need for improvement in HAI prevention activities in acute care settings
- Expand prevention to outpatient settings
- Comprehensive approach is needed
  - HAI surveillance and investigation
  - Professional oversight and licensing
  - Provider education and public awareness
  - Systems improvement and culture change
The findings and conclusions are those of the presenter and do not necessarily represent the view of the Centers for Disease Control and Prevention.

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