1.0 PURPOSE

Using standardized case definitions for Healthcare Associated Infections (HAI) provides opportunity for generating surveillance data that can be compared to or pooled with other similar facilities and settings using the same case definitions with the intent to improve patient outcomes.

2.0 DEFINITION

Case definitions for Acute Care – standardized definitions for each HAI based on the CDC/NHSN (National Healthcare Safety Network) definitions and the Provincial Infection Control Network (PICNet) of British Columbia definitions and allows for comparability of findings and benchmarking with other similar hospitals.

Catheter Case definitions for Residential Care – standardized definitions for each HAI that have been developed based on The McGeer Criteria in addition to consensus opinions from infectious disease physicians, epidemiologists, infection prevention and control professionals, geriatricians and public health officials and is specifically aimed at persons living in Residential Care facilities.

Device-associated Infection Rates – a rate of infection associated with exposure to a medical device, such as a ventilator, central venous catheter or indwelling urinary catheter.

3.0 GUIDING PRINCIPLES

3.1 To establish priorities for an HAI surveillance system, consideration must be taken for the types of patients/residents that it serves, the key medical interventions and procedures that they undergo and the types of infections for which they are most at risk for.

3.2 When defining HAIs, consider the frequency of the infection, the impact of the infection (including case fatality and excess costs associated with the infection) and the preventability of the infection. The outcomes selected for surveillance should be re-evaluated at least annually.

3.3 Syndromic surveillance of respiratory infections and gastrointestinal infections should be undertaken in all hospitals and residential care facilities.

3.4 In Acute Care when a particular infection meets a case definition, it should only be considered health care associated if:
   • It was not present or incubating when the patient was admitted to the hospital;
   • The infection does not represent a complication or extension of an infectious process that was present at admission;

Note: in this document the term “patient” is inclusive of patient, resident or client.
• The infection occurred more than 48 to 72 hours after admission, and within 10 days following discharge or longer if it is related to a surgical procedure, a *Clostridium difficile* infection or an antibiotic resistant organism.

3.5 In Residential Care, in order for an infection to be considered healthcare associated
• There must be no evidence that the infection was present on admission to the facility or readmission (following hospitalization or community visit);
• There must be no evidence that the infection resulted from a procedure performed at an acute care hospital or in a physician’s office;
• Where residents regularly attend day programs or other activities in the community and there is uncertainty about whether the infection occurred in community or the residential care home, the case should be counted as an HAI.

4.0 PROCEDURE

4.1 Surgical Site Infections (SSIs) Definitions
An infection involving the surgical site within 30 days of the procedure, or within 90 days (previously 365) if an implant is in place and the infection is related to the operative procedure. There are 3 categories of SSIs:

4.1.1 **Superficial Incisional Infection** – occurs within 30 days of procedure and involves only skin and subcutaneous tissue of incision.
Patient has at least 1 of the following:
1. Purulent drainage from superficial incision
2. Organisms isolated from aseptically-obtained culture of fluid or tissue from superficial incision
3. Superficial incision that is deliberately opened by a surgeon and is culture-positive or not cultured. (A culture negative finding does not meet criterion.) AND Patient has at least 1 of the following S&S: - Pain or tenderness - Localized swelling - redness – heat
4. Diagnosis of SSI by surgeon or attending MD

4.1.2 **Deep Incisional Infection** - occurs within 30 or 90 days of surgery and has implant if after the 30 days and involves deep soft tissues of incision (i.e. fascial and muscle layers)
Patient has at least 1 of the following:
1. Purulent drainage from deep incision
2. Deep incision that spontaneously dehisces or deliberately opened by surgeon & is culture positive or not cultured. (A culture negative finding does not meet criterion.) AND patient has at least 1 of the following S&S: - fever (>38°C) - localized pain or tenderness
3. Abscess or other evidence of infection involving deep incision found on direct exam, during invasive procedure, or by histopathologic exam or imaging test
4. Diagnosis of SSI by surgeon or attending MD

4.1.3 **Organ/Space Surgical Site Infection** - occurs within 30 or 90 days of surgery & has implant if after the 30 days & involves any part of the body excluding the skin incision, fascia or muscle layers, that is opened or manipulated during the operative procedure
Patient has at least 1 of the following:
1. Purulent drainage from drain that is placed into the organ/space
2. Organism isolated from an aseptically-obtained culture of fluid or tissue in the organ/space

Note: in this document the term “patient” is inclusive of patient, resident or client.
3. Abscess or other evidence of infection involving organ/space found on direct exam, during invasive procedure, or by histopathologic exam or imaging test
4. Diagnosis of SSI by surgeon or attending MD

4.2 *Clostridium difficile* Infection (CDI) Definition

The presence of diarrhea or toxic megacolon AND positive CDI result OR diagnosis of pseudo-membranous colitis OR histological/pathological diagnosis of CDI with or without diarrhea AND the following:

4.2.1 Criteria for New CDI Associated with YOUR Facility

1. Symptoms onset > 72 hours after admission OR
2. Symptoms onset in the community or occurring ≤ 72 hours after admission AND Pt was admitted for a period of at least overnight (≥24 hours) in the past 4 weeks before hospitalization AND - Symptoms onset was less than 4 weeks after the last discharge from your facility

4.2.2 Criteria for New CDI associated with OTHER Healthcare Facility

1. Symptoms onset in the community or occurring ≤ 72 hours after admission to your facility AND
Pt was admitted to another healthcare facility (including acute/ LTC) for at least overnight (or ≥24 hours) in past 4 weeks before current hospitalization AND
Symptom onset was less than 4 weeks after discharge from that facility with another facility

4.2.3 Relapse of CDI

- A CDI case (as defined above) with recurrence of diarrhea between 2 – 8 weeks after previous CDI case
- CDI identified less than 2 weeks after previous episode is considered to be a continuation of previous CDI case

4.2.4 Community Associated

- A CDI case (as defined above) with symptom onset in the community or ≤ 72 hours after admission to a healthcare facility, provided the patient was not admitted to any healthcare facility (including acute care and long-term care) for ≥ 24 hours in the past 4 weeks before onset of CDI symptoms

4.3 Antibiotic Resistant Organisms (AROs) Definition

AROs include Methicillin Resistant Staphylococcus Aureus (MRSA), Vancomycin Resistant Enterococcus (VRE), Extended Spectrum Beta-lactamase (ESBL)

4.3.1 Criteria for Healthcare associated with current admission to Your Facility

1. Not previously positive for ARO AND
   Identified > 48 hours after patient admitted to your facility OR Newborn

4.3.2 Criteria for Healthcare associated with previous encounter with Your Facility

Not previously positive for ARO AND identified ≥48 hours after admission and meets one criteria:
1. Admitted to your facility at least over night (≥24 hours) within the last 12 months OR
2. Indwelling catheters or medical device at time of admission, which was inserted by your facility OR

*Note:* in this document the term "patient" is inclusive of patient, resident or client.
3. Documented weekly visits to outpatient clinic (i.e. dialysis, oncology) in your facility in the last 12 months

4.3.3 Criteria for Healthcare associated with Another Facility
Not previously positive for ARO AND identified ≤ 48 hours after admission and meets one criteria:

1. Any contact with another healthcare facility as inpatient (acute/LTC) or as outpatient (dialysis/oncology) within the last 12 months OR
2. Indwelling catheters or medical device at time of admission, which was inserted by another facility

4.3.4 Community Associated
Any case without documented history of healthcare exposure including admission to acute care, LTC or rehab, weekly visits to an outpatient clinic (dialysis, oncology, i.e. use of indwelling catheter or other medical device)

Newborn: Less than 28 days considered case for Your Facility if the mother was not known or suspected to be ARO positive on admission. In the case of a newborn transferred from another facility and ARO identified ≤ 48 hours after admission the case is classified as healthcare associated with Another Facility

Multiple Encounters: If a patient has multiple encounters with different healthcare facilities in the last 12 months the classification of ARO will be based on the most recent encounter

4.4 Ventilator Associated Pneumonia (VAP) – includes the classifications of both Possible and Probable VAPs
- On a ventilator ≥ 3 days and > 14 days since last Ventilator Associated Condition (VAC) (VAC - After a period of stability or improvement of 2 or more days, requires one of the following: 1. Increase FIO2 by ≥ 20 points for ≥ 2 days 2. Increase in PEEP ≥ 3cm for ≥ 2 days)
- Within window period (2 days before + 2 days after VAC date – 5 days total) meets BOTH Criteria:
  1. Has a temp>38°C or <36°C OR white blood cell count ≥12.0 x 10⁹/l or 4.0 x 10⁹/l AND
  2. A new antimicrobial agent(s) is started and continued for ≥ 4 days AND
- Within window period meets ONE of the following criteria:
  1. Purulent respiratory secretions (1 or more specimens) defined as gram stain of 4+ WBC & 1 to 2+ epithelial cells
  2. Positive culture of sputum endotracheal aspirate, BAL, lung tissue or protected specimen brushing AND
  the organism is NOT excluded: “Normal respiratory flora,” “normal oral flora,” mixed respiratory flora,” “mixed oral flora,” “altered oral flora” or other commensal flora of the oral cavity or upper respiratory tract: Candida species or yeast not otherwise specified; coagulase-negative Staphylococcus species; and Enterococcus species, when isolated from cultures of sputum, endotracheal aspirations, bronchoalveolar lavage, or protected specimen brushings OR
Excluded organisms isolated from cultures of lung tissue or pleural fluid including Candida species or yeast not otherwise specified, coagulase-negative Staphylococcus species or Enterococcus species

OR

Test result meets one of the following criteria:
- Positive pleural fluid culture (from thoracentesis or initial placement of chest tube)
- OR Positive lung histopathology
- OR Positive diagnostic test for legionella spp
- OR Positive diagnostic test for respiratory viruses

4.5 Central Line Associated Bloodstream Infection (CLABSI) Definition – surveillance restricted to Intensive Care Unit (ICU) patients who:
- Have a central line in place > 2 calendar days OR central line has been discontinued for < 3 calendar days AND
- There is a pathogen in 1 or more blood cultures AND infection is not suspected at another site AND all elements of lab confirmed blood stream infection first present together on or after the 3rd hospital day AND
- Patient has at least 1 of the following: -- Fever >38°C -- OR chills -- OR hypotension (systolic <90) AND positive lab results that are not related to an infection at another site AND common commensals is cultured from 2 or more blood cultures, drawn on separate occasions AND criteria elements occurred within a timeframe that does not exceed a gap of 1 calendar day AND all elements of lab confirmed blood stream infection first present together on or after the 3rd hospital day
- Central line: An intravascular catheter that terminates at or close to the heart or in one of the great vessels and is used for infusion, withdrawal of blood, or hemodynamic monitoring.
- PICC line: a peripherally inserted central catheter is inserted in a peripheral vein and then advanced through increasingly larger veins toward the heart until the tip rests in the distal superior vena cava, is considered a central line.
- Non-lumened devices inserted into central blood vessels or the heart (i.e. pacemaker) are not considered central lines if fluids are not infused, pushed or withdrawn through the device.

4.6 Lower Respiratory Tract Infection (LRI) / Pneumonia Definition in Residential Care
Review chart to rule out other conditions that could account for symptoms (CHF, COPD) For an LRI:
- Are there TWO or more Signs & Symptoms:
  - new or increased cough
  - new or increased sputum production
  - oxygen saturation < 94% or <3% from baseline
  - abnormal lung exam new or changed
  - pleuritic chest pain
  - respiratory rate > 25 breaths/min
AND
- Is there 1 or more constitutional criteria: fever, leukocytosis, confusion or functional decline?

For a Pneumonia:
- Does the chest x-ray indicate pneumonia?
AND
- Are there ONE or more Signs & Symptoms:
Infection Prevention and Control
Section 09V - IV0200 (Definitions for Healthcare Associated Infections)

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4.7 Skin & Soft Tissue Infection (SSTI) Definition in Residential Care

Criteria: Must have ONE of the following:

- Pus present at a wound, skin, or soft tissue site OR
- Are there FOUR or more signs and symptoms:
  - serous drainage at site
  - site swelling
  - heat at site
  - site tenderness or pain
  - site redness
  - one constitutional criteria: fever, leukocytosis, confusion, acute functional decline?

4.8 Catheter Associated Urinary Tract Infection (CAUTI) in Residential Care

Criteria: Resident must have indwelling urinary catheter and at least ONE of the following:

- Fevers, rigors OR new onset hypotension with NO alternate sign of infection
- Acute change in mental status OR functional decline with no alternate diagnosis AND leukocytosis (WBC > 14,000)
- New onset suprapubic pain or costooverterbral angle pain or tenderness
- Purulent discharge around catheter or acute pain, swelling of testes, epididymis or prostate

AND

- Urine culture (> 10⁶ CFU/ml) correlates with symptoms OR
- Positive blood culture & urine culture with same organism with no alternate site of infection
- Fever (>38C) or chills, new flank or supra-pubic pain or tenderness, change in character of infection

5.0 REFERENCES


5.3. CDC/NHSN surveillance definition of healthcare associated infection and criteria for specific types of infections in the acute care setting; 2013.

**Note:** In this document the term “patient” is inclusive of patient, resident or client.