Development of an Occupational Health Information System for Surveillance

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CDC: Engaging Stakeholders in Expanding Occupational Health Surveillance within the National Healthcare Safety Network (NHSN)
November 16–17, 2009
Objectives

- Share Vanderbilt’s experience in developing an occupational health surveillance system.

- Discuss problems in developing surveillance systems within a medical center.

- Provide tips to engage “top level” management in supporting electronic system development.
Vanderbilt University

- Institution of
  - higher education
  - academic medical center

- “One Vanderbilt”
  - Faculty: 3,526
  - Students: 12,093
  - Staff: 19,836

- Administration
  - 1 Chancellor
  - 8 Vice Chancellors
  - 10 schools with 10 deans
Vanderbilt University Medical Center

Operates 24/7

- Teaching Hospitals
  - Adult
  - Children
  - Psychiatric

- Major Trauma Center

- Multiple Offsite Clinics

- 75% of faculty and staff

- Multiple joint ventures, partnerships, contractors, volunteers,
HEALTH & WELLNESS
VANDERBILT FACULTY & STAFF

Health Plus

Work Life Connections

Occupational Health Clinic

Child & Family Center
Occupational Health Clinic Services

- Surveillance of workplace hazards
  - Preventive immunizations/screenings
  - Follow-up of infectious exposures
  - Treatment of work-related injury/illness

- Care of acute medical conditions

- Interpretation of legislative/policy related to employee medical conditions
  - E.g. FMLA, ADA, Fit-for-Duty, etc
Workplace Infectious Hazards

- Measles
- Mumps
- Rubella
- Varicella
- Hepatitis A, B, and C
- HIV
- Botulism
- Herpes B
- Q fever
- SARS
- Smallpox
- Rabies
- Meningococcal
- Tuberculosis
- Influenza
- Seasonal
- H1N1
- Pneumococcal
- Pertussis
- Diphtheria
- Syphilis
Problems for Occupational Providers in the Health Care Setting

- Protection of patient vs. employee health
- Employment Law
- Distinction between delivery of care to an individual and population management, i.e. preventive medicine
- Rapidly emerging hazards and their management
  - E.g. H1N1 and SARS
- “Vertical” management of surveillance-related agencies
  - Federal, State, and VU
- Varying electronic architectures
  - Open vs. proprietary
  - Versions of software
  - Knowledge of participants
“.....in the face of the H1N1 pandemic, the perception that health care workers are self-sacrificial “saints” who inevitably place themselves at risk when they come to work must be discarded and that occupational safety and health principles must be applied to protect this working population”

NIOSH Director John Howard
at the National Safety Council (NSC) 2009 congress and Expo.
Workplace Legislation

- Workers’ Compensation (first state laws 1911)
- Fair Labor Standards Act (1938)
- Title VII of the Civil Rights Act (1964)
- Occupational Safety and Health Act (OSHA)(1970)
- Employee Retirement Income Security Act of 1974 (ERISA)
- Pregnancy Discrimination Act (1978)
- Americans with Disabilities Act (ADA)(1990)
- Family Medical Leave Act (FMLA)(1993)
- Health Insurance Portability and Accountability Act of 1996
- Patient Bill of Rights (1998)
Occupational Health Information System

- Assigns and tracks medical services related to occupational health programs

- Purpose: compliance tracking and resource management

- Not an appointment system or medical record
Strategy: Link multiple workplace hazard programs and services to the individual

- Identify workplace hazards
- Group workplace hazards into “events”
  - Surveillance
    - prevention and monitoring related to specific jobs
  - Exposures:
    - contact occurs with unsafe level
  - Worker’s Comp
    - injury or illness related to contact
  - Acute Care
    - question of ability when hazard not job related
  - Training
    - education of hazard programs
- Define programs for each event
  - E.g. TB would have different program for annual screening, exposure, and disease treatment
- Identify services for each hazard program
- Electronically link all hazard programs the individual
Specific Scope

- Federal, state, or employer mandated
  - OSHA (TOSHA)
  - Worker’s Compensation
  - FMLA
  - ADA
  - HIPAA
  - VU workplace policies designed to protect health
Managed Surveillance

- Algorithms consider hazards associated with each job
- Determines who, what, where, when, and why
- Assigns services
- Record service results
- Interface with related programs and events
- Report compliance
Coordination and Communication

- Web based application
- Security groups allow access on a “need-to-know” basis
- Shares information with appropriate internal partners
  - Safety, Risk Management, Case Management, Opportunity Development Center, Infection Control, and Employee Assistance Program, Human Resources
Manage Compliance and Resources

- Business Objects Universe
- Reports post to employee and supervisor portals
- No medical information shared with supervisors
- Individual compliance (Y/N)
- Group statistics
- Feeds dashboards and administrative reviews
Compliance Rates Across Job Codes, e.g. Physicians

The image shows a bar chart comparing compliance rates across various job codes, specifically focusing on diseases such as TB, Hepatitis B, Varicella, Measles, Mumps, and Rubella. The compliance rates are measured against a policy adherence scale from 0% to 100%. The chart includes data from different time periods, indicated by various labels such as VMG Jan '05, VMG Apr '05, VMG Apr '06, VMG Apr '07, and VMG Apr '08.
BBF Exposure Report


Confidential

**SN Surgical Stepdown**

<table>
<thead>
<tr>
<th>Job Title</th>
<th>Event Date</th>
<th>Object Causing Injury</th>
<th>Object Category</th>
<th>Brand of Object</th>
<th>PPE</th>
<th>How Occurred</th>
<th>Preventable</th>
<th>Corrective Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Registered Nurse</td>
<td>6/24/2007</td>
<td>Butterfly needle</td>
<td>Hollow bone Needlelacer</td>
<td>Smith</td>
<td>Yes</td>
<td>After Use / Before Disposal</td>
<td>Yes</td>
<td>Activate Safety Device</td>
</tr>
<tr>
<td>Registered Nurse</td>
<td>6/24/2007</td>
<td>Injection Needle</td>
<td>Hollow bone Needlelacer</td>
<td>Smith</td>
<td>Yes</td>
<td>Insert / DC (During Use)</td>
<td>No</td>
<td></td>
</tr>
</tbody>
</table>

**9 South Surgical**

<table>
<thead>
<tr>
<th>Job Title</th>
<th>Event Date</th>
<th>Object Causing Injury</th>
<th>Object Category</th>
<th>Brand of Object</th>
<th>PPE</th>
<th>How Occurred</th>
<th>Preventable</th>
<th>Corrective Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Registered Nurse</td>
<td>6/17/2007</td>
<td>Splash</td>
<td>Splash</td>
<td>N/A</td>
<td>No</td>
<td>Other</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Registered Nurse</td>
<td>6/18/2007</td>
<td>Injection Needle</td>
<td>Hollow bone Needlelacer</td>
<td>Smith</td>
<td>No</td>
<td>After Use / Before Disposal</td>
<td>Yes</td>
<td>Appropriate Handling</td>
</tr>
</tbody>
</table>

**Ob/Gyn Housestaff**

Department Injury Count = 5

- Injection Needle (20.00%)
- Splash (40.00%)
- Suture Needle (40.00%)
Blood/Body Fluid Exposure Rate
Value Added: Improved Safety and Reduction in Worker’s Comp Claims

![Graph showing blood/body fluid exposure rate trends from July 2006 to July 2008. The graph includes lines for VU exposure rate, upper control limit, lower control limit, and national average.]