HAI Surveillance in Long Term Care
Mary Andrus, CDC
A Webber Training Teleclass

Learning Objectives

- Identify components of a surveillance system for healthcare-associated infections (HAI) in a long term care facility
- List the most common infections identified in long term care
- Review the formulas for calculation of HAI Rates
- State how surveillance data can improve patient outcomes

Components of a LTC Surveillance Program

- The facility should have a system for ongoing collection of data on infections in the facility
- A documented surveillance procedure should include
  - Standard definitions
  - Population at risk
  - Data sources for data collection
  - Numerators and denominators
  - Reports

Components of a LTC Surveillance Program

- ICP should review surveillance data frequently and recommend infection prevention measures in response to identified problems
- Infection rates should be calculated periodically, recorded, and reported to those who can make a difference

Identification of Infections

- A "facility–associated" infection is when there is no evidence that the infection was present or incubating on admission or readmission and no evidence that the infection began as the result of a procedure carried out in an acute-care hospital or physician office or clinic
- The majority of infections identified are facility-associated
- Frequency of surveillance should be at least once a week

No available comparative data
- Rates range from 2.6 to 7.1 infections per 1000 resident days
- Some sources suggest an average of one infection per resident per year

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Most common infections in LTC
- Urinary tract infections (catheter-associated)
- Respiratory
- Infected pressure ulcers
- Gastroenteritis
- Conjunctivitis

Sources of Information
- Communication with staff
- Walking rounds
- Medical progress note in patient record
- Lab or radiology reports
- Medication records
- Information from transfer records

Surveillance Definitions (Criteria)
- Definitions written by Canadian consensus in 1991
- Used widely in LTC surveillance
- No study to determine reliability or validity
- No established benchmarks
- No risk classification

Definitions Included
- Respiratory
  - Common cold
  - Influenza-like illness
  - Pneumonia
  - Other RTI
- Urinary Tract
  - All UTIs
  - Catheter-associated UTI
- Gastroenteritis

Example of Infection Definition
- Gastroenteritis. One of the following criteria must be met:
  1. Two or more loose or watery stools above what is normal for the resident within a 24-hr period
  2. Two or more episodes of vomiting in a 24-hr period
  3. Both of the following: (a) stool culture positive for a pathogen or a toxin assay positive for C. difficile toxin and (b) at least one symptom or sign compatible with gastrointestinal tract infection (nausea, vomiting, abdominal pain or tenderness, diarrhea)

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Other Considerations
- Radiology and microbiology data are less available
  - Detection of infections often depends on recognition of clues by nursing assistants and reporting to the licensed staff
  - Positive cultures do not necessarily signify an infection
- If there is a Surgical Site Infection (SSI), acute care (CDC) definition should be used – reported to the hospital where the operation was done
- Influenza is reported only during “flu season” (October – March)

Infection Rates
- **Numerator** is the number of HAI infections identified
  - By definition type (e.g., EENT)
  - Device-associated
- **Denominator** is the population at risk
  - Resident days
  - Device days

Infection Control Surveillance Report
- Analysis and reporting of infection case data are usually done monthly, quarterly, and annually to identify trends
- See samples

Surveillance Report

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### Surveillance Report

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  - Device days

### Example:

**Infection Incidence Rate:**

\[
\text{Incidence Rate} = \frac{\text{Number of new HAIs}}{\text{Number of resident days}} \times 1000
\]

Example:

\[
\text{Incidence Rate} = \frac{8 \text{ cases of influenza in 3 months}}{960 \text{ (resident days)}} \times 1000 = 8.33
\]

### Example:

**Infection Incidence Rate:**

\[
\text{Incidence Rate} = \frac{\text{Number of device-associated infections}}{\text{Number of device days}} \times 1000
\]

Example:

\[
\text{Incidence Rate} = \frac{2 \text{ residents with CAUTI}}{180 \text{ (device days)}} \times 1000 = 10.63
\]
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Using the Data
- Interpret the data so that it is meaningful to your audience... turn the data into information

Delivering the message...
- For patients who have a Foley catheter, we're doing a better job of preventing urinary tract infections
- We may be able to explain this by the fact that the number of catheter days has decreased
- We can still do better

Reporting InfectionsExternally
- Report infectious complications associated with surgical procedures to the facility where the operation was performed
- Report important infections to the facility to which the resident will be transferred
- Report epidemiologically significant infections to the public health authority
- Mandatory public reporting on the horizon for long term care

Consider also monitoring
- Patient and staff influenza vaccination rates
- Blood and body fluid exposures
- Process monitors
  - Hand hygiene
  - Dressing changes
  - Indwelling catheter care
- Antimicrobial use

Summary
- Surveillance data collected in LTC focuses primarily on outcomes (rates)
- Surveillance uses objective definitions, specifically designed for LTC
- Surveillance data are used to plan prevention activities and educational activities and to prevent outbreaks.

Questions??

Thank You!

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<td>16 Sep</td>
<td>Ebola Teleclass: Curriculum Difficult - Prevention Is Better Than Cure</td>
<td>Professor Mark Widdowson, Leeds University</td>
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<td>Sponsored by Virus Technologies (<a href="http://www.viro.com">www.viro.com</a>)</td>
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<td>22 Sep</td>
<td>Final Ebola Teleclass: Evidence for Preventing Infection</td>
<td>Professor Stephen Hadley, University of Geneva Hospitals</td>
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<td>24 Sep</td>
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<td>Dr. Helenia Molokos, Helios Centre for Disease Control and Prevention, Greece</td>
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