

Comments of Network Committee on HAI Case Definitions

Warsaw, 24/11/2011

Generic Definition of Healthcare-Associated Infection (1)

- A healthcare-associated infection **associated to the current hospital stay** is defined as infection that matches one of the case definitions **AND**
 - the onset of symptoms was on Day 3 or later (day of admission = Day 1) of the current hospital admission **OR**
 - the patient underwent surgery on day 1 or day 2 and develops symptoms of a Surgical Site Infection before day 3 **OR**
 - an invasive device was placed on day 1 or day 2 resulting in an HAI before day 3

Generic Definition of Healthcare-Associated Infection (2)

- A healthcare-associated infection **associated to a previous hospital stay** is defined as infection that matches one of the case definitions **AND**
 - the patient presents with an infection but has been readmitted less than 2 days after a previous admission to an acute care hospital **OR**
 - the patient has been admitted with an infection that meets the case definition of a Surgical Site Infection i.e. the SSI occurred within 30 days of the operation (or in the case of surgery involving an implant was a deep or organ/space SSI that developed within a year of the operation) and the patient either has symptoms that meet the case definition and/or is on antimicrobial treatment for that infection **OR**
 - the patient has been admitted (or develops symptoms within 2 days) with *C.difficile* infection less than 28 days from a previous discharge from an acute care hospital.

Active Healthcare-associated Infection

- For the purpose of point prevalence surveys, an **active healthcare-associated infection** present on the day of the survey is defined as an infection for which signs and symptoms of the infection are present on the survey date **or** signs and symptoms were present in the past and the patient is (still) receiving treatment for that infection on the survey date. The presence of symptoms and signs should be verified until the start of the treatment in order to determine whether the treated infection matches one of the case definitions of healthcare-associated infection.

[Comment 1 - France]

- Does this definition only apply to point prevalence survey (PPS) or to all HAI surveillance protocols? E.g., HAI in the ICU surveillance only are included Day 3 and afterwards, even if there is a invasive device in place before. Should the ICU protocol be adapted?
- **[ECDC Reply]** The HCAI definition applies to both point prevalence survey and surveillance of HCAI.

[Comment 2 - France]

- Should we not have a simpler, generic EU case definition for HAI, independently from any infection onset date (the proposed one being interesting mostly for prevalence surveys)? E.g.,
 - “An infection is considered as healthcare-associated if occurring during or after any care (diagnostics, therapeutics, palliative, preventive or educational) to a patient, and if this infection was not present or incubating when this care was initiated”
- **[ECDC Reply]** The HCAI definition applies to both point prevalence survey and surveillance of HCAI.

[Comment 3 - Belgium]

- Concerning “generic definition of healthcare-associated infection”, the third inclusion criterion “an invasive device was placed on day 1 or day 2 resulting in an HAI before day 3”.
- My impression is that this is a criterion specifically for and restricted to be used within the HAI/AMU PPS protocol, and therefore needs to be labelled as such (contrary to its current label “generic”).
- To my knowledge, no decision has been made concerning the addition of this criterion to the case definitions of the current HAIICU protocol that deals substantially with invasive device-associated infections.
- One concern is that its addition will imply changing the inclusion criteria for followed patients when doing ICU surveillance, by abandoning the well-defined “only patients staying more than 2 calendar days” (HAIICU protocol V1.01 pag 14) and instead extending it towards “OR patients with invasive device use in the 1st 2 days of stay in the ICU”. Said change will have a huge impact on the size of collected denominators, and therefore needs to discuss properly.
- **[ECDC Reply]** Propose discussing further at Network meeting in November in Warsaw.

[Comment 4 – Greece]

- “A healthcare-associated infection associated to a previous hospital stay”: we would like to note that there is one more specific population of patients with repeated/multiple admissions (e.g. hematology/oncology patients or in general, immunosuppressed patients) which cannot be classified according to the proposed case definitions on page 23. In the case of such patients for example, as they are frequently colonized with MDR strains, they may present with the signs of infection during a readmission more than 2 days after their last admission.
- **[ECDC Reply]** We acknowledge the comment from Greece, and would suggest that this is discussed at the forthcoming Network meeting in Warsaw. Definitions could be further updated in due course.

[Comment 5 – Latvia]

- General Definition of Healthcare-Associated Infections: it is necessary to write hours instead of days, for instance 72 hours (not the Day 3). It is necessary to avoid following situations: admission to clinic is happened late in the evening 23.00 (the first day), onset of symptoms early in the morning (03.00 a.m.) on the third day – formally situation meets the proposed definition but in fact only 28 hours passed.
- **[ECDC Reply]**

Surgical Site Infection (1)

- For the purpose of point prevalence surveys, an **active healthcare-associated infection** present on the day of the survey is defined as an infection for which signs and symptoms of the infection are present on the survey date **or** signs and symptoms were present in the past and the patient is (still) receiving treatment for that infection on the survey date. The presence of symptoms and signs should be verified until the start of the treatment in order to determine whether the treated infection matches one of the case definitions of healthcare-associated infection.

Surgical Site Infection (2)

- **Deep incisional (SSI-D)**
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- Infection occurs within 30 days after the operation if no implant is left in place or within one year if implant is in place and the infection appears to be related to the operation and infection involves deep soft tissue (e.g. fascia, muscle) of the incision and at least one of the following:
- Purulent drainage from the deep incision but not from the organ/space component of the surgical site.
- A deep incision spontaneously dehisces or is deliberately opened by a surgeon when the patient has at least one of the following signs or symptoms: fever ($>38^{\circ}\text{C}$), localized pain or tenderness, unless incision is culture-negative.
- An abscess or other evidence of infection involving the deep incision is found on direct examination, during reoperation, or by histopathologic or radiologic examination.
- Diagnosis of deep incisional SSI made by a surgeon or attending physician.

Surgical Site Infection (3)

- **Organ/Space (SSI-O)**
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- Infection occurs within 30 days after the operation if no implant is left in place or within one year if implant is in place and the infection appears to be related to the operation and infection involves any part of the anatomy (e.g., organs and spaces) other than the incision which was opened or manipulated during an operation and at least one of the following:
- Purulent drainage from a drain that is placed through a stab wound into the organ/space .
- Organisms isolated from an aseptically obtained culture of fluid or tissue in the organ/space.
- An abscess or other evidence of infection involving the organ/space that is found on direct examination, during reoperation, or by histopathologic or radiologic examination.
- Diagnosis of organ/space SSI made by a surgeon or attending physician.

[Comment 6 – France]

- Please note that SSI surveillance in France is only performed with a follow-up up to 30 days for all SSI, including those with the use of prosthesis (SSI-D / SSI-O). This is a pragmatic choice made in France for feasibility reasons and in order to not delay the feedback of results.
- **[ECDC Reply]**

Pneumonia

- See definition in your codebook ...

[Comment 7 - France]

- Pneumonia: OK for this definition, which is very close from the French one (CTINILS, 2007) except for its end, which lists alternative diagnostics methods and might be deleted as it could be difficult to update based on future advances in medical microbiology :
 - Positive exams for pneumonia with virus or particular germs (Legionella, Aspergillus, mycobacteria, mycoplasma, Pneumocystis carinii)
 - Positive detection of viral antigen or antibody from respiratory secretions (e.g., EIA, FAMA, shell vial assay, PCR)
 - Positive direct exam or positive culture from bronchial secretions or tissue
 - Seroconversion (ex : influenza viruses, Legionella, Chlamydia)
 - Detection of antigens in urine (Legionella)
- This part could be rewritten as: “other, alternative methods including those developed for viruses or specific pathogen agents (positive detection of viral antigen or antibody, seroconversion, PCR, etc.) and that have been validated through studies with a high level of scientific evidence.”
- **[ECDC reply]** We propose discussing this at the Warsaw meeting.

[Comment 8 – Sweden]

- It is not clear what differs PN 4 from PN5
- **[ECDC Reply]** Case definition describes PN 4 and PN5:
 - Positive sputum culture or non-quantitative LRT specimen culture (PN 4)
 - No positive microbiology (PN 5)

[Comment 9 – France]

- As for intubation-associated pneumonia (IAP): "Intubation-associated pneumonia (IAP): a pneumonia is defined as intubation-associated (IAP) if an invasive respiratory device was present (even intermittently) in the 48 hours preceding the onset of infection."
- French ICU-specialists underlined that, using this definition, a patient being intubated because of a severe pneumonia (date of intubation date of pneumonia onset) is considered as having an IAP. We therefore currently include as IAP some pneumonia cases that are not intubation-associated. Should this be fixed?
- **[ECDC Reply]** The sequence of events will be clarified through the variables reported in TESSy.

Urinary Tract Infection

- **UTI-A: microbiologically confirmed symptomatic UTI**
 - Patient has at least one of the following signs or symptoms with no other recognized cause: fever ($>38^{\circ}$ C), urgency, frequency, dysuria, or suprapubic tenderness
and
patient has a positive urine culture, that is, $\geq 10^5$ microorganisms per ml of urine with no more than two species of microorganisms.
- **UTI-B: not microbiologically confirmed symptomatic UTI**
 - Patient has at least two of the following with no other recognized cause: fever ($>38^{\circ}$ C), urgency, frequency, dysuria, or suprapubic tenderness
and
 - at least one of the following:
 - Positive dipstick for leukocyte esterase and/or nitrate
 - Pyuria urine specimen with ≥ 10 WBC/ml or ≥ 3 WBC/high-power field of unspun urine
 - Organisms seen on Gram stain of unspun urine
 - At least two urine cultures with repeated isolation of the same uropathogen (gram-negative bacteria or *S. saprophyticus*) with $\geq 10^2$ colonies/ml urine in nonvoided specimens
 - $\leq 10^5$ colonies/ml of a single uropathogen (gram-negative bacteria or *S. saprophyticus*) in a patient being treated with effective antimicrobial agent for a urinary infection
 - Physician diagnosis of a urinary tract infection
 - Physician institutes appropriate therapy for a urinary infection

Asymptomatic bacteriuria should not be reported, but bloodstream infections secondary to asymptomatic bacteriuria are reported as BSI with source (origin) S-UTI.

[Comment 11 - France]

- As for IAP, ECDC proposed case definitions do not include any reference to a possible association with a urinary catheter (UCA-UTI). Should you not add this reference? Here is the French definition:
 - “A UTI is considered as associated to a urinary catheter if its onset date is after the insertion of the urinary catheter, and within 7 days of its removal.”
- **[ECDC Reply]**

[Comment 12 - Sweden]

- Is there evidence that asymptomatic bacteriuria may be the focus of bloodstream infection ?
- **[ECDC Reply]**

Bloodstream Infection

- See definition in your codebook ...

[Comment 13 - France]

- BSI: OK with the definition but one might want to add that a blood culture should never be performed in the absence of any clinical sign.
- **[ECDC Reply]** These definitions are intended for surveillance purposes, so we do not think the proposed text needs to be added.

[Comment 16 - France]

- One should absolutely add a definition for a vascular catheter as there might be slight differences in this list from one country to another or to the ECDC protocol (Swan-Ganz, introducers, arterial catheters, venous access devices ...)
- Here is the list of EXCLUDED catheters in our REA-Raisin protocol (not translated)
 - cathéter veineux périphérique
 - cathéter artériel
 - sonde de thermodilution (Swan-Ganz)
 - Desilet, introducteurs
 - dispositifs intraveineux de longue durée (Broviac, cathéter à chambre implantable, Groshung)
 - abord vasculaire de dialyse permanent (cathéter de Canaud, fistule artérioveineuse...
- **[ECDC Reply]** We propose discussing this at the Warsaw meeting.

[Comment 17 - Portugal]

- CRI3: says it should be reported if the CVC is present 48h before or after removal. Is this only for purpose of the PPS? What about incidence studies? Why 48h before?
- **[ECDC Reply]** The definitions are for PPS and surveillance use; this has been clarified in the document.

Endocarditis

- See definition in your codebook

[Comment 18 - France]

- CVS-ENDO: The Duke Criteria for Infective Endocarditis may also be used for this definition.
 - Durack DT, Lukes AS, Bright DK. New criteria for diagnosis of infective endocarditis: utilization of specific echocardiographic findings: Duke Endocarditis Service. Am J Med. 96:200-209, 1994.
- **[ECDC Reply]** We propose discussing this at the Warsaw meeting.

[Comment 19 - Sweden]

- Conjunctivitis

- Are there any conjunctivitis diagnosed by IgM or 4-fold IgG raise in paired sera?
- **[ECDC Reply]**

[Comment 20 – United Kingdom]

- Clostridium difficile infection
 - No minimum span of symptoms or number of episodes is specified and this could lead to over-reporting. The US guidance gives a minimum duration.
 - **[ECDC Reply]** These definitions are taken from the HAI PPS protocol. Suggest further discussions in network meeting.

Hepatitis

- Hepatitis must meet the following criterion:
 - Patient has at least 2 of the following signs or symptoms with no other recognized cause: fever ($>38^{\circ}\text{C}$), anorexia, nausea, vomiting, abdominal pain, jaundice, or history of transfusion within the previous 3 months
 - and
 - at least 1 of the following:
 - positive antigen or antibody test for hepatitis A, hepatitis B, hepatitis C, or delta hepatitis
 - abnormal liver function tests (eg, elevated ALT/ AST, bilirubin)
 - cytomegalovirus (CMV) detected in urine or oropharyngeal secretions.

[Comment 22 – France]

- **GI-HEP: Hepatitis**
 - This definition appears to be related to acute hepatitis and does not take into account the incubation period. Moreover, combination of a clinical definition and “abnormal hepatic function test” only, may correspond to many non infectious hepatitis.
 - If this definition is adopted, what about chronic hepatitis or patient who have recovered from an authentic HAI hepatitis?
- **[ECDC Reply]** We propose discussing this at the Warsaw meeting.

[Comment 23 - Ireland]

- Clinical sepsis
- For Neo-CSEP, one of the requirements in the surveillance definition is at least 5 days of antibiotic therapy. What happens if a child dies prior to completing 5 days of therapy? Do they still meet the surveillance definition?
- **[ECDC Reply]** For Neo-CSEP, the definition refers to a decision to treat for 5 days.

[Comment 24 - Sweden]

- The abbreviation NEO-LCBI is probably misspelled. Should probably be NEO-CLBI. But NEO-LBSI would make even more sense.
- **[ECDC Reply]** LCBI stands for Laboratory-confirmed Bloodstream infection and therefore is correct.