Monitoring Healthcare-Associated Infections at the National Level

CDC National Healthcare Safety Network (NHSN)

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Why Monitor HAIs?

- Healthcare-associated infections (HAIs) have been a long-standing and ongoing threat to patient safety
- HAIs = central line-associated bloodstream infections, catheter-associated urinary tract infections, surgical site infections, etc.
- The prevention and reduction of HAIs has been a top priority for the U.S. Department of Health and Human Services (HHS)
- The HHS Steering Committee for the Prevention of HAIs was established in July 2008
- Developed the *HHS Action Plan to Prevent Healthcare-Associated Infections* - a roadmap for HAI prevention in acute care hospitals
Response to the HHS Action Plan to Prevent HAIs

- State Health Departments moved to legislatively mandate the reporting of certain HAIs within their jurisdictions from specific healthcare settings.
- Centers for Medicare and Medicaid Services (CMS) put forth rules for reporting certain HAIs from specific healthcare settings for reimbursement (pay for reporting then pay for performance).
- Healthcare systems and healthcare corporations instituted reporting of HAIs and use of NHSN.
- CDC began to expand the National Healthcare Safety Network (NHSN) to provide the platform for this newly required reporting.
CDC NHSN – Nation’s most widely used HAI tracking system

NHSN provides medical facilities, states, regions, and the nation with data collection and reporting capabilities needed to:

• identify infection prevention problems by facility, state, or specific quality improvement project
• benchmark progress of infection prevention efforts
• comply with state and federal public reporting mandates, and ultimately,
• drive national progress toward elimination of HAIs.
Types of Healthcare Facilities Reporting into NHSN

- Acute care hospitals
- Long-term acute care hospitals
- Critical access hospitals
- Psychiatric hospitals
- Rehabilitation hospitals
- Outpatient dialysis centers
- Ambulatory surgery centers
- Skilled nursing facilities and Nursing homes
NHSN’s Growth (x100)
Concerns for Healthcare Facilities Reporting into NHSN

- Staff Burden and Consequences
  - Security and confidentiality of patient and facility-level reported data
  - Required data elements not currently captured in medical records
  - Manual data entry is time consuming and potential for errors
  - Infection Preventionists caught between NHSN definitions and internal facility definitions of an HAI
  - Validation for fair comparisons across “like” facilities
  - Consequences of publicly reported HAIs – potential for negative public focus, decrease in patient business
  - Unrealistic expectation of “getting to zero”
Addressing Healthcare Facility Concerns

- Data security and confidentiality
  - SAMS: Secure Access Management Services
  - HIPAA: Health Insurance Portability and Accountability Act
  - Facility Agreement to Participate and Consent
  - NHSN Facility Administrator – NHSN User Roles
  - Group Users
**Data elements required for submission**

### Primary Bloodstream Infection (BSI)

**Facility ID:**

**Event #:**

*Patient ID:*  
Social Security #:  
Medicare #:  

**Patient Name, Last:**  
First:  
Middle:  

*Gender:*  
F  
M  
Other  

*Date of Birth:*  

*Race (Specify):*  

*Event Type:* BSI  

*Date of Event:*  

Post-procedure BSI:  
Yes  
No  

Date of Procedure:  

NHSN Procedure Code:  

ICD-9-CM Procedure Code:  

*MDRO Infection Surveillance:*  
☐ Yes, this infection's pathogen & location are in-plan for Infection Surveillance in the MDRO/CDI Module  
☐ No, this infection’s pathogen & location are not in-plan for Infection Surveillance in the MDRO/CDI Module  

*Date Admitted to Facility:*  

*Location:*  

**Risk Factors**

*If ICU/Other locations, Central line:*  
Yes  
No  

*If Specialty Care Area/Oncology,*  
Permanent central line:  
Yes  
No  

Temporary central line:  
Yes  
No  

*If NICU,*  
Central line, including umbilical catheter:  
Yes  
No  

Birth weight (grams):  

Any hemodialysis catheter present:  
Yes  
No  

Extracorporeal life support present (e.g., ECMO):  
Yes  
No  

Ventricular assist device (VAD) present:  
Yes  
No  

**Event Details**

*Specific Event: Laboratory-confirmed*  

*Specify Criteria Used:*  

**Signs & Symptoms (check all that apply):**

Any Patient  
≤ 1 year old  
☐ Fever  
☐ Chills  
☐ Hypotension  
☐ Hypothermia  
☐ Hypo  

Underlying conditions for MBI-LCBI (check all that apply):  

☐ Allo-SCT with Grade ≥ 3 GI GVHD  
☐ Allo-SCT with diarrhea  
☐ Neutropenia (WBC or ANC < 500 cells mm³)  

**Laboratory (check one):**

☐ Recognized pathogen from one or more blood cultures  
☐ Common commensals from ≥ 2 blood cultures
### Appendix F. Isolate Based Report Variables

<table>
<thead>
<tr>
<th>NAME</th>
<th>DESCRIPTION OF FIELD</th>
<th>CODE VALUE LIST</th>
<th>LEVEL OF REQUIREMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facility OIDa</td>
<td>Must be assigned to facility and included in the importation file prior to submission to NHSN.</td>
<td></td>
<td>Required</td>
</tr>
<tr>
<td>Patient ID</td>
<td>Alphanumeric patient ID assigned by the hospital and may consist of any combination of numbers and/or letters. This should be an ID that remains the same for the patient across all visits and admissions.</td>
<td></td>
<td>Required</td>
</tr>
<tr>
<td>Date of Birth</td>
<td>The date of the patient’s birth including month, day, and year.</td>
<td></td>
<td>Required</td>
</tr>
<tr>
<td>Gender</td>
<td>M (Male), F (Female), O (Other) to indicate the gender of the patient.</td>
<td></td>
<td>Required</td>
</tr>
<tr>
<td>Date admitted to facility</td>
<td>Date patient was admitted to the inpatient facility including month, day, and year. Note – use the encounter date if event occurred in an outpatient location.</td>
<td></td>
<td>Required</td>
</tr>
<tr>
<td>Specimen collection date</td>
<td>Date the specimen was collected including month, day, and year.</td>
<td></td>
<td>Required</td>
</tr>
<tr>
<td>Specimen source</td>
<td>Specimen source from which the isolate was recovered (urine, lower respiratory, blood, CSF).</td>
<td>SNOMED</td>
<td>Required</td>
</tr>
<tr>
<td>Location</td>
<td>Patient care area where patient was located when the laboratory specimen was collected. Use patient location obtained from administrative data system (ADT).</td>
<td>CDC Location Codes</td>
<td>Required</td>
</tr>
<tr>
<td>Isolate identifier</td>
<td>Isolate identifier unique for each isolate within laboratory.</td>
<td></td>
<td>Required</td>
</tr>
<tr>
<td>Organism</td>
<td>Organism identified from specimen collected (Appendix E).</td>
<td>SNOMED</td>
<td>Required</td>
</tr>
</tbody>
</table>
Electronic data collection, transmission, and sharing

HL7 Vision

A world in which everyone can securely access and use the right health data when and where they need it.

HL7 Mission

To provide standards that empower global health data interoperability.

HL7 Purpose

Electronic messaging using HL7 format allows for standard data elements that can easily be transmitted for multiple uses.
Data integrity

National Healthcare Safety Network (NHSN)

NHSN Measures Endorsed by National Quality Forum (NQF)

The National Quality Forum (NQF) is a not-for-profit, nonpartisan, membership-based organization that works to catalyze improvements in healthcare. NQF endorsement is the gold standard for healthcare quality. NQF-endorsed measures are evidence-based and valid, and in tandem with the delivery of care and payment reform.

New! NQF NHSN Dialysis Event Bloodstream Infection (BSI) Measure Information October 2015 [PDF – 578K]
Benefits to Healthcare Facilities

- Provides internal and external motivation
  - Standard data and established metrics for meaningful comparisons
  - Internal levels to strive towards
  - Identify risks from practices, processes, other transferring facilities
  - Measure success of prevention efforts
  - Turned a potential negative to a positive – success stories!
  - External benchmarks to similar facilities
  - Reduction in HAIs
  - Healthier and safer patients
Sharing Results through standardized data and metrics
Thank You!

For more information, contact CDC
1-800-CDC-INFO (232-4636)

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.
U.S. ANTIBIOTIC AWARENESS WEEK
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www.cdc.gov/antibiotic-use

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