USER GUIDE – Northern Ireland

European Point Prevalence Survey on Healthcare Associated Infections and Antibiotic use in Long-Term Care Facilities

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LIST OF ABBREVIATIONS

AB	Antibiotic
AMR	Antimicrobial Resistance
ECDC	European Centre for Disease Prevention and Control
ESAC	European Surveillance of Antimicrobial Consumption
GP	General Practitioner
HALT	Healthcare associated infections in long term care facilities
HCAI	Healthcare associated infections
IM	Intramuscular
IPH	Institute of Public Health (Brussels, Belgium)
IT	Information Technology
IU	International Units
IV	Intravenous
LTCF	Long-Term Care Facilities
MRSA	Methicillin Resistant *Staphylococcus aureus*
NH	Nursing Home
OCR	Optical Character Recognition
PPS	Point Prevalence Survey/Study
PHA	Public Health Agency

FOREWORD

The aim of the HALT project is to develop and implement a sustainable methodology to estimate the prevalence of healthcare associated infections, antimicrobial resistant micro-organisms and antimicrobial use in long term care facilities (LTCF) in Europe. Thus, future trends in European LTCFs could be monitored and the needs for intervention, training and/or additional infection control resources identified, to foster the safety of the residents in LTCFs and the ageing population in general.

Thank you for participating in the HALT study in Northern Ireland.

CONTACT DETAILS

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1. THE POINT PREVALENCE STUDY: DESIGN AND ORGANISATION

1.1 When should the study be carried out?

- The study should be carried out during **September 2010**
- The study has been designed as a point prevalence survey. This means that, in an ideal world, the **information should be completed for the whole LTCF on a single day**. Completion of the survey on a single day is probably not feasible for larger LTCFs; therefore **at least one ward (all beds) should be completed on a single day** and the overall LTCF as soon as possible within the following days. (i.e., once you commence a ward you must finish surveying it the same day).

1.2 How should I prepare? – organisation of the study

- Preparation is key!
- Each centre should designate a staff member to be in charge of the study and act as a contact person.
- Much of the Institutional Questionnaire (Section 2.3) can be completed before the study day.
- Recording data for the resident questionnaires (Section 2.2) is the most time consuming activity. However, the resident questionnaires should *only be* completed *for residents with signs/symptoms of an infection and/or AB-using residents* (see Sections 1.4-1.6).

  For example, in a facility with 100 beds, if the prevalence is the same as the one recorded during the HALT pilot study (6.4%), +/- 7 resident questionnaires need to be completed.
- You are requested to **validate approximately 10% of your resident questionnaires**. A different person (not the data collector) should perform this validation. For example If a nurse is responsible for data collection, it is preferred that another nurse, GP or coordinating physician checks and validates the data from the questionnaires.
- It is advisable to organise **information sessions for the staff** (e.g., a ward/unit/LTCF meeting) in advance of the survey in your LTCF to explain to staff about the HALT study and the benefits in taking part. Taking into account the potential extra workload caused by the PPS, it could be useful to **involve extra staff** during this period (this can also be useful for staff education). After you complete the study and generate your report on the software application, you should arrange a staff feedback session to discuss your results and plan relevant improvement programmes.
- To help you prepare staff, all training day presentations and staff and patient information leaflets can be downloaded from the HALT section of the PHA website (see page 4).

1.3 Which study documents do I need to perform the HALT study?

Before you commence you will need the following documents:

1 This user guide (keep it with you when doing the survey to cross check definitions etc)

2 A ward list

3 2 questionnaires: a) resident questionnaire; b) Institutional questionnaire

4 List of generic and trade name of antibiotics (see appendix 2)

After you complete the survey you will need:

The HALT software application with a user guide (so that you can load your results, generates a report for your LTCF and sends information to PHA)

Missing or extra documents can be downloaded from the HALT section of the PHA website

(See page 4)

1.4 Which residents should be included in the survey? (See Appendix 1)

1.4.1. Inclusion and Exclusion of Residents

Residents should be **included** in the study if:

1. **living full-time in the LTCF**
   AND
2. **present at 8 AM on the day of the PPS**
   AND
3. **present in the LTCF for at least 24h**

Exclude the following residents:

- not living full-time in the LTCF, not present at 8 AM (e.g. absent for leave or admitted to a hospital) or not present in the LTCF for at least 24h
- residents from day care centres (not living full-time in the LTCF)
- residents hospitalised on the day (i.e., inpatient in hospital with hospital stay for at least 24h)

Note: residents receiving chronic ambulatory care on a regular basis in the acute care hospital (e.g. haemodialysis, chemotherapy...) should not be excluded.

1.4.2 When do I need to complete a resident questionnaire?

A resident questionnaire has to be completed for each resident who meets the following criteria (i.e., not all eligible residents will need a resident questionnaire completed):

- **on an antibiotic on the day of the PPS (see section 1.5)**

AND/OR

- **presenting with signs/symptoms of an infection on the day of the PPS (see section 1.6)**

1.5 Which antibiotics should be registered in the PPS?

A resident questionnaire has to be completed for each resident on an antibiotic on the day of the PPS.

An '*Antibiotic using resident*' is defined as a resident present on the day of the PPS admitted to the LTCF for at least 24h and receiving an antibiotic on the PPS day.

Inclusion:

- All oral, rectal, intramuscular (IM) and intravenous (IV) treatment with
  - Antibacterials and antimycotics (antifungals)
  - Drugs for treatment of tuberculosis
- Antibiotic treatment by inhalation (aerosol therapy)

Exclusion (do not include residents on the following):

- Antivirals for systemic use
- Antimicrobials for topical (local) use
- Antiseptics

1.6 Which infections should be included in the PPS?

A resident questionnaire has to be completed for each resident presenting with signs/symptoms of an infection on the day of the PPS

Which infections?

- All sites of infection should be included
- Confirmation of the infection by a physician (or recorded in the residents' file) is not compulsory.
- Do not include patients where the infection was either present or incubating at the time of admission/readmission (e.g., after hospitalisation) to the LTCF

Which signs and symptoms should be recorded?

- All signs/symptoms (e.g. fever, redness, pain, swelling, nausea, diarrhoea) of an infection present on the day of the PPS.
- When a resident presents no longer signs/symptoms of an infection but is still treated with an antimicrobial on the day of the study, all signs/symptoms of the same infection episode which were present in the days preceding the PPS day, should be registered.
- Do not include signs/symptoms related to non-infectious causes (e.g., shortness of breath due to underlying cardiac condition)

1.7 Confidentiality and Ethical considerations

- **Each participating LTCF will be assigned a code** by the PHA team
- **The ward list which contains residents names (see Section 2.1) is for local use only** and should be kept in the LTCF until the end of the study. The LTCF study coordinator should keep the ward list(s) in a safe place in order to perform validation or check for missing or incorrect data see below). Ward lists should **NOT** be sent to PHA.
- **The resident questionnaires are anonymous**. To be able to perform validation or check for missing or incorrect data, the software application in the LTCF will automatically assign a study number to each resident on antibiotics or infected. The surveyor should write down this study number on the ward list in order to keep the link between the resident name and the resident study number.
- In Northern Ireland, the Office for Research Ethics Committees Northern Ireland (ORECNI) has confirmed that ethical approval is not required for a LTCF to participate in the study.

1.8 How should the data be entered and when will I receive my results?

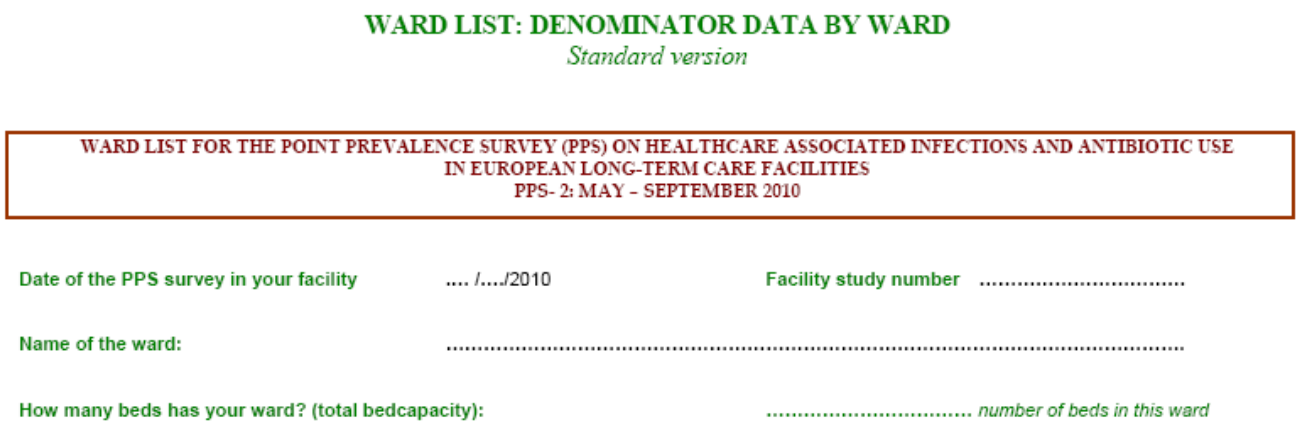
- A user friendly software program for data entry has been developed. This software programme will be issued to all participating LTCFs, where it can be installed on a local computer. A user guide which explains how to install and work with the software will be provided.
- Paper questionnaires/ward list can be used to collect the requested information before data entry into the program. These questionnaires/ward lists have been provided and can be printed from the HALT section of the PHA website (see page 4)
- Once all data are entered in the software program, a summary report with preliminary results for your LTCF, can be automatically obtained from the software (i.e., you can get immediate results for feedback to your staff).
- After the data have been entered in the software send by e-mail to **gerry.mcilvenny@hscni.net**

- The transmitted data will be appended to the national data base and subsequently forwarded for inclusion into the European data base.
- PHA will produce a Northern Ireland report which we will send to all participating LTCF by end 2010.
- A study report, including aggregated data of all the participating European LTCFs, will be prepared in Brussels. PHA will send this report to all participating LTCF.

2. THE POINT PREVALENCE STUDY: DATA COLLECTION

2.1 Ward list

- The ***ward list*** **facilitates the collection of denominator data**, which is required for the institutional questionnaire (see section 2.3). It helps you obtain total figures for each ward which is necessary to complete the institutional questionnaire.
- Do **NOT send the ward list to PHA;** otherwise confidentiality will not be assured because the list contains residents' names.
- You should complete a separate ward list for each ward. If your LTCF does not have different wards, all data should be completed using one ward list only.



WARD LIST: DENOMINATOR DATA BY WARD

Standard version

WARD LIST FOR THE POINT PREVALENCE SURVEY (PPS) ON HEALTHCARE ASSOCIATED INFECTIONS AND ANTIBIOTIC USE IN EUROPEAN LONG-TERM CARE FACILITIES
PPS- 2: MAY - SEPTEMBER 2010

Date of the PPS survey in your facility .... /..../2010 Facility study number .....

Name of the ward: .....

How many beds has your ward? (total bedcapacity): ..... *number of beds in this ward*

Variable	*Description/definition*
PPS study date	Date of the study in the LTCF
Facility study number	The number allocated to the LTCF by PHA
Total bed capacity in the ward	The total number of beds in the ward, both occupied and not occupied
Number of residents hospitalised	The number of residents absent from the facility on the day of the PPS due to hospitalisation in an acute care hospital for at least 24h

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 + in the column if the condition is TRUE												
Room & bed number	Resident name	Study number of the resident	Resident was present yesterday	Resident over 85 years old	Male resident	Antibiotic therapy on the PPS-day	Signs/symptoms of infection present on the PPS-day	Urinary catheter	Vascular catheter	Pressure sore	Other wounds	Disoriented in time and/or space	Wheelchair or bednidden	Surgery in the previous 30 days	Urinary and/or faecal incontinence
1	2		3	4	5	6	7	8	9	10a	10b	11	12	13	14

1

List here ALL the residents present on the PPS day

The software will provide a resident study number to each resident on ABs and/or signs of infection. Copy this study number in the ward list

2

Complete columns 3 to 14 for eligible residents only

Living full-time in the LTCF ***AND***

Present at 8 AM on the day of the PPS ***AND***

Present in the LTCF for at least 24h

Variable	*Description/definition*
Room and bed number	Useful to check if every resident has been listed
Resident name	Report the resident name (for eventual data checking and validation)
Study number of the resident	When inputting data (after data completion), the software programme will assign a numerical code to each resident with an AB and/or signs/symptoms of an infection.

Variable	*Description/definition*
	Mark an '+' when the criterion is met by the resident, otherwise leave the box empty.
Resident was present yesterday	Was the resident present in the facility for at least 24 hours?
Resident older than 85?	Is the resident older than 85 years on the day of the PPS?
Male resident	Is the resident a male?

Antibiotic use on the day	Is the resident treated with an antibiotic (see section 2.2.2) on the day?
Signs/symptoms of an infection on the PPS day	**All signs/symptoms** (e.g. fever, redness, pain, swelling, nausea, diarrhoea) of an infection present on the day of the PPS. When a resident presents **no longer signs/symptoms** of an infection but is still treated with an antimicrobial on the day of the PPS, **all signs/symptoms of the same infection episode** which were present in the days preceding the PPS day, should be registered.
Urinary catheter	Any urinary catheter (any tube system placed in the body to drain and collect urine from the bladder, e.g. an indwelling urinary catheter, suprapubic or abdominal wall catheter, a cystostomy) on the study day
Vascular catheter	Any tube system placed in the body to access the vascular (venous, arterial) system, (e.g. a peripheral intravenous catheter, an implanted vascular access system (port-à-cath) or any other intravascular access system (including arterio-venous fistula) on the study day
Pressure sore	Has the resident a pressure sore on the day of the study?
Other wound	Any other wound on the study day (e.g. leg ulcers, traumatic or surgical wounds) with the exception of a pressure sore). Insertion sites for gastrostomy, tracheostomy, urostomy, colostomy, suprapubic and peritoneal catheters are also considered as a wound.
Disoriented in time and/or space	Periods of confusion in time, place or identification of persons (e.g. he/she cannot find his/her room, has no idea of time and is not able to recognise persons he/she knows very well).
Wheelchair or bedridden	Does the resident need a wheelchair or is he/she bedridden on the study day?
Surgery in the previous 30 days	Did the resident have surgery in the 30 days before the day of the study?
Urinary and/or faecal incontinent	Is the resident suffering from urinary and/or faecal incontinence necessitating the use of incontinence pads on the study day? (i.e. lack of control of the sphincter from bladder or bowel resulting in an uncontrolled loose of urine or faeces). Because this indicator measures work load, a resident with a urinary catheter *in situ* on the study day is considered as continent.

SUMMARY TABLE: TOTAL NUMBERS FOR THIS WARD

Who many residents are absent from the facility on the PPS day, because they stay in an acute care hospital ? .....

On the day of the PPS, TOTAL number of:	Column	TOTAL NUMBERS
How many beds count your ward (bed capacity)?	1	
Occupied beds in the ward	2	
Eligible residents, present in the facility since at least 24h	3	
Residents over 85 years	4	
Male residents	5	
Residents with antibiotic therapy	6	
Residents with signs/symptoms of infection	7	
Residents with urinary catheter	8	
Residents with vascular catheter	9	
Residents with pressure sore	10a	
Residents with other wounds	10b	
Residents with disorientation in time and space	11	
Residents using wheelchair or bedridden	12	
Residents with surgery in the previous 30 days	13	
Residents with urinary and/or faecal incontinence	14	

Sum up the above subtotals from all completed ward lists in the setting in order to fill in part B of the institutional questionnaire (B- DENOMONATOR DATA) Keep this ward list in your setting until the end of the study (February 2011).

- Sum the **'+'** in each column in the previous page of the ward list.
- These totals must be copied in the summary table on the last page.
- The counts for each ward list will then be summed up to produce an overall summary for the whole LTCF. This overall summary is reported in the institutional questionnaire, part B – denominator data (see page 21).

2.2 Resident questionnaire

A resident questionnaire has to be completed for each resident who meets the following criteria (i.e., not all eligible residents will need a resident questionnaire completed):

- **on an antibiotic on the day of the PPS (see section 1.5)**

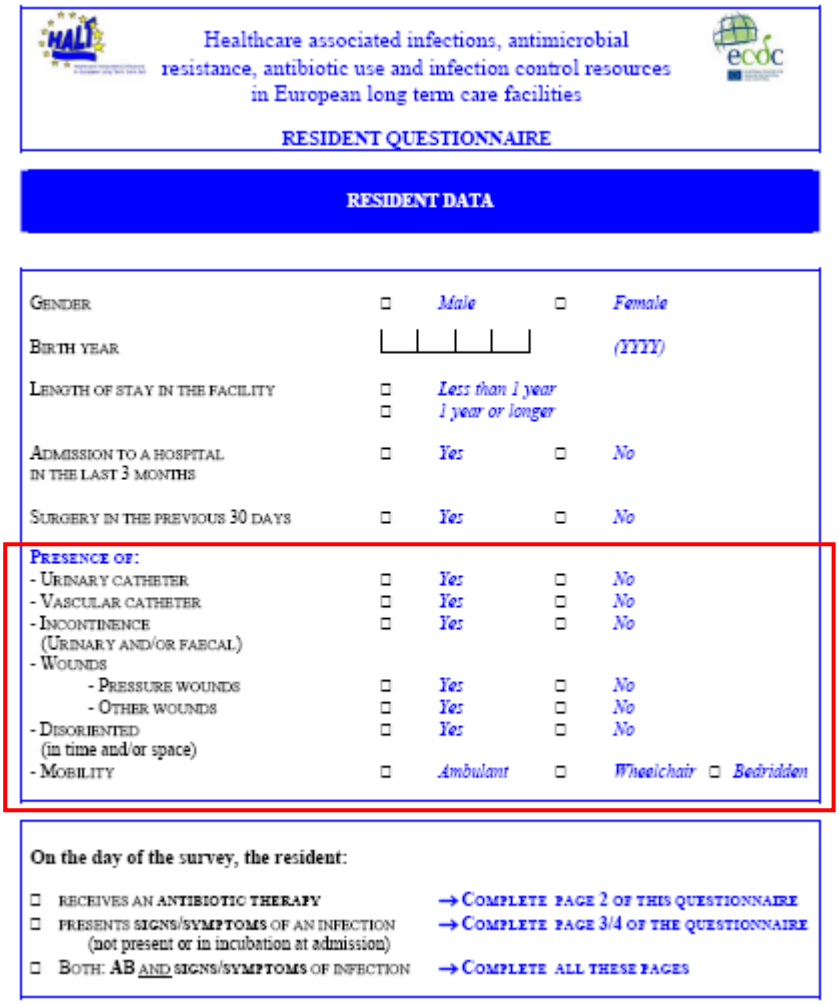
AND/OR

- **presenting with signs/symptoms of an infection on the day of the PPS (see section 1.6)**

It is strongly recommended to write down the resident study number (attributed by the HALT software) and resident name on each page of the paper questionnaire in order to keep all resident information grouped. However, these documents should **not** be sent to PHA as previously discussed.

2.2.1 Resident data

Variable	*Description/definition*
Birth year	Year of the resident birth date
Length of stay in the facility	When was the resident admitted to the LTCF? 'Less than one year ago' or 'one year or longer'.
Admission in the hospital during the past 3 months	Was the resident admitted to an acute care hospital during the 3 months preceding the PPS study date? *(only admissions to acute care hospitals - with at least a medical or surgical ward- for at least 24h of stay)*
Mobility	Is the resident ambulant (he/she can walk alone with or without canes, crutches, walkers), does he/she need a wheelchair or is he/she bedridden on the study day?



Healthcare associated infections, antimicrobial resistance, antibiotic use and infection control resources in European long term care facilities

RESIDENT QUESTIONNAIRE

RESIDENT DATA

GENDER	☐	*Male*	☐	*Female*
BIRTH YEAR	☐☐☐☐			*(YYYY)*
LENGTH OF STAY IN THE FACILITY	☐	*Less than 1 year*		
	☐	*1 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 WOUNDS	☐	*Yes*	☐	*No*
- OTHER WOUNDS	☐	*Yes*	☐	*No*
- DISORIENTED (in time and/or space)	☐	*Yes*	☐	*No*
- MOBILITY	☐	*Ambulant*	☐	*Wheelchair* ☐ *Bedridden*

On the day of the survey, the resident:

- ☐ RECEIVES AN ANTIBIOTIC THERAPY → COMPLETE PAGE 2 OF THIS QUESTIONNAIRE
- ☐ PRESENTS SIGNS/SYMPTOMS OF AN INFECTION (not present or in incubation at admission) → COMPLETE PAGE 3/4 OF THE QUESTIONNAIRE
- ☐ BOTH: AB AND SIGNS/SYMPTOMS OF INFECTION → COMPLETE ALL THESE PAGES

Definitions: see section 2.1

Ward list

2.2.2 Antibiotic treatment data

- An '***Antibiotic using resident'*** is defined as a resident present on the day of the study admitted to the LTCF for at least 24h and receiving an antibiotic on the study day (section 1.5).
- Only ABs used on the PPS day are to be registered. This includes antibacterials and antimycotics (antifungals) for systemic use, drugs for treatment of tuberculosis and antibiotic use by aerosol therapy. The following antimicrobials are excluded: antivirals, antimicrobials for topic use (e.g., ointments, eye or ear drops, sprays) and antiseptics (antiseptics and disinfectants).
- **For AB treatments stopped on the day of the survey**: if the resident received at least one dose of AB on the PPS day, a resident questionnaire for AB users has to be completed.

ANTIBIOTIC TREATMENT DATA				
	Antibiotic – 1	Antibiotic – 2	Antibiotic – 3	Antibiotic – 4
Antibiotic Name (capital letters)	……………………	……………………	……………………	……………………
Total prescribed Daily dose	……………………	……………………	……………………	……………………
Unit	☐ *gr./ day* ☐ *mg./ day* ☐ *I.U./ day*	☐ *gr./ day* ☐ *mg./ day* ☐ *I.U./ day*	☐ *gr./ day* ☐ *mg./ day* ☐ *I.U./ day*	☐ *gr./ day* ☐ *mg./ day* ☐ *I.U./ day*
Administration route	☐ *Oral* ☐ *IM or IV* ☐ *Inhalation* ☐ *Rectal*	☐ *Oral* ☐ *IM or IV* ☐ *Inhalation* ☐ *Rectal*	☐ *Oral* ☐ *IM or IV* ☐ *Inhalation* ☐ *Rectal*	☐ *Oral* ☐ *IM or IV* ☐ *Inhalation* ☐ *Rectal*
Type of AB treatment	☐ *Prophylactic* ☐ *Therapeutic*	☐ *Prophylactic* ☐ *Therapeutic*	☐ *Prophylactic* ☐ *Therapeutic*	☐ *Prophylactic* ☐ *Therapeutic*
AB therapy given for *Specify:*	☐ *Urinary tract* ☐ *Skin or wound* ☐ *Respiratory tract* ☐ *Gastrointestinal* ☐ *Eye* ☐ *Ear, nose, mouth* ☐ *Systemic infection* ☐ *Unexplained fever* ☐ *Other*	☐ *Urinary tract* ☐ *Skin or wound* ☐ *Respiratory tract* ☐ *Gastrointestinal* ☐ *Eye* ☐ *Ear, nose, mouth* ☐ *Systemic infection* ☐ *Unexplained fever* ☐ *Other*	☐ *Urinary tract* ☐ *Skin or wound* ☐ *Respiratory tract* ☐ *Gastrointestinal* ☐ *Eye* ☐ *Ear, nose, mouth* ☐ *Systemic infection* ☐ *Unexplained fever* ☐ *Other*	☐ *Urinary tract* ☐ *Skin or wound* ☐ *Respiratory tract* ☐ *Gastrointestinal* ☐ *Eye* ☐ *Ear, nose, mouth* ☐ *Systemic infection* ☐ *Unexplained fever* ☐ *Other*
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*
Who prescribed?	☐ *GP* ☐ *Specialist* ☐ *Pharmacist* ☐ *Nurse* ☐ *Other*	☐ *GP* ☐ *Specialist* ☐ *Pharmacist* ☐ *Nurse* ☐ *Other*	☐ *GP* ☐ *Specialist* ☐ *Pharmacist* ☐ *Nurse* ☐ *Other*	☐ *GP* ☐ *Specialist* ☐ *Pharmacist* ☐ *Nurse* ☐ *Other*
For urine: Dipstick before AB-therapy	☐ *No* ☐ *Yes*	☐ *No* ☐ *Yes*	☐ *No* ☐ *Yes*	☐ *No* ☐ *Yes*
Was a culture sample taken?	☐ *No* ☐ *Yes*	☐ *No* ☐ *Yes*	☐ *No* ☐ *Yes*	☐ *No* ☐ *Yes*

ISOLATED MICROORGANISMS				
Name of isolated microorganism (please use code-list)	________	________	________	________
	________	________	________	________
	________	________	________	________

Where do I get antibiotic data to complete the above?

Data sources will depend on your LTCF:

- *The pharmacy:*
  If in the LTCF, all drugs are delivered by one single pharmacy that can provide an electronic file with all AB using residents on the day of the survey, data collection is easy to perform.
- *The drug list in the LTCF ward or the drug prescription sheet (kardex):*
  If in the wards a list/sheet is available with the medicines currently used by residents, and if regularly updated, it could be a good source for data collection on the PPS day.
  If an electronic list is available in the ward, data collection is much easier and a printed copy from the list for each AB using resident could be used. If no electronic list or sheet is available but only written documents, the surveyor will have to go through all of them.
- *The medical and/or nursing records from the residents:*
  If no drug list/kardex is available and the antibiotic 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.

Important remarks

- **Residents taking their own medication;** Some residents may take their medication (including antibiotics) themselves. If this is the case in your LTCF for independent residents, the patients/nurse-in-charge will be able to verify this.
- **No residents on antibiotics:** If none of the LTCF residents are treated with antibiotics on the day of the PPS, it is very important to declare this by completing the institutional questionnaire. In this particular situation (zero AB-using residents) the completed institutional questionnaire should clearly mention “zero” for ‘total number of residents with an AB treatment on the PPS-day’ in the summary table with denominator data. Please insert zero – do not leave this section blank

Variable	Description/definition
Antibiotic name	The commercial or molecule name of the prescribed antibiotic is required. Please use capital letters and write clearly the name of the medicine. Space is provided for 4 different antibiotics. If the resident uses more, use a second questionnaire indicating the resident study-number clearly. You may find appendix 2 of this user manual useful.
Total prescribed daily dose	Total number of grams, milligrams or International Units (IU) of an antimicrobial drug prescribed over 24 hours. *e.g., if the prescribed dose is 500 mg 4 times per day, write 2 (if UNIT expressed in g/24h) or 2000 (if UNIT expressed in mg/24h).* For AB treatments stopped on the day of the survey: even if the resident received an incomplete daily dose on the PPS day, the total prescribed dose must be registered. If a resident for some reason did not receive his prescribed dose (e.g. he/she refused or forgot to take the antibiotic) the prescribed dose has to be registered.
Unit	Gram (g)/24h, Milligram (mg)/24h, International Unit (I.U.)/24h. Indicate here the unit of prescription. Is the AB prescription expressed in grams in milligrams or in International units? *e.g. if the total dose is 2 gram/24h, fill the circle corresponding with g/day* *If the total dose is 2000 mg/24h, fill the circle corresponding with mg/day*
Administration route	How are ABs administered to the resident on the PPS day? Oral (in pills, capsules or liquid form), intramuscular (IM) or intravenous (IV, including IV-perfusion), inhalation (aerosol therapy) or rectal (suppository).
Type of AB treatment	Why was the AB therapy prescribed? Was it prescribed in order to avoid the development of an infection (***prophylactic treatment***) or for the treatment of an existing infection (***therapeutic treatment***)?
AB therapy given for	What anatomical site was the AB therapy (prophylactic or therapeutic) prescribed for? • *Urinary tract* • *Skin or wound* • *Respiratory tract* • *Gastrointestinal tract* • *Eye* • *Ear, nose, mouth* • *Systemic infection (primary bloodstream infection)* • *Unexplained period of fever* • *Other sites*
AB, where prescribed?	Was the treatment prescribed in the LTCF, in an acute care hospital or elsewhere?
AB, who prescribed?	Were the antimicrobials prescribed by the attending physician (general practitioner), by a specialist (the specialist, working in the facility or consulted outside the LTCF), the pharmacist, a nurse or another person (e.g. the general practitioner who treated the resident before his admission

	to the LTCF).
For urine: dipstick before AB therapy 	Dipstick test = a specially treated chemical strip (dipstick) is placed into a new urine sample. Patches on the dipstick will change colour to indicate the presence of white blood cells and nitrites (often also proteins, blood...).
Was a culture sample taken?	Was a specimen (e.g., urine, sputum, stools, pus) taken for microbiological analysis, before or at the time an antibiotic was prescribed?
Name of the isolated micro-organism(s) ***(see appendix 4)***	If microbiological results are available for the treated infection at the time of the PPS, indicate the micro-organisms isolated, using the code list 'micro-organisms' (available in the software package). If a resistant micro-organism was isolated, you can indicate this as follows:

CODE	Micro-organism
ACIMDR	*ACINETOBACTER BAUMANNII*, CARBAPENEM RESISTANT (imipenem, meropenem)
ENBMDR	*ENTEROBACTER*, 3rd generation CEPHALOSPORIN RESISTANT (ceftriaxone, cefotaxime, ceftazidime, cefixime) AND/OR CARBAPENEM RESISTANT (imipenem, meropenem)
ENCMDR	*ENTEROCOCCUS SPECIES*, RESISTANT FOR GLYCOPEPTIDES (vancomycin, teicoplanin)
ESCMDR	*ESCHERICHIA COLI*, 3rd generation CEPHALOSPORIN RESISTANT (ceftriaxone, cefotaxime, ceftazidime, cefixime)
KLEMDR	*KLEBSIELLA PNEUMONIAE*, 3rd generation CEPHALOSPORIN RESISTANT (ceftriaxone, cefotaxime, ceftazidime, cefixime)
PRTMDR	*PROTEUS MIRABILIS*, 3rd generation CEPHALOSPORIN RESISTANT (ceftriaxone, cefotaxime, ceftazidime, cefixime)
PSEMDR	*PSEUDOMONAS AERUGINOSA*, CARBAPENEM RESISTANT (imipenem, meropenem)
MRSA	*STAPHYLOCOCCUS AUREUS* - METICILLIN RESISTANT (oxacillin)

2.2.3 Signs and symptoms of an infection

Record all signs and symptoms of each 'possible' infection, either:

- **present the day of the survey**
- **present in the preceding days and the resident is still being treated with an antimicrobial for that infection on the day of the PPS.**

Infected resident the day of the survey:

- All sites of infection should be included
- When a resident **no longer has signs/symptoms** of an infection but is still on antimicrobial therapy for that infection on the day of the PPS, **all signs/symptoms of that infection** should be registered.
- Do not include signs/symptoms related to non-infectious causes

- Do not include patients where the infection was either present or incubating at the time of admission/readmission (e.g., after hospitalisation) to the LTCF

1. Go to the section corresponding to the infected anatomical site: e.g., urinary, skin, respiratory, etc. and tick **ALL signs and/or symptoms**.
2. It is important to **be as exhaustive as possible**, even if you can tick 'infection diagnosed by the attending physician'. During analysis, infections will be classified in 'confirmed' and 'probable' infections, based on the selected signs/symptoms.
3. Indicate all infections present: a resident can have more than one infection on the PPS day. If you cannot classify the infection of the resident, choose 'other' and write down this infection.

Remark: the infection does not have to be confirmed by a physician or recorded in the residents' file. In LTCFs the first line of infection detection are often healthcare staff, who then report it to the nurse in charge. Diagnostic testing often used in acute care hospitals for the detection of an infection, are infrequent in these settings. For these reasons, we have chosen to base the identification of signs and symptoms of an infection mainly on clinical observation.

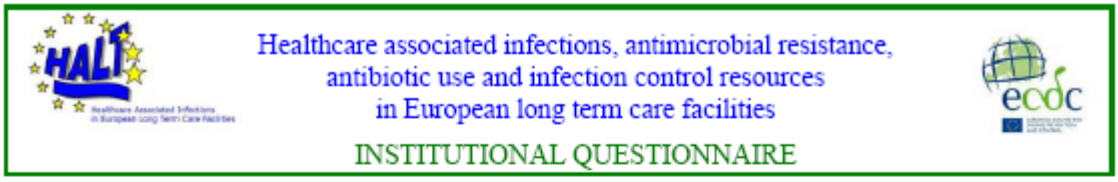
Variable	*Description/definition*
Urinary infection	Can be an infection of the kidney, urether, bladder or urethra
Change in aspect of urine	A noticeable change of colour, smell and/or consistency (e.g. bloody urine, foul smell, amount of sediment)
Worsening of mental or functional status	New arising difficulties or deterioration experienced by the resident when performing activities of daily life (e.g. In need of help for bathing, dressing, visiting the toilet, transfer, continence and/or feeding) or a decline in cognitive abilities (e.g. forgetting something faster, having problems recognising familiar persons, being confused quicker…)
Cellulitis	Infection of the connective tissue
Soft tissues	Tissues that connect support or surround other structures or organs (muscles, tendons, ligaments, nerves, blood vessels, fat, fibrous tissues, fascia and membranes)
Maculopapular rash	Rash characterised by spots and bumps
Herpes simplex	'Cold Sores'. Disease caused by a virus leading to a rash (often around the lips and nose) with groups of fluid-filled vesicles (blisters) which soon dry out
Herpes zoster	'Shingles'. Disease caused by a virus; mostly painful vesicular(blistering) rash in areas where many sensory nerves are present (e.g. face, chest, shoulders and hip)
Scabies	Contagious and heavy itching disease of the skin caused by a mite

Respiratory tract infection	Can be an infection of the upper or lower respiratory tract ***Upper respiratory tract infection*** Infection of the (naso)pharynx ((naso)pharyngitis), paranasal sinus (sinusitis) or tonsils (tonsillitis) ***Lower respiratory tract infection*** Infection of the trachea and bronchus (bronchitis), bronchiole (bronchiolitis) or lung and alveoli (pneumonia)
Infiltrate	Deposition of fluid (e.g. blood, pus…) in tissues and cells
Sputum	Secretion expectorated from the lower respiratory tract (not to be confused with saliva)
Pleuritic chest pain	Pain in the chest during inhalation which can cause fast and superficial breathing to decrease the pain
Rales	Crackles or a series of discontinued short sounds heard on auscultation (listening with a stethoscope) due to air movements
Rhonchi	Continued noises in the lower respiratory tract due to vibrations heard on auscultation (listening with a stethoscope) due to air movements
Wheezes	Whistling noises when difficulties with exhaling
Bronchial breathing	Higher pitched breathing noise heard on auscultation (listening with a stethoscope) due to air movements
Gastrointestinal infection	Infection of the stomach and/or intestines
Salmonella	You will need a positive microbiological test to complete this section. Bacteria, frequent cause of gastrointestinal diseases (e.g. gastroenteritis, food poisoning…)
Shigella	You will need a positive microbiological test to complete this section. Bacteria which can cause bloody diarrhoea (dysentery) and/or dehydration
E. coli	You will need a positive microbiological test to complete this section. *Escherichia coli*, can cause gastrointestinal symptoms (e.g. bloody diarrhoea) or urinary tract infections
C. difficile	You will need a positive microbiological test (faeces) to complete this section. *Clostridium difficile* can cause persistent diarrhoea and ulcero-hemorrhagic colitis
Systemic infection	Infection caused by a micro-organism and disseminated to several organs in the different systems of the body.
Primary bloodstream infection	You will need a positive microbiological test (blood culture) to complete this section. Infection originated directly from the bloodstream; In contrast, secondary bloodstream infections are those originating (secondary) from a source outside the bloodstream (e.g. urinary or respiratory infection) and later spread from this source to involve the bloodstream

2.3 Institutional questionnaire

- Each participating LTCF has to complete the ***institutional questionnaire***. This is essential for the study to collect important structural & functional characteristics, denominator data and information about antibiotic and infection control practices in the participating institution.
- With the exception of sections **B** (denominator data) and **F** (How was the survey performed in your LTCF) the majority of the Institutional Questionnaire can be completed before the study day.

A – GENERAL INFORMATION



Healthcare associated infections, antimicrobial resistance, antibiotic use and infection control resources in European long term care facilities

INSTITUTIONAL QUESTIONNAIRE

Remark: Each facility enrolled in the point prevalence survey (PPS) on healthcare associated infections (HAI) and antibiotic use (AB) has to complete this institutional questionnaire which is **essential** for the study. This document collects important structural & functional characteristics, denominator data and information on Antibiotic (AB) and infection prevention/control policy in the participating settings. **From the pilot experience we recommend that the person completing this questionnaire should be the one in charge of the facility. If s/he cannot answer some of the questions, could s/he please forward the questionnaire to others who are able to answer those specific questions.**

A – GENERAL INFORMATION ABOUT THE FACILITY

DATE OF THE SURVEY IN YOUR FACILITY ⌊_⌋⌊_⌋ ⌊_⌋⌊_⌋ ⌊2⌋⌊0⌋⌊1⌋⌊0⌋

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

OWNERSHIP OF THE FACILITY ☐ *Private* ☐ *Public*

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

IN THE FACILITY:

Total number of ROOMS in the facility ⌊_⌋⌊_⌋⌊_⌋⌊_⌋ *Rooms*

Total number of SINGLE ROOMS in the facility ⌊_⌋⌊_⌋⌊_⌋⌊_⌋ *Single rooms*

Variable	*Description/definition*
Qualified nurses available 24/24h in the facility	Are qualified nurses available day and night? E.g. reachable by phone/beeper, presence of a nurse 24h/24h…
Total number of rooms in the facility	Total number of rooms in the facility is the sum of all resident rooms including single rooms and multi-bedded rooms
Total number of single rooms in the facility	Total number of room in the facility where only one person can stay. It will be used to calculate the proportion of single rooms in the facility.

B – DENOMINATOR DATA

These data are very important for the study. They are collected in each ward on the PPS day, e.g. by the use of the ward list. The denominator table for the institutional questionnaire summarises for the total LTCF population the data collected in each ward.

B – DENOMINATOR DATA

This table with denominator data, summarizes the data collected in each ward (ward list) for the total population in the facility

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

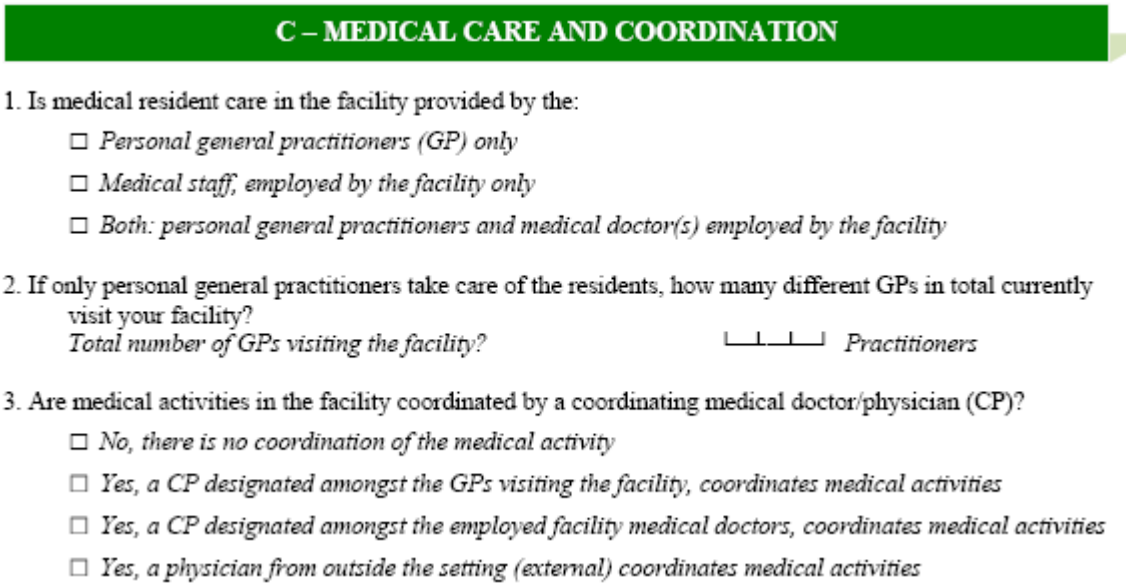
AVAILABLE BEDS (*total bed capacity in the facility*)	
RESIDENTS HOSPITALISED (*acute care hospital*)	
OCCUPIED BEDS	
ELIGIBLE RESIDENTS, PRESENT (at 8 am) IN THE FACILITY SINCE AT LEAST 24 h	
RESIDENTS OVER 85 YEARS	
MALE RESIDENTS	
RESIDENTS RECEIVING AN ANTIBIOTIC THERAPY	
RESIDENTS WITH SIGNS OR SYMPTOMS OF INFECTION	
RESIDENTS WITH A URINARY CATHETER	
RESIDENTS WITH A 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	

→ Definition of variables: *See section 2.1 Ward list*

C – MEDICAL CARE AND COORDINATION

Part C of the questionnaire provides information about the organisation of medical care in the LTCF; it is important because may help in explaining differences in AB prescribing habits. The kind of care: personal general practitioner (GP) or employed medical staff and their number can influence the ability of coordination and standardisation of care and AB prescription.

Variable	Description/definition
Personal general practitioner (GP)	A medical doctor chosen by the resident and often for many years (before admission to the LTCF) that provides medical care to the resident (i.e., the residents own GP)
Medical staff employed by the facility	Medical doctors employed by the LTCF management that take care of the residents. These doctors could be LTCF medical staff or outside GPs employed by the LTCF. These doctors are not the personal GPs of the residents.
Coordinating physician (CP)	A medical doctor in charge of the co-ordination of medical activities and the standardisation of practices/policies in the LTCF.
Medical resident care	Diagnostic, medical treatment and follow-up of residents' health problems.
Supervision of medical records	Access to all medical information of all residents in the LTCF with or without the ability to change the course of a treatment, often after discussion with the medical doctor who prescribed the treatment.
Antibiotic policy	Recommendations for good antimicrobial practice based on current knowledge and evidence, taking into account a prudent use and avoiding unnecessary or ineffective treatments.
Care strategy	A long-term plan of actions resulting in a systematic and informed approach to provide good quality of care, e.g. wound care, vaccination therapy, infection prevention, etc.
Infection prevention policy	A coherent set of precautions taken to prevent infections and transmission of pathogens among a population.
Peer review of medical activities	A process of subjecting the medical care practice provided by a physician to the examination of a qualified interdisciplinary team of experts, often the other GPs or medical doctors working in the facility.



C – MEDICAL CARE AND COORDINATION

1. Is medical resident care in the facility provided by the:
   - ☐ *Personal general practitioners (GP) only*
   - ☐ *Medical staff, employed by the facility only*
   - ☐ *Both: personal general practitioners and medical doctor(s) employed by the facility*

2. If only personal general practitioners take care of the residents, how many different GPs in total currently visit your facility?
   Total number of GPs visiting the facility? ⌊_⌋⌊_⌋⌊_⌋ *Practitioners*

3. Are medical activities in the facility coordinated by a coordinating medical doctor/physician (CP)?
   - ☐ *No, there is no coordination of the medical activity*
   - ☐ *Yes, a CP designated amongst the GPs visiting the facility, coordinates medical activities*
   - ☐ *Yes, a CP designated amongst the employed facility medical doctors, coordinates medical activities*
   - ☐ *Yes, a physician from outside the setting (external) coordinates medical activities*

Sample part of the form for recording section C

D – INFECTION CONTROL PRACTICE IN THE FACILITY

The presence and expertise of infection prevention and control teams can largely influence the antibiotic policy and the prevalence of infections in the LTCF. Thus this information is very important.

D – INFECTION CONTROL PRACTICE IN THE FACILITY

1. Is a person with training in infection control/prevention in charge of infection control (IC) in the facility?
   ☐ Yes ☐ No
2. If so, is this/are these person(s) in charge of infection control in the facility:
   ☐ *A nurse*
   ☐ *A doctor*
   ☐ *Both, a nurse and a doctor*

Is this/are these person(s):
   ☐ *Working in the facility*
   ☐ *Not working in the facility (external)*

3. If the person in charge of 'Infection control' is a doctor, what is his/her medical specialty?
   ☐ *Microbiologist*
   ☐ *Hospital hygiene specialist*
   ☐ *Infectiologist (Infectious disease physician)*
   ☐ *Epidemiologist*
   ☐ *General practitioner*
   ☐ *Other*

Sample part of the form for recording the section D

Variable	*Description/definition*
Infection control practitioner	A registered nurse, physician, epidemiologist or medical technologist who helps to prevent healthcare-acquired infections by isolating sources of infections and limiting their spread; systematically collects, analyses and interprets health data in order to plan, implement, evaluate and disseminate appropriate public health practices; and trains healthcare staff through instruction and dissemination of information on infection control practices. *(Definition source: Association for Professionals in Infection Control and Epidemiology)*
Infection control committee	A multidisciplinary committee including physicians, nursing staff, infection control practitioners, quality assurance personnel, risk management personnel, representatives from microbiology, surgery, central sterilisation, pharmacy, environmental services, etc. involved in the prevention and control of nosocomial infections in a healthcare facility.
Litres of hand alcohol	Total number of litres used during the course of the year 2009

E – ANTIBIOTIC POLICY

The antibiotic policy can be widely implemented or absent in the LTCF. The presence and use of restrictive lists, written guidelines and therapeutic formularies are important AB policy indicators.

E – ANTIBIOTIC POLICY

1. Which types of physicians prescribe antibiotics in the facility?

ESTIMATED % OF TOTAL NUMBER OF AB PRESCRIPTIONS

- ☐ *General practitioner* ⌊_⌋⌊_⌋⌊_⌋ %
- ☐ *Medical Doctor employed by the facility* ⌊_⌋⌊_⌋⌊_⌋ %
- ☐ *External consultants (specialists)* ⌊_⌋⌊_⌋⌊_⌋ %
- ☐ *Specialists working in the facility* ⌊_⌋⌊_⌋⌊_⌋ %

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

☐ Yes ☐ No

3. If a restrictive list exists, what kinds of ABs are restricted?

- ☐ *Carbapenems*
- ☐ *3th Generation Cephalosporins*
- ☐ *Fluoroquinolones*
- ☐ *Vancomycin*
- ☐ *Mupirocin*
- ☐ *Glycopeptides*
- ☐ *Broad-spectrum AB*
- ☐ *Intravenously administered antibiotics*

Sample part of the form for recording the section E

Variable	*Description/definition*
Restrictive list of AB to be prescribed	A list with antimicrobial agents which are authorised and those which should not be used at all or which should not used in the empirical therapy of any infection in the LTCF. The purpose is to preserve certain antibiotics, using them only for specific indications under specialist advice or for specific culture proven infections with sensitive micro organisms. In some cases exceptions are allowed, through written motivation forms, explaining the reasons for the choice of the antibiotic.
Antibiotic committee	A team composed at least of doctors prescribing AB, a pharmacist, if present a co-ordinating physician and an infection prevention and control practitioner and if possible a microbiologist. This committee is in charge of the development of local guidelines and protocols for antibiotic use in the LTCF.
Written guidelines for appropriate AB use in the facility	Recommendations for empirical and targeted treatment of the most frequent infections, including dosage, administration route and duration of treatment. Most of the time a first and second choice therapy is proposed.

Annual AB consumption	A report on the quantity of AB used during the past year, classified by AB class.
Drug resistance profiles	Follow-up of the evolution of AB resistance patterns for the different micro-organisms in a LTCF in order to guide the choice of antimicrobials for treatment. Data are obtained by the surveillance of the resistance profiles of isolated micro organisms from residents.
Therapeutic formulary	List of eligible drugs indicated by illness, intended as a manual for physicians guiding them in prescribing drugs. The therapeutic formulary should at least include a specific chapter on antimicrobial therapy.

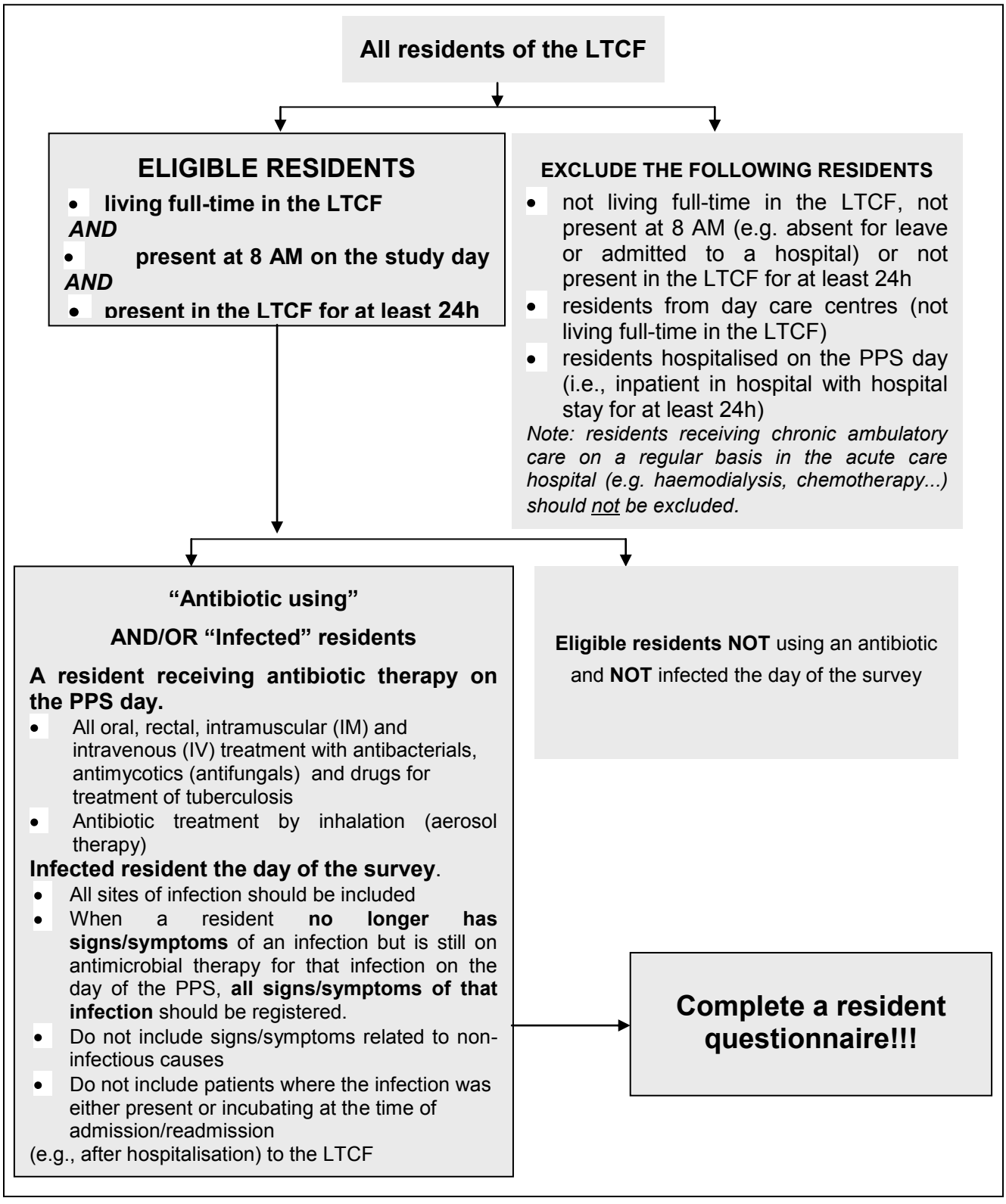
F – HOW WAS THIS SURVEY PERFORMED IN YOUR FACILITY ?

F – HOW WAS THIS SURVEY PERFORMED IN YOUR FACILITY ?

1. Who collected the data for the HALT-study?
   - ☐ *a physician from the setting*
   - ☐ *a qualified nurse*
   - ☐ *another person*

2. If no physician was involved in the data collection, did a physician validate data?
   - ☐ Yes ☐ No

APPENDIX 1: SELECTION OF RESIDENTS TO BE INCLUDED IN THE STUDY



APPENDIX 2: LIST OF ANTIBIOTICS USED IN NORTHERN IRELAND

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

Trade name	Route	Active ingredient
CLARYL	Oral	Clarithromycin
CLAVAMEL	Oral	Amoxicillin and enzyme inhibitor
CLEOCIN	Oral	Clindamycin
CLINDAMYCIN	Oral	Clindamycin
CLINIMYCIN	Oral	Oxytetracycline
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
ERYTHROMYCIN	Oral	Erythromycin
ERYTHROMYCIN ABT	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

Trade name	Route	Active ingredient
FULCIN	Oral	Griseofulvin
FUNGAFINE	Oral	Terbinafine
FUNGILIN	Oral	Amphotericin B
FURADANTIN	Oral	Nitrofurantoin
FUSIDIC ACID	Oral	Fusidic acid
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

Trade name	Route	Active ingredient
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
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

Trade name	Route	Active ingredient
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
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

Trade name	Route	Active ingredient
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
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

Trade name	Route	Active ingredient
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
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

Trade name	Route	Active ingredient
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
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 3

HALT survey in LONG TERM CARE FACILITIES

CODE LIST: MICROORGANISMS

CODE	NAME OF THE MICROORGANISM
	- A -
ACHSPP	ACHROMOBACTER SPECIES
ACIBAU	ACINETOBACTER BAUMANNII
ACIMDR	ACINETOBACTER BAUMANNII, CARBAPENEM RESISTANT *(imipenem, meropenem)*
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 -
GNBOTH	BACILLI, GRAM NEGATIVE, NON ENTEROBACTERIACIAEA, *other*
GPBNSP	BACILLI, GRAM POSITIVE, *not specified*
GPBOTH	BACILLI, GRAM POSITIVE, *other*
BACSPP	BACILLUS SPECIES
GNBNSP	BACTERIA, GRAM NEGATIVE, NON ENTEROBACTERIACEAE, *not specified*
BCTOTH	BACTERIA, *other*
BCTNSP	BACTERIA, *other, not specified*
BATFRA	BACTEROIDES FRAGILIS
BATNSP	BACTEROIDES SPECIES, *not specified*
BATOTH	BACTEROIDES SPECIES, *other*

BURCEP	BURKHOLDERIA CEPACIA
	- C -
CAMSPP	CAMPYLOBACTER SPECIES
CANALB	CANDIDA ALBICANS
CANGLA	CANDIDA GLABRATA
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*
ENBMDR	ENTEROBACTER, 3th generation CEPHALOSPORIN RESISTANT *(ceftriaxone, cefotaxim (Claforan), ceftazidim (Fortum), cefixim, ..)* AND/OR CARBAPENEM RESISTANT *(imipenem, meropenem)*
ETBNSP	ENTEROBACTERIACEAE, *not specified*
ETBOTH	ENTEROBACTERIACEAE, *other*
ENCFAE	ENTEROCOCCUS FAECALIS
ENCFAI	ENTEROCOCCUS FAECIUM
ENCNSP	ENTEROCOCCUS SPECIES, *not specified*
ENCOTH	ENTEROCOCCUS SPECIES, *other*
ENCMDR	ENTEROCOCCUS SPECIES, RESISTANT FOR GLYCOPEPTIDES (*vancomycin, teicoplanin)*
ESCCOL	ESCHERICHIA COLI
ESCMDR	ESCHERICHIA COLI, 3th generation CEPHALOSPORIN RESISTANT *(ceftriaxone, cefotaxim (Claforan), ceftazidim(Fortum) , cefixim, ..)*
	- F -
FLASPP	FLAVOBACTERIUM SPECIES
FUNNSP	FUNGI, *not specified*
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
KLEMDR	KLEBSIELLA PNEUMONIAE, 3th generation CEPHALOSPORIN RESISTANT *(ceftriaxone, cefotaxim (Claforan) , ceftazidim (Fortum), cefixim, ..)*
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 -
PASSPP	PASTEURELLA SPECIES
PRESPP	PREVOTELLA SPECIES
PROSPP	PROPIONIBACTERIUM SPECIES
PRTMIR	PROTEUS MIRABILIS
PRTMDR	PROTEUS MIRABILIS, 3th generation CEPHALOSPORIN RESISTANT *(ceftriaxone, cefotaxim, ceftazidim, cefixim, ..)*
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
PSEMDR	PSEUDOMONAS AERUGINOSA, CARBAPENEM RESISTANT *(imipenem, meropenem)*
	- S -
SALENT	SALMONELLA ENTERITIDIS
SALNSP	SALMONELLA SPECIES, *not specified*
SALOTH	SALMONELLA SPECIES, *other*
SALTYP	SALMONELLA TYPHI or PARATYPHI
SALTYM	SALMONELLA TYPHIMURIUM
SERLIQ	SERRATIA LIQUEFACIENS
SERMAR	SERRATIA MARCESCENS
SERNSP	SERRATIA SPECIES, *not specified*
SEROTH	SERRATIA SPECIES, *other*
SHISPP	SHIGELLA SPECIES
STACNS	STAFYLOCOCCI, COAGULASE-NEGATIVE, *not specified*
STAOTH	STAFYLOCOCCI, COAGULASE-NEGATIVE (CNS), *other*
STAAUR	STAPHYLOCOCCUS AUREUS
MRSA	STAPHYLOCOCCUS AUREUS - METICILLIN RESISTANT (*oxacillin)*
STAEPI	STAPHYLOCOCCUS EPIDERMIDIS

STAHAE	STAPHYLOCOCCUS HAEMOLYTICUS
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*
- Y -	
YEAOTH	YEASTS, *other*
YERSPP	YERSINIA SPECIES