* Developing a Surveillance Plan

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*Objectives*

* Help develop a Surveillance Program specific for your site
  * Building your Risk Assessment
  * Based on Current Standards and APIC Recommended Practices
  * Understand Case Definitions for Surveillance
    * McGeer’s definitions
    * Pneumonia
    * UTI
  * Aggregate the data into a quality metric and improvement program
  * Rapidly identify cluster infections/outbreaks
Assessing your Program

* Assess the population (risk assessment)
* Select the outcome or process to be measured
* Use surveillance definitions
* Collect surveillance data
* Calculate and analyze the data
* Apply risk stratification
* Report and use data for improvement

Infection Prevention Risk Assessment

What is it?
* Part of infection prevention planning process
* Serves as a starting point for a well-developed plan
* Together with plan forms the foundation for a program
* Assists in focusing surveillance and other program activities

Why do we do it?
* Standard of Practice-develop a plan based on risk assessment
* QAPI

Risk Assessment Influences

*Identify risks and transmission of infections based on:
  * Geographic location, community, and population served
  * Care, treatment and services provided
  * Analysis of surveillance activities and infection data
*Reviewed annually or when there are significant changes

Risk Assessment Influences, cont.

*Risk assessment occurs with interdisciplinary team input
  * Infection Prevention Personnel
  * Medical Director (F501)
  * Nursing
  * Leadership
  * Environmental Services (Maintenance, Housekeeping, Laundry)
*Pharmacy & Lab
* Risk Assessment

* Understanding your Facility

* Risk Assessment - Does your facility have residents with:
  * Acuity, mobility and incontinence issues
  * Ventilators, central lines
  * Foley catheters
  * Pressure ulcers
  * C. diff
  * History of MDRO colonization/infection
  * Admissions of post surgical patients
**Risk Assessment-Environment**

* Be aware of environmental factors that pose risks:
  * Visitors and volunteers
  * Pet Therapy: dogs, cats, fish, birds..... (MRSA, Edwardsiella, Toxoplasma)
  * Physical therapy: whirlpools, shared equipment
  * Vaccine Status for employees and residents
    * Influenza, Pneumococcal, Tetanus, Pertussis
  * Water features (Legionella)
  * Healing gardens (Tetanus & Strep)

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**Risk Assessment: Physical**

* Do you have:
  * Shared resident rooms, shared bathrooms
  * Separate sinks for hand hygiene, cleaning of urinals, bed pads, TEDs stockings, etc.
  * A dining room that is also a multipurpose room
Making all of this make sense

- Various ways to explain, view your risks

Uses a scoring system

Displays your Risk Assessment

Pull out the handout—three categories need to be addressed
1. Probability of occurrence
2. Required response
3. Potential change in care...

<table>
<thead>
<tr>
<th>Event</th>
<th>Probability of Occurrence</th>
<th>Required Organizational Response</th>
<th>Potential Change in Care, Treatment, Services</th>
<th>Preparedness</th>
<th>Risk Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>TB Population</td>
<td>High-3, Med-2, Low-1, None-0</td>
<td>Life threat-3, Perm harm-2, Temp hard-1, None-0</td>
<td>High-3, Med-2, Low-1, None-0</td>
<td>Poor-3, Fair-2, Good-1</td>
<td>6</td>
</tr>
<tr>
<td>MDRO colonization in residents</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>Resident with permanent Foley Catheter</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Resident Influenza Vaccinations</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>9</td>
</tr>
<tr>
<td>Outbreaks of infectious disease (Influenza)</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>9</td>
</tr>
<tr>
<td>Post Operative Therapy</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td>Wound Therapy</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>9</td>
</tr>
</tbody>
</table>
* **How to Assign Values**

* There are no right or wrong answers
* Allow for discussion
* Push group for consensus
* Keep group focused, on target
* Important to be consistent
* Go through entire list of risks
* Assign someone to calculate risk scores

* **Risk Score & Prioritizing**

* Add up the probability, risk, preparedness
* Group consensus vs. mathematical value
* Rank order risks using risk scores
* Each organization’s priorities will be different
**Risk Assessment Exercise:**

* Give you fictitious setting
* Each table create a risk assessment
* Focus on the Human Risk Factors
* Discuss potential risk
* Come to group consensus on assignment
* Add scores to calculate risk

**Happy Valley Care Center**  
**Sunshine, Wisconsin**

* 120 bed facility
* 25 new admits a month
* Skilled nursing facility
  * No vents
  * Short term rehab (PT, OT, Speech)
  * IV therapy
* Average resident age is 85, with a mix of men/women and ethnicity.
*Happy Valley Care Center  
Sunshine, Wisconsin

* Facility was built in 1973 with additions in 1992 and 2005  
* Healing Garden outside  
* Green house inside  
* Water feature in the community room  
* Pet therapy

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Infection Risk Mitigation Plan 2013

<table>
<thead>
<tr>
<th>Event</th>
<th>Probability of Occurrence</th>
<th>Reason Organizational Weakness</th>
<th>Preventative Change in Care, Environment</th>
<th>Response</th>
<th>Preventative Action</th>
<th>Risk Level</th>
</tr>
</thead>
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<td></td>
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5 Minutes to Complete
**Infection Prevention Surveillance Program**

*Based on your:
   * Priorities defined in your risk assessment
   * Accreditation mandatory documentation

*Develop
   * Goals and targets
   * Strategies for process improvement
   * Evaluation methods

**Using Standard Language - McGeer Criteria**

*Definitions of Infection for Surveillance in Long-term Care Facilities
  * Allison McGeer, Beverly Campbell, T. Grace Emori, Walter J. Hierholzer, Marguerite M. Jackson, Lindsay E. Nicolle, Carla Peppler, Amersolo Rivera, Debra G. Schollenberger, Andrew E. Simor, Philip W. Smith and Elain E-L Wang
  * Originally written in 1996
  * Revised October of 2012
  * Recognized by APIC, the CDC, SHEA and WI HAI in LTC Coalition as the gold standard.
**McGeer’s Criteria - GI**

Gastrointestinal Tract Infections (GI)
Must have one of the following: (Rule out non-infectious causes, for example medication changes.)

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<th>Two or more loose or watery stools above what is normal for the resident in a 24 hour period.</th>
<th>OR: Two or more episodes of vomiting in a 24 hours period.</th>
<th>OR: Must have both of these:</th>
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<td>• Positive stool culture for a pathogen.</td>
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<tr>
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<td></td>
<td>• One GI S/S (n/v/d or abd. pain)</td>
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**GI Case Study 1**

*Mr. Sam Anella is an 87 year old male, room 111*

*Admitted 3 weeks ago, s/p total knee replacement*

*No history of loose stools*

*Presented with 2 loose stools and c/o nausea on Friday pm shift*

*Medications: Colace, Verapamil. Just completed a 14 day course of antibiotics for a post surgical site infection.*

*So... does he meet McGeer Definition for surveillance?*
**GI Case Study 1**

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*Yes! He meets the criteria.*

*Is there anything else you need to do?*

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**GI Case Study 1**

*Is there anything else you need to do?*
*RN assessment & continue to monitor*
*Are transmission precautions needed?*
*Should we hold the Colace?*
*Did his diet change?*
*Add a tracking sheet to keep track of the number of loose stools*
*Is a temporary care plan needed?*
*Do you need to alert the DON?*
Link to INTERACT Care Path can be found on the WI WAI in LTC Coalition Website.

*GI Case Study 1*

*Mr. Sam Anella on day 2 and 3, continues to have loose stools that are now more frequent and states he has abdominal pain.*

*What pathogenicity should you be thinking about?*

*What should you be doing next?*

- Isolation the resident (Contact isolation- gown and gloves)
- Educate resident and staff about hand hygiene - soap & water
- Attain a specimen
- Notify the provider
- Care plan modifications
- BRAT diet
- Fluid assessment
GI Case Study 1

Mr. Sam Anella’s symptoms resolved on day 4; however, Ms. Shi Gellia is Mr. Sam Anella’s neighbor and is now complaining of loose stools and nausea.

Two staff have called in sick with the “Flu”.

What are your next steps?
* Notify Leadership
* Notify Public Health

Further discussion on how to proceed in the Outbreak session

Surveillance Data

Happy Valley Care Center, Sunshine, Wisconsin

Sample of tracking- more information will be shared in the Outbreak session
**McGeers: UTI**

**Urinary Tract Infection (UTI)**

No indwelling catheter: **Both** criteria one and two must be present:

1. At least one of the following **S/Sx** sub-criteria:
   a) Acute dysuria or acute pain, swelling, or tenderness of the testes, epididymis, or prostate.
   b) Fever or leukocytosis and at least one of the following localizing urinary tract sub-criteria:
      i. Acute costovertebral angle pain or tenderness
      ii. Suprapubic pain
      iii. Gross hematuria
      iv. New or marked increase in incontinence
      v. New or marked increase in urgency
      vi. New or marked increase in frequency
   c) In absence of fever or leukocytes then two or more of the following localizing urinary tract criteria:
      i. Suprapubic pain
      ii. Gross hematuria
      iii. New or marked increase in incontinence
      iv. New or marked increase in urgency
      v. New or marked increase in frequency

2. One of the following microbiologic sub criteria:
   a) At least 100,000 (10⁵) cfu/mL of no more than 2 species of microorganism in a voided urine sample.
   b) At least 100 (10²) cfu/mL of any number of organisms in a specimen collected by and in-and-out catheter.

With indwelling catheter: **Both** criteria one and two below must be met:

1. At least one of the following **S/Sx** sub-criteria:
   a) Fever, rigors, or new onset hypotension, with no alternate site of infection
   b) Either acute change in mental status or acute functional decline, with no alternate diagnosis and leukocytosis
   c) New-onset suprapubic pain or costovertebral angle pain or tenderness
   d) Purulent discharge from around the catheter or acute pain, swelling, or tenderness of the testes, epididymis, or prostate

2. Must have a urinary catheter specimen culture with at least 10⁵ cfu/mL of any organism(s).

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**UTI Case Study**

*Ms. Escherichia Coli is a 92 y/o female resident who is incontinent bowel and bladder. She wears incontinent briefs that are changed 4 times a day.*

*She is now not drinking*

*Increase confusion*

*Increase difficulty moving around by herself*

*1 fall noted on her chart earlier today*

*Vitals: Temp 98.2F, BP 148/94, HR 62*
**UTI Case Study**

*Does she meet the McGeer’s Definition*

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**What should be your next steps?**

- RN assessment – pain, hydration, bowel status, medication review
- Place resident on strict I&O for 3 days.
- Monitor McGeer’s definitions closely.
- Notify provider
  - Notify of plan to monitor and increase fluids
  - do not order antibiotic at this time* (antibiotic stewardship*)

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Day 3, resident is not showing any signs of improvement, presents with urgency

*UA macro (dip) is performed
  *Leukoesterase positive

*Notify the MD to request a urine culture

*Does this meet our surveillance criteria?
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2. One of the following microbiologic sub criteria:
   a) At least 100,000 (10^5) cfu/mL of no more than 2 species of microorganism in a voided urine sample.
   b) At least 100 (10^2) cfu/mL of any number of organisms in a specimen collected by and in-and-out catheter

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   c) New-onset suprapubic pain or costovertebral angle pain or tenderness
   d) Purulent discharge from around the catheter or acute pain, swelling, or tenderness of the testes, epididymis, or prostate

2. Must have a urinary catheter specimen culture with at least 10^5 cfu/mL of any organism(s).

Does this meet criteria?
• No

*UTI Case Study*

*Send specimen off for culture*
*Continue to push fluids*
*Perform good peri-care*
*Monitor McGeer’s definitions closely.*

*Culture is now positive for E. coli - 100,000 colonies*
*Does she meet the criteria now?*
Urinary Tract Infection (UTI)

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Does this meet criteria?
• YES

*UTI Case Study*
Questions

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