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APIC - HICPAC Surveillance Definitions
for Home Health Care and Home Hospice Infections

The Association for Professionals in Infection Control and Epidemiology, Inc. (APIC) Home Care Membership Section published ***Draft definitic infections in home health care*** in December 2000. (Embry FC, Chinnes LF. AJIC 2000;28:449-53) As a guidance resource for Infection Control working in the home health care practice setting, these definitions have been used for seven years. APIC has requested and received support from Prevention and Control's (CDC's) Healthcare Infection Control Practices Advisory Committee (HICPAC) to revisit the draft definitions for surve home health care and to expand the application to include home hospice. HICPAC has agreed to support this final document for surveillance purp

A healthcare associated infection (HAI) is an infection that develops in a patient who is cared for in any setting in which healthcare is delivered (chronic care facility, ambulatory clinic, dialysis center, surgicenter, home) and is related to receiving health care (i.e., was not incubating or prese was provided). In ambulatory and home settings, HAI applies to any infection that is associated with a medical or surgical intervention. Since the infection acquisition is often uncertain, the infection is considered to be healthcare *associated*, rather than healthcare *acquired*. (Siegel et al. Fed. HAI criteria for home health care and home hospice are essential to the specific anatomical site definitions for HAI. Thus, **home care and home associated infections (HAIs)** are those infections that were neither present nor incubating at the time of initiation of care in the patient's place of infections appearing in a patient within 48 hours of discharge from a healthcare facility, the infection(s) is reported back to the facility that discha their home care services.

Background:
An estimated 1.2 million infections occur annually in approximately 8 million adult and pediatric home health care patients in the US. (Mananga

Several issues have precluded in-depth validation and study of reproducibility of the draft home health care definitions. (Manangan LP EID 2002 of several home care agencies found that just over half of 95 agencies supported a trained, designated ICP to oversee their HAI surveillance prog ICHE 2000;21:114 (abstr)) Second, patients may be served by more than one care agency and provider of care (i.e., home health care personnel, caregiver, etc.), a circumstance that inhibits the capture of outcomes if patients receive care from a provider other than the initial agency. Third, convenient access to both clinical and laboratory data among those patients are often lacking in the home care setting. Finally, reporting, collati outcome indicators and processes may be limited and/or incomplete.

Criteria for infection definitions in acute care health facilities usually include combinations of clinical findings and results of laboratory and othe Laboratory testing and radiological procedures are performed infrequently for hospice patients due to their limited life expectancy and patients ir home health care and hospice patient populations, reliance is largely on clinical observations to assess changes in the patient's status, made by th caregivers and providers, and is the basis for these definitions. As a result, there is an introduction of subjectivity and variability in both observa documentation, which must be acknowledged.

Goals and Purpose of Surveillance:
The goals, purpose and infrastructure of an effective surveillance program have been previously described. (Lee TB et al. AJIC 1998;26:277-88; 1999;20:695-705; CDC. MMWR 2001;50(RR13); Lee TB et al. AJIC 2007;35:427-440) In brief, these remain as stated: to enhance the safety a provided, to reduce morbidity and mortality, and to improve health regardless of the practice setting.

Home health care agencies and home hospices must establish HAI definitions for the purpose of surveillance before initiating a surveillance prog receiving health care in the home environment. Definitions should be consistently used in the collection, analysis, and reporting of infection data of infection are not intended to be used to make clinical decisions or determine treatments. Definitions developed for the purpose of surveillance in an outbreak investigation as a specific case definition is usually required.

The purpose of surveillance in home health and hospice care is to assess the safety and quality of patient care provided by establishing a baseline monitor trends within the agency, to use findings to improve care, and to prevent HAI and other complications. Valid written definitions enhance and reproducibility of the surveillance data; however, definitions are only one piece of surveillance. As has been learned within acute care practi desire interfacility or, in this case, interagency comparison are advised to use caution when attempting to compare outcomes as there are a multitu affect accuracy of indicators from one agency to the next. Until a standard set of HAI definitions for home health care and home hospice are fina within a surveillance program and surveillance data analyzed, a lack of realistic incidence per site exists. A risk assessment of the population serv provided should be a starting point to identify appropriate process and outcome indicators. (Lee TB et al. AJIC 1998;26:277-88; Lee TB et al. AJ

Data collectors should be trained in the written definitions adopted by the agency. Among the limitations to surveillance in home health care and surveillance personnel may not have infection control training or access to a trained infection control professional or epidemiologist. Access to c ICP or other infection control resource would be beneficial to the designated staff responsible for collecting, analyzing, and interpreting the surve must be analyzed and interpreted. Numerator data (number of infections) may detect problems within an agency, but infection rates should be cal meaningful trends. Denominators (population at risk) will also vary based on accessibility of information within each agency and may require no reliable data for comparison, such as device days/month, patient census, or both. Lastly, information gathered from surveillance must be reported who will be most able to affect and improve the safety and quality of patient care.

The rationale for HAI surveillance among patients receiving home health and hospice care can be assessed with both process and outcome measu

Process objectives may include, but are not limited to:

a. Adherence to published standards, conditions and/or recommendations from accrediting bodies, regulatory agencies, and third party pay
b. Compliance with hand hygiene practices, provision of recommended immunizations, and management of invasive medical devices (e.g., and securement of catheters) by agency personnel
c. Appropriateness of medical device use and possibly of antimicrobial therapy
d. Training and competence of care provided by family or other members of the patient's support system in the home
e. Evaluation of specific infection prevention and control measures
f. Impact of education and training to patient and health caregivers
g. Identification and reporting healthcare associated infections back to the facility (i.e., hospital, ambulatory surgical centers, long term care

d. Catheter associated urinary tract infections
e. Skin and soft tissue infections (i.e., pressure ulcers or other wounds) acquired during home care

Primary outcome objectives include reductions in morbidity, emergent care, acute care hospitalizations, mortality, and cost.

Terminology:

Home Care Services are health care provided in the home setting by providers of home health care, home hospice, home infusion therapy, and d for the home.

Home Health Care is defined as health care provided to individuals and families in their places of residence for the purpose of promoting, main or for maximizing the level of independence while minimizing the effects of disability and illness, including terminal illness. (Access at: http://www.cdc.gov/nchs/about/major/nhhcsd/nhhcsdefhomehealth.htm)

Home Hospice Care is a program of palliative and supportive care services providing physical, psychological, social, and spiritual care for dyin and other loved ones. Hospice services are available in both the home and inpatient settings. Home hospice care is provided on part-time, interm scheduled, and around-the-clock basis. Bereavement services and other types of counseling are available to the family and other loved ones. (A http://www.cdc.gov/nchs/about/major/nhhcsd/nhhcsdefhospicecare.htm)

Health care professionals include, but are not limited to, physicians, nurse practitioners, clinical nurse specialists, physician assistants, registere therapists, licensed practical or vocational nurses, ancillary personnel delivering bedside care (e.g., equipment, supplies, nutrition, etc.), respirato rehabilitation staff (i.e., physical therapist).

A **surgical site infection** (SSI) occurring within 30 days from the date of surgery is considered a HAI SSI. Infection related to a surgically impla are counted as a HAI SSI for up to 1 year from the date of surgery. A SSI meeting these criteria is reported to the facility where the surgery was p is available. Therefore, a SSI definition is included in the surveillance program for a home care agency as an informational reference to assist th care personnel in identifying the SSI before reporting their findings back to the facility in which the surgical procedure was performed.

Home Infusion Therapy involves the administration of medications using intravenous, subcutaneous, and epidural routes in the home setting. D administered via infusion in the home setting include antimicrobials, chemotherapy, pain management, parenteral nutrition, and immune globulir infusion therapy services include registered nurses to ensure proper patient education and training and to monitor the care of the patient in the ho pharmacy technicians, and delivery personnel.

Durable Medical Equipment Services provided in the home include the provision of respiratory therapy equipment and its related supplies (e.g

Temporal Association:

Describing an infection as home health and/or hospice healthcare associated does not necessarily indicate that the infection was caused by the ho hospice personnel**.** The association is temporal (related to a time, place, or event), not causal. In addition, culpability, preventability, and etiology are not part of the definition of a HAI that occurs in the home health care or hospice setting. Because patients are in their own residence and rece prolonged period of time, many intercurrent illnesses and infections likely reflect exposure to microbes from other family members, visitors, or h Additionally, there are parallels that can be drawn to long term care wherein exposure and infection incidents may not necessarily reflect associat

Certain underlying conditions or therapies place patients at greater risk for infection. These conditions or therapies include, but are not limited to underlying diseases, stress, nutritional status, immunosuppression, trauma, wounds, and burns.

Other elements not directly associated with a person's health status can also make a patient particularly susceptible to infection. Extrinsic factors status, therapeutic instrumentation (e.g., venous access devices, urinary catheters), therapeutic modalities (e.g., radiation, cancer chemotherapy), drug abuse), personal hygiene, medications, occupational history, and presence or absence of able and willing caregivers.

Various environmental factors also may contribute to the development of infection in a patient receiving home health care and hospice. Poor sani plumbing, contaminated supplies and equipment, exposure to the elements (i.e., cold, heat, and water), rodent or insect infestation, and exposure factors that may increase the risk of acquiring infection.

An additional influencing factor in the development of infection is referred to as an agent factor. Agent factors include the number of microorgan individual is exposed (infectious dose), the ease and mode of transmission, and virulence (ability to cause disease) of the organism.

Criteria for Home Healthcare Associated Infection (HAI):
The evaluation of a suspected infection should include consideration of whether the symptoms are new or acutely worse from the established bas causes also must be considered. The definition of infection includes more than a single sign or symptom. Physician diagnosis should be accompa and symptoms of infection in most cases. Laboratory reports (microbiology and serology findings) alone are not used to define infection, but ma supportive evidence to confirm infection.

The idea of using a designated temperature for fever is controversial, especially as many elderly persons have minimal or no temperature increas

Defining **infection** in a patient receiving home health and/or hospice care depends upon a **new** sign(s) or symptom(s) identified by a clinician or personnel. Supportive evidence from laboratory or other diagnostic testing can be used to confirm support criteria for a possible HAI.
The following definitions by anatomical site are provided as criteria to identify home and hospice HAIs in those patient populations and are fund surveillance program. Surveillance programs are geared toward prevention of these adverse outcomes in the patient population.
Urinary Tract Infections (UTI)
Symptomatic Urinary Tract Infections (SUTI)
Symptomatic urinary tract infections (SUTI) can occur without prior instrumentation (e.g., intermittent catheterization), but this is rare.

a. Fever **OR** chills
b. Flank pain **OR** suprapubic pain **OR** tenderness
AND both bacteriuria (determined by a positive urine culture for a potential pathogen or a positive nitrite assay by dipstick) **and** p
or more wbc/hpf on urinalysis or positive leukocyte esterase assay by dipstick).

NOTE: Asymptomatic urinary tract infections are not included in these definitions.

Respiratory Tract Infections

Influenza-like Illness (ILI)

An **Influenza-like Illness (ILI)** must meet **both** of the following criteria:

1. Fever
2. Presence of **three** of the following six signs or symptoms:
   a. Chills
   b. New headache **OR** eye pain
   c. Myalgia
   d. Malaise **OR** loss of appetite
   e. Sore throat
   f. New **OR** increased cough

NOTE: This diagnosis will usually be made during influenza season: October through March, except in an influenza pandemic.
NOTE: During influenza season, if criteria for influenza-like illness **AND** upper **OR** lower respiratory tract infection are met at the same time, th
recorded only as an influenza-like illness.

Lower Respiratory Infections (LRI) (i.e., Bronchitis, Pneumonia)

The patient has not had a chest film **OR** the chest film did not confirm pneumonia **AND three** of the following seven signs or symptoms are pres

1. New **OR** increased cough
2. New **OR** increased sputum production
3. New **OR** increased purulence of sputum
4. Fever
5. Pleuritic chest pain
6. New **OR** increased physical finding on chest examination
   a. Rales
   b. Rhonchi
   c. Bronchial breathing
7. Change in status or breathing difficulty
   a. New **OR** increased shortness of breath
   b. Respiratory rate >25 per minute
   c. Worsening mental or functional status

NOTE: Noninfectious causes, such as congestive heart failure, should be ruled out.
NOTE: If the patient has a chest x-ray interpreted as pneumonia, probable pneumonia, or the presence of an infiltrate, and meets the above criter
Pneumonia.

Bloodstream Infections (BSI)

Primary Bloodstream Infection (BSI)

Primary bloodstream infection (BSI) includes laboratory-confirmed bloodstream infection (LCBSI) and clinical sepsis (CSEP). A positive blo
used to define bacteremia.

Laboratory-confirmed bloodstream infection (LCBSI)

Laboratory-confirmed bloodstream infection (LCBSI) must meet **one** of the following three criteria:

1. Patient has a recognized pathogen cultured from one or more blood cultures **AND**
organism cultured from blood is not related to an infection at another site.
2. Patient has at least **one** of the following three signs or symptoms:
   a. Fever
   b. Chills
   c. Hypotension
   AND signs and symptoms and positive laboratory results are not related to an infection at another site
   AND common skin contaminant (e.g., diphtheroids, *Bacillus* spp., *Propionibacterium* spp., coagulase-negative staphylococci, or m
   two or more blood cultures drawn on separate occasions
3. Patient aged <1 year has at least **one** of the following four signs or symptoms:
   a. Fever
   b. Hypothermia
   c. Apnea
   d. Bradycardia
   AND signs and symptoms and positive laboratory results are not related to an infection at another site
   AND common skin contaminant (e.g., diphtheroids, *Bacillus* spp., *Propionibacterium* spp., coagulase-negative staphylococci, or m
   two or more blood cultures drawn on separate occasions

NOTE: When an organism that is isolated from a blood culture is compatible with a related infection at another site, the bloodstream infection is
bloodstream infection
NOTE: Infections related to intravascular access devices are classified as primary, even if localized signs of infection are present at the access si

AND blood culture is not done **OR** no organisms detected in blood
AND no apparent infection at another site
AND physician institutes treatment for sepsis
AND hospital admission for clinical sepsis and/or death due to clinical sepsis

IV Catheter Site Infection
See **Skin and Soft Tissue Infection**

Skin and Soft Tissue Infections

Cellulitis/soft tissue/non-surgical wound/decubitus ulcer/foreign body site (e.g., gastrostomy, jejunostomy, tracheostomy)/around foreign drains, catheters) infections must meet at least **one** of the following two criteria:

1. Purulent drainage at the wound, skin or soft tissue site **OR**
2. **Four** or more of the following six signs or symptoms with no other recognized cause:
    a. Fever **OR** worsening mental or functional status
    b. Pain **OR** tenderness at the affected site
    c. Localized swelling at the affected site
    d. Redness at the affected site
    e. Heat at the affected site
    f. Serous discharge at the affected site

Fungal Skin Infection
A **fungal skin infection** must meet **both** maculopapular rash **AND** either physician diagnosis **OR** laboratory confirmation must be present.

Herpes Simplex or Zoster Infection
A **herpes simplex or zoster infection** must meet **both** a vesicular rash **AND** either physician diagnosis **OR** laboratory confirmation must be pre

Surgical Site Infections (SSI)
A **surgical site infection** (SSI) occurring within 30 days from the date of surgery is considered a HAI SSI. Infection related to a surgically impla counted as a HAI SSI for up to 1 year from the date of surgery. A SSI meeting these criteria is reported to the facility where the surgery was perf available. Therefore, SSI definitions are included in the surveillance program for the home health and hospice care agency to assist in identifyin their findings back to the facility where the surgical procedure was performed.

A **surgical site infection (SSI)** must meet the following criteria:

1. Infection occurs within 30 days after the operative procedure if no implant is left in place **OR** within one year if implant is in place an be related to the operative procedure **AND**
2. **Two** of the following seven signs or symptoms:
    a. Purulent drainage from the incision OR drain
    b. Pain or tenderness
    c. Localized swelling
    d. Redness
    e. Heat
    f. Spontaneous dehiscence of the incision
    g. Fever

NOTE: Surgical site infections should be considered healthcare associated infections and reported to the facility where the surgery was performe

Eye, ear, nose, and mouth infections

Conjunctivitis
Infective conjunctivitis must meet **one** of the following two criteria:

1. Pus from one or both eyes
2. Redness with or without itching or pain

NOTE: Both trauma and allergies must be ruled out.

Ear Infection
An **ear infection** must meet **one** of the following two criteria:

1. Physician diagnosis
2. New purulent drainage fluid in the middle ear accompanied by ear pain or tympanic redness

Sinusitis
Sinusitis must meet at least **one** of the following three criteria:

1. Physician diagnosis
2. Organisms cultured from purulent material from the sinus cavity
3. **One** of the following four signs or symptoms with no other recognized cause:
    a. Fever
    b. Pain **OR** tenderness over the involved sinus
    c. Headache
    d. Purulent exudates **OR** nasal obstruction

Oral Infection

2. Two or more vomiting episodes in 24 hours
3. **Both** a stool culture positive for a gastrointestinal pathogen **AND** any of the following four signs or symptoms:
    a. Nausea
    b. Vomiting
    c. Abdominal pain or tenderness
    d. Diarrhea

NOTE: Non-infectious causes, such as tube feeding or medication side effects, must be ruled out.

***Clostridium difficile*-Associated Diarrhea (CDAD)**
***Clostridium difficile* associated diarrhea (CDAD)** meets **both** of the following criteria:
1. Two or more loose watery stools in 24 hours above what is normal for the patient
2. A positive assay for *Clostridium difficile* toxin

NOTE: Report suspected ***Clostridium difficile*-Associated Diarrhea (CDAD)** to the healthcare facility from which the patient was discharged.

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