

Annex 4. Case definitions of infections



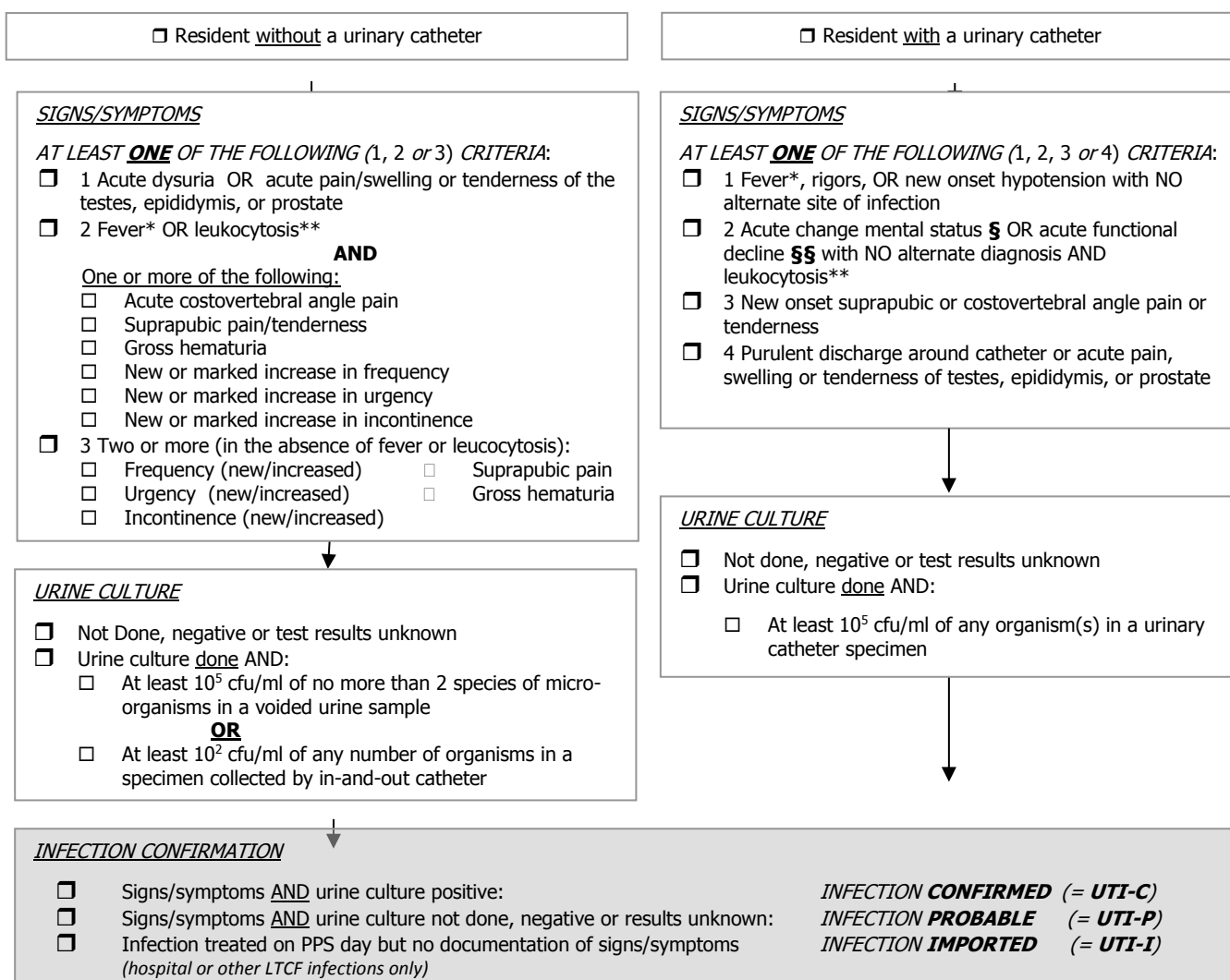
Healthcare-associated infections and antimicrobial use in European long-term care facilities (HALT-3)

CASE DEFINITIONS OF INFECTIONS

IMPORTANT REMARK: All **active infections** present on the day of the survey should be reported. An infection is **active** when signs/symptoms of the infection are present on the survey date **OR** signs/symptoms were present in the past and the resident is (still) receiving treatment for that infection on the survey date. The presence of symptoms and signs in the two weeks (14 days) preceding the PPS day should be verified in order to determine whether the treated infection matches one of the case definitions. Infections can only be reported as 'imported' for residents recently transferred from another healthcare facility (i.e. hospital or other LTCF) and still treated for an infection on the PPS day in the absence of documentation on (all) signs/symptoms that were present in the past.

- * Fever: 1) single > 37.8°C oral/tympanic membrane or 2) repeated > 37.2°C oral or > 37.5°C rectal or 3) > 1.1°C Cover baseline from any site (oral, tympanic, axillary)
- ** Leucocytosis: 1) Neutrophilia > 14,000 leucocytes/mm³ or 2) left shift (>6% bands or ≥ 1500 bands/mm³)
- § Acute change in mental status from baseline: Acute onset + fluctuating course + inattention AND either disorganized thinking or altered level of consciousness
- §§ Acute functional decline: New 3 point increase in total ADL score (Range 0-28) from baseline based on 7 ADL items (bed mobility, transfer, locomotion, dressing, toilet use, personal hygiene, eating) each scored from 0 (independent) - 4 (total dependence) OR increased dependency defined by scales other than ADL

URINARY TRACT INFECTIONS



RESPIRATORY TRACT INFECTIONS

COMMON COLD or PHARYNGITIS

AT LEAST **TWO** OF THE FOLLOWING CRITERIA:

- ☐ Runny nose or sneezing
- ☐ Stuffy nose (i.e. congestion)
- ☐ Sore throat or hoarseness or difficulty in swallowing
- ☐ Dry cough
- ☐ Swollen or tender glands in the neck (cervical lymphadenopathy)

FLU diagnosis can be made also outside the Flu season

BOTH OF THE FOLLOWING CRITERIA MUST BE MET:

- ☐ Fever (for definition see top of page 1)
- AND**
- ☐ At least **three** of the following:
 - ☐ Chills
 - ☐ New headache or eye pain
 - ☐ Myalgias or body aches
 - ☐ Malaise or loss of appetite
 - ☐ Sore throat
 - ☐ New or increased dry cough

INFECTION CONFIRMATION

- ☐ Infection criteria fully met: **INFECTION CONFIRMED (= COLD-C)**
- ☐ Infection treated on PPS day but no documentation of signs/symptoms: **INFECTION IMPORTED (hospital or other LTCF only) (= COLD-I)**

INFECTION CONFIRMATION

- ☐ Infection criteria fully met: **INFECTION CONFIRMED (= FLU-C)**
- ☐ Infection treated on PPS day but no documentation of signs/symptoms: **INFECTION IMPORTED (hospital or other LTCF only) (= FLU-I)**

LOWER RESPIRATORY TRACT INFECTIONS

- ☐ Resident **with** a POSITIVE chest x-ray for pneumonia or a new infiltrate

- ☐ Resident **without** a POSITIVE chest x-ray for pneumonia or a new infiltrate OR chest x-ray not done

SIGNS/SYMPTOMS

BOTH OF THE FOLLOWING CRITERIA MUST BE MET:

- ☐ At least **one** of respiratory signs or symptoms:
 - ☐ New or increased cough
 - ☐ New/increased sputum production
 - ☐ O₂ saturation < 94% or reduced >3% from baseline
 - ☐ Abnormal lung examination (new or changed)
 - ☐ Pleuritic chest pain
 - ☐ Respiratory rate ≥ 25 breaths/min
- AND**
- ☐ One or more constitutional signs/symptoms (fever, leucocytosis, confusion, acute functional decline; for definitions see top of page 1 §§)

SIGNS/SYMPTOMS

BOTH OF THE FOLLOWING CRITERIA MUST BE MET:

- ☐ At least **two** of respiratory signs or symptoms:
 - ☐ New or increased cough
 - ☐ New/increased sputum production
 - ☐ O₂ saturation < 94% or reduced >3% from baseline
 - ☐ Abnormal lung examination (new or changed)
 - ☐ Pleuritic chest pain
 - ☐ Respiratory rate ≥ 25 breaths/min
- AND**
- ☐ One or more constitutional signs/symptoms (fever, leucocytosis, confusion, acute functional decline; for definitions see top of page 1 §§)

Absence of other conditions such as chronic hearth failure that could account for symptoms

INFECTION CONFIRMATION

- ☐ Signs/symptoms criteria met AND chest x-ray positive: **PNEUMONIA INFECTION CONFIRMED (= PNEU-C)**
- ☐ Infection treated on PPS day but no documentation of signs/symptoms (hospital or other LTCF only): **PNEUMONIA INFECTION IMPORTED (= PNEU-I)**

INFECTION CONFIRMATION

- ☐ Infection criteria fully met: **OTHER LOWER RTI CONFIRMED (= LRTI-C)**
- ☐ Infection treated on PPS day but no documentation of signs/symptoms (hospital or other LTCF only): **OTHER LOWER RTI IMPORTED (= LRTI-I)**

SKIN INFECTIONS

CELLULITIS/SOFT TISSUE/WOUND INFECTIONS

ONE OF THE FOLLOWING (1 or 2) CRITERIA MUST BE MET:

- ☐ 1 Pus at a wound, skin, or soft tissue site
- ☐ 2 **Four or more** new or increasing signs/symptoms at affected site:
 - ☐ Heat
 - ☐ Tenderness or pain
 - ☐ Redness
 - ☐ Serous drainage
 - ☐ Swelling
 - ☐ One constitutional sign/symptom (fever, leucocytosis, confusion, acute functional decline; for definitions see top of page 1)



INFECTION CONFIRMATION

- ☐ Infection criteria fully met: **INFECTION CONFIRMED** (= **SKIN-C**)
- ☐ Infection treated on PPS day but no documentation of signs/symptoms: **INFECTION IMPORTED** (hospital or other LTCF only) (= **SKIN-I**)

NOTE:

If the infection matches one of the Surgical Site Infection (SSI) definitions, please give priority to the SSI. Do not apply another case definition for the same infection.

HERPES SIMPLEX OR ZOSTER INFECTION

BOTH OF THE FOLLOWING CRITERIA MUST BE MET:

- ☐ A vesicular rash
- AND**
- ☐ Physician diagnosis or laboratory confirmation



INFECTION CONFIRMATION

- ☐ Infection criteria fully met: **INFECTION CONFIRMED** (= **HERP-C**)
- ☐ Infection treated on PPS day but no documentation of signs/symptoms: **INFECTION IMPORTED** (hospital or other LTCF only) (= **HERP-I**)

SCABIES

BOTH OF THE FOLLOWING CRITERIA MUST BE MET:

- ☐ Maculopapular and/or itching rash
- AND**
- ☐ At least **one** of the following:
 - ☐ Physician diagnosis
 - ☐ Laboratory confirmation (positive scraping or biopsy)
 - ☐ Epidemiological linkage to a case of scabies with lab confirmation



INFECTION CONFIRMATION

- ☐ Infection criteria fully met: **INFECTION CONFIRMED** (= **SCAB-C**)
- ☐ Infection treated on PPS day but no documentation of signs/symptoms: **INFECTION IMPORTED** (hospital or other LTCF only) (= **SCAB-I**)

FUNGAL INFECTION

BOTH OF THE FOLLOWING CRITERIA MUST BE MET:

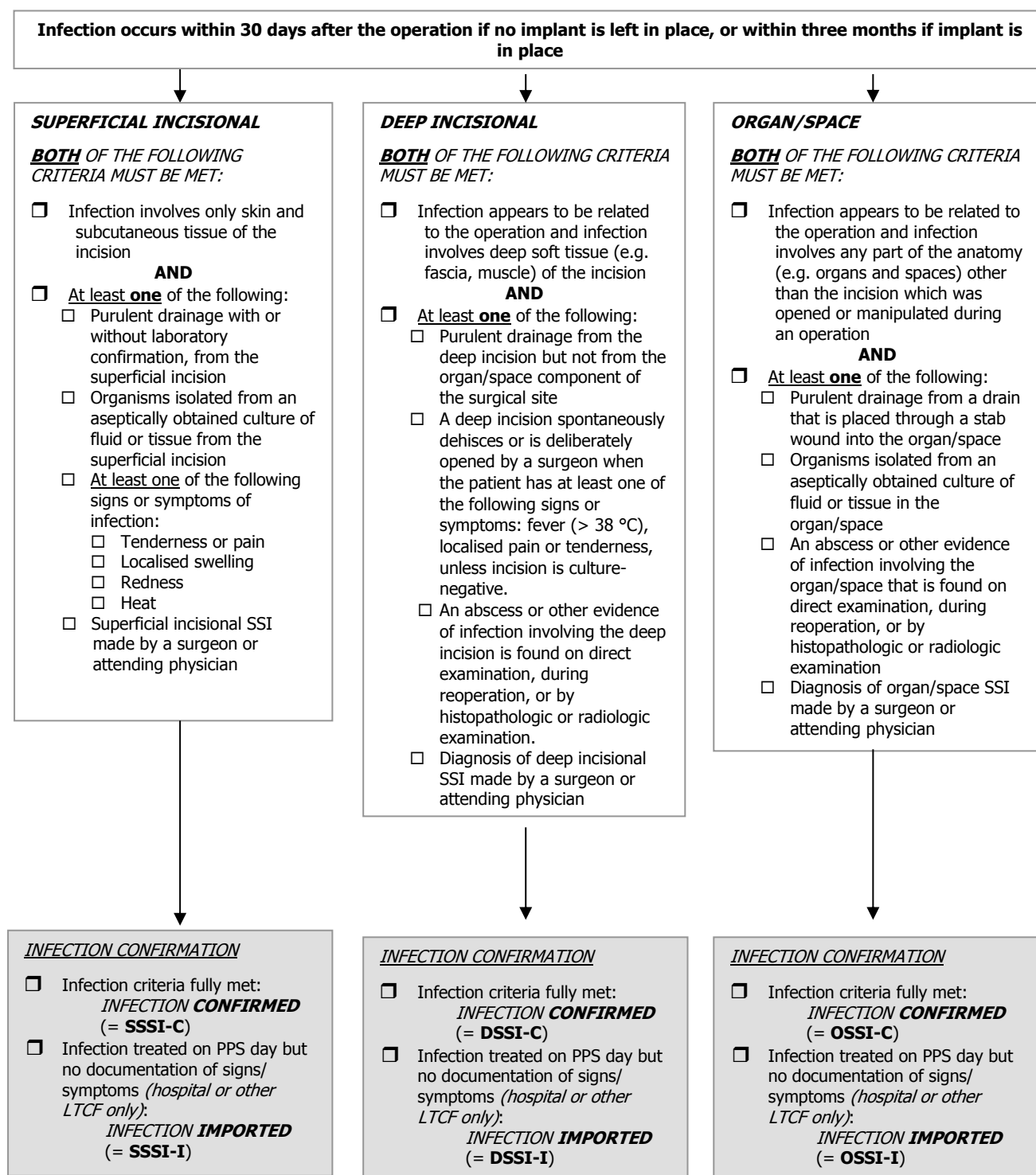
- ☐ Characteristic rash or skin lesions
- AND**
- ☐ Physician diagnosis or lab confirmed fungal pathogen from scraping or biopsy



INFECTION CONFIRMATION

- ☐ Infection criteria fully met: **INFECTION CONFIRMED** (= **FUNG-C**)
- ☐ Infection treated on PPS day but no documentation of signs/symptoms: **INFECTION IMPORTED** (hospital or other LTCF only) (= **FUNG-I**)

SURGICAL SITE INFECTIONS



NOTE:

If the infection matches one of the Surgical Site Infection (SSI) definitions, please give priority to the SSI. Do not apply another case definition for the same infection.

EYE, EAR, NOSE AND MOUTH INFECTIONS

CONJUNCTIVITIS

ONE OF THE FOLLOWING (1, 2 or 3) CRITERIA MUST BE MET:

- ☐ 1 Pus appearing from one or both eyes, present for at least 24 hours
- ☐ 2 New or increased conjunctival erythema, with or without itching
- ☐ 3 New or increased conjunctival pain, present for at least 24 hours

Symptoms must not be due to allergy or trauma to the conjunctiva

INFECTION CONFIRMATION

- ☐ Infection criteria fully met: **INFECTION CONFIRMED**
(= **CONJ-C**)
- ☐ Infection treated on PPS day but no documentation of signs/symptoms: **INFECTION IMPORTED**
(hospital or other LTCF only) (= **CONJ-I**)

EAR

ONE OF THE FOLLOWING (1 or 2) CRITERIA MUST BE MET:

- ☐ 1 Diagnosis by a physician of any ear infection
- ☐ 2 New drainage from one or both ears
(non-purulent drainage must be accompanied by additional symptoms, such as ear pain or redness)

INFECTION CONFIRMATION

- ☐ Infection criteria fully met: **INFECTION CONFIRMED**
(= **EAR-C**)
- ☐ Infection treated on PPS day but no documentation of signs/symptoms: **INFECTION IMPORTED**
(hospital or other LTCF only) (= **EAR-I**)

SINUSITIS

- ☐ Sinusitis diagnosed by physician

INFECTION CONFIRMATION

- ☐ Infection criteria fully met: **INFECTION CONFIRMED**
(= **SINU-C**)
- ☐ Infection treated on PPS day but no documentation of signs/symptoms: **INFECTION IMPORTED**
(hospital or other LTCF only) (= **SINU-I**)

ORAL CANDIDIASIS

BOTH OF THE FOLLOWING CRITERIA MUST BE MET:

- ☐ Presence of raised white patches on inflamed mucosa OR plaques on oral mucosa
- AND**
- ☐ Diagnosed by a dentist or a physician

INFECTION CONFIRMATION

- ☐ Infection criteria fully met: **INFECTION CONFIRMED**
(= **ORAL-C**)
- ☐ Infection treated on PPS day but no documentation of signs/symptoms: **INFECTION IMPORTED**
(hospital or other LTCF only) (= **ORAL-I**)

GASTROINTESTINAL INFECTIONS

GASTROENTERITIS

ONE OF FOLLOWING (1, 2 or 3) CRITERIA MUST BE MET:

- ☐ 1 Diarrhoea, three or more liquid or watery stools above normal baseline for the resident in 24-hr period
 - ☐ 2 Vomiting, two or more episodes in 24-hr period
 - ☐ 3 **Both** of the following:
 - ☐ Positive stool specimen for bacterial or viral pathogen
- AND**
- ☐ At least one of the following: nausea, vomiting, abdominal pain or tenderness, diarrhoea

INFECTION CONFIRMATION

- ☐ Infection criteria fully met: **INFECTION CONFIRMED**
(= **GE-C**)
- ☐ Infection treated on PPS day but no documentation of signs/symptoms: **INFECTION IMPORTED**
(hospital or other LTCF only) (= **GE-I**)

CLOSTRIDIUM DIFFICILE INFECTION

ONE OF FOLLOWING (1, 2 or 3) CRITERIA MUST BE MET:

- ☐ 1 Diarrhoeal stools or toxic megacolon **AND** a positive laboratory assay for *C. difficile* toxin A and/or B in stools or a toxin-producing *C. difficile* organism detected in stool via culture or other means e.g. a positive PCR result
- ☐ 2 Pseudomembranous colitis revealed by lower gastrointestinal endoscopy
- ☐ 3 Colonic histopathology characteristic of *C. difficile* infection (with or without diarrhoea) on a specimen obtained during endoscopy or colectomy

INFECTION CONFIRMATION

- ☐ Infection criteria fully met: **INFECTION CONFIRMED**
(= **CDI-C**)
- ☐ Infection treated on PPS day but no documentation of signs/symptoms: **INFECTION IMPORTED**
(hospital or other LTCF only) (= **CDI-I**)

BLOODSTREAM INFECTIONS

ONE OF THE FOLLOWING (1 or 2) CRITERIA MUST BE MET:

- ☐ 1 Two or more blood cultures positive for the same organism
- ☐ 2 A single blood culture documented with an organism thought not to be a contaminant

AND

At least **one** of the following:

- ☐ Fever (for definition see top of page 1)
- ☐ New hypothermia (<34.5° C, or does not register on the thermometer being used)
- ☐ A drop in systolic blood pressure of >30 mm Hg from baseline
- ☐ Worsening mental or functional status

INFECTION CONFIRMATION

- ☐ Infection criteria fully met: **INFECTION CONFIRMED**
(= **BSI-C**)
- ☐ Infection treated on PPS day but no documentation of signs/symptoms: **INFECTION IMPORTED**
(hospital or other LTCF only) (= **BSI-I**)

UNEXPLAINED FEVER

- ☐ The resident must have documentation in the medical record of fever (for definition see top of page 1) on two or more occasions at least 12 hours apart in any 3-day period, with no known infectious or non-infectious cause

INFECTION CONFIRMATION

- ☐ Infection criteria fully met: **INFECTION CONFIRMED**
(= **FUO-C**)
- ☐ Infection treated on PPS day but no documentation of signs/symptoms: **INFECTION IMPORTED**
(hospital or other LTCF only) (= **FUO-I**)

OTHER INFECTION(S)

Please specify (= **OTHER**)