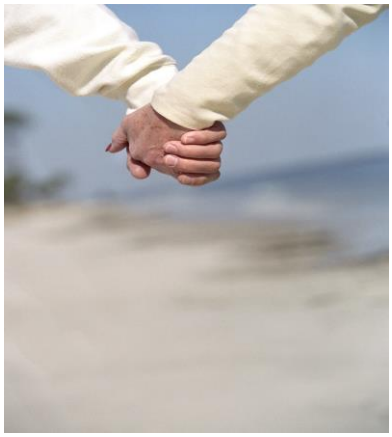
Healthcare-Associated Infections & Antimicrobial Use in Long-Term Care Facilities (HALT)

May 2016

Survey Protocol – Version 1.0

(Adapted from the final © ECDC Protocol Version 2.0 – February 2016)



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LIST OF ACRONYMS

AB	Antibiotic
ADL	Activities of Daily Living
CDI	*Clostridium difficile* infection
COPD	Chronic Obstructive Pulmonary Disease
CP	Coordinating Physician
CVC	Central Vascular Catheter
ECDC	European Centre for Disease Prevention and Control
ERCP	Endoscopic Retrograde Cholangio-Pancreatography
FAQ	Frequently-Asked Questions
FBC	Full Blood Count
GP	General Practitioner
HALT	Healthcare-Associated Infections in Long-Term Care Facilities
HCAI	Healthcare-Associated Infection
HPSC	Health Protection Surveillance Centre
HSE	Health Service Executive
ICC	Infection Control Committee
IM	Intramuscular Route
IPC	Infection Prevention & Control
IV	Intravenous Route
LTCF	Long-Term Care Facility
MRSA	Meticillin Resistant *Staphylococcus aureus*
NA	Microbiology result not yet available or microbiology result is missing
NOEXA	No specimen was sent to microbiology
NONID	Microorganisms isolated from the specimen, not identified and reported mixed growth
OGD	Oesophago-Gastro-Duodenoscopy
PEG	Percutaneous Endoscopic Gastrostomy
PICC	Peripherally Inserted Central Catheter
PO	Oral or Enteral Route
PPE	Personal Protective Equipment
PVC	Peripheral Venous Cannula
RCPI	Royal College of Physicians of Ireland
SC	Subcutaneous Route
STERI	Microorganisms not isolated from specimen or sterile culture
TB	Tuberculosis
UTI	Urinary Tract Infection
WCC	White Cell Count
WIV-ISP	Scientific Institute of Public Health, Brussels, Belgium

INTRODUCTION

Thank you for participating in the fourth national point prevalence survey of healthcare-associated infections & antimicrobial use to be carried out by Irish long-term care facilities (LTCF) during May 2016. This study is also known as the HALT survey. Irish LTCFs first participated in a European HALT survey in 2010. In 2011, Ireland repeated a national HALT survey and the third HALT survey in Ireland (second European HALT survey) took place in 2013. From May 2016, the HALT survey will be repeated across Europe. HALT is coordinated by the European Centre for Disease Prevention & Control (ECDC) and the Scientific Institute of Public Health (WIV-ISP), Brussels, Belgium. The HALT survey in Ireland is coordinated by the Health Protection Surveillance Centre (HPSC) and is overseen by a multi-disciplinary steering group convened in January 2016, under the auspices of the Royal College of Physicians of Ireland (RCPI) Clinical Advisory Group on Healthcare-Associated Infections (HCAI) & Antimicrobial Resistance **(Appendix A)**. Representatives from each participating LTCF are required to attend one of a series of regional HALT training days, scheduled to take place across Ireland before the study takes place in May 2016.

ADDITIONAL INFORMATION

All documentation related to HALT in Ireland may be found on the HPSC website at the following link:
http://www.hpsc.ie/hpsc/A-Z/MicrobiologyAntimicrobialResistance/InfectionControlandHAI/Surveillance/HCAIinlongtermcarefacilities/

1. Results of previous HALT surveys: 2010, 2011 & 2013
2. HALT 2016 Protocol
3. HALT 2016 Data collection forms/questionnaires
4. HALT 2016 Resident & staff information leaflets
5. HALT 2016 Data entry software
6. HALT 2016 Frequently-Asked Questions (FAQ)
7. HALT 2016 Training materials

If you need additional information before, during or after the HALT survey, please contact the HPSC via e-mail at: HALT@hpsc.ie or telephone 01-8765300.

1. THE HALT POINT PREVALENCE SURVEY: PLANNING

1.1. When should the HALT survey be carried out?

- The survey should be carried out in your LTCF during **May 2016**
- The HALT survey is a point prevalence survey: This means that all the data should be collected in a single day on each ward (e.g., all data for Unit A should be collected in the same working day). Completion of the full survey over one day may not be practical for larger LTCFs. Therefore, make a plan to divide the LTCF into separate wards/units and collect the data over two or three consecutive days. **It is very important that the data on a particular ward/unit is collected on the same day**
- Each facility selects the day(s) to undertake the survey. However, it is important to factor in that the **deadline for submitting the results to HPSC is 31st May**, and time is required to input results into the software after completing the data collection

1.2 How should we prepare for HALT in our facility?

- Designate a staff member, who will be in charge of the HALT survey locally and act as a nominated contact person for any communications with the national coordinating centre at HPSC
- The HALT contact person for each LTCF should attend one of the HALT training days and be the lead data collector for their LTCF
- If a person (other than the HALT contact person) attends the training day, it is critical that this trained person is the lead data collector for their LTCF. The HALT contact person should plan the date(s) on which the HALT survey will be performed in their LTCF, ensuring that the staff member who has attended the training is present
- Before the HALT survey date(s) in your LTCF, you will need to draw up a list of all of the wards/units in your LTCF and **assign a letter code to each ward/unit**. For example, St. Patrick's ward may be assigned the letter 'A', St Mary's ward may be assigned the letter 'B' etc. This letter code must stay with the particular ward/unit during HALT data collection
- After the HALT training day, organise a local **information session(s) for your colleagues** and let them know the planned date(s) for performing the HALT survey in your LTCF. Taking into account the potential extra workload on the date(s) of the HALT survey, it may be useful to **involve extra staff** on the day and it's really important to make sure that the HALT data collector(s) have the time specifically allocated to collect the data and don't get distracted with other duties on the day

- To help you prepare your colleagues for HALT 2016, all training day MS PowerPoint presentations can be downloaded from the HPSC website for your local use
- Make sure your colleagues and residents are aware that HALT is taking place in your LTCF and that they understand what is involved, including the benefits to residents and staff in participating. Print out and distribute copies of the resident and staff information leaflets, which are available on the HPSC website
- Make sure you have a printed copy of this HALT 2016 Survey Protocol and sufficient numbers of printed copies of the various HALT questionnaires/data collection forms which you can print from the HPSC website

1.3 Confidentiality & ethical considerations

- Each participating LTCF will be assigned a unique anonymous facility study number by HPSC. If your facility has previously participated in a HALT survey, you will retain the same facility study number
- The HALT survey is an anonymous survey and no resident-identifying information will leave your facility
- The ward list is the only survey document which contains resident names (see Section 2.2). The ward list is for local use only. All the completed ward lists for your LTCF should be retained locally by the HALT local contact person, until the national HALT report has been published. Ward lists must **NOT** be sent back to HPSC. The ward list enables the local HALT contact person to:
    - Assign each resident named on the ward list with an anonymous resident study number. This is made up of two parts: The locally-assigned letter code for the ward/unit and the consecutive number of the resident on the ward list. *For example, J. Juliet is a patient in St Patrick's ward. For the HALT survey the local HALT contact person has assigned St. Patrick's ward with the letter code 'A'. Upon completion of the ward list for ward 'A', J Juliet is the fifth consecutive patient on the ward. Therefore, J Juliet's anonymous resident study number is A05*
    - Go back at a later date, if necessary, to link a resident to their anonymous resident study number. *For example, if upon return of HALT data from a LTCF, the national HALT coordinator at HPSC notices there is some missing data associated with the anonymous resident study number (A05), the HPSC will then contact the local HALT contact person, who can then go back to the locally-retained completed ward list to identify the resident in question as J Juliet and clarify the missing data*
- For each eligible resident meeting the criteria for completion of a resident questionnaire (see Section 1.4), the anonymous resident study number is used. The resident's name is not written on the resident questionnaire and is not provided to HPSC

- In Ireland, the HALT survey is an anonymous resident safety survey, which forms part of a high-level audit cycle and enables participating facilities to review their own performance. HSE has confirmed that ethical approval is not required for a LTCF to participate in the HALT survey

1.4 What information will be collected during the HALT survey?

- All of the HALT 2016 questionnaires/data collection forms should be downloaded, printed off and stapled together locally in advance, from the HALT section of the HPSC website:
    - **Institutional Questionnaire** – One institutional questionnaire to be completed per participating LTCF. Sections A, C, D & E of the institutional questionnaire may be completed ahead of your planned HALT survey date. Sections B & F are completed after all of the other data has been collected in your LTCF. The local HALT coordinator is advised to liaise with their Director of Nursing or General Manager when completing sections A, C, D & E of the institutional questionnaire

    - **Ward List** – One ward list to be completed per ward/unit within your LTCF. The ward list is an important document, for local use only. Completed ward lists will help you to gather the information required for completion of section B of the institutional questionnaire and enables you to assign each resident their anonymous resident study number. Because the ward list contains resident names, it must not leave the LTCF. All data to be returned to HPSC from each participating LTCF is anonymous and no resident-identifying information can be returned. The completed ward lists for your LTCF should be retained locally by the HALT local contact person, until the national HALT report has been published by HPSC

    - **Resident Questionnaire** – One resident questionnaire to be completed for each eligible resident, who on the day of the HALT survey:
        - Is currently prescribed a systemic antimicrobial(s) (either for infection treatment or prevention/prophylaxis) **AND/OR**
        - Has symptoms and/or signs of an active healthcare-associated infection (HCAI) **OR** who has recently had symptoms and/or signs of HCAI and continues to receive antimicrobial therapy for that infection
        - There is space on the same resident questionnaire to record information for a resident who is prescribed an antimicrobial **AND** who has an active HCAI
        - The resident questionnaire contains anonymous information. The resident's name should never be recorded on this form. The resident's anonymous study number should be

recorded on each page of the resident questionnaire. The local HALT contact person can go back to the ward list if they need to link the resident study number back to the resident at a later date (e.g., to clarify a queried infection)

1.5 Which residents should be included in the HALT survey?

1.5.1. Included & excluded residents

A resident should be included in the HALT survey if he or she is:

1. **living full-time*in the LTCF**
   AND
2. **present at 08:00AM on the morning of the HALT survey date for that ward/unit**
   AND
3. **Not discharged from the LTCF at the time of the survey**

*For the purposes of the HALT survey, 'living full-time' simply means that the LTCF is the resident's current place of residence, where overnight accommodation is provided for the resident. The duration of residence/length-of-stay should not be a factor in deciding whether or not the resident lives full-time in the LTCF.

A resident should be excluded from the HALT survey if he or she is:

- Not living full-time in the LTCF
- Living full-time in the LTCF, but not present at 08:00AM on the morning of the HALT survey date for that ward/unit (e.g. absent for holidays or currently admitted overnight to hospital as an inpatient)
- Attending the LTCF day care centre only and not living full-time in the LTCF
- Hospitalised on the HALT survey date for that ward/unit (i.e., admitted overnight to hospital as an inpatient)
- The resident states that he/she does not wish to participate in the HALT survey

Note: residents receiving chronic ambulatory care (i.e., not admitted to hospital overnight as an inpatient on the HALT survey date) on a regular basis (e.g. outpatient haemodialysis, or oncology day ward chemotherapy etc) should NOT be excluded from HALT.

1.5.2 Which residents need a resident questionnaire completed?

Not all eligible residents need a resident questionnaire completed. **A resident questionnaire has to be completed** for each eligible resident who meets the following criteria on the HALT survey date:

Is currently prescribed systemic antimicrobial(s) (either for infection treatment or prophylaxis)
AND/OR
Having signs or symptoms of an active healthcare-associated infection

A resident questionnaire has to be completed for each eligible resident, who is prescribed a **systemic** antimicrobial on the HALT survey date (i.e., a resident who is living full-time in the LTCF, who is present at 08:00AM on the HALT survey date and who has not been discharged from the LTCF at the time of the survey). Based on the results of previous HALT surveys performed in Ireland in 2010, 2011 and 2013, it is estimated that around 10% of all the eligible residents will need to have a resident questionnaire completed.

Systemic antimicrobial means that the drug is given to the patient via the following routes of administration:

1. Oral (PO) or tablet or enteral route
2. Intramuscular (IM) route
3. Intravenous (IV) route
4. Rectal (PR) route
5. Inhaled or nebulised (nebs) or aerosolised route
6. Subcutaneous route

The following types of systemic antimicrobials should be recorded on the resident questionnaire:

- Antibacterials (i.e. drugs used to treat bacterial infections)
- Antifungals (i.e. drugs used to treat fungal infections)
- Antimycobacterials (i.e. drugs used to treat tuberculosis/TB – e.g., rifampicin, isoniazid, pyrazinamide, ethambutol)

<u>The HALT survey is not collecting information on the following drugs:</u>

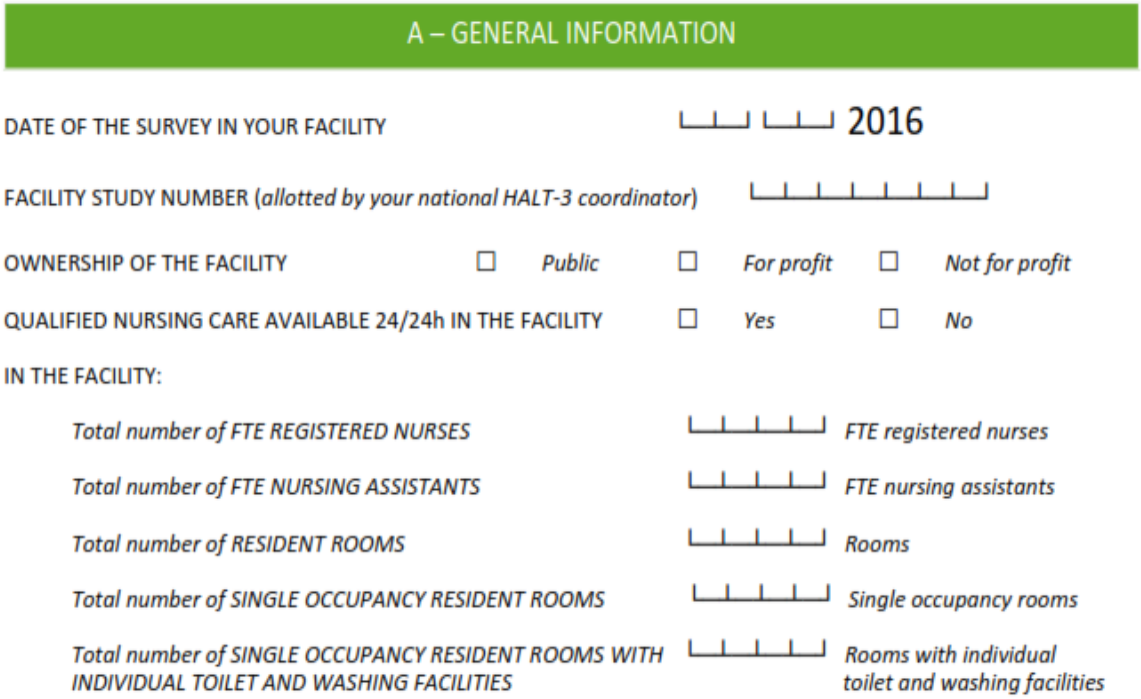
- Antivirals (i.e., drugs used to treat viral infections, such as oseltamivir/Tamiflu or aciclovir)
- Antiseptics
- Antimicrobials given to the patient via the topical route are **NOT** classified as systemic antimicrobials (e.g., creams, lotions, ointments) and are not recorded on the resident questionnaire
- A resident who is receiving an antiviral, antiseptic or topical antimicrobial does not require a resident questionnaire to be completed, **UNLESS** the resident is also prescribed a systemic antimicrobial and/or meets case definition for an active HCAI on the survey date

2.0 THE HALT POINT PREVALENCE SURVEY: QUESTIONNAIRES

2.1 Institutional questionnaire (Appendix B)

- One institutional questionnaire to be completed per participating LTCF. The questionnaire is five pages long and is divided into six sections. Sections A, C, D & E of the institutional questionnaire may be completed ahead of your planned HALT survey date. Sections B & F are completed after all of the other data has been collected in your LTCF
- The local HALT coordinator is advised to liaise with their Director of Nursing or General Manager when completing sections A, C, D & E of the institutional questionnaire

2.1.1 Section A – General information



A – GENERAL INFORMATION

DATE OF THE SURVEY IN YOUR FACILITY ⌊_⌋⌊_⌋ ⌊_⌋⌊_⌋ 2016

FACILITY STUDY NUMBER (*allotted by your national HALT-3 coordinator*) ⌊_⌋⌊_⌋⌊_⌋⌊_⌋⌊_⌋⌊_⌋⌊_⌋

OWNERSHIP OF THE FACILITY ☐ *Public* ☐ *For profit* ☐ *Not for profit*

QUALIFIED NURSING CARE AVAILABLE 24/24h IN THE FACILITY ☐ *Yes* ☐ *No*

IN THE FACILITY:

Total number of FTE REGISTERED NURSES ⌊_⌋⌊_⌋⌊_⌋⌊_⌋ *FTE registered nurses*

Total number of FTE NURSING ASSISTANTS ⌊_⌋⌊_⌋⌊_⌋⌊_⌋ *FTE nursing assistants*

Total number of RESIDENT ROOMS ⌊_⌋⌊_⌋⌊_⌋⌊_⌋ *Rooms*

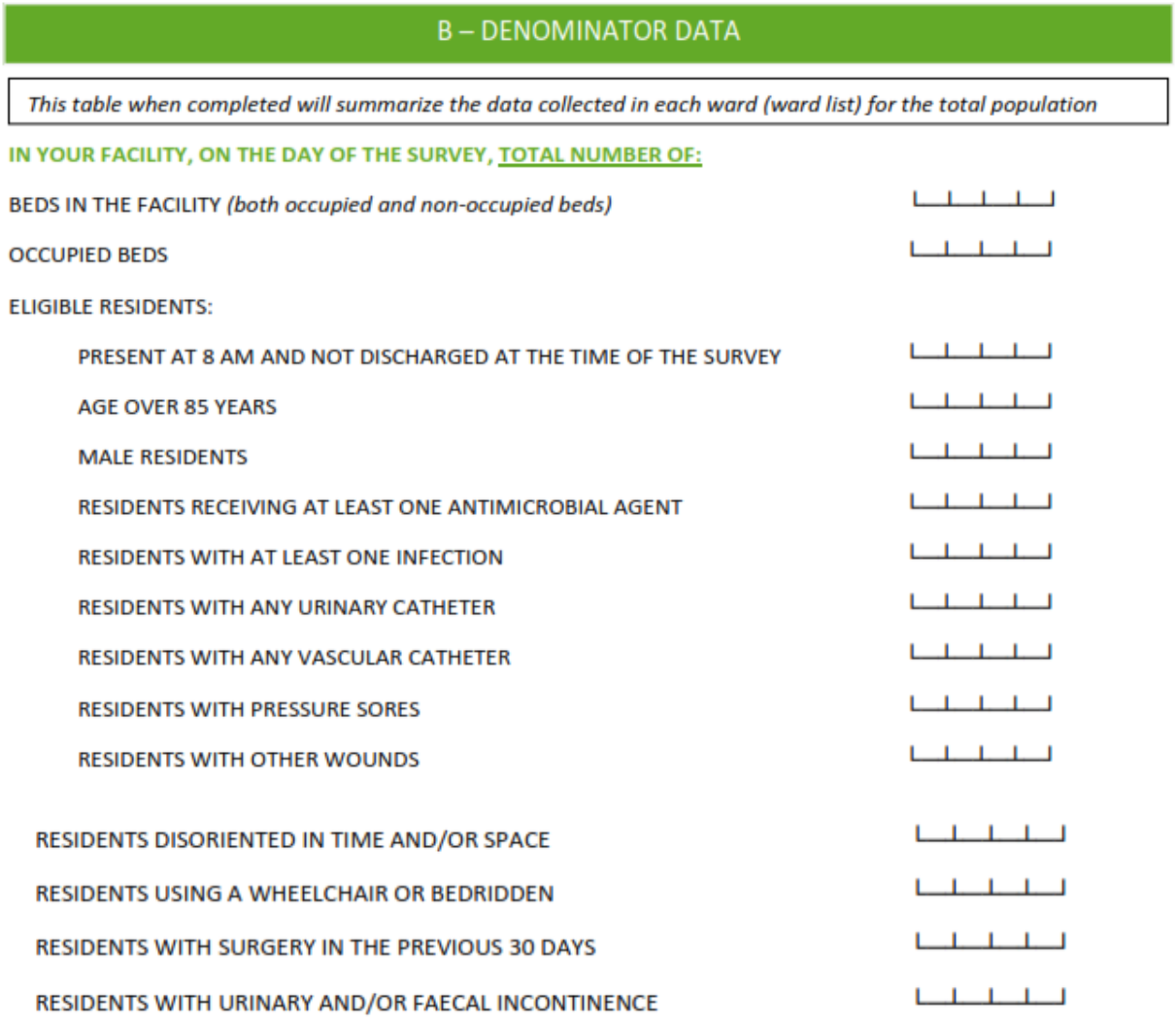
Total number of SINGLE OCCUPANCY RESIDENT ROOMS ⌊_⌋⌊_⌋⌊_⌋⌊_⌋ *Single occupancy rooms*

Total number of SINGLE OCCUPANCY RESIDENT ROOMS WITH INDIVIDUAL TOILET AND WASHING FACILITIES ⌊_⌋⌊_⌋⌊_⌋⌊_⌋ *Rooms with individual toilet and washing facilities*

Section A – General Information **This section may be completed ahead of the HALT survey date for your LTCF**	
Questionnaire Item	**Explanation**
Date of the survey in your facility	Start date of the HALT survey data collection in your LTCF
Facility study number	A unique anonymous facility study number which will be given to you by HPSC. If your facility has previously participated in a HALT survey, you will retain the same facility study number
Ownership of the facility	Tick the box which indicates the most appropriate option for ownership of your facility: ▪ Public = HSE-owned ▪ For profit = Privately-owned ▪ Not for profit = Owned by charitable or voluntary organisation ▪

Qualified nursing care available 24/24h in the facility	Tick appropriate box (yes or no) to indicate whether or not your LTCF always has qualified nurses available on-site
Total number of FTE registered nurses	Total number of full-time equivalent (FTE) or whole-time equivalent (WTE) registered nurses working in the LTCF Includes all registered nursing staff headcount, regardless of whether they are permanent, temporary or agency posts. Do not breakdown the proportion of each employee's clinical versus non-clinical/managerial commitment **Excludes student nurses who are not yet registered by NMBI**
Total number of FTE healthcare assistants or nurse aides or multi-task attendants or carers	Total number of full-time equivalent (FTE) or whole-time equivalent (WTE) healthcare assistants or nurse aides or multi-task attendants or carers working in the LTCF Includes all healthcare assistant/nurse aide/multitask attendant/carer headcount, regardless of whether they are permanent, temporary or agency posts **Excludes students, volunteers or other allied health professionals** (e.g., physiotherapist, dietician, occupational therapist, speech and language therapist)
Total number of resident rooms	Count up the **TOTAL** number of resident bedrooms in the facility, which are available for occupancy by a resident. If beds are closed and not available for occupancy, they should not be counted. This includes the number of single-occupancy resident bedrooms, each of which is counted as one room **PLUS** the number of multiple-occupancy resident bedrooms/bays (e.g., a bedroom or bay shared by two or more residents is also counted as one room)
Total number of single occupancy resident rooms	Count up the number of single-occupancy resident bedrooms, which are available for occupancy by one resident. If rooms are closed and not available for occupancy, they should not be counted
Total number of single occupancy resident rooms with individual toilet and washing facilities	Total number of single-occupancy resident bedrooms with an *en suite* bathroom (i.e., separate toilet and washing facilities for the use of one resident) Do not include a single bedroom with commode in this category

2.1.2 Section B – Denominator data



B – DENOMINATOR DATA

This table when completed will summarize the data collected in each ward (ward list) for the total population

IN YOUR FACILITY, ON THE DAY OF THE SURVEY, TOTAL NUMBER OF:

BEDS IN THE FACILITY *(both occupied and non-occupied beds)* ⌊_⌊_⌊_⌊_⌋

OCCUPIED BEDS ⌊_⌊_⌊_⌊_⌋

ELIGIBLE RESIDENTS:

- PRESENT AT 8 AM AND NOT DISCHARGED AT THE TIME OF THE SURVEY ⌊_⌊_⌊_⌊_⌋
- AGE OVER 85 YEARS ⌊_⌊_⌊_⌊_⌋
- MALE RESIDENTS ⌊_⌊_⌊_⌊_⌋
- RESIDENTS RECEIVING AT LEAST ONE ANTIMICROBIAL AGENT ⌊_⌊_⌊_⌊_⌋
- RESIDENTS WITH AT LEAST ONE INFECTION ⌊_⌊_⌊_⌊_⌋
- RESIDENTS WITH ANY URINARY CATHETER ⌊_⌊_⌊_⌊_⌋
- RESIDENTS WITH ANY VASCULAR CATHETER ⌊_⌊_⌊_⌊_⌋
- RESIDENTS WITH PRESSURE SORES ⌊_⌊_⌊_⌊_⌋
- RESIDENTS WITH OTHER WOUNDS ⌊_⌊_⌊_⌊_⌋

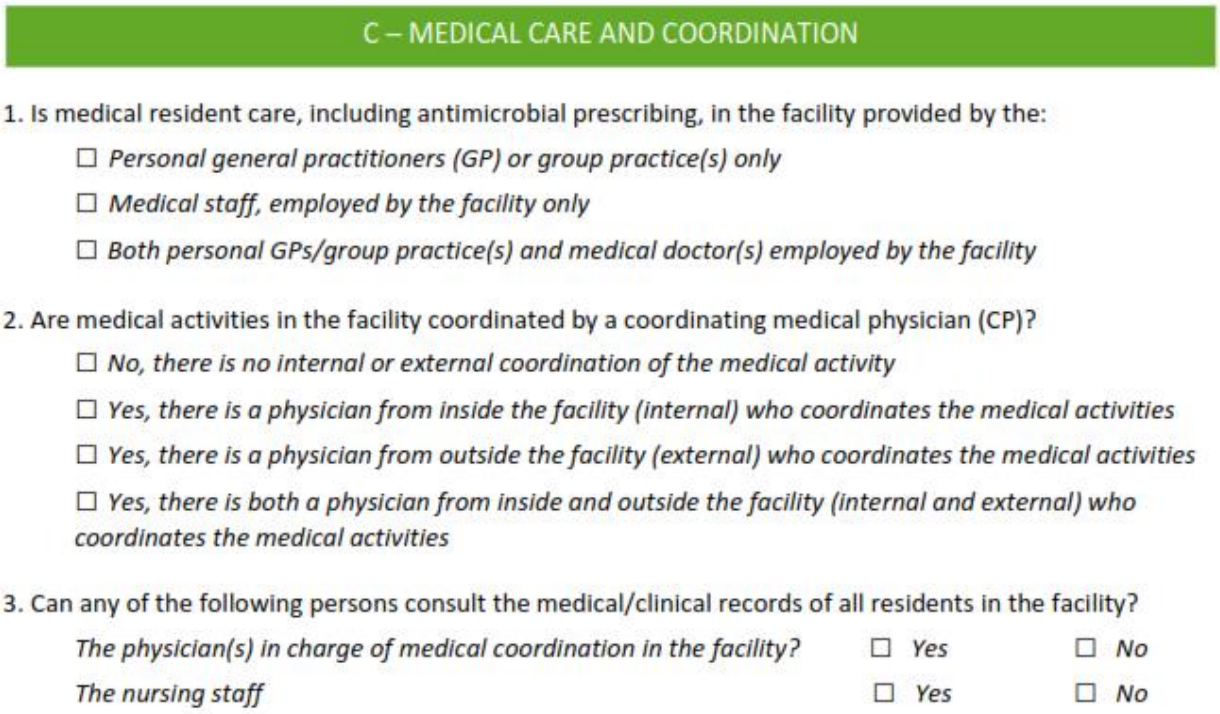
- RESIDENTS DISORIENTED IN TIME AND/OR SPACE ⌊_⌊_⌊_⌊_⌋
- RESIDENTS USING A WHEELCHAIR OR BEDRIDDEN ⌊_⌊_⌊_⌊_⌋
- RESIDENTS WITH SURGERY IN THE PREVIOUS 30 DAYS ⌊_⌊_⌊_⌊_⌋
- RESIDENTS WITH URINARY AND/OR FAECAL INCONTINENCE ⌊_⌊_⌊_⌊_⌋

Section B – Denominator data **This section can only be completed after all of the HALT data has been collected in your LTCF. Gather each of the completed ward lists and add up the data recorded from each ward list to complete this section**	
Questionnaire Item	**Explanation**
Beds in the facility **(both occupied and non-occupied beds)**	This is calculated by adding the total number of entries in Column 1 'Room & bed number' from each completed ward list
Occupied beds	This is calculated by adding the total number of residents listed in Column 2 'Resident name' from each completed ward list This includes beds that are normally occupied by a resident(s) who is absent because they are currently admitted to hospital or are on leave or holidays Where a couple shares a double bed – count this as two separate beds

Eligible residents, present at 08:00AM in the facility and not discharged at the time of the survey	This is calculated by adding the total number of **X** marked in Column 4 'Present at 8AM and not discharged at time of PPS' from each completed ward list
Age over 85 years	This is calculated by adding the total number of eligible residents older than 85 years **X** marked in Column 5 'Age over 85 years' from each completed ward list
Male residents	This is calculated by adding the total number of eligible male residents **X** marked in Column 6 'Male resident' from each completed ward list
Residents receiving at least one antimicrobial agent –	This is calculated by adding the total number of eligible residents prescribed systemic antimicrobial(s) **X** marked in Column 7 'Antimicrobial agent' from each completed ward list Make sure that residents prescribed only topical agents, antivirals and antiseptics are not recorded in this column
Residents with at least one infection	This is calculated by adding the total number of eligible residents who have at least one infection confirmed on the HALT survey date where an **X** is marked in Column 8b 'Infection matching a case definition' from each completed ward list
Residents with any urinary catheter	This is calculated by adding the total number of eligible residents with a urinary catheter **X** marked in Column 9 'Urinary catheter' from each completed ward list A urinary catheter is any tube system placed in the body to drain and collect urine from the bladder (e.g., indwelling urethral catheter, suprapubic catheter) Condom catheters are not included, because they are not in the body. Intermittent catheterisation is not included
Residents with any vascular catheter	This is calculated by adding the total number of eligible residents with a vascular catheter **X** marked in Column 10 'Vascular catheter' from each completed ward list A vascular catheter is a tube system placed in the body to access the vascular system, such as a peripheral venous cannula (PVC), peripherally inserted central catheter (PICC), midline or central vascular catheter (e.g. Hickman, permcath for dialysis, portacath or temporary CVC)
Residents with pressure sores	This is calculated by adding the total number of eligible residents with a pressure sore **X** marked in Column 11a 'Pressure sore' from each completed ward list All grades of pressure sores should be included, even the lowest grade, characterised by discolouration of intact skin not affected by light finger pressure: non-blanching erythema
Residents with other wounds	This is calculated by adding the total number of eligible residents with a wound other than a pressure sore **X** marked in Column 11b 'Other wound' from each completed ward list This category includes residents with: leg ulcers, surgical wounds, traumatic wounds, insertion sites for percutaneous endoscopic gastrostomy (PEG) tubes, suprapubic catheters, peritoneal catheters, tracheostomy tubes, colostomy, ileostomy and urostomy sites

Residents disoriented in time and/or space	This is calculated by adding the total number of eligible residents who suffer from periods of confusion, especially for time, place or recognition of places or people they know who are **X** marked in Column 12 'Disorientation in time and/or space' from each completed ward list
Residents using a wheelchair or bedridden	This is calculated by adding the total number of eligible residents who need a wheelchair for mobility or who are bedridden, who are **X** marked in Column 13 'Wheelchair bound or bedridden' from each completed ward list
Residents with surgery in the previous 30 days	This is calculated by adding the total number of eligible residents who have undergone a surgical procedure in the 30 days prior to the HALT survey date, who are **X** marked in Column 14 'Surgery in the previous 30 days' from each completed ward list Surgery is a procedure that takes place in an operating theatre or an interventional procedure room (radiology, cardiology, endoscopy suite), where a surgeon makes at least one incision through skin or mucous membranes, including laparoscopic surgery and closes the incision before the patient leaves the operating theatre Percutaneous procedures, such as insertion of PEG tubes or coronary angiography and endoscopic procedures such as OGD, colonoscopy, bronchoscopy and ERCP are **NOT** counted as surgical procedures
Residents with urinary and/or faecal incontinence	This is calculated by adding the total number of eligible residents who suffer from urinary and or faecal incontinence, who are **X** marked in Column 15 'Urinary and/or faecal incontinence' from each completed ward list Incontinence is defined as a lack of control of the sphincter muscle of the bowel or bladder, resulting in uncontrolled loss of faeces or urine, necessitating the use of diapers/nappies in the 24 hours prior to the HALT survey date Note that residents with a urinary catheter *in situ* are **NOT** counted as being incontinent

2.1.3 Section C – Medical care & coordination



C – MEDICAL CARE AND COORDINATION

1. Is medical resident care, including antimicrobial prescribing, in the facility provided by the:

☐ *Personal general practitioners (GP) or group practice(s) only*

☐ *Medical staff, employed by the facility only*

☐ *Both personal GPs/group practice(s) and medical doctor(s) employed by the facility*

2. Are medical activities in the facility coordinated by a coordinating medical physician (CP)?

☐ *No, there is no internal or external coordination of the medical activity*

☐ *Yes, there is a physician from inside the facility (internal) who coordinates the medical activities*

☐ *Yes, there is a physician from outside the facility (external) who coordinates the medical activities*

☐ *Yes, there is both a physician from inside and outside the facility (internal and external) who coordinates the medical activities*

3. Can any of the following persons consult the medical/clinical records of all residents in the facility?

The physician(s) in charge of medical coordination in the facility? ☐ *Yes* ☐ *No*

The nursing staff ☐ *Yes* ☐ *No*

Section C – Medical care & coordination **This section may be completed ahead of the HALT survey date for your LTCF**	
Questionnaire Item	**Explanation**
C1 – Is medical resident care, including antimicrobial prescribing, in the facility provided by the...	Tick the box which most appropriately describes how medical care, including antimicrobial prescribing is delivered to residents in your LTCF
C2 – Are medical activities in the facility coordinated by a coordinating medical physician (CP)?	Tick the box which most appropriately describes how medical activities are coordinated for the residents in your LTCF A coordinating physician (CP) is a medical doctor who is in charge of coordinating medical activities and the standardisation of practices/policies for residents in the LTCF Medical activities are defined as medical treatment, diagnosis and follow-up of residents' health problems
C3 – Can any of the following persons consult the medical/clinical records of all residents in the facility?	Tick the box which most appropriately describes the level of access to all of the residents' clinical records/medical information that the nursing staff and coordinating physician have Yes = has access to all clinical records No = does not have access to all clinical records

2.1.4 Section D – Infection control practice

D – INFECTION CONTROL PRACTICE

1. Are there persons with training in infection control/prevention available to the staff of the facility?

☐ *Yes* ☐ *No*

2. If a person with training in infection control/prevention is available, is this person:

☐ *A nurse* ☐ *A doctor* ☐ *There is both a nurse and a doctor*

Is this/are these person(s):

☐ *Working in the facility (internal)*

☐ *Not working in the facility (external)*

☐ *There is both an internal and an external person*

3. In the facility, is/are there:
(Please complete this question even if there is no person with training in infection control/prevention available in the facility)

☐ *Infection prevention and control training of the nursing and paramedical staff*

☐ *Appropriate training of general practitioners and medical staff in infection prevention and control*

☐ *Development of care protocols*

☐ *Registration of residents colonized/infected with multi-resistant microorganisms*

☐ *Designation of a person responsible for reporting and management of outbreaks*

☐ *Feedback on surveillance results to the nursing/medical staff of the facility*

☐ *Supervision of disinfection and sterilization of medical and care material*

☐ *Decisions on isolation & additional precautions for residents colonized with resistant microorganisms*

☐ *Offer of annual immunisation for flu to all residents*

☐ *Organization, control, feedback on hand hygiene in the facility on a regular basis*

☐ *Organization, control, feedback of a process surveillance/audit of infection policies and procedures (on regular basis)*

☐ *None of the above*

4. In the facility, is there an infection control committee (internal or external)? ☐ *Yes* ☐ *No*

5. How many infection control committee meetings were organized in the previous year?

Total number of meetings last year? ⌊_⌊_⌊_⌋ *meetings previous year*

6. Can the facility ask for help and expertise from an external infection control (IC) team on a formal basis (e.g. IC team from a local hospital)?

☐ *Yes* ☐ *No*

7. In the facility, is a written protocol available for:

- *the management of MRSA and/or other multidrug resistant microorganisms* ☐ *Yes* ☐ *No*
- *hand hygiene* ☐ *Yes* ☐ *No*
- *the management of urinary catheters* ☐ *Yes* ☐ *No*
- *the management of venous catheters/lines* ☐ *Yes* ☐ *No*
- *the management of enteral feeding* ☐ *Yes* ☐ *No*

8. Is a surveillance programme of healthcare-associated infections in place in the facility? *(annual summary report of number of urinary tract infections, respiratory tract infections, etc…)*

☐ *Yes* ☐ *No*

9. In the facility, which of following products are available for hand hygiene?

- *Alcohol rub solution* ☐ *Yes* ☐ *No*
- *Wipes (alcoholic)* ☐ *Yes* ☐ *No*
- *Liquid soap (antiseptic/ other)* ☐ *Yes* ☐ *No*
- *Bar soap in clinical areas* ☐ *Yes* ☐ *No*

10. Which hand hygiene method is most frequently used in your facility <u>when hands are not soiled</u> (only **<u>one answer</u>** is possible)?

☐ *Hand disinfection with an alcohol solution*

☐ *Hand washing with water and a non antiseptic soap*

☐ *Hand washing with water and an antiseptic soap*

11. How many litres of hand alcohol were used last year?

Total annual consumption in litres ⌊_⌊_⌊_⌋ *Litres last year*

12. Last year, was a hand hygiene training session organized for care professionals of the facility?

☐ *Yes* ☐ *No*

13. How many hand hygiene opportunities were there observed in your facility last year?

Number of observed opportunities ⌊_⌊_⌊_⌊_⌊_⌋ *Opportunities last year*

Section D – Infection control practice **This section may be completed <u>ahead</u> of the HALT survey date for your LTCF**	
Questionnaire Item	**Explanation**
D1 – Are there persons with training in infection control/prevention available to the staff of the facility?	Tick the appropriate box 'yes' or 'no' A person with specific IPC training may be <u>a registered nurse or doctor, who may or may not work full-time on IPC activities in the LTCF</u>. IPC activities may involve provision of advice on prevention of HCAI spread, by appropriate isolation of infectious patients, provision of training for staff on IPC practices, collection, analysis and of infection surveillance data <u>When answering this question, an infection prevention and control link nurse is **not** counted as being an infection prevention and control nurse</u>

D2a – If a person with infection control/prevention training is available..? **D2b – Is this/are these person(s)....**	Tick the box that most appropriately describes the training background of the person/people who provide the IPC advice and training to the staff of the facility – nurse, doctor or both a nurse and doctor are available Tick the box that most appropriately describes the usual location at which the IPC person is based – internal, external **or** both internal and external IPC people are available
D3 – Is there a system in place within the facility to ensure....	Tick the box(es) that most accurately describe the IPC systems currently in place within the LTCF
D4 – In the facility, is there an infection control committee (internal or external)?	Tick the appropriate box 'yes' or 'no' An infection control committee (ICC) is a multi-disciplinary committee that meets regularly and keeps written meeting records/minutes to review infection control data, IPC policies and monitor IPC goals and activities. The ICC may be internal or external to the facility (e.g., a joint ICC shared between a group of LTCF) The ICC membership should include the IPC person for the LTCF, the coordinating physician, the LTCF director of nursing or manager and other healthcare professionals, as appropriate
D5 – How many ICC meetings were organised in the previous year?	Write in the number of ICC meetings that took place in 2015
D6 – Can the facility ask for help and expertise from an external infection control team on a formal basis (e.g., local hospital team or public health team)?	Tick the appropriate box 'yes' or 'no'
D7 – In the facility, is a written protocol available for:	Tick the appropriate box 'yes' or 'no' which describes the availability of written protocols for each of the five listed items
D8 – Is a surveillance programme of healthcare associated infections in place in the facility?	Tick the appropriate box 'yes' or 'no' A surveillance programme for a particular HCAI involves systematic counting and recording of the number of infections and the consistent use of definitions to define each infection type
D9 – In the facility, which of the following products is available for hand hygiene?	Tick the appropriate box 'yes' or 'no' for each of the four listed hand hygiene products
D10 – Which hand hygiene method is most frequently used in your facility for hands that are not visibly soiled (only one answer is possible)?	Tick one box only, which most accurately describes the hand hygiene method most frequently used by staff in your LTCF for routine hand hygiene
D11 – How many litres of hand alcohol were used last year?	Find out and write in the total number of litres of alcohol hand rub (gel/foam) that were used by your LTCF in 2015
D12 – Last year, was a hand hygiene training session organised for care professionals of the facility?	Tick the appropriate box 'yes' or 'no' to confirm whether staff hand hygiene training session(s) took place in 2015 A hand hygiene training session is a formal education session for staff working in the LTCF which provides information on hand hygiene indications (when to do it) and technique (how to do it)

D13 – How many hand hygiene opportunities were there observed in your facility last year?	This question should be answered if hand hygiene compliance audits were carried out in your facility in 2015. Provide the number of observed hand hygiene opportunities (or estimate if exact number not available) Do not provide the number of opportunities that were compliant Leave this answer blank if hand hygiene compliance audits were not carried out in your facility in 2015.

2.1.5 Section E – Antimicrobial policy

E – ANTIMICROBIAL POLICY

1. Does the facility use a 'restrictive list' of antimicrobials to be prescribed? *(prescription requiring permission of a designated person or not to be used)*

☐ *Yes* ☐ *No*

2. If a restrictive list exists, what kinds of antibiotics are restricted?

☐ *Carbapenems*

☐ *3rd generation cephalosporins*

☐ *Fluoroquinolones*

☐ *Vancomycin*

☐ *Mupirocin*

☐ *Glycopeptides*

☐ *Broad-spectrum antibiotics*

☐ *Intravenously administered antibiotics*

3. Which of following elements are present in the facility?

☐ *An antimicrobial committee*

☐ *Annual regular training on appropriate antimicrobial prescribing*

☐ *Written guidelines for appropriate antimicrobial use (good practice) in the facility*

☐ *Data available on annual antimicrobial consumption by antimicrobial class*

☐ *A system to remind healthcare workers of the importance of microbiological samples to inform the best antimicrobial choice*

☐ *Local (i.e. for that region/locality or national if small country) antimicrobial resistance profile summaries available in the LTCF or in the GP surgeries who prescribe*

☐ *A system that requires permission from a designated person(s) for prescribing of restricted antimicrobial, not included in local formulary*

☐ *Advice from a pharmacist for antimicrobials not included in the formulary*

☐ *A therapeutic formulary, comprising a list of antibiotics*

☐ *Feedback to the GPs on antimicrobial consumption in the facility*

☐ *None of the above*

4. If written therapeutic guidelines are present in the facility, are they on:

- *Respiratory tract infections?* ☐ *Yes* ☐ *No*
- *Urinary tract infections?* ☐ *Yes* ☐ *No*
- *Wound and soft tissue infections?* ☐ *Yes* ☐ *No*

5. Do you perform a urine dipstick test for detection of urinary tract infections in the facility?

☐ *Routinely* ☐ *Sometimes* ☐ *Never*

6. Is a programme for surveillance of antimicrobial consumption and feedback in place in the facility?

☐ *Yes* ☐ *No*

7. Is a programme for surveillance of resistant microorganisms in place in the facility? (*annual summary report for MRSA, Clostridium difficile, etc)*

☐ *Yes* ☐ *No*

8. How are antimicrobials supplied to your facility? (only **one answer** possible)

☐ Provided by more than one pharmacy

☐ Provided by one pharmacy only

☐ This facility does not acquire antimicrobials directly from pharmacies; antimicrobials are acquired by residents directly (e.g. supplied by the family)

9. How many microbiological laboratories do you work with? (only **one answer** possible)

☐ More than one microbiological laboratory

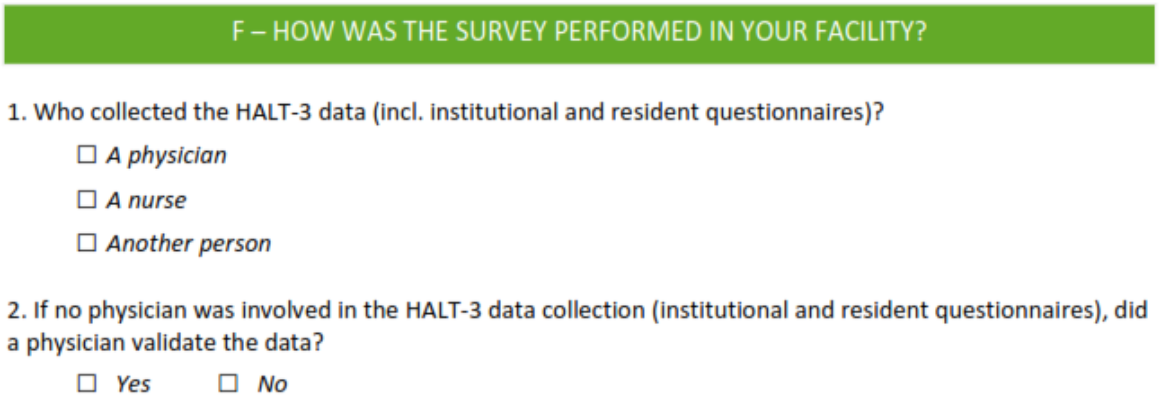
☐ One single microbiological laboratory

☐ This facility does not send microbiological samples to any laboratories; each visiting general practitioner can work with his microbiological laboratory of choice.

Section E – Antimicrobial policy **This section may be completed ahead of the HALT survey date for your LTCF**	
Questionnaire Item	**Explanation**
E1 – Does the facility use a 'restrictive list' of antimicrobials to be prescribed?	Tick the appropriate box 'yes' or 'no' to indicate whether or not your LTCF operates a restricted list for antimicrobial prescribing A restricted list usually describes antimicrobials which may classified either by the class of antimicrobial (e.g., fluoroquinolones, cephalosporins, macrolides) or by the name of the antimicrobial (e.g., ciprofloxacin, levofloxacin, azithromycin, fosfomycin) that should not be empirically prescribed for residents, unless there is a microbiology culture and sensitivity result that indicates that there is no alternative effective antimicrobial available
E2 – If a restrictive list exists, what kinds of antibiotics are restricted?	Answer this question if you answered 'yes' to question E1 ▪ Carbapenems = meropenem, ertapenem, imipenem/cilastatin, doripenem ▪ 3rd generation cephalosporins = cefotaxime, ceftriaxone, ceftazidime ▪ Fluoroquinolones = ciprofloxacin, levofloxacin, olfloxacin, moxifloxacin ▪ Glycopeptides = teicoplanin ▪ Broad-spectrum antimicrobials = co-amoxiclav, piperacillin-tazobactam ▪ Intravenously-administered antibiotics = any antimicrobial administered via the IV route (i.e. through a vascular catheter)
E3 – Which of the following elements are present in the facility?	From the list of 11 antimicrobial stewardship practices, tick the box(es) that most accurately describe those that are currently in place within your LTCF An antimicrobial committee is a multi-disciplinary committee that meets regularly and keeps written meeting records/minutes to review

	antimicrobial prescribing data and consumption, policies and monitor antimicrobial stewardship goals and activities. The antimicrobial committee may be internal or external to the facility (e.g., a joint committee shared between a group of LTCF) The membership should include the antimicrobial prescribers for the LTCF, the coordinating physician, the LTCF director of nursing or manager, a pharmacist, the IPC person and other healthcare professionals as appropriate
E4 – If written therapeutic guidelines are present in the facility, they are on:	Answer this question if you answered 'yes' to question E3 sub-questions 3 or 9 Tick the appropriate box 'yes' or 'no' to indicate which of the three listed infection types has a written antimicrobial treatment guideline available
E5 – Do you perform a urine dipstick for detection of urinary tract infections (UTI) in the facility?	Tick the box that most appropriately answers the question on the use of urine dipsticks (which detect leukocyte esterase and/or nitrites) for diagnosing UTI in your facility 
E6 – Is a programme for surveillance of antimicrobial consumption and feedback in place in the facility?	Tick the appropriate box 'yes' or 'no'
E7 – Is a programme for surveillance of resistant microorganisms in place in the facility? **(e.g., summary report for meticillin resistant *S. aureus* - MRSA)**	Tick the appropriate box 'yes' or 'no' A surveillance programme for a particular drug-resistant organism involves the systematic counting and recording of the number of cases of infection and colonisation due to that resistant organism, with the consistent use of definitions
E8 – How are antimicrobials supplied to your facility? **(only one answer is possible)**	Tick one box only, which most accurately describes the usual way that antimicrobials are supplied to the LTCF
E9 – How many microbiological laboratories do you work with? **(only one answer is possible)**	Tick one box only, which most accurately describes the most usual way your facility uses the local microbiology laboratory. If resident microbiology specimens/samples are normally only sent directly from your facility to the same microbiology laboratory, choose 'one single microbiology laboratory' If the resident's GP visits the LTCF, takes a microbiology sample from the resident and then sends it onto a different microbiology laboratory used by that GP, choose the third option

2.1.6 Section F – How was the survey performed in your facility?


F – HOW WAS THE SURVEY PERFORMED IN YOUR FACILITY?

1. Who collected the HALT-3 data (incl. institutional and resident questionnaires)?

☐ *A physician*

☐ *A nurse*

☐ *Another person*

2. If no physician was involved in the HALT-3 data collection (institutional and resident questionnaires), did a physician validate the data?

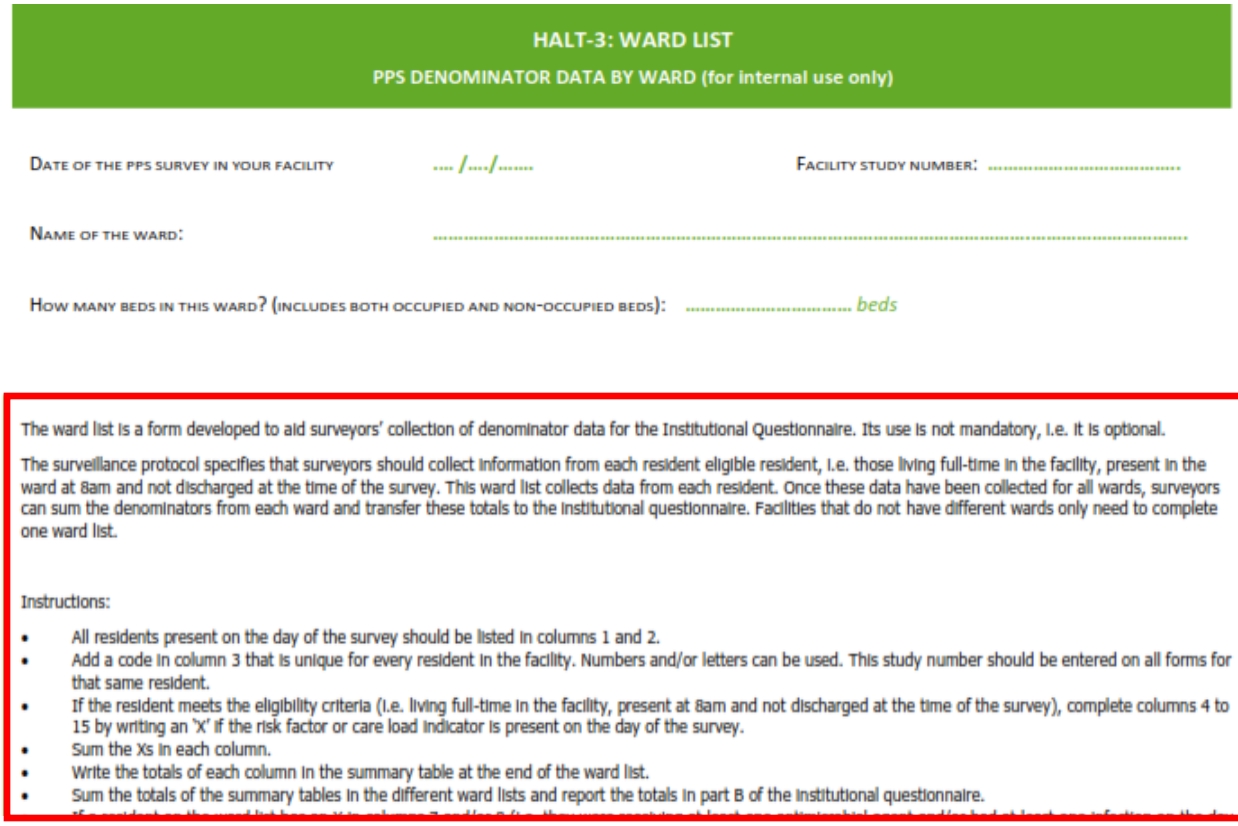
☐ *Yes* ☐ *No*

Section F – How was the survey performed in your facility? **This section can only be completed after all of the HALT data has been collected in your LTCF.**	
Questionnaire Item	**Explanation**
Who collected the HALT data?	Tick the most appropriate box to describe the title of the staff member who collected the data for the HALT survey (the institutional and resident questionnaires)
If no physician was involved in the HALT data collection, did a physician validate the data?	Tick the appropriate box 'yes' or 'no' to indicate whether or not a physician/doctor reviewed the information recorded on the questionnaires

2.2 Ward list (Appendix C)

- Ensure that you have sufficient copies of the four-page ward list printed out and stapled together before you begin data collection. If an individual unit/ward has more than 28 beds, copy an additional ward list page 2 or 3 and staple it to the existing four-page ward list
- One ward list to be completed per ward/unit within your LTCF. The ward list is an important document, for local use only. Completed ward lists will help you to gather the information required for completion of the institutional questionnaire 'Section B – Denominator Data' and enables you to assign each resident their anonymous resident study number. Because the ward list contains resident names, it must not leave the LTCF. All data to be returned to HPSC from each participating LTCF is anonymous and no resident-identifying information can be returned. The completed ward lists for your LTCF should be retained locally by the HALT local contact person until the national HALT report has been published by HPSC
- Prior to the HALT survey date, a list should be drawn up of every ward/unit in your LTCF. Every ward/unit should be assigned a letter code (e.g., St Patrick's = 'A', St Joseph's = 'C') and the unit keeps the same letter code for the duration of the HALT survey. If your LTCF participated in previous HALT surveys, keep the same letter code for each unit across each HALT survey

Page 1 of the ward list provides the instructions for completion:



HALT-3: WARD LIST

PPS DENOMINATOR DATA BY WARD (for internal use only)

DATE OF THE PPS SURVEY IN YOUR FACILITY .... /..../..... FACILITY STUDY NUMBER: .....

NAME OF THE WARD: .....

HOW MANY BEDS IN THIS WARD? (INCLUDES BOTH OCCUPIED AND NON-OCCUPIED BEDS): ..... *beds*

The ward list is a form developed to aid surveyors' collection of denominator data for the Institutional Questionnaire. Its use is not mandatory, i.e. it is optional.

The surveillance protocol specifies that surveyors should collect information from each resident eligible resident, i.e. those living full-time in the facility, present in the ward at 8am and not discharged at the time of the survey. This ward list collects data from each resident. Once these data have been collected for all wards, surveyors can sum the denominators from each ward and transfer these totals to the institutional questionnaire. Facilities that do not have different wards only need to complete one ward list.

Instructions:

- All residents present on the day of the survey should be listed in columns 1 and 2.
- Add a code in column 3 that is unique for every resident in the facility. Numbers and/or letters can be used. This study number should be entered on all forms for that same resident.
- If the resident meets the eligibility criteria (i.e. living full-time in the facility, present at 8am and not discharged at the time of the survey), complete columns 4 to 15 by writing an 'X' if the risk factor or care load indicator is present on the day of the survey.
- Sum the Xs in each column.
- Write the totals of each column in the summary table at the end of the ward list.
- Sum the totals of the summary tables in the different ward lists and report the totals in part B of the institutional questionnaire.

Ward List – Pages 2 - 3	
Questionnaire Item	**Explanation**
Column 1: Room & bed number	List all the resident bedrooms and bed spaces on the ward that are open and available for occupancy as you would normally identify them in your LTCF. For example: Room 1 = single occupancy resident bedroom Room 2a, 2b, 2c etc. = multiple occupancy patient bedroom Do not include rooms or beds that are closed and not available for occupancy
Column 2: Resident name	List all the residents of your LTCF by name, corresponding with their current allocated room and bed number in column 1
Column 3: Study number of the resident	The anonymous resident study number is made up of two parts: The locally-assigned letter code for the ward/unit and the consecutive number of the resident on the ward list (starting with 01, 02....09, 10...etc). *For example, J. Juliet is a patient in St Patrick's ward. For the HALT survey the local HALT contact person has assigned St. Patrick's ward with the letter code 'A'. Upon completion of the ward list for ward 'A', J Juliet is the fifth consecutive patient on the ward. Therefore, J Juliet's anonymous resident study number is A05.*
Column 3: Resident is present at 8AM and is not discharged by the time of the point prevalence survey (PPS)	Mark **X** in the box if this statement is true for the resident in question

If the resident listed on the ward list meets the criteria for an eligible resident: proceed to review and mark X in the box for the true statements in columns 5, 6 and 9 to 15 of the ward list for that resident

Before you can complete columns 7, 8a and 8b in the ward list, you should first review the medication record, medical, nursing and observation records and discuss with the nurse caring for every eligible resident, to identify those who are prescribed systemic antimicrobials and/or have symptoms and/or signs of infection and/or meet the criteria for a HCAI. You should first complete the resident questionnaires for that unit/ward and then go back to the ward list to enter data into columns 7, 8a and 8b. This may be followed by completion of the ward list

1. **living full-time in the LTCF**

   AND

2. **present at 08:00AM on the morning of the HALT survey date for that ward/unit and not discharged by the time of the survey**

Column 5: Age over 85 years	Mark **X** in the box if this statement is true for the resident in question
Column 6: Male resident	Mark **X** in the box if this statement is true for the resident in question
Column 7: Antimicrobial agent ***Can only be completed once the resident's medication record has been checked for systemic antimicrobial prescription***	Mark **X** in the box if this statement is true for the resident in question Refer back to Section 1.5.2 for further description of the systemic routes of administration and antimicrobial types being collected in HALT Make sure that residents prescribed only topical agents, antivirals and antiseptics are not recorded in this column
Column 8a: Signs/symptoms of an infection ***Can only be completed once the resident's medical, nursing and observation records have been checked for evidence of symptoms/signs of infection***	Mark **X** in the box if this statement is true for the resident in question
Column 8b: Infection matching a case definition ***Can only be completed once the completed resident questionnaire has been checked for infection data entered in Part B – Healthcare Associated Infections***	Mark **X** in the box if this statement is true for the resident in question
Column 9: Urinary catheter	Mark **X** in the box if this statement is true for the resident in question A urinary catheter is any tube system placed in the body to drain and collect urine from the bladder (e.g., indwelling urethral catheter, suprapubic catheter) Condom catheters are not included because they are not in the body. Intermittent catheterisation is not included
Column 10: Vascular catheter	Mark **X** in the box if this statement is true for the resident in question A vascular catheter is a tube system placed in the body to access the vascular system, such as a peripheral venous cannula (PVC), peripherally inserted central catheter (PICC), midline or central vascular catheter (e.g. Hickman, permcath for dialysis, portacath or temporary CVC)

Column 11a: Pressure sore	Mark **X** in the box if this statement is true for the resident in question All grades of pressure sores should be included, even the lowest grade, characterised by discolouration of intact skin not affected by light finger pressure: non-blanching erythema
Column 11b: Other wound	Mark **X** in the box if this statement is true for the resident in question This category includes all wound types other than pressure sores. The following residents are classified as having an 'other wound': leg ulcers, surgical wounds, traumatic wounds, insertion sites for percutaneous endoscopic gastrostomy (PEG) tubes, suprapubic catheters, peritoneal catheters, tracheostomy tubes, colostomy, ileostomy and urostomy sites
Column 12: Disorientation in time and/or space	Mark **X** in the box if this statement is true for the resident in question This includes residents who suffer from periods of confusion, especially for time, place or recognition of places or people they know
Column 13: Wheelchair bound or bedridden	Mark **X** in the box if this statement is true for the resident in question
Column 14: Surgery in the previous 30 days **FOR THIS STATEMENT TO BE TRUE, YOU NEED TO KNOW THE DATE OF SURGERY:** **DATE OF HALT SURVEY MINUS DATE OF SURGERY IS ≤30 DAYS**	Mark **X** in the box if this statement is true for the resident in question Surgery is a procedure that takes place in an operating theatre or an interventional procedure room (radiology, cardiology, endoscopy suite), where a surgeon makes at least one incision through skin or mucous membranes, including laparoscopic surgery, and closes the incision before the patient leaves the operating theatre Percutaneous procedures, such as insertion of PEG tubes or coronary angiography and endoscopic procedures such as OGD, colonoscopy, ERCP are **NOT** counted as surgical procedures
Column 15: Urinary and/or faecal incontinence	Mark **X** in the box if this statement is true for the resident in question Incontinence is defined as a lack of control of the sphincter muscle of the bowel or bladder, resulting in uncontrolled loss of faeces or urine, necessitating the use of diapers/nappies in the 24 hours prior to the HALT survey date Note that residents with a urinary catheter *in situ* are **NOT** counted as being incontinent

Once the ward list has been completed for the ward in question, add up the total counts recorded in columns 1, 2 & 4 to 15 and enter the totals for each column in the ward list summary table, which is on the final page (page 4) of the ward list. You should only complete the totals for columns 7, 8a and 8b once you have completed all of the resident questionnaires for that ward/unit.

Column 8a is not included in the summary table. Residents with signs and symptoms that meet all the required criteria confirming an infection definition will be counted in the HALT software

SUMMARY TABLE: TOTAL NUMBERS FOR THIS WARD

Use this table to add the number of 'X' from each column from each ward list from the facility.
Transfer the total number into Part B of the institutional questionnaire, i.e. 'Denominator Data'

On the day of the PPS, TOTAL number of:	Column	TOTAL NUMBERS
Total number of beds on this ward (total bed capacity)	1	
Occupied beds in the ward	2	
Eligible residents, present at 8 AM and not discharged at time of PPS	4	
Age over 85 years	5	
Male residents	6	
Residents receiving at least one antimicrobial agent	7	
Residents with at least one infection	8b	
Residents with any urinary catheter	9	
Residents with any vascular catheter	10	
Residents with pressure sores	11a	
Residents with other wounds	11b	
Residents disorientated in time and/or space	12	
Residents using wheelchair or being bedridden	13	
Residents with surgery in the previous 30 days	14	
Residents with urinary and/or faecal incontinence	15	

Keep this ward list safely in your LTCF until the publication of the national HALT report

HALT-3: WARD LIST 2016-2017 4

- Once all HALT survey data has been collected in your LTCF, gather each of the completed ward lists and add up the data recorded on the summary table of each completed ward. This data is then used to complete the institutional questionnaire 'Section B – Denominator data'. The ward lists do not leave your LTCF, they are not returned to HPSC and they should be retained locally by the local HALT contact person until after the publication of the final national HALT report by HPSC

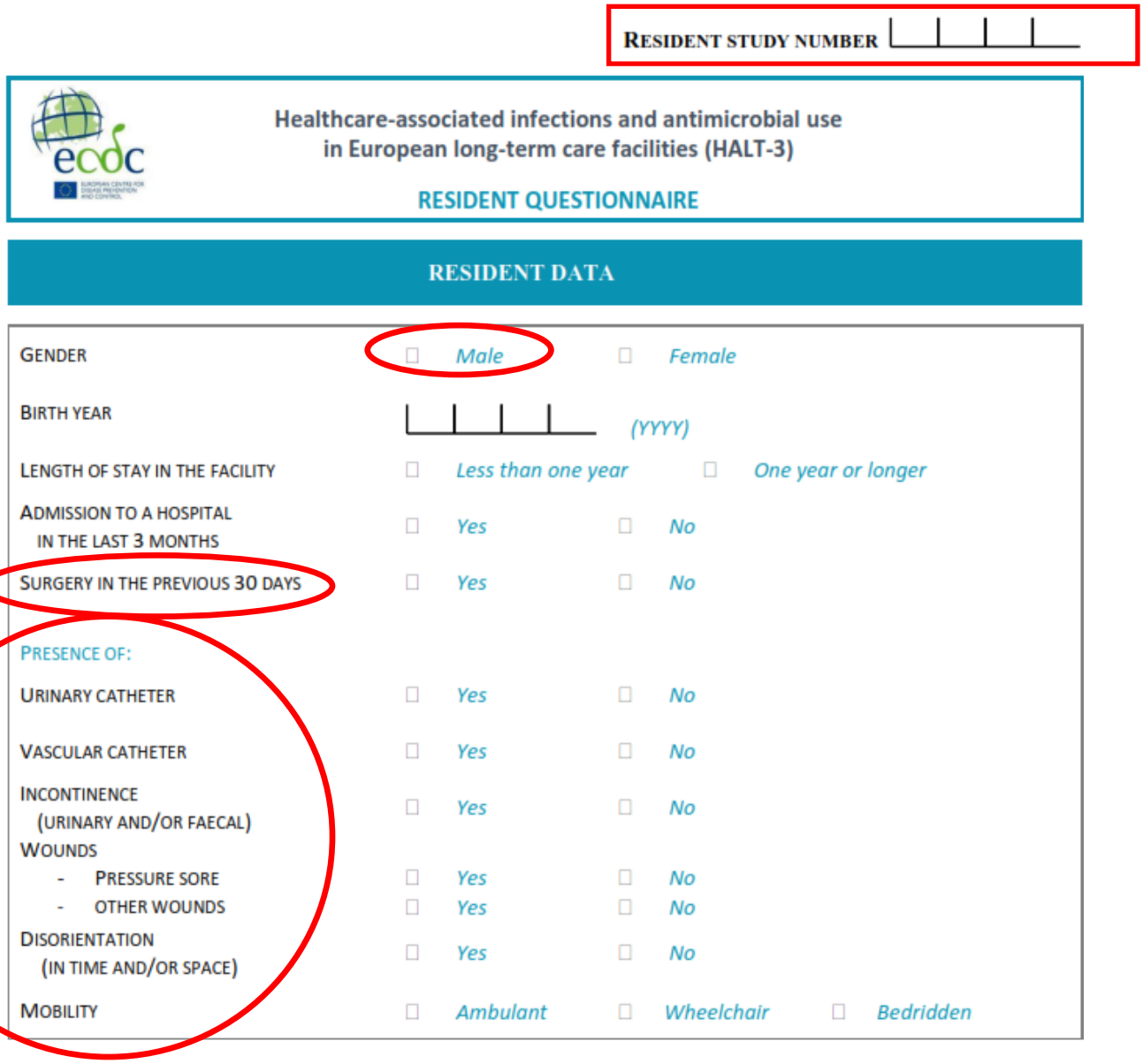
2.3 Resident questionnaire (Appendix D)

- Ensure that you have sufficient paper copies of the resident questionnaires printed out and stapled together, before you begin data collection
- Not all eligible residents need a resident questionnaire completed. **A resident questionnaire has to be completed** for each eligible resident who meets the following criteria on the HALT survey date:

Is currently prescribed a systemic antimicrobial(s) (either for infection treatment or prophylaxis) **AND/OR** Is having signs or symptoms of an active healthcare-associated infection

- For the eligible resident who requires a resident questionnaire to be completed, instead of recording the resident's name, always use the resident's corresponding anonymous 'Resident Study Number', as recorded on the ward list. The resident study number should be clearly recorded on the top-right-hand corner of each page of the resident questionnaire
- The resident's name should not be written on the resident questionnaire. The completed paper version of the resident questionnaire is used for local data entry into the HALT software, following completion of the HALT survey in your LTCF
- The paper copy of the resident questionnaire is not returned to HPSC and should be retained locally along with the completed ward lists, until the final national HALT survey report has been published
- The resident questionnaire is sub-divided into the following sections:
    - Resident data (page 1)
    - Part A: Antimicrobial use data (page 2)
    - Part B: Healthcare-associated infection data (page 2)
    - Each of the case definitions for the infection types included in HALT is available on pages 3 – 8 of the resident questionnaire, allowing the data collector to tick boxes where symptoms and/or signs are present and follow each algorithm from start to finish to determine whether or not the resident meets criteria for 'INFECTION CONFIRMATION'

2.3.1 Resident data



RESIDENT STUDY NUMBER ___

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

RESIDENT QUESTIONNAIRE

RESIDENT DATA

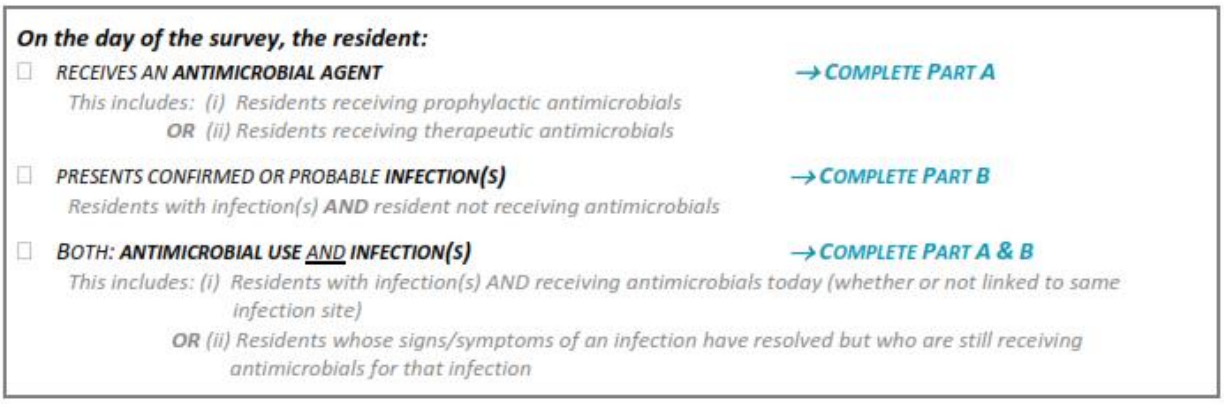
GENDER	☐ *Male*	☐ *Female*			
BIRTH YEAR	___ *(YYYY)*				
LENGTH OF STAY IN THE FACILITY	☐ *Less than one year*	☐ *One year or longer*			
ADMISSION TO A HOSPITAL IN THE LAST 3 MONTHS	☐ *Yes*	☐ *No*			
SURGERY IN THE PREVIOUS 30 DAYS	☐ *Yes*	☐ *No*			
PRESENCE OF:					
URINARY CATHETER	☐ *Yes*	☐ *No*			
VASCULAR CATHETER	☐ *Yes*	☐ *No*			
INCONTINENCE (URINARY AND/OR FAECAL)	☐ *Yes*	☐ *No*			
WOUNDS					
- PRESSURE SORE	☐ *Yes*	☐ *No*			
- OTHER WOUNDS	☐ *Yes*	☐ *No*			
DISORIENTATION (IN TIME AND/OR SPACE)	☐ *Yes*	☐ *No*			
MOBILITY	☐ *Ambulant*	☐ *Wheelchair*	☐ *Bedridden*		

Resident questionnaire – Resident data	
1. **Make sure that the resident study number is clearly marked on top-right hand corner of each page** 2. **When completing this section, cross-check the data circled above matches that recorded for the resident in question on the corresponding ward list**	
Questionnaire Item	**Explanation**
Gender	Tick the box 'male' or 'female'
Birth year	Write the resident's year of birth here
Length of stay in the facility	Tick the appropriate box which indicates the duration of the resident's admission to your LTCF: 'less than one year' or 'one year or longer'

Admission to a hospital in the last 3 months	Tick the appropriate box 'yes' or 'no' Only acute hospital admissions of at least 24 hours duration (i.e., overnight stay) should be considered when choosing 'yes' option Residents receiving regular chronic ambulatory care (e.g. outpatient haemodialysis, or oncology day ward chemotherapy) are not counted as having been admitted to hospital in the last 3 months, unless they have had an inpatient admission of at least 24 hours duration
Surgery in the previous 30 days **DATE OF HALT SURVEY MINUS DATE OF SURGERY IS ≤30 DAYS**	Tick the appropriate box 'yes' or 'no' Surgery is a procedure that takes place in an operating theatre or an interventional procedure room (radiology, cardiology, endoscopy suite), where a surgeon makes at least one incision through skin or mucous membranes, including laparoscopic surgery, and closes the incision before the patient leaves the operating theatre Percutaneous procedures, such as insertion of PEG tubes or coronary angiography and endoscopic procedures such as OGD, colonoscopy, ERCP are **NOT** counted as surgical procedures
Urinary catheter	Tick the appropriate box 'yes' or 'no' A urinary catheter is any tube system placed in the body to drain and collect urine from the bladder (e.g., indwelling urethral catheter, suprapubic catheter) Condom catheters are not included because they are not in the body
Vascular catheter	Tick the appropriate box 'yes' or 'no' A vascular catheter is a tube system placed in the body to access the vascular system, such as a peripheral venous cannula (PVC), peripherally inserted central catheter (PICC), midline or central vascular catheter (e.g. Hickman, permcath for dialysis, portacath or temporary CVC)
Incontinence (urinary and/or faecal)	Tick the appropriate box 'yes' or 'no' Incontinence is defined as a lack of control of the sphincter muscle of the bowel or bladder, resulting in uncontrolled loss of faeces or urine, necessitating the use of diapers/nappies in the 24 hours prior to the HALT survey date Note that residents with a urinary catheter *in situ* are **NOT** counted as being incontinent

Wounds: **Pressure sore** **Other wounds**	Tick the appropriate box 'yes' or 'no' All grades of pressure sores should be included, even the lowest grade, characterised by discolouration of intact skin not affected by light finger pressure: non-blanching erythema Tick the appropriate box 'yes' or 'no' This category includes all wound types other than pressure sores. The following residents are classified as having an 'other wound': leg ulcers, surgical wounds, traumatic wounds, insertion sites for percutaneous endoscopic gastrostomy (PEG) tubes, suprapubic catheters, peritoneal catheters, tracheostomy tubes, colostomy, ileostomy and urostomy sites
Disorientation (in time and/or space)	Tick the appropriate box 'yes' or 'no' This includes residents who suffer from periods of confusion, especially for time, place or recognition of people or places they know
Mobility	Tick the most appropriate box to describe the resident's level of mobility on the HALT survey date: ▪ Ambulant – The resident can walk by himself/herself, with or without the aid of a stick/crutches/walking frame ▪ Wheelchair bound ▪ Bedridden

- Tick the appropriate box in the next section on page 1 of the resident questionnaire:
  - For a resident who is only prescribed systemic antimicrobials, either for treatment or prophylaxis; proceed to complete Part A 'Antimicrobial Use' of the resident questionnaire (Page 2)
  - For a resident who is not prescribed any systemic antimicrobials, but has symptoms or signs suggestive of a healthcare associated infection on the HALT survey date, proceed to complete Part B 'Healthcare Associated Infections' of the resident questionnaire (Page 2), in conjunction with reviewing each case definition on pages 3 – 8
  - For a resident who is prescribed systemic antimicrobials (either for treatment or prophylaxis) **AND** who either has symptoms or signs of healthcare associated infection today **OR** who has recently had symptoms and signs of infection and continues to receive antimicrobial therapy for that infection; proceed to complete both parts A & B of the resident questionnaire (i.e. all of the resident questionnaire is completed for this resident)



2.3.2 Antimicrobial use data

Systemic antimicrobial means that the drug is given to the patient via the following routes of administration:

1. Oral (PO)/tablet, enteral, per rectum (PR) route
2. Intramuscular (IM) route
3. Intravenous (IV) route
4. Inhaled or nebulised (nebs) or aerosolised route

Antimicrobials given to the patient via the topical route are **NOT** classified as systemic antimicrobials (e.g., creams, lotions, ointments) and are not recorded on the resident questionnaire.

The following types of systemic antimicrobials should be recorded on the resident questionnaire:

- Antibacterials (i.e. drugs used to treat bacterial infections)
- Antifungals (i.e. drugs used to treat fungal infections)
- Antimycobacterials (i.e. drugs used to treat tuberculosis/TB – e.g., rifampicin, isoniazid, pyrazinamide, ethambutol)

The HALT survey is not collecting information on the following drugs:

- Antivirals (i.e., drugs used to treat viral infections, such as oseltamivir/Tamiflu, aciclovir)
- Antiseptics

If a resident is prescribed a topical antimicrobial, an antiviral or an antiseptic agent, it is **NOT** recorded on the resident questionnaire. That resident does not require a resident questionnaire to be completed, **UNLESS** the resident is also prescribed another systemic antimicrobial and/or is having signs or symptoms of an active healthcare-associated infection.

2.3.2.1 Where do I find antimicrobial treatment data?

- *The drug list in the LTCF ward or the resident's medication prescription sheet (kardex):*
  - If the ward maintains an up-to-date list/sheet of medication currently prescribed and administered to residents, this could be a useful source of information
- *The resident's medical and/or nursing records:*
  - If no drug list/kardex is available and treatment is only noted in the medical or nursing record of the residents, all records from all residents should be verified on the day of the survey
- *The pharmacy:* If all the medications for the LTCF are delivered by one pharmacy, the pharmacist should be able to indicate from their local patient medication records, the date of dispensing of antimicrobials for the resident in question. This may be particularly helpful in scenarios where a resident has been prescribed a particular antimicrobial and it is unclear when the agent was first prescribed (e.g., long-term prophylaxis)

- **Residents taking their own medication;** Some residents may take their medication (including antimicrobials) themselves. If this is the case in your LTCF for independent residents, the nurse-in-charge should be able to verify this
- **No residents on antimicrobials:** If none of the LTCF residents are prescribed systemic antimicrobials on the HALT survey date, it is very important to declare this on the institutional questionnaire by recording zero (0) for the statement 'residents receiving at least one antimicrobial agent' in Section B – Denominator data.

RESIDENT STUDY NUMBER | | | |

PART A: ANTIMICROBIAL USE

	ANTIMICROBIAL 1	ANTIMICROBIAL 2	ANTIMICROBIAL 3	ANTIMICROBIAL 4
ANTIMICROBIAL NAME	....	....	....	....
ADMINISTRATION ROUTE PARENTERAL = IM, IV OR SC	☐ Oral ☐ Parenteral ☐ Other	☐ Oral ☐ Parenteral ☐ Other	☐ Oral ☐ Parenteral ☐ Other	☐ Oral ☐ Parenteral ☐ Other
END DATE / REVIEW DATE OF TREATMENT KNOWN?	☐ No ☐ Yes	☐ No ☐ Yes	☐ No ☐ Yes	☐ No ☐ Yes
TYPE OF TREATMENT	☐ Prophylactic ☐ Therapeutic	☐ Prophylactic ☐ Therapeutic	☐ Prophylactic ☐ Therapeutic	☐ Prophylactic ☐ Therapeutic
ANTIMICROBIAL GIVEN FOR	☐ Urinary tract ☐ Genital tract ☐ Skin or wound ☐ Respiratory tract ☐ Gastrointestinal ☐ Eye ☐ Ear, nose, mouth ☐ Surgical site ☐ Tuberculosis ☐ Systemic infection ☐ Unexplained fever ☐ Other (specify)	☐ Urinary tract ☐ Genital tract ☐ Skin or wound ☐ Respiratory tract ☐ Gastrointestinal ☐ Eye ☐ Ear, nose, mouth ☐ Surgical site ☐ Tuberculosis ☐ Systemic infection ☐ Unexplained fever ☐ Other (specify)	☐ Urinary tract ☐ Genital tract ☐ Skin or wound ☐ Respiratory tract ☐ Gastrointestinal ☐ Eye ☐ Ear, nose, mouth ☐ Surgical site ☐ Tuberculosis ☐ Systemic infection ☐ Unexplained fever ☐ Other (specify)	☐ Urinary tract ☐ Genital tract ☐ Skin or wound ☐ Respiratory tract ☐ Gastrointestinal ☐ Eye ☐ Ear, nose, mouth ☐ Surgical site ☐ Tuberculosis ☐ Systemic infection ☐ Unexplained fever ☐ Other (specify) ....
WHERE PRESCRIBED?	☐ In this facility ☐ In the hospital ☐ Elsewhere	☐ In this facility ☐ In the hospital ☐ Elsewhere	☐ In this facility ☐ In the hospital ☐ Elsewhere	☐ In this facility ☐ In the hospital ☐ Elsewhere

Resident Questionnaire – Antimicrobial treatment data

1. **Make sure that the resident study number is clearly marked on top-right hand corner of each page**
2. **There is space to record data on up to <u>four separate prescribed systemic antimicrobials</u>**
3. **Write the antimicrobial name clearly, using capital letters and use the generic name of the antimicrobial wherever possible**

Questionnaire Item	**Explanation**
Antimicrobial name **See Appendix E for the antimicrobials used in Ireland, listed alphabetically and by administration route**	Write the name of the prescribed systemic antimicrobial clearly in capital letters
Administration route	Tick the box which accurately describes the administration route of the prescribed antimicrobial: ▪ **Oral** = enteral/tablet/via PEG tube/jejunostomy or NG tube. Select this option for rectal (PR) administration, which is also enteral route ▪ **Parenteral** = intravenous (IV), intramuscular (IM) or subcutaneous (SC) ▪ **Other** = inhaled or nebulised Antimicrobials given to the patient via the topical route are **NOT** classified as systemic antimicrobials (e.g., creams, lotions, ointments) and are not recorded on the resident questionnaire
End date/review date of treatment known?	Tick the appropriate box 'yes' or 'no' Tick 'yes' only where it is clearly stated in the resident's notes or prescription chart that there is an 'end/stop date' or 'review date' for the prescribed antimicrobial
Type of treatment	Tick the appropriate box 'prophylactic' or 'therapeutic' Prophylactic = prescribing an antimicrobial with the aim of preventing an infection – The resident had no signs or symptoms of an infection on the date the antimicrobial was started Therapeutic = prescribing an antimicrobial to treat an infection – The resident had signs or symptoms of an infection on the date the antimicrobial was started ▪ If it is unclear whether the resident is prescribed the antimicrobial for treatment or prophylaxis, go back to the date that the antimicrobial was prescribed and check to see whether the resident had evidence of signs or symptoms of infection documented on that date? ▪ Check in the resident's medical and nursing notes ▪ Check with the coordinating physician or general practitioner if the information is still unclear ▪ If the antimicrobial was started in the hospital, the patient's discharge letter should be checked for further information

Antimicrobial given for	From the 11 options provided, tick the box that best describes the part of the body/site for which the antimicrobial was prescribed, either to treat suspected infection (therapy) or to prevent infection from occurring (prophylaxis). If none of the 11 options matches the infection site, specify by writing the site under the final 12th option 'other'
Where prescribed?	Tick the appropriate box to describe the place that the antimicrobial was prescribed: ▪ In your LTCF ▪ In the hospital ▪ Elsewhere

2.3.3 Infection data

2.3.3.1 How do I complete Part B of the questionnaire: Healthcare-Associated Infections?

- Part B of the questionnaire is only completed when a resident has **an active healthcare-associated infection (HCAI). An infection is active when <u>signs and/or symptoms of the infection are present on the survey date</u> OR <u>signs and/or symptoms were present in the past and the resident is still receiving treatment for that infection on the survey date</u>**

2.3.3.2 What is a healthcare-associated infection?

- Any infection that has onset of symptoms and/or signs day three onwards after admission a healthcare facility
- Any infection that was already present/still being treated with systemic antimicrobials on the day of admission to the facility (day 1) or that started on day 2 **AND** the resident was directly transferred from another healthcare facility or hospital **[IMPORTED]**
- Any category of surgical site infection (SSI) with a date of onset of signs or symptoms within 30 days of the date of the surgery **OR** any deep incisional or organ/space SSI with a date of onset of signs or symptoms within 90 days of the date of an implant surgery (you need to know the date of the surgery and whether or not an implant was inserted, e.g., prosthetic hip, artificial heart valve, pacemaker etc. to decide this) **[IMPORTED]**
- Microbiology laboratory test result positive for *Clostridium difficile,* where the diarrhoea onset date occurs within 28 days of the discharge date from another healthcare facility or hospital (you need to know the date of the positive laboratory test and date of discharge/transfer from the other healthcare facility to your facility to decide this) **[IMPORTED]**

2.3.3.3 How will I know if the resident has a healthcare-associated infection?

- For the first time, the 2016 HALT survey is collecting information about **ALL** types of HCAI:

1. *Infection acquired in the long-term care facility (this has been collected in every HALT survey) – An infection which begins day three onwards following admission to the LTCF*
2. *Infection acquired in the hospital and for which antimicrobial treatment was started in the hospital, but the resident was discharged to the long-term care facility before the treatment course finished (this is new information to collect for HALT 2016)*
3. *For the resident who was recently admitted to the hospital and discharged back to the long-term care facility, certain infections may still be associated with the hospital (surgical site infection or C. difficile infection) but may not become evident until after the resident has returned to their LTCF (this is new information to collect for HALT 2016)*

- If the resident is prescribed a systemic antimicrobial, you will already have completed Part A of the resident questionnaire. Check what you selected for the section 'Type of treatment'. If you have ticked the option 'Therapeutic', this means that your resident is prescribed an antimicrobial for treatment of infection: You will now need to further evaluate the resident and decide whether the infection could be a healthcare-associated infection (i.e., acquired in your facility **or** acquired in another facility, whereby the resident arrived into your facility already on the antimicrobial treatment which was started in the hospital or other long-term care facility)
- If the resident was recently admitted to your facility directly from the community, or recently returned to your facility from a holiday and was already prescribed an antimicrobial for treatment by his/her GP and that treatment continues in your facility on the survey date, this is probably for a community-acquired infection and the resident won't be categorised as a HCAI. The HALT survey is not capturing information on community-acquired infections
- If you think the resident has a healthcare-associated infection which was acquired in the hospital **OR** the resident has developed signs and/or symptoms of a surgical site infection within a certain timeframe after date of surgery in the hospital **OR** has had onset of diarrhoea and microbiology laboratory test positive for *Clostridium difficile* infection within 28 days of the date of discharge from the hospital, you should contact the HALT team to discuss the scenario and advice will be provided on how to proceed; HALT@hpsc.ie
- If the resident is not prescribed any systemic antimicrobial **OR** is only prescribed a systemic antimicrobial for 'Prophylactic' type of treatment, you will still need to check with the resident's nurse and review the resident's medical, nursing and observation records to decide whether the resident

currently has any signs or symptoms of infection. This is important, because not every resident with a HCAI will already be on an antimicrobial treatment (e.g., the signs and symptoms may just have started today and there's not yet been time for the doctor to review the resident and start antimicrobial treatment **OR** the resident has a viral infection (e.g., common cold, influenza or viral gastroenteritis) for which antimicrobials would not be indicated

- If you think the resident might have a HCAI, look at the information recorded about the signs and symptoms on the survey date and also go back to review the recorded information about signs and symptoms on the date that the antimicrobial therapy was started. Tick the matching boxes in the case definition algorithms on page 3 – 8 of the resident questionnaire, starting with the infection type that best fits with your resident's signs and symptoms
- **Record all signs and symptoms and follow the relevant algorithm(s) to the end**. This may involve checking the results of relevant investigations (e.g., chest x-ray report for a resident with suspected lower respiratory tract infection or urine culture report for resident with suspected UTI)
- If all the criteria for a HCAI are met, proceed to the shaded box '**INFECTION CONFIRMATION**' and tick the first box 'Infection criteria fully met: INFECTION CONFIRMED' for that resident. Note that the UTI case definition has two options INFECTION CONFIRMED (UTI-C) or INFECTION PROBABLE (UTI-P). Next, you will transcribe the relevant infection code back into Part B on page 2 of the resident questionnaire
- In the scenario whereby the resident was discharged from the hospital to the LTCF, finishing off a course of systemic antimicrobial treatment for a hospital-acquired infection, you may not have access to all of the symptoms and signs information which were evident and documented in the hospital chart on the date that the antimicrobial was started. You should review the resident's hospital discharge letter and decide what infection type/body site is being treated. In this scenario, you may proceed to the shaded box '**INFECTION CONFIRMATION**' and tick the second box 'Infection treated on PPS day, but no documentation of signs/symptoms: INFECTION IMPORTED' for that resident. Next, you will transcribe the relevant infection code (ends with –I) back into Part B on page 2 of the resident questionnaire. **Remember, you are only permitted to select the INFECTION IMPORTED option for an infection which was acquired in another facility or hospital & where you have no information on symptoms/signs**
- If the resident has signs and symptoms on the survey date or had signs and symptoms on the date that antimicrobial therapy was started, you will tick off the relevant boxes in the case definition algorithms on pages 3 – 8 of the resident questionnaire. If the resident does not meet all of the required criteria for that HCAI, you cannot proceed to complete the shaded box INFECTION CONFIRMATION and you will not record that resident as having that HCAI, because although they have some signs and

symptoms they do not meet the criteria for INFECTION CONFIRMATION. If you decide that no infection criteria have been met by the resident, write **'HCAI not present'** clearly on the top of page one of the resident questionnaire. Later on, when you enter the data on resident questionnaires into the HALT software, it will be obvious that although the resident had signs and symptoms recorded, ultimately a HCAI was not present.

	Infection Group	Infection Name
1	**Urinary tract infections (UTI)**	1. UTI in a resident without a urinary catheter 2. UTI in a resident with a urinary catheter
2	**Respiratory tract infections (RTI)**	1. Common cold (pharyngitis) 2. Flu (influenza) 3. Lower respiratory tract infection in a resident with a positive chest x-ray, reporting the presence of a new infiltrate (pneumonia) 4. Lower respiratory tract infection in a resident who has either not had a chest x-ray **OR** the chest x-ray result does not confirm presence of a new infiltrate
3	**Skin infections**	1. Cellulitis/soft tissue/wound infections 2. Scabies 3. Herpes simplex (cold sore) **or** herpes zoster (shingles/chickenpox/varicella) infection 4. Fungal skin infection (e.g., ringworm, tinea)
4	**Surgical site infections (SSI)**	1. Superficial incisional SSI 2. Deep incisional SSI 3. Organ/space SSI
5	**Eye, ear, nose and mouth infections**	1. Conjunctivitis 2. Ear infection 3. Sinusitis 4. Oral candidiasis (thrush)
6	**Gastrointestinal infections**	1. Gastroenteritis 2. *Clostridium difficile* infection (CDI)
7	**Bloodstream infections**	Resident with a positive blood culture result
8	**Unexplained fever**	Resident meets the definition for fever and the fever is documented on ≥2 occasions at least 12 hours apart in any three-day period and there is no known cause for the resident's fever (either infectious or non-infectious)
9	**Other infection(s)**	Handwritten description of the resident's infection site, where none of the other infection options on the form apply to that resident

2.3.3.4 What is an active HCAI?

- A HCAI is **active** when signs and symptoms of infection are present on the survey date **OR** signs and symptoms of infection were present in the past and the resident continues to receive systemic antimicrobial therapy for that infection
- If the resident is prescribed a systemic antimicrobial(s) and it is not clear whether the reason for the prescription is therapeutic (treatment of infection) or prophylactic (prevention of infection), go back to the date that the antimicrobial was first prescribed and check for documentation of symptoms or signs of infection on that date. For antimicrobials prescribed more than 14 days ago, go back a maximum of 14 days to look for documentation of signs or symptoms of infection. If there are signs and symptoms documented, proceed to tick them off on the relevant infection case definition algorithms on pages 3 – 8 of the resident questionnaire

2.3.3.5 How do I decide if a resident's chronic signs and symptoms are due to infection and not because of another reason (i.e. non-infectious cause)?

Many residents may have chronic signs or symptoms (productive cough, shortness of breath, urinary urgency etc.), which may be as a result of an underlying disease (emphysema, bronchitis, uterine prolapse etc.). For chronic signs and symptoms to be potentially related to an active HCAI, there must be **some evidence that those chronic signs and symptoms have become acutely worse** for that resident (i.e., patient with chronic productive cough, has an acute increase in cough and sputum/phlegm production).

Make sure to check for evidence of all signs and symptoms and to document them where they occur. By following the algorithms for each infection type, you will then be able to decide if the resident meets the definition for that particular infection.

* **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 over baseline from any site (oral, tympanic, axillary)

** **Leucocytosis**: 1) Neutrophilia > 14,000 leucocytes/mm^3 or 2) left shift (>6% bands or ≥ 1500 bands/mm^3)

§ **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

2.3.3.6 What is the definition of fever for the HALT survey?

In the HALT survey, fever is defined as <u>any one</u> of the following:

- Single/One oral/tympanic membrane temperature reading which is >37.8^{o}C
- Repeated oral temperature readings which are >37.2^{0}C
- Repeated rectal temperature readings which are >37.5^{0}C
- An increase in temperature reading from any site (tympanic/oral/rectal/axillary), which is >1.1^{0}C above the baseline reading for that site

If the resident meets <u>one</u> of the criteria above for fever, then that sign can be ticked on the resident questionnaire.

2.3.3.7 What is the definition of leucocytosis for the HALT survey?

In the HALT survey, leucocytosis means an elevated white blood cell count (WCC). For this to be counted as a sign, **<u>the resident must have had a full blood count (FBC) taken</u>** around the time that other signs and symptoms developed. Do not count results of WCC that were taken prior to onset of signs and symptoms.

- If the resident's WCC >14, this is leucocytosis and that sign can be ticked on the resident questionnaire
- If the haematology laboratory report mentions a 'left shift' (>6% bands or ≥1500 bands/mm^{3}, the resident has leucocytosis
- Please note that the presence of leucocytes/white cells on urine dipstick analysis or urine culture report from the microbiology laboratory is not the same as leucocytosis, which refers to white cells in blood

2.3.3.8 What is the definition of an acute change in mental status from baseline for the HALT survey?

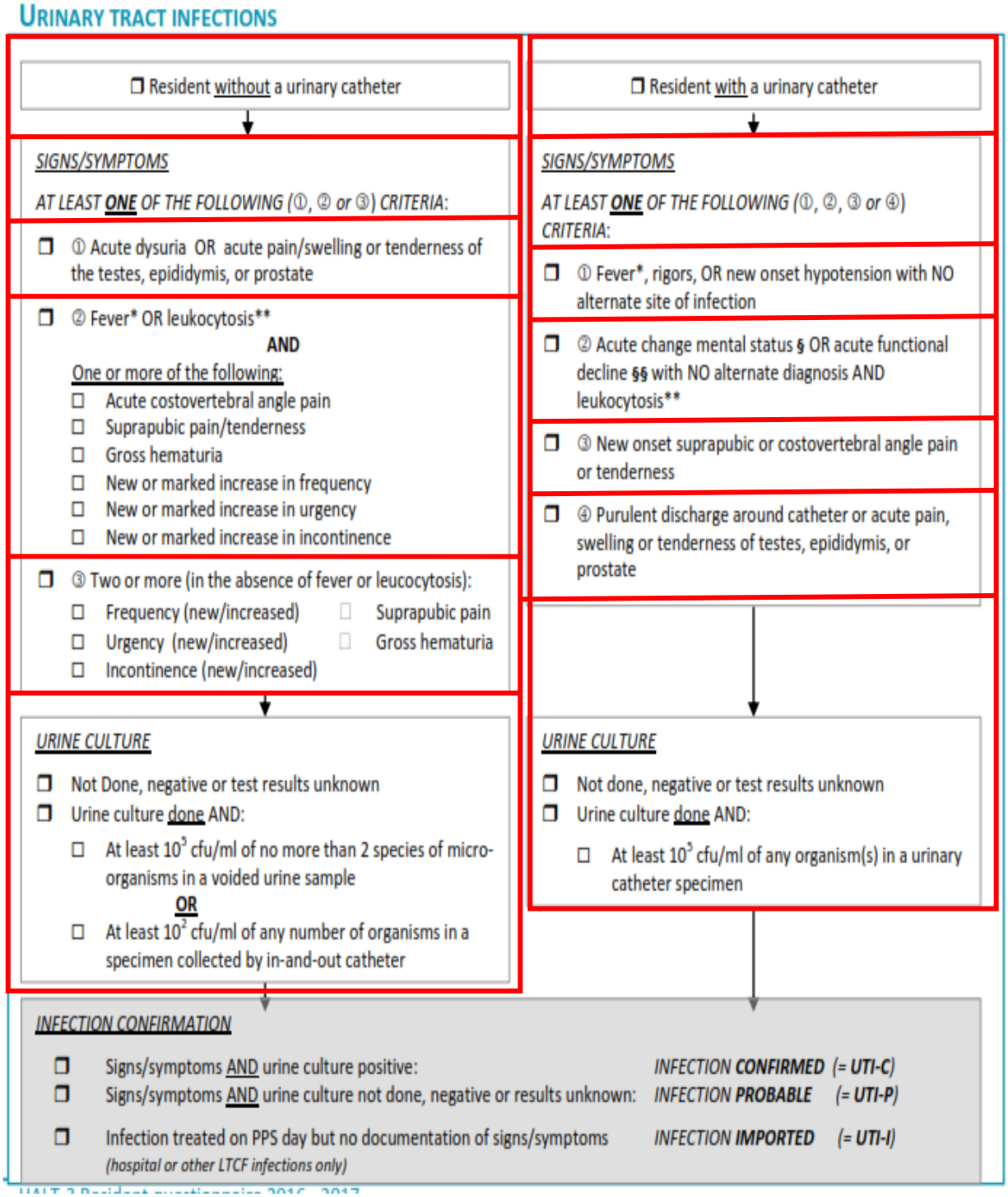
In the HALT survey, a resident has an acute change in mental status from baseline when **ALL** of the following criteria have been met:

1. Acute onset
2. Fluctuating course
3. Inattention
4. Altered level of consciousness **OR** disorganised thinking

2.3.3.9 What is the definition of an acute functional decline for the HALT survey?

In the HALT survey, an acute functional decline is present if the resident has a **new** three point increase in the activities of daily living (ADL) score from the baseline score for that resident. Alternatively, an acute functional decline can be present if there is increased dependency, as defined by whatever scale/scoring system is traditionally used in the LTCF (e.g., Barthel score).

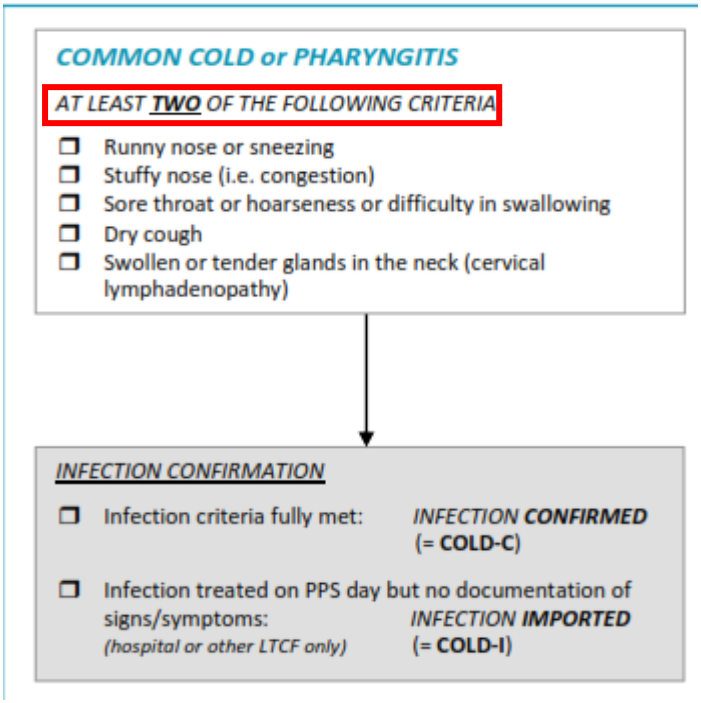
2.3.3.10 Urinary tract infections (UTI)



Signs and symptoms of an infection – Urinary tract infections

- A urinary tract infection can be an infection of the kidney, bladder, prostate or urethra
- The starting point is whether or not the resident has a urinary catheter, which is defined as any tube system placed in the body to drain and collect urine from the bladder (e.g., indwelling urethral catheter, suprapubic catheter) – Tick the appropriate box and proceed along the relevant algorithm
- The costovertebral angle is also known as renal angle and relates to the back between the 12th lowermost rib where it joins up with the spine
- The suprapubic area is found just above the pubic bone or pubis
- Once the signs and symptoms have been recorded, check for results of urine culture

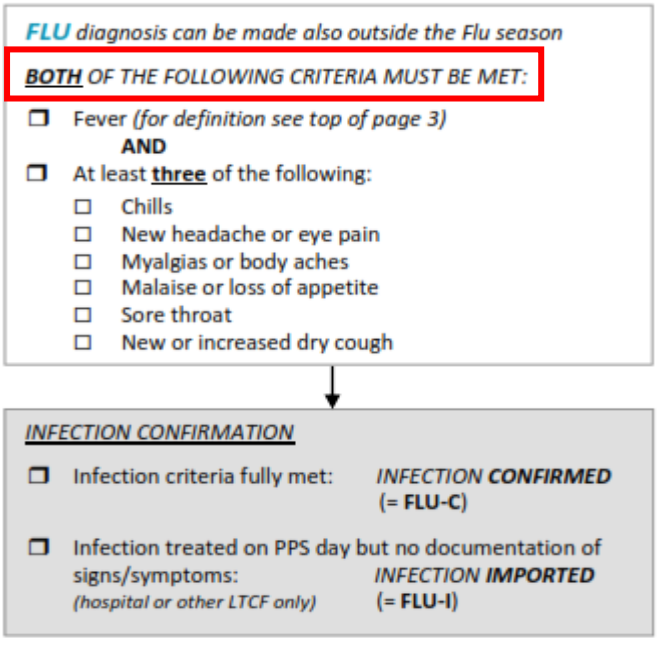
2.3.3.11 Common cold or pharyngitis



Signs and symptoms of an infection – Common cold or pharyngitis

- Ensure the resident has at least two of the listed criteria for confirmation of the infection
- Lymphadenopathy refers to swollen or enlarged lymph glands

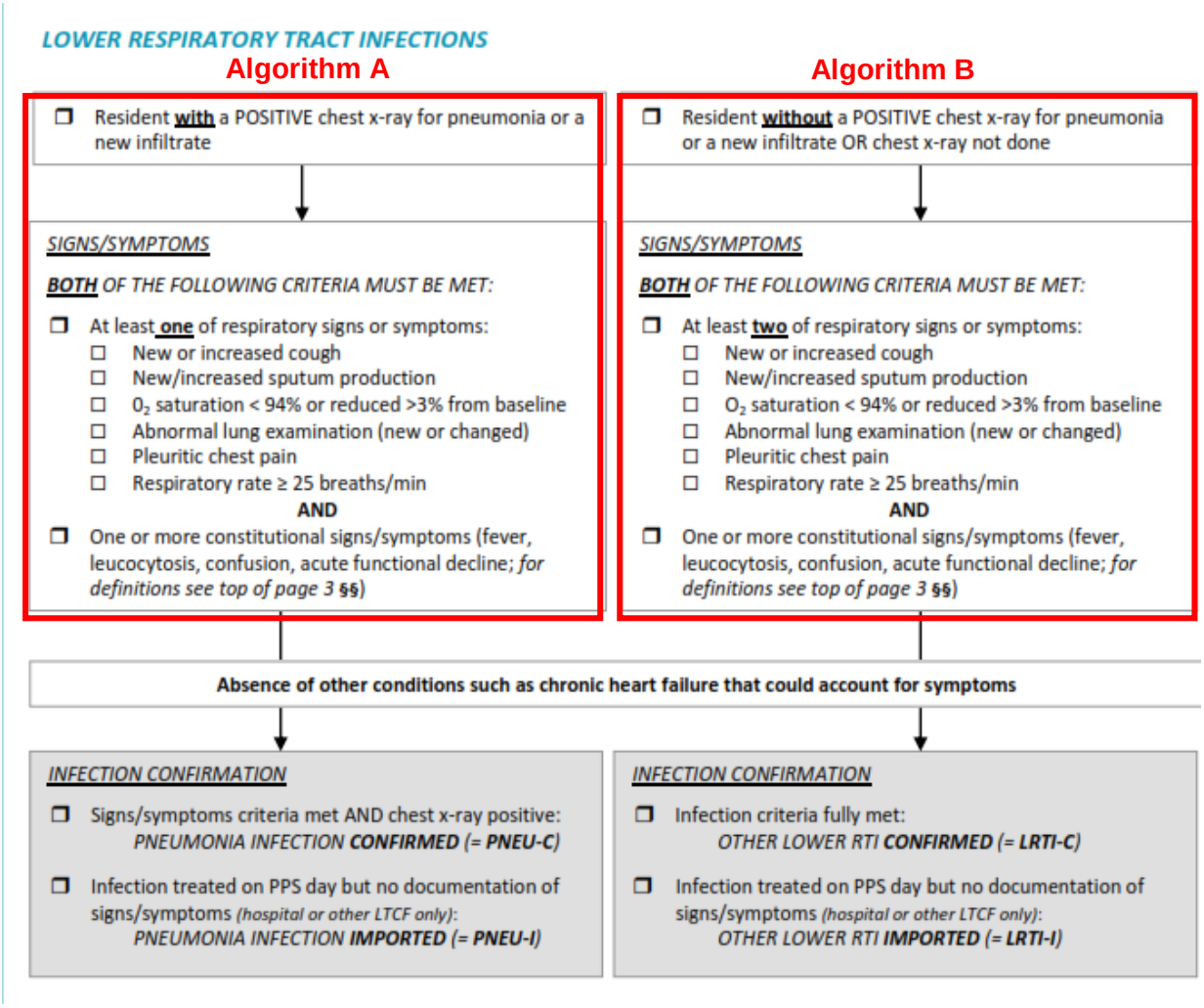
2.3.3.12 Flu or influenza virus infection



Signs and symptoms of an infection – Flu or influenza virus infection

- The resident must meet the criteria for having a fever **PLUS** the resident must have at least three of the listed criteria for confirmation of the infection

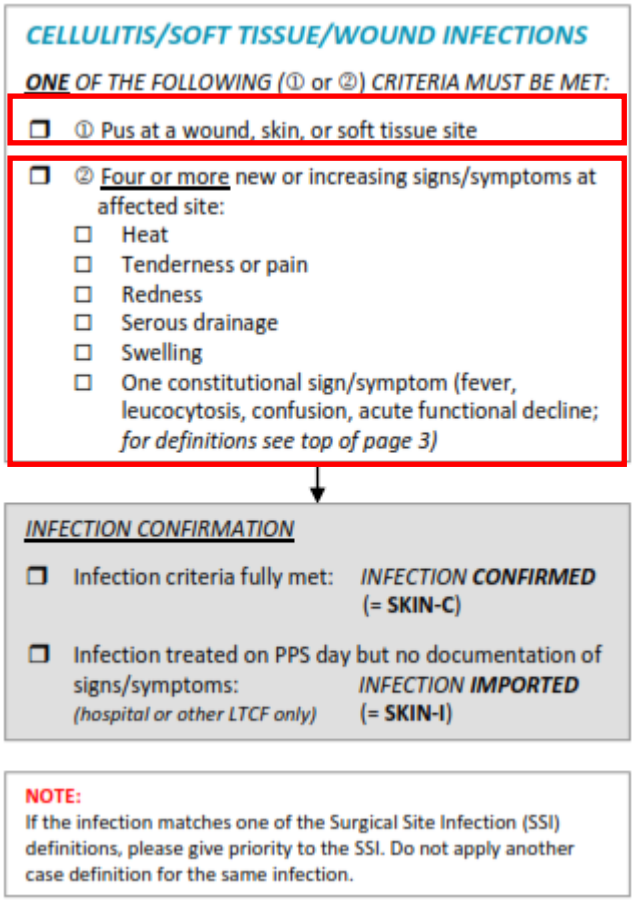
2.3.3.13 Lower respiratory tract infections



Signs and symptoms of an infection – Lower respiratory tract infections

- The starting point is whether or not the resident has had a chest x-ray and what was stated in the chest x-ray report:
- If the resident has had a **chest x-ray, with findings reported as consistent with pneumonia** or as having a new infiltrate – proceed along Algorithm A. To confirm pneumonia, the resident must also have at least **one** sign or symptom linking the infection to the respiratory tract **PLUS one** or more constitutional signs/symptoms (refer to top of page 3 of resident questionnaire for definitions)
- If the resident has not had a chest x-ray or the chest x-ray was reported as clear or having no infiltrates consistent with pneumonia – proceed along Algorithm B. To confirm that the resident has an 'other lower respiratory tract infection', the resident must have at least **two** signs or symptoms linking the infection to the respiratory tract **PLUS one** or more constitutional signs/symptoms
- Do not confuse the production of sputum or phlegm, which is coughed up from the lower respiratory tract with the production of saliva or spit, which is produced by the upper gastrointestinal tract
- Pleuritic chest pain refers to pain which tends to occur when the patient inhales or breathes air inwards
- If the resident has chronic lung disease (e.g., COPD or bronchiectesis) or chronic heart failure, those conditions may be a reason for an abnormal chest x-ray report. If in doubt, seek further clarification from the resident's doctor

2.3.3.14 Cellulitis/soft tissue/wound 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 3)*

INFECTION CONFIRMATION

❒ Infection criteria fully met: *INFECTION **CONFIRMED*** (= **SKIN-C**)

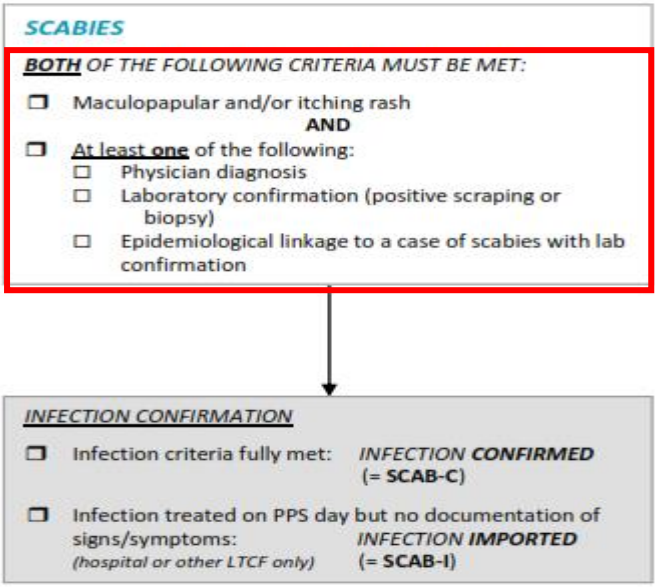
❒ Infection treated on PPS day but no documentation of signs/symptoms: *INFECTION **IMPORTED*** (= **SKIN-I**)
(hospital or other LTCF only)

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.

Signs and symptoms of an infection – Cellulitis/soft tissue/wound infections

- Patients with infection of traumatic wounds, device exit sites or chronic ulcers should be categorised using the cellulitis/soft tissue/wound infection category
- In HALT 2016, a new category of infection – surgical site infection is included. Any infection of a surgical wound that meets the surgical site infection definition should take priority over the cellulitis/soft tissue/wound infection category
- Where a resident meets two separate HCAI case definitions related to a surgical wound, the potentially more severe infection type should be selected (SSI instead of cellulitis/soft tissue/wound). Don't categorise the same patient as meeting two different case definitions for the same infection
- To meet this infection definition, a resident must have either pus at the site **OR** at least four new signs/symptoms at the site

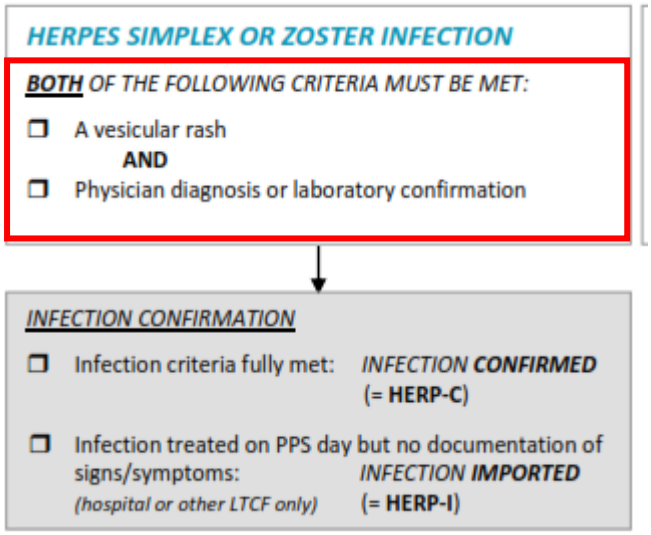
2.3.3.15 Scabies



Signs and symptoms of an infection – Scabies

- A resident must have maculopapular rash, which is a rash characterised by spots and bumps and the rash may or may not be itchy **PLUS** at least one of the three listed criteria for confirmation of the infection
- Epidemiological linkage means that this resident with suspected scabies was in contact with another resident who was confirmed by the microbiology laboratory to have a scabies infection

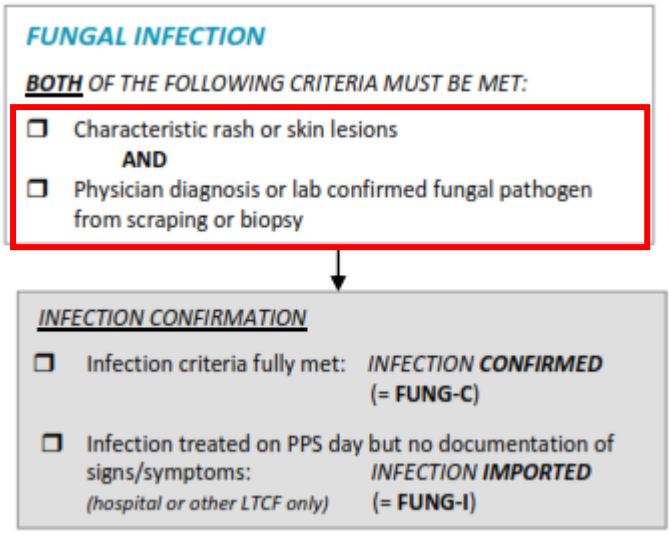
2.3.3.16 Herpes simplex (cold sore) or herpes zoster (shingles or chickenpox or varicella) infection



Signs and symptoms of an infection – Herpes simplex (cold sore) or herpes zoster (shingles or chickenpox) infection

- A resident must have a characteristic vesicular/blistering rash **AND** the doctor makes a clinical diagnosis

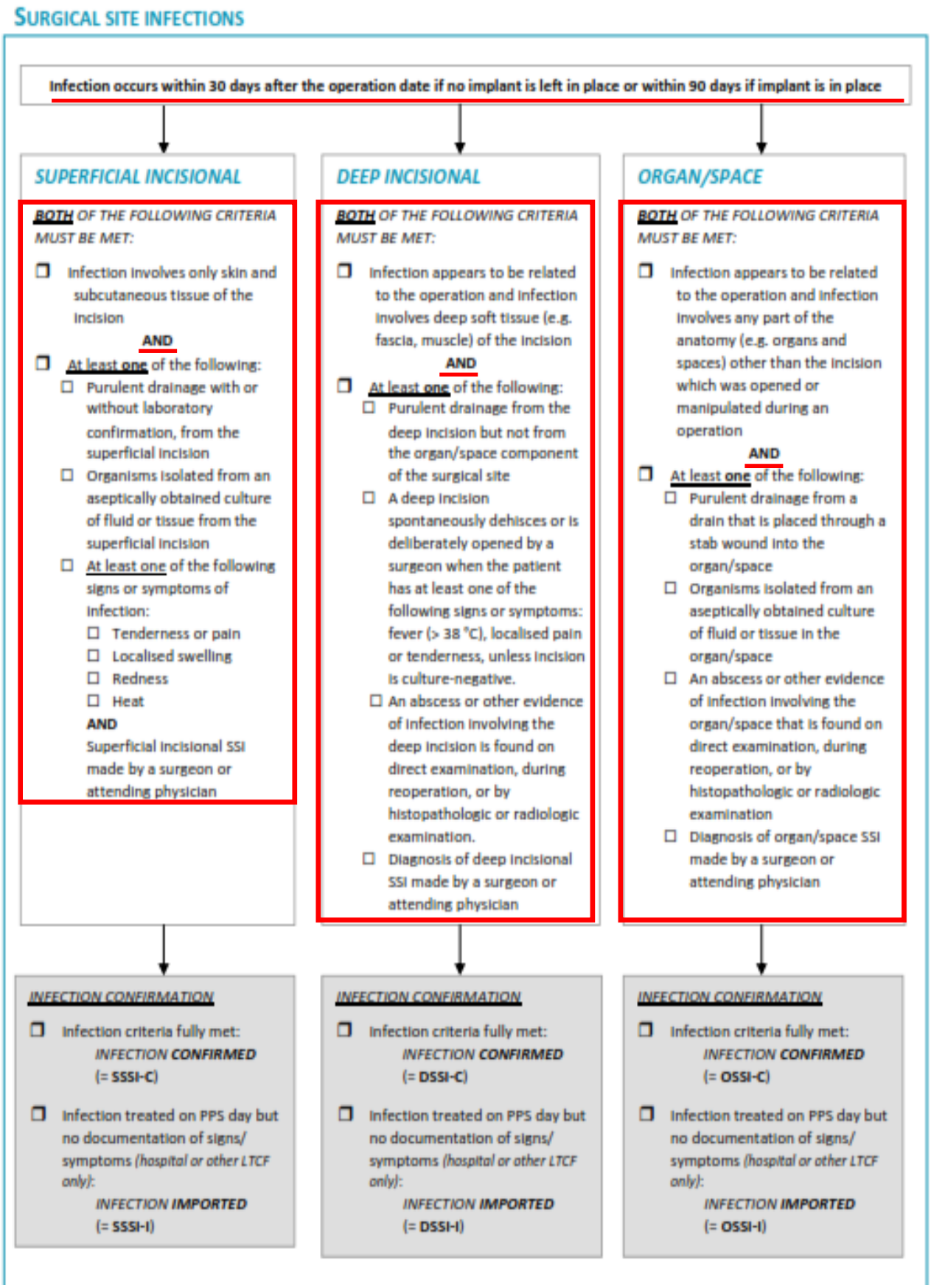
2.3.3.17 Fungal skin infection



Signs and symptoms of an infection – Fungal skin infection

- A resident must have a characteristic rash consistent with a fungal skin infection **AND EITHER** the doctor makes a clinical diagnosis of ringworm or tinea **OR** the laboratory reports that fungi/dermatophytes (e.g., Trichophyton species, Microsporum species, Epidermophyton species) have been isolated from skin scrapings or skin biopsy
- If the patient has oral candidiasis/oral thrush, the case definition algorithm is on page 7 of the resident questionnaire

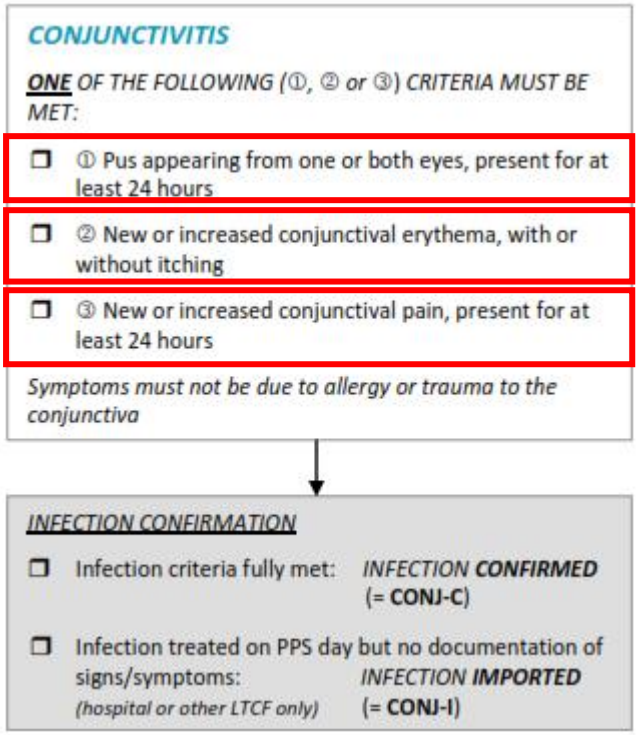
2.3.3.18 Surgical site infections



Signs and symptoms of an infection – Surgical site infection (SSI)

- Surgical site infections (SSI) usually occur at the site of a surgical wound/incision that was created during an operation. They may be further classified by the depth or extent of the infection: A superficial infection involves uppermost layers of the wound/incision (skin and subcutaneous tissue), whereas a deep infection involves soft tissue below the skin and subcutaneous tissue. An organ/space SSI is related to the surgical procedure, but occurs internally, so it might not be visible at the superficial or deep layers of the incision
- Residents who have the more extensive SSI types (deep incisional and organ/space) will normally require readmission to hospital for management of those infections, because intravenous antimicrobials, wound debridement, drainage of abscess or further surgery could be required
- Residents with superficial SSI usually respond to antimicrobial treatment alone. Therefore, they may be managed by their GP, LTCF doctor or by the hospital team who reviews the resident back in the outpatient department
- If you think the resident might have a SSI, in order to categorise the infection correctly, you will need to know the following information:
    - The date of the surgery
    - The date the signs and/or symptoms of surgical site infection started
    - Whether the surgical procedure involved the insertion of an implant (e.g., artificial/prosthetic joint replacement, prosthetic tissue/metal heart valve, permanent pacemaker insertion, implantable cardiac defibrillator insertion, hernia repair with mesh insertion, ventriculoperitoneal (VP) shunt insertion etc.)
    - If no implant was inserted during the surgical procedure, the resident can only meet a SSI case definition if the symptoms and/signs of SSI begin within 30 days of the date of the surgery. If the symptoms and/or signs begin >30 days after the date of the surgical procedure, go to the cellulitis/soft tissue/wound infection algorithm on page 5 of the resident questionnaire and see if the resident's symptoms and/or signs meet the criteria for that case definition
    - If an implant was inserted during the surgical procedure, the resident may meet a SSI case definition for any SSI category up to 30 days after the date of surgery and for deep incisional and organ/space SSI up to 90 days after the date of surgery. If the resident has had implant surgery and develops symptoms and/or signs of a superficial SSI that begin >30 days after the date of the surgical procedure, go to the cellulitis/soft tissue/wound infection algorithm on page 5 of the resident questionnaire and see if the resident's symptoms and/or signs meet the case definition
    - Please note, if the resident fulfils all the necessary criteria for a SSI, that will take priority over the cellulitis/soft tissue/wound infection case definition
- If you think a resident has a SSI, please contact the HALT national coordinating team via e-mail HALT@hpsc.ie for help to work your way through the algorithm

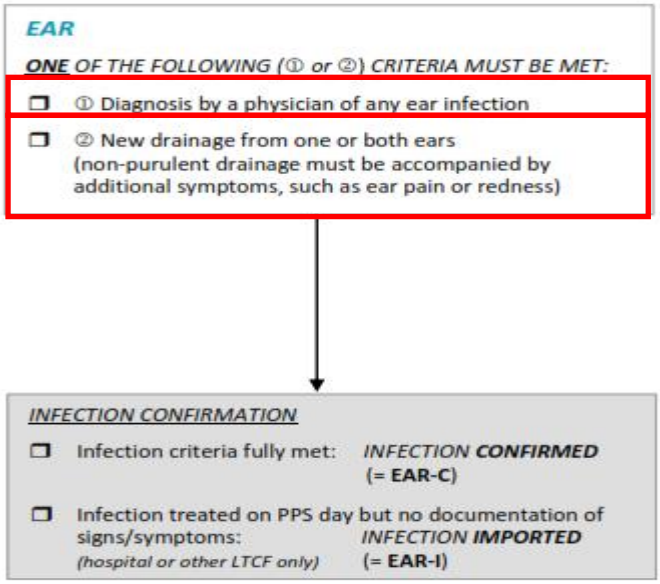
2.3.3.19 Conjunctivitis



Signs and symptoms of an infection – Conjunctivitis

- A resident must not have evidence or diagnosis of allergy or trauma to the affected eye
- A resident must meet one of the three listed criteria to meet the diagnosis
- Conjunctival erythema refers to redness of the mucous membrane that lines the eyelid

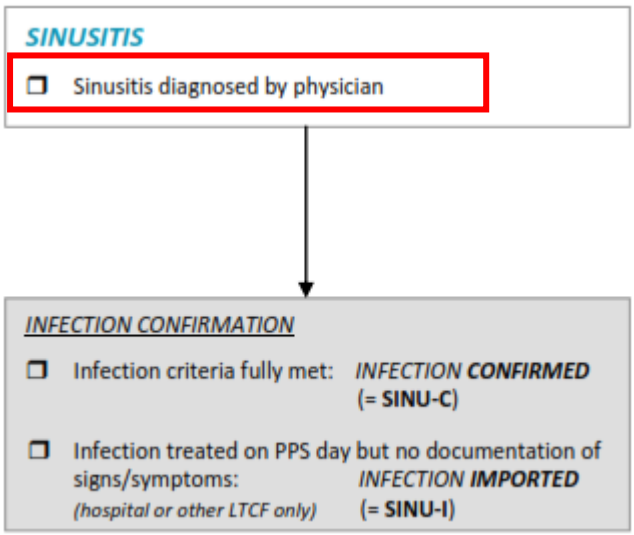
2.3.3.20 Ear infection



Signs and symptoms of an infection – Ear infection

- A resident must meet one of the two listed criteria to be diagnosed with an ear infection

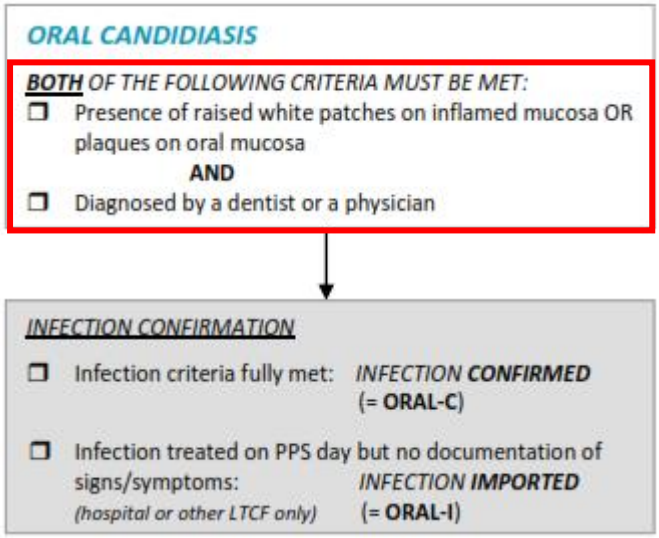
2.3.3.21 Sinusitis



Signs and symptoms of an infection – Sinusitis

- If a doctor has diagnosed the resident with sinusitis, that is sufficient to confirm the diagnosis and no other signs or symptoms are recorded

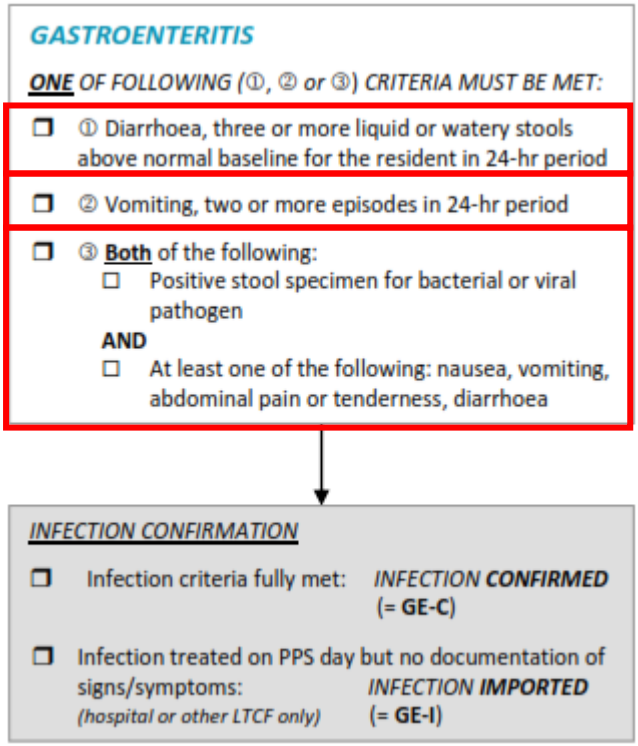
2.3.3.22 Oral candidiasis or thrush



Signs and symptoms of an infection – Oral candidiasis or thrush

- A resident must meet both of the listed criteria to be diagnosed with oral candidiasis/thrush

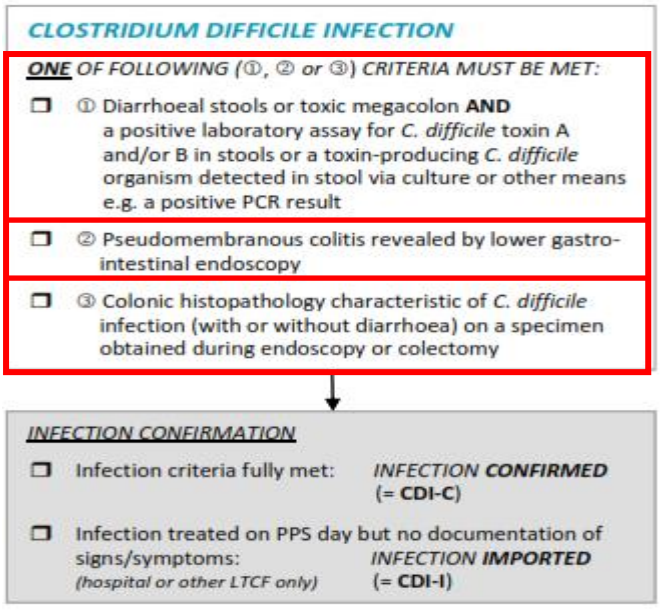
2.3.3.23 Gastroenteritis



Signs and symptoms of an infection – Gastroenteritis

- A resident must meet the signs or symptoms in one of the three listed groups of criteria
- Check whether the resident had a faeces/stool specimen sent to the laboratory at the time of symptom onset and if yes, check what the result was – If the faeces specimen was positive for *Clostridium difficile* – the patient is classified as having *Clostridium difficile* infection, so choose that instead

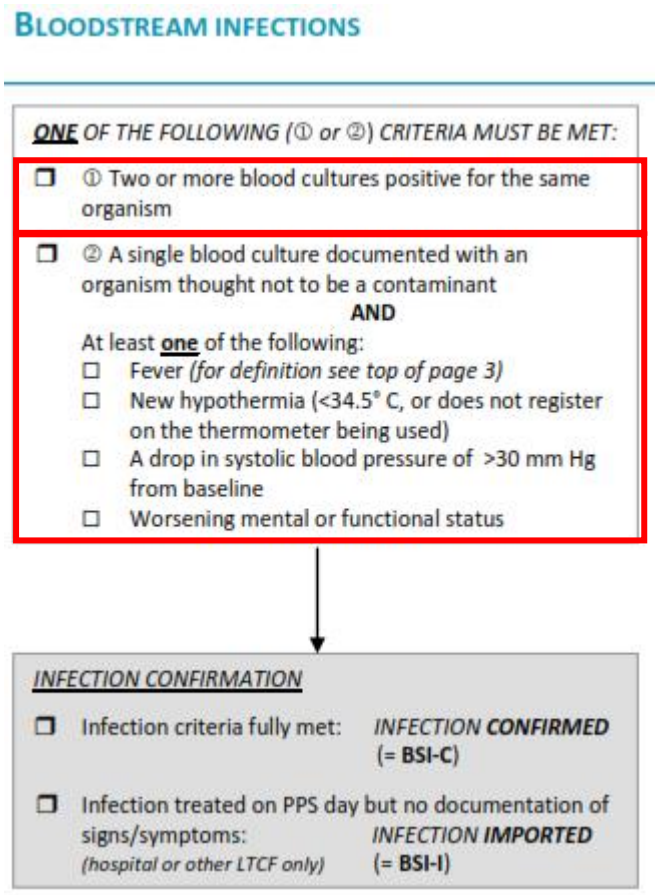
2.3.3.24 *Clostridium difficile* infection (CDI)



Signs and symptoms of an infection – *Clostridium difficile* infection (CDI)

- A resident must meet both of the criteria as listed above to be diagnosed with CDI
- Toxic megacolon may be an indicator of severe CDI and represents dilation of the colon which is usually diagnosed on a plain film abdominal x-ray
- If a resident does not have a positive faeces result for *Clostridium difficile*, the only other way this infection can be confirmed is if the resident had a colonoscopy or a surgical procedure which confirmed that characteristic pseudomembranous colitis was present

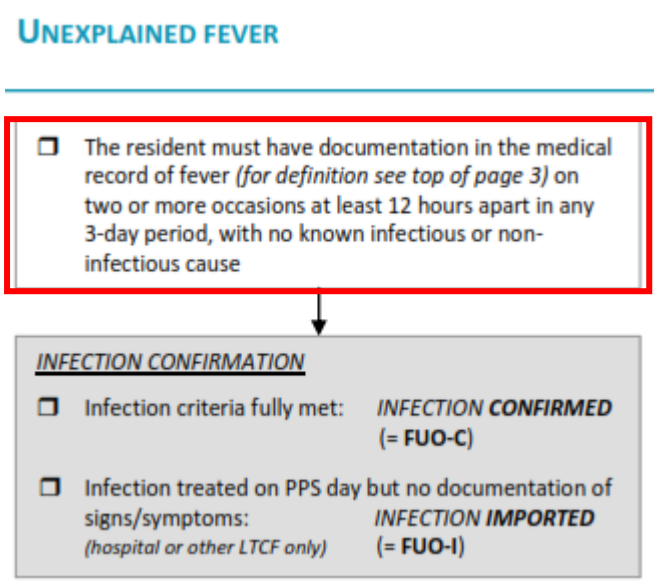
2.3.3.25 Bloodstream infection



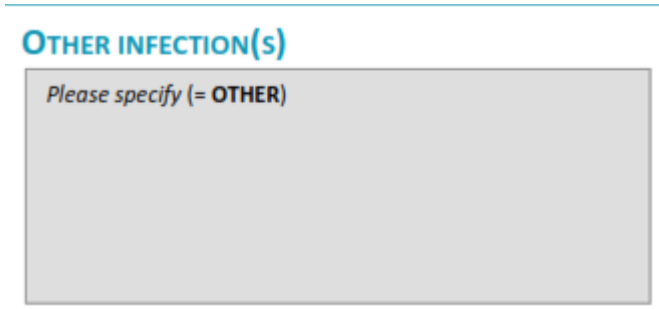
Signs and symptoms of an infection – Bloodstream infection

- To meet this definition, the resident **MUST** have had blood cultures taken and positive blood cultures reported by the microbiology laboratory
- If the resident has two different blood culture sets positive with the same microorganism named on the report of both sets, this is a bloodstream infection and there is no need to record any symptoms or signs for confirmation
- If the resident has just one single blood culture set positive and the result is deemed to be clinically significant, the resident must have at least one of the three listed signs
- If you need further assistance with interpreting the results of positive blood cultures, please contact the HALT national coordinating team: HALT@hpsc.ie

2.3.3.26 Unexplained fever



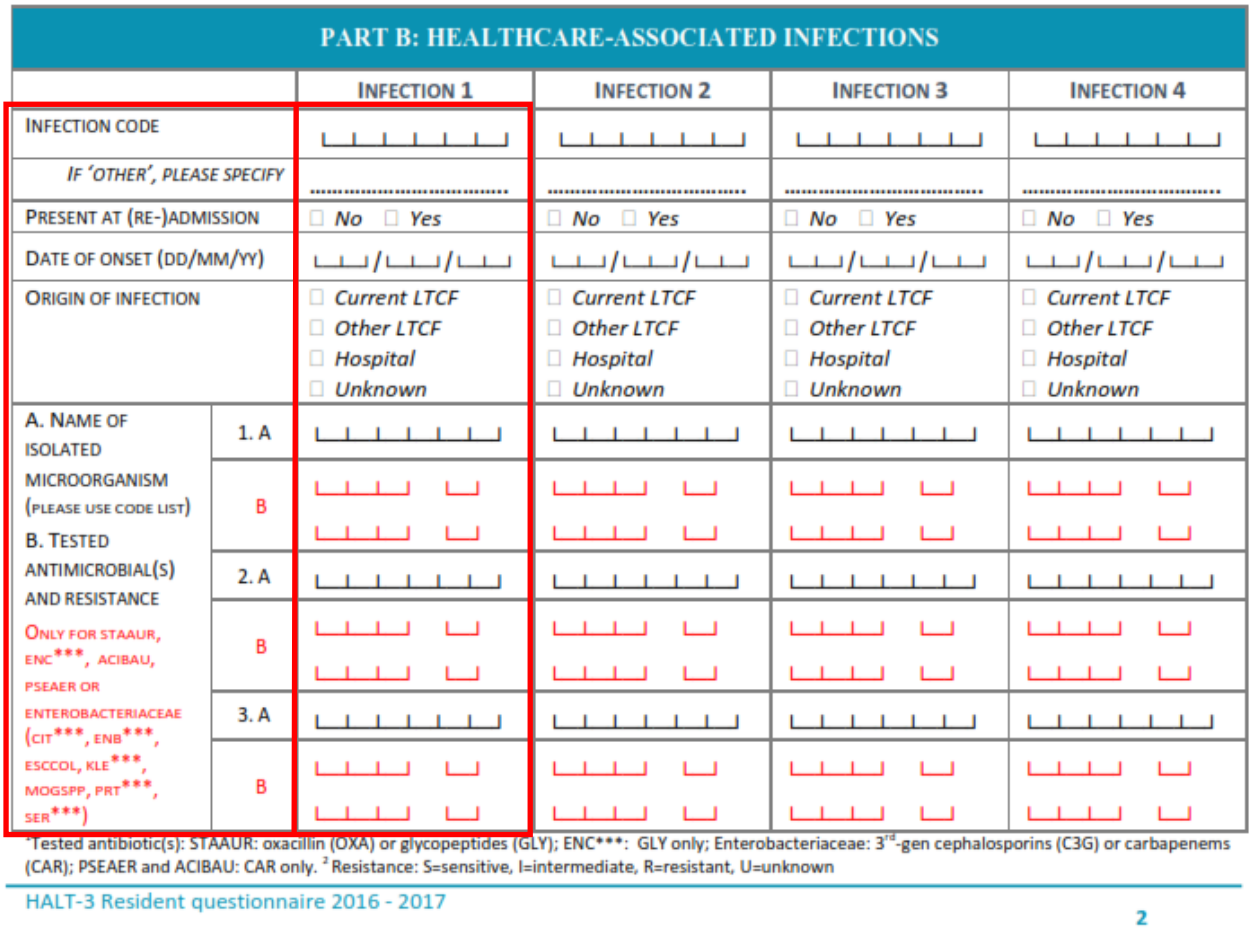
2.3.3.27 Other infection(s)



Signs and symptoms of an infection – Other infection(s)

- This should only be completed in the event that the doctor has diagnosed the resident with an infection which is not listed in any of the infection categories on pages 3 – 8 of the resident questionnaire
- Write clearly in black ink the name of the infection type & use the code 'OTHER' in Part B: Healthcare-associated infections on page 2 of the resident questionnaire and specify the site writing in free text underneath

2.3.4 Healthcare-associated infection data



PART B: HEALTHCARE-ASSOCIATED INFECTIONS

		INFECTION 1	INFECTION 2	INFECTION 3	INFECTION 4
INFECTION CODE		⌊_⌊_⌊_⌊_⌊_⌊_⌋	⌊_⌊_⌊_⌊_⌊_⌊_⌋	⌊_⌊_⌊_⌊_⌊_⌊_⌋	⌊_⌊_⌊_⌊_⌊_⌊_⌋
IF 'OTHER', PLEASE SPECIFY		.....	.....	.....	.....
PRESENT AT (RE-)ADMISSION		☐ *No* ☐ *Yes*	☐ *No* ☐ *Yes*	☐ *No* ☐ *Yes*	☐ *No* ☐ *Yes*
DATE OF ONSET (DD/MM/YY)		⌊_⌊_⌋/⌊_⌊_⌋/⌊_⌊_⌋	⌊_⌊_⌋/⌊_⌊_⌋/⌊_⌊_⌋	⌊_⌊_⌋/⌊_⌊_⌋/⌊_⌊_⌋	⌊_⌊_⌋/⌊_⌊_⌋/⌊_⌊_⌋
ORIGIN OF INFECTION		☐ *Current LTCF* ☐ *Other LTCF* ☐ *Hospital* ☐ *Unknown*	☐ *Current LTCF* ☐ *Other LTCF* ☐ *Hospital* ☐ *Unknown*	☐ *Current LTCF* ☐ *Other LTCF* ☐ *Hospital* ☐ *Unknown*	☐ *Current LTCF* ☐ *Other LTCF* ☐ *Hospital* ☐ *Unknown*
A. NAME OF ISOLATED MICROORGANISM (PLEASE USE CODE LIST)	1. A	⌊_⌊_⌊_⌊_⌊_⌊_⌋	⌊_⌊_⌊_⌊_⌊_⌊_⌋	⌊_⌊_⌊_⌊_⌊_⌊_⌋	⌊_⌊_⌊_⌊_⌊_⌊_⌋
	B	⌊_⌊_⌊_⌋ ⌊_⌋ ⌊_⌊_⌊_⌋ ⌊_⌋	⌊_⌊_⌊_⌋ ⌊_⌋ ⌊_⌊_⌊_⌋ ⌊_⌋	⌊_⌊_⌊_⌋ ⌊_⌋ ⌊_⌊_⌊_⌋ ⌊_⌋	⌊_⌊_⌊_⌋ ⌊_⌋ ⌊_⌊_⌊_⌋ ⌊_⌋
B. TESTED ANTIMICROBIAL(S) AND RESISTANCE ONLY FOR STAAUR, ENC***, ACIBAU, PSEAER OR ENTEROBACTERIACEAE (CIT***, ENB***, ESCCOL, KLE***, MOGSPP, PRT***, SER***)	2. A	⌊_⌊_⌊_⌊_⌊_⌊_⌋	⌊_⌊_⌊_⌊_⌊_⌊_⌋	⌊_⌊_⌊_⌊_⌊_⌊_⌋	⌊_⌊_⌊_⌊_⌊_⌊_⌋
	B	⌊_⌊_⌊_⌋ ⌊_⌋ ⌊_⌊_⌊_⌋ ⌊_⌋	⌊_⌊_⌊_⌋ ⌊_⌋ ⌊_⌊_⌊_⌋ ⌊_⌋	⌊_⌊_⌊_⌋ ⌊_⌋ ⌊_⌊_⌊_⌋ ⌊_⌋	⌊_⌊_⌊_⌋ ⌊_⌋ ⌊_⌊_⌊_⌋ ⌊_⌋
	3. A	⌊_⌊_⌊_⌊_⌊_⌊_⌋	⌊_⌊_⌊_⌊_⌊_⌊_⌋	⌊_⌊_⌊_⌊_⌊_⌊_⌋	⌊_⌊_⌊_⌊_⌊_⌊_⌋
	B	⌊_⌊_⌊_⌋ ⌊_⌋ ⌊_⌊_⌊_⌋ ⌊_⌋	⌊_⌊_⌊_⌋ ⌊_⌋ ⌊_⌊_⌊_⌋ ⌊_⌋	⌊_⌊_⌊_⌋ ⌊_⌋ ⌊_⌊_⌊_⌋ ⌊_⌋	⌊_⌊_⌊_⌋ ⌊_⌋ ⌊_⌊_⌊_⌋ ⌊_⌋

*Tested antibiotic(s): STAAUR: oxacillin (OXA) or glycopeptides (GLY); ENC***: GLY only; Enterobacteriaceae: 3rd-gen cephalosporins (C3G) or carbapenems (CAR); PSEAER and ACIBAU: CAR only. ² Resistance: S=sensitive, I=intermediate, R=resistant, U=unknown

HALT-3 Resident questionnaire 2016 - 2017 2

Resident Questionnaire – Healthcare-associated infections data ▪ **Make sure that the resident study number is clearly marked on top-right hand corner of each page** ▪ **There is space to record data on up to <u>four separate HCAI types in Part B (page 2)</u>** ▪ **Write clearly, using capital letters**	
Questionnaire Item	**Explanation**
Infection code	Go to the relevant HCAI case definition for which the resident met all of the required criteria and check the code for that infection which you will find in the shaded box Transcribe the code in the shaded box in to this section 'Infection Code' You should only select a code that ends with (-I) which represents IMPORTED infection when the infection was acquired in the hospital or in another LTCF
If 'OTHER', please specify	Having carefully worked through all of the case definition algorithms on pages 3 – 8 of the resident questionnaire and you have not been able to find a case definition to match the HCAI with which the resident is diagnosed, you should have written 'OTHER' in the Infection Code section and next, you should write the site of the infection in this section

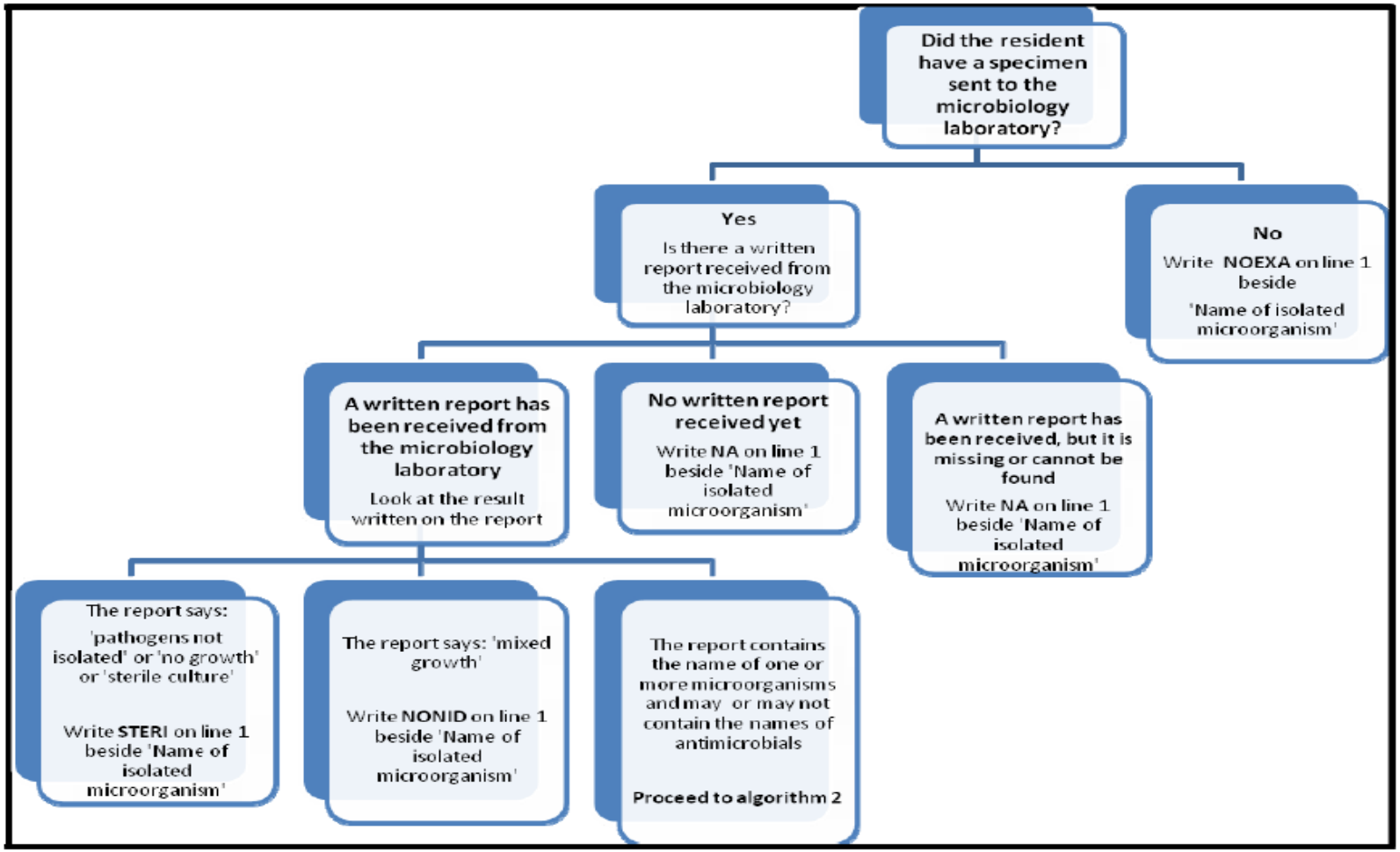
Present at (re)admission	Tick the appropriate box 'no' or 'yes' ▪ Select 'yes' if the resident's symptoms and/or signs of the HCAI were already evident on the date the resident was admitted to or transferred back (readmitted) to your facility ▪ Select 'yes' if the resident was already on antimicrobial treatment, prescribed in the hospital or other facility to treat the HCAI and that treatment continued on the date the resident was admitted to or transferred back (readmitted) to your facility ▪ Select 'no' if the symptoms and/or signs began after the resident was admitted to or transferred back (readmitted) to your facility ▪ Select 'no' if the antimicrobial treatment for the HCAI commenced after the resident was admitted to or transferred back to your facility
Date of onset	If you answered 'yes; for the last question 'Present at (re)admission', you can leave this answer blank If you answered 'no' for the last question 'Present at (re)admission?', write the date that the resident's symptoms and/or signs of this HCAI started – You need to review the resident's medical, nursing and observation records to decide the date of onset. If you still can't determine the date of onset from review of records, you could use the date that the antimicrobial treatment was started for the HCAI as the date of onset **OR** if the resident is not prescribed an antimicrobial (e.g., the HCAI is due to a virus where antimicrobials are not indicated), you could use the date that a relevant specimen was sent to the microbiology laboratory **I**f you still can't determine the exact date from review of the records, the resident is not on an antimicrobial and did not have a specimen sent to the laboratory, you should estimate the date of onset for the HCAI
Origin of the infection	Select the option that best fits the place where the resident acquired this HCAI: **Current LTCF** = your facility : This will be the right option for the vast majority of residents **Other LTCF** = You can only use this option when the resident was transferred to your facility from a different LTCF and had symptoms and/or signs of a HCAI on the date of admission (day 1) or developed them on day 2 **OR** where the resident arrived into your facility already on antimicrobial treatment for a HCAI acquired in another LCTF. Remember if the HCAI you have chosen is laboratory-confirmed *Clostridium difficile* infection, you should discuss the case with the HALT national coordinating team: e-mail HALT@hpsc.ie **Hospital** = You can only use this option when the resident was admitted or transferred back to your

	facility from the hospital and had symptoms and/or signs of a HCAI on the date of admission (day 1) or developed them on day 2 **OR** where the resident arrived into your facility already on antimicrobial treatment for a HCAI acquired the hospital. Remember if the HCAI you have chosen is laboratory-confirmed *Clostridium difficile* infection or a surgical site infection, you should discuss the case with the HALT national coordinating team: e-mail HALT@hpsc.ie **Unknown** = You should only select this option once you have discussed the case with the HALT national coordinating team and it has been determined that it is not possible to determine where the resident acquired their HCAI
Name of isolated microorganism ***See Appendix F for the microorganism code list, listed alphabetically***	Go to **section 2.4.1 Algorithm 1** and follow the instructions: ▪ If no microbiology specimen was taken from the resident – write **NOEXA** = examination not done ▪ If a microbiology specimen was taken from the resident, but the report has not yet come back from the microbiology laboratory – write **NA** = results not available ▪ If a microbiology specimen was taken from the resident, but the microbiology laboratory report cannot be found or is missing – write **NA** = results not available ▪ If a microbiology specimen was taken from the resident and the microbiology report has been received, look at the result on the report: If no microorganisms were isolated from the specimen (e.g., reported as 'no growth' or 'pathogens not isolated' or 'sterile culture' etc.) - write **STERI** = sterile examination If microorganisms were isolated from the specimen but they have not been fully identified to species level (e.g., reported as 'mixed growth') – write **NONID** = microorganism not identified If microorganisms were isolated from the specimen and fully identified to species level – **go to section 2.4.2 Algorithm 2** and Appendix F and look for the name of the microorganism, as written on the microbiology report in the code list: ○ When you find the microorganism – take note of the corresponding code for that microorganism. The code is written on the

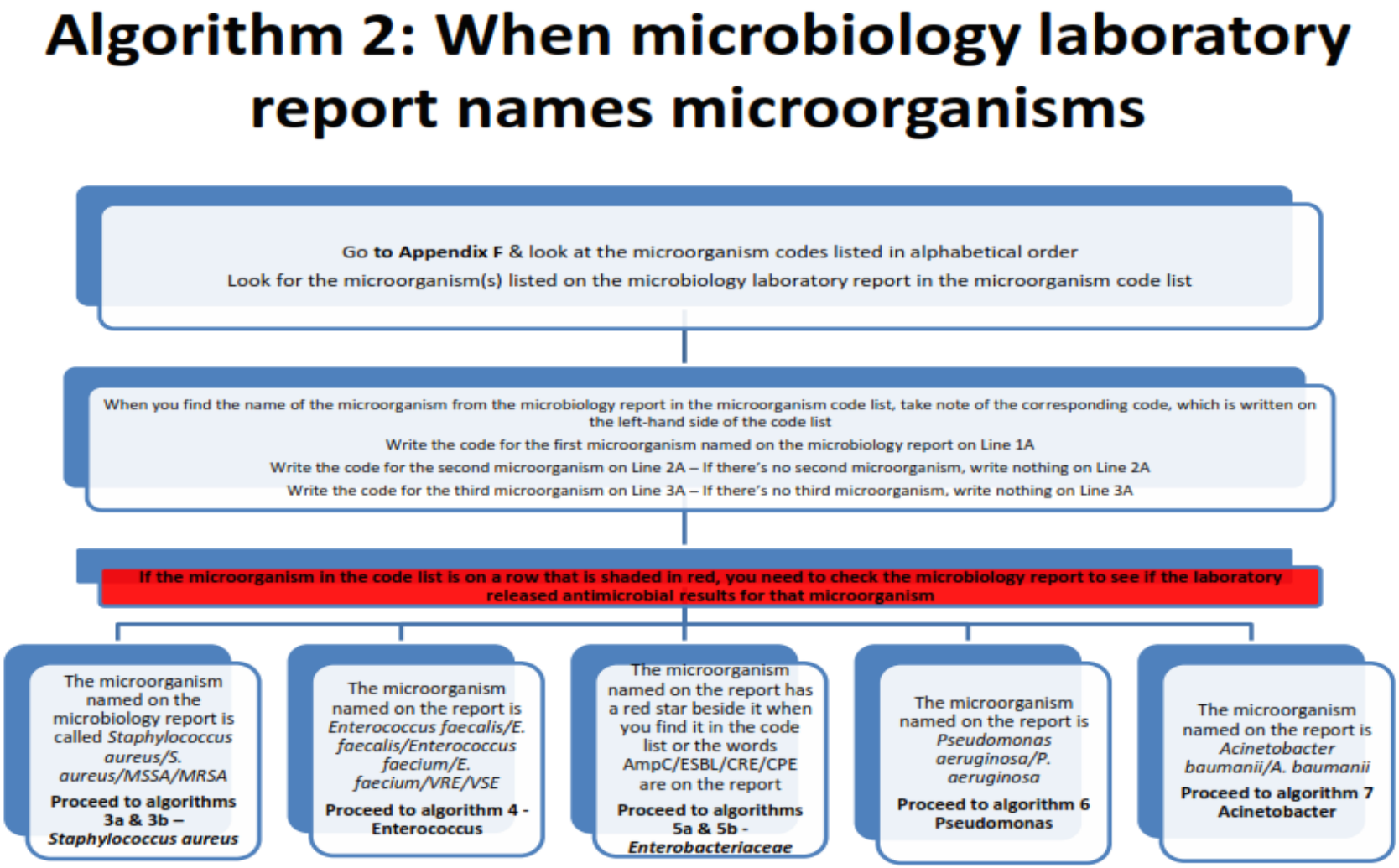
	left hand side of the code list – write the relevant code ○ If there is more than one microorganism named on the microbiology report: ➢ Write the code for the first microorganism on the line 1A ➢ Write the code for the second microorganism on the line 2A ➢ Write the code for the third microorganism on the line 3A
Tested antimicrobial(s) and resistance ***See Appendix F for the microorganism code list, listed alphabetically***	This question is **ONLY** answered if the following **TWO** criteria are true: ▪ The resident has had a positive microbiology culture result with named microorganisms on the laboratory report **AND** ▪ When you look up the name of the microorganism in Appendix F, the row for that microorganism is **HIGHLIGHTED IN RED** If the microorganism named on the microbiology report is highlighted on red in Appendix F, you need to follow the instructions on Algorithm 2 and go to the relevant subsequent algorithm for further instructions If the microorganism is not highlighted in red in Appendix F, leave section B blank Contact the HALT national coordinating team if you require any assistance with coding microorganisms and interpreting microbiology laboratory reports: HALT@hpsc.ie

2.3.4.1 Algorithm 1: Completion of isolated microorganisms section

Algorithm 1: Completion of Resident Questionnaire Section: 'Isolated Microorganisms' on bottom of page 2

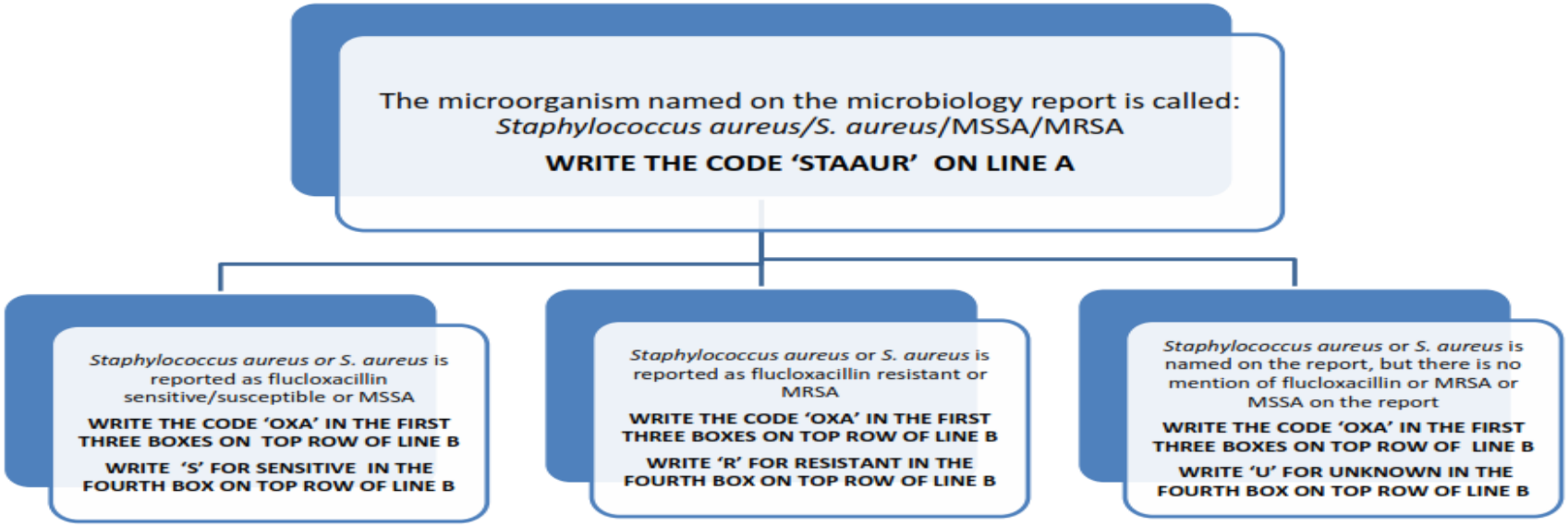


2.3.4.2: Algorithm 2: When microbiology report names microorganisms



2.3.4.3 Algorithm 3: Microorganism on report is *S. aureus*

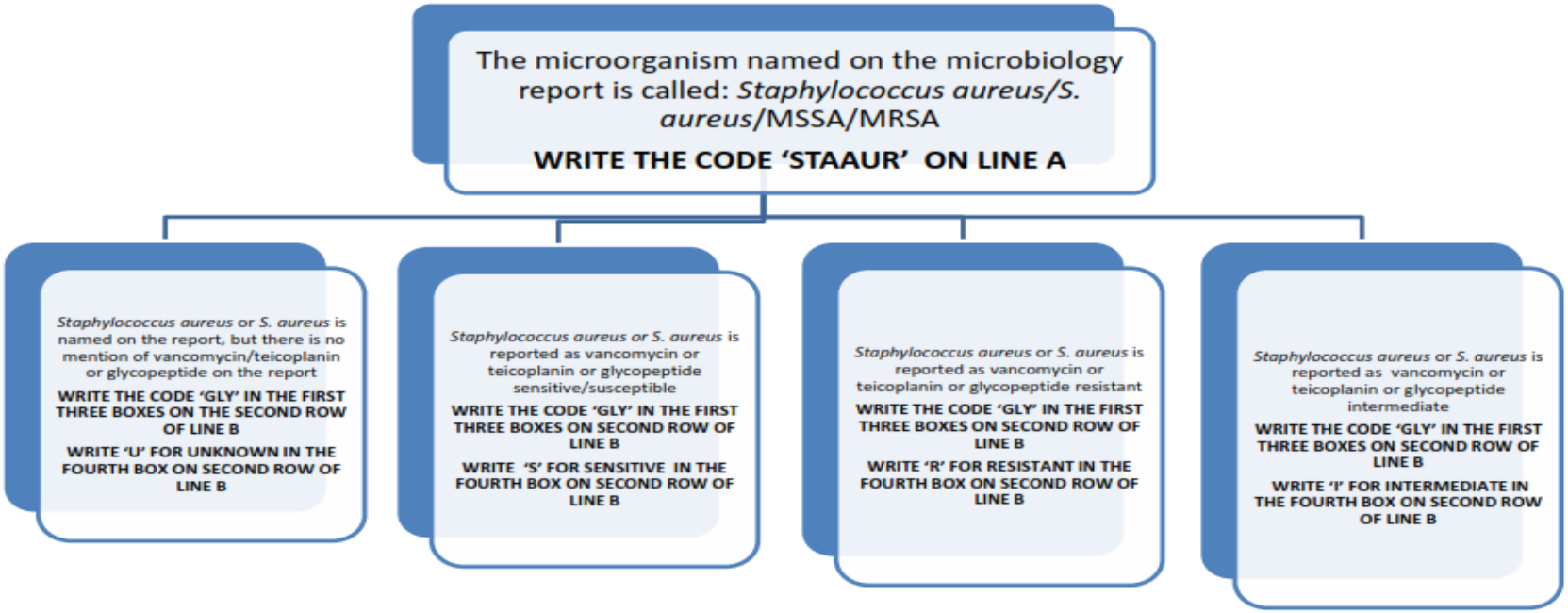
Algorithm 3a: *Staphylococcus aureus*



These three names are interchangeable: Oxacillin = Flucloxacillin = Meticillin

A. NAME OF ISOLATED MICROORGANISM	1. A	STAAUR	STAAUR	STAAUR
		OXA S	OXA R	OXA U

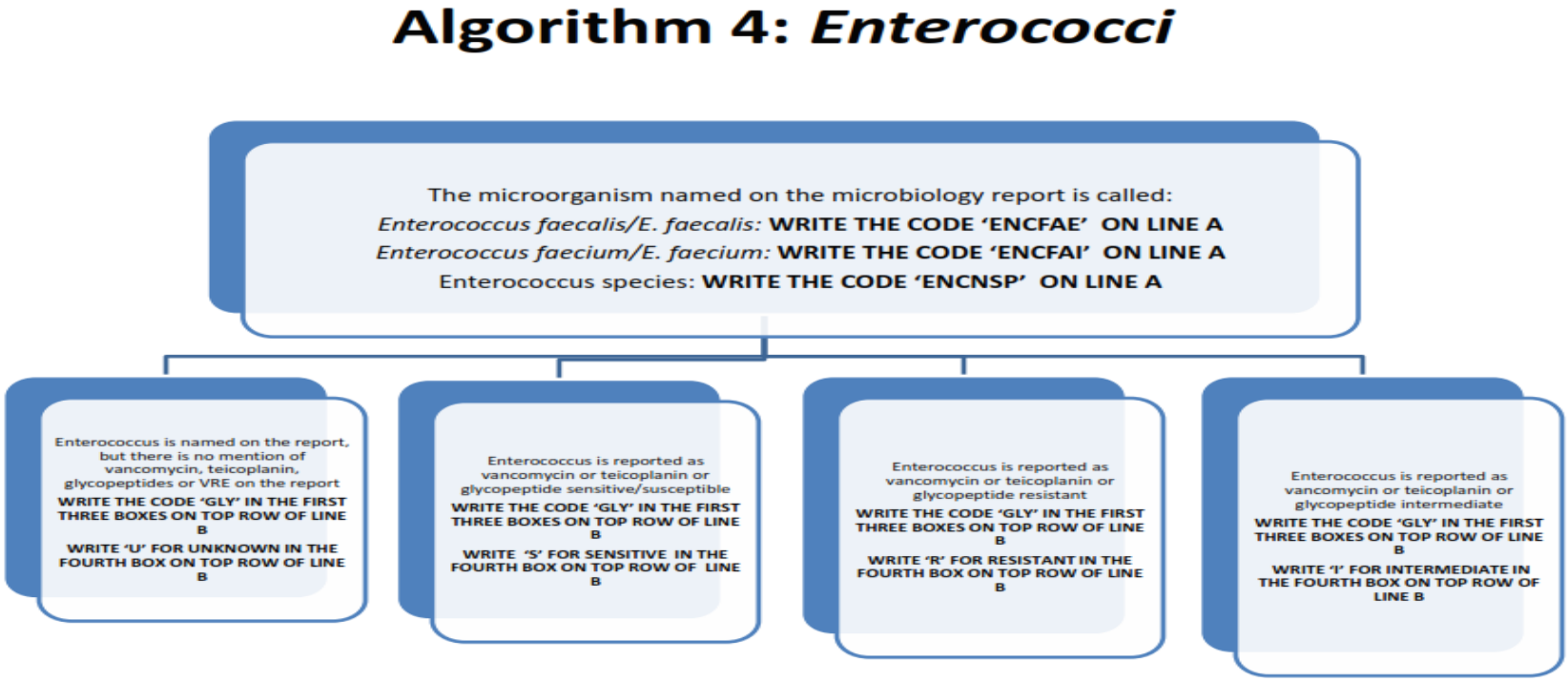
Algorithm 3b: *Staphylococcus aureus*



These three names are interchangeable: Glycopeptide = Vancomycin = Teicoplanin

A. NAME OF ISOLATED MICROORGANISM (PLEASE USE CODE LIST) B. TESTED	1. A	STAAUR	STAAUR	STAAUR
	B	OXA S GLY U	OXA R GLY U	OXA U GLY U

2.3.4.4 Algorithm 4: Microorganism on report is Enterococcus

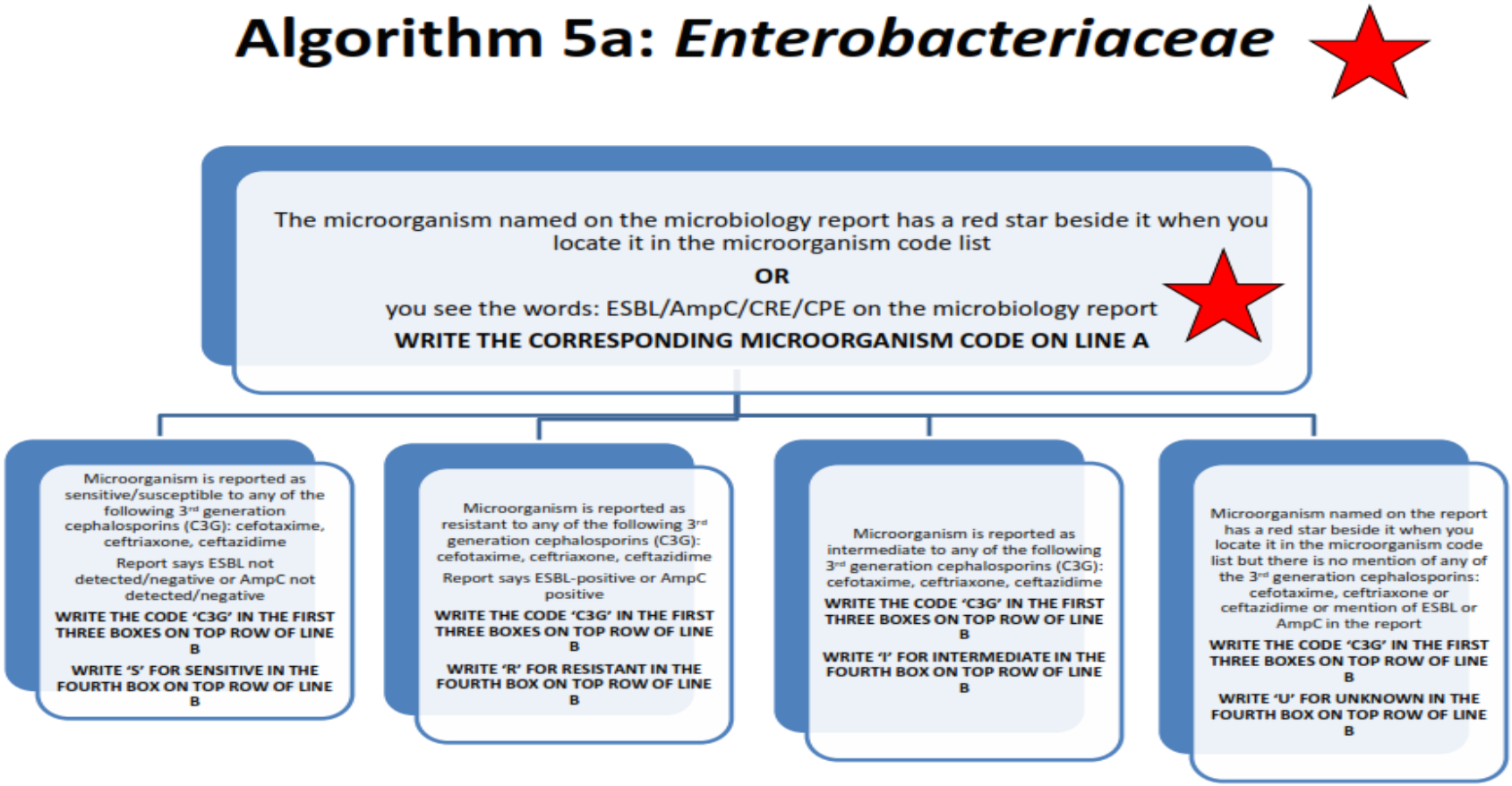


These three names are interchangeable: Glycopeptide = Vancomycin = Teicoplanin

A. NAME OF ISOLATED MICROORGANISM (PLEASE USE CODE LIST)	1. A	ENCFAE	ENCFAE	ENCFAE	ENCFAE
	B	GLY S	GLY R	GLY I	GLY U

A. NAME OF ISOLATED MICROORGANISM (PLEASE USE CODE LIST)	1. A	ENCFAI	ENCFAI	ENCFAI	ENCFAI
	B	GLY S	GLY R	GLY I	GLY U

2.3.4.5 Algorithm 5: Microorganism on report has a star beside it in Appendix F



Algorithm 5b: *Enterobacteriaceae*

The microorganism named on the microbiology report has a red star beside it when you locate it in the microorganism code list

OR

you see the words: ESBL/AmpC/CRE/CPE on the microbiology report

WRITE THE CORRESPONDING MICROORGANISM CODE ON LINE A

Microorganism is reported as sensitive/susceptible to any of the following carbapenems: meropenem, ertapenem, doripenem, imipenem

Report says CRE/CPE not detected/negative

WRITE THE CODE 'CAR' IN THE FIRST THREE BOXES ON SECOND ROW OF LINE B

WRITE 'S' FOR SENSITIVE IN THE FOURTH BOX ON SECOND ROW OF LINE B

Microorganism is reported as resistant to any of the following carbapenems: meropenem, ertapenem, doripenem, imipenem

Report says CRE/CPE detected/positive

WRITE THE CODE 'CAR' IN THE FIRST THREE BOXES ON SECOND ROW OF LINE B

WRITE 'R' FOR RESISTANT IN THE FOURTH BOX ON SECOND ROW OF LINE B

Microorganism is reported as intermediate to any of the following carbapenems: meropenem, ertapenem, doripenem, imipenem

WRITE THE CODE 'CAR' IN THE FIRST THREE BOXES ON SECOND ROW OF LINE B

WRITE 'I' FOR INTERMEDIATE IN THE FOURTH BOX ON SECOND ROW OF LINE B

Microorganism named on the report has a red star beside it when you locate it in the microorganism code list but there is no mention of any of the carbapenems; meropenem, ertapenem, doripenem, imipenem or mention of CRE/CPE in the report

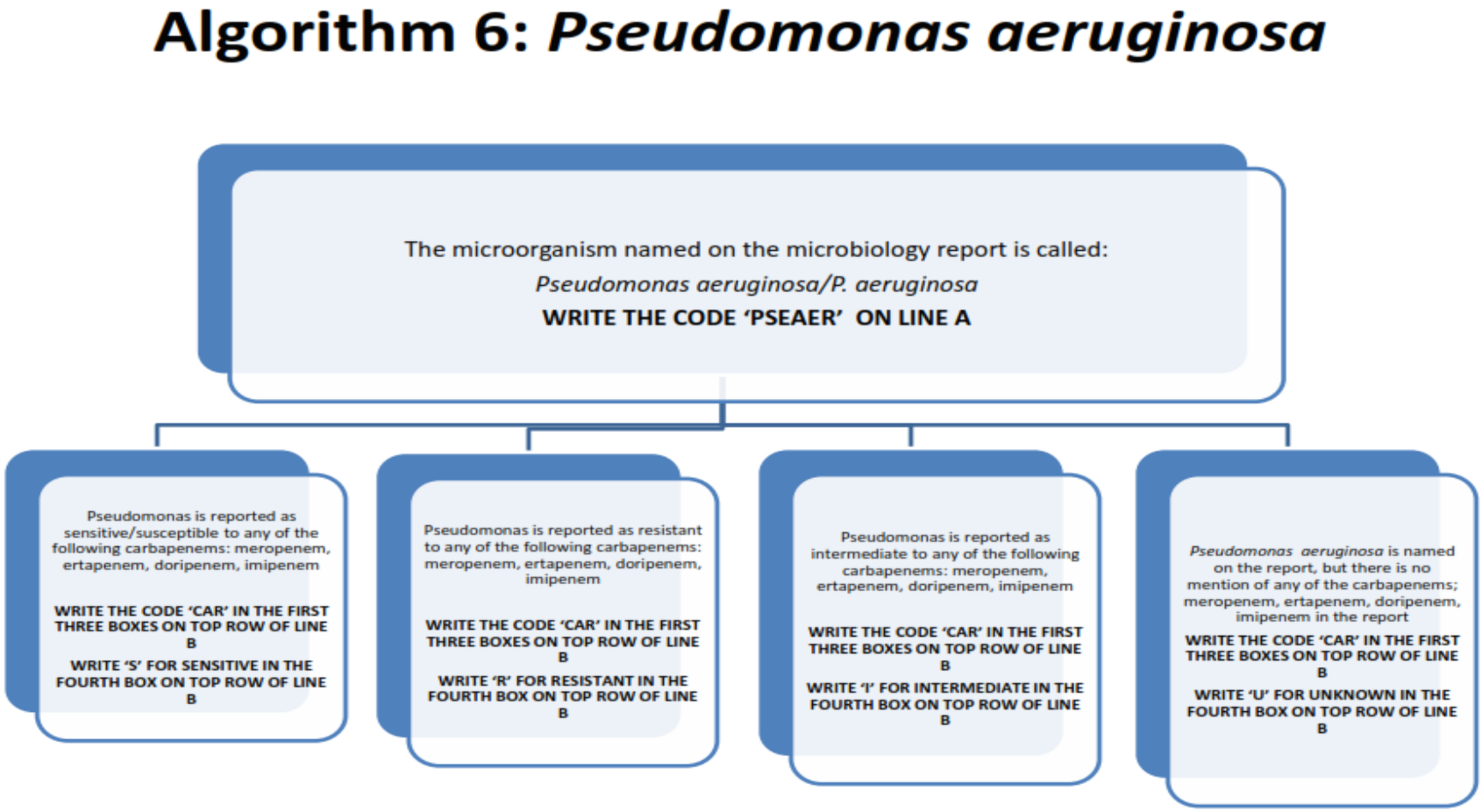
WRITE THE CODE 'CAR' IN THE FIRST THREE BOXES ON SECOND ROW OF LINE B

WRITE 'U' FOR UNKNOWN IN THE FOURTH BOX ON SECOND ROW OF LINE B

A. NAME OF ISOLATED MICROORGANISM (PLEASE USE CODE LIST) B. TESTED	1 A	ESCCOL	ESCCOL	ESCCOL	ESCCOL
	B	C3G S CAR U	C3G R CAR U	C3G I CAR U	C3G U CAR U

A. NAME OF ISOLATED MICROORGANISM (PLEASE USE CODE LIST) B. TESTED	1. A	KLEPNE	KLEPNE
	B	C3G S CAR S	C3G R CAR R

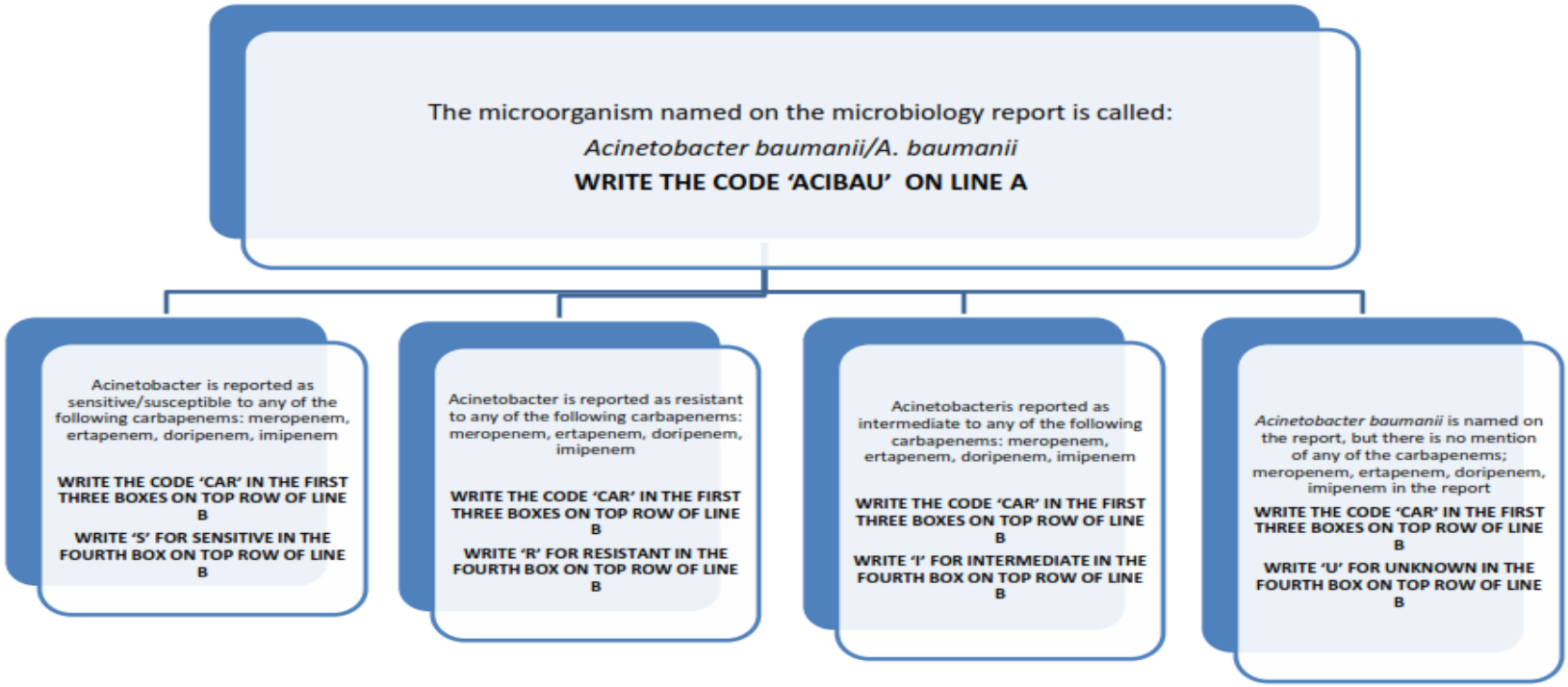
2.3.4.6 Algorithm 6: Microorganism on report is *P. aeruginosa*



A. NAME OF ISOLATED MICROORGANISM	1. A	PSEAER	PSEAER	PSEAER	PSEAER
		CAR S	CAR R	CAR I	CAR U

2.3.4.7 Algorithm 6: Microorganism on report is *A. baumanii*

Algorithm 7: *Acinetobacter baumanii*



A. NAME OF ISOLATED MICROORGANISM (PLEASE USE CODE LIST)	1. A	ACIBAU	ACIBAU	ACIBAU	ACIBAU
	B	CAR S	CAR R	CAR I	CAR U

2.4 I have completed the data collection on the ward/unit – What's next?

1. Check each of the completed resident questionnaires and make sure that they are properly labelled, with each resident's study number and that all of the sections have been correctly completed
2. For residents with symptoms or signs recorded, check whether the infection confirmation box has been ticked
3. If a resident had symptoms or signs recorded, but did not ultimately meet the criteria for infection confirmation, write **'HCAI not present'** clearly on the top of page 1 of the resident questionnaire. This will make life easier later on, when you go to enter the data on resident questionnaires into the HALT software, because it will be obvious that although the resident had signs and symptoms recorded, ultimately the criteria for the HCAI in question were not all fulfilled
4. Keep the completed ward list and resident questionnaires from the same ward/unit together in a folder until you are ready to begin the data entry using the HALT software

2.5 I have completed all of the data collection for my LTCF – What's next?

1. Gather up all the folders containing the completed ward lists and resident questionnaires for your LTCF
2. Add up the information recorded in the summary tables on each completed ward list to complete Section B – Denominator Data on the Institutional Questionnaire
3. Complete Institutional Questionnaire Section F 'How was the survey performed in your facility'
4. Go to the **HALT Data Entry Manual** for further instructions on how to enter your data into the software and how to submit your completed data to HPSC

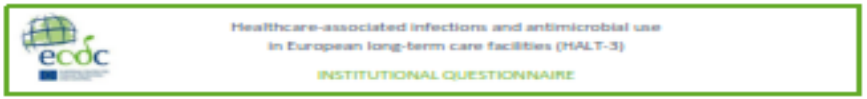
3.0 APPENDICES

Appendix A: HALT 2016 (Ireland) steering group membership

- Dr Karen Burns, Consultant Microbiologist, HSE-HPSC & Beaumont Hospital (Chair)
- Ms Helen Murphy, Infection Prevention & Control Nurse Manager, HSE-HPSC
- Ms Margaret Nadin, Project Manager, HSE NMPDU, Dublin-North East
- Ms Mary McKenna, Lead Infection Prevention & Control ADON, HSE HCAI & AMR Clinical Programme, Quality Improvement Division
- Ms Grainne Parker, Communicable Disease Control Nurse, Public Health Department, HSE South (South East)
- Ms Mags Moran, Community Infection Control Nurse Manager, Donegal Community Services, HSE West
- Dr Nuala O'Connor, General Practitioner & ICGP Lead HSE HCAI & AMR Clinical Programme, Quality Improvement Division
- Dr Diarmuid O'Shea, Consultant Geriatrician, St Vincent's University Hospital & HSE Clinical Programme for Older People, Clinical Lead
- Dr Mimi Fan, Consultant Geriatrician, Mater Hospital, Irish Society for Physicians in Geriatric Medicine
- Ms Fiona McMahon, Project Manager, HSE NMPDU Mid-West/ONMSD
- Mr Gerry Clerkin, Head of Quality & Safety, HSE Social Care Division
- Ms Linda Moore, Quality, Standards & Compliance Officer, HSE National Mental Health Division
- Ms Lisa Malone, Practice Development Facilitator, Nursing Homes Ireland
- Dr Fidelma Fitzpatrick, Consultant Microbiologist, Beaumont Hospital & Senior Lecturer in Microbiology, RCSI
- Dr Fiona Roche, Trinity College Dublin, Bioinformatics Support Research Fellow
- Dr Ian Callanan, Group Clinical Audit Facilitator, St Vincent's Healthcare Group
- Dr Akke Vellinga, Senior Lecturer & Epidemiologist, School of Medicine, NUI Galway
- Ms Sheila Donlon, ADON Infection Prevention & Control Department, Beaumont Hospital
- Mr Sean Egan, Regulatory Lead for Antimicrobial Stewardship, Health Information & Quality Authority
- Ms Meera Tandan, PhD student, NUI Galway
- Ms Rita Torrans, Community Pharmacist, Abbey Healthcare, Irish Pharmaceutical Union
- Ms Josephine Galway, Director of Nursing, St Columba's Hospital & Castlecomer District Hospital, Irish Association of Directors of Nursing & Midwifery

The HALT 2016 Steering Group has been convened under the auspices of the Royal College of Physicians of Ireland & Health Service Executive Clinical Advisory Group on Healthcare-Associated Infections & Antimicrobial Resistance

Appendix B: Institutional questionnaire



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

INSTITUTIONAL QUESTIONNAIRE

Remark: It is **essential** that each facility enrolled in HALT-3 completes this questionnaire as it collects vital data. We recommend that the person completing this questionnaire is the person in charge of the facility. If this person cannot answer some of the questions or locate the relevant information, they should request assistance from persons who are able to answer those questions. **This is especially relevant for questions relating to antimicrobial policy.**

A – GENERAL INFORMATION

DATE OF THE SURVEY IN YOUR FACILITY ☐☐ ☐☐ 201☐

FACILITY STUDY NUMBER *(allotted by your national HALT-3 coordinator)* ☐☐☐☐☐☐☐

OWNERSHIP OF THE FACILITY ☐ *Public* ☐ *For profit* ☐ *Not for profit*

QUALIFIED NURSING CARE AVAILABLE 24/24h IN THE FACILITY ☐ *Yes* ☐ *No*

IN THE FACILITY:

Total number of FTE REGISTERED NURSES ☐☐☐☐ *FTE registered nurses*

Total number of FTE NURSING ASSISTANTS ☐☐☐☐ *FTE nursing assistants*

Total number of RESIDENT ROOMS ☐☐☐☐ *Rooms*

Total number of SINGLE OCCUPANCY RESIDENT ROOMS ☐☐☐☐ *Single occupancy rooms*

Total number of SINGLE OCCUPANCY RESIDENT ROOMS WITH INDIVIDUAL TOILET AND WASHING FACILITIES ☐☐☐☐ *Rooms with individual toilet and washing facilities*

B – DENOMINATOR DATA

This table when completed will summarize the data collected in each ward (ward list) for the total population

IN YOUR FACILITY, ON THE DAY OF THE SURVEY, TOTAL NUMBER OF:

BEDS IN THE FACILITY *(both occupied and non-occupied beds)* ☐☐☐☐

OCCUPIED BEDS ☐☐☐☐

ELIGIBLE RESIDENTS:

PRESENT AT 8 AM AND NOT DISCHARGED AT THE TIME OF THE SURVEY ☐☐☐☐

AGE OVER 85 YEARS ☐☐☐☐

MALE RESIDENTS ☐☐☐☐

RESIDENTS RECEIVING AT LEAST ONE ANTIMICROBIAL AGENT ☐☐☐☐

RESIDENTS WITH AT LEAST ONE INFECTION ☐☐☐☐

RESIDENTS WITH ANY URINARY CATHETER ☐☐☐☐

RESIDENTS WITH ANY VASCULAR CATHETER ☐☐☐☐

RESIDENTS WITH PRESSURE SORES ☐☐☐☐

RESIDENTS WITH OTHER WOUNDS ☐☐☐☐

RESIDENTS DISORIENTED IN TIME AND/OR SPACE ☐☐☐☐

RESIDENTS USING A WHEELCHAIR OR BEDRIDDEN ☐☐☐☐

RESIDENTS WITH SURGERY IN THE PREVIOUS 30 DAYS ☐☐☐☐

RESIDENTS WITH URINARY AND/OR FAECAL INCONTINENCE ☐☐☐☐

C – MEDICAL CARE AND COORDINATION

1. Is medical resident care, including antimicrobial prescribing, in the facility provided by the:
   - ☐ *Personal general practitioners (GP) or group practice(s) only*
   - ☐ *Medical staff, employed by the facility only*
   - ☐ *Both personal GPs/group practice(s) and medical doctor(s) employed by the facility*

2. Are medical activities in the facility coordinated by a coordinating medical physician (CP)?
   - ☐ *No, there is no internal or external coordination of the medical activity*
   - ☐ *Yes, there is a physician from inside the facility (internal) who coordinates the medical activities*
   - ☐ *Yes, there is a physician from outside the facility (external) who coordinates the medical activities*
   - ☐ *Yes, there is both a physician from inside and outside the facility (internal and external) who coordinates the medical activities*

3. Can any of the following persons consult the medical/clinical records of all residents in the facility?
   - *The physician(s) in charge of medical coordination in the facility?* ☐ *Yes* ☐ *No*
   - *The nursing staff* ☐ *Yes* ☐ *No*

D – INFECTION CONTROL PRACTICE

1. Are there persons with training in infection control/prevention available to the staff of the facility?
   ☐ *Yes* ☐ *No*

2. If a person with training in infection control/prevention is available, is this person:
   ☐ *A nurse* ☐ *A doctor* ☐ *There is both a nurse and a doctor*

   Is this/are these person(s):
   - ☐ *Working in the facility (internal)*
   - ☐ *Not working in the facility (external)*
   - ☐ *There is both an internal and an external person*

3. In the facility, is/are there:
   (Please complete this question even if there is no person with training in infection control/prevention available in the facility)
   - ☐ *Infection prevention and control training of the nursing and paramedical staff*
   - ☐ *Appropriate training of general practitioners and medical staff in infection prevention and control*
   - ☐ *Development of care protocols*
   - ☐ *Registration of residents colonized/infected with multi-resistant microorganisms*
   - ☐ *Designation of a person responsible for reporting and management of outbreaks*
   - ☐ *Feedback on surveillance results to the nursing/medical staff of the facility*

☐ *Supervision of disinfection and sterilization of medical and care material*

☐ *Decisions on isolation & additional precautions for residents colonized with resistant microorganisms*

☐ *Offer of annual immunisation for flu to all residents*

☐ *Organization, control, feedback on hand hygiene in the facility on a regular basis*

☐ *Organization, control, feedback of a process surveillance/audit of infection policies and procedures (on regular basis)*

☐ *None of the above*

4. In the facility, is there an infection control committee (internal or external)? ☐ *Yes* ☐ *No*

5. How many infection control committee meetings were organized in the previous year?

Total number of meetings last year? ⌊_⌊_⌊ *meetings previous year*

6. Can the facility ask for help and expertise from an external infection control (IC) team on a formal basis (e.g. IC team from a local hospital)?

☐ *Yes* ☐ *No*

7. In the facility, is a written protocol available for:

- *the management of MRSA and/or other multidrug resistant microorganisms* ☐ *Yes* ☐ *No*
- *hand hygiene* ☐ *Yes* ☐ *No*
- *the management of urinary catheters* ☐ *Yes* ☐ *No*
- *the management of venous catheters/lines* ☐ *Yes* ☐ *No*
- *the management of enteral feeding* ☐ *Yes* ☐ *No*

8. Is a surveillance programme of healthcare-associated infections in place in the facility? *(annual summary report of number of urinary tract infections, respiratory tract infections, etc...)*

☐ *Yes* ☐ *No*

9. In the facility, which of following products are available for hand hygiene?

- *Alcohol rub solution* ☐ *Yes* ☐ *No*
- *Wipes (alcoholic)* ☐ *Yes* ☐ *No*
- *Liquid soap (antiseptic/ other)* ☐ *Yes* ☐ *No*
- *Bar soap in clinical areas* ☐ *Yes* ☐ *No*

10. Which hand hygiene method is most frequently used in your facility <u>when hands are not soiled</u> (<u>only one answer</u> is possible)?

☐ *Hand disinfection with an alcohol solution*

☐ *Hand washing with water and a non antiseptic soap*

☐ *Hand washing with water and an antiseptic soap*

11. How many litres of hand alcohol were used last year?

Total annual consumption in litres ⌊_⌊_⌊ *Litres last year*

12. Last year, was a hand hygiene training session organized for care professionals of the facility?

☐ *Yes* ☐ *No*

13. How many hand hygiene opportunities were there observed in your facility last year?

Number of observed opportunities ⌊_⌊_⌊_⌊_⌊ *Opportunities last year*

E – ANTIMICROBIAL POLICY

1. Does the facility use a 'restrictive list' of antimicrobials to be prescribed? *(prescription requiring permission of a designated person or not to be used)*

☐ *Yes* ☐ *No*

2. If a restrictive list exists, what kinds of antibiotics are restricted?

☐ *Carbapenems*

☐ *3rd generation cephalosporins*

☐ *Fluoroquinolones*

☐ *Vancomycin*

☐ *Mupirocin*

☐ *Glycopeptides*

☐ *Broad-spectrum antibiotics*

☐ *Intravenously administered antibiotics*

3. Which of following elements are present in the facility?

☐ *An antimicrobial committee*

☐ *Annual regular training on appropriate antimicrobial prescribing*

☐ *Written guidelines for appropriate antimicrobial use (good practice) in the facility*

☐ *Data available on annual antimicrobial consumption by antimicrobial class*

☐ *A system to remind healthcare workers of the importance of microbiological samples to inform the best antimicrobial choice*

☐ *Local (i.e. for that region/locality or national if small country) antimicrobial resistance profile summaries available in the LTCF or in the GP surgeries who prescribe*

☐ *A system that requires permission from a designated person(s) for prescribing of restricted antimicrobial, not included in local formulary*

☐ *Advice from a pharmacist for antimicrobials not included in the formulary*

☐ *A therapeutic formulary, comprising a list of antibiotics*

☐ *Feedback to the GPs on antimicrobial consumption in the facility*

☐ *None of the above*

4. If written therapeutic guidelines are present in the facility, are they on:

- *Respiratory tract infections?* ☐ *Yes* ☐ *No*
- *Urinary tract infections?* ☐ *Yes* ☐ *No*
- *Wound and soft tissue infections?* ☐ *Yes* ☐ *No*

5. Do you perform a urine dipstick test for detection of urinary tract infections in the facility?

☐ *Routinely* ☐ *Sometimes* ☐ *Never*

6. Is a programme for surveillance of antimicrobial consumption and feedback in place in the facility?

☐ *Yes* ☐ *No*

7. Is a programme for surveillance of resistant microorganisms in place in the facility? (*annual summary report for MRSA, Clostridium difficile, etc)*

☐ *Yes* ☐ *No*

8. How are antimicrobials supplied to your facility? (only **one answer** possible)

☐ Provided by more than one pharmacy

☐ Provided by one pharmacy only

☐ This facility does not acquire antimicrobials directly from pharmacies; antimicrobials are acquired by residents directly (e.g. supplied by the family)

9. How many microbiological laboratories do you work with? (only **one answer** possible)

☐ More than one microbiological laboratory

☐ One single microbiological laboratory

☐ This facility does not send microbiological samples to any laboratories; each visiting general practitioner can work with his microbiological laboratory of choice.

F – HOW WAS THE SURVEY PERFORMED IN YOUR FACILITY?

1. Who collected the HALT-3 data (incl. institutional and resident questionnaires)?

☐ *A physician*

☐ *A nurse*

☐ *Another person*

2. If no physician was involved in the HALT-3 data collection (institutional and resident questionnaires), did a physician validate the data?

☐ *Yes* ☐ *No*

The HALT-3 team thanks you for your participation!

Appendix C: Ward list

PPS of HAI & ANTIMICROBIAL USE in LTCFs (HALT-3)

HALT-3: WARD LIST

PPS DENOMINATOR DATA BY WARD (for internal use only)

DATE OF THE PPS SURVEY IN YOUR FACILITY .... /..../..... FACILITY STUDY NUMBER: .....

NAME OF THE WARD: .....

HOW MANY BEDS IN THIS WARD? (INCLUDES BOTH OCCUPIED AND NON-OCCUPIED BEDS): ..... *beds*

The ward list is a form developed to aid surveyors' collection of denominator data for the Institutional Questionnaire. Its use is not mandatory, i.e. it is optional.

The surveillance protocol specifies that surveyors should collect information from each resident eligible resident, i.e. those living full-time in the facility, present in the ward at 8am and not discharged at the time of the survey. This ward list collects data from each resident. Once these data have been collected for all wards, surveyors can sum the denominators from each ward and transfer these totals to the institutional questionnaire. Facilities that do not have different wards only need to complete one ward list.

Instructions:

- All residents present on the day of the survey should be listed in columns 1 and 2.
- Add a code in column 3 that is unique for every resident in the facility. Numbers and/or letters can be used. This study number should be entered on all forms for that same resident.
- If the resident meets the eligibility criteria (i.e. living full-time in the facility, present at 8am and not discharged at the time of the survey), complete columns 4 to 15 by writing an 'X' if the risk factor or care load indicator is present on the day of the survey.
- Sum the Xs in each column.
- Write the totals of each column in the summary table at the end of the ward list.
- Sum the totals of the summary tables in the different ward lists and report the totals in part B of the institutional questionnaire.
- If a resident on the ward list has an X in columns 7 and/or 8 (i.e. they were receiving at least one antimicrobial agent and/or had at least one infection on the day of the survey, complete a resident form for this resident.

COMPLETE FOLLOWING LIST FOR ALL RESIDENTS PRESENT ON THE DAY OF THE PPS

COMPLETE THIS PART OF THE LIST FOR ALL RESIDENTS IN THE WARD				COMPLETE THIS PART FOR ALL ELIGIBLE RESIDENTS (residents from column 3) Write a X in the column if the condition is TRUE ON THE DAY OF THE SURVEY												
Room & bed number	Resident name	Study number of the resident	Present at 8 AM and not discharged at time of PPS	Age over 85 years	Male resident	Antimicrobial agent	Signs/symptoms of an infection	Infection matching a case definition	Urinary catheter	Vascular catheter	Pressure sore	Other wound	Disorientation in time and/or space	Wheelchair bound or bedridden	Surgery in the previous 30 days	Urinary and/or faecal incontinence
1	2	3	4	5	6	7	8a	8b	9	10	11a	11b	12	13	14	15

COMPLETE FOLLOWING LIST FOR ALL RESIDENTS PRESENT ON THE DAY OF THE PPS

COMPLETE THIS PART OF THE LIST FOR ALL RESIDENTS IN THE WARD				COMPLETE THIS PART FOR ALL ELIGIBLE RESIDENTS (residents from column 3) Write a X in the column if the condition is TRUE ON THE DAY OF THE SURVEY												
Room & bed number	Resident name	Study number of the resident	Present at 8 AM and not discharged at time of PPS	Age over 85 years	Male resident	Antimicrobial agent	Signs/symptoms of an infection	Infection matching a case definition	Urinary catheter	Vascular catheter	Pressure sore	Other wound	Disorientation in time and/or space	Wheelchair bound or bedridden	Surgery in the previous 30 days	Urinary and/or faecal incontinence
1	2	3	4	5	6	7	8a	8b	9	10	11a	11b	12	13	14	15

SUMMARY TABLE: TOTAL NUMBERS FOR THIS WARD

Use this table to add the number of 'X' from each column from each ward list from the facility.
Transfer the total number into Part B of the institutional questionnaire, i.e. 'Denominator Data'

On the day of the PPS, TOTAL number of:	Column	TOTAL NUMBERS
Total number of beds on this ward (total bed capacity)	1	
Occupied beds in the ward	2	
Eligible residents, present at 8 AM and not discharged at time of PPS	4	
Age over 85 years	5	
Male residents	6	
Residents receiving at least one antimicrobial agent	7	
Residents with at least one infection	8b	
Residents with any urinary catheter	9	
Residents with any vascular catheter	10	
Residents with pressure sores	11a	
Residents with other wounds	11b	
Residents disorientated in time and/or space	12	
Residents using wheelchair or being bedridden	13	
Residents with surgery in the previous 30 days	14	
Residents with urinary and/or faecal incontinence	15	

Keep this ward list safely in your LTCF until the publication of the national HALT report

Appendix D: Resident questionnaire & HCAI case definitions

RESIDENT STUDY NUMBER |__|__|__|__|

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

RESIDENT QUESTIONNAIRE

RESIDENT DATA

GENDER	☐ *Male*	☐ *Female*	
BIRTH YEAR	|__|__|__|__| *(YYYY)*		
LENGTH OF STAY IN THE FACILITY	☐ *Less than one year*	☐ *One year or longer*	
ADMISSION TO A HOSPITAL IN THE LAST 3 MONTHS	☐ *Yes*	☐ *No*	
SURGERY IN THE PREVIOUS 30 DAYS	☐ *Yes*	☐ *No*	
PRESENCE OF:			
URINARY CATHETER	☐ *Yes*	☐ *No*	
VASCULAR CATHETER	☐ *Yes*	☐ *No*	
INCONTINENCE (URINARY AND/OR FAECAL)	☐ *Yes*	☐ *No*	
WOUNDS			
- PRESSURE SORE	☐ *Yes*	☐ *No*	
- OTHER WOUNDS	☐ *Yes*	☐ *No*	
DISORIENTATION (IN TIME AND/OR SPACE)	☐ *Yes*	☐ *No*	
MOBILITY	☐ *Ambulant*	☐ *Wheelchair*	☐ *Bedridden*

On the day of the survey, the resident:

☐ *RECEIVES AN **ANTIMICROBIAL AGENT*** → *COMPLETE PART A*
This includes: (i) Residents receiving prophylactic antimicrobials
OR (ii) Residents receiving therapeutic antimicrobials

☐ *PRESENTS CONFIRMED OR PROBABLE **INFECTION(S)*** → *COMPLETE PART B*
Residents with infection(s) AND resident not receiving antimicrobials

☐ *BOTH: **ANTIMICROBIAL USE AND INFECTION(S)*** → *COMPLETE PART A & B*
This includes: (i) Residents with infection(s) AND receiving antimicrobials today (whether or not linked to same infection site)
OR (ii) Residents whose signs/symptoms of an infection have resolved but who are still receiving antimicrobials for that infection

PART A: ANTIMICROBIAL USE

	ANTIMICROBIAL 1	ANTIMICROBIAL 2	ANTIMICROBIAL 3	ANTIMICROBIAL 4
ANTIMICROBIAL NAME	....	....	....	....
ADMINISTRATION ROUTE *PARENTERAL = IM, IV OR SC*	☐ *Oral* ☐ *Parenteral* ☐ *Other*	☐ *Oral* ☐ *Parenteral* ☐ *Other*	☐ *Oral* ☐ *Parenteral* ☐ *Other*	☐ *Oral* ☐ *Parenteral* ☐ *Other*
END DATE / REVIEW DATE OF TREATMENT KNOWN?	☐ *No* ☐ *Yes*	☐ *No* ☐ *Yes*	☐ *No* ☐ *Yes*	☐ *No* ☐ *Yes*
TYPE OF TREATMENT	☐ *Prophylactic* ☐ *Therapeutic*	☐ *Prophylactic* ☐ *Therapeutic*	☐ *Prophylactic* ☐ *Therapeutic*	☐ *Prophylactic* ☐ *Therapeutic*
ANTIMICROBIAL GIVEN FOR	☐ *Urinary tract* ☐ *Genital tract* ☐ *Skin or wound* ☐ *Respiratory tract* ☐ *Gastrointestinal* ☐ *Eye* ☐ *Ear, nose, mouth* ☐ *Surgical site* ☐ *Tuberculosis* ☐ *Systemic infection* ☐ *Unexplained fever* ☐ *Other (specify)*	☐ *Urinary tract* ☐ *Genital tract* ☐ *Skin or wound* ☐ *Respiratory tract* ☐ *Gastrointestinal* ☐ *Eye* ☐ *Ear, nose, mouth* ☐ *Surgical site* ☐ *Tuberculosis* ☐ *Systemic infection* ☐ *Unexplained fever* ☐ *Other (specify)*	☐ *Urinary tract* ☐ *Genital tract* ☐ *Skin or wound* ☐ *Respiratory tract* ☐ *Gastrointestinal* ☐ *Eye* ☐ *Ear, nose, mouth* ☐ *Surgical site* ☐ *Tuberculosis* ☐ *Systemic infection* ☐ *Unexplained fever* ☐ *Other (specify)*	☐ *Urinary tract* ☐ *Genital tract* ☐ *Skin or wound* ☐ *Respiratory tract* ☐ *Gastrointestinal* ☐ *Eye* ☐ *Ear, nose, mouth* ☐ *Surgical site* ☐ *Tuberculosis* ☐ *Systemic infection* ☐ *Unexplained fever* ☐ *Other (specify)* ....
WHERE PRESCRIBED?	☐ *In this facility* ☐ *In the hospital* ☐ *Elsewhere*	☐ *In this facility* ☐ *In the hospital* ☐ *Elsewhere*	☐ *In this facility* ☐ *In the hospital* ☐ *Elsewhere*	☐ *In this facility* ☐ *In the hospital* ☐ *Elsewhere*

PART B: HEALTHCARE-ASSOCIATED INFECTIONS

		INFECTION 1	INFECTION 2	INFECTION 3	INFECTION 4
INFECTION CODE		|__|__|__|__|__|__|	|__|__|__|__|__|__|	|__|__|__|__|__|__|	|__|__|__|__|__|__|
IF 'OTHER', PLEASE SPECIFY		....	....	....	....
PRESENT AT (RE-)ADMISSION		☐ *No* ☐ *Yes*	☐ *No* ☐ *Yes*	☐ *No* ☐ *Yes*	☐ *No* ☐ *Yes*
DATE OF ONSET (DD/MM/YY)		|__|__|/|__|__|/|__|__|	|__|__|/|__|__|/|__|__|	|__|__|/|__|__|/|__|__|	|__|__|/|__|__|/|__|__|
ORIGIN OF INFECTION		☐ *Current LTCF* ☐ *Other LTCF* ☐ *Hospital* ☐ *Unknown*	☐ *Current LTCF* ☐ *Other LTCF* ☐ *Hospital* ☐ *Unknown*	☐ *Current LTCF* ☐ *Other LTCF* ☐ *Hospital* ☐ *Unknown*	☐ *Current LTCF* ☐ *Other LTCF* ☐ *Hospital* ☐ *Unknown*
A. NAME OF ISOLATED MICROORGANISM (PLEASE USE CODE LIST) B. TESTED ANTIMICROBIAL(S) AND RESISTANCE ONLY FOR STAAUR, ENC***, ACIBAU, PSEAER OR ENTEROBACTERIACEAE (CIT***, ENB***, ESCCOL, KLE***, MOOSPP, PRT***, SER***)	1. A	|__|__|__|__|__|__|	|__|__|__|__|__|__|	|__|__|__|__|__|__|	|__|__|__|__|__|__|
	B	|__|__|__| |__| |__|__|__| |__|	|__|__|__| |__| |__|__|__| |__|	|__|__|__| |__| |__|__|__| |__|	|__|__|__| |__| |__|__|__| |__|
	2. A	|__|__|__|__|__|__|	|__|__|__|__|__|__|	|__|__|__|__|__|__|	|__|__|__|__|__|__|
	B	|__|__|__| |__| |__|__|__| |__|	|__|__|__| |__| |__|__|__| |__|	|__|__|__| |__| |__|__|__| |__|	|__|__|__| |__| |__|__|__| |__|
	3. A	|__|__|__|__|__|__|	|__|__|__|__|__|__|	|__|__|__|__|__|__|	|__|__|__|__|__|__|
	B	|__|__|__| |__| |__|__|__| |__|	|__|__|__| |__| |__|__|__| |__|	|__|__|__| |__| |__|__|__| |__|	|__|__|__| |__| |__|__|__| |__|

[1]Tested antibiotic(s): STAAUR: oxacillin (OXA) or glycopeptides (GLY); ENC***: GLY only; Enterobacteriaceae: 3rd-gen cephalosporins (C3G) or carbapenems (CAR); PSEAER and ACIBAU: CAR only. [2]Resistance: S=sensitive, I=intermediate, R=resistant, U=unknown

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

CASE DEFINITIONS OF INFECTIONS

RESIDENT STUDY NUMBER

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 over baseline from any site (oral, tympanic, axillary)

** **Leucocytosis**: 1) Neutrophilia > 14,000 leucocytes/mm^3 or 2) left shift (>6% bands or ≥ 1500 bands/mm^3)

§ **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

❒ Resident without a urinary catheter	❒ Resident with a urinary catheter
SIGNS/SYMPTOMS *AT LEAST **ONE** OF THE FOLLOWING (①, ② or ③) CRITERIA:* ❒ ① Acute dysuria OR acute pain/swelling or tenderness of the testes, epididymis, or prostate ❒ ② Fever* OR leukocytosis** **AND** One or more of the following: ☐ Acute costovertebral angle pain ☐ Suprapubic pain/tenderness ☐ Gross hematuria ☐ New or marked increase in frequency ☐ New or marked increase in urgency ☐ New or marked increase in incontinence ❒ ③ Two or more (in the absence of fever or leucocytosis): ☐ Frequency (new/increased) ☐ Suprapubic pain ☐ Urgency (new/increased) ☐ Gross hematuria ☐ Incontinence (new/increased)	*SIGNS/SYMPTOMS* *AT LEAST **ONE** OF THE FOLLOWING (①, ②, ③ or ④) CRITERIA:* ❒ ① Fever*, rigors, OR new onset hypotension with NO alternate site of infection ❒ ② Acute change mental status § OR acute functional decline §§ with NO alternate diagnosis AND leukocytosis** ❒ ③ New onset suprapubic or costovertebral angle pain or tenderness ❒ ④ Purulent discharge around catheter or acute pain, swelling or tenderness of testes, epididymis, or prostate
URINE CULTURE ❒ Not Done, negative or test results unknown ❒ Urine culture done AND: ☐ At least 10^5 cfu/ml of no more than 2 species of micro-organisms in a voided urine sample **OR** ☐ At least 10^2 cfu/ml of any number of organisms in a specimen collected by in-and-out catheter	*URINE CULTURE* ❒ Not done, negative or test results unknown ❒ Urine culture done AND: ☐ At least 10^5 cfu/ml of any organism(s) in a urinary catheter specimen

INFECTION CONFIRMATION

- ❒ Signs/symptoms AND urine culture positive: *INFECTION **CONFIRMED** (= **UTI-C**)*
- ❒ Signs/symptoms AND urine culture not done, negative or results unknown: *INFECTION **PROBABLE** (= **UTI-P**)*
- ❒ Infection treated on PPS day but no documentation of signs/symptoms *(hospital or other LTCF infections only)* *INFECTION **IMPORTED** (= **UTI-I**)*

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)

INFECTION CONFIRMATION

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

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 3)*
  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** (= **FLU-C**)*
- ❒ Infection treated on PPS day but no documentation of signs/symptoms: *INFECTION **IMPORTED** (= **FLU-I**) (hospital or other LTCF only)*

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 ☐ O_2 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 3* §§)	*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 ☐ O_2 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 3* §§)

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

INFECTION CONFIRMATION	*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 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**)*

RESIDENT STUDY NUMBER

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 3)*

INFECTION CONFIRMATION

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

SURGICAL SITE INFECTIONS

Infection occurs within 30 days after the operation date if no implant is left in place or within 90 days if implant is in place

SUPERFICIAL INCISIONAL

BOTH OF THE FOLLOWING CRITERIA MUST BE MET:

- ❒ Infection involves only skin and subcutaneous tissue of the incision
  AND
- ❒ At least one of the following:
  - ☐ Purulent drainage with or without laboratory confirmation, from the superficial incision
  - ☐ Organisms isolated from an aseptically obtained culture of fluid or tissue from the superficial incision
  - ☐ At least one of the following signs or symptoms of infection:
    - ☐ Tenderness or pain
    - ☐ Localised swelling
    - ☐ Redness
    - ☐ Heat
  - **AND**
  - Superficial incisional SSI made by a surgeon or attending physician

INFECTION CONFIRMATION

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

DEEP INCISIONAL

BOTH OF THE FOLLOWING CRITERIA MUST BE MET:

- ❒ 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 °C), localised 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

INFECTION CONFIRMATION

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

ORGAN/SPACE

BOTH OF THE FOLLOWING CRITERIA MUST BE MET:

- ❒ 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

INFECTION CONFIRMATION

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

RESIDENT STUDY NUMBER

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** (= **CONJ-I**) *(hospital or other LTCF only)*

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** (= **EAR-I**) *(hospital or other LTCF only)*

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** (= **SINU-I**) *(hospital or other LTCF only)*

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** (= **ORAL-I**) *(hospital or other LTCF only)*

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** (= **GE-I**) *(hospital or other LTCF only)*

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 gastro-intestinal 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** (= **CDI-I**) *(hospital or other LTCF only)*

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 3)*
- ☐ 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** (= **BSI-I**) *(hospital or other LTCF only)*

UNEXPLAINED FEVER

- ☐ The resident must have documentation in the medical record of fever *(for definition see top of page 3)* 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** (= **FUO-I**) *(hospital or other LTCF only)*

OTHER INFECTION(S)

Please specify (= **OTHER**)

Appendix E: Antimicrobials used in Ireland

Listed alphabetically and in order of administration route

Trade name	Route	Active ingredient
AMOCLAV	Oral	Amoxicillin and enzyme inhibitor
AMOXICILLIN	Oral	Amoxicillin
AMOXICILLIN/CLAVULANIC	Oral	Amoxicillin and enzyme inhibitor
AMOXIL	Oral	Amoxicillin
AMOXYCILLIN	Oral	Amoxicillin
AMPICILLAN	Oral	Ampicillin
AMPICILLIN	Oral	Ampicillin
ANCOTIL	Oral	Flucytosine
AUGMENTIN	Oral	Amoxicillin and enzyme inhibitor
AVELOX	Oral	Moxifloxacin
AZITHROMYCIN	Oral	Azithromycin
AZROMAX	Oral	Azithromycin
BIOFLOXCIN	Oral	Ciprofloxacin
BIRAVID	Oral	Ofloxacin
BY MYCIN	Oral	Doxycycline
BYFLUC	Oral	Fluconazole
CALVEPEN	Oral	Phenoxymethylpenicillin
CALVEPEN LEO	Oral	Phenoxymethylpenicillin
CEFACLOR	Oral	Cefaclor
CEFAGER	Oral	Cefaclor
CEFALEXIN	Oral	Cefalexin
CEFALEXIN	Oral	Cefaclor
CEFIXIME	Oral	Cefixime
CEFODOX	Oral	Cefpodoxime
CEFPODOXIME	Oral	Cefpodoxime
CEFRADINE	Oral	Cefradine
CEFTAL	Oral	Cefuroxime
CEFUROXIME	Oral	Cefuroxime
CEPHALEXIN	Oral	Cefalexin
CEPOREX	Oral	Cefalexin
CHLORAMPHENICOL	Oral	Chloramphenicol
CIFLOXAGER	Oral	Ciprofloxacin
CIFOX	Oral	Ciprofloxacin
CIPROFLOXACIN	Oral	Ciprofloxacin
CIPROXIN	Oral	Ciprofloxacin
CLARITHROMYCIN	Oral	Clarithromycin
CLAROSIP	Oral	Clarithromycin
CLARYL	Oral	Clarithromycin
CLAVAMEL	Oral	Amoxicillin and enzyme inhibitor
CLEOCIN	Oral	Clindamycin
CLINDAMYCIN	Oral	Clindamycin
CLINIMYCIN	Oral	Oxytetracycline

Trade name	Route	Active ingredient
CLONAMOX	Oral	Amoxicillin
CLONAMP	Oral	Ampicillin
CLONAMP	Oral	Amoxicillin
CLONOCI	Oral	Clarithromycin
CLONOCID	Oral	Clarithromycin
CLOROM	Oral	Clarithromycin
CO-AMOXICLAV	Oral	Amoxicillin and enzyme inhibitor
COTRIMEL	Oral	Sulfamethoxazole and trimethoprim
CO-TRIMOXAZOLE	Oral	Sulfamethoxazole and trimethoprim
CYCLOSERINE	Oral	Cycloserine
DALACIN C	Oral	Clindamycin
DAPSONE	Oral	Dapsone
DEMECLOCYCLINE	Oral	Demeclocycline
DIFLAZOLE	Oral	Fluconazole
DIFLUCAN	Oral	Fluconazole
DISTACLOR	Oral	Cefaclor
DOXYCYCLINE	Oral	Doxycycline
ERYCEN	Oral	Erythromycin
ERYMAX	Oral	Erythromycin
ERYTHROCIN	Oral	Erythromycin
ERYTHROCIN	Oral	Erythromycin
ERYTHROMYCIN	Oral	Erythromycin
ERYTHROMYCIN	Oral	Erythromycin
ERYTHROMYCIN ABT	Oral	Erythromycin
ERYTHROPED	Oral	Erythromycin
ERYTHROPED	Oral	Erythromycin
ETHAMBUTOL	Oral	Ethambutol
FASIGYN	Oral	Tinidazole
FLAGYL	Oral	Metronidazole
FLOXAPEN	Oral	Flucloxacillin
FLUCANDID	Oral	Fluconazole
FLUCILLIN	Oral	Flucloxacillin
FLUCLON	Oral	Flucloxacillin
FLUCLOXACILLIN	Oral	Flucloxacillin
FLUCOL	Oral	Fluconazole
FLUCONAZOLE	Oral	Fluconazole
FLUCYTOSINE	Oral	Flucytosine
FUCIDIN	Oral	Fusidic acid
FULCIN	Oral	Griseofulvin
FUNGAFINE	Oral	Terbinafine
FUNGILIN	Oral	Amphotericin B
FURADANTIN	Oral	Nitrofurantoin
FUSIDIC ACID	Oral	Fusidic acid

Trade name	Route	Active ingredient
GALENAMOX	Oral	Amoxicillin
GERAMOX	Oral	Amoxicillin
GERIFLOX	Oral	Flucloxacillin
GERMENTIN	Oral	Amoxicillin and enzyme inhibitor
GRIFULVIN	Oral	Griseofulvin
GRISEOFULVIN	Oral	Griseofulvin
GRISOVIN	Oral	Griseofulvin
HIPREX	Oral	Methenamine
IPRAL	Oral	Trimethoprim
ISONIAZ	Oral	Isoniazid
ISONIAZID	Oral	Isoniazid
ISOZID	Oral	Isoniazid
ITRACONAZOLE	Oral	Itraconazole
KEFEXIN	Oral	Cefalexin
KEFLEX	Oral	Cefalexin
KEFTID	Oral	Cefaclor
KETEK	Oral	Telithromycin
KETOCONAZOLE	Oral	Ketoconazole
KLACID	Oral	Clarithromycin
KLARIGER	Oral	Clarithromycin
KOPEN	Oral	Phenoxymethylpenicillin
LAMISIL	Oral	Terbinafine
LEDERMYCIN	Oral	Demeclocycline
LEVOFLOXACIN	Oral	Levofloxacin
LINEZOLID	Oral	Linezolid
LYMECYCLINEAS	Oral	Lymecycline
MACROBID	Oral	Nitrofurantoin
MACRODANTIN	Oral	Nitrofurantoin
METHENAMINE HIPPURATE	Oral	Methenamine
METRONIDAZOLE	Oral	Metronidazole
METRONIDE	Oral	Metronidazole
MICTRAL	Oral	Nalidixic acid
MINOCIN	Oral	Minocycline
MINOCYCLINE	Oral	Minocycline
MINOCYLINE	Oral	Minocycline
MINOX	Oral	Minocycline
MONOTRIM	Oral	Trimethoprim
MOXIFLOXACIN	Oral	Moxifloxacin
MYAMBUTOL	Oral	Ethambutol
MYCIFRADIN	Oral	Neomycin
MYCOBUTIN	Oral	Rifabutin
MYCOSTATIN	Oral	Nystatin
NALIDIXIC ACID	Oral	Nalidixic acid
NEGRAM	Oral	Nalidixic acid
NEOMYCIN	Oral	Neomycin

Trade name	Route	Active ingredient
NITROFURANTOIN	Oral	Nitrofurantoin
NIVEMYCIN	Oral	Neomycin
NORFLOXACIN	Oral	Norfloxacin
NOVAPEN	Oral	Ampicillin
NYSTAN	Oral	Nystatin
OFLOXACIN	Oral	Ofloxacin
ORAMOX	Oral	Amoxicillin
OXYTETRACYCLINE	Oral	Oxytetracycline
PENBRITIN	Oral	Ampicillin
PENICILLIN V	Oral	Ampicillin
PENICILLIN V	Oral	Phenoxymethylpenicillin
PERIOSTAT	Oral	Doxycycline
PETEHA	Oral	Protionamide
PHENOXYMETHYLPENICILLIN	Oral	Phenoxymethylpenicillin
PINACLAV	Oral	Amoxicillin and enzyme inhibitor
PINACLOR	Oral	Cefaclor
PINAMOX	Oral	Amoxicillin
PIRILENE	Oral	Pyrazinamide
POSACONAZOLE	Oral	Posaconazole
PRIMACINE	Oral	Erythromycin
PRISTINAMYCIN	Oral	Pristinamycin
PROFLOXIN	Oral	Ciprofloxacin
PROTIONAMIDE	Oral	Protionamide
PYRAFAT	Oral	Pyrazinamide
PYRAZINAMID	Oral	Pyrazinamide
PYRAZINAMIDE	Oral	Pyrazinamide
RIFABUTIN	Oral	Rifabutin
RIFADIN	Oral	Rifampicin
RIFAMPICIN	Oral	Rifampicin
RIFAMPICIN/ISONIAZID	Oral	Rifampicin
RIFATER	Oral	Rifampicin
RIFINAH	Oral	Rifampicin
RIMACTANE	Oral	Rifampicin
RIMACTAZID	Oral	Rifampicin
SEPTRIN	Oral	Sulfamethoxazole and trimethoprim
SODIUM FUSIDATE	Oral	Fusidic acid
SPORANOX	Oral	Itraconazole
SULFADIAZINE	Oral	Sulfadiazine
SULPHADIAZINE	Oral	Sulfadiazine
SUPRAX	Oral	Cefixime
TARIVID	Oral	Ofloxacin
TAVANIC	Oral	Levofloxacin
TERBINAFINE	Oral	Terbinafine
TERRAMYCIN	Oral	Oxytetracycline

Trade name	Route	Active ingredient
TETRACYCLINE	Oral	Tetracycline
TETRALYSAL	Oral	Lymecycline
TRIMETHOPRIM	Oral	Trimethoprim
TRUOXIN	Oral	Ciprofloxacin
ULTRACEF	Oral	Cefadroxil
URIBEN	Oral	Nalidixic acid
VANCOCIN	Oral	Vancomycin
VANCOMYCIN	Oral	Vancomycin
VELOSEF	Oral	Cefradine
VFEND	Oral	Voriconazole
VIBRAMYCIN	Oral	Doxycycline
VORICONAZOLE	Oral	Voriconazole
ZINAMIDE	Oral	Pyrazinamide
ZINNAT	Oral	Cefuroxime
ZITHROMAX	Oral	Azithromycin
ZYVOX	Oral	Linezolid
FLAGYL	Rectal	Metronidazole
METRONIDAZOLE	Rectal	Metronidazole
TOBI	Inhaled	Tobramycin
TOBRAMYCIN	Inhaled	Tobramycin
BACTROBAN	Nasal	Mupirocin
AMBISOME	Parenteral	Amphotericin B
ABELCET	Parenteral	Amphotericin B
AMBISOME	Parenteral	Amphotericin B
AMIKACIN	Parenteral	Amikacin
AMIKIN	Parenteral	Amikacin
AMOXICILLIN	Parenteral	Amoxicillin
AMOXICILLIN/CLAVULANIC	Parenteral	Amoxicillin and enzyme inhibitor
AMOXIL	Parenteral	Amoxicillin
AMPHOTERICIN	Parenteral	Amphotericin B
AMPHOTERICIN B	Parenteral	Amphotericin B
AMPICILLIN	Parenteral	Ampicillin
AMPICLOX	Parenteral	Combinations of penicillins
ANCOTIL	Parenteral	Flucytosine
AUGMENTIN	Parenteral	Amoxicillin and enzyme inhibitor
AVELOX	Parenteral	Moxifloxacin
AZACTAM	Parenteral	Aztreonam
BENZATHINE PENICILLIN	Parenteral	Benzylpenicillin
BENZYLPENICILLIN	Parenteral	Benzylpenicillin
CANCIDAS	Parenteral	Caspofungin

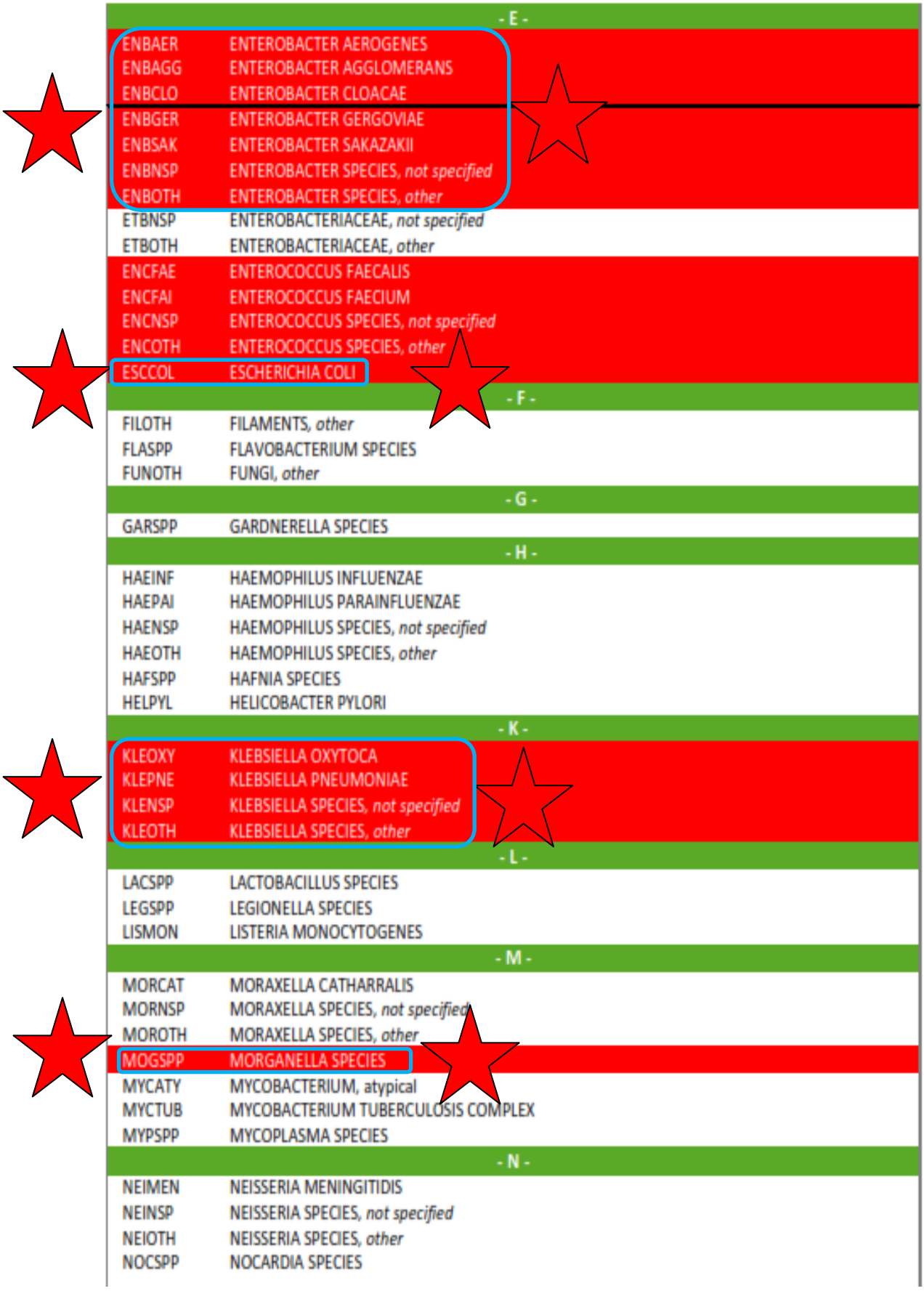
Trade name	Route	Active ingredient
CASPOFUNGIN	Parenteral	Caspofungin
CEFAZOLIN	Parenteral	Cefazolin
CEFOTAXIME	Parenteral	Cefotaxime
CEFRADINE	Parenteral	Cefradine
CEFTAZIDIME	Parenteral	Ceftazidime
CEFTRIAXONE	Parenteral	Ceftriaxone
CEFUROXIME	Parenteral	Cefuroxime
CHLORAMPHENICOL	Parenteral	Chloramphenicol
CHLOROMYCETIN	Parenteral	Chloramphenicol
CIDOMYCIN	Parenteral	Gentamicin
CIPROFLOXACIN	Parenteral	Ciprofloxacin
CIPROXIN	Parenteral	Ciprofloxacin
CIRROFLOVACIN	Parenteral	Ciprofloxacin
CLAFORAN	Parenteral	Cefotaxime
CLARITHROMYCIN	Parenteral	Clarithromycin
CLINDAMYCIN	Parenteral	Clindamycin
CO-AMOXICLAV	Parenteral	Amoxicillin and enzyme inhibitor
COLISTIMETHATE	Parenteral	Colistin
COLISTIN	Parenteral	Colistin
COLOMYCIN	Parenteral	Colistin
CO-TRIMOXAZOLE	Parenteral	Sulfamethoxazole and trimethoprim
CRYSTAPEN	Parenteral	Benzylpenicillin
CUBICIN	Parenteral	Daptomycin
DALACIN C	Parenteral	Clindamycin
DEPOCILLIN AQUEOUS	Parenteral	Benzylpenicillin
DIFLUCAN	Parenteral	Fluconazole
DOXYCYCLIN	Parenteral	Doxycycline
DOXYCYCLINE	Parenteral	Doxycycline
ERTAPENEM	Parenteral	Ertapenem
ERYTHROCIN	Parenteral	Erythromycin
ERYTHROMYCIN	Parenteral	Erythromycin
EXTENCILLIN	Parenteral	Benzylpenicillin
EXTENCILLINE	Parenteral	Benzathine benzylpenicillin
FARMAPROINA	Parenteral	Procaine benzylpenicillin
FLAGYL	Parenteral	Metronidazole
FLOXAPEN	Parenteral	Flucloxacillin
FLUCLOXACILLIN	Parenteral	Flucloxacillin
FLUCOL	Parenteral	Fluconazole
FLUCONAZOLE	Parenteral	Fluconazole
FLUCYTOSINE	Parenteral	Flucytosine
FORTUM	Parenteral	Ceftazidime
FOSFOMYCIN	Parenteral	Fosfomycin
FUCIDIN	Parenteral	Fusidic acid
FUNGIZONE	Parenteral	Amphotericin B

Trade name	Route	Active ingredient
GENTAMICIN	Parenteral	Gentamicin
GENTICIN	Parenteral	Gentamicin
IBIMICYN	Parenteral	Ampicillin
INFECTOFOS	Parenteral	Fosfomycin
IVANZ	Parenteral	Ertapenem
KEFADOL	Parenteral	Cefamandole
KEFZOL	Parenteral	Cefazolin
KEMICETINE	Parenteral	Chloramphenicol
KEMICITINE	Parenteral	Chloramphenicol
KLACID	Parenteral	Clarithromycin
LEVOFLOXACIN	Parenteral	Levofloxacin
LINEZOLID	Parenteral	Linezolid
MERONEM	Parenteral	Meropenem
MEROPENEM	Parenteral	Meropenem
METROLYL	Parenteral	Metronidazole
METRONIDAZOLE	Parenteral	Metronidazole
METROVEX	Parenteral	Metronidazole
MOXIFLOXACIN	Parenteral	Moxifloxacin
NEBCIN	Parenteral	Tobramycin
NEGABAN	Parenteral	Temocillin
NETILMICIN	Parenteral	Netilmicin
OFLOXACIN	Parenteral	Ofloxacin
PEMBRITIN	Parenteral	Ampicillin
PENBRITIN	Parenteral	Ampicillin
PENICILLIN G	Parenteral	Benzylpenicillin
PENICILLIN G	Parenteral	Procaine benzylpenicillin
PENIDURAL	Parenteral	Benzathine benzylpenicillin
PIPERACILLIN	Parenteral	Piperacillin and enzyme inhibitor
PIPERACILLIN/TAZOBACTAM	Parenteral	Piperacillin and enzyme inhibitor
PRIMAXIN	Parenteral	Imipenem and enzyme inhibitor
RIFADIN	Parenteral	Rifampicin
RIFAMPICIN	Parenteral	Rifampicin
ROCEPHIN	Parenteral	Ceftriaxone
SECUROPEN	Parenteral	Azlocillin
SEPTRIN	Parenteral	Sulfamethoxazole and trimethoprim
SODIUM FUSIDATE	Parenteral	Fusidic acid
SPORANOX	Parenteral	Itraconazole
STREPTOMYCIN	Parenteral	Streptomycin
SUPRAMYCIN	Parenteral	Doxycycline
SYNERCID	Parenteral	Quinupristin/dalfopristin
TARGOCID	Parenteral	Teicoplanin
TARIVID	Parenteral	Ofloxacin
TAVANIC	Parenteral	Levofloxacin
TAZOCIN	Parenteral	Piperacillin and enzyme inhibitor

Trade name	Route	Active ingredient
TEICOPLANIN	Parenteral	Teicoplanin
TEMOCILLIN	Parenteral	Temocillin
TIGECYCLINE	Parenteral	Tigecycline
TIMENTIN	Parenteral	Ticarcillin and enzyme inhibitor
TOBRAMYCIN	Parenteral	Tobramycin
TROBICIN	Parenteral	Spectinomycin
TYGACIL	Parenteral	Tigecycline
VANACOMYCIN	Parenteral	Vancomycin
VANCOCIN	Parenteral	Vancomycin
VANCOMYCIN	Parenteral	Vancomycin
VELOSEF	Parenteral	Cefradine
VFEND	Parenteral	Voriconazole
VORICONAZOLE	Parenteral	Voriconazole
ZINACEF	Parenteral	Cefuroxime
ZYVOX	Parenteral	Linezolid

Appendix F: Microorganism code list

CODE	NAME OF THE MICROORGANISM
	- A -
ACHSPP	ACHROMOBACTER SPECIES
ACIBAU	ACINETOBACTER BAUMANNII
ACICAL	ACINETOBACTER CALCOACETICUS
ACIHAE	ACINETOBACTER HAEMOLYTICUS
ACILWO	ACINETOBACTER LWOFFI
ACINSP	ACINETOBACTER SPECIES, *not specified*
ACIOTH	ACINETOBACTER SPECIES, *other*
ACTSPP	ACTINOMYCES SPECIES
AEMSPP	AEROMONAS SPECIES
AGRSPP	AGROBACTERIUM SPECIES
ALCSPP	ALCALIGENES SPECIES
ANANSP	ANAEROBES, *not specified*
ANAOTH	ANAEROBES, *other*
ASPFUM	ASPERGILLUS FUMIGATUS
ASPNIG	ASPERGILLUS NIGER
ASPNSP	ASPERGILLUS SPECIES, *not specified*
ASPOTH	ASPERGILLUS SPECIES, *other*
	- B -
GNBNSP	BACILLI, GRAM NEGATIVE, *not specified*
GNBOTH	BACILLI, GRAM NEGATIVE, NON ENTEROBACTERIACIAEA, *other*
GPBNSP	BACILLI, GRAM POSITIVE, *not specified*
GPBOTH	BACILLI, GRAM POSITIVE, *other*
BACSPP	BACILLUS SPECIES
BCTOTH	BACTERIA, *other*
BATFRA	BACTEROIDES FRAGILIS
BATOTH	BACTEROIDES, *other*
BURCEP	BURKHOLDERIA CEPACIA
	- C -
CAMSPP	CAMPYLOBACTER SPECIES
CANALB	CANDIDA ALBICANS
CANGLA	CANDIDA GLABRATA
CANKRU	CANDIDA KRUSEI
CANPAR	CANDIDA PARAPSILOSIS
CANNSP	CANDIDA SPECIES, *not specified*
CANOTH	CANDIDA SPECIES, *other*
CANTRO	CANDIDA TROPICALIS
CHLSPP	CHLAMYDIA SPECIES
CITFRE	CITROBACTER FREUNDII
CITDIV	CITROBACTER KOSERI (EX. DIVERSUS)
CITNSP	CITROBACTER SPECIES, *not specified*
CITOTH	CITROBACTER SPECIES, *other*
CLODIF	CLOSTRIDIUM DIFFICILE
CLOOTH	CLOSTRIDIUM, *other*
GNCNSP	COCCI, GRAM NEGATIVE, *not specified*
GNCOTH	COCCI, GRAM NEGATIVE, *other*
GPCNSP	COCCI, GRAM POSITIVE, *not specified*
GPCOTH	COCCI, GRAM POSITIVE, *other*
CORSPP	CORYNEBACTERIUM SPECIES



- E -	
ENBAER	ENTEROBACTER AEROGENES
ENBAGG	ENTEROBACTER AGGLOMERANS
ENBCLO	ENTEROBACTER CLOACAE
ENBGER	ENTEROBACTER GERGOVIAE
ENBSAK	ENTEROBACTER SAKAZAKII
ENBNSP	ENTEROBACTER SPECIES, *not specified*
ENBOTH	ENTEROBACTER SPECIES, *other*
ETBNSP	ENTEROBACTERIACEAE, *not specified*
ETBOTH	ENTEROBACTERIACEAE, *other*
ENCFAE	ENTEROCOCCUS FAECALIS
ENCFAI	ENTEROCOCCUS FAECIUM
ENCNSP	ENTEROCOCCUS SPECIES, *not specified*
ENCOTH	ENTEROCOCCUS SPECIES, *other*
ESCCOL	ESCHERICHIA COLI
- F -	
FILOTH	FILAMENTS, *other*
FLASPP	FLAVOBACTERIUM SPECIES
FUNOTH	FUNGI, *other*
- G -	
GARSPP	GARDNERELLA SPECIES
- H -	
HAEINF	HAEMOPHILUS INFLUENZAE
HAEPAI	HAEMOPHILUS PARAINFLUENZAE
HAENSP	HAEMOPHILUS SPECIES, *not specified*
HAEOTH	HAEMOPHILUS SPECIES, *other*
HAFSPP	HAFNIA SPECIES
HELPYL	HELICOBACTER PYLORI
- K -	
KLEOXY	KLEBSIELLA OXYTOCA
KLEPNE	KLEBSIELLA PNEUMONIAE
KLENSP	KLEBSIELLA SPECIES, *not specified*
KLEOTH	KLEBSIELLA SPECIES, *other*
- L -	
LACSPP	LACTOBACILLUS SPECIES
LEGSPP	LEGIONELLA SPECIES
LISMON	LISTERIA MONOCYTOGENES
- M -	
MORCAT	MORAXELLA CATHARRALIS
MORNSP	MORAXELLA SPECIES, *not specified*
MOROTH	MORAXELLA SPECIES, *other*
MOGSPP	MORGANELLA SPECIES
MYCATY	MYCOBACTERIUM, atypical
MYCTUB	MYCOBACTERIUM TUBERCULOSIS COMPLEX
MYPSPP	MYCOPLASMA SPECIES
- N -	
NEIMEN	NEISSERIA MENINGITIDIS
NEINSP	NEISSERIA SPECIES, *not specified*
NEIOTH	NEISSERIA SPECIES, *other*
NOCSPP	NOCARDIA SPECIES

- P -	
PAROTH	PARASITES, *other*
PASSPP	PASTEURELLA SPECIES
PRESPP	PREVOTELLA SPECIES
PROSPP	PROPIONIBACTERIUM SPECIES
PRTMIR	PROTEUS MIRABILIS
PRTNSP	PROTEUS SPECIES, *not specified*
PRTOTH	PROTEUS SPECIES, *other*
PRTVUL	PROTEUS VULGARIS
PRVSPP	PROVIDENCIA SPECIES
PSENSP	PSEUDOMONADACEAE FAMILY, *not specified*
PSEOTH	PSEUDOMONADACEAE FAMILY, *other*
PSEAER	PSEUDOMONAS AERUGINOSA
- S -	
SALENT	SALMONELLA ENTERITIDIS
SALNSP	SALMONELLA SPECIES, *not specified*
SALOTH	SALMONELLA SPECIES, *other*
SALTYM	SALMONELLA TYPHIMURIUM
SALTYP	SALMONELLA TYPHI or PARATYPHI
SERLIQ	SERRATIA LIQUEFACIENS
SERMAR	SERRATIA MARCESCENS
SERNSP	SERRATIA SPECIES, *not specified*
SEROTH	SERRATIA SPECIES, *other*
SHISPP	SHIGELLA SPECIES
STAAUR	STAPHYLOCOCCUS AUREUS
STAEPI	STAPHYLOCOCCUS EPIDERMIDIS
STAHAE	STAPHYLOCOCCUS HAEMOLYTICUS
STACNS	STAPHYLOCOCCI, COAGULASE-NEGATIVE, *not specified*
STAOTH	STAPHYLOCOCCI, COAGULASE-NEGATIVE (CNS), *other*
STANSP	STAPHYLOCOCCUS SPECIES, *not specified*
STEMAL	STENOTROPHOMONAS MALTOPHILIA
STRHCG	STREPTOCOCCAE, HAEMOLYTIC (C, G), *other*
STRAGA	STREPTOCOCCUS AGALACTIAE (B)
STRPNE	STREPTOCOCCUS PNEUMONIAE
STRPYO	STREPTOCOCCUS PYOGENES (A)
STRNSP	STREPTOCOCCUS SPECIES, *not specified*
STROTH	STREPTOCOCCUS SPECIES, *other*

- V -	
VIRADV	ADENOVIRUS
VIRCMV	CYTOMEGALOVIRUS (CMV)
VIRENT	ENTEROVIRUS (POLIO, COXSACKIE, ECHO)
VIRHAV	HEPATITIS A VIRUS
VIRHBV	HEPATITIS B VIRUS
VIRHCV	HEPATITIS C VIRUS
VIRHIV	HUMAN IMMUNODEFICIENCY VIRUS (HIV)
VIRHSV	HERPES SIMPLEX VIRUS
VIRINA	INFLUENZA A VIRUS
VIRINB	INFLUENZA B VIRUS
VIRINC	INFLUENZA C VIRUS
VIRNOR	NOROVIRUS
VIRPIV	PARAINFLUENZAVIRUS
VIRRHI	RHINOVIRUS
VIRROT	ROTAVIRUS
VIRRSV	RESPIRATORY SYNCYTIAL VIRUS (RSV)
VIRSAR	SARS-CORONAVIRUS
VIRVZV	VARICELLA-ZOSTER VIRUS
VIRNSP	VIRUS, *not specified*
VIROTH	VIRUS, *other*
- Y -	
YEAOTH	YEASTS, *other*
YERSPP	YERSINIA SPECIES