Objectives

- Discuss content of a surveillance plan, infection log and worksheets.
- Determine actions needed as indicated by your data.
- Recognize early indications of possible outbreak.
  - Initiate containment strategies
  - Notify appropriate parties
  - Conduct post-outbreak learning session

Surveillance

Definition

- Surveillance is the ongoing systematic collection, analysis, interpretation and dissemination of data to identify infections and infection risks.

Association for Professionals in Infection Control & Epidemiology (APIC)

Why do we need to do surveillance?

- Reduce morbidity and mortality from infections.
- Improve resident health and wellbeing.
Data Collection

- Surveillance plan: based on facility assessment, for identifying, tracking, monitoring and reporting of infections.
- Early detection: management of a potentially infectious, symptomatic resident and implementation of appropriate transmission-based precautions.
- Uses evidence based surveillance criteria: National Healthcare Safety Network (NHSN) Long Term Care (LTC) or revised McGeer Criteria.

Communicable Disease Reporting

Reportable Communicable Diseases
- Staff must be able to identify to whom and when communicable diseases, healthcare associated infections and potential outbreaks must be reported. (What happens when Infection prevention is not in house?)
- Prohibit employees with a communicable disease or infected skin lesion from direct contact with residents or their food.

Surveillance Log (master line list of all infections)

- Resident number or medical record number
- Location in facility
- Date of current admission
- Date each symptom began
- Date culture collected (if done)
- Invasive device? Insertion/removal date
- Organism identified - Was it a Multidrug Resistant Organism (MDRO)?
Surveillance Log

- Facility Onset vs. Community Onset
- Infection Worksheet completed
- Criteria met (McGeer’s)
- Transmission Precaution start date / end date
- Provider notified
- Antibiotics: date started / discontinued
- Part of outbreak
- Public Health reporting requirement

Antibiotic stewardship may also be recorded separately elsewhere including:

- Antibiotic prescribed
- Dose, route, frequency
- Start date
- End date
- Total number days of therapy
- Appropriate use – met criteria

Sample log

- [https://www.lsgin.org/initiatives/nursing-home-quality/essentials/](https://www.lsgin.org/initiatives/nursing-home-quality/essentials/)
What do I track on log?

- Urinary Tract Infections (UTI)
  - Catheter present
  - No Catheter
- Gastrointestinal Illness (GI)
  - Norovirus
  - C. difficile
- Wounds
  - Organism - MDRO

What do I track on log?

- Influenza like Illness
- Pneumonia
- Conjunctivitis
- Scabies
- Other infections identified on Risk Assessment
  - Ventilator Associated Event – Pneumonia
  - Central Line Associated Blood Infection (CLABSI)
  - Surgical Site Infections (SSI)

Standard Case Definitions

What does your facility use?
- McGeer’s criteria (2012)
- Lobes criteria (2001)
- NHSN definitions for reporting purposes

Be consistent for comparison internally and externally

Identification of infection is not based on single piece of evidence – usually multiple criteria
Criteria 1
Criteria 2


How do I get infection data?

What is your facility process?
- Automatic electronic medical record (EMR) trigger
- Culture and laboratory reports
- Antibiotic starts
- Symptom reporting – morning huddle
- 24 hour board
- Paper logs
- Rounding – visiting the units

Calculating Infection Rates

Infection Rate:  
Number of infections x Constant = Rate of infection  
Population at risk

Population at risk may be expressed as total resident days  
(Norovirus) or specifically as residents with a urinary catheter  
(Urinary Catheter Infection)

Constant may be expressed as relationship to units of population during that time such as 100, 1000 or 10,000  
(consistent case definition)
Outcome Measure Surveillance

- Infection Rates
  - Urinary Tract Infection (UTI)
  - Respirator Infection, Pneumonia, Influenza
  - Gastrointestinal Illness (GI)
  - *C. difficile*
  - Others as indicated by Risk Assessment

Process Measure Surveillance: Auditing

- Hand Hygiene
- Glove and gown use - adherence to policy
- Cleaning of resident rooms, terminal cleaning
- Cleaning and disinfection of shared equipment
  - Glucometer, podiatry and dental equipment
  - Blood pressure cuffs, rehab and therapy
- Inspection of shared bath pads and wheelchair pads for breaks
- Point of care testing

- Medication administration
- Injection safety practices
- Wound care
- Oral care
- Perineal care
- Catheter care
- Vascular access device care
Monitoring Antibiotic Usage

Important part of Surveillance
Cornerstone of Antibiotic Stewardship
• What antibiotics are being prescribed?
• How many antibiotics are being prescribed?
• Are they appropriately prescribed?
• Are there differences between providers?

Data Analysis

Infection Prevention and Control Plan "includes ongoing analysis of surveillance data, and review of data and documentation of follow-up activity in response"

Data

Facility data should drive your program and actions
• Helps with prioritization of your improvement efforts.

How do you know how well you are doing?
• Compare your current data to past data (baseline)
• Analyze in timely manner
  • Depending on what you are looking at, this might mean daily, monthly, or quarterly
Baseline

Internal (Infection Logs – Line Lists)

External
- Certification and Survey Provider Enhanced Reporting (CASPER)
- Other facilities in your “group” or corporation
- NHSN
- Literature

Historically, there has been a lack of national baseline data for LTC.

Analyze Data

Compare current data to baseline to detect
- Unusual or unexpected occurrences
- Sentinel (serious) event
- Trends -patterns in series of data points
  - Rising, falling or steady
- Non-compliance with policy / protocols

Data Drives Actions Needed

Protocol/process for action should be identified in Infection Prevention and Control Plan.
- Keep general vs. specific
  - Identify threshold / trigger (action limit)
  - Identify control measures to be instituted
  - Who to notify – how quickly?
    - Medical director
    - Quality Assurance committee
    - Division of Public Health

Unique to your organization
Date Drives Actions Needed

- Identify infection control issues - make recommendations for corrective action
- Short and long range planning educational activities
- Helps to prioritize actions

Discussions will be documented in the minutes as they are presented at the Quality Assessment and Assurance (QAA) committee.

What Data do you Present to your Quality Assurance Committee?

- Relevant data
  - Increase in UTIs, inappropriate antibiotic usage versus just total number of infections
  - Actionable data
  - Changes from baseline
  - Actions already taken and results of those actions
  - Additional actions planned
  - Request assistance/guidance with system changes needed

Who else Needs this Data?

- Medical Director – Providers
  - Infection rates
  - Antibiotic Utilization
- Staff
  - Infection rates
  - Hand hygiene rates
  - Audit results
- Resident council when appropriate
  - Hand Hygiene
Outbreak Surveillance

What is your facility’s definition of Outbreak?
- One case of highly communicable infection
- Infection trends that are 10 percent higher than historical rate of infection
- Three or more cases of the same infection over a specific length of time on the same unit or other defined area (general definition)
- Division of Public Health guidelines

Policy for Outbreak Investigation

- Process should be spelled out in detail so anyone can follow (for example: agency staff on a weekend)
  - Outbreak measures that will be initiated whenever there is increase in illness above expected or baseline
  - “General definition” is presence of three or more residents or staff experiencing symptoms within a 72 hour period on same wing/floor
  - Confirm staff is aware of process/policy

Outbreak Management

- Steps are done almost simultaneously
  - Recognize
  - Contain
  - Notify all appropriate persons
Recognize Early

- More illness than usual
  - Know “trigger” for action
- Surveillance mechanism in place
  - Line list of ill residents and staff with specific disease symptoms
  - Review 24 hour logs for ill residents
    - Communication between shifts is important
  - Who monitors staff call ins? Must combine with resident illness to get complete picture

Containment

Containment strategies may depend on cause of outbreak and state requirements. Work with local health department (LHD) to determine best strategies.

Are transmission based precautions indicated?
  - Contact, Droplet, Other, Combination

Center for Disease Control (CDC) Type and Duration of Precautions Appendix A:
https://www.cdc.gov/infectioncontrol/guidelines/isolation/appendix/type-duration-precautions.html

Containment

- Cleaning and disinfection
  - Are special products indicated?
  - Should frequency of cleaning be increased, especially in common areas and frequently touched objects?
    - Continue increased frequency for 72 hours after last case has recovered
  - Clean medication carts and vitals machines before and after use
  - Dedicate commonly used equipment if possible
Gastrointestinal Illness – specific containment measures

- Soap and water indicated for hand hygiene
- Mask and goggles or face shield if vomitus is present
- Bleach based cleaners (premixed or mixed fresh every 24 hours)
- Clean most contaminated areas of room last
- Change mop heads when a new bucket of cleaning solution is prepared
- Steam clean carpet and upholstery if soiled, do not dry vacuum to prevent re-circulation of virus

Containment strategies to consider

- Restrict ill resident’s activities until 48 hours after symptom resolution
- Minimize movement of residents from affected location to unaffected location
- Evaluate need to cancel group activities until 48 hours after well date of last case

*Non-ill residents should not be confined or restricted to their rooms during outbreak.

Can be a difficult balance: Containment ↔ Restriction

Containment strategies

- Consider limiting new admissions
  - Consider admitting new residents to unaffected area or area where all residents have been asymptomatic for 48 hours.
  - Inform prospective residents and health care providers about ongoing outbreak
- If transferring resident for another reason, be sure Emergency Medical Services (EMS) and receiving facility are aware of outbreak.
Containment strategies to consider

Families / Visitors
• Notify resident’s representative / family
• Post signage alerting visitors of outbreak
• Encourage non-essential visitors to reschedule visit
• Visitors who decide to visit should be provided education and provided Personal Protective Equipment (PPE) as indicated

Staff
• Are additional education or in-services needed?
• Can you maintain same staff assignments to residents, limiting staff moving from affected to unaffected units?
• Staff should exclude themselves from resident care at onset of symptoms – leave work
  • Difficult when short staffed but important
• Are your staff illness policies clear on time of exclusion from work? (generally 48 hours after symptom resolution)

Notify
• Unit staff notify person in charge / Infection Preventionist (IP) when available
  • What happens when IP is not there?
• Medical Director
• All care providers for resident to determine if any changes to medical management are needed.
• “Sister” or adjacent facilities that may share staff
• Contracted Ancillary services
• All staff including dietary, housekeeping, maintenance, laundry etc.
Notify

- Local Health Department – notify of any suspected or confirmed outbreak
  - Will ask for information on your line list
  - Will advise regarding obtaining cultures / testing, treatment and prophylaxis
  - Can also help to evaluate the need for possible containment and confinement strategies
  - How can they be reached after hours, on weekends?

Post – outbreak review

- What worked well?
- What can be improved on for next time?
- What surprised you?

Post – outbreak review

- Complete all line list entries
  - Dates start/stop, well dates etc.
- Complete narrative summary
  - Chronological timeline of what happened, what actions were taken, results of those actions etc. that an outside reviewer could follow
- Interdisciplinary team completes an evaluation of outbreak once all information is available
Post – outbreak review

- Take team recommendations for preventative measures, and changes to policy to QAA/Quality Assurance & Performance Improvement (QAPI)/Infection Prevention and Control Committee
- Put approved recommendations into policy
- Educate staff on any changes in policy
- Monitor for compliance to changes in policy

Resources

**Infection Prevention, Control and Immunizations, Critical Element Pathway, CMS-20054**

Resources

**Wisconsin Healthcare-Associated Infections (HAIs) in LTC Coalition Resources**
https://www.dhs.wisconsin.gov/regulations/nh/ha-i-resources.htm

**CDC Links for LTC Settings**
https://www.cdc.gov/longtermcare/prevention/index.html

**The National Nursing Home Quality Improvement Campaign**
https://www.nhqualitycampaign.org/
Resources

McGeer Criteria for Long Term Care Surveillance

Infection Preventionists Guide to Long Term Care
APIC

Lake Superior Quality Innovation Network (QIN)
https://www.lsqin.org/

Resources - Wisconsin

Reporting, prevention and control of acute respiratory illness outbreaks in long-term care facilities

Recommendations for the prevention and control of acute gastroenteritis outbreaks in LTC facilities
https://www.dhs.wisconsin.gov/publications/p0/p00653.pdf

Questions?

Diane Dohm MT, IP, CIC, CPHQ
Project Specialist – Nursing Home Quality

ddohm@metastar.com
608-441-8263

www.lsqin.org
www.metastar.com