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609  Infection Prevention and Control Surveillance Data: Meeting Regulatory and Accrediting Organizations’ Requirements
Infection Prevention and Control Surveillance Data: Meeting Regulatory and Accrediting Organizations’ Requirements
Presented by: Mary McGoldrick, MS, RN, CRNI

Session Objectives:

1. Describe how to establish and implement a comprehensive surveillance program.
2. Integrate infection prevention and control surveillance data into a QAPI program.
3. More effectively prepare for a survey under the Home Health and Hospice Conditions of Participation (CoPs) and Accrediting Organizations’ standards.
### National Outcomes and Assessment Information Set

![Pie chart showing outcomes of patients]

- **95.4%** patients were transferred to hospital
- **21.2%** were discharged
- **58.3%** were dead
- **20.1%** were transferred to an inpatient facility
- **0.4%** recertified

Unplanned hospitalization rate was 10.2% (36,360/356,499)


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### Unplanned Hospitalizations due to Infections

<table>
<thead>
<tr>
<th>Reasons for Unplanned Hospitalizations</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respiratory infection</td>
<td>2878</td>
<td>7.7</td>
</tr>
<tr>
<td>Wound infection or deterioration</td>
<td>1702</td>
<td>4.7</td>
</tr>
<tr>
<td>Urinary tract infection</td>
<td>1587</td>
<td>4.4</td>
</tr>
<tr>
<td>IV catheter-related infection or complication</td>
<td>105</td>
<td>0.3</td>
</tr>
</tbody>
</table>

Unplanned Hospitalizations Due to UTIs

- Examined association between activities of daily living (ADL) and risk of UTI-related hospitalization
- Severe ADL dependence is an independent risk factor for UTI-related hospitalizations
- Patients at highest level of ADL dependence, increased risk of UTI-related hospitalization by nearly 50%
- 4.6% (1,133 of 24,887) of patients had UTI-related hospitalizations
- *None* of the patients with UTI-related hospitalizations had a diagnosis of UTI documented on their start of care assessment


InHOME Study*: Nationwide Survey of HHCs

![Bar chart showing the most challenging aspect of IPC](http://nursing.columbia.edu/research/inhome; n=209)
Actual Survey Findings

- “Observed in Infection Control System Tracer ....site. The organization did not report infection surveillance, prevention, and control information to the appropriate staff within the organization. There was no tracking and trending of staff or patient infections, therefore no reporting.”

- “Infection surveillance activities included data collection, but not data analysis so that infection prevention and control risks pertain to patients and staff could be identified. Selected infections were reported by month and the rates per 1000 catheter days, 100 central lines, and 1000 wound days were reported. No analysis of the aggregated data was performed to identify patterns or trends that could be acted on in order to reduce the risk of infections.”

- “During system tracer activity and on interview with staff the hospice surveyor found that data collected for hospice patients (in home and in facility) had been combined with the data for home care. Therefore, there has not been the ability to analyze the data specific to hospice prevention and control risks.”

Federal Regulations: Home Health & Hospice Conditions of Participation

§484.70 Home Health CoP: Infection prevention and control.
§418.60 Hospice CoP: Infection prevention and control.
(b) **Standard: Control.** Maintain a coordinated agency-wide program for the surveillance, identification, prevention, control, and investigation of infectious and communicable diseases that is an integral part of the quality assessment and improvement (QAPI) program. The infection control program must include:

(1) A method for identifying infectious and communicable disease problems; and

(2) A plan for the appropriate actions that are expected to result in improvement and disease prevention.


How to Design a Surveillance Program

- Select type of surveillance activities:
  - Total surveillance
  - Targeted surveillance
  - Combination
- Define population at risk
  - Consider historical infection prevention and control data
  - Identify patients with the greatest risk for infection or other adverse outcome
  - Risk assessment

Conduct Infection Prevention and Control Risk Assessment

- Scope of services
- Patient demographics
- General and specialty patient population served
- Medical devices, equipment or supplies
- Medical waste generated
- Geographic epidemiology
- Outbreaks of infection
- TB risk assessment
- Treatments and procedures performed

**Device and Procedure-associated Infections in Home Care and Hospice**

<table>
<thead>
<tr>
<th>Urinary Tract Infection</th>
<th>Bloodstream Infection</th>
<th>Skin and Soft Tissue Infection</th>
<th>Lower Respiratory Infection</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Indwelling catheter insertion</td>
<td>• Insertion of peripheral IVs (PIV)</td>
<td>• Care to non-surgical wounds</td>
<td>• Tracheostomy care and maintenance</td>
</tr>
<tr>
<td>• Indwelling catheter care and maintenance</td>
<td>• PIV &amp; Central venous access device (CVAD) care and maintenance</td>
<td>• Care to indwelling devices</td>
<td>• Inhalation therapy</td>
</tr>
<tr>
<td></td>
<td>• Administration of IV medication or flushes/locking</td>
<td></td>
<td>• Ventilator maintenance</td>
</tr>
</tbody>
</table>

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**Home Care Infection Prevention and Control Risk Assessment**

<table>
<thead>
<tr>
<th>TOPIC/ISSUE</th>
<th>PROBABILITY FOR OCCURRENCE</th>
<th>POTENTIAL SEVERITY OR IMPACT ON PATIENTS</th>
<th>CURRENT PROCESSES/SYSTEMS</th>
<th>RISK SCORE</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRIORITY INFECTION RISKS/ SYSTEM DEFICITS</td>
<td>Low (Low)</td>
<td>Medium (Medium)</td>
<td>High (High)</td>
<td>Low (Low)</td>
</tr>
<tr>
<td>Score</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

1. Surveillance Event
   - Bloodstream Infection (BSI): Laboratory-Confirmed Bloodstream Infection (LCBI)
   - Central-line Associated Bloodstream Infection (CLABSI): Laboratory-Confirmed Bloodstream Infection (LCBI)
   - Venous Infection
   - Symptomatic Urinary Tract Infection (SUTI)
   - Catheter-associated Symptomatic Urinary Infection (CAUTI)

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How to Design a Surveillance Program

- **Outcome measures:**
  - Patient surveillance event:
    - Home care-onset HAIs
    - Organism-specific infections
  - Employee surveillance
  - Outbreak
- **Process measures:**
  - Hand hygiene
  - Isolation precautions

Outcome Measures:
Home Care-onset Healthcare-associated Infection

<table>
<thead>
<tr>
<th>Urinary Tract Care</th>
<th>Wound Care</th>
<th>Respiratory Therapy</th>
<th>Enteral Therapy</th>
<th>Infusion Therapy</th>
</tr>
</thead>
<tbody>
<tr>
<td>UTI:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CA-SUTI</td>
<td>SST: Non-surgical wound or decubitus ulcer</td>
<td>Tracheostomy-associated LRI</td>
<td>Enteral Therapy-associated gastro-enteritis</td>
<td>CLABSI-LCBI</td>
</tr>
<tr>
<td>SUTI</td>
<td>SST: Infection around an indwelling device</td>
<td>Ventilator-associated LRI</td>
<td></td>
<td>CLABSI</td>
</tr>
<tr>
<td>ABUTI</td>
<td></td>
<td>Home oxygen-associated LRI</td>
<td></td>
<td>MBI-LCBI</td>
</tr>
</tbody>
</table>

### Hepatitis B Outbreaks in Patients Receiving Care from a HHA

<table>
<thead>
<tr>
<th>Year</th>
<th>State</th>
<th>Setting</th>
<th>Outbreak-associated Infections</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>FL</td>
<td>Assisted facilities (n=2). Blood glucose monitoring activities at both assisted-living facilities were provided by HHA (Forero, S., et al., 2010)</td>
<td>▪ 9 patients in an ALF</td>
</tr>
</tbody>
</table>
| 2010 | TX    | Assisted living facilities (ALF) (n=10) in the same metropolitan area served by the same home health agency (HHA) for diabetic care (Zheteyeva, Y, et al., 2014) | ▪ 23 patients in an ALF, plus one family member of an infected facility resident who experienced a needlestick injury while assisting with the resident’s blood glucose monitoring  
▪ 1 patient at home  
▪ All patients received care by the same HHA |
| 2010 | CA    | Assisted living facility (Bancroft, E., Hathaway S., 2010). | ▪ 3 diabetic patients, newly diagnosed with hepatitis B  
▪ All 3 patients received assisted blood glucose monitoring from same HHA during incubation period of the acute hepatitis B case |

**Total** 35 patients residing in an ALF and 1 patient residing at their personal residence.

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### Outcome Measures:
**Home Care-onset Healthcare-associated Infection**

<table>
<thead>
<tr>
<th>Organism</th>
<th>Prevalence or Incidence</th>
<th>Other</th>
<th>Outbreak</th>
</tr>
</thead>
<tbody>
<tr>
<td>▪ MDRO: MRSA, VRE, etc.</td>
<td>▪ Home care-onset HAI</td>
<td>▪ Influenza-like Illness</td>
<td></td>
</tr>
<tr>
<td>▪ <em>C. difficile</em></td>
<td>▪ Antibiotic starts after admission to home care or hospice</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

How to Design a Surveillance Program

- Determine the data collection time period
- Identify surveillance criteria
- Select and use standardized surveillance definitions:
  - APIC – CDC HICPAC Surveillance Definitions for Home Health Care and Home Hospice Infections
  - NHSN surveillance definitions

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Identifying a Home Care-onset Healthcare-associated Infection

- Home care-onset healthcare-associated infection:
  - Exclusion criteria
  - Other considerations:
    - Agency affiliation
    - Access to lab results
  - Date of event
  - Surveillance criteria met

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Collecting and Aggregating Surveillance Data

- Use a systematic approach to report surveillance data
- Use a systematic method to record surveillance data
- Determine numerator and denominator
- Organize and stratify data for analysis
- Calculate home care-onset healthcare-associated infection rate(s)
- Determine the incidence or prevalence of home care-onset healthcare-associated infection

Sample of Device-associated Surveillance Formulas

<table>
<thead>
<tr>
<th>Surveillance Event</th>
<th>Numerator</th>
<th>Denominator</th>
<th>Multiplier</th>
<th>Expressed As</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central Line-associated Bloodstream Infection-Lab Confirmed BSI (CLABSI-LCBI)</td>
<td>Total number of patients with a CLABSI-LCBI</td>
<td>Total number of CVAD days</td>
<td>1,000</td>
<td>Number of CLABSI-LCBI per 1,000 catheter days</td>
</tr>
<tr>
<td>Catheter-associated Symptomatic Urinary Tract Infection (CA-SUTI)</td>
<td>Total number of CA-SUTI events</td>
<td>Total number of indwelling urinary catheter days</td>
<td>1,000</td>
<td>Number of CA-SUTI per 1,000 catheter days</td>
</tr>
<tr>
<td>Skin and Soft Tissue (SST) Infection</td>
<td>Total number of SST infections in patients receiving wound care</td>
<td>Total number of wound care days</td>
<td>1,000</td>
<td>Number of SSTs per 1,000 wound care days</td>
</tr>
</tbody>
</table>

Analyzing Surveillance Data

- Validate and analyze surveillance data
- Attribution of infection:
  - Care provided by in-home caregivers
  - Patients served by more than one healthcare provider
- Compare surveillance data to:
  - Targeted goals
  - Published data or other benchmarks
- Display data using statistical tools


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Reporting Data and Infections

- Surveillance data and investigations:
  - Internal reporting
  - External reporting
  - State’s reportable diseases and conditions
  - Occupational exposures
  - Patient safety event


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Develop a Plan of Action

- Establish action plan, if needed
  - Staff education
  - Staff competence assessment
  - Patient/caregiver education
  - Patient/caregiver competence assessment
  - Equipment/supplies
- Use data to evaluate and improve IPC program
**Outcome Measures:**
**Occupational Health Surveillance**

<table>
<thead>
<tr>
<th>Bloodborne Pathogen Exposure</th>
<th>Staff Illness</th>
<th>Conversion Rate</th>
<th>Vaccination Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>▪ Sharps injuries</td>
<td>▪ Potentially communicable illnesses or conditions</td>
<td>▪ TB testing</td>
<td>▪ Influenza vaccination</td>
</tr>
<tr>
<td>▪ Non-percutaneous Exposures</td>
<td>▪ Outbreaks</td>
<td></td>
<td>▪ Hepatitis B</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>▪ Other (e.g., Measles)</td>
</tr>
</tbody>
</table>


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**Federal Regulations: Home Health & Hospice Conditions of Participation**

- **§484.65 Home Health Condition of Participation: Quality Assessment and Performance Improvement.**
- **§418.58 Hospice Condition of Participation: Quality Assessment and Performance Improvement.**

Five components of the QAPI program:

1. Program scope
2. Program data
3. Program activities
4. Performance improvement projects
5. Executive responsibilities

Additional Accrediting Organization Requirements

The Joint Commission:
- IC.01.04.01 IPC Goals
  - EP1: Addressing its prioritized risks
  - EP2 Limiting unprotected exposure to pathogens
  - EP3 Limiting the spread of infections associated with procedures
  - EP3 Limiting the spread of infections associated with the use of medical equipment
  - EP5 Improving compliance with hand hygiene guidelines
- IC.02.04.01 EP4 Influenza vaccination rate goal
- LD.03.09.01 EP10 Sentinel event


Documents to Have Ready for Survey

- Infection prevention and control policies and procedures
- Infection control plan with prioritized goals
- Data measuring compliance w/prioritized goals
- Surveillance data analysis and action plan
- Infection control risk assessment and program evaluation
- Bloodborne pathogen exposure control plan evaluation
- Respiratory protection plan evaluation

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Industry Challenges in Implementing a Home Care and Hospice Surveillance Program

- Lack of designated Infection Preventionist (IP)\(^1\)
- IP designee serving in multiple roles \(^1\)
- Lack of updated surveillance definitions
- Surveillance data validity
- Lack of national surveillance repository
- Lack of agency-level published data


Summary

- How to implement a comprehensive surveillance program to identify home care-onset healthcare-associated infections
- How to integrate infection prevention and control surveillance data into a QAPI program
- Continue to improve the infection prevention and control program to meet the new Home Health Conditions of Participation (CoPs) and Accrediting Organizations’ standards
References


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Questions

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