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

HEALTHCARE-ASSOCIATED INFECTION SURVEILLANCE IN LONG-TERM CARE

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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

Am J Infect Control 1997;25:488-512

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

Am J Infect Control 1997;25:488-512

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

Identification of Infections

- 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

McGeer A et al: Definitions of Infection for Surveillance in long term care facilities, *Am J Infect Control* 19(1):1-7,1991.

Surveillance Definitions

- Acute care definitions (CDC) should not be used in LTC
- All symptoms must be new or acutely worse. Chronic symptoms are not used
- Noninfectious causes of signs/symptoms should be considered first
- Identification should not be based on a single piece of evidence
- Physician diagnosis should be accompanied by compatible signs and symptoms of the infection

Definitions Included

- Respiratory
  - Common cold
  - Influenza-like illness
  - Pneumonia
  - Other RTI
- Urinary Tract
  - All UTIs
  - Catheter-associated UTI
- Gastroenteritis
- EENT
  - Conjunctivities
  - Ear
  - Mouth
  - Sinusitis
- Skin
  - Cellulitis/ST/Wound
  - Fungal
  - Herpes
  - Scabies
- Systemic
  - Primary bloodstream infection
  - Fever, undetermined origin

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

$$\text{Infection (incidence) rate} = \frac{\text{Number of new HAIs*}}{\text{Number of resident days*}} \times 1000$$

Example:

$$\frac{\text{8 (\# cases of influenza in Jan)}}{\text{980 (\# Resident days)}} \times 1000 = \mathbf{8.16}$$

$$\text{Incidence Rate} = \frac{\text{\# device-associated infections}}{\text{\# device days *}} \times 1000$$

Example:

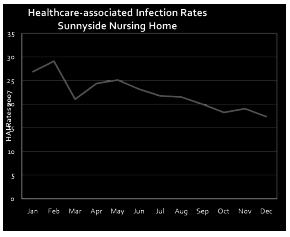
$$\text{Incidence Rate} = \frac{\text{2 (Residents with CAUTI)}}{\text{188 (\# Indwelling catheter}} \times 1000 = \mathbf{10.63}$$

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

	Jan	Feb	Mar	Q1
Respiratory	8	11	4	23
Common cold	4	7	1	12
Influenza-like illness	3	3	3	9
Pneumonia	0	1	0	1
Other RTI	1	0	0	1
RESPIRATORY RATE	**17.9**	**22.8**	**9.4**	**17**
Urinary Tract Infection	2	1	1	4
UTI	0	0	0	0
CAUTI	2	1	1	4
Catheter days	110	101	94	305
CAUTI RATE	**18.2**	**9.9**	**10.6**	**13.1**
TOTAL UTI RATE	**4.5**	**2.1**	**2.3**	**2.9**



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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…

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- 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 Infections Externally

- 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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