HAI-Net

HelicsWin.Net User Manual

Software version 4.1.0

December 2021

Edition notice

This document applies to HelicsWin.Net (HWN) version 4.1.0

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Document control

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Document's intended audience and purpose

The document is intended for hospital staff that use HelicsWin.Net to collect or administer data collected using ECDC's HAI-Net surveillance of healthcare-associated infections methods (HAI-Net PPS and ICU).

This document describes the HelicsWin.Net v4.1.0 user interface, and provides users with step-by-step instructions in its use, and conceptual information about data storage.

About HelicsWin.Net

HelicsWin.Net is a software application developed for the manual entry of data of the Healthcare-Associated Infections surveillance Network (HAI-Net).

The current version includes four surveillance modules:

- HAI-Net PPS: point prevalence survey (PPS) of healthcare-associated infections and antimicrobial use in European acute care hospitals (Protocol version 6.x), and
- HAI-Net ICU: surveillance of healthcare-associated infections in European intensive care units (ICUs) (Protocol version 2.x), and
- HAI-Net CDI: surveillance of *Clostridium difficile* infections (CDI) in the EU (pilot protocol version 2.2).
- HAI-Net SSI: surveillance of surgical site infections (SSIs) (Protocol version 2.2)
- HAI-Net HALT: point prevalence surveys of healthcare-associated infections and antimicrobial use in European long-term care facilities (Protocol version 2.1),

HelicsWin.Net enables local users, typically in a hospital, to collect surveillance data at the hospital and ward levels; these data are stored internally by HelicsWin.Net, but the data can be exported to other applications in a variety of formats, including formats compatible with Microsoft Access (.mdb) and Microsoft Excel (.csv).

For nominated representatives of the EU Member States only, a TESSy compatible format is provided to facilitate the importation of data to The European Surveillance System (TESSy) database.

Background

The name *HelicsWin.Net* originates from the Microsoft Access application *HelicsWin* developed by the former European HELICS (Hospitals in Europe for Infection Control through Surveillance) network for the surveillance of HAI. HelicsWin was originally developed as part of an ECDC contract for further Hospital Software Support for the European Surveillance of HAI, which included *HelicsWin for the surveillance protocols Surveillance of healthcare-associated infections in Intensive Care Units (ICU) and Surveillance of surgical site infections (SSI).*

HelicsWin.Net was originally developed by the ICT department of the Scientific Institute of Public Health, Brussels, Belgium under contract ECD.2218 and its amendment ECD.2764 until September 2011. In September 2011, development of HelicsWin.Net was transferred to ECDC.

Technology

HelicWin.Net is a standalone application developed in Microsoft .Net framework. Data are stored in an .mdb file that is in Microsoft Access format. This file is stored on the computer on which HelicsWin.Net is installed.

Users should also note that:

- HelicsWin.Net is supplied free of charge and can be freely distributed to participating hospitals.
- The text displayed on the data entry forms can be translated to meet language requirements of the participating hospitals.
- HelicsWin.Net can be installed and run from a server, but simultaneous users are not supported, i.e. only one user can run the software at any one time.
- The current version does not require Microsoft Access to be installed on the computer on which it runs.
- Microsoft .Net Framework version 3.5 SP1 or later (available free of charge from Microsoft) is required.

HelicsWin.Net versions

HelicsWin.Net has been published in incremental versions from 1.0 to the current version 4.1.0.

What's new in HelicsWin.Net version 4.1.0

Version 4.1 is a release with the following features:

- ✓ Changes in the PPS module for the third ECDC PPS in acute care hospitals (planned for 2022)
- ✓ Changes in the documentation guides

What's new in HelicsWin.Net version 4.0.0

Version 4.0 is a major release with the following features:

- ✓ Addition of the HAI-Net HALT module.

What's new in HelicsWin.Net version 3.3.0

Version 3.0 is a major release with the following features:

- ✓ Addition of the HAI-Net SSI module containing **TESSy export**.
- ✓ Addition of PPS reports

What's new in HelicsWin.Net version 2.2

Version 2.2 is a major release with the following features:

- ✓ Addition of the HAI-Net CDI pilot module.
- ✓ The HAI-Net PPS module has been updated to match the current ECDC PPS 2016-2017 protocol

What's new in HelicsWin.Net version 2.0

Version 2.0 is a major release with the following features:

- ✓ Addition of the HAI-Net ICU surveillance module for the surveillance of healthcare-associated infections in European intensive care units. The current version contains the variables for the pilot study of the new HAI-Net ICU surveillance protocol. It does not yet contain the features **TESSy export** and **Reports**, which will be added after the pilot study.
- ✓ The **General** tab in the PPS Hospital Surveys form has been split into three tabs (Form H1, H2 and H3) to allow for more detailed and accurate surveillance data to be recorded.
- ✓ The **General** tab in the Ward PPS Data form has been split into two tabs (Form W and Form W (2)) to allow for more detailed and accurate surveillance data to be recorded.
- ✓ Functionality of version 1.3.8 preserved.

What's new in HelicsWin.Net version 1.3.8

Version 1.3.8 was a minor release with the following features:

- ✓ Major functionality of version 1.3.0 preserved.
- ✓ Maintains compatibility with existing v1.3.0 data; new data is automatically converted to the new format on import.
- ✓ New reporting facilities including both predefined and user-defined report templates.
- ✓ Reports can be printed directly or exported as CSV files.
- ✓ Improved data merge facilities. Now you can merge HelicsWin.Net data from different computers, either from the same ward or from different wards in the same hospital. You can then create reports from the merged data.
- ✓ Enhanced data entry and print options.

What's new in HelicsWin.Net version 1.3.0

The key features introduced in v1.3.0 were:

- ✓ Keyboard shortcuts
- ✓ Data quality checks during data entry
- ✓ Separate data quality check function before export
- ✓ Printable search lists for all levels
- ✓ Antimicrobial brand lookup tool
- ✓ Translation possible for all forms, messages and different kinds of controls Integration of PPS validation protocol variables
- ✓ TESSy export for Standard and Light protocol
- ✓ Improved speed
- ✓ Integrity of the database is ensured; if a user changes the ward ID or survey date, the corresponding data in the underlying records (for example. patient data) is automatically updated.

Related documents

For information about how to complete the forms in this application, please refer to the following documents:

- HAI-net CDI:
  - European Centre for Disease Prevention and Control. European surveillance of Clostridium difficile infections, Surveillance protocol version 2.2 (pilot study).
  - Forms 1215-TED-HAI-Net-CDI-pilot-forms.xlsx: Master copies of data collection forms for the CDI protocol v2.2 (in editable format for translation purposes).
- HAI-Net ICU:
  - European Centre for Disease Prevention and Control. Surveillance of healthcare-associated infections and prevention indicators in European intensive care units HAI-Net ICU protocol version 2.0 (pilot study).
  - Forms 0515-TED-HAI-Net-ICUv2-pilot-forms.xls: Master copies of data collection forms for the ICU protocol v2.0 (in editable format for translation purposes).
- HAI-Net PPS:
  - European Centre for Disease Prevention and Control. Point prevalence survey of healthcare-associated infections and antimicrobial use in European acute-care hospitals – protocol version 6.0. Stockholm: ECDC; 2021.
  - Forms 0512-TED-PPS-HAI-antimicrobial-use-forms.PPT: Master copies of data collection forms for PPS protocol v6 (in editable format for translation purposes).
- HAI-Net SSI:
  - European Centre for Disease Prevention and Control. Surveillance of surgical site infections and prevention indicators in European hospitals - HAI-Net SSI protocol, version 2.2. Stockholm: ECDC; 2017.
- HAI-Net HALT:
  - European Centre for Disease Prevention and Control. point prevalence surveys of healthcare-associated infections and antimicrobial use in European long-term care Facilities Version 2.1
  - Forms HALT-protocol-forms-v2.1.PPT: Master copies of data collection forms for HALT protocol v2.1 (in editable format for translation purposes).

These documents are available from within the software, under Settings > About > *Documentation* or in the Documentation subfolder of the installation folder of the HelicsWin.Net software (by default C:\HWN2).

HelpDesk

For any questions, please refer to your National HAI surveillance (and/or PPS) coordinating centre that may refer questions to *mailto:HAI-Net@ecdc.europa.eu*.

Feedback

ECDC welcomes any feedback from users to help us to improve future versions of this software and documentation. Please send your comments to the HelpDesk.

Installation

This section describes the installation requirements and procedures for HelicsWin.Net.

Installation Requirements

The following requirements must be met on the PC on which you are installing the HelicsWin.Net software:

- **Windows XP or later** - Personal computer running Windows XP or later.
- **Administrator rights** - You must have administrator rights on your PC.

  Note: If you do not have administration rights on your computer, contact your system administration for further help.

- **Microsoft .NET Framework 3.5 SP1** or later (.NET 3.5) must be installed on the PC on which HelicsWin.Net runs. The installation program checks for the presence of this software component and cannot complete without it.

  If you were able to run the previous version of HelicsWin.Net 1.3 on the same machine, you will be able to install the new version.

  If your PC does not already have .NET 3.5, it is installed automatically during HelicsWin.Net installation, providing the PC is connected to the internet and downloads are allowed.

  If your PC does not have internet access...

  Check whether.NET 3.5 or later is already installed (see *below*).

  Alternatively, if your PC is not connected to the internet, and you don't have .NET, you can download the .NET software to another PC (that does have internet access) and copy the .NET installation files to portable memory device, such as a USB stick, transfer the device to your PC, and install .NET from there. You can download this software from this URL:

  http://www.microsoft.com/en-us/download/details.aspx?id=22

Runtime Requirements

Access permissions

You do not need administrator rights to your PC to run the application once it is installed, but you must have full access (read/write/execute permission) to the installation folder, which by default is C:\HWN2.

If you install HelicsWin.Net in a different folder, you will need full access to that folder.

Microsoft Access

Although the application database HelicsWinNet.mdb is in Microsoft Access format, you do not need Microsoft Access installed on your computer to run HelicsWin.Net.

You can open the database files in Microsoft Access, but you could also use other compatible software such as Microsoft Excel.

.NET

To check whether .NET 3.5 SP1 or later is installed on your PC

In **Windows 7**, do the following:

1. Click **Start > Control panel**

   The control panel opens.

2. Click **Programs**.

3. Click **Programs and Features** and wait until the installed programs list is populated.

4. Scroll down the list to the Microsoft entries.

   If **Microsoft .NET Framework** is in the list, it is installed. If the version is **3.5 SP1** or higher, you have the correct version, and you can install HelicsWin.Net.

   If the correct version of .NET is not installed, the included setup.exe file installs it for you, although you must have administration rights on your computer (see below).

   Alternatively, to install .NET Framework 3.5 SP 1 or later manually, go to this link and follow the on-screen instructions:

   http://www.microsoft.com/en-us/download/details.aspx?id=22

In **Windows 10**, do the following:

1. Click **Settings**

   The Windows settings window opens.

2. Click **Apps**.
3. See step 4 above.

In **Windows XP**, do the following:

1. Click **Start > Settings > Control panel**

   The control panel opens.

2. Click **Add or remove programs** and wait until the installed programs list is populated.
3. See step 4 above.

Installing HelicsWin.Net

The application comes as two files, one of which is an .msi file that contains the full application.
To install HelicsWin.Net 3.3.0, you must have administration rights to your PC.

HelicWin.Net.msi	Installation files *Administration rights required*
setup.exe	Installer program

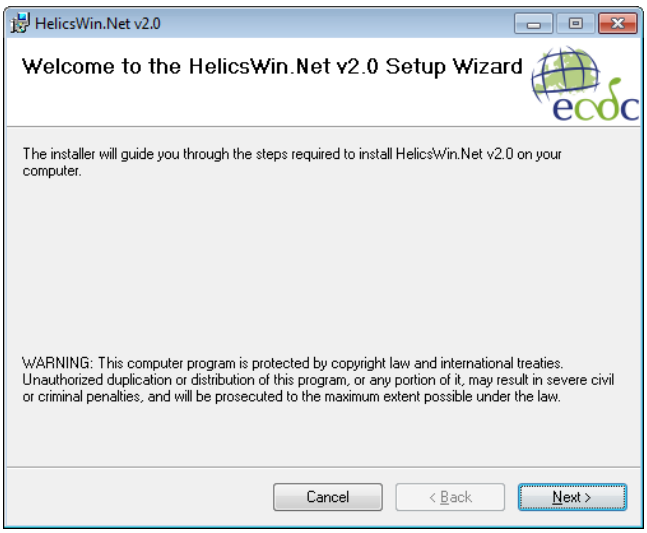
To install HelicsWin.Net 3.3.0:

1. Download the HelicsWin.Net zip file to your PC from the ECDC website at:

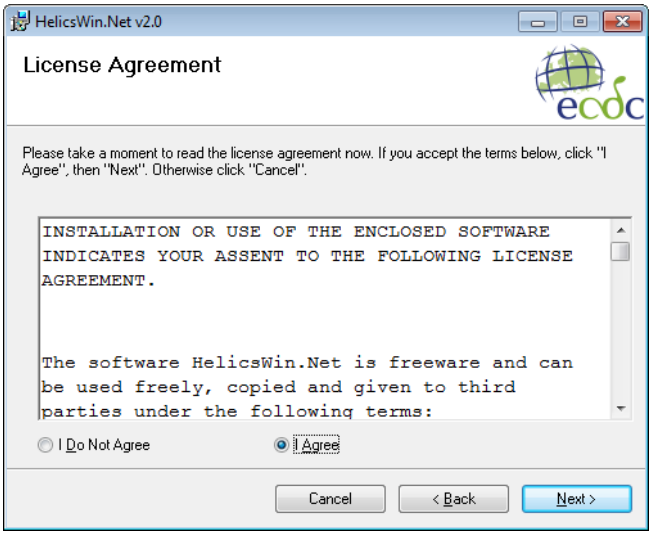
   http://ecdc.europa.eu/en/activities/surveillance/hai/about_hai-net/pages/helicswinnet-download-page-hwn.aspx

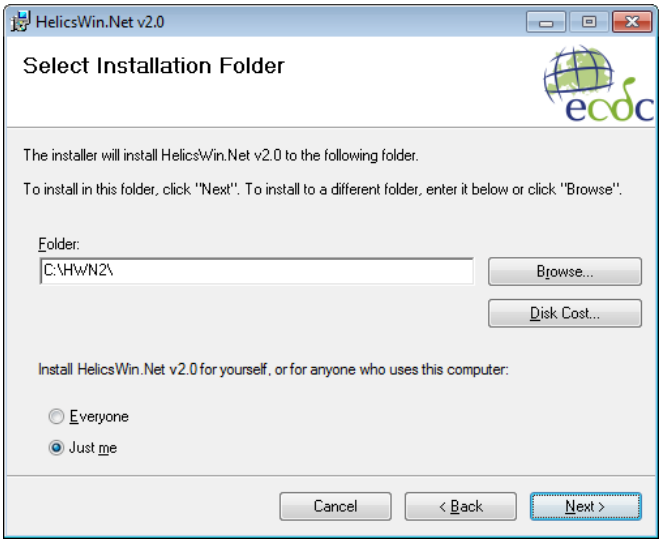
2. Open the zip file and extract the installation files to a folder to which you have full access.
3. Make sure that after extracting the files, both installation files are in the same folder.
4. Click **setup.exe**.

   The installer opens.



5. Follow the on-screen instructions.





6. By default, the installer creates a  shortcut to HelicsWin.Net on your desktop. Simply click the shortcut icon to open the HWN application. The icon also appears in your taskbar when HelicsWin.Net is running.

The application files are installed, by default, in the folder C:\HWN2. Table below describes the purpose of each file.

File or folder	Contents
DatabaseBackups	Database backup file, for example, files saved by a merge operation. This folder is not visible immediately after installation, but is created automatically by the application when needed.
Documentation	User guide; HAI-Net PPS and ICU main protocols and forms.
Log	Log files: level of detail depends on user's specification.
Res	Documents enabling view of antimicrobial resistance markers and codes and ECDC's Privacy Policy from within the software.
HelicsWin.Net.Common.dll HelicsWin.Net.Components.Log.dll HelicsWin.Net.Helpers.dll	Application extension files – needed for HelicsWin.Net to work.
HelicsWin.Net.exe	Executable for HelicsWin.Net.
HelicsWin.Net.exe.config	Configuration file
license.rtf license_3rd_party_notices.rtf	License files
HelicsWinNetCDI.mdb HelicsWinNetICU.mdb HelicsWinNetPPS.mdb	Database file: *HelicsWinNetXXX.mdb*: is initially the empty database (Microsoft Access format) for this application, where XXX represents the module name (CDI, ICU, or PPS). These files are the most important in the application, because they contain all the survey data entered to date. **Recommendation:** make regular backups of these files.
Reference.mdb	Database file containing values and labels (Microsoft Access format).
Translation.mdb	Database file containing translation data (Microsoft Access format).

Warning:	Manually changing the structure, or the data, in any of the .mdb databases — for example, within MS Access — may cause the programme to stop working. If you do decide to make manual changes to the database files, **always** make a backup copy of the database first.
Important:	The software must be installed in a path (folder) where the user has write rights/access (for example, C:\HWN2), otherwise save errors may occur. **Any existing data will be overwritten when copying new .mdb files!** If applicable, make a backup of your existing data first (HelicsWinNet.mdb for the PPS database, Traduction.mdb for translations).

Network installation

You can also install HelicsWin.Net on a network drive in the hospital and then users can run the application from there. Users must have write access to the installation folders.

Network installation can be used when data needs to be entered from different wards; this may be preferred to having to work with multiple local ward copies (and databases); however, with the merge facility, it is relatively easy to merge these data into a single database for the hospital as a whole (see *Merging data*).

It is not possible to enter data from two or more computers simultaneously into the same database.

Getting started

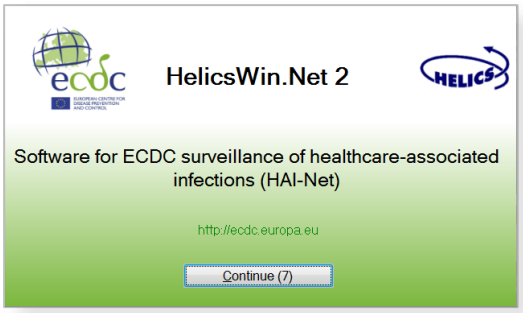
To launch the software, open installation folder (default is HWN2) and run the file *HelicsWin.Net.exe*.

1. From your desktop, click the HWN2 icon on your desktop.

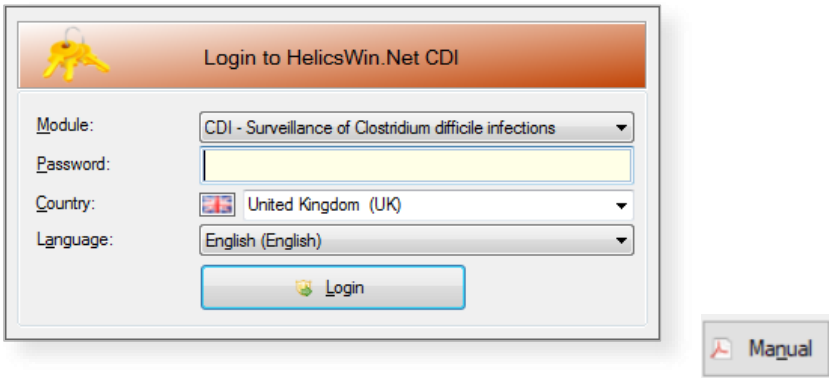
or

1. Select **Start** > **My Computer** > **System** (C:) > **HWN2**> **HelicsWin.Net.exe**.

The splash screen appears:



2. Click **Continue** to go to the first (login) form.



3. Select the surveillance module (HAI-Net CDI, ICU, or PPS) from the **Module** drop-down list.

4. Select your country and language. You can add a language by translating the software.

   The first time anyone uses this installation, the default password is *helics*. You will be prompted to change this the next time you log in. You can change your password in **Settings** later on.

   Caution If you change your password, make sure you can remember it because there is no easy way to access your database files without that password.

   The default language on installation is English. If you change to another language while logging in, HelicsWin.net will be remember your change for subsequent logins.

5. In case want to read the user manual click on the **manual** button that exist on the buttom right of the screen.

6. Click **Login**.

   If you have not already defined any hospitals, you must define one now.

7. Click the **Add item** icon .

The fields in the upper part of the form open for editing.

8. Enter the hospital code—as provided by your National HAI Surveillance/PPS Coordinating Centre—and the hospital name.

9. Click the **Save** icon  or press **Ctrl+S** to save the data **as a record in the database**.

10. Click **Select this hospital** to make changes to or view/enter data on this hospital.

Working with HelicsWin.Net forms

In HelicsWin.Net you enter your data in a series of forms. These forms have standard features, such as labelled text boxes, drop-down lists, and option buttons, to help you become familiar with the user interface so that you can enter your data quickly and accurately.

General guidelines

Caution:	Each time you log in, the software opens the first record in the database. Therefore, if you start entering data without creating a new empty record, the first record will be overwritten when data are saved!

You use the toolbar's functions to perform basic tasks:

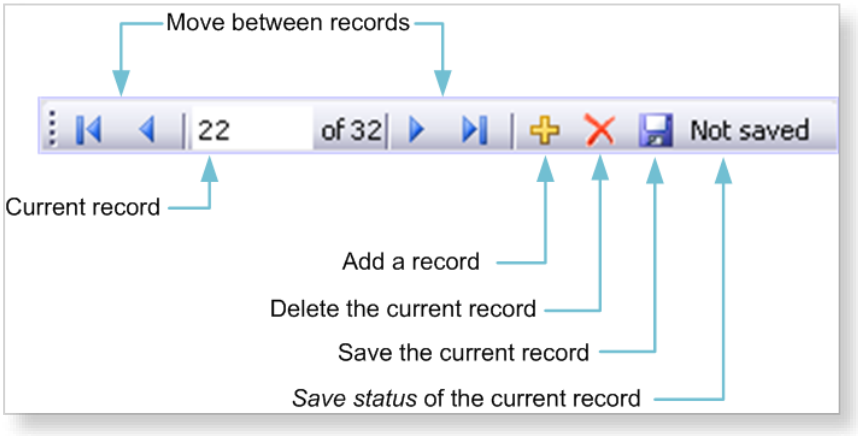


Table below describes these functions.

Toolbar functions

Icon	Function	Description
22 of 33	Current record	Indicates which record is currently open for editing.
	Move between records	Use the **Backwards** and **Forwards** buttons on the toolbar to move one record at a time; alternatively, press **Ctrl + left and right arrow** or use **Back** and **Forward** to go the start or end record respectively.
	Add a record	On all data entry forms, first click the yellow **Add item** icon to activate the relevant input fields. Click to add a new record. Make sure the current record is saved first, before creating a new record. Alternatively, press **Ctrl+N** to create a new record.
	Delete the current record	Most deletions are preceded by a warning. Note that if you delete a record (e.g. a ward), with dependent records (e.g. patient records), all the dependent records will be deleted. However, if you deleted a record by mistake, exit the programme without saving and re-start HWN to undo the deletion. Click the **Save** icon to confirm the permanent deletion of the record.

Icon	Function	Description
Not saved	*Save status* of the current record	The **Not saved** indicator text appears whenever you have changed data in a data record but not saved it. This indicator disappears as soon as you save the record, and reappears if you make any changes.
	Save the current record	Alternatively, press **Ctrl+S** to save the current record.

Keyboard shortcuts

Keyboard shortcut	Action
Ctrl + Left arrow	Previous record
Ctrl + Right arrow	Next record
Ctrl + N	New record
Ctrl + S	Save record
Ctrl + D	Delete record

When a record is saved, the programme performs some validation checks on the data before actually saving. See *Checking data quality*.

Understanding reported errors

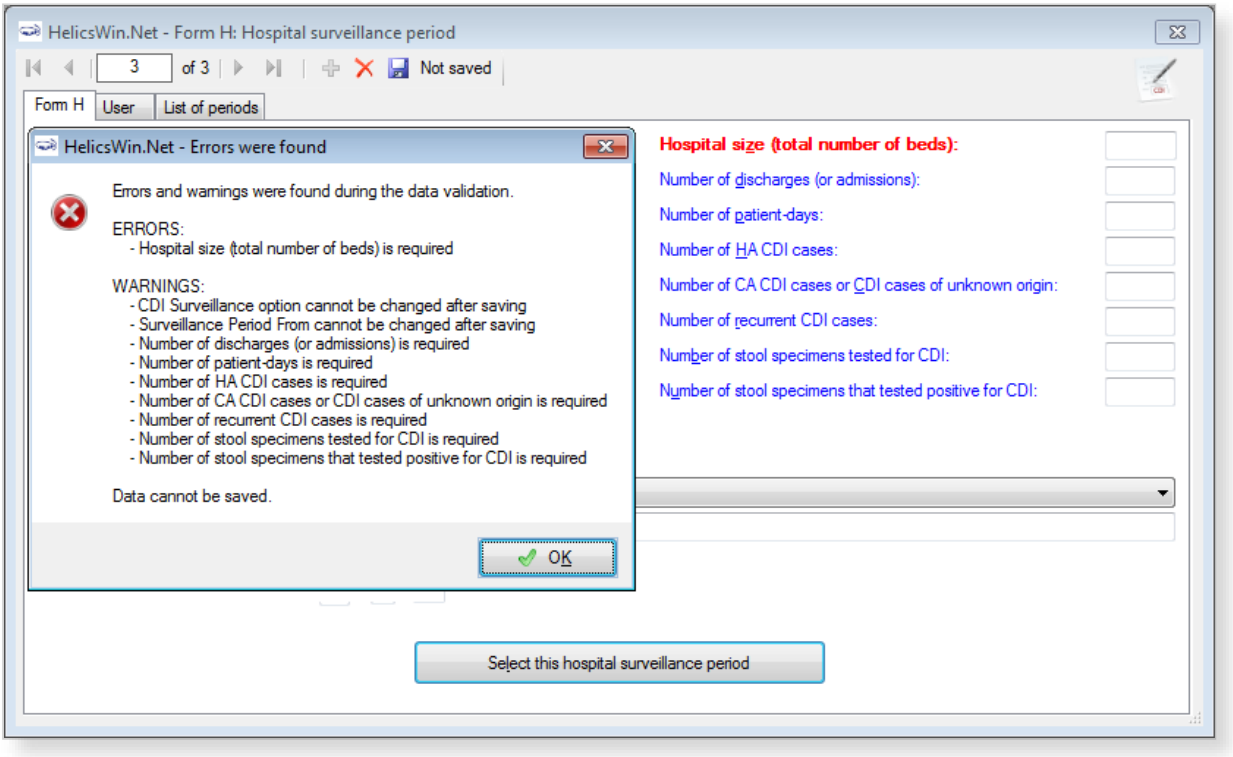
The application checks the data you supply as soon as you attempt to save it. The purpose of this check is to help you get your data right. If data quality checks and data entry validation identify errors, the application displays a message before saving.

There are three types of field validation in HWN:

- Type 1: **mandatory fields** are left blank or have been assigned invalid values: an **error message** is displayed, the relevant field labels are shown in red and you cannot save the data.
- Type 2: **required fields** are left blank: a **warning message** is displayed, the relevant field labels are shown in blue, but saving is possible. This will typically occur when required data are not available until the end of the surveillance period, e.g. the number of discharges in the surveillance period.
- Type 3: **optional fields** that can be empty: no warning or error message is displayed.

Figure below illustrates possible errors and warnings that could arise when you save a record in the CDI hospital data form. Note that in this case, there is one error and the data cannot be saved before the mandatory data is entered.

Example of errors and warnings



Note: Not all validation rules are implemented at data entry; some more complex rules are implemented only in the *data quality check*.

General features of the user interface

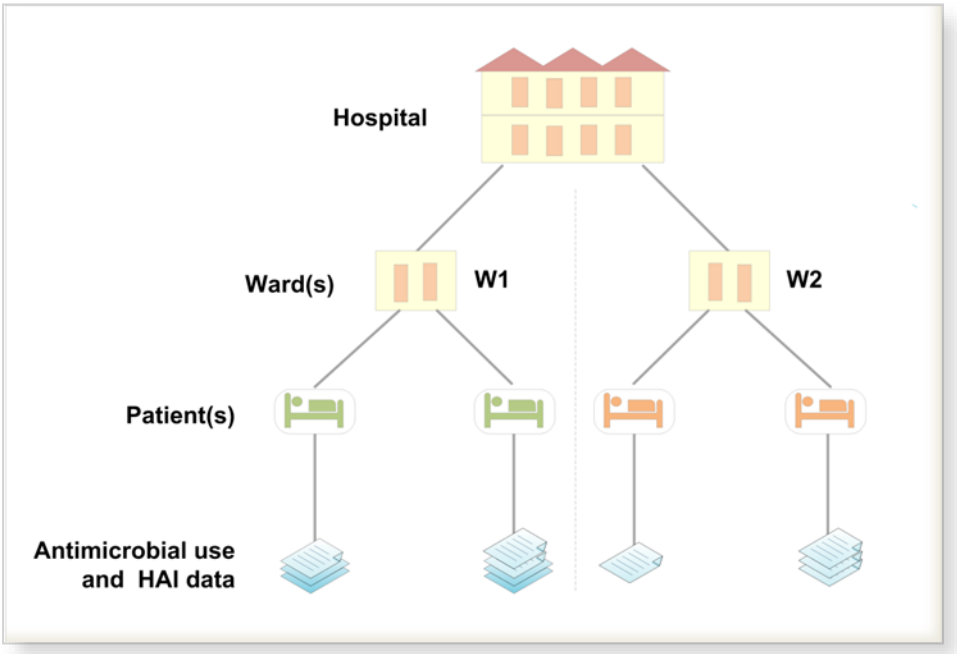
- General outlook of data forms: directly underneath the toolbar, the selected hospital code is displayed.
- You have to enter most categorical variables through drop-down lists (starting with blank line), so that you can enter only a predefined value from the list.
- Tabbing: keyboard tabbing first follows the order of input fields, after which focus will be put on toolbar.
- You can access fields with keyboard shortcuts made up of the **Alt** key and the underlined letter on the field label. For example, if you press **Alt+P** in the **Hospital** form, the focus moves to the **PPS Protocol** field.

  Once the focus is on the field, enter the first letter of the required value, for example, **S** for Standard protocol, alternatively, you can select the value from the drop-down list.
- The default buttons in the warning messages—for example, **Yes** and **No** buttons—are displayed in the language of the installed Windows operating system.

Data hierarchy

Data in HWN is stored hierarchically, with the hospital at the top and patient data at the bottom. The definition of data at any level depends on the earlier creation of data for the level immediately above.

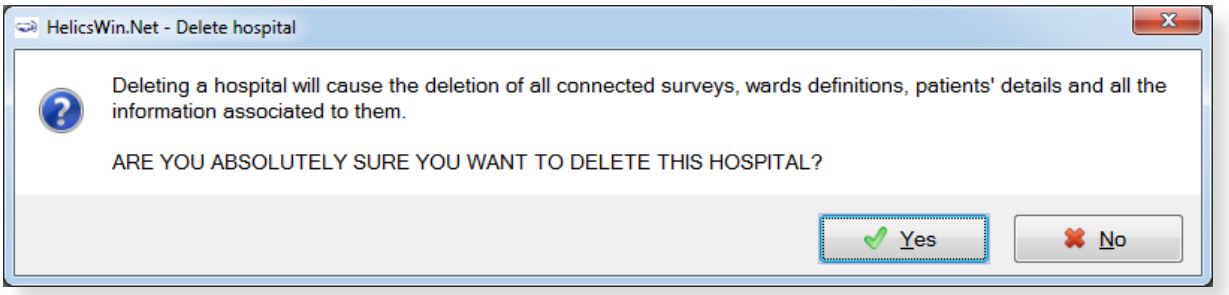
Data hierarchy



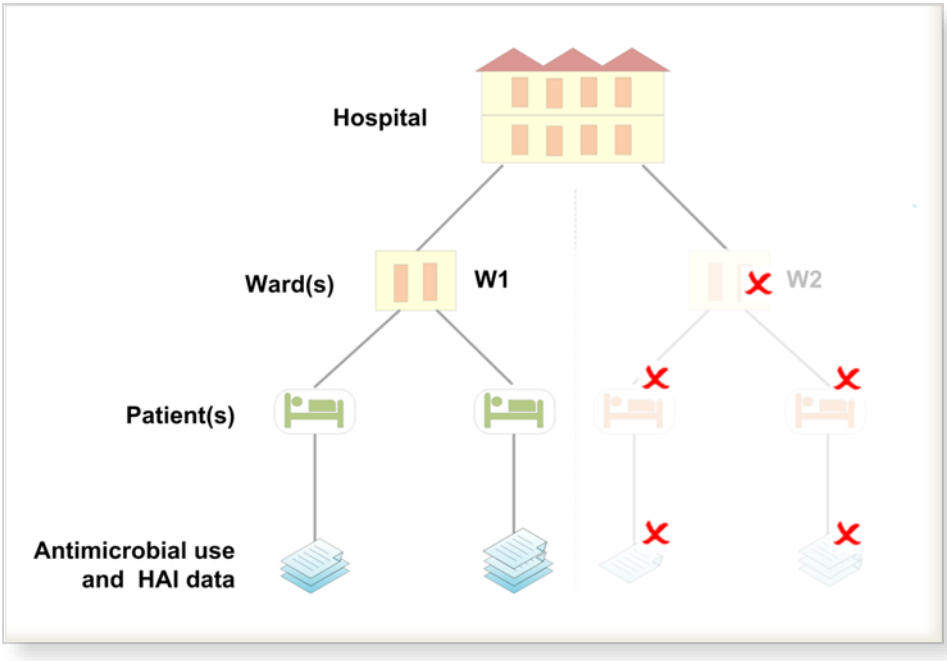
One consequence of this data hierarchy is that if you delete a definition at one level you automatically delete the data that depend on that definition, at the lower levels. For example, if you delete a ward definition (W2), all the data belonging to patients on that ward are also deleted (see figures below). Furthermore, if you delete the whole hospital record, you would delete all the related ward and patient data as well.

HWN warns you before it deletes anything, but you need to be vigilant to ensure that you do not lose your work or that of others.

Data hierarchy – warning message



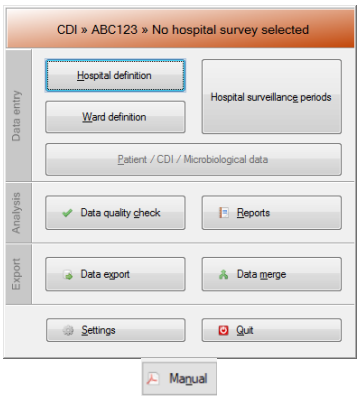
Data hierarchy – the effect of deleting a ward definition



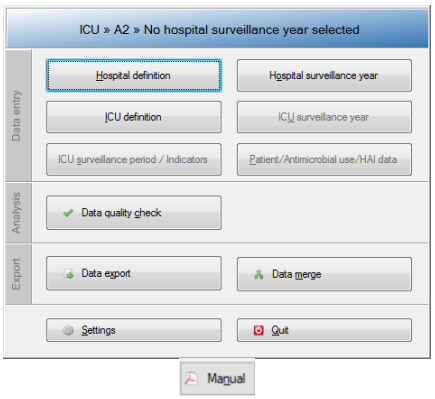
Using the main menu

Use the main menu to open the main data entry forms for the different data levels. These forms are arranged in hierarchical order, based on hospital-, ward-, and patient-level data.

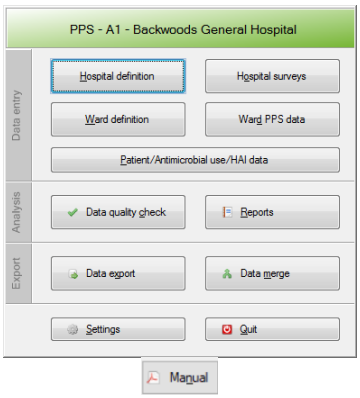
CDI main menu



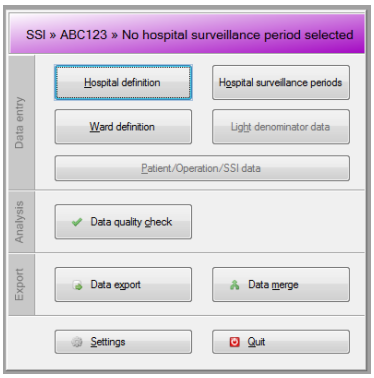
ICU main menu



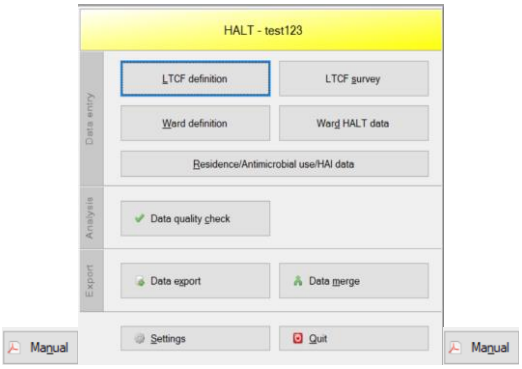
PPS main menu



SSI main menu



HALT main menu



Summary of main menu functions

Button	Actions(s)
Hospital definition	Enter the name and code of a new hospital in the system. You can enter the data for different hospitals (sites) in the same database, e.g. hospitals within hospital trusts or organizations. This also enables national/regional coordinating centres to enter different hospitals data centrally, into a single database. If more than one hospital has been entered, you select individual hospitals here, by double clicking on its name in the Hospitals list.
Ward definition **ICU definition**	Define all ward/ICU ID codes (abbreviated names). Optionally and in addition, full ward names can be entered. In SSI, you can select "Use without wards" to use the software without any definition of specific wards.
Hospital surveys **Hospital surveillance periods / year**	Enter data from the hospital questionnaire. These data include the hospital's survey dates (or surveillance year), hospital size and type, and, for the PPS, a number of infection control structure and process indicators.
Ward PPS data	PPS: Enter the date the PPS was performed and the ward specialty for each ward.
ICU surveillance year	ICU: Enter data that remain constant for the entire ICU surveillance year, e.g. ICU size and specialty.

Button	Actions(s)
Patient/CDI /Microbiological data	CDI: For the MINIMAL option: Enter aggregated nominator and denominator data. For the LIGHT option: Enter aggregated nominator and denominator data, and case-based data. For the ENHANCED option: Enter aggregated nominator and denominator data, case-based data, and *C. difficile* isolate data.
ICU surveillance period/indicators	ICU: Enter the start date and end date of the surveillance period. For the LIGHT option: Enter the denominator data (required). In ICU, optionally enter denominator data in STANDARD surveillance. In ICU, this level also contains the structure and process indicators for HAI prevention.
Light denominator data	SSI: For the LIGHT option: Enter the denominator data (required).
Patient/Antimicrobial use /HAI data	PPS: For the STANDARD option: Enter each patient's demographic data and risk factors. For the LIGHT option: Enter demographic data for each patient with at least one HAI (or antimicrobial, in the case of PPS). For both options: Access the healthcare-associated infection form and/or antimicrobial use form from this patient form, through separate buttons.
Patient/Operation/SSI data	SSI: For the STANDARD option: Enter each patient's and operations demographic data and risk factors. For the LIGHT option: Enter demographic data for each patient with at least one SSI. For both options: Access the healthcare-associated infection form and/or antimicrobial use form from this patient form, through separate buttons.
Data quality check	Analyse the data and report any missing or impossible values, and missing records. These checks go beyond the automatic validation checks that take place when individual records are saved; for example, cross-checks between different data levels.
Reports	Create pre-formatted reports containing patient- or ward-based data related to HAIs and/or antimicrobial usage. This feature enables you to use off-the shelf reports or reports that you customise yourself. Currently only available for the PPS module.
Data export	Export data as (i) raw data (as stored in the HelicsWinNet.mdb access format database), with or without user or validation variables, or as (ii) CSV (comma separated text) files in ECDC's TESSy CSV format (always without user variables).
Data merge	Merge HelicsWin.Net databases; this is useful if you want to consolidate the data from different hospitals, or from different wards within one hospital, into a single database. This application can (i) analyse the data in the other database to ensure that they are consistent with the data being merged; and (ii) if necessary, add user defined prefixes to user IDs to prevent overlapping patient IDs from different hospitals or wards.
Settings	From this form you can: • Change your password; • Specify how HelicsWin.Net sorts lists that contain data values (for example, sorting antimicrobials alphabetically by ATC5 code or alphabetically by antimicrobial agent) • Translate labels on HelicsWin.Net forms This feature enables you to translate labels on data fields and controls, such as tabs and buttons. You can access the text definitions for all the labels on the forms and validation messages and translate them in any language. You can also rename user field labels so that a local or national extra data collection modules can be implemented. The system also checks problems in the translation files, such as an accidental deletion of labels, and automatically fixes inconsistencies; • Reset window sizes to their original values; • Define the level of detail of error logging (for debugging purposes).

Button	Actions(s)
Quit	Shut down the programme.
Manual	Open the user manual for HelicsWin.net

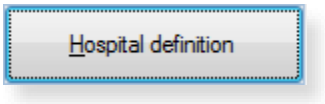
Defining hospitals

If you are working in a single hospital, create the definition for that hospital. Once a hospital definition has been created, you can then add its ward and survey data.

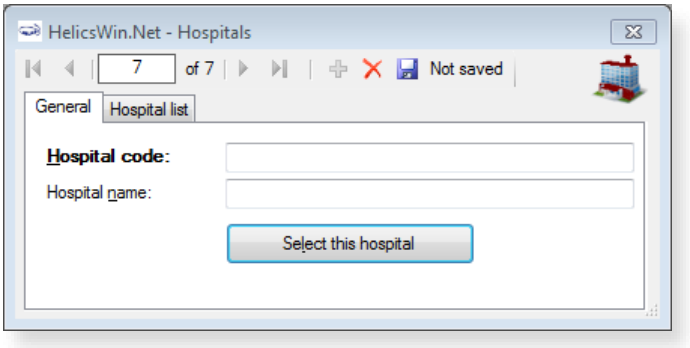
If necessary, you can add additional hospitals to the same HelicsWin.Net application. In doing this you are able to store the data for the additional hospitals in the same HelicsWin.Net database. If more than one hospital has been defined, you can only enter information for one hospital at a time.

To create a hospital definition:

1. Click **Hospital definition** in the *main menu*.



The **Hospitals** form opens.

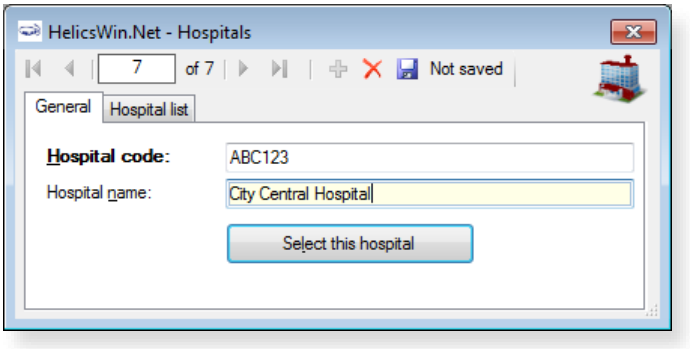


If no hospitals have been defined yet, the fields are blank.

2. Click the **Add item** icon.

The **Hospital code** and **Hospital name** fields clear.

3. Enter the new hospital code and name (in this example, 'ABC123' and 'City Central Hospital').



4. Click the **Save** icon or press **Ctrl+S**.

The hospital record is added to the internal database. From now on, you can access this record from this form through the Forwards and Backwards buttons on the toolbar.

5. Click **Select this hospital**.

The *main menu* re-opens.

You can now enter this hospital's ward and survey information – see:

- *Defining wards and ICUs* and

- *Creating a PPS point prevalence survey* or
- *Creating an ICU survey* or
- *Creating a CDI survey* or
- *Creating a SSI survey or*
- *Creating a HALT survey*

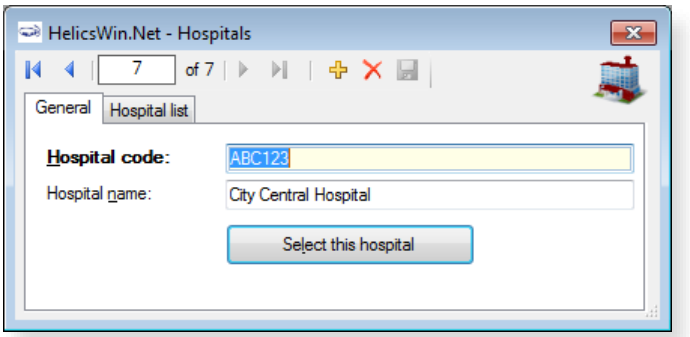
Selecting a defined hospital

If you have more than one hospital defined, you can enter information for one hospital at a time. This includes (i) adding or editing survey data and (ii) adding or editing ward definitions.

To select a hospital:

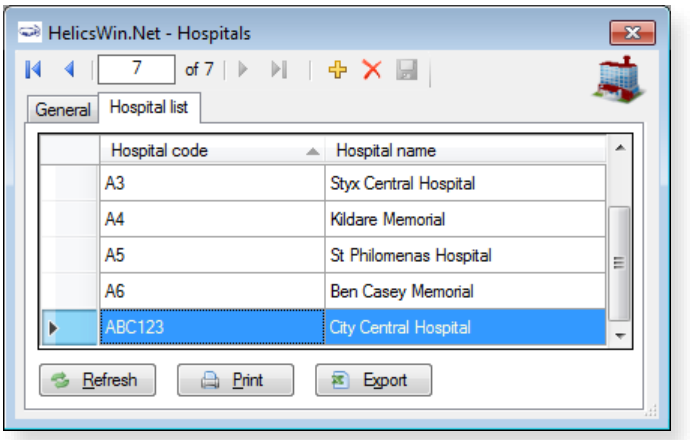
1. Click **Hospital definition** in the ***main menu*** (as in step 1 above).

2. The **Hospitals** form opens.



2. Click the **Hospitals list** tab.

   A list of all defined hospitals opens.

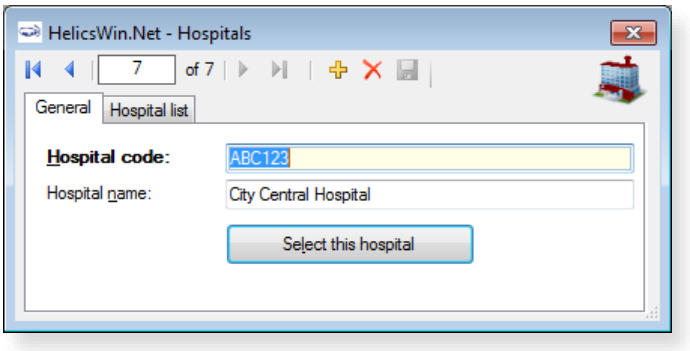


3. Click **Refresh**.

   This ensures that hospitals defined since the last refresh are included in this list.

4. To select the hospital, double-click on its code.

   This re-opens the **General** tab, and shows the hospital you chose.



5. Click **Select this hospital** to select it.

Hospital types

You do not enter details about the type of hospital while defining a hospital. The type is defined later when you create a survey.

Hospital types

Primary	Often referred to as a 'district hospital' or 'first-level referral' hospital.
	Few specialities (mainly internal medicine, obstetrics-gynaecology, paediatrics, general surgery or only general practice).
	Limited laboratory services are available for general, but not for specialised pathological analysis.
	Often corresponds to a general hospital without teaching function.
Secondary	Often referred to as a 'provincial hospital'.
	Hospital is highly differentiated by function with five to ten clinical specialities, such as haematology, oncology, nephrology, ICU.
	Takes some referrals from other (primary) hospitals.
	Often corresponds to a general hospital with teaching function.
Tertiary	Often referred to as a 'central', 'regional' or 'tertiary-level' hospital.
	Highly specialised staff and technical equipment (ICU, haematology, transplantation, cardio-thoracic surgery, neurosurgery); specialised imaging units.
	Clinical services are highly differentiated by function.
	Specialised imaging units.
	Provides regional services and regularly takes referrals from other (primary and secondary) hospitals.
	Often a university hospital or associated with a university.
Specialised	Single clinical specialty, possibly with sub-specialties.
	Highly specialised staff and technical equipment.
	Specialisation (e.g. paediatric hospital, infectious diseases hospital) should be specified in a form when this is possible.

Defining wards and ICUs

You can define wards (units) to be included in the Point Prevalence Survey, included in the SSI surveillance or different intensive care units (ICUs) in the ICU module. For each ward/unit, you have to enter an abbreviated

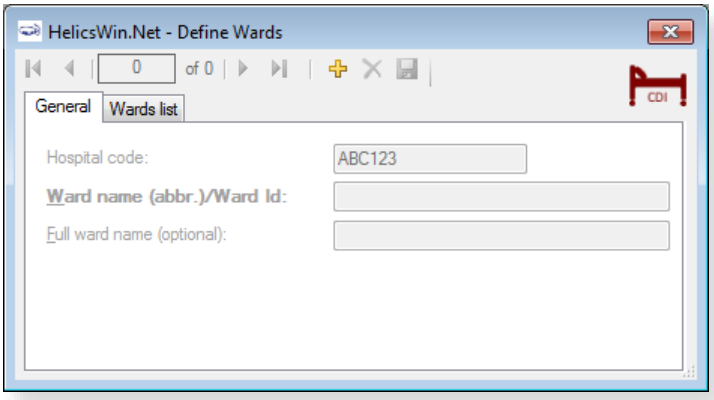
name (the Unit ID or code) that will be used in all levels of the database and, optionally, a full ward name. The procedure to define wards in the PPS module described below is similar to the procedure to define ICUs in the ICU module.

In the SSI module, you can select "Use Without wards" if you wish to enter the surveillance data for the entire hospital without specifying wards.

To create a ward or ICU definition:

1. Click **Ward definition** (PPS and CDI) or **ICU definition** (ICU) in the *main menu*.

   The **Wards** or **Define ICUs** form opens showing the current hospital code.

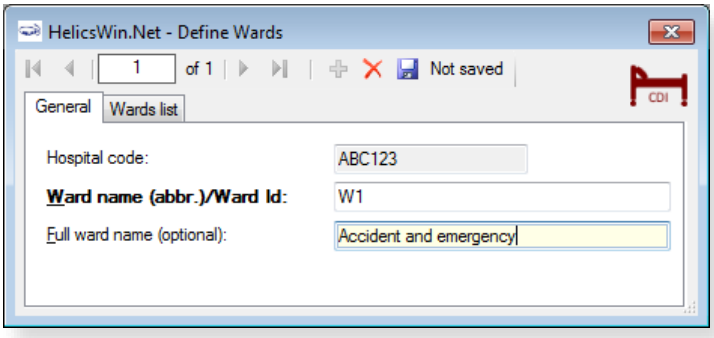


   If this is not the correct hospital, click the **Close** icon to cancel. To select the correct hospital, see *Selecting a defined hospital*.

2. Click the **Add item** icon or press **Ctrl+N**.

   The form opens for editing.

3. In the **Ward name** or **ICU name** field, enter the ward/unit name (up to 20 characters) or ID.

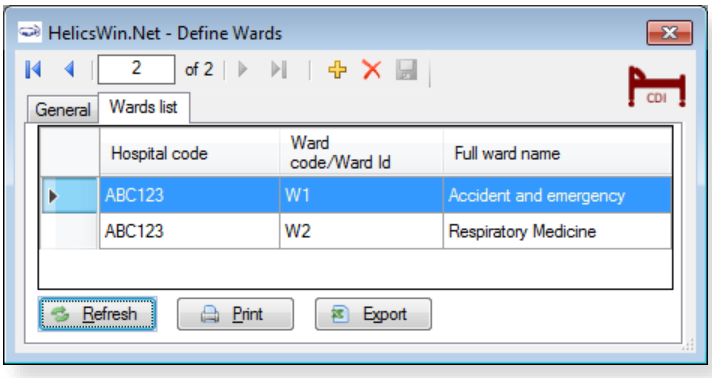


   You cannot enter the same ID twice. The ward/unit list can be used for different hospital surveys within the same hospital.

4. Optionally, specify the full (expanded) name in the **Full ward name** or **Full ICU name** field.

5. Click the **Save** icon or press **Ctrl+S**.

6. Click the **Wards list** or **ICU list** tab to view all the wards/units for which a record has been created.



Note: The ward specialty is defined later (because it may change from one survey to another).

You can now enter this hospital's survey information – see:

- *Creating a CDI survey* or
- *Creating an ICU survey* or
- *Creating a PPS point prevalence survey* or
- *Creating a SSI survey or*
- *Creating a HALT survey*

Creating a CDI survey

There are three *Clostridium difficile* surveillance options:

- Minimal – collects:
  - Aggregated numerator and denominator data
- Light – collects:
  - Aggregated numerator and denominator data
  - Case-based numerator data
- Enhanced
  - Aggregated numerator and denominator data
  - Case-based numerator data
  - Microbiological data

Please refer to the CDI Protocol for detailed descriptions of these options.

Please bear the following in mind when planning your CDI survey:

- Continuous surveillance for 12 months is recommended.
- The recommended minimum surveillance period is three consecutive months, preferably from 1 October to 31 December, or from 1 January to 31 March.
- Starting on the first day of the month is recommended (the pilot study demonstrated that completing Form H is much easier by starting surveillance on the first day of a month).
- You cannot change the start date of the survey once it has been defined. When creating your CDI survey, it is therefore important to make sure its start date is earlier than any ward survey date.
- You can have multiple surveys, but two surveys cannot start on the same date.
- You can later change from Minimal to Light, or from Light to Enhanced, but not vice versa.

CDI survey data collection is described in the following sections:

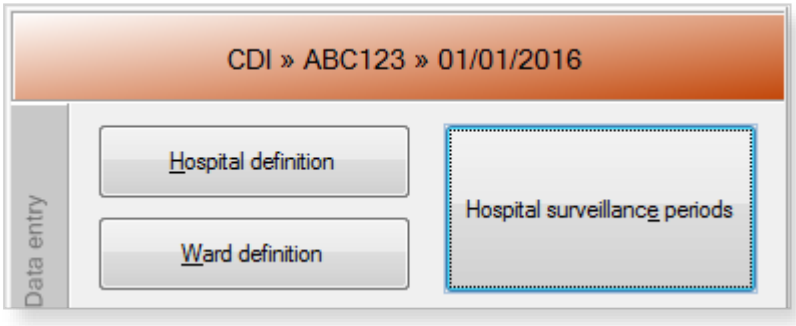
- *Entering CDI hospital-based data (Form H)*
- *Entering CDI patient, CDI and microbiological data (Form C)*
- *Entering CDI microbiological data (Form M)*

Form H - entering CDI hospital-based data

Follow the procedure in this section to create a new **CDI** survey for each defined hospital, entering information from Form H. Before you can create your survey, you must *define your hospital and wards*.

To create a CDI hospital survey:

1. Click **Hospital surveillance periods** in the CDI *main menu*.

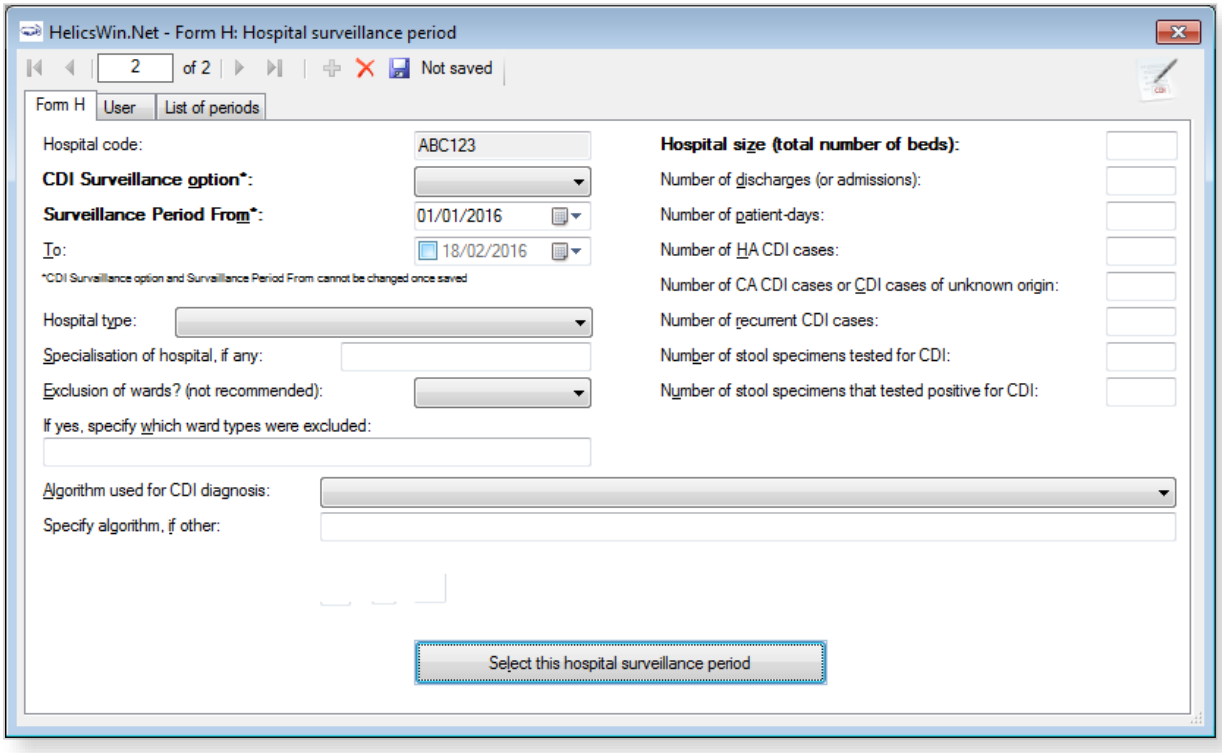


   The **Hospital survey** form opens for the hospital you have selected.

2. If not already open, click the **Form H** tab.

3. In the **Form H** form, click the **Add item** icon to open the form for editing.

   The data entered here is hospital data applicable to the Minimal, Light and Enhanced surveillance options.



4. Specify the values for the fields.

   Descriptions of the variables in Form H are given in table below. Mandatory fields are indicated by a red asterisk *. Required fields are indicated by a black asterisk *.

5. Click the **Save** icon or press **Ctrl+S**.

If any mandatory or required data field is empty when you save, e.g. because you do not yet have the data, an error and/or warning message is shown and the field label is highlighted as a reminder - in red for a mandatory field (you cannot save) or blue for a required field. See *Understanding reported errors*.

6. Click **Select this hospital surveillance period** to return to the main menu and proceed to *enter Form C data*.

You can now see the surveillance period in the **List of periods** tab (click **Refresh**).

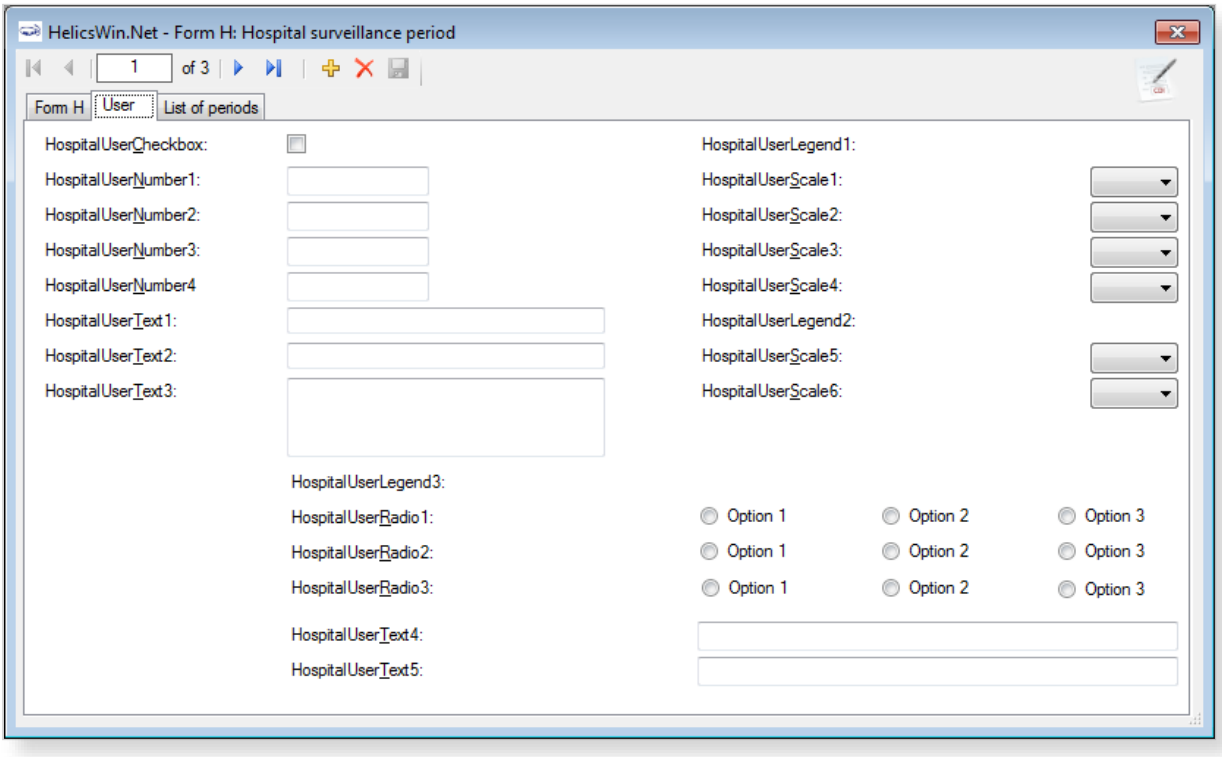
CDI Form H variables

Variable	Description
Hospital code *	The hospital identifier/code assigned by the national/regional CDI surveillance coordinator. Hospital codes should be unique within each surveillance network, and kept constant between the ECDC Antimicrobial Resistance and Healthcare-Associated Infection (ARHAI) surveillance protocols and from one year to the next. Inserted automatically based on the hospital selected during *Hospital definition*.
CDI Surveillance option *	Specify the CDI surveillance option to be used. You can select either **Minimal**, **Light** or **Enhanced**. Note that you can later change from Minimal to Light, or from Light to Enhanced, but not vice versa. Refer to the CDI Protocol for detailed descriptions of the three options.
Surveillance period from *	The start date of the survey. You can have multiple surveys, but two surveys cannot start on the same date. Warning: You cannot change the **Surveillance period from** date after you have saved it. If you save without having selected the correct date, today's date is applied by default. Before saving, make sure that the start date of the hospital CDI survey is earlier than any ward survey date. If you need to change the start date, you will have to contact your national or regional CDI co-ordinator.
To	The end date of the survey. Can be entered at a later time and can also later be changed.
Hospital type *	Designate the hospital type – PRIM: primary, SEC: secondary, TERT: tertiary, SPEC: specialised, missing=UNK. See *Hospital types*.
Specialisation of hospital	Free text. Indicate the hospital specialty for a specialised hospital (e.g. paediatric, infectious diseases, etc.); please use specialty codes if possible.
Exclusion of wards	All wards should be included for the surveillance of CDI, exclusion of wards is strongly discouraged. If, despite this recommendation, certain wards were excluded, it is crucial that the aggregated denominator data are provided for the included wards only.
If yes, specify wards	Free text field. Enter the name or ID of any ward excluded from the survey. Max. 100 characters.
Hospital size (total number of beds) *	Number of hospital beds for the current surveillance period. If, despite the recommendation to the contrary, certain wards were excluded, it is crucial that the aggregated denominator data are provided for the included wards only.
Number of discharges (or admissions) *	Number of hospital discharges in the current surveillance period. Use number of admissions if discharges are not available.
Number of patient-days *	Number of hospital patient-days in the current surveillance period.
Number of HA CDI cases *	Number of healthcare-associated CDI cases within the surveillance period (i.e. with onset on day three or later, following admission to a healthcare facility on day one, OR in the community within four weeks of discharge from any healthcare facility). Exclude recurrent cases.
Number of CA CDI cases or CDI cases of unknown origin *	Number of community-associated CDI cases and cases of unknown origin within the surveillance period i.e. onset outside of healthcare facilities, AND without discharge from a healthcare facility within the previous 12 weeks, OR onset on the day of admission to a healthcare facility or on the following day AND not resident in a healthcare facility within the previous 12 weeks, OR a CDI case discharged from a healthcare facility 4–12 weeks before the onset. Exclude recurrent cases.

Variable	Description
Number of recurrent CDI cases *	Number of CDI episodes with onset within two and eight weeks of a previous episode (including both healthcare-associated and community-associated recurrent cases).
Number of stool specimens tested *	Number of stool specimens tested for CDI in the surveillance period. Each specimen should only be counted once, even if more than one test was performed on that specimen.
Number of stool specimens that tested positive for CDI *	Number of stools tested for CDI with a positive test result in the surveillance period. Each specimen should only be counted once.
Algorithm used for CDI diagnosis	The laboratory test(s) applied on faeces samples to recognise the presence of toxin-producing *C. difficile*, either as a solitary test or as a combination of screening and confirmatory tests. If multiple algorithms are applied (i.e. depending on work hours or patient categories), please indicate the most frequently applied algorithm(s), that is/are used for more than 80% of the samples tested for *C. difficile*. • Toxin A/B EIA — Enzyme immunoassays, including enzyme-linked immunosorbent assays (ELISA), that test for both toxins A and B in stool samples or cultures. • GDH EIA — Enzyme immunoassays, including enzyme-linked immunosorbent assays (ELISA), that test for both Glutamate dehydrogenase in stool samples or cultures. • NAAT — Nucleic acid amplification tests. • Cytotoxicity assay — Demonstration that stool sample supernatant kills a cell monolayer in the absence of a *C. difficile* toxin-neutralising antibody. • Toxigenic culture — Demonstration that a *C. difficile* culture is able to produce toxins in vitro, e.g. by cytotoxicity assays, Toxin A/B EIA or NAAT from colonies. • Toxin detection — Detection of toxins, in stool samples or cultures, e.g. by toxin A/B EIA or cell cytotoxicity assays.
Specify algorithm, if other	Free text field. If none of the listed algorithms matches your algorithm, indicate the algorithm which matches most closely. Max. 255 characters.

Surveillance period User tab

The **Surveillance period User** tab contains fields that can be renamed to enable collection of information during the survey that is outside the scope of the CDI protocol. These modifications are made using the **Translation** functionality in the **Settings** form, see *Translating the text in user forms*.

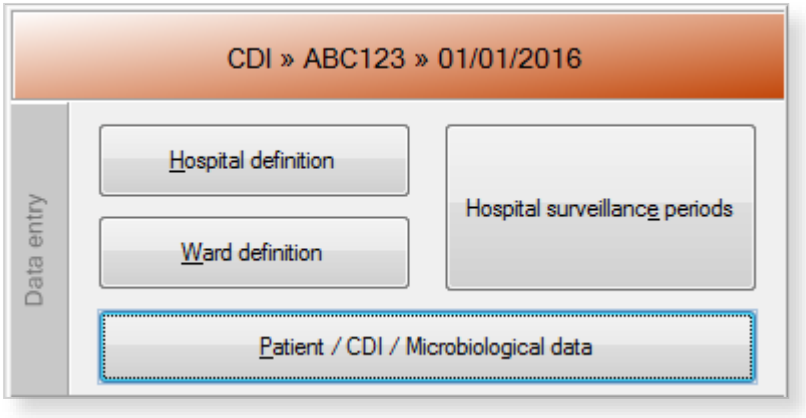


Form C - entering CDI patient and infection data

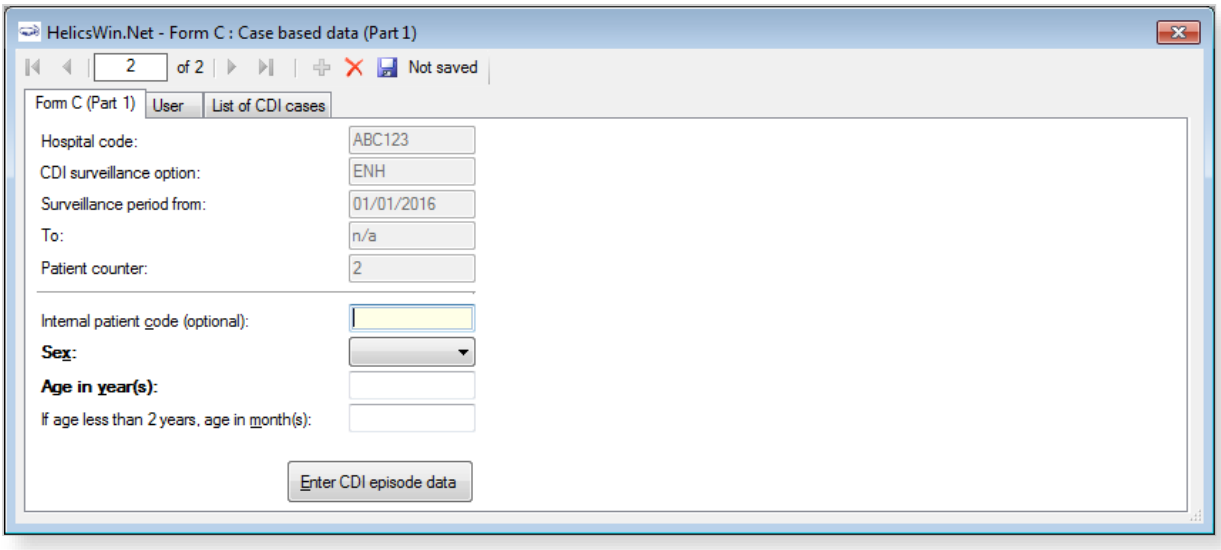
Form C is applicable only to the **Light** and **Enhanced** surveillance options. The **Minimal** surveillance option does not record case-based data

To enter CDI patient and infection data:

1. Click **Patient / CDI / Microbiological data** in the CDI *main menu*.



A form equivalent to the upper section of Form C opens.



2. Click the **Add item** icon ✚ or press **Ctrl+N** to open the form for editing.

3. Enter the patient's age and gender and, optionally, an internal patient code.

   The fields are described in table below. Mandatory fields are indicated by a red asterisk *. Required fields are indicated by a black asterisk *.

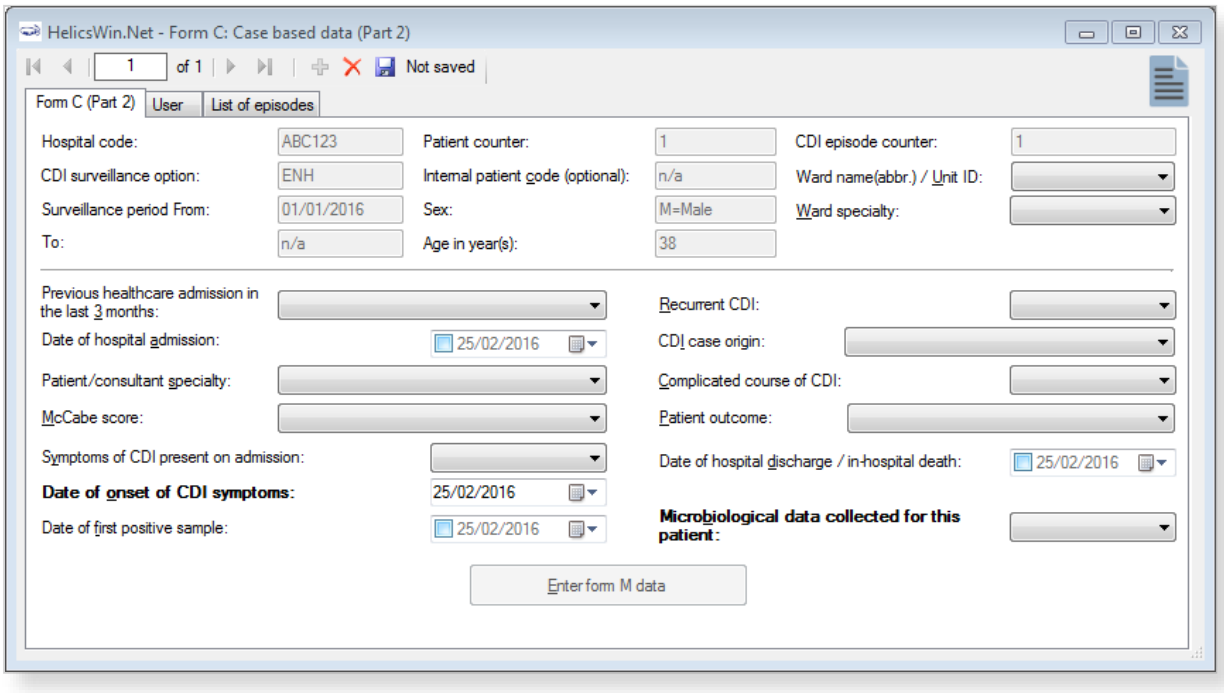
   Important: please note that to avoid data privacy infringement, internal patient codes must be removed from any data submitted to ECDC/TESSy.

CDI Form C variables, part 1

Variable	Description
Hospital code	The hospital identifier/code for the hospital selected for the survey. Inserted by the system.
CDI Surveillance option	Minimal, Light or Enhanced. From Form H.
Surveillance period from	The start date for the survey. From Form H.
To	The end date for the selected survey. From Form H. The field is blank if the end date has not yet been defined for this survey.
Patient counter	A system allocated sequential patient number for anonymised identification. In enhanced surveillance, this number should permit linkage of patient data with microbiological typing/susceptibility data and patient data from enhanced surveillance.
Internal patient code	For hospital internal use only. Optional. Must be removed from any data submitted to ECDC/TESSy.
Sex *	Gender of the patient: M (male), F (female).
Age in year(s) *	Patient's age in years; if missing=unknown (UNK). Enter respectively 0 or 1 if the patient is less than two years old.
If age less than 2 years	Patient's age in months. Mandatory if **Age in years** is less than 2 (note that you must *also* enter the baby's **Age in years**).

4. Click **Enter CDI episode data**.

A form equivalent to the lower section of Form C opens.

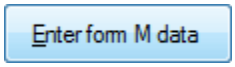


Note that the **Enter form M data** button is only displayed for the **Enhanced** surveillance option. See also *Form M - entering CDI microbiological data*.

5. Enter the patient's CDI data, see table below. Mandatory fields are indicated by a red asterisk *. Required fields are indicated by a black asterisk *.

6. Enter Yes, No, or Unknown for **Microbiological data collected for this patient**. If you have entered:

- *No* or *Unknown* – then click the **Save** icon or press **Ctrl+S** to save and exit.
- *Yes* and you are working in the **Light** option – then click the **Save** icon or press **Ctrl+S** to save and exit.
- *Yes* and you are working in the **Enhanced** option – click **Enter form M Data** and proceed to *Entering CDI microbiological data*.



If any mandatory or required data field is empty when you save, e.g. because you do not yet have the data, an error and/or warning message is shown and the field label is highlighted as a reminder - in red for a mandatory field (you cannot save) or blue for a required field. See *Understanding reported errors*.

You can now see the Form C data in the **List of episodes** tab (click **Refresh**).

CDI Form C variables, part 2

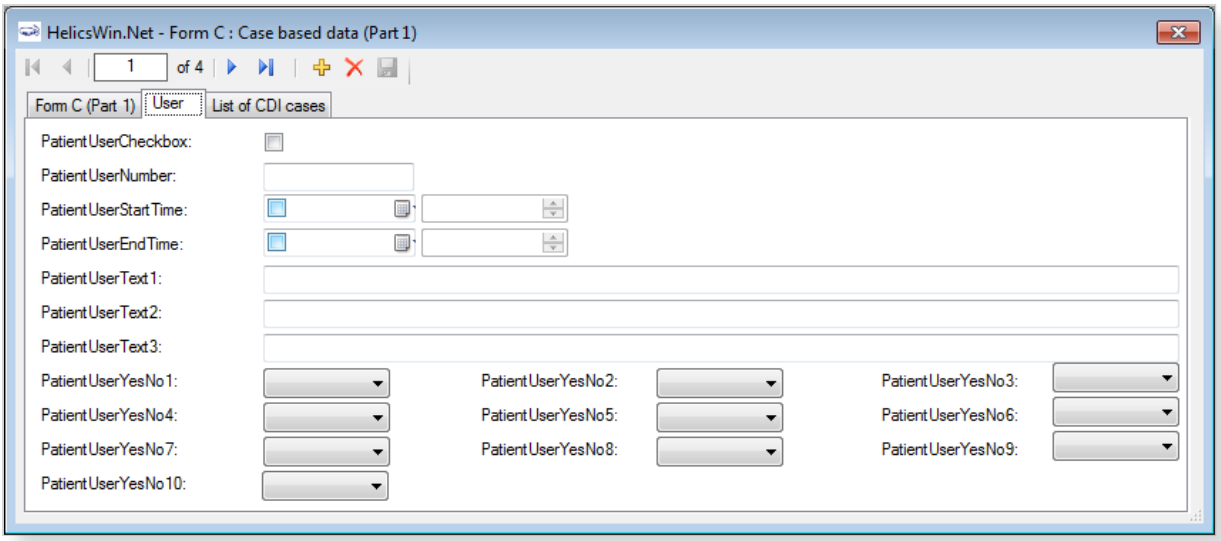
Variable	Description
Hospital code	The hospital identifier/code for the hospital selected for the survey. Inserted by the system.
CDI surveillance option	Minimal, Light or Enhanced. From Form H.
Surveillance period from	The start date previously selected for the survey. From Form H.
To	The end date for the survey. From Form H. The field is blank if the end date has not yet been defined for this survey.

Variable	Description
Patient counter	System assigned sequential patient number for anonymised identification. In Enhanced surveillance the counter links patient data with microbiological typing/susceptibility data.
Internal patient code	Optional. From Form C, part 1. Must be removed from any data submitted to ECDC/TESSy.
Sex	From Form C, part 1.
Age in year(s)	From Form C, part 1.
CDI episode counter	System assigned sequential number for episode identification.
Ward name/unit ID	Abbreviated name of hospital ward; it should be used consistently and should remain the same in different surveillance periods/years.
Ward specialty	Enter the code for the main ward specialty. See Protocol for the ward specialty code list.
Previous healthcare admission	Previous admission in a healthcare facility in the last three months relative to the onset of CDI: Yes/No/Unknown. If yes: admission in a hospital or another healthcare facility (long-term care, outpatient department, etc.). Collect from electronic records and/or patient notes, and/or by asking the patient.
Date of hospital admission *	Date patient was admitted to the hospital for the current hospitalisation (dd/mm/yyyy).
Patient/ consultant specialty	Enter the code for the specialty of the physician in charge of the patient; this may differ from the ward/unit specialty. See Protocol for the ward specialty code list.
McCabe score	Classification of the severity of underlying medical conditions. Disregard the influence of an active CDI, i.e. estimate the score the patient had before the infection. Some examples of diseases and their different McCabe score categories are shown in the protocol. These examples, in particular those of the second (ultimately fatal) category, are not meant to be exhaustive but rather to serve as a guidance tool for the current protocol.
Symptoms of CDI present on admission	Patient had CDI symptoms when admitted for this episode. Yes/No/Unknown.
Date of onset of CDI symptoms *	Mandatory if symptom onset was during current hospitalisation, but not recorded if signs/symptoms were present on admission. Record the date of the first signs or symptoms of the infection (dd/mm/yyyy). If unknown, record the date treatment was started for this infection or the date the first diagnostic sample was taken. If no treatment or sample, please estimate. If no date is entered, today's date is selected by default. This date can later be changed.
Date of first positive sample	Date on which the first positive diagnostic stool sample was taken from the patient referred to on this form.
Recurrent CDI *	Choose yes if the patient had an episode of CDI (return of diarrhoeal stools with a positive laboratory test after the end of treatment) more than two weeks and less than eight weeks following the onset of a previous episode.

Variable	Description
CDI case origin *	Choose one (for detailed definitions, see Definitions section): • Healthcare-associated CDI: A case with onset of symptoms on day three or later, following admission to a healthcare facility on day one, OR in the community within four weeks of discharge from any healthcare facility. This may apply to the current hospital or a previous stay in another healthcare facility, e.g. in another hospital, a long-term care facility or other healthcare facilities (e.g. outpatient departments etc.). • Community-associated CDI: A case with [onset outside of healthcare facilities, AND without discharge from a healthcare facility within the previous 12 weeks] OR [onset on the day of admission to a healthcare facility or on the following day AND not resident in a healthcare facility within the previous 12 weeks]. • Unknown association: A case discharged from a healthcare facility 4–12 weeks before symptom onset.
Complicated course of CDI *	Yes / No / Unknown. CDI leading to any of the following: • Admission to a healthcare facility for treatment of community-associated CDI. • Admission to an intensive care unit for treatment of CDI or its complications (e.g. for shock requiring vasopressor therapy). • Surgery (colectomy) for toxic megacolon, perforation or refractory colitis. • Death within 30 days after diagnosis if CDI is either a primary or contributing cause.
Patient outcome *	Status of the patient at hospital discharge or at end of follow-up in the hospital • Discharged alive: patient was discharged alive; OR patient was still in the hospital and alive at end of follow-up during this hospital stay. • Death, CDI definitely contributed to death: use this category if a causal link between CDI and death can be demonstrated.
Date of discharge/ in-hospital death	Date the patient was discharged from the hospital; OR date of end of follow-up if the patient was still hospitalised and alive; OR date of death if patient died during the current hospitalisation.
Microbiological data collected for this patient *	Yes/No/UNK. Indicate whether Form M has been completed.

Case-based data User tab

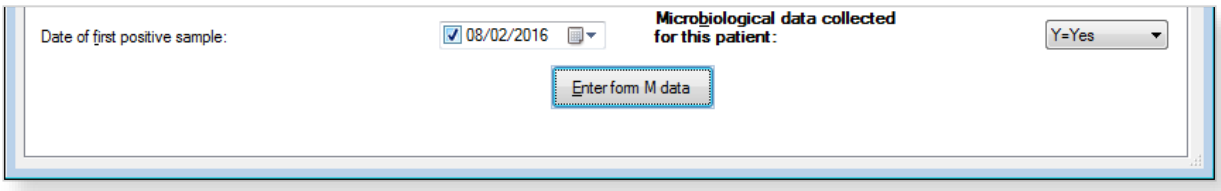
The **Case-based data User** tab contains fields that can be renamed to enable collection of information during the survey that is outside the scope of the CDI protocol. These modifications are made using the **Translation** functionality in the **Settings** form, see *Translating the text in user forms*.



Form M - entering CDI microbiological data

Only the **Enhanced** surveillance option supports recording microbiological data – the **Minimal** and **Light** options do not support this.

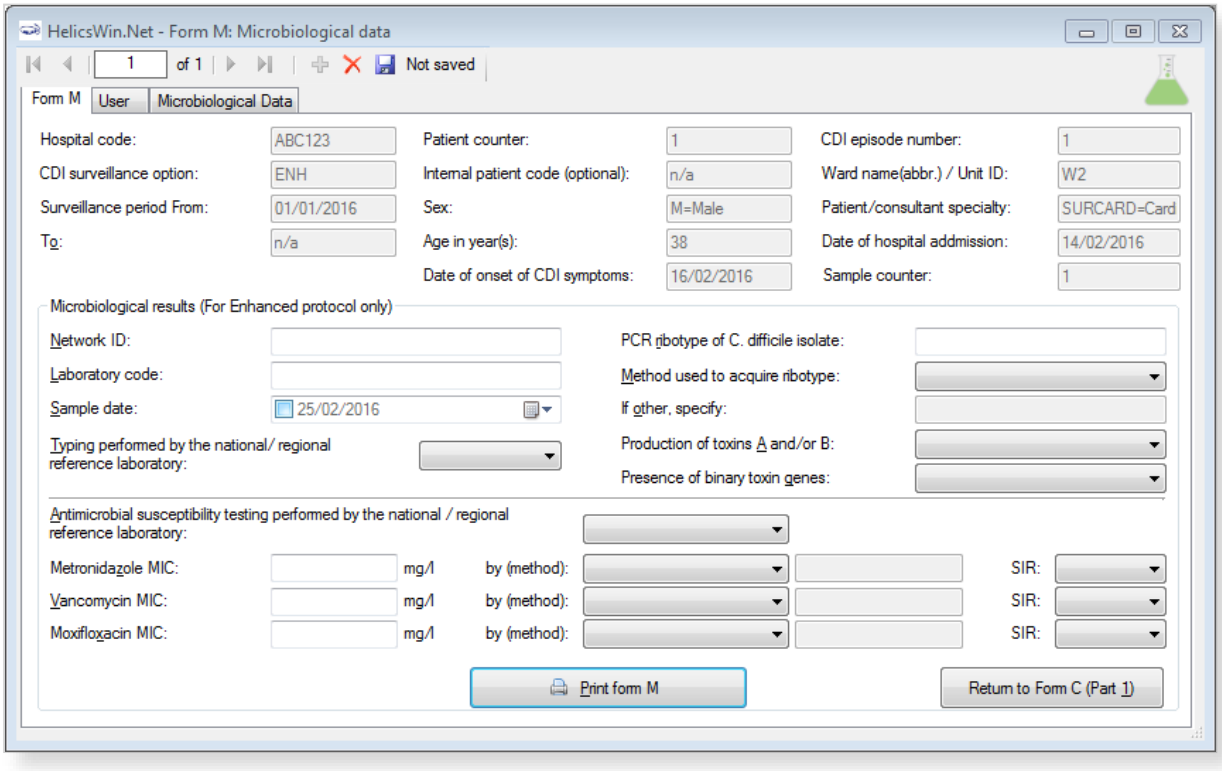
If you are working in the **Enhanced** option, the **Enter form M data** button is displayed at the bottom of Form C, part 2.



To enter microbiological data:

1. Click **Enter form M data** in Form C.

   Form M opens.



2. Enter the microbiological data. The fields are described in table below.

   Descriptions of the variables in Form H are given in table below. Mandatory fields are indicated by a red asterisk *. Required fields are indicated by a black asterisk *.

3. Click the **Save** icon or press **Ctrl+S**.

   If any mandatory or required data field is empty when you save, e.g. because you do not yet have the data, an error and/or warning message is shown and the field label is highlighted as a reminder - in red for a mandatory field (you cannot save) or blue for a required field. See *Understanding reported errors*.

   You can now see the Form M data listed in the **Microbiological data** tab (click **Refresh**).

CDI Form M variables

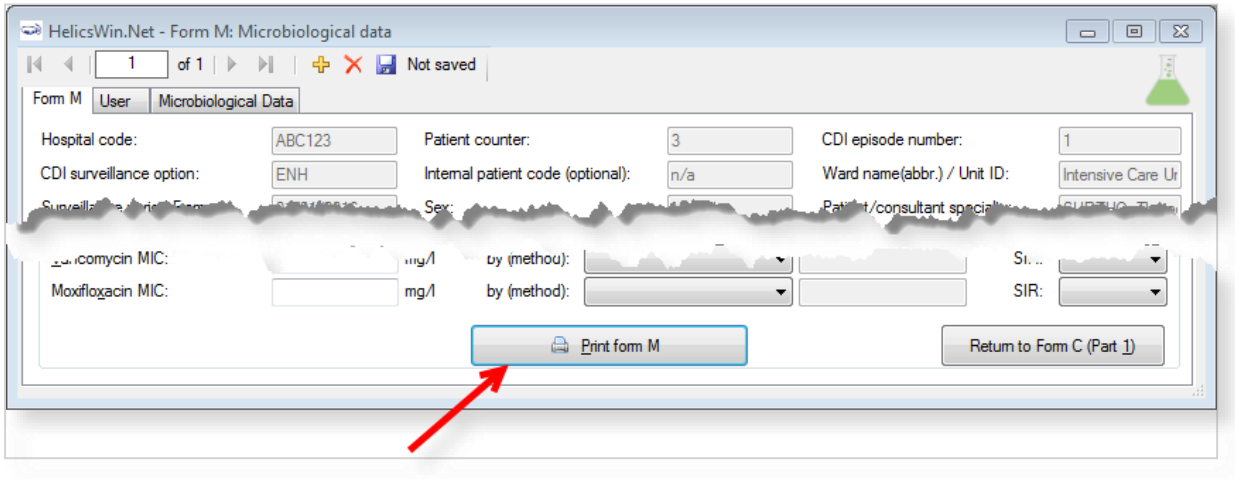
Variable	Description
Hospital code	The hospital identifier/code for the hospital selected for the survey.
CDI surveillance option	Minimal, Light or Enhanced. From Form H.
Surveillance period from	The start date for the survey. From Form H.
To	The end date for the survey. From Form H. The field is blank if the end date has not yet been defined for this survey.
Patient counter	System assigned sequential patient number for anonymised identification. In Enhanced surveillance the counter links patient data with microbiological typing/susceptibility data.

Variable	Description
Internal patient code	From Form C. Must be removed from any data submitted to ECDC/TESSy.
Sex	From Form C.
Age in year(s)	From Form C.
Date of onset of CDI symptoms	From Form C.
CDI episode number	System assigned sequential number for identification.
Ward name/unit ID	From Form C.
Patient/consultant specialty	From Form C.
Date of hospital admission	From Form C.
Sample counter	System assigned sequential number for identification. Assigned when Form M is created.
Network ID	Unique identifier for each surveillance network within a Member State, selected and generated by the Member State, e.g. for UK, EN, NI, SC or WA; for France, different CClin networks. This field is combined with the hospital identifier to create a unique hospital code, because different networks within one Member State may use the same hospital code. Can be omitted if the hospital identifiers are unique within the reporting Member State.
Laboratory code *	Local laboratory identifier/code assigned by national/regional CDI surveillance coordinating centre. For the primary laboratory responsible for microbiological confirmation of the CDI (not the code of the national/reference laboratory). It is recommended to use the same laboratory codes as in EARS-Net. Required for data export.
Sample date	Date on which the first positive diagnostic stool sample was taken from the patient referred to in this form, if available. Otherwise, the date the stool sample was taken resulting in the results referred to in this form.
Typing performed by a national/ regional reference laboratory	Typing of *C. difficile* isolates performed by a laboratory that provides diagnostic, analytical and advisory services to other laboratories, nationally or sub-nationally.
PCR ribotype of *C. difficile* isolate	*C. difficile* PCR ribotype as determined by conventional gel-electrophoresis or capillary-based PCR ribotyping.
Method used to acquire ribotype	Method used to acquire PCR ribotype information, e.g. capillary-based PCR ribotyping; conventional gel-electrophoresis.
If other	Other method used to acquire PCR ribotype (please specify, e.g. whole genome sequencing).
Production of toxins A and/or B	Production of toxins A and/or B as determined by PCR of tcdA and tcdB or by EIA for TcdA and TcdB.
Production of binary toxin genes	Production of binary toxin (CDT) as determined by PCR of cdtA and cdtB
Antimicrobial susceptibility testing performed by ... reference laboratory	Testing of *C. difficile* isolates for their susceptibility to antimicrobial agents performed by a laboratory that provides diagnostic, analytical and advisory services to other laboratories, nationally or sub-nationally. Yes/No/Test not performed/Unknown.
Antimicrobial susceptibility testing	For the relevant antimicrobial: 1. Enter the MIC (minimum inhibitory concentration) in mg/l. 2. Select the method used for the determination of the MIC from the drop-down list. If **Other** is selected, then the free-text field to the right of the list is enabled – enter a description of the method used. Max. 255 characters. 3. Select the interpretation **S**, **I** or **R**, i.e. susceptible, intermediate or resistant.

Printing Form M

You might require to print a patient's microbiological data in order to send it to a laboratory, for example.

To do this, click **Print form M** at the bottom of the form.



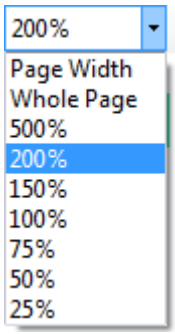
The patient's microbiological data is entered into the hardcopy template and displayed in a pop-up window. Controls at the top of the pop-up allow for basic document management:

 Print.

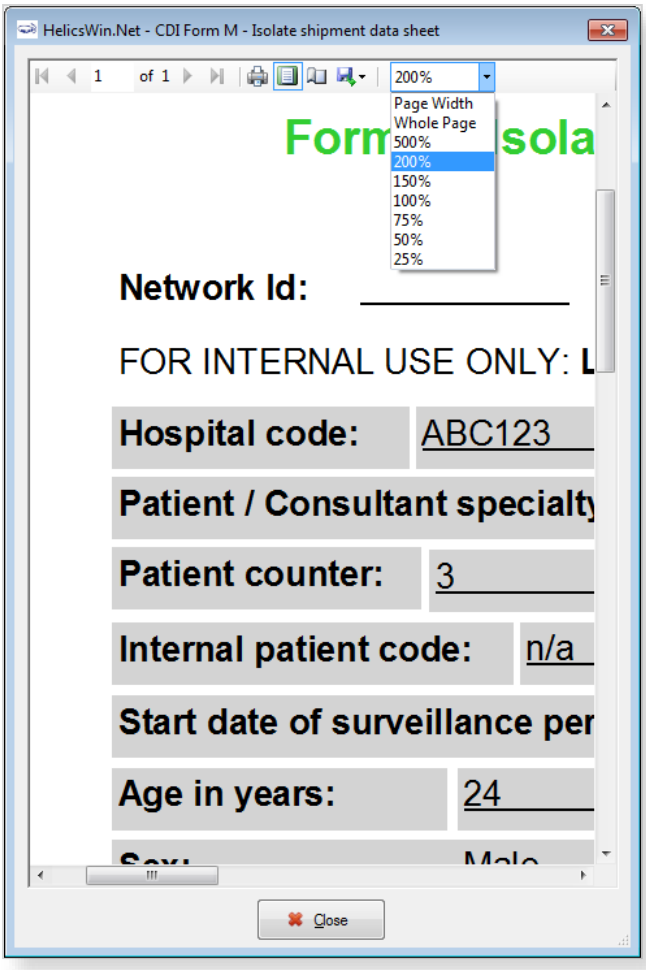
 Print layout.

 Page setup – paper size, paper source, orientation, margins.

 Export to Excel, PDF or Word.

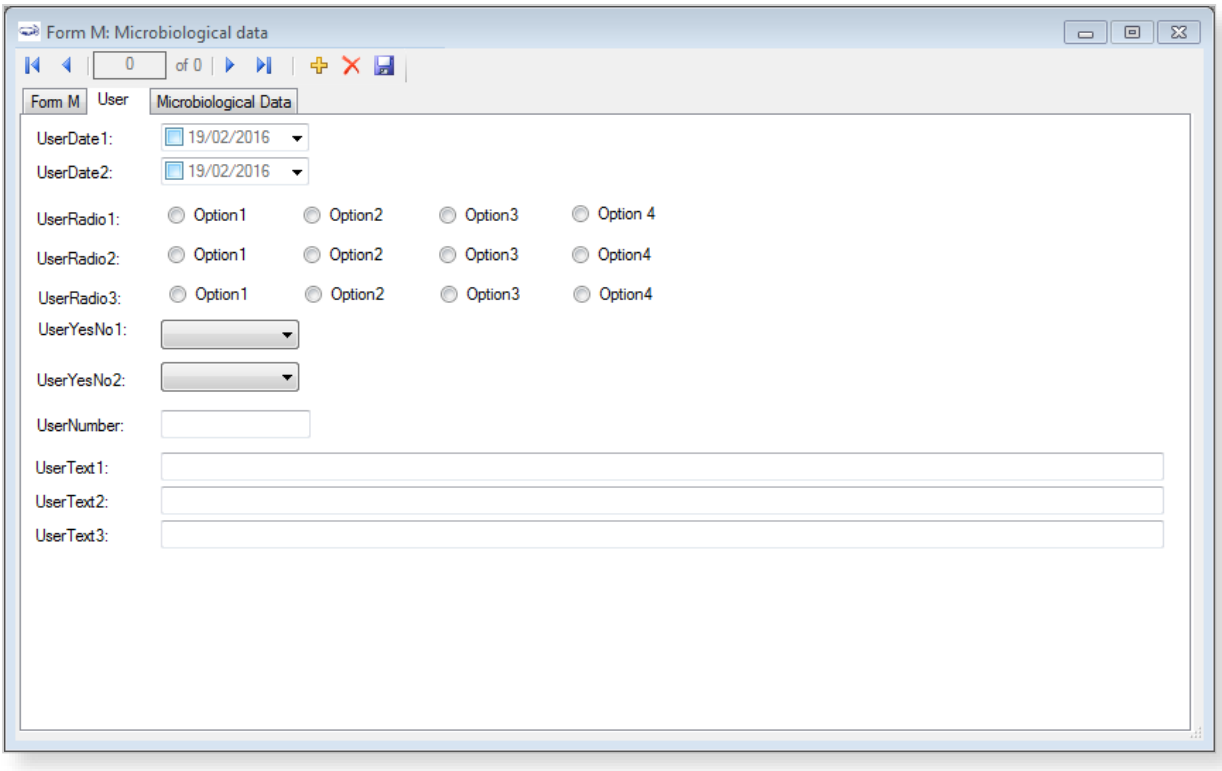


Zoom. The default view is whole page, but you can zoom to improve legibility.



Microbiological data User tab

The **Microbiological data User** tab contains fields that can be renamed to enable collection of information during the survey that is outside the scope of the CDI protocol. These modifications are made using the **Translation** functionality in the **Settings** form, see *Translating the text in user forms*.



CDI validation tabs

There are no CDI **Validation** tabs or CDI validation protocol for HWN2.2.

Creating an ICU survey

There are two Intensive Care Unit (ICU) survey options:

- **Standard**: Patient-based option allows advanced risk adjustment of healthcare-associated infection rates for inter-hospital comparisons. You enter all patient data for all patients, including those without HAI and/or antimicrobial use. Risk factors are collected for each patient (infected or not).
- **Light**: Unit-based option is less labour-intensive solution, produces partially the same indicators as Standard option for follow-up of trends, as well as the same descriptive results about infections and antimicrobial resistance, but with less possibility for risk-adjusted comparisons. You only enter patient data for patients with any antimicrobial use and/or a healthcare-associated infection. Consequently, in the Light protocol, each patient record must include details of at least one antimicrobial use or HAI. Denominator data are aggregated at the unit (ICU) level.

Case definitions, included patients, and infection data (including antimicrobial resistance data and mortality review data) are identical in both options.

Further details are provided in the HAI-Net ICU protocol (see *Related documents*).

PPS data collection is described in the following sections:

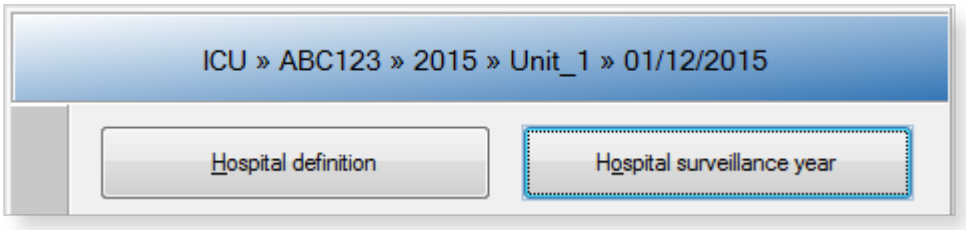
- *Entering an ICU hospital surveillance year*
- *Entering ICU surveillance year and surveillance period data*
- *Entering ICU patient, HAI and antimicrobial use data*

Entering an ICU hospital surveillance year

Follow the procedure in this section to create a new **ICU** survey for each defined hospital, entering information from Form H. Before you can create your survey, you must *define your hospital and wards*.

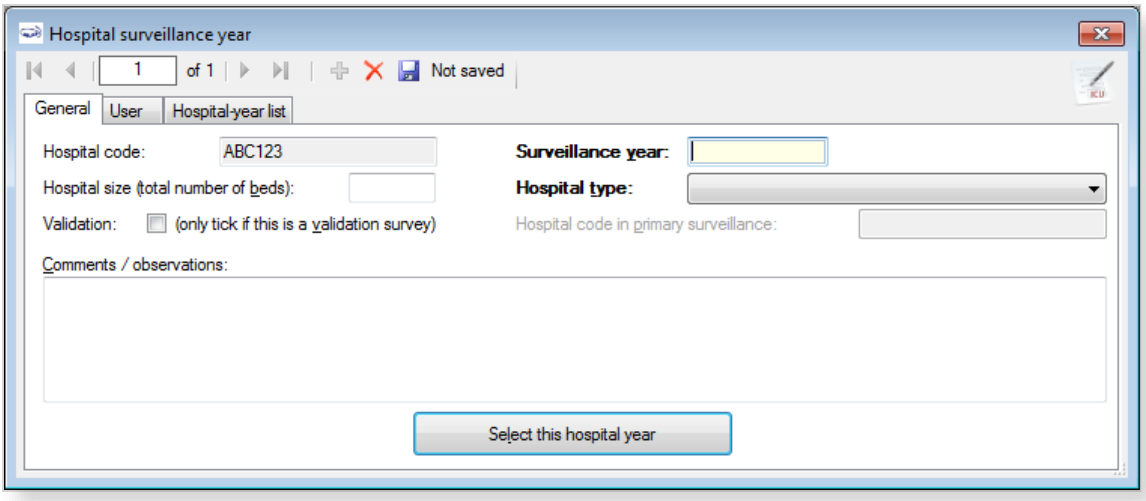
To create a hospital surveillance year:

1. Click **Hospital surveillance year** in the ICU ***main menu***.



   The **Hospital survey** form opens (for the hospital you have selected).

2. If not already open, click the **General (1)** tab.
3. In the **General (1)** form, click the **Add item** icon to open the form for editing.



The **Light** or **Standard** protocol option is selected later at the ICU surveillance period level.

4. Specify values for the fields. Descriptions of the variables in this form are given in table below. Mandatory fields are indicated by a red asterisk *. Required fields are indicated by a black asterisk *.

5. Click **Select this hospital year** to be able to enter (an) ICU surveillance period(s).

6. Click the **Save** icon or press **Ctrl+S**.

   If any mandatory or required data field is empty when you save, e.g. because you do not yet have the data, an error and/or warning message is shown and the field label is highlighted as a reminder - in red for a mandatory field (you cannot save) or blue for a required field. See *Understanding reported errors*.

Hospital surveillance year ICU General tab variables

Variable	Description
Hospital code	The hospital identifier/code assigned by national/regional PPS coordinating centre; unique code per surveillance/PPS network. Hospital codes should be unique within each surveillance network, and kept constant between the ECDC Antimicrobial Resistance and Healthcare-Associated Infection (ARHAI) surveillance protocols and from one year to the next. Inserted automatically based on the hospital selected during *Hospital definition*.
Hospital size (total number of beds) *	Total number of beds in the hospital. If, for reasons of confidentiality, the exact number of hospital beds cannot be given, please enter the number of beds rounded up to the nearest 50.
Validation	If the current survey or surveillance year is a validation study performed by a validation team, the **Validation** checkbox should be checked to indicate that this is not a primary data collection but a repeated data collection for validation purposes of the primary PPS data. Checking the **Validation** checkbox will change the messages on data entry for the entire application, especially for the variables displayed on the Validation tabs at different levels (see *Validation tab* below). Validation cannot be changed after saving.
Surveillance year *	The year in which the survey will be performed. Warning: The surveillance year cannot be changed after saving. Before saving, make sure that the start date of the hospital ICU survey is within the year you are specifying. If you need to change the surveillance year, you will have to contact your national or regional PPS co-ordinator.
Hospital type *	Designate the hospital type – PRIM: primary, SEC: secondary, TERT: tertiary, SPEC: specialised, missing=UNK. See *Hospital types*.
Hospital code in primary surveillance	

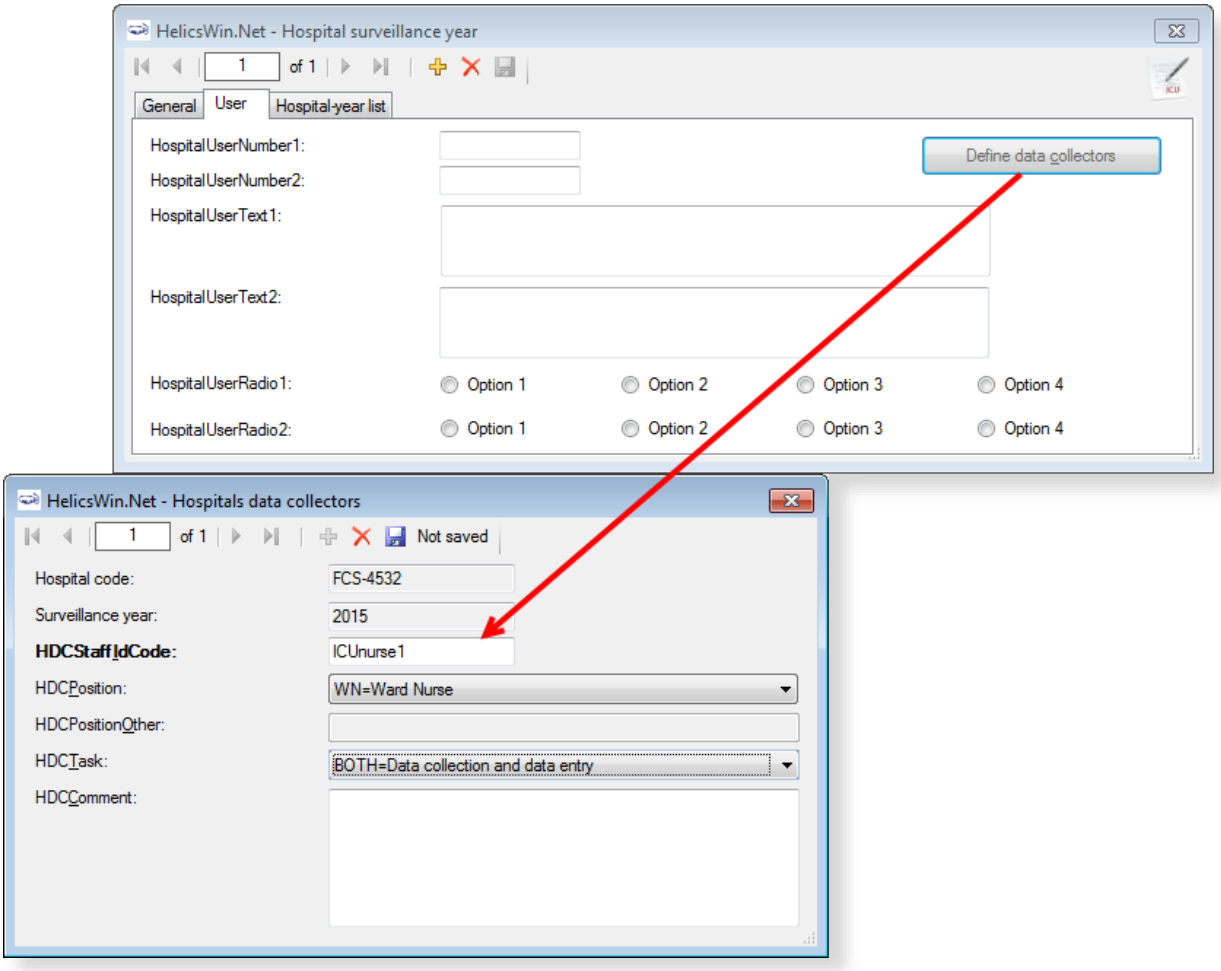
Variable	Description
Comments/ observations	Free text field. Enter any information relevant to the survey.

User tab

The **User** tab contains fields useful for users at national, regional or hospital level. They can be renamed and personalised to enable collection of information during the PPS that is outside of the PPS protocol. These modifications are made using the **Translation** functionality in the **Settings** form, see *Translating the text in user forms*.

Additionally, the **User** tab of the **Hospital surveys** form also enables you to record the details of all hospital data collectors (HDC): their ID Code, Position (function) and survey-related task(s). This is optional.

Click **Define data collectors** to enter these data.



Data collectors for ICU surveillance defined here can be used later in the **Pilot: Feasibility** tab of the ICU surveillance period / Indicators screen, see below.

Entering ICU surveillance year and surveillance period data

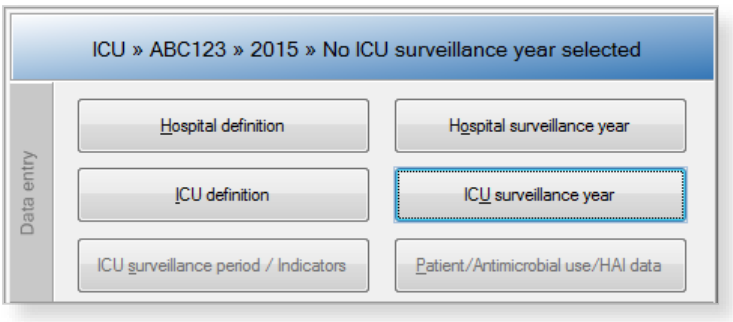
How you enter these data depends on the protocol being used:

- In the (unit-based) **Light protocol**, you only enter patient data for patients with any antimicrobial use and/or a healthcare-associated infection. Therefore, in the Light protocol, each patient record must include details of at least one antimicrobial use or HAI.

- In the (patient-based) **Standard protocol**, you enter all patient data for all patients, including those without HAI and/or antimicrobial use. Additional risk factors (not applicable to the Light protocol) appear once you select the ward.

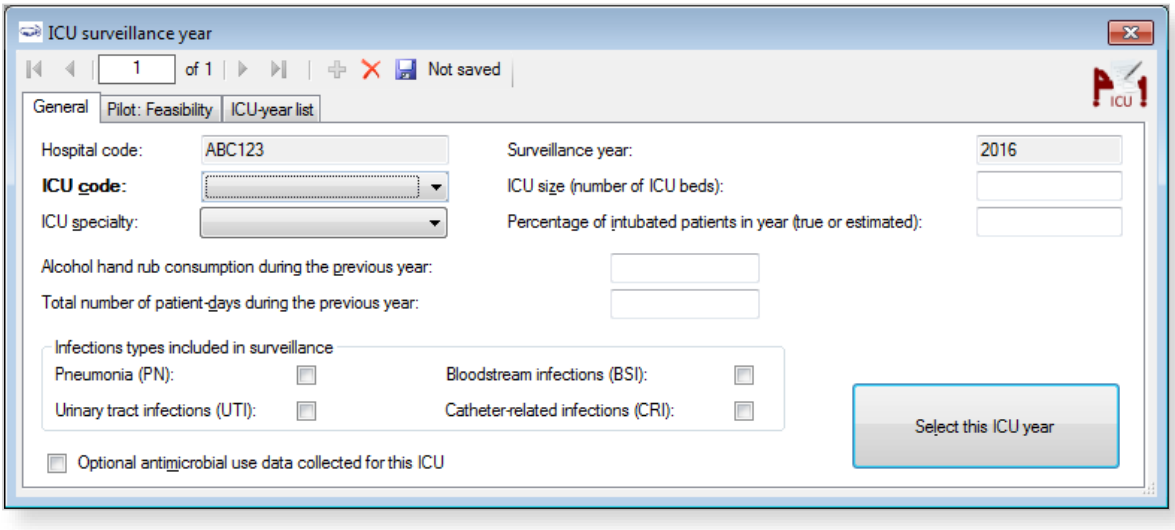
Surveillance year data

To enter surveillance year data, click **ICU surveillance year** in the *main menu*.



After entering the surveillance year data, save and click **Select this ICU year** in the **General** tab to be able to enter surveillance period data.Specifying surveillance year data, General tab

The **General** tab contains the ICU ward data that remain constant for all surveillance periods in the surveillance year. This tab also contains one of the structure and process indicators, i.e. the consumption of alcohol-based hand rub in the ICU in the previous year. Variables in this form are described in the Table. Further details are provided in the HAI-Net ICU protocol (see *Related documents*).



To define the ICU surveillance year:

1. Specify values for the fields in the **ICU surveillance year General** tab. Descriptions of the variables in this form are given in table below. Mandatory fields are indicated by a red asterisk *. Required fields are indicated by a black asterisk *.

2. Click the **Save** icon or press **Ctrl+S**.

   If any mandatory or required data field is empty when you save, e.g. because you do not yet have the data, an error and/or warning message is shown and the field label is highlighted as a reminder - in red for a mandatory field (you cannot save) or blue for a required field. See *Understanding reported errors*.

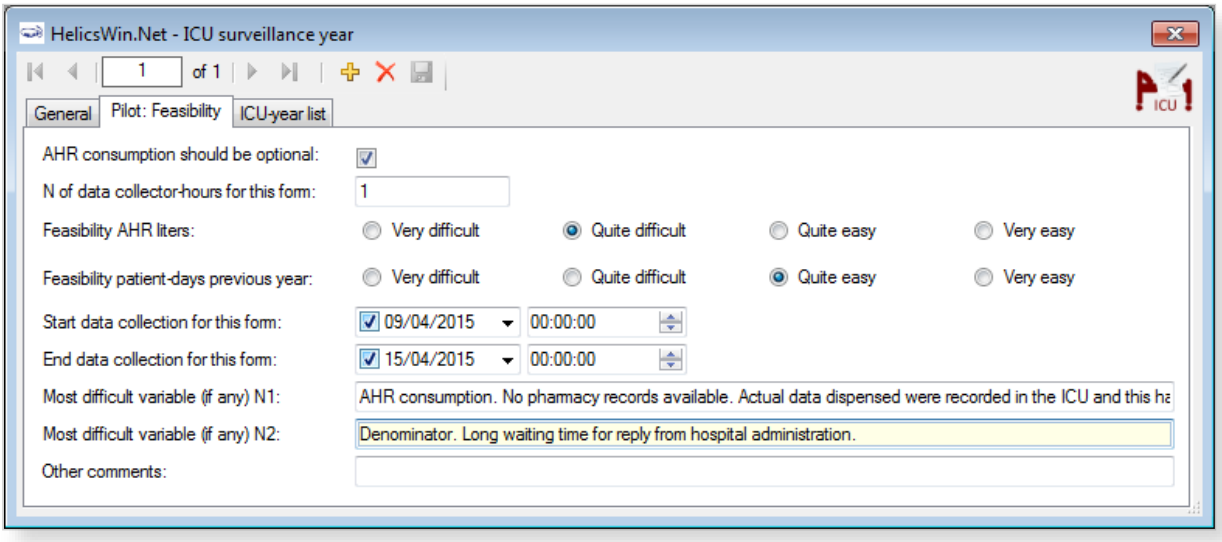
3. Click **Select this ICU year** to be able to enter an ICU surveillance period.

ICU surveillance year General tab variables

Variable	Description
Hospital code	Inserted automatically based on the hospital selected during *Hospital definition*.
Surveillance year	The year previously selected for the survey. Inserted by system.
ICU code *	Unique identifier for each intensive care unit within a hospital, should remain identical in different surveillance periods/years.
ICU size *	Number of beds in the ICU.
ICU speciality *	If 80% of the patients belong to a particular category, the ICU falls within that category, otherwise the specialty is 'Mixed'. MIX = Mixed; MED = Medical; SURG = Surgical; CORO = Coronary; BURN = Burns; NEUR = Neurosurgical; PED = Paediatric; NEON = Neonatal; O = Other; UNK = Unknown.
Percentage of intubated patients in the ICU *	Percentage of intubated patients over the past year in the ICU. Measured or estimated average percentage (not: proportion) of patients with an invasive respiratory device over the last year in the current ICU. Number from 0.00 to 100.00. This variable is used as a proxy for severity of ICU case-mix and should also be collected if pneumonia is not included in the surveillance.
Alcohol hand rub consumption during the previous year *	Total number of litres of alcohol-based hand rub delivered to the intensive care unit (usually by the hospital pharmacy) during the previous year.
Total number of patient-days during the previous year *	Total number of patient-days during the year prior to the current surveillance year (patient-days for all patients, not only for patients staying more than 2 days in the ICU). Short interruptions are not taken into account. Partial days count as one patient day. This variable is the denominator of the indicator 'alcohol-based hand rub consumption in the ICU per 1000 patient-days'.
Infections types included in the surveillance *	Check the relevant checkbox(s) to indicate which of the four types of infection are included in the current ICU surveillance year. Included types should remain constant between different surveillance periods within the same surveillance year.
Optional antimicrobial use data collected	Check the checkbox to indicate that antimicrobial use data was collected at the patient level (blank = not collected).

Specifying surveillance year data, Pilot: Feasibility tab

The **Pilot: Feasibility** tab contains the surveillance-year part of the feasibility questionnaire (Form F) of the HAI-Net ICU pilot study. Table below describes the variables in this form. Further details are provided in the HAI-Net ICU protocol (see *Related documents*). Since this is a pre-configured User variables screen, please remember to include User variables when you export the data.

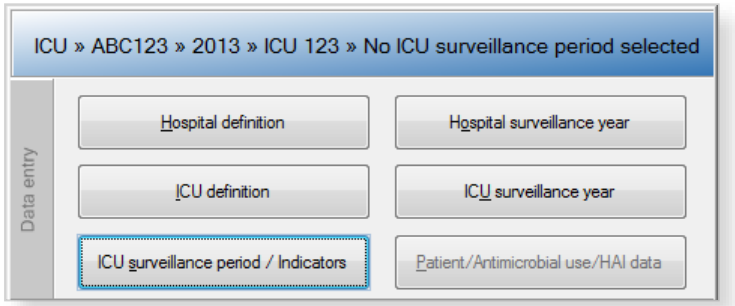


ICU surveillance year Pilot: Feasibility tab variables

Variable	Description
AHR consumption should be optional	Should the AHR consumption indicator be kept optional in the ICU protocol? YES/NO (NO=required for all participating ICUs, leave checkbox unchecked).
Number of data collector-hours for this form	(Estimated) number of person-hours of surveillance staff (data collectors) actually spent by one or more of the data collectors, for ICU surveillance-year data only. In practice, this will be the time spent on the AHR indicator alone, e.g. time to write and send the requests to the pharmacist (for the numerator) and possibly hospital administration (for the denominator) plus the time actually spent by the pharmacist to extract the amount of litres delivered to the ICU during the previous year plus the time needed to extract the denominator data – do NOT include the waiting time needed for the reply (see dates below). Round to the nearest hour (e.g. round 45 minutes to 1 hour).
Feasibility AHR liters	Level of difficulty of collecting data the total number of litres of alcohol-based hand rub delivered to the ICU during the last year (numerator of the AHR consumption indicator). Click the appropriate choice.
Feasibility of the total number of patient-days during previous year	Level of difficulty of collecting data on the total number of ICU patient-days during the last year (denominator of the AHR consumption indicator). Click the appropriate choice.
Start/end data collection for this form	Start date and end date for the data collection of the ICU characteristics (type, size) and alcohol-based hand rub consumption during the previous year. Because ICU type and size are in principle readily available, these dates allow the calculation of the number of days (including waiting time) to receive the numerator and denominator data for the indicator AHR consumption.
Most difficult variable (if any) 1/2	Free text. Indicate the two most difficult data items of the ICU surveillance-year data and the reasons why or encountered problems (up to 255 characters). These fields may be left empty.
Other comments	Comments regarding variables or HelicsWin.Net software. Collected once per year or on the software interface. Free text, max 255 characters. This field may be left empty.

Surveillance period data

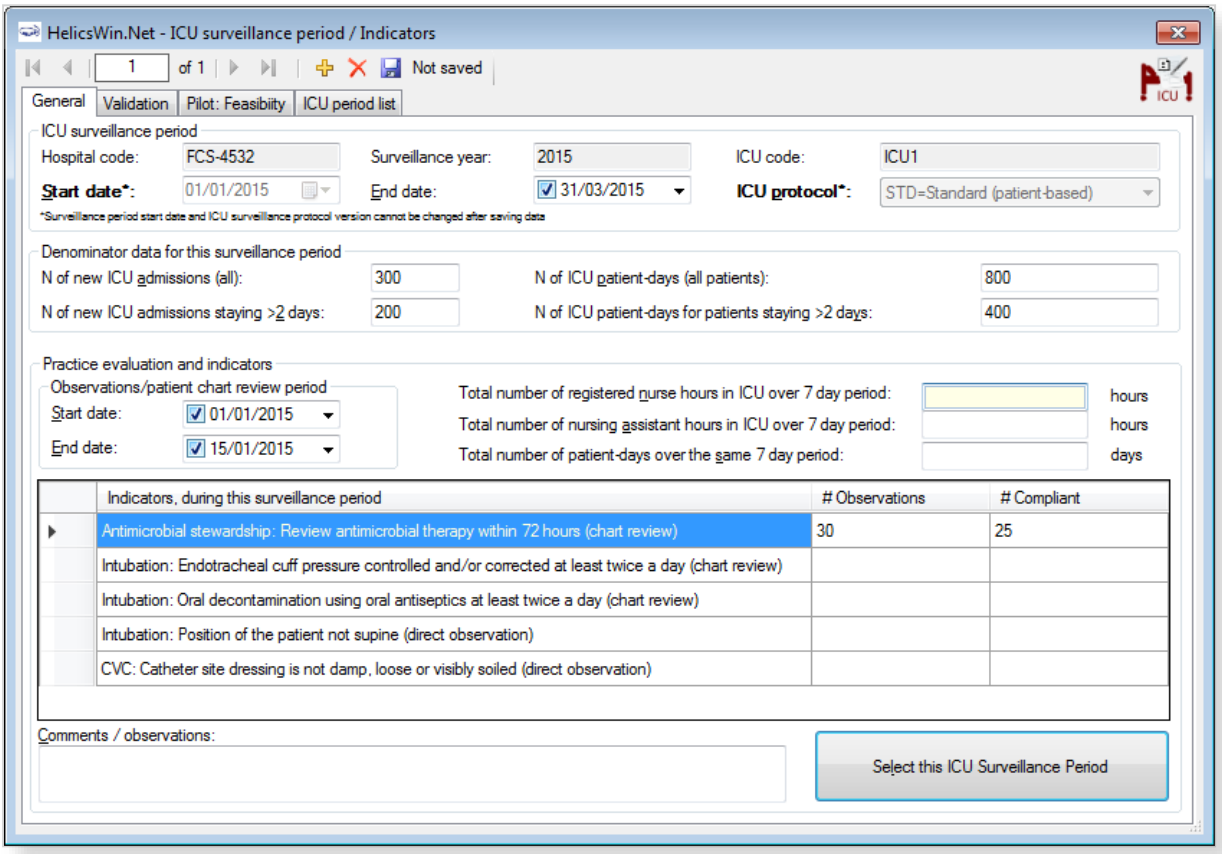
To enter surveillance period data, click **ICU surveillance period/Indicators** in the *main menu*.



After entering the surveillance period data, save and click **Select this ICU surveillance period** in the **General** tab to continue.

Specifying surveillance period data, General tab

The **General** tab contains the surveillance protocol option (Light or Standard), the denominator data (optional in Standard surveillance, required in Light surveillance) and the other structure and process indicators: nurse-to-patient ratio and five indicators collected during an evaluation of practices (or audit) in the ICU. Variables in this form are described in the Table. Further details are provided in the HAI-Net ICU protocol (see *Related documents*).



To define the ICU surveillance period:

1. Specify values for the fields in the **ICU surveillance period General** tab. Descriptions of the variables in this form are given in table below. Mandatory fields are indicated by a red asterisk *. Required fields are indicated by a black asterisk *.

2. Click the **Save** icon or press **Ctrl+S**.

   If any mandatory or required data field is empty when you save, e.g. because you do not yet have the data, an error and/or warning message is shown and the field label is highlighted as a reminder - in red for a mandatory field (you cannot save) or blue for a required field. See *Understanding reported errors*.

3. Click **Select this ICU surveillance period** to be able to enter Patient/ Antimicrobial use/ HAI data.

ICU surveillance period General tab variables

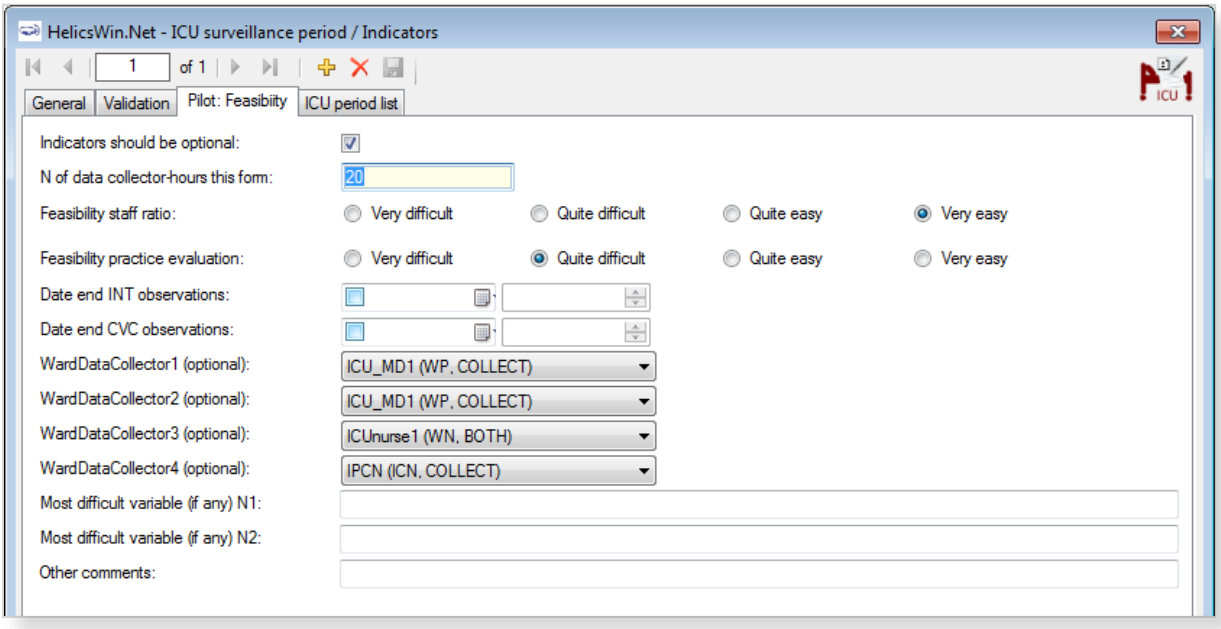
Variable	Description
Hospital code	Inserted automatically based on the hospital selected during *Hospital definition*.
Surveillance year	The year previously selected for the survey. Inserted by system.
ICU code	Unique identifier for each intensive care unit within a hospital, should remain identical in different surveillance periods/years. Inserted by system.
Start date *	Start date of the ICU surveillance period. Cannot be changed after saving.
End date *	End date of the ICU surveillance period. The recommended surveillance period is minimum 3 months, maximum 1 year. Can be entered later.

Variable	Description
ICU protocol *	Select either **Standard** or **Light**. Cannot be changed after saving. **Standard**: Patient-based option allows advanced risk adjustment of healthcare-associated infection rates for inter-hospital comparisons. Risk factors are collected for each patient (infected or not). **Light**: Unit-based option is less labour-intensive solution, produces partially the same indicators as Standard option for follow-up of trends, as well as the same descriptive results about infections and antimicrobial resistance, but with less possibility for risk-adjusted comparisons. Denominator data are aggregated at the unit (ICU) level. Case definitions, included patients, and infection data (including antimicrobial resistance data and mortality review data) are identical in both versions. Refer to the HAI-Net ICU protocol (see *Related documents*) for further details.
Number of new ICU admissions (all) *	Total number of new admissions in the intensive care unit during the period. Used for burden estimates of HAIs in ICUs, assessing the ICU workload for patients staying 1 or 2 days in the ICU and comparing some indicators with ICU surveillance systems that include all ICU patients. Optional, but strongly recommended.
Number of ICU patient-days (all patients) *	Total number of patient-days in the intensive care unit during the period. Used for burden estimates of HAIs in ICUs, assessing the ICU workload for patients staying 1 or 2 days in the ICU, comparing some indicators with ICU surveillance systems that include all ICU patients and cross-checking the plausibility of the denominator of the alcohol hand rub consumption and nurse-to-patient ratio indicators. Optional, but strongly recommended.
Number of new ICU admissions staying > 2 days *	Required for light surveillance. Number of new admissions of patients staying more than 2 days in the intensive care unit during the period. Main denominator for the indicator 'cumulative incidence of HAIs'. In standard surveillance, this variable is optional and allows verifying the exhaustiveness of the entered patient-based data.
Number of ICU patient-days for patients staying > 2 days *	Required for light surveillance. Number of patient-days for patients staying more than 2 days in the intensive care unit during the period. Main denominator for the indicator 'incidence density of HAIs'. In standard surveillance, this variable is optional and allows verifying the sum of patient-days reported on patient level.
Observations/ patient chart review period	Start date and end date of the period during which HAI prevention and antimicrobial stewardship practices are evaluated.
Total number of registered nurse hours in ICU over 7 day period	Total number of hours of real presence of registered nurses during a period of 7 days, including hours of presence during the night (presence of 1 full-time nurse 24/7=168 hours). Only include registered nurses involved in bedside patient care. Students are not included. A 'registered nurse' is a nurse who has graduated from a college's nursing program or from a school of nursing and has passed a national licensing exam to obtain a nursing license. Also include 'agency nurses', 'bank nurses', 'interim nurses' or other registered nurses who are not permanently employed for that position in the hospital.
Total number of nursing assistant hours in ICU over 7 day period	Total number of hours of real presence of nursing assistants during a period of 7 days, including hours of presence during the night (presence of 1 full-time nursing assistant 24/7=168 hours). Only include nursing assistants involved in bedside patient care. Students are not included. A 'nursing assistant' is also referred to as 'nurses' aide', 'healthcare assistant', 'nursing auxiliary', 'auxiliary nurse', 'patient care assistant' or similar terms. Also include nursing assistants who are not permanently employed for that position in the hospital.
Total number of patient-days over the same 7 day period	Total number of patient-days (all patients) over the same 7 days used for the number of (registered/assistant) nurse hours. Short interruptions are not taken into account. Partial days count as one patient day.
Antimicrobial stewardship: Review antimicrobial therapy within 72 hours (chart review)	Verify, for 30 (minimum 20) consecutive patients with antimicrobial therapy whether the therapy was evaluated within 72 hours after the start of the antimicrobial and has been documented in the patient file. Only consider first empiric or documented antimicrobial therapies that were started in the current ICU. Only systemic antimicrobial therapy (IV, IM, SC, oral) started since more than 72 hours are eligible for evaluation. Number of observations (denominator) = Total number of audited antimicrobial therapies that were started more than 3 days ago; Number compliant (numerator) = Number of antimicrobial therapies that were started more than 3 days ago and were re-assessed within 72 hours after start of the antimicrobial.

Variable	Description
Intubation: Endotracheal cuff pressure controlled and/or corrected at least twice a day (chart review)	Numerator=Number of intubation days (days of patients with intubation) during which the endotracheal cuff pressure was verified and maintained between 20 and 30 cm H2O (and documented in the patient file) at least twice per day; Denominator=Total number of observed intubation days. Source: medical or nurse patient file, prospective review of 30 patient-days with intubation. One patient with intubation is included only once a day, but the same patient can be included for several consecutive days.
Intubation: Oral decontamination using oral antiseptics at least twice a day (chart review)	Numerator=Number of intubation days (days of patients with intubation) during which oral decontamination with oral antiseptics has been performed (and documented in the patient file) at least twice per day; Denominator=Total number of observed intubation days. Source: medical or nurse patient file, prospective review of 30 patient-days with intubation. One patient with intubation is included only once a day, but the same patient can be included for several consecutive days.
Intubation: Position of the patient not supine (direct observation)	Numerator=Number of days of patients with intubation during which the patient's position was not supine (= was either prone or recumbent); Denominator=Total number of observed intubation days. Source: Direct observation of the position of the patient with intubation (in bed), up to 30 patient observations. One patient with intubation is included only once a day, but the same patient can be included for several consecutive days. Observations should as much as possible be perform at the same time during the day (e.g. at 16:00 in the afternoon). Patients in strict supine (dorsal decubitus) position for specific indications (e.g. certain trauma patients) should be excluded.
CVC: Catheter site dressing is not damp, loose or visibly soiled (direct observation)	Numerator = Number of days of patients with a central vascular catheter during which the dressing of the CVC was not loose, damp or visibly soiled; Denominator = Total number of observed CVC days. Source: Direct observation of 30 patients with at least one CVC in place, up to 30 patient observations. One patient with one or several CVCs is included only once a day, but the same patient can be included for several consecutive days. Observations should as much as possible be perform at the same time during the day (e.g. at 16:00 in the afternoon). For patients with several CVCs in place, all CVC dressings need to be ok (not loose, damp nor visibly soiled).
Comments/ observations	Free text field.

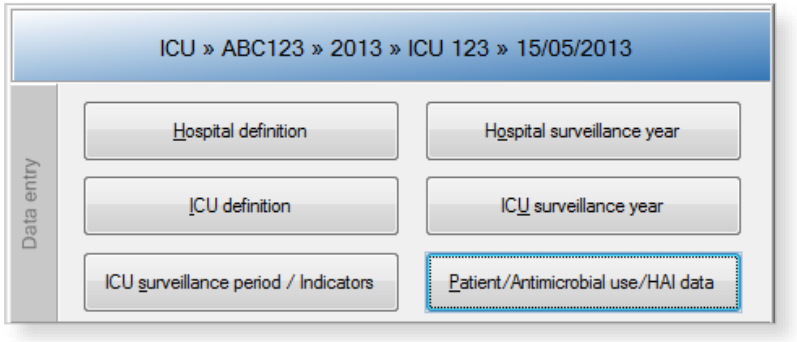
Specifying surveillance period data, Pilot: Feasibility tab

The **Pilot: Feasibility** tab contains the surveillance-year part of the feasibility questionnaire (Form F) of the HAI-Net ICU pilot study. Full descriptions of all the variables in this form are provided in the HAI-Net ICU protocol (see *Related documents*). Data collectors should first be defined in the **User** tab of the hospital-year screen, by clicking the **Define data collectors** button (see ***User** tab*). Please remember to include User variables when you export the data.



Entering ICU patient, antimicrobial use and HAI data

To enter patient data for antimicrobial use and HAI, click **Patient/Antimicrobial use/HAI data** in the *main menu*.



General tab

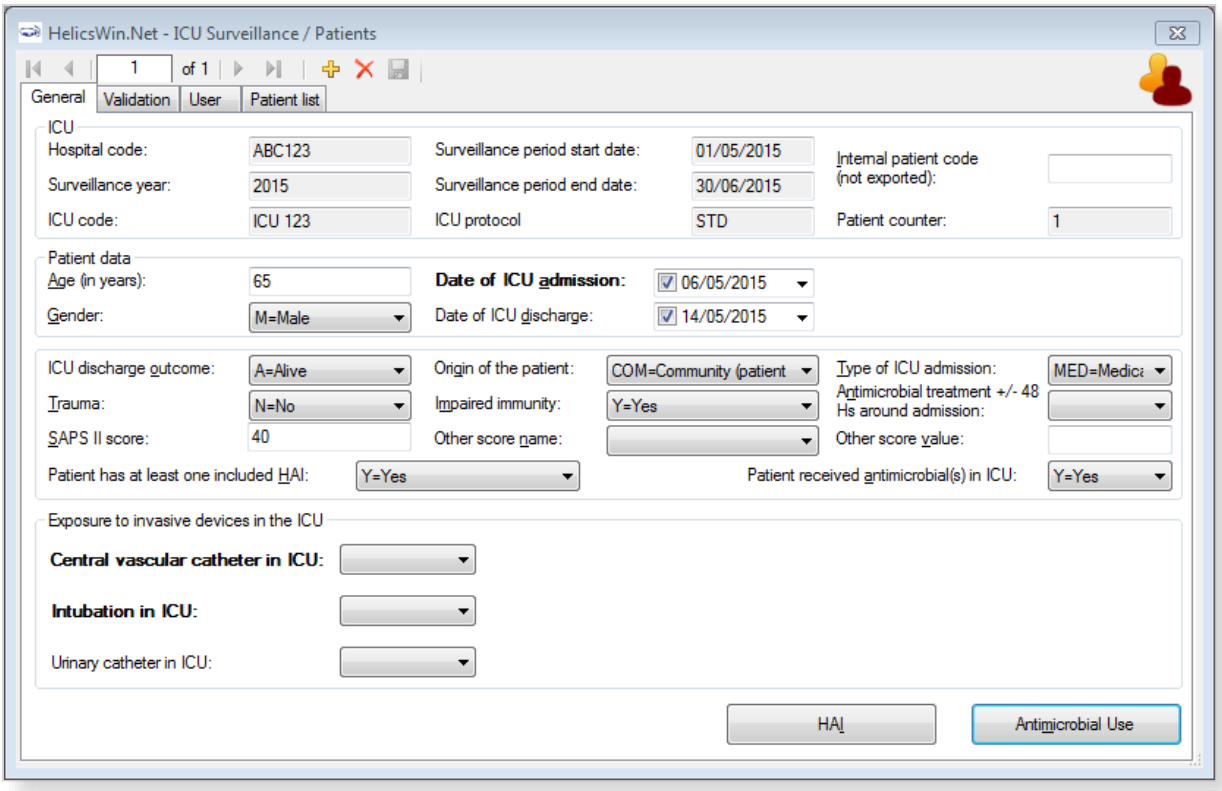
When you select **Patient/Antimicrobial use/HAI data** in the *main menu*, the **Patients** forms open at the **General** tab.

As in the PPS, the appearance of the **General** tab depends on whether Standard or Light surveillance has been chosen.

Unlike PPS, antimicrobial use data in the ICU module are optional and can only be entered in Standard surveillance.

Table below describes the variables in the Standard and Light forms. Further details are provided in the HAI-Net ICU protocol (see *Related documents*).

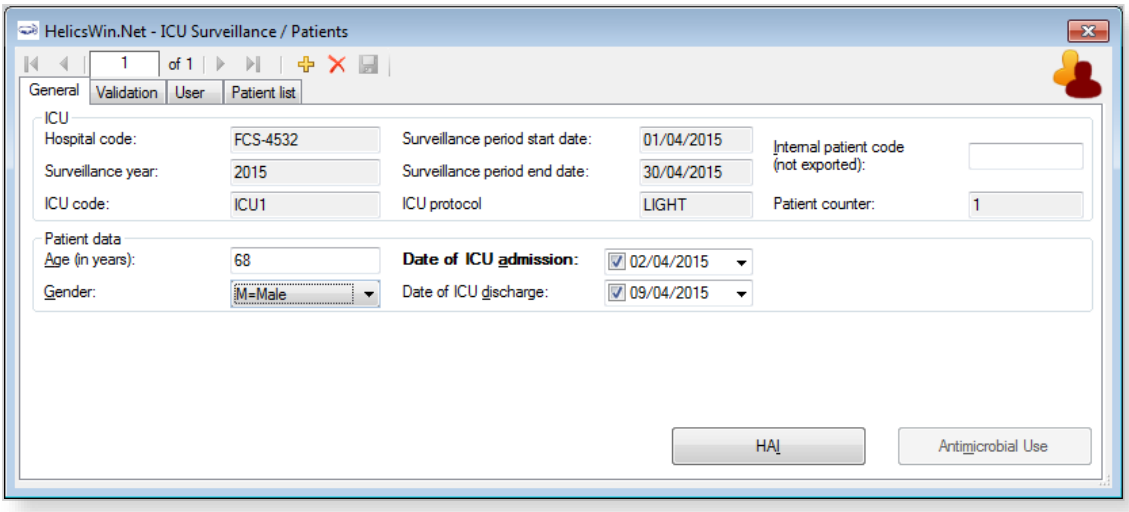
ICU Surveillance/Patients General tab - Standard protocol



In Standard surveillance, the **General** tab shows all the risk factors that should be entered for each patient staying more than two days in the ICU (with or without an infection).

In Standard surveillance the **HAI** button is deactivated when the variable **Patient has at least one included HAI** is set to **No**.

ICU Surveillance/Patients General tab - Light protocol



In Light surveillance, the **General** tab only shows a few demographic variables. These should only be entered for patients with an HAI. Consequently, a patient record in Light surveillance should always have at least one HAI record, and the **HAI** button is therefore activated by default each time a patient is created.

In Light surveillance, the **Antimicrobial use** button is deactivated.

To define the ICU patient, antimicrobial use and HAI data:

1. Specify values for the fields in the **ICU surveillance/patients General** tab. Descriptions of the variables in this form are given in the Table. Mandatory fields are indicated by a red asterisk *. Required fields are indicated by a black asterisk *.

2. Click the **Save** icon or press **Ctrl+S**.

   If any mandatory or required data field is empty when you save, e.g. because you do not yet have the data, an error and/or warning message is shown and the field label is highlighted as a reminder - in red for a mandatory field (you cannot save) or blue for a required field. See *Understanding reported errors*.

3. Click the **HAI** or **Antimicrobial data** button to proceed to the respective dialog-box:
   - *HAI data*
   - *Antimicrobial use data*

ICU patients General tab variables (Standard and Light protocols)

Variable	Description
Hospital code	Inserted automatically based on the hospital selected during *Hospital definition*.
Surveillance year	The year previously selected for the survey. Inserted by system.
Surveillance period start date	Start date of the ICU surveillance period. Inserted by system. Cannot be changed after saving.
Surveillance period end date	End date of the ICU surveillance period. Inserted by system. Can be blank if not yet entered.
ICU code	Identifier for the selected intensive care unit. Inserted by system.
Internal patient code	For hospital internal use only. Optional. Not exported. Must be removed from any data submitted to ECDC/TESSy.
Patient counter	A system allocated sequential patient number for anonymised identification.
Age *	Age of the patient on the date of admission to the ICU (in years).
Gender *	Gender of the patient. M = Male; F = Female; O = Other; UNK = Unknown.
Date of ICU admission *	Date of admission in the ICU. Mandatory – data cannot be saved without this date.
Date of ICU discharge	Date the patient was discharged from the ICU or date of in-ICU death or date of last follow-up in the ICU.
ICU discharge outcome	Patient status at discharge from the ICU or at end of follow-up in the ICU. A = Alive; D = Dead in ICU; UNK = Unknown.
Origin of the patient	Origin of the patient at the time he/she was admitted at the ICU: HOSP = Ward in this/other hospital. OICU = Other ICU; COM = Community (patient came from his home, via emergency or not); LTC = Long-term care/nursing home; O = Other; UNK = Unknown.
Type of ICU admission	Type of admission as defined in SAPS II score: (medical: no surgery within one week of admission to ICU; scheduled surgical: surgery was scheduled at least 24 hours in advance +/- 7 days ICU admission; unscheduled surgical: patients added to the operating room schedule within 24 hours of the operation. MED = Medical; SSUR = Scheduled surgical; USUR = Unscheduled surgical; UNK = Unknown.
Trauma patient	Intensive care unit admission resulted from blunt or penetrating traumatic injury to the patient, with or without surgical intervention. Y = Yes; N = NO; UNK = Unknown .
Impaired immunity	Impaired immunity as defined in APACHE II score: impaired immunity due to treatment (chemotherapy, radiotherapy, immune suppression, corticosteroids long duration or high doses recently), due to disease (leukaemia, lymphoma, AIDS), or < 500 PMN/mm3. Y = Yes; N = NO; UNK = Unknown.

Variable	Description
Antibiotic treatment +/- 48 hours around admission	Specify 'yes' if any antibiotic therapy in the 48 hours preceding ICU admission and/or during the first two days of ICU stay (=antibiotic therapy for an infectious event around ICU admission, excl. antifungal and antiviral treatment) has been given; not: antimicrobial prophylaxis, SDD, local treatment. Y = Yes; N = NO; UNK = Unknown.
SAPS II score	Simplified Acute Physiology Score II on admission (first 24h of ICU stay). Severity of illness score developed to predict mortality. Integer number from 0 to 163.
Other score name	Add alternative severity of illness score.
Other score value	Corresponding value for alternative severity of illness score. Possible scores [and possible values]: APACHE II [0-71], APACHE III [0-299], APACHE IV [0-286], MPM II [0-100], MPM III [0-100], McCabe score [0=non-fatal (survival >= 5 years); 1=ultimately fatal (survival < 5 years), 2=rapidly fatal (survival<1 year); 9=unknown], SAPS 3 [0-217]
Central vascular catheter in ICU *	Patient had a central vascular catheter during the current ICU stay. Y = Yes; N = NO; UNK = Unknown. Mandatory. If yes, enter dates for the corresponding exposure period.
Intubation in ICU *	Patient was intubated (invasive respiratory device) during the current ICU stay. Y = Yes; N = NO; UNK = Unknown. Mandatory. If yes, enter dates for the corresponding exposure period.
Urinary catheter in ICU	Patient had indwelling urinary catheter during the current ICU stay. Y = Yes; N = NO; UNK = Unknown. Required if UTI is included in surveillance. If yes, enter dates for the corresponding exposure period.
Patient received antimicrobial(s) in ICU	Patient received any antimicrobials during ICU stay. If yes, fill corresponding antimicrobial use data. Y = Yes; N = NO; UNK = Unknown.
Patient has at least one included HAI *	Patient has at least one healthcare-associated infection (with onset on day three or later, see definition) included in the current surveillance-year. If yes, fill out an HAI form for each infection. Y = Yes; N = NO; UNK = Unknown.

Antimicrobial use data

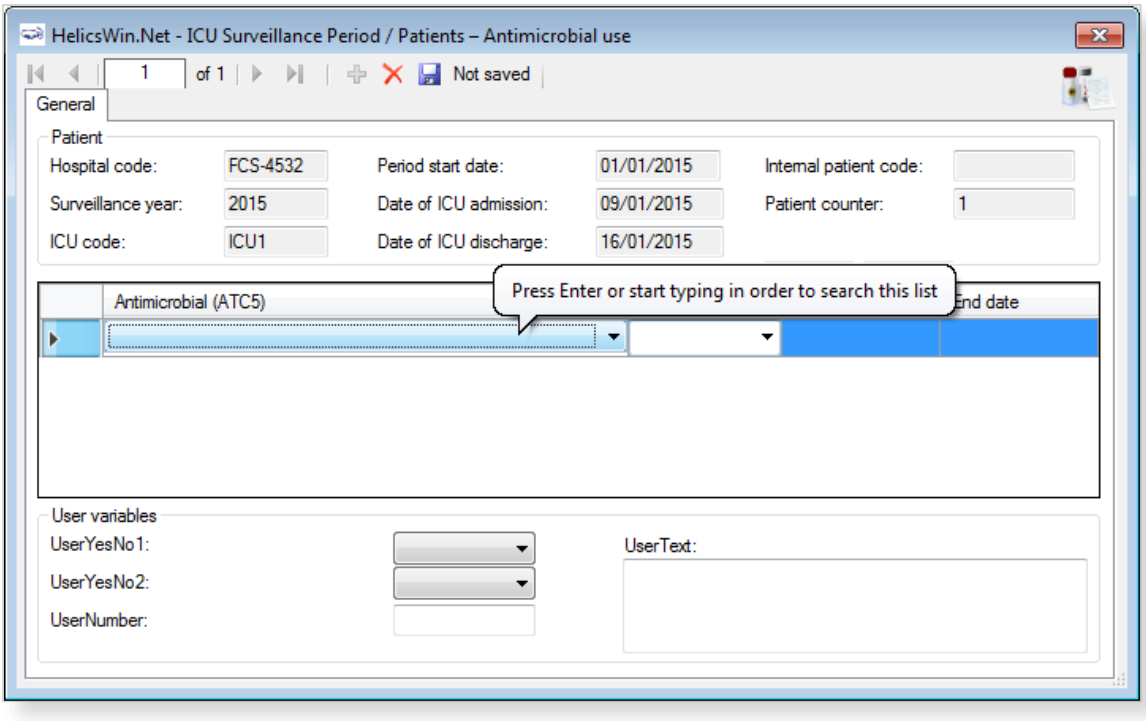
Antimicrobial use data are optional in the ICU module and can only be entered in Standard surveillance. Data entry requires that:

- The variable **Patient received antimicrobial(s) in ICU** is set to **Yes** the ICU **General** tab.

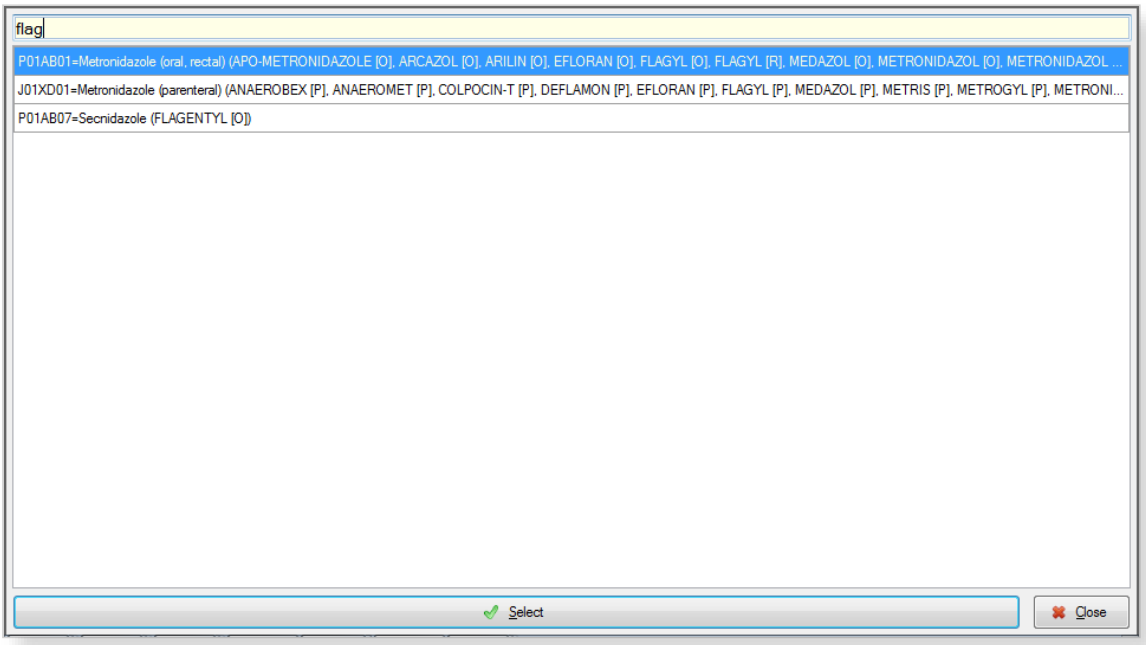
  AND

- The option for antimicrobial use data has been activated in the **ICU surveillance year** form.

To enter antimicrobial use data, click the **Antimicrobial use** button in the ICU **General** tab to open the **Antimicrobial use** form. The fields in the form are described in the Table.



Example of searching for an ATC5 code using a brand name:



To enter antimicrobial use data:

1. Click the **Antimicrobial use** button in the ICU **Surveillance/patients General** tab to open the form.
2. Specify values for the fields in the **Antimicrobial use General** tab. Mandatory fields are indicated by a red asterisk *. Required fields are indicated by a black asterisk *.
3. Search for antimicrobials in the dropdown list by pressing enter when the cursor is placed over the **Antimicrobial (ATC5)** field. You can search on the ATC5 code, antimicrobial generic name, or any of the brand names included in the database.
4. Click the **Save** icon or press **Ctrl+S**.

If any mandatory or required data field is empty when you save, e.g. because you do not yet have the data, an error and/or warning message is shown and the field label is highlighted as a reminder - in red for a mandatory field (you cannot save) or blue for a required field. See *Understanding reported errors*.

Patient's antimicrobial use

Variable	Description
Header section	Selected hospital, ward and patient data.
Antimicrobial (ATC5) *	Antimicrobial coded as ATC5 code. Include ATC2 classes J01 antibacterials, J02 antifungals and ATC4 A07AA, P01AB, D01BA and ATC5 J04AB02. See ATC5 list in the HAI-Net ICU protocol Annex 4 (see *Related documents*).
Indication	Indication for use of this antimicrobial episode. If the indication changes (e.g. from empiric treatment to documented treatment), enter a new line, even if the antimicrobial has not changed. If the same antimicrobial (ATC5 code) is used for different indications, enter a line for each indication. P=Prophylaxis; E=Empiric treatment (not based on microbiological results); M=Documented treatment (based on microbiological results with or without antimicrobial susceptibility results); S=Selective digestive decontamination; O=Other; UNK=Unknown.
Start date	Start date within the ICU of this antimicrobial agent/indication (days before ICU admission should not be reported). For antimicrobials present on admission, enter date of ICU admission.
End date	End date within the ICU of this antimicrobial agent/indication (days after ICU discharge should not be reported). For antimicrobials continued after discharge, enter date of ICU discharge.
User variables	As defined in ICU Surveillance/Patients Users tab.

HAI data

HAI, microorganism and antimicrobial resistance data are entered through the **Patients - Healthcare-associated infections (HAI)** form. The fields in the form are described in the Table.

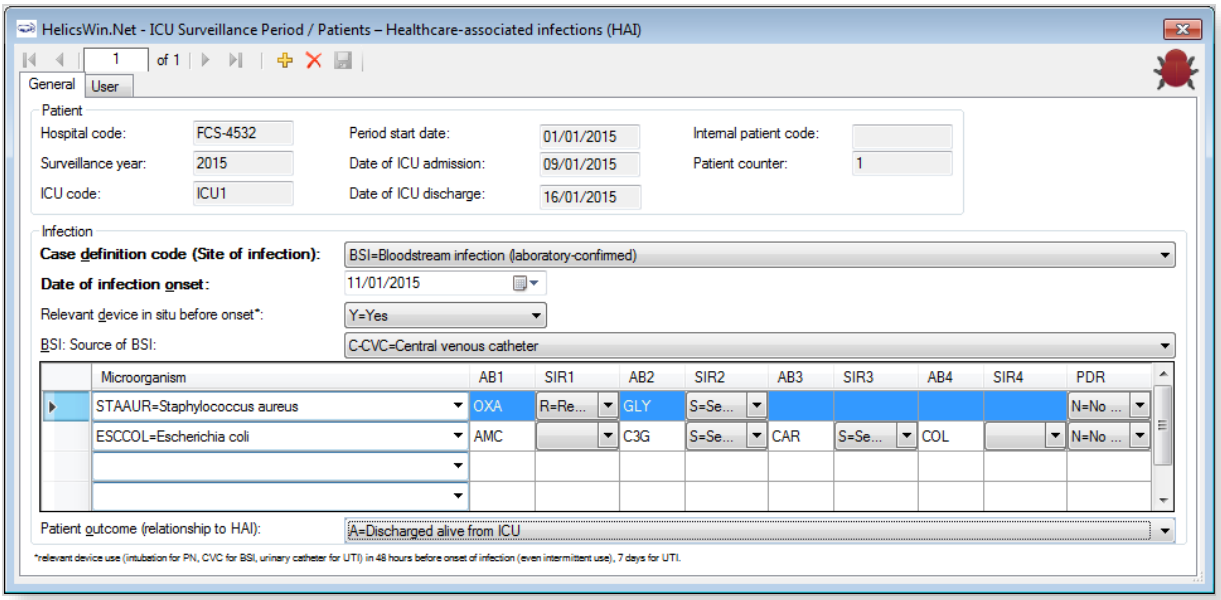
To enter HAI, microorganism and antimicrobial resistance data:

1. Click the **HAI** button in the ICU **Surveillance/patients General** tab to open the **HAI** form.
2. Specify values for the fields in the **ICU surveillance/patients HAI General** tab. Descriptions of the variables in this form are given in the Table below. Mandatory fields are indicated by a red asterisk *. Required fields are indicated by a black asterisk *.
3. Enter the **Case definition code** and **Date of infection onset** data (mandatory).
4. Select the relevant device status from the drop-down list.
5. Click the **Save** icon or press **Ctrl+S**.

   If any mandatory or required data field is empty when you save, e.g. because you do not yet have the data, an error and/or warning message is shown and the field label is highlighted as a reminder - in red for a mandatory field (you cannot save) or blue for a required field. See *Understanding reported errors*.

   Once the HAI record is saved, the microorganism sub-form is activated.
6. Click on the drop-down list in the **Microorganism** field or enter the first letters of a microorganism to select a microorganism.

   Once the organism is selected, the corresponding AMR markers are automatically displayed.
7. Enter the susceptibility results in the corresponding SIR1, SIR2, etc. fields.
8. Select the relationship of the HAI to the patient outcome from the drop-down list at the bottom of the form.
9. Click the **Save** icon or press **Ctrl+S**.



ICU patient HAIs General tab variables

Variable	Description
Header section	Selected hospital, ward and patient data.
Case definition code (Site of Infection) *	Site of infection according the case definition (including subcategory), taking into account signs and symptoms of the entire infection episode (not just day one of the HAI). See Chapter 3 for case definitions. BSI = Bloodstream infection; PN = Pneumonia (unknown subcategory); PN1 = Pneumonia (protected sample + quantitative culture); PN2 = Pneumonia (non-protected sample (ETA) + quantitative culture); PN3 = Pneumonia (alternative microbiological criteria); PN4 = Pneumonia (sputum bacteriology or non-quantitative ETA); PN5 = Pneumonia (no microbiology); UTI = Symptomatic urinary tract infection (unknown subcategory); UTI-A = Symptomatic urinary tract infection (microbiologically confirmed); UTI-B = Symptomatic urinary tract infection (not microbiologically confirmed); CRI1-CVC = CVC-related infection (local); CRI2-CVC = CVC-related infection (generalised no positive haemoculture); CRI3-CVC = CVC-related infection (generalised with positive haemoculture). If (optional) catheter-related infections (CRIs) are included in the surveillance, report a CVC-related BSI corresponding to the case definition of CRI3-CVC as CRI3-CVC (do not report twice).
Date of infection onset *	Date of onset of symptoms or, if unknown, date treatment was started or date first diagnostic examination was done.
Relevant device in situ before onset *	Relevant invasive device was present (even intermittently) in the 48 hours preceding the infection (7 days for UTIs): intubation for pneumonia, central vascular catheter for bloodstream infection, urinary catheter for urinary tract infections. Necessary to distinguish device-associated infections. Y = Yes; N = No; UNK = Unknown.
BSI: Source of BSI	Required if the case definition code is *BSI*. Source/origin of the bloodstream infection. C = The same microorganism was cultured from the catheter or symptoms improve within 48 hours after removal of the catheter. Exception: Report microbiologically confirmed CVC-related BSI as CRI3-CVC if optional CRIs are included in the surveillance. C = Catheter, catheter type unknown; C-CVC = Central venous catheter; C-PVC = Peripheral venous catheter; C-ART = Arterial catheter; S = Secondary to another site, primary site unknown; S-PUL = Pulmonary infection; S-UTI = Urinary tract infection; S-SSI = Surgical site infection; S-DIG = Digestive tract infection; S-SST = Skin/Soft Tissue infection; S-OTH = Other infection or procedure; UO= None of the above, BSI of unknown origin; UNK=Unknown/Missing.
Microorganism *	Isolate result. Microorganism (MO) six letter code or negative code including reason why the isolate result is not available. _NA = Results not available; _NOEXA = Examination not done; _NONID = Microorganism not identified; _STERI = Sterile examination. See Code list in the HAI-Net ICU protocol Annexes 2 and 3 (see *Related documents*). It is recommended to use the extended microorganism list, even though minimal list codes are also allowed. Minimum one code per HAI is Required, the recommended maximum per HAI is 3 microorganisms.

Variable	Description
AB	Antibiotic code. Antimicrobial drug for which susceptibility was tested, depends on the microorganism. In HWN, recommended antimicrobial codes are automatically generated.
SIR *	Final interpretation result of all different susceptibility tests performed. If antibiotic code is _NOTEST, SIR=NA. S = Susceptible; I = Intermediate; R = Resistant; UNK = Unknown; NA = Not applicable.
Patient outcome (relationship to HAI)	Relationship of HAI to ICU outcome in patients with HAI: • Discharged alive: patient was discharged alive; OR patient was still in the hospital and alive at end of follow-up during this hospital stay. • Death, HAI definitely contributed to death: use this category if a causal link between CDI and death can be demonstrated. • Death, HAI possibly contributed to death: use this category if no causal link between CDI and this case's death can be demonstrated, but it is still plausible that CDI was at least a contributory factor. • Death, unrelated to HAI: use this category if the cause of death can be demonstrated not to be related to CDI. • Death, relationship to HAI unknown: use this category if no evidence of contributory factors to the cause of death is available. • Unknown: unknown patient outcome.

ICU validation tabs

The **Validation** tabs in the **ICU** forms are not currently activated for HWN2.2.

Creating a PPS point prevalence survey

There are two Point Prevalence Survey (PPS) options:

- **Standard**: Patient-based option allows advanced risk adjustment of healthcare-associated infection rates for inter-hospital comparisons. You enter all patient data for all patients, including those without HAI and/or antimicrobial use. Risk factors are collected for each patient (infected or not).
- **Light**: Unit-based option is less labour-intensive solution, produces partially the same indicators as Standard option for follow-up of trends, as well as the same descriptive results about infections and antimicrobial resistance, but with less possibility for risk-adjusted comparisons. You only enter patient data for patients with any antimicrobial use and/or a healthcare-associated infection. Consequently, in the Light protocol, each patient record must include details of at least one antimicrobial use or HAI.

Both options use the hospital data forms **H1**-**H3**, the ward data form **W**, and the national data form **N**.

However, the Standard option uses patient data form **A**, whereas the Light option uses numerator data form **B**.

Further details are provided in the HAI-Net PPS protocol (see *Related documents*).

PPS data collection is described in the following sections:

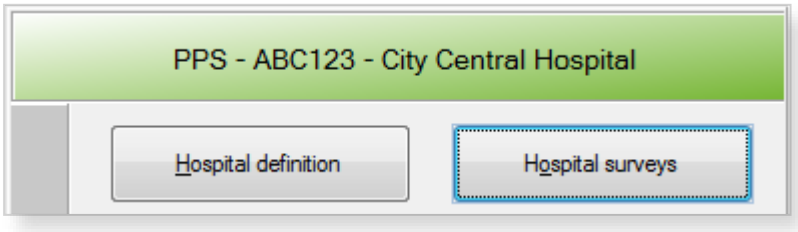
- *Entering PPS hospital data*
- *Entering ward PPS data*
- *Entering PPS patient, antimicrobial use and HAI data*

Entering PPS hospital data

Follow the procedure in this section to create a new **PPS** survey for each defined hospital, entering information from Form H. Before you can create your survey, you must *define your hospital and wards*.

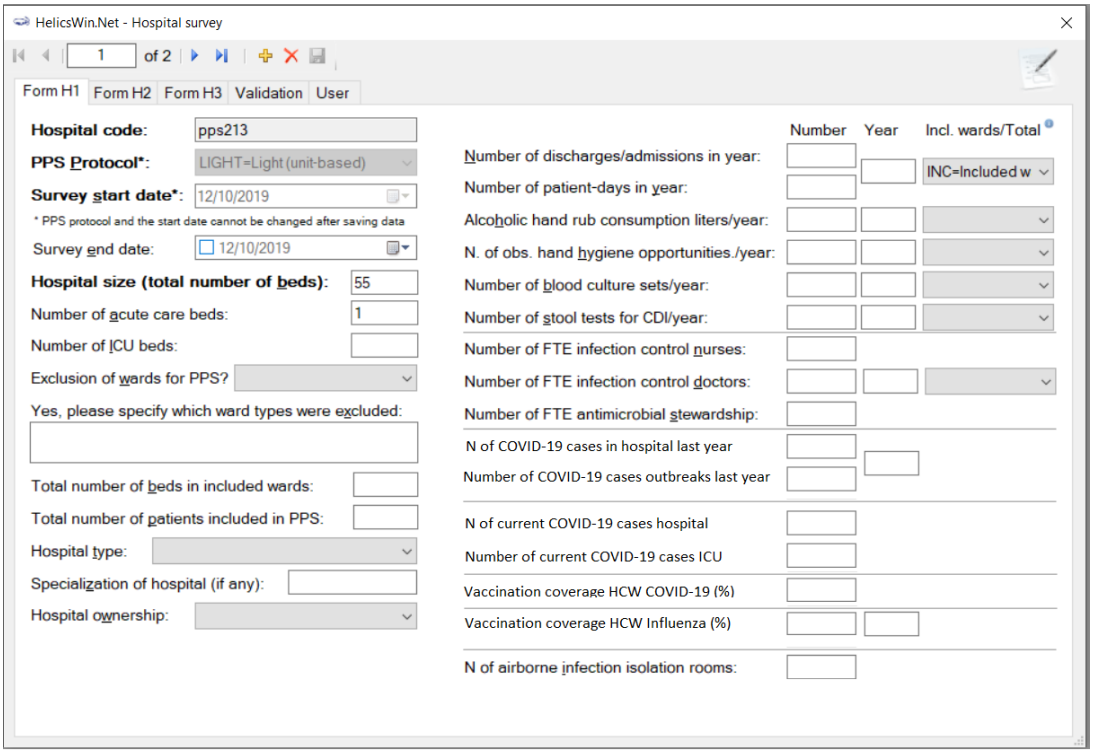
To create a hospital Point Prevalence Survey:

1. Click **Hospital surveys** in the PPS ***main menu***.



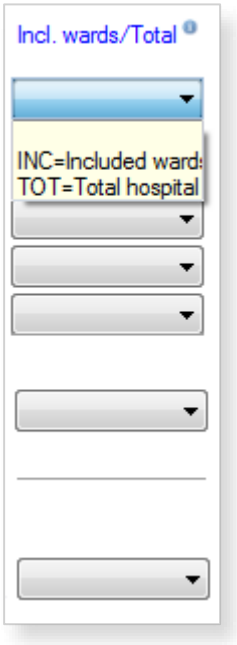
   The **Hospital survey** form opens (for the hospital you have selected).

2. If not already open, click the **Form H1** tab.
3. In the **Form H1** tab, click the **Add item** icon to open the form for editing.



4. Enter the values for the fields in the **Form H1** tab.

Note that the **Incl. wards / Total** options (for included wards only OR for hospital total) are required fields.



5. Click the **Save** icon or press **Ctrl+S**.

6. Enter the values for the fields in the **Form H2** and **Form H3** tabs, and save.

Descriptions of the variables for Hospital survey tabs Form H1, *2*, and *3* are given in table below. If any mandatory or required data field is empty when you save, e.g. because you do not yet have the data, an error and/or warning message is shown and the field label is highlighted as a reminder - in red for a mandatory field (you cannot save) or blue for a required field. See *Understanding reported errors*.

PPS Hospital survey tabs (Form H1, 2 and 3) variables

Variable	Description
Form H1 tab	
Hospital code *	The hospital identifier/code assigned by national/regional PPS coordinating centre; unique code per surveillance/PPS network. Hospital codes should be unique within each surveillance network, and kept constant between the ECDC Antimicrobial Resistance and Healthcare-Associated Infection (ARHAI) surveillance protocols and from one year to the next. Inserted automatically based on the hospital selected during *Hospital definition*.
PPS protocol *	Select either **Standard**, **Light** or **Validation**. Note that you cannot add Light protocol data records to a PPS data collection defined to use the Standard protocol, or vice versa. If the current survey or surveillance year is a validation study performed by a validation team, **Validation** should be selected to indicate that this is not a primary data collection but a repeated data collection for validation purposes of the primary PPS data. Selecting **Validation** will change the messages on data entry for the entire application, especially for the variables displayed on the Validation tabs at different levels (see *Validation tab* below). Warning: You cannot change the **PPS protocol** after you have saved it.
Survey start date *	Start and end dates for the PPS in the entire hospital. Warning: You cannot change the **Survey start date** after you have saved it. If you save without having selected the correct **Survey start date**, today's date is applied by default. Before saving, make sure that the start date of the hospital PPS is earlier than any ward survey date. If you need to change the survey start date, you will have to contact your national or regional PPS co-ordinator.
Survey end date	The date the last data were collected in the last ward. You can enter the **Survey end date** at a later time.
Hospital size *	Total number of beds in the hospital. If, for reasons of confidentiality, the exact number of hospital beds cannot be given, please enter the number of beds rounded up to the nearest 50.
Number of acute care beds	Number of acute care beds in the hospital (according to national definition).
Number of ICU beds	Number of intensive care unit beds in the hospital. No ICU=0.
Exclusion of wards for PPS?	Were any wards excluded for the PPS in your hospital? Yes/No.
Specify excluded wards	Specify which wards where excluded, if any. Free text; please use specialty codes if possible.
Total number of beds in included wards *	Sum of the number of beds in wards that were included in the PPS.
Total number of patients included in PPS *	Sum of the number of patients included in the PPS.
Hospital type	Hospital type – PRIM: primary, SEC: secondary, TERT: tertiary, SPEC: specialised, missing=UNK. See *Hospital types*.
Specialisation of hospital	Free text. Indicate the hospital specialty for a specialised hospital (e.g. paediatric, infectious diseases, etc.); please use specialty codes if possible.
Hospital ownership	Hospital ownership as defined by WHO/Europe [7], Eurostat [8] and OECD [9]: PUB: Public, PRIVNFP: Private, not-for-profit, PRIVFP: Private, for-profit, OTHUNK: Other or unknown. See protocol for definitions.
Incl. wards / Total *	Included wards only OR total for hospital. Select INC or TOT in the drop-down lists.
Number of discharges/ admissions *	Number of hospital discharges in a given year (data from previous year if available, specify year in second column), use number of admissions if discharges are not available. Provide the number for the included wards only (if not available, provide number for entire hospital; specify 'included wards only OR total for hospital' in last column).

Variable	Description
Number of patient-days *	Number of hospital patient-days in a given year (data from previous year if available, specify year in second column). Provide data for the same year and wards (included wards only OR total for hospital) as for the number of discharges/admissions.
Alcoholic hand rub consumption *	Total number of litres of alcoholic hand rub used in a given year (data from previous year if available, specify year in second column); provide the number for the included wards only (if available, otherwise provide number for the entire hospital; specify 'included wards only OR total for hospital' in last column).
Number of observed hand hygiene opportunities	Number of observed hand hygiene opportunities performed in the previous year if available (or the most recently available year). Report the total number of observed opportunities for hand hygiene, not only the compliant observations.
Number of blood cultures per year	Number of inpatient blood culture sets tested by the microbiological laboratory for the current hospital in a period of one year. Provide data for previous year or the most recently available data (specify year data in a separate variable). If the number of blood culture sets is not directly available, estimate by the [total number of blood culture bottles processed] divided by the [total number of bottles per blood culture request]. Count all blood culture tests per patient, not the number of patients for whom >=1 test was performed. Count the number of blood culture sets actually processed by the laboratory, not the number sent to the laboratory for analysis.
Number of stool tests for CDI per year	Number of inpatient stool tests performed for *Clostridium difficile* infections (CDI) per year. Provide data for previous year or the most recently available data (specify year data in a separate variable). Count all stool specimens per patient, not the number of patients for whom >=1 test was performed. Count the number of stool specimens actually processed by the laboratory, not the number sent to the laboratory for analysis.
Number of FTE infection control nurses	Number of full-time equivalent (FTE) infection control nurses in the hospital; infection control nurse=nurse with specialised training in infection control/hospital hygiene and usually responsible for infection control/hospital hygiene tasks such as training of hospital employees in infection control, elaboration and implementation of infection control procedures, management (implementation, follow-up, evaluation) of an infection control work plan and projects, audits and evaluation of performance, procedures for disinfection of medical devices etc. (see TRICE project report). Specify year of data collection (current year if available) and whether the number of FTE infection control nurses is provided for the entire hospital or only for the included wards.
Number of FTE infection control doctors	Number of full-time equivalent (FTE) infection control doctors (or pharmacists, hospital epidemiologists, etc.) in the hospital with specialised training in infection control/hospital hygiene and usually responsible for infection control/hospital hygiene tasks such as identification and investigation of outbreaks, analysis and feedback of infection control data, elaboration of an infection control work plan and projects, design and management of surveillance systems, elaboration of infection control procedures etc. (see TRICE project report). Please ensure that the reported number was collected for the same year and wards (included wards only OR total for hospital) as the number of FTE infection control nurses.
Number of FTE antimicrobial stewardship	Number of full-time equivalent (FTE) antimicrobial stewardship consultants in hospital. FTE antimicrobial stewardship = dedicated time of an ('external') consultant employed by the hospital and specifically paid for antimicrobial stewardship tasks, NOT the time spent by treating physicians on antimicrobial stewardship activities (e.g. post-prescription review) as part of their daily practice. Deduct FTE from FTE infection control doctor if same person: in case antimicrobial stewardship tasks are an integral part of the job description/daily activities of the infection control doctor (or equivalent), the estimated FTE (proportion of his/her time) spent on antimicrobial stewardship activities should be deduced from the FTE infection control doctors and be reported separately.
Number of airborne infection isolation rooms	Number of airborne infection isolation rooms in the hospital. An airborne infection isolation room is defined as a hospital room provided with negative pressure and an anteroom.
Number of COVID-19 cases in hospital last year	Number of COVID-19 cases in hospital (hospitalised community-onset cases and hospital-onset cases) last year (specify year in YearOfCovidData)
Number of COVID-19 hospital	Number of COVID-19 outbreaks or clusters (minimum of 2 confirmed healthcare-associated COVID-19 cases among patients and/or healthcare workers linked in time and space) in the current hospital last year.

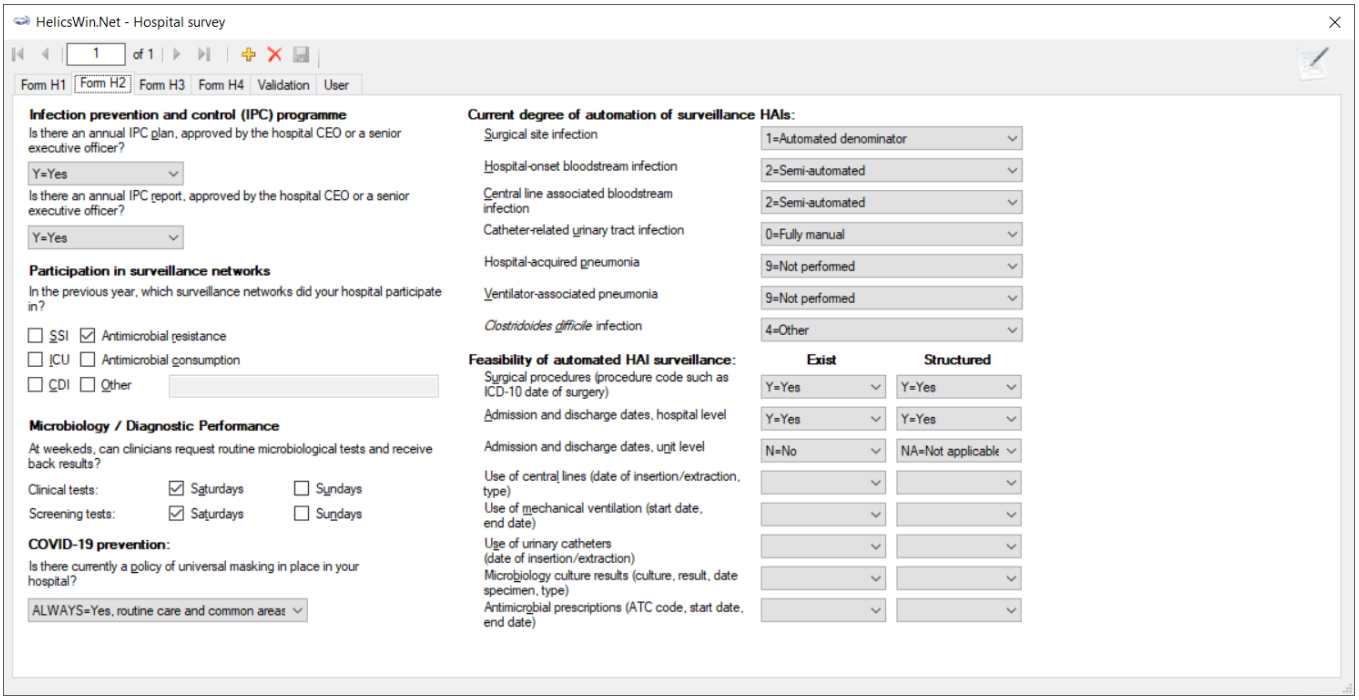
Variable	Description
outbreaks last year	
Year of last year's COVID-19 data	Year for which last year's number of cases and outbreaks of COVID-19 were reported.
Number of COVID-19 cases currently in hospital	Number of COVID-19 cases in hospital at the time of the PPS (first PPS day in current hospital)
Number of COVID-19 cases currently in intensive care	Number of COVID-19 cases in the ICU or HDU at the time of the PPS (first PPS day in current hospital)
Vaccination coverage HCW COVID-19	Current percentage of healthcare workers in hospital fully vaccinated against COVID-19
Vaccination coverage HCW Influenza	Percentage of healthcare workers in hospital vaccinated against influenza, specify year
Year of influenza vaccination	Year of influenza vaccination
Form H2 tab	
Annual IPC plan	Is there an annual infection prevention and control (IPC) plan and if so, was it approved by the hospital Chief Executive Officer (CEO, Managing Director) or by a senior executive officer? Yes/No/Unknown.
Annual IPC report	Is there an annual infection prevention and control (IPC) report and if so, was it approved by the hospital Chief Executive Officer (CEO, Managing Director) or by a senior executive officer? Yes/No/Unknown.
Participation in surveillance networks	Indicate (Yes/No) if your hospital participates in a national or regional surveillance network for each of following surveillance modules: surveillance of surgical site infections (SSI), surveillance of HAIs in intensive care (ICU), surveillance of C. difficile infections (CDI), surveillance of antimicrobial resistance according to the EARS-Net protocol (surveillance of antimicrobial resistance in invasive isolates of S. pneumonia, S. aureus, Enterococcus spp., E. coli, K. pneumoniae, P. aeruginosa and/or A. baumannii), surveillance of antimicrobial consumption in the hospital (surveillance at 5th ATC level in defined daily dose (DDD) per 1 000 patient-days) and other HAI or AMR surveillance modules (national/regional protocols for which a European/ECDC protocol does not exist). Local surveillance without transmission of data to a national or regional surveillance coordination centre for comparative analysis and feedback is not sufficient.
Microbiology/ diagnostic performance	Indicate whether clinicians can request routine microbiological tests and receive back results during weekends. Report yes/no/unknown separately for Saturdays and Sundays for clinical tests and screening tests respectively.
COVID-19 Prevention	Is there currently a policy of universal masking in your hospital
Current degree of automation of surveillance HAIs	Current degree of automation of surveillance of surgical site infections Current degree of automation of surveillance of healthcare-associated bloodstream infections Current degree of automation of surveillance of central line-associated bloodstream infections Current degree of automation of surveillance of catheter-associated urinary tract infections Current degree of automation of surveillance of healthcare-associated pneumonia Current degree of automation of surveillance of ventilator-associated pneumonia Current degree of automation of surveillance of Clostridoides difficile infections
Feasibility of automated HAI surveillance	Data on surgical procedures (procedure code such as ICD-10, date of surgery) exist in a digital subsystem Data on admission and discharge dates exist in a digital subsystem at hospital level Data on admission and discharge dates exist in a digital subsystem at ward level Data on the use of central lines (date of insertion/extraction and CVC type) exist in a digital subsystem

Variable	Description
	Data on the use of mechanical ventilation (start and end dates) exist in a digital subsystem Data on the use of urinary catheters (date of insertion/extraction) exist in a digital subsystem Data on microbiology (culture results, date of sampling, specimen type) exist in a digital subsystem Data on antimicrobial prescriptions (ATC code, start date, end date) exist in a digital subsystem Data on surgical procedures (procedure code such as ICD-10, date of surgery) are structured and well-defined Data on admission and discharge dates at hospital level are structured and well-defined Data on admission and discharge dates at ward level are structured and well-defined Data on the use of central lines (date of insertion/extraction and CVC type) are structured and well-defined Data on the use of mechanical ventilation (start and end dates) are structured and well-defined Data on the use of urinary catheters (date of insertion/extraction) are structured and well-defined Data on microbiology results (culture results, date of sampling, specimen type) are structured and well-defined Data on antimicrobial prescriptions (ATC code, start date, end date) are structured and well-defined
Form H3 tab	
Full WHO IPCAF questionnaire provided	Full WHO IPCAF questionnaire provided (optional, on WHO website) - If no, please complete questions multimodal strategy. When the user answers `yes', a link appears which refers the user to the WHO page where the IPCAF questionnaire can be completed. When clicking the link, the country code and hospital code are transferred to the WHO website.
Do you use multimodal strategies	Do you use multimodal strategies to implement IPC interventions?
MM strategies include system change	Do your multimodal strategies include system change?
MM strategies include education and training	Do your multimodal strategies include education and training?
MM strategies include monitoring and feedback	Do your multimodal strategies include monitoring and feedback?
MM strategies include communication and reminders	Do your multimodal strategies include communication and reminders?
MM strategies include safety climate and culture change	Do your multimodal strategies include safety climate and culture change?
Multidisciplinary team used to implement MM strategies	Is a multidisciplinary team used to implement IPC multimodal strategies?
Link to quality improvement and patient safety	Do you regularly link to colleagues from quality improvement and patient safety to develop and promote IPC multimodal strategies?
MM strategies include bundles or checklists	Do these strategies include bundles or checklists?

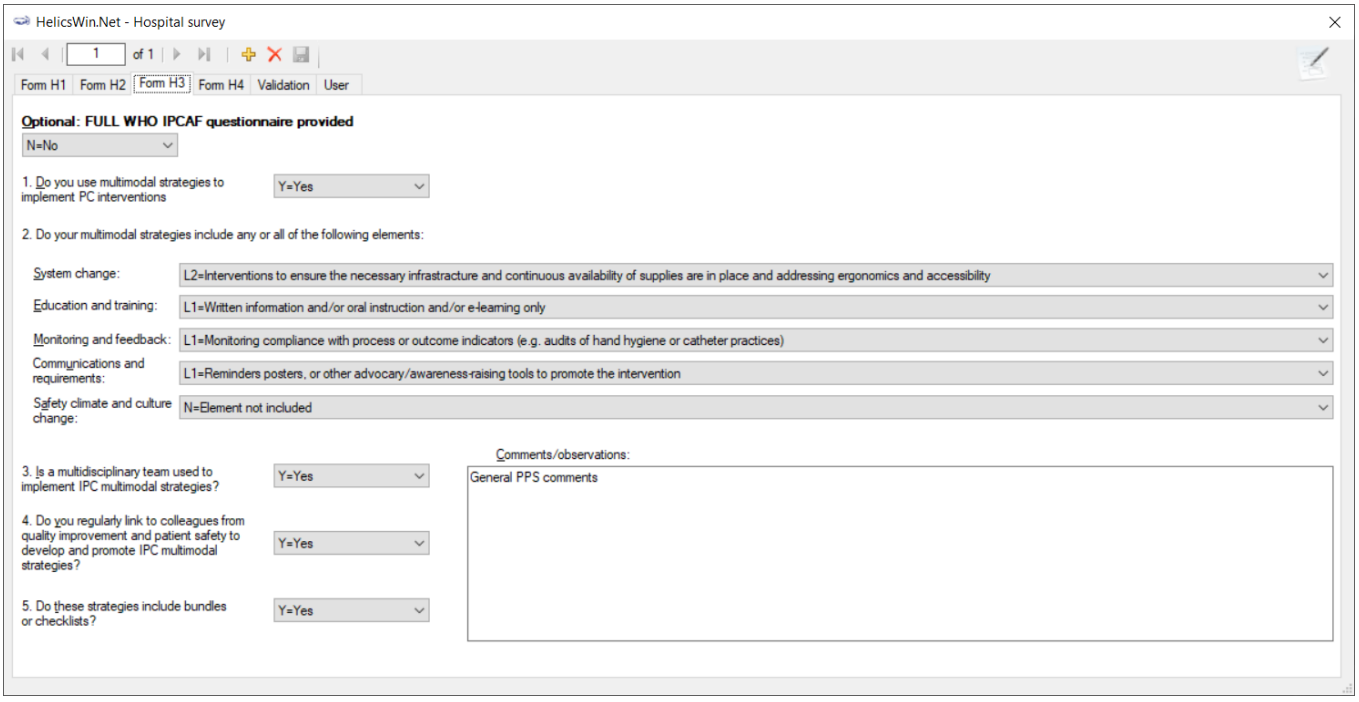
Variable	Description
Comments	Free text field for additional information.
Form H4 tab	
Number of beds with AHR dispensers at point of care	Number of beds in the hospital with alcohol hand rub (AHR) dispensers available at the point of care as recommended by the 2009 WHO Guidelines on Hand Hygiene in Health Care. AHR dispensers at the entrance of the patient room only are NOT considered as 'available at the point of care'. The 'point of care' is the place where three elements come together: the patient, the HCW, and care or treatment involving contact with the patient or his/her surroundings (within the patient zone). The concept embraces the need to perform hand hygiene at recommended moments exactly where care delivery takes place. This requires that a hand hygiene product (e.g. alcohol-based hand rub, if available) be easily accessible and as close as possible – within arm's reach of where patient care or treatment is taking place. Point-of-care products should be accessible without having to leave the patient zone. Dispensers available at the point of care that happen to be empty on the PPS day should be included.
Number of beds assessed for the presence of AHR dispensers	The denominator of the previous variable, i.e. the total number of beds for which the presence of alcohol hand rub dispensers at the point of care was checked. If all wards were assessed, then this number is in principle the same as the total number of hospital beds.
Total number of patient rooms	Total number of rooms in included wards or total for hospital. Data from current year if available, specify year in second column; provide the number for the included wards only (if available, otherwise provide number for the entire hospital; specify 'included wards only OR total for hospital' in last column).
Number of single patient rooms	Total number of single-bed rooms in included wards OR total for hospital. Please ensure that the number of single patient rooms was collected for the same year and wards (included wards only OR total for hospital) as the total number of patient rooms. Rooms with more than one bed that are designated for use as single occupancy and isolation rooms (e.g. for infection control purposes) should be included.
Number of beds occupied at 00:01 on the day of the PPS	Number of hospital beds occupied at midnight on the day of the PPS. Since the PPS usually takes several days for an entire hospital, this variable can be measured on a day in the middle of the PPS data collection period, but not during the weekends.
Number of beds assessed for occupancy at 00:01 on the day of PPS	Number of hospital beds that were checked for occupancy at midnight on the day of the PPS. Denominator of the previous variable. If occupancy was checked for all beds, this variable normally equals the total number of beds in the hospital.
Do healthcare workers carry AHR dispensers?	Percentage of healthcare workers in hospital that carry alcohol hand rub dispensers. In your hospital, do healthcare workers (HCW) carry AHR dispensers (e.g. in their pockets)? (If yes, please estimate percentage). Zero=0% Q0; >0-25% Q1; >25-50% Q2; >50-75% Q3; 75-100% Q4; Yes, percentage unknown YES; Unknown.
Is there a formal procedure to review antimicrobial within 72 hours?	Is there a formal procedure for a post-prescription review? I.e. to review the appropriateness of an antimicrobial within 72 hours (three calendar days) from the initial order in the hospital? A formal post-prescription review procedure should be documented and adopted by the hospital management and should be performed by a person or team other than the treating physician. The procedure should at least address the prescription of broad-spectrum or reserve antimicrobials. Choose one answer. YESALL = Yes, in all wards; YESSEL = Yes, in selected wards only (usually, but not necessarily, including ICU); YESICU = Yes, in ICU only; NO = No; UNK=Unknown.

If any mandatory or required data field is empty when you save, e.g. because you do not yet have the data, an error and/or warning message is shown and the field label is highlighted as a reminder - in red for a mandatory field (you cannot save) or blue for a required field. See *Understanding reported errors*.

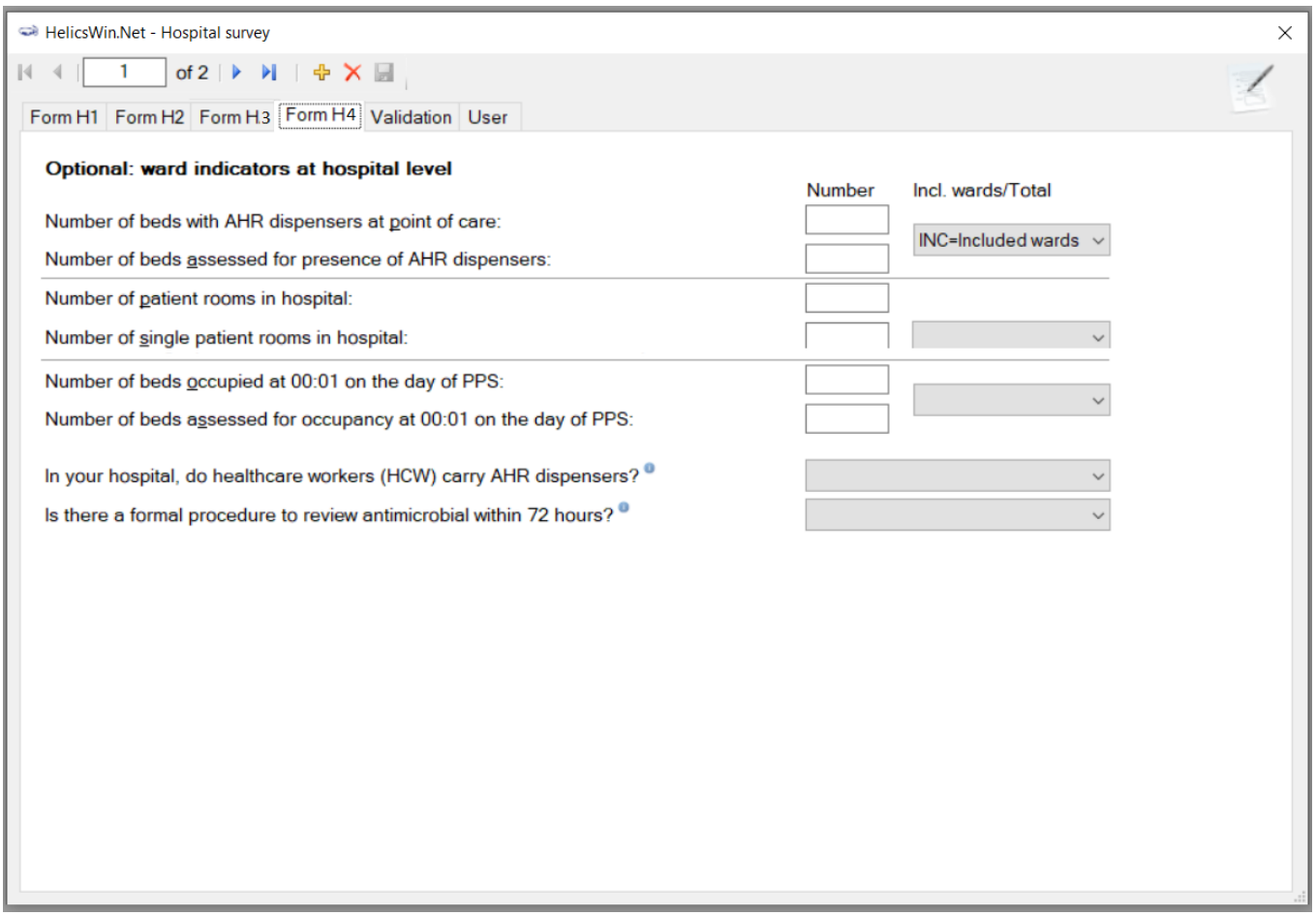
Hospital survey Form H2 tab



Hospital survey Form H3 tab

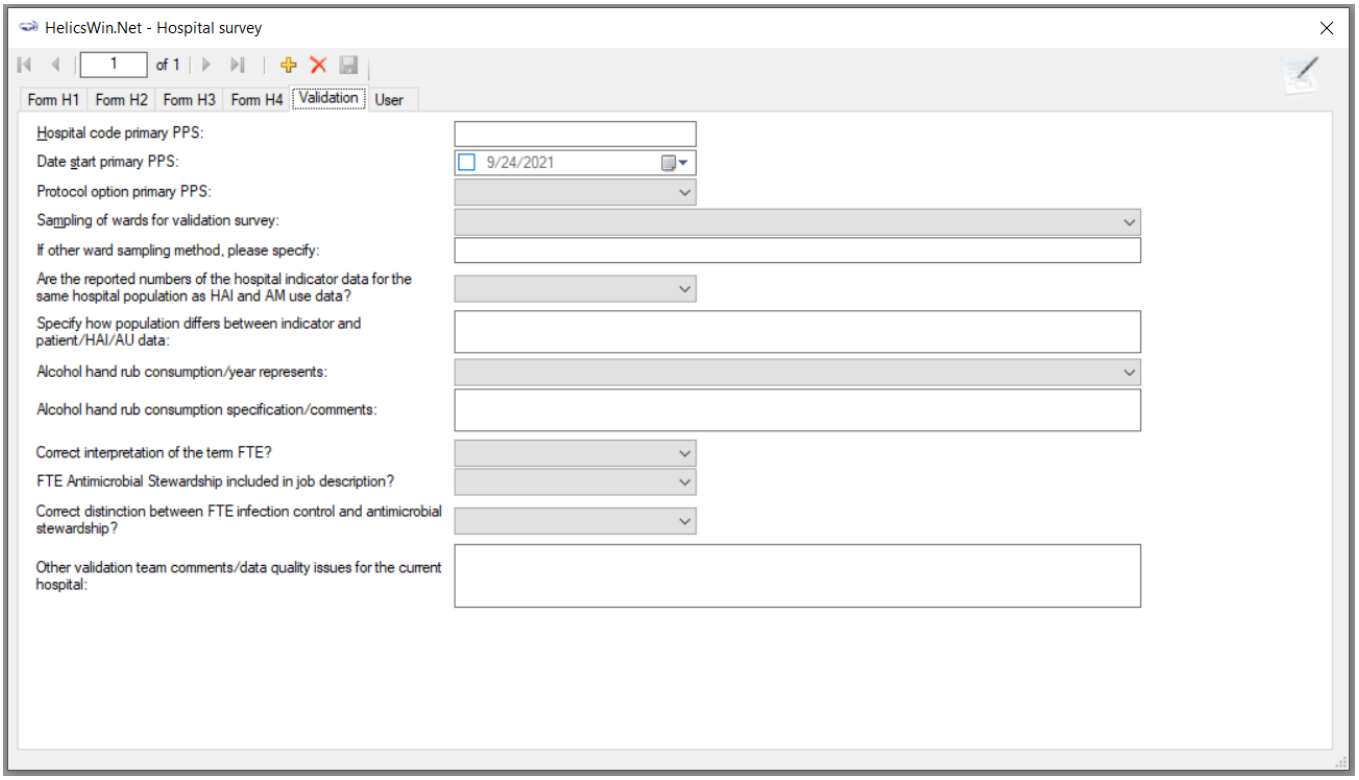


Hospital survey Form H4 tab


HelicsWin.Net - Hospital survey
1
of 2
Form H1
Form H2
Form H3
Form H4
Validation
User
Optional: ward indicators at hospital level
Number
Incl. wards/Total
Number of beds with AHR dispensers at point of care:
Number of beds assessed for presence of AHR dispensers:
INC=Included wards
Number of patient rooms in hospital:
Number of single patient rooms in hospital:
Number of beds occupied at 00:01 on the day of PPS:
Number of beds assessed for occupancy at 00:01 on the day of PPS:
In your hospital, do healthcare workers (HCW) carry AHR dispensers?
Is there a formal procedure to review antimicrobial within 72 hours?

Validation tab

Validation teams use the **Validation** tab to enter data if a validation survey is performed. For the PPS module, use of this tab is described in a separate document, the **PPS Validation Protocol**.



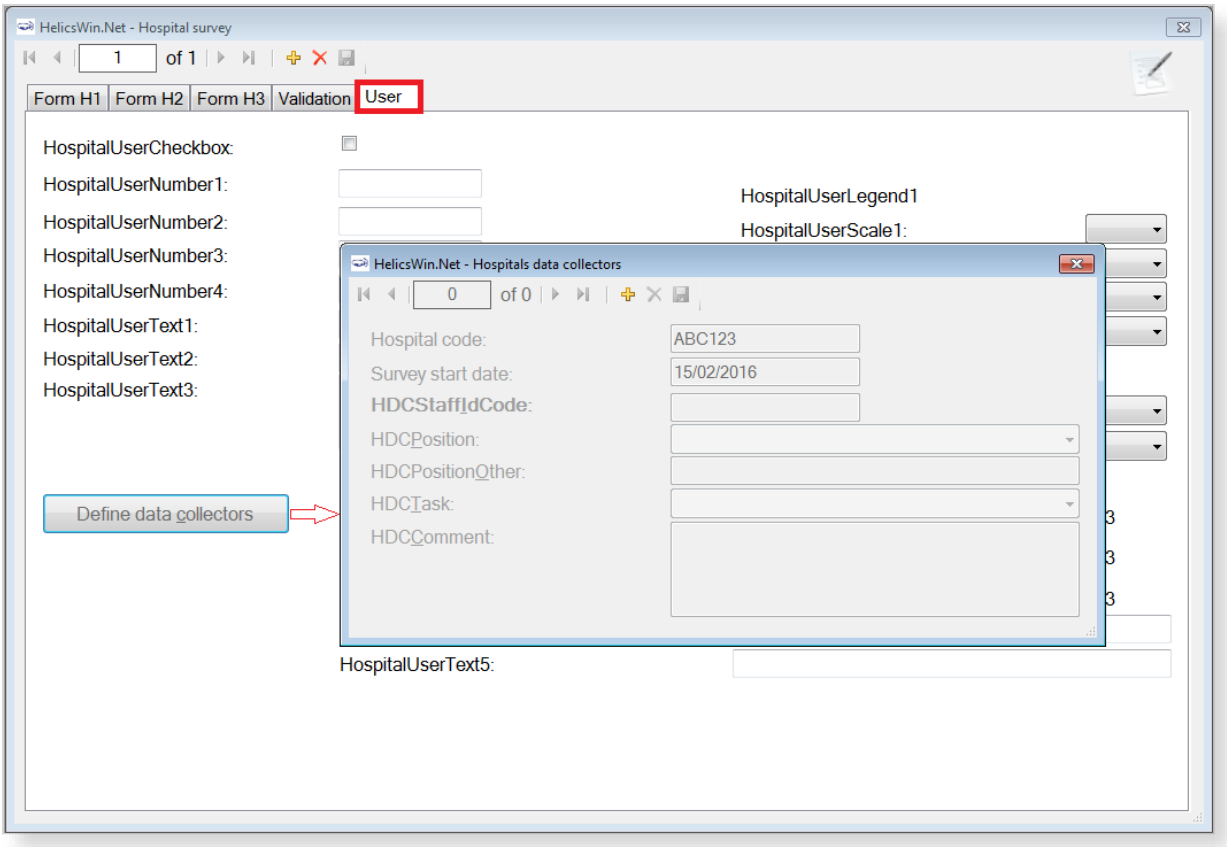
User tab

The **User** tab contains fields useful for users at national, regional or hospital level. They can be renamed and personalised to enable collection of information during the PPS that is outside of the PPS protocol. These modifications are made using the **Translation** functionality in the **Settings** form, see *Translating the text in user forms*.

Additionally, the **User** tab of the **Hospital surveys** form also enables you to record the details of all hospital data collectors (HDC): their ID Code, Position (function) and survey-related task(s). This is optional.

You can also later assign the ID Code for the data collectors to the wards (see the **User** tab in the **Ward PPS data** form).

Click **Define data collectors** to enter these data.



Entering ward PPS data

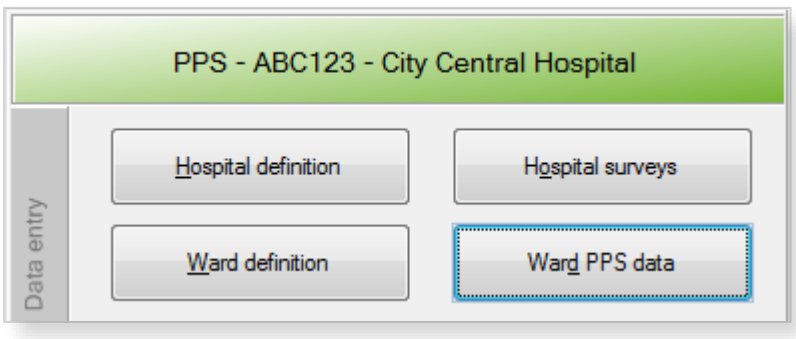
Follow the procedure in this section to create a new **PPS** survey for each defined ward, entering information from Form W. Before you can enter ward data, you must have *defined your surveys and wards*.

For each ward (unit) included in the PPS, you need to choose the ward and the date when the PPS was performed in that ward. In principle, a ward should be surveyed on a single day. However, you can enter more than one survey date for the same ward. The ward survey date and specialty are mandatory in both the **Light** and **Standard** protocols.

The ward PPS data are entered in the **Ward PPS data Form W and W (2)** tabs, the fields of which are described in the Table below.

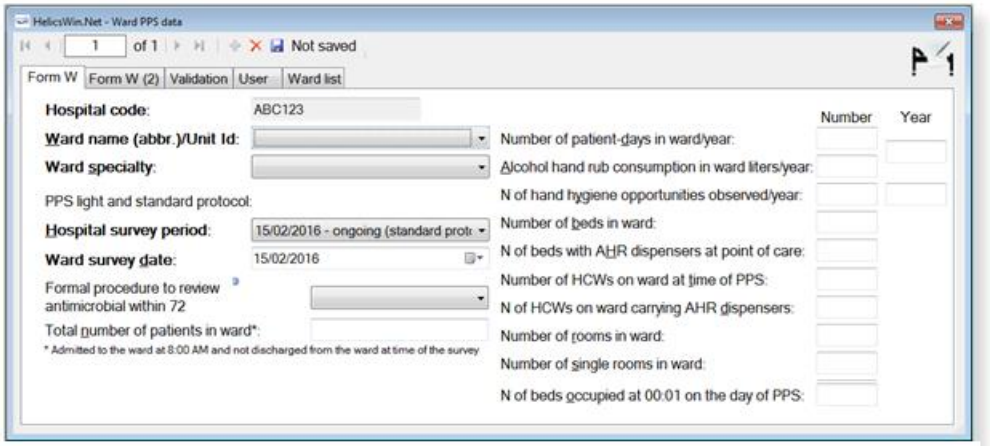
To specify the PPS date, specialty and denominator data:

1. Click **Ward PPS data** in the *main menu*.



   The **Ward PPS data** form opens showing the current hospital code.

2. Click the **Add item** icon ✚ or press **Ctrl+N** to open the form for editing.

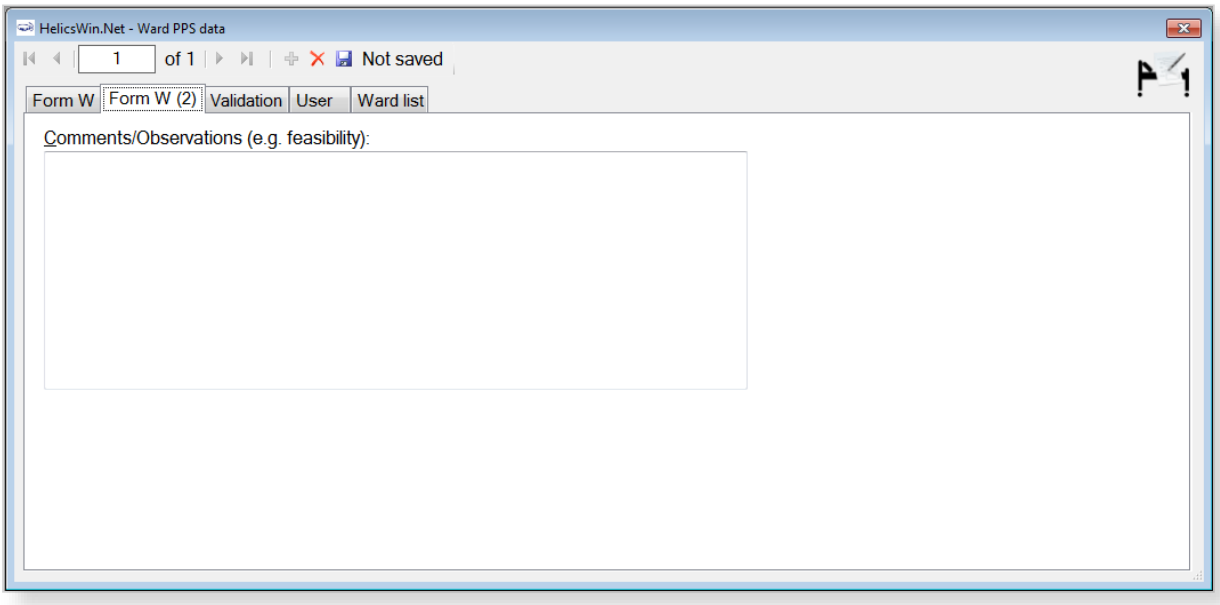


You cannot change the hospital code from this form.

3. For each ward (unit) included in the PPS, choose the **Ward specialty** from the drop-down list and enter the date the PPS was performed in that ward (i.e. the **Ward survey date**).

   A ward survey should be completed within a single day, but if that is not possible, you can enter the other date(s) for the same ward on this form.

4. Fill in the supplementary data for the ward, as relevant. In the **Form W (2)** you can add comments and observations for the ward, e.g. on the feasibility of the PPS.



5. Click the the **Save** icon or press **Ctrl+S**.

6. To start entering patient data in the Standard protocol, exit this form and click **Patient/Antimicrobial Use/HAI** data in the *main menu*.

The fields in the **Ward PPS Form W** tab are described in table below. Mandatory fields are indicated by a red asterisk *. Required fields are indicated by a black asterisk *.

Ward PPS data Form W and W (2) tab variables

Variable	Description
Hospital code *	Inserted automatically based on the hospital selected during *Hospital definition*.

Variable	Description
Ward name /unit ID *	Unique identifier for each unit (abbreviated ward name) within a hospital; should be used consistently on all forms (link with patient and HAI/AU data) and should remain unchanged in different PPS periods/years.
Ward specialty *	Main ward specialty (≥ 80% of patients require this specialty). If less than 80%, report 'mixed ward' (MIX). PED=Paediatric, NEO=Neonatal, ICU=Intensive Care, MED=Medicine, SUR=Surgery, GO=Gynaecology/Obstetrics, GER=Geriatrics, PSY=Psychiatry, RHB=Rehabilitation, LTC=Long-term care, OTH=Other, MIX=Mixed. Allows combination with patient specialty to refine specialties, e.g. paediatrics: ward specialty PED + patient specialty: PEDICU = paediatric ICU, NEOICU = neonatal ICU, SURCARD = paediatric cardiac surgery). A ward with healthy new-borns either must be allocated to GO (GOBAB) when it is located in obstetrics, or to PED (PEDBAB) if it is located in paediatrics. Note: how to code paediatric patients? Use the ward code PED for paediatric wards. If the ward specialty code is PED, then patients should be coded as per consultant/patient specialty MEDGEN, MEDSUR etc. The consultant/patient specialty PEDGEN should be used only for paediatric patients on adult wards.
Hospital survey period *	List of PPS surveys that the ward can participate in.
Ward survey date *	Date on which the data were collected in the ward. Data from a single ward should be collected on one day; date dd/mm/yyyy.
Formal procedure to review antimicrobial within 72 hours?	Is there a formal procedure for a post-prescription review? I.e. to review the appropriateness of an antimicrobial within 72 hours (three calendar days) from the initial order in the hospital? A formal post-prescription review procedure should be documented and adopted by the hospital management and should be performed by a person or team other than the treating physician. The procedure should at least address the prescription of broad-spectrum or reserve antimicrobials. Yes/No/Unknown.
Total number of patients in ward	Total number of patients admitted to the ward before or at 8 a.m. that were not discharged from the ward at the time of the survey. Mandatory for light protocol, optional for standard protocol.
Number of patient-days in ward/year	Number of patient-days in one year for current ward (data from previous year if available, specify year in second column).
Alcohol hand rub consumption in ward liters/year	Number of liters of alcohol hand rub delivered to the ward in one year.
Number of hand hygiene opportunities observed in ward/year	Number of hand hygiene opportunities observed in the current ward in one year. Provide data for previous year if available or the most recent data available (specify year in second column). Report the total number of observed opportunities for hand hygiene, not only the compliant observations.
Number of beds in ward	Total number of beds in ward on the PPS day. Include 'corridor beds' and neonatal beds.
Number of beds in ward with AHR dispensers at the point of care	Number of beds in the ward with alcohol hand rub (AHR) dispensers available at the point of care as recommended by the 2009 WHO Guidelines on Hand Hygiene in Health Care. AHR dispensers at the entrance of the patient room only are NOT considered as 'available at the point of care'. The 'point of care' is the place where three elements come together: the patient, the HCW, and care or treatment involving contact with the patient or his/her surroundings (within the patient zone). The concept embraces the need to perform hand hygiene at recommended moments exactly where care delivery takes place. This requires that a hand hygiene product (e.g. alcohol-based hand rub, if available) be easily accessible and as close as possible – within arm's reach of where patient care or treatment is taking place. Point-of-care products should be accessible without having to leave the patient zone.
Number of HCWs on ward at time of PPS	Number of healthcare workers (HCWs) on ward at the time of PPS.
Number of HCWs on ward carrying AHR dispensers	Number of HCWs on ward carrying AHR dispensers (e.g. in their pocket).

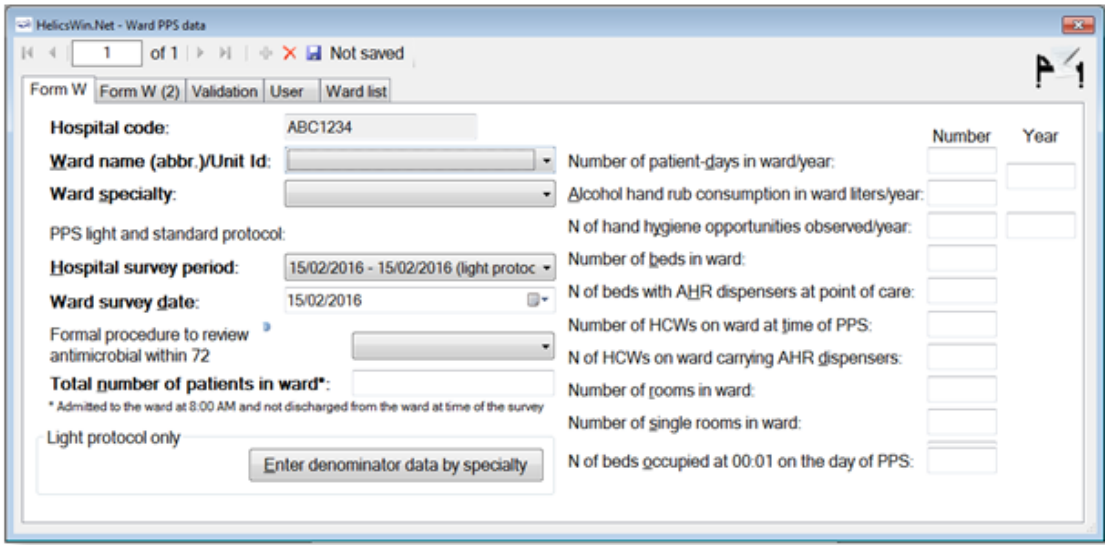
Variable	Description
Number of rooms in ward	Total number of rooms in the ward on the PPS day.
Number of single rooms in ward	Total number of single-bed rooms in the ward on the PPS day. Rooms with more than one bed that are designated for use as single occupancy and isolation rooms (e.g. for infection control purposes) should be included.
Number of beds occupied at 00:01 on the day of PPS	Number of ward beds occupied at midnight on the day of the PPS (can also be measured at midnight after the PPS took place).
Comments/observations	(**Form W (2)** tab) Free text field to report e.g. feasibility issues, data quality problems or specific epidemiological information for the current ward.

Light protocol

The following instructions apply to the Light protocol only. In the Light protocol, the form has an additional mandatory field, **Total number of patients in ward**, and a button to enter the denominator data by consultant/patient specialty. The sum of the consultant/patient specialty denominators should be equal to the field **Total number of patients in ward**. This is verified during the *data quality check*, not during data entry.

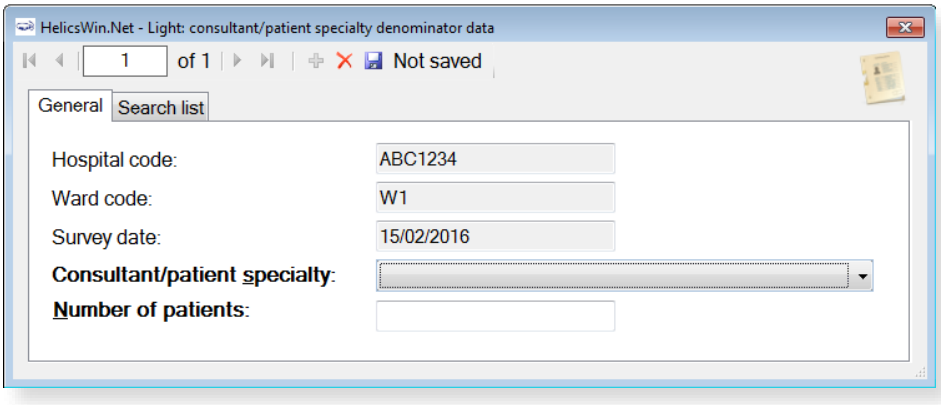
The ward PPS data are entered in the **Ward PPS data Form W** tab, the fields of which are described in the Table above. Mandatory fields are indicated by a red asterisk *. Required fields are indicated by a black asterisk *.

1. Enter the total number of included patients in ward, i.e. the denominator data in the **Total number of patients in ward** field.



2. Click **Enter denominator data by specialty** to enter denominator information separately for consultant(s)/patient speciality(s) within that same ward.

   The **Light: consultant/patient speciality denominator data form opens.**



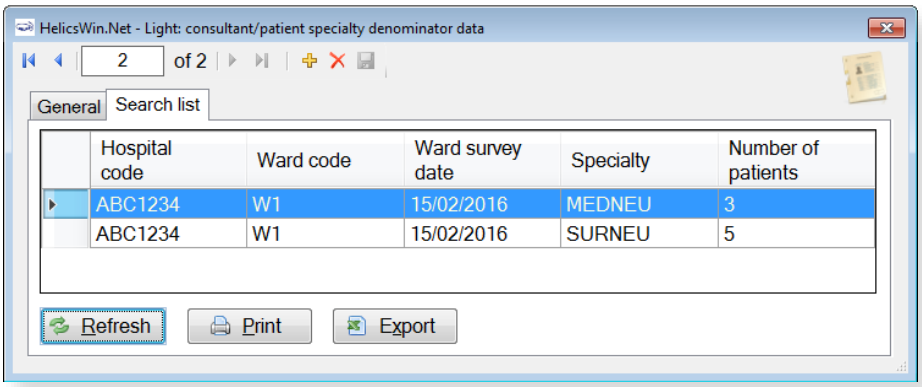
Warning: In the Light protocol, denominator data by ward AND by consultant/patient specialty are mandatory. If the detailed denominator data by consultant/patient specialty are not known, enter at least one record with the total number of patients (using the unit specialty instead). Also make sure that the list of consultant/patient specialties entered in this form includes all the consultant/patient specialties that are used in the patient/AM/HAI form afterwards (this is verified by the *data quality check* before data export as well).

3. Click the **Add item** icon ✚ or press **Ctrl+N** to open the form for editing.

4. For each ward (unit) included in the PPS, choose the **Consultant/patient specialty** from the drop-down list and enter the **Number of patients** of the selected specialty in that ward.

   Repeat for each different specialty within that ward.

5. Finally, you can see the total number of patients entered for that ward in the **Search list** tab. Click **Refresh** to ensure that all recent data is included in this list. Remember that the sum of the consultant/patient specialty denominators should be equal to the field **Total number of patients in ward**.



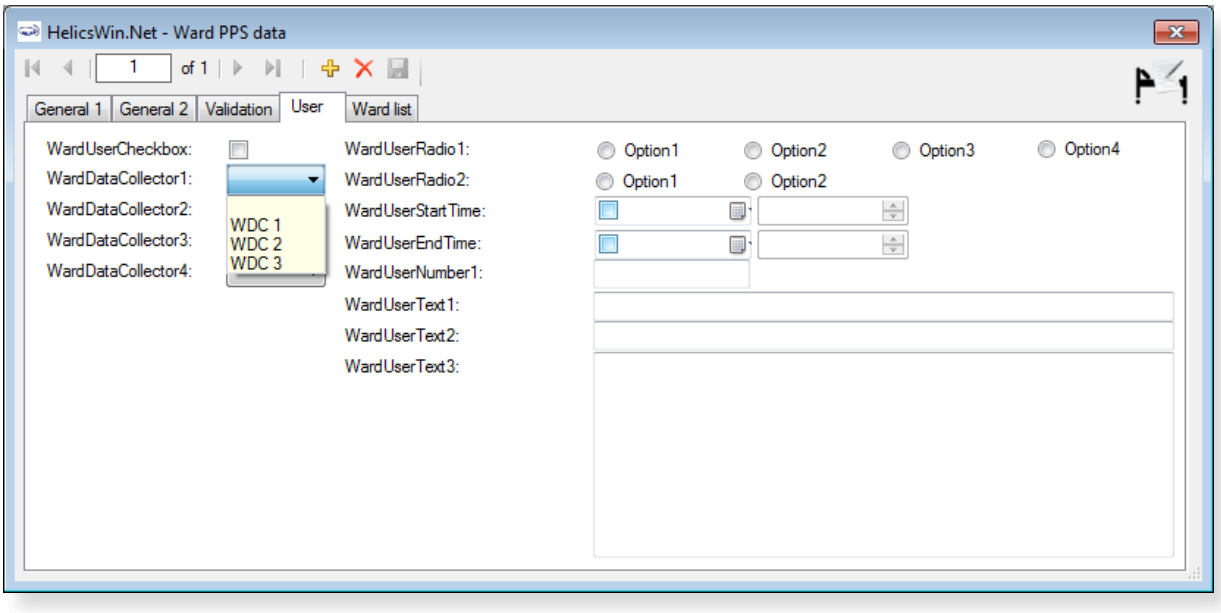
User tab

The **User** tab contains fields useful for users at national, regional or hospital level. They can be renamed and personalised to enable collection of information during the PPS that is outside of the PPS protocol. These modifications are made using the **Translation** functionality in the **Settings** form, see *Translating the text in user forms*.

Optionally, choose to associate one or more data collectors with the ward.

ID codes of Ward data collectors entered in the **Hospital surveys** form will be present in drop down lists on the **User** tab. Optionally, choose one of these from each dropdown list, to associate them with the ward chosen in previous steps.

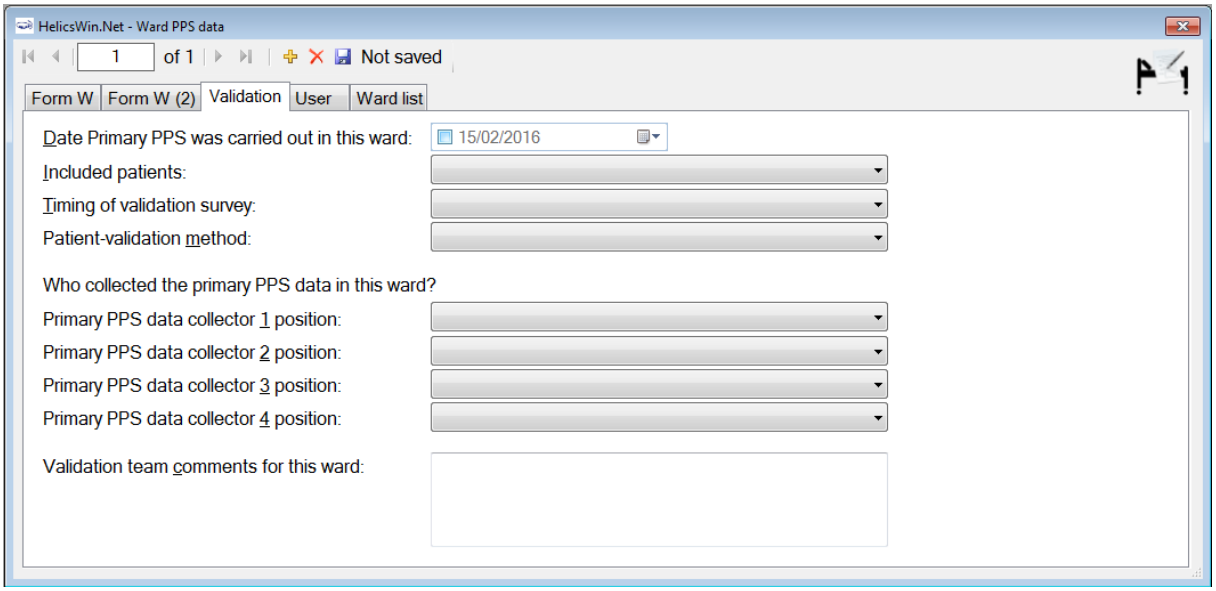
Ward PPS data - User tab



Validation tab

Validation teams use the **Validation** tab to enter data if a validation survey is performed. For the PPS module, use of this tab is described in a separate document, the **PPS Validation Protocol**.

Ward PPS data - Validation tab



Entering PPS patient, antimicrobial use and HAI data

The way in which you enter these data depends on the protocol being used:

- In the (unit-based) **Light protocol**, you only enter patient data for patients with any antimicrobial use and/or a healthcare-associated infection. Therefore, in the Light protocol, each patient record must include details of at least one antimicrobial use or HAI.
- In the (patient-based) **Standard protocol**, you enter all patient data for all patients, including those without HAI and/or antimicrobial use. Additional risk factors (not applicable to the Light protocol) appear once you select the ward.

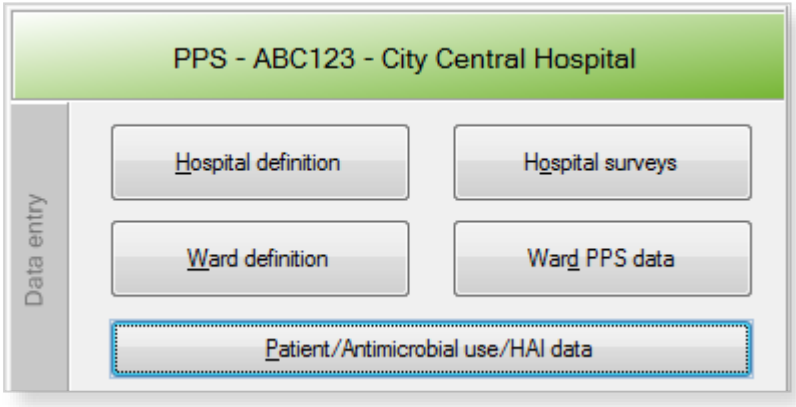
Note:

- Antimicrobial use data and HAI data can only be accessed from the **Patients** form.
- Only records which have HAI/AU specific data entered will be included in prevalence results during final analysis, e.g. in reports generated by ECDC after upload to the TESSy database.
- The **Antimicrobial use** button is activated when the field **Patient receives antimicrobial(s):** is set to **Yes.**

- The **HAI** button is activated when the field **Patient has at least one HAI:** is set to **Yes.**

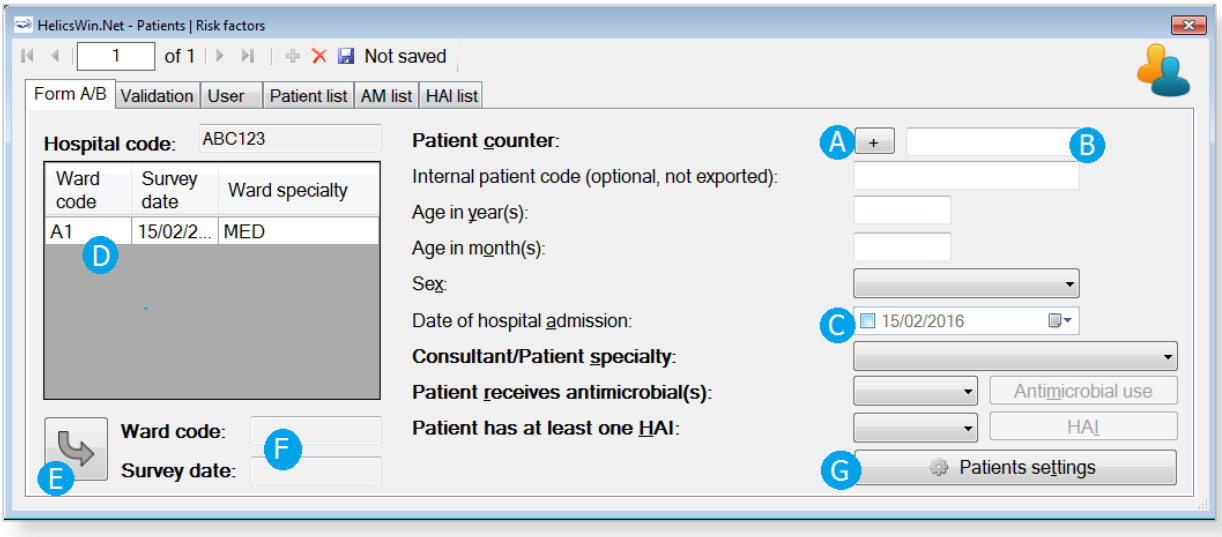
- No warning message is given if either of these fields are set to **Yes** and the corresponding AU/HAI data are not entered in the AU/HAI forms. These errors are only reported in the *data quality check*.

To enter patient data for antimicrobial use and HAI, click **Patient/Antimicrobial use/HAI data** in the ***main menu***.



Form A/B tab

When you select **Patient/Antimicrobial use/HAI data** in the *main menu*, the **Patients | Risk factors** form opens at the **Form A/B** tab.



1. Click the **Add item** icon to activate the form. Click **(A)** to increment the counter for the next patient number, or **(B),** enter the number manually.

   The patient counter defines a unique record within the hospital (not within the ward). The patient counter is an anonymous patient identifier (that is, it is not the true patient number), and it can contain only numbers; other characters are not allowed.

2. Optionally, you can also enter a patient identifier in the **Internal patient code** field.

   This field is for local (hospital) use only. By default, data in this field is not exported as it may contain personal identifiers. However, HelicsWin.Net's export function allows you to choose to export it (see Exporting data from the database). To preserve patient confidentiality in compliance with Data Protection principles, the internal patient code data should not be included in the export file sent to the regional, national or EU level.

3. Select the check box **(C)** to confirm the proposed date or select a date in the calendar pop-up.

   The date of hospital admission defaults to the ward survey date once the ward is selected. If this is not the correct date, select the actual admission date from the calendar.

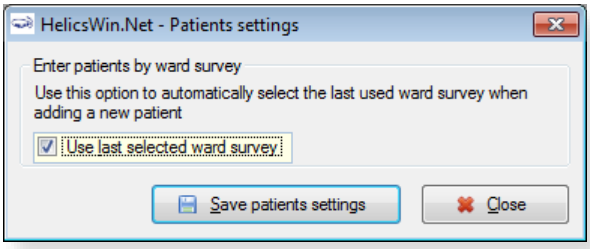
4. Select the ward code (ID) from the **Ward list (D)**, and then click the transfer button **(E)** to update the **Ward code** and **Survey date** fields **(F)**.

   Only wards for which the survey date and ward specialty were previously entered appear in the **Ward list**.

5. Optionally, to save time when entering subsequent patients, click on **Patient settings (G).**

   The Patients settings box opens.

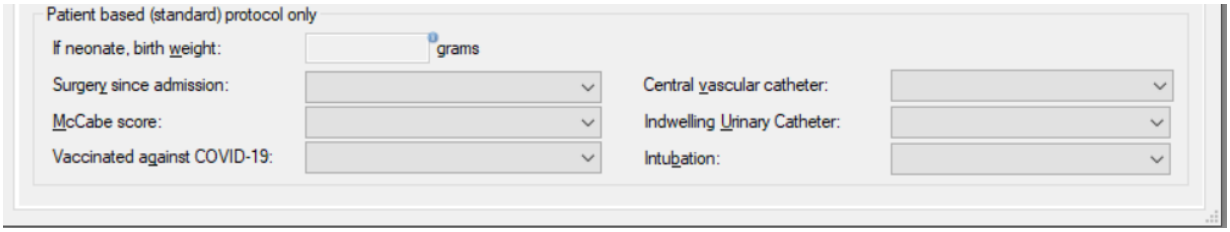
   Select **Use last selected ward survey**, and click **Save patient settings** to ensure that the chosen ward **(D)** is automatically entered in the **Ward code** and **Survey date** fields both when the transfer button **(E)** is clicked, and when subsequent patient records are added.



6. Complete the remaining fields as necessary.

   Note that bold field labels denote mandatory fields.

7. If you are using the Standard protocol, complete the additional risk factors that are displayed when the ward is selected (when the transfer button **(E)** is clicked).



8. Click the **Save** icon or press **Ctrl+S**.

Descriptions of the variables in the **Form A/B** tab are given in table below. Mandatory fields are indicated by a red asterisk *. Required fields by a black asterisk *.

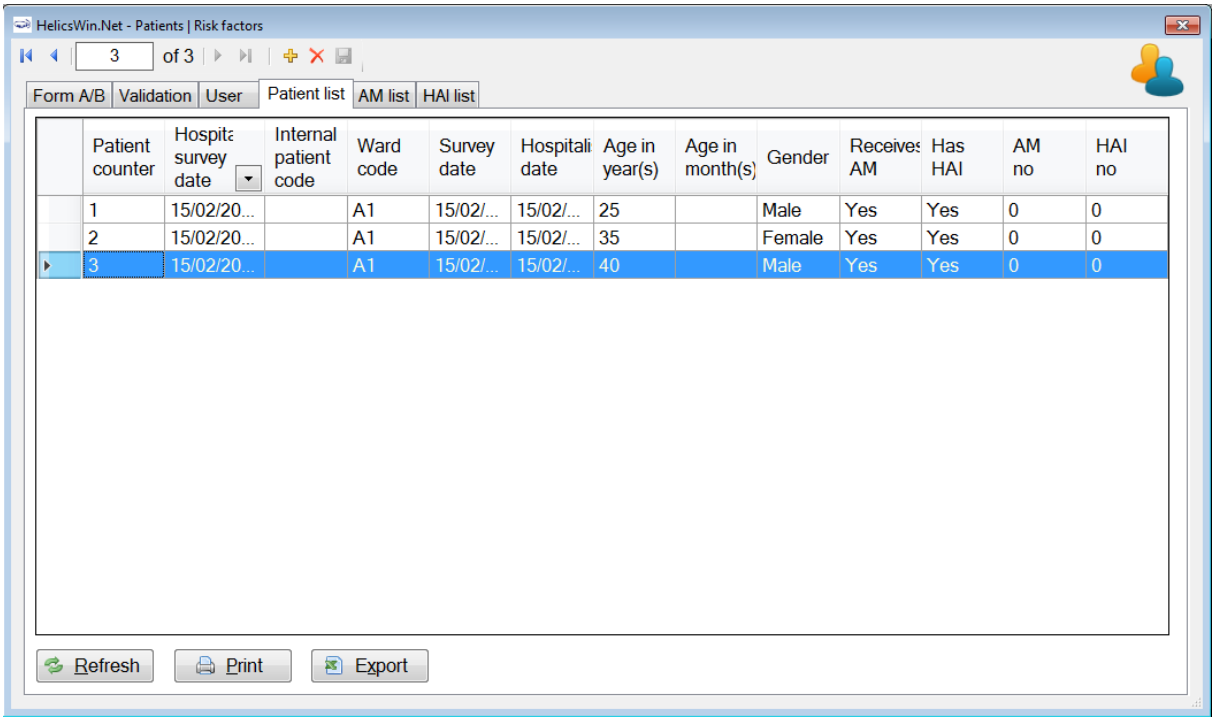
Patients risk factors Form A/B tab

Variable	Description
Hospital code	Inserted automatically based on the hospital selected during *Hospital definition*.
Ward code	From ward PPS data.
Survey date	From ward PPS data. Date on which data were collected in this ward. Data from a single ward should be collected on one day (dd/mm/yyyy).
Ward specialty	From ward PPS data.
Patient counter *	A system allocated sequential patient number for anonymised identification. Click + to apply a number to the patient.
Internal patient code	For hospital internal use only. Optional. Must be removed from any data submitted to ECDC/TESSy.
Age in years	Patient's age in years. Enter respectively 0 or 1 if the patient is less than two years old.
Age in months	Patient's age in months. Mandatory if **Age in years** is less than 2 (note that you must *also* enter the baby's **Age in years**).
Sex	Select from the listed options.
Date of hospital admission	Date patient was admitted to the hospital for the current hospitalisation (dd/mm/yyyy).
Consultant/ patient speciality *	Specialty of physician in charge of the patient or specialty of main disease of the patient. If the consultant specialty differs from the patient specialty, give priority to the patient specialty. For paediatric patients on a PED ward, use the subspecialty (MEDGEN, MEDSUR etc.) (see ward specialty). LTC is in principle a ward specialty and should only exceptionally be used as a patient/consultant specialty.
Patient receives antimicrobial(s) *	Patient receives at least one systemic antimicrobial agent on the date of the survey (given or planned treatment, including intermittent treatments, e.g. alternate day; or medical prophylaxis); for surgical antimicrobial prophylaxis, check whether any surgical prophylaxis was given in the 24 hours prior to 8 a.m. on the day of the survey; yes/no/unknown. If yes, collect *antimicrobial use data*.
Patient has at least one HAI *	Patient has an active healthcare-associated infection on survey date; yes/no/unknown. If yes, collect *HAI data*.
If neonate, birth weight	Birth weight in grams for neonates (patients who are ≤ 30 days of age); the birthweight is the weight of the infant at the time of birth and should not be changed as the infant gains or loses weight.
Surgery since admission	Patient has undergone surgery during current hospitalisation. Surgery is defined as a procedure where an incision is made (not just a needle puncture), with breach of mucosa and/or skin – not necessarily in the operating theatre. Answer categories: No surgery; yes, minimally invasive/non-NHSN surgery (examples see annex); yes, NHSN surgery –

Variable	Description
	optionally specify NHSN surgery code (ICD9-CM code of the intervention is listed for the surveillance of surgical site infections in the NHSN system, see codebook); unknown.
McCabe score	Classification of the severity of underlying medical conditions. Disregard the influence of acute infections, e.g. if the patient has an active HAI, estimate the score the patient had before the infection. Some examples of diseases and their different McCabe score categories are shown in the protocol. These examples, in particular those of the second (ultimately fatal) category, are not meant to be exhaustive but rather to serve as a guidance tool for the current protocol. Answer categories: Non-fatal disease (expected survival at least five years); ultimately fatal disease (between one and five years); rapidly fatal disease (expected death within one year); unknown.
Central vascular catheter	Patient has central vascular catheter in place on survey date; yes/no/unknown. A central vascular catheter is defined by the CDC as an intravascular catheter that terminates at or close to the heart or in one of the great vessels which is used for infusion, withdrawal of blood, or hemodynamic monitoring. The following are considered great vessels for the purpose of reporting central-line BSI and counting central-line days in the NHSN system: Aorta, pulmonary artery, superior vena cava, inferior vena cava, brachiocephalic veins, internal jugular veins, subclavian veins, external iliac veins, common iliac veins, common femoral veins, and in neonates, the umbilical artery/vein.
Indwelling urinary catheter	Patient has indwelling urinary catheter in place at the date of the survey; yes/no/unknown.
Intubation	Patient is under intubation with or without mechanical ventilation (endotracheal tube or tracheostomy) on survey date; yes/no/unknown.

Patient list, AM list and HAI list tabs

You can view, export and print listed information entered on all patients, all antimicrobial use, and all healthcare-associated infections within the tabs **Patient list**, **AM list** and **HAI list**.

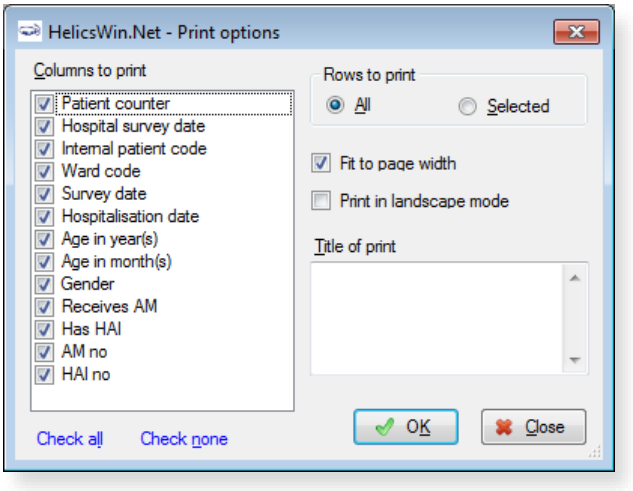


1. Click **Refresh** to show the latest added records.
2. Click any column header in the first row change the sort order of the list.

3. Click **Print** to print the list.

   The **Print options** form opens.

4. Select the fields and rows to be printed.

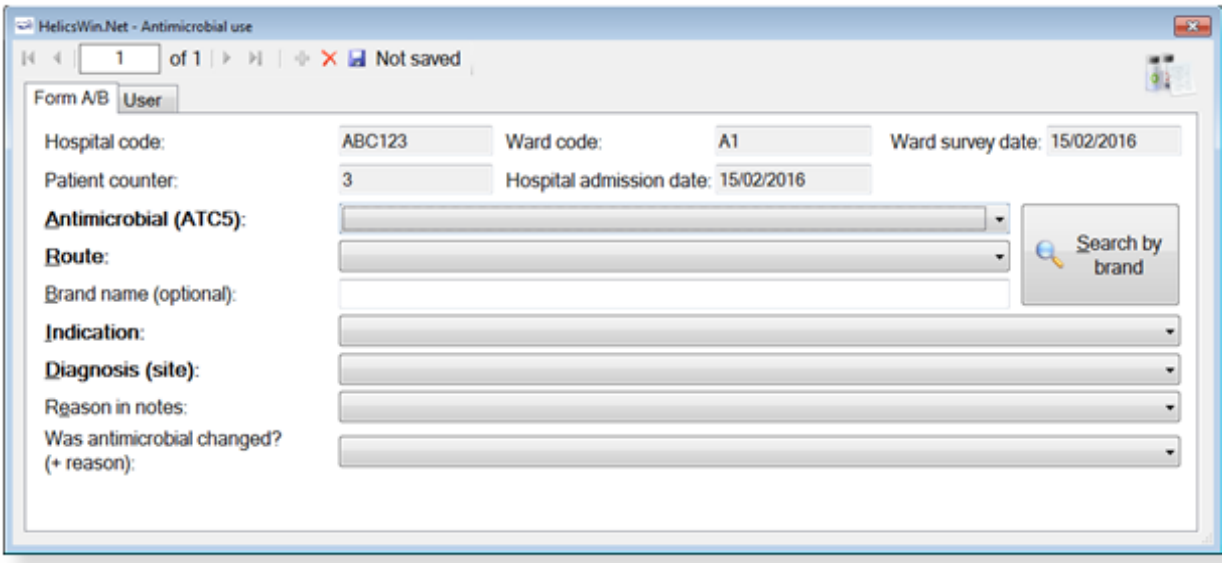


5. To add data for the next patient, click the **Add item** icon .

Antimicrobial use data

Antimicrobial use data are entered through the **Antimicrobial use Form A/B** tab. This form is opened by clicking the **Antimicrobial use** button in the **Patients | Risk factors Form A/B** tab.

The Antimicrobial use Form A/B tab



A unique antimicrobial record is defined by the fields with a bold label in the **Antimicrobial use** form. These fields create a unique combination of:

- **ATC5 code + route + indication + diagnosis site** (for treatment only – otherwise code NA=not applicable).

This means that it is possible to enter the same antimicrobial agent for more than one indication, for the treatment of more than one infection site, or for more than one route, in the same patient. De-duplication of the data will be done at the analysis level as necessary.

No warning message is given if the corresponding AU data are not entered in the AU form. These errors are only reported in the *data quality check*.

Typically you add patient data and antimicrobial consumption data, when you enter the survey data.

If data is incomplete, a Warning/Error message will open, listing required data items. Variables used in the **Antimicrobial use** form are described in the Table. Further details are provided in the HAI-Net PPS protocol (see *Related documents*).

To specify antimicrobial use data for a patient:

1. Click **Patient/Antimicrobial use/HAI data** in the *main menu*.

   The **Patients | Risk factors** form opens displaying the **Form A/B** tab.

2. Scroll through the list of patients to locate the patient you are interested in and confirm that the patient details match the patient whose data you want to update.

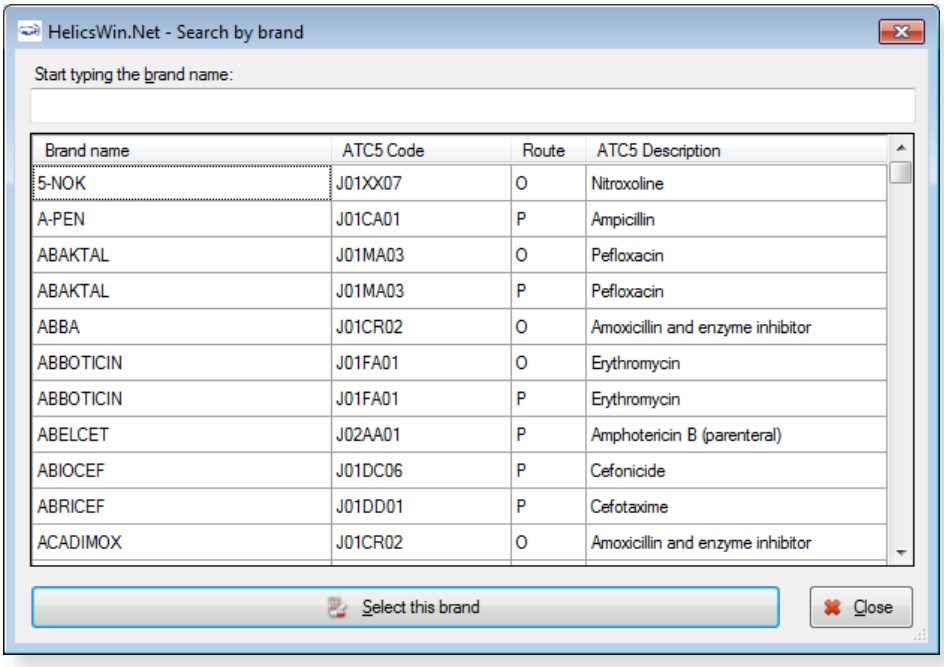
3. Select **Yes** for the **Patient receives antimicrobial(s)** field to activate the **Antimicrobial Use** button.

4. Click **Antimicrobial use**.

   The **Antimicrobial use Form A/B** tab opens.

5. Click **Search by brand**.

   The **Search by brand** form opens.



6. Enter the brand name in the field or click the required brand in the list.

7. Click **Select this brand**.

   You return to the **Antimicrobial use** form, where the ATC5 code and route have been inserted.

8. Optionally, click the ***User** tab* to view or edit the antimicrobial use user variables.

9. Click the **Save** icon or press **Ctrl+S**.

Descriptions of the variables in the **Antimicrobial use General** tab are given in table below. Mandatory fields are indicated by a red asterisk *. Required fields are indicated by a black asterisk *.

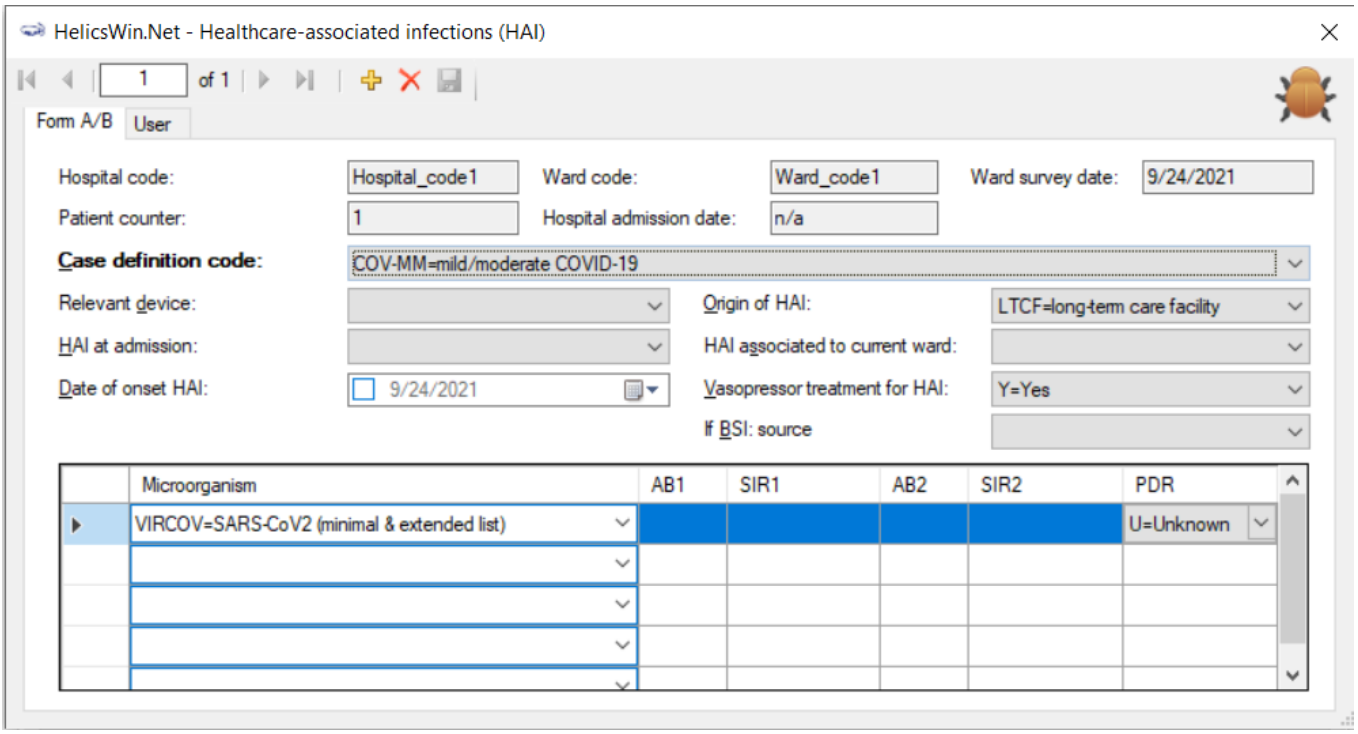
Antimicrobial use Form A/B tab variables

Variable	Description
Header section	From ward PPS data and PPS patient risk data.
ANTIMICROBIAL (ATC5) *	**Antimicrobial generic or brand name.** Allowed are, for example, amoxicillin, but also national brand names; include ATC codes (ATC2: J01 antibacterials, J02 antifungals; ATC4: A07AA, P01AB, D01BA; ATC5: J04AB02). See codebook for included antimicrobial agents.
Route *	Route of administration of the antimicrobial agent; **P**=parenteral; **O**=oral; **R**=rectal; **I**=inhalation.
Brand name	Retrieved from stored brand names.
Indication *	Patient receives systemic antimicrobials for: • Treatment intention: **CI:** community-acquired infection; **LI:** infection acquired in long-term care facility (e.g. nursing home) or chronic-care hospital; **HI:** acute-hospital-acquired infection. • Surgical prophylaxis: **SP1:** single dose; **SP2:** one day; **SP3:** > 1 day: check if given in the 24 hours prior to 8 a.m. on the day of the survey – if yes, check if given on the day before yesterday or on the day of the survey in order to determine duration. • **MP.** Medical prophylaxis. • **O.** Other indication (e.g. erythromycin use as a prokinetic agent). • **UI.** Unknown indication/reason (verified during PPS). • **UNK.** Unknown/missing, information on indication was not verified during PPS. If treatment intention for infection, fill in site of infection (diagnosis).
Diagnosis (site) *	Diagnosis group by anatomical site. Should only be recorded if there is an intention to treat an infection; not recorded for prophylaxis or other indications (use code NA=not applicable). See codebook for code list.
Reason in notes *	The reason for antimicrobial use was documented in the patient chart/notes. **Yes/No/Unknown**.
Was antimicrobial changed? (+reason)	Was the antimicrobial (or the route of administration) changed for this indication, and if so, what was the reason? If the antimicrobial was changed more than once for the current indication, report the reason of the last change. • **N**=no change, antimicrobial was not changed. • **E**=Escalation: antimicrobial was escalated on microbiological and/or clinical grounds, i.e. the isolated microorganism was not susceptible to the previous antimicrobial and/or lack of clinical effect of previous antimicrobial; includes switch from oral to parenteral for the same antimicrobial. • **D**=De-escalation: antimicrobial was de-escalated on microbiological and/or clinical grounds, i.e. the isolated microorganism was susceptible to more narrow-spectrum or first-line antimicrobials than the previous antimicrobial and/or the clinical situation of the patient allows changing to more narrow-spectrum or first-line antimicrobial. • **S**=switch IV to oral; route of administration of same antimicrobial was changed from parenteral to oral. • **A**=adverse effects; antimicrobial was changed because of observed or expected side or adverse effects of the antimicrobial. • **OU**=change for other or unknown reason: the antimicrobial for that indication was changed for another reason or the antimicrobial was changed but the reason why could not be determined by the surveyor. • **U**=unknown: no information on whether the antimicrobial was changed or not.

HAI data

HAI data are entered through the **Healthcare-associated infections (HAI)** form. This form is opened by clicking the **HAI** button in the **Patients | Risk factors General** tab.

Figure 1: The Healthcare-associated infections (HAI) form



In the **HAI** form, a unique record is defined by the **Case definition code**. The same HAI case definition code cannot be reported twice in the same patient record, even with a different date of onset, because this is not possible according to the ECDC-PPS protocol. In fact, even the same infection site should not be allowed, but currently the programme looks only at the case definition codes. For example:

- A PN1 and a PN4 should not be reported in the same patient record although both definitions were met.
- Related codes for the same site should not be reported: e.g.,
  - A PN1-5 should not be reported together with a NEO-PNEU (the latter has priority in neonates);
  - A BSI should not be reported together with a NEO-CNSB or NEO-LCBI, and so on.

If data is incomplete, a Warning/Error message will open, listing required data items. Variables in the HAI form are described in the Table. Further details are provided in the HAI-Net PPS protocol (see *Related documents*).

To specify healthcare-associated infection (HAI) data for a patient:

1. Click **Patient/Antimicrobial use/HAI data** in the *main menu*.

   The **Patients | Risk factors** form opens displaying the **General** tab.

2. Scroll through the list of patients to locate the patient you are interested in and confirm that the patient details match the patient whose data you want to update.

3. Select **Yes** for the **Patient has at least one HAI** field to activate the **HAI** button.

4. Click **HAI**.

   The **Healthcare-associated infections (HAI)** form (Figure 1) opens.

Note

- The date of onset of the HAI should be specified only if the HAI was not present at admission, that is, date of onset ≥ date of hospital admission
- The resistance markers (phenotypes) do not have labels depending on the micro-organism.

5. Optionally, click the ***User** tab* to view or edit the HAI user variables.

6. Click the **Save** icon or press **Ctrl+S**.

Descriptions of the variables in the **HAI General** tab are given in table below. Mandatory fields are indicated by a red asterisk *. Required fields are indicated by a black asterisk *.

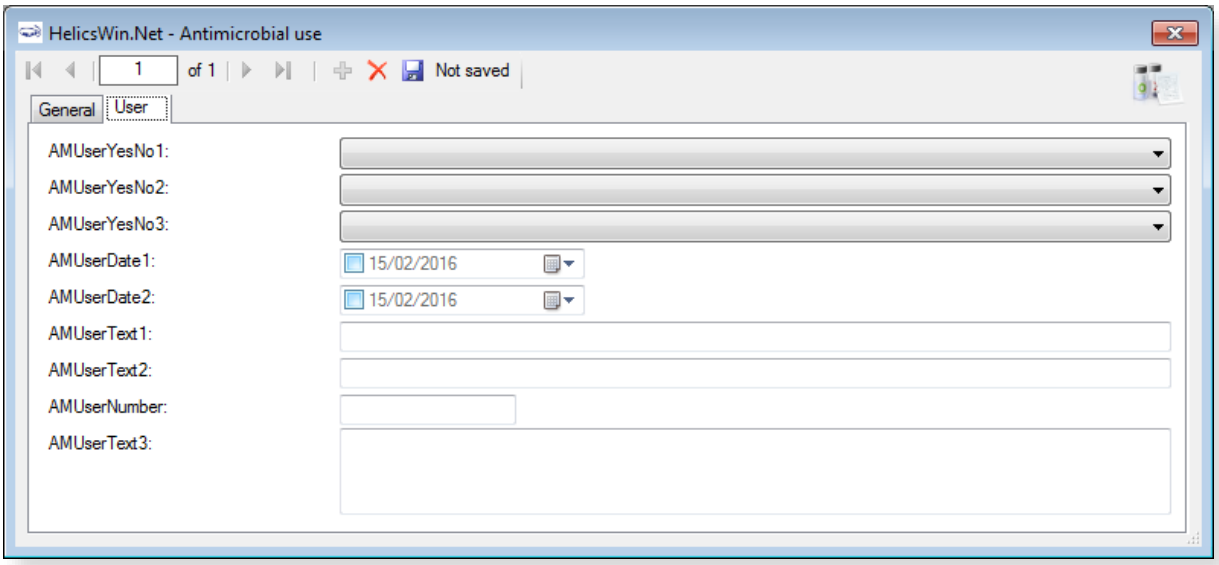
HAI General tab variables

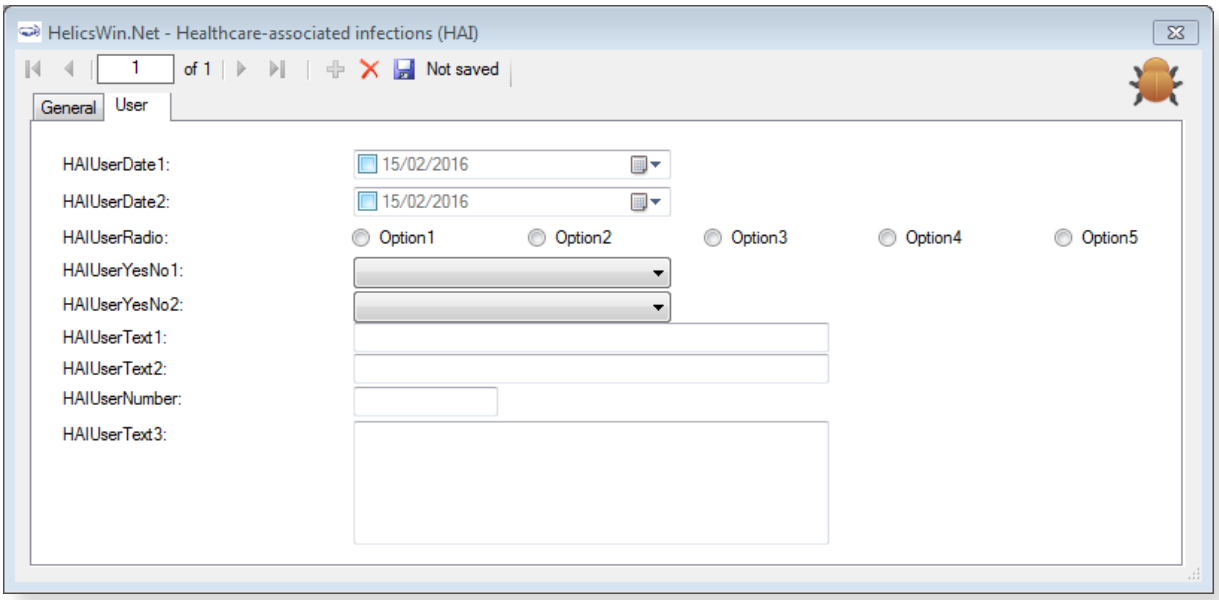
Variable	Description
Header section	From ward PPS data and PPS patient risk data.
Case definition code *	HAI case definition codes: specify subcategory, e.g. PN4 (see codebook), CVS-VASC. A single-case definition code should only be provided once per patient (no different infection episodes).
Relevant device *	To be specified for PN, BSI, NEO-LCBI, NEO-CNSB and UTI only. Relevant invasive device was in situ (even intermittently) for 48 hours (seven days for UTI) before onset of the infection, i.e. intubation for pneumonia, central/peripheral vascular catheter for bloodstream infections, urinary catheter for UTI; Unk=unknown. Yes/No/Unknown.
Origin of HAI *	Infection is associated with (1) current hospital; (2) another acute-care hospital; (3) other origin or unknown. Record 'HAI present at admission' if associated with an earlier stay in surveyed hospital or transferred from another facility.
HAI at admission *	Signs and symptoms of the infection were present at admission to the hospital; if not, provide date onset of infection. Yes/No/Unknown.
HAI associated to current ward	An HAI is associated with the current ward if the infection started on day 3 or later after admission to the current ward (where the date of admission to the ward is day 1) OR if the infection started on day 1 or 2 after a placement of an invasive device on the current ward OR if the patient was readmitted with an HAI present on admission associated to a previous stay in the same ward (within 30 days after operation for surgical site infections (or 90 days for deep and organ/space SSI after implant surgery), less than 28 days after discharge for C. difficile infections, less than 48 hours (two calendar days) after discharge for other HAIs).
Date of onset HAI	Date of onset of the infection (dd/mm/yyyy). Not to be recorded if signs/symptoms are present at admission, but mandatory if onset during current hospitalisation. Date of first signs or symptoms of the infection; if unknown, record date treatment was started for this infection or the date the first diagnostic sample was taken. If no treatment or sample, please estimate.
If BSI: source	If lab-confirmed bloodstream infection, specify the origin: catheter-related (central: C-CVC, peripheral C-PVC), secondary to another infection: pulmonary (S-PUL), urinary tract (S-UTI), digestive tract (S-DIG), surgical site infection (S-SSI), skin and soft tissue infection (S-SST), other infection (S-OTH), or BSI of (confirmed) unknown origin (UO); missing data, no information available=UNK; Secondary BSI reported as separate HAI, in addition to the primary infection if it matches the case definition.
Vasopressor treatment for HAI	Vasopressor treatment (e.g. norepinephrine, epinephrine, vasopressin, phenylephrine, dopamine) was initiated for the treatment of the consequences of the HAI (marker of septic shock)

User tab

The **User** tab contains fields useful for users at national, regional or hospital level. They can be renamed and personalised to enable collection of information during the PPS that is outside of the PPS protocol. These modifications are made using the **Translation** functionality in the **Settings** form, see *Translating the text in user forms*.

Skip the **User** tab.





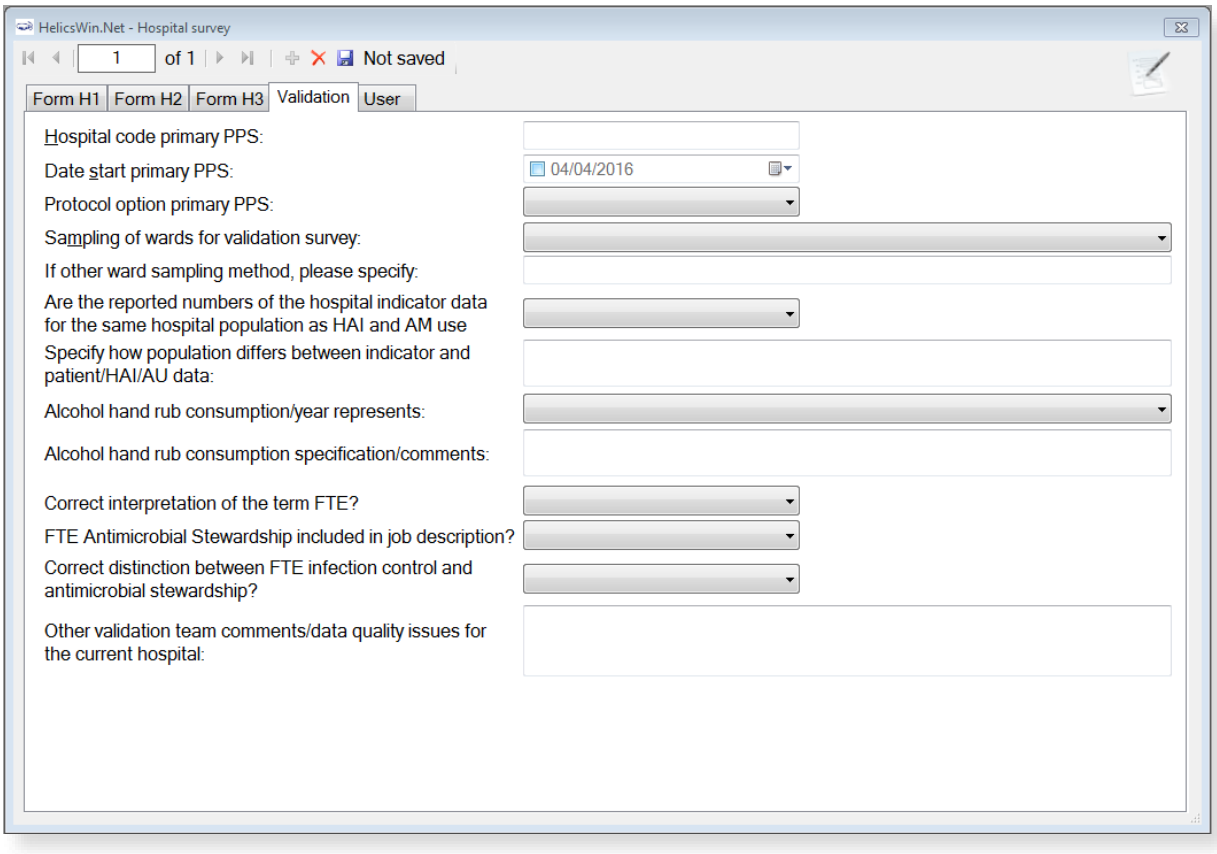
PPS validation tabs

The **Validation** tabs in the **Hospital surveys**, **Ward PPS data** and **Patient** forms are used by validation teams, only if the current survey is a validation study of the primary PPS for the hospital (validation checkbox in hospital data form checked), following the validation protocol.

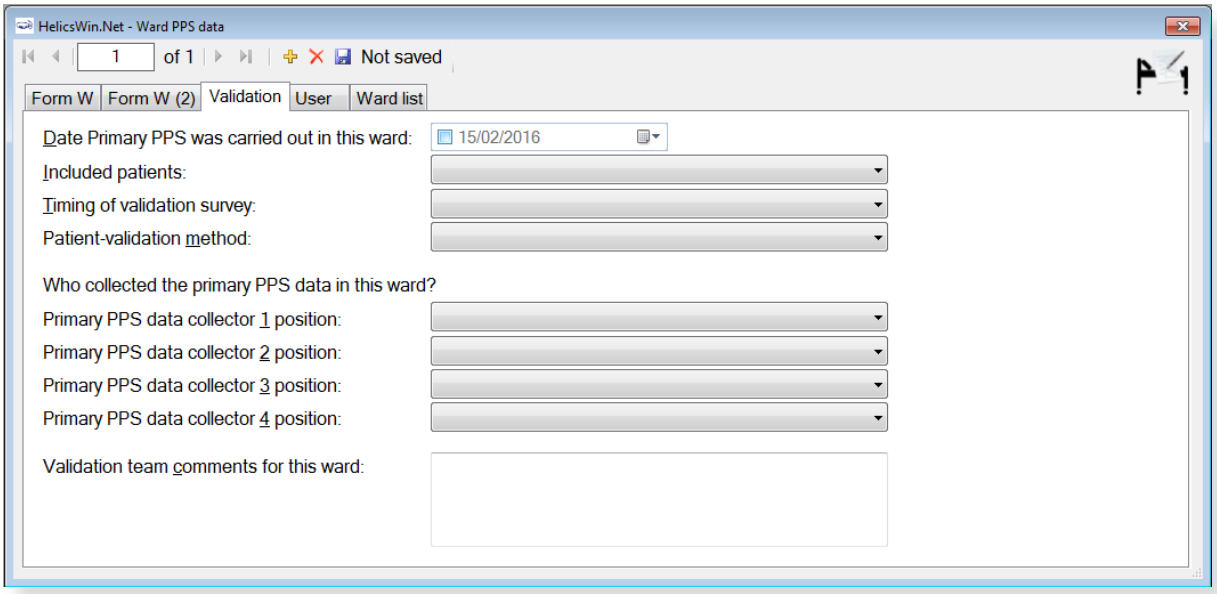
PPS validation is in principle performed by **an external validation team** trained by the national/regional PPS coordinating centre. The objective of the validation study is to assess the sensitivity, specificity and/or reproducibility of the data collected in the ECDC PPS.

See also: Further details are contained in the **Validation Protocol**.

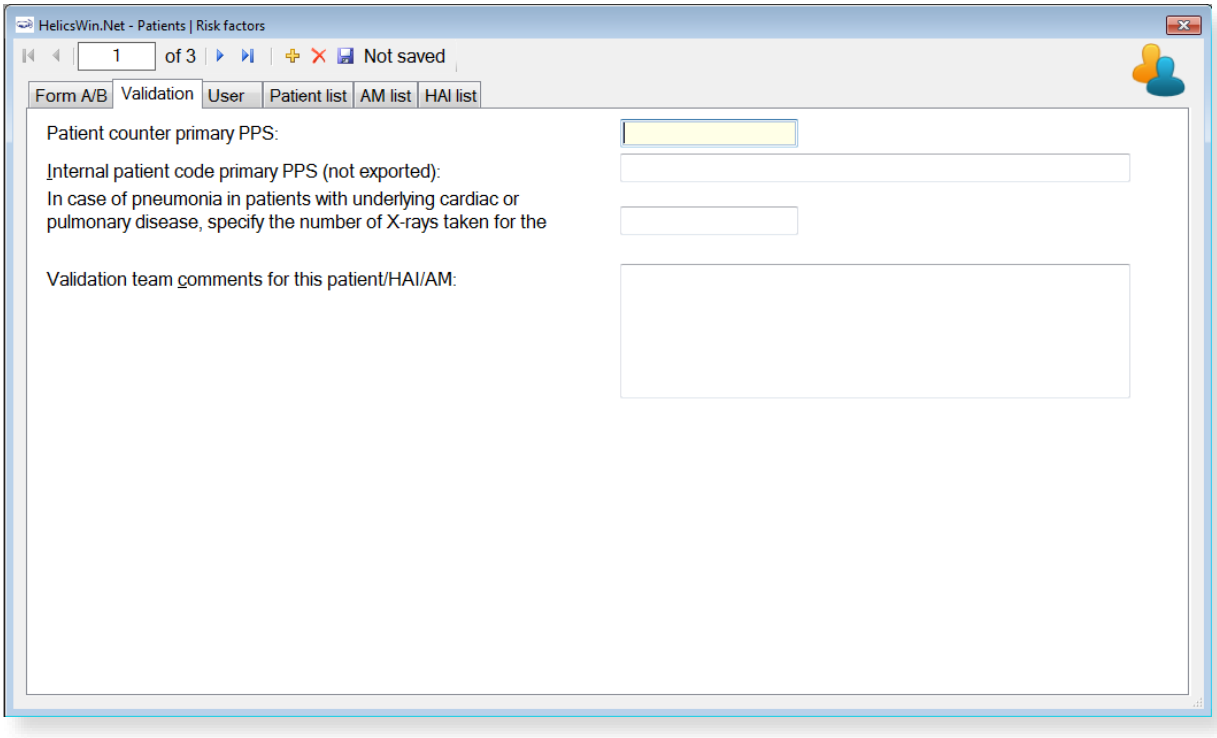
The Validation tab in the Hospital surveys form



The Validation tab in the Wards: Ward PPS data form



The Validation tab in the Patients: Risk factors form



Creating a SSI survey

There are two Surgical Site Infections (SSI) options:

- **Standard**: Patient-based option allows advanced risk adjustment of healthcare-associated infection rates for inter-hospital comparisons. You enter all patient data for all patients/operations, including those without SSI. Risk factors are collected for each patient (infected or not).
- **Light**: Unit-based option is less labour-intensive solution, produces partially the same indicators as Standard option for follow-up of trends, as well as the same descriptive results about infections, but with less possibility for risk-adjusted comparisons. You should only enter patient/operation data for patients with SSI. Consequently, in the Light protocol, each patient/operation record must include details of at least one SSI.

Both options use the hospital data form **General**, the ward definition form, and the **General Patients, Operations** and **SSI** forms.

However, the Light protocol uses a subset of the Operations form and a specific **Light denominator data** form for the Operation code specific denominator data.

Further details are provided in the HAI-Net SSI protocol (see *Related documents*).

SSI data collection is described in the following sections:

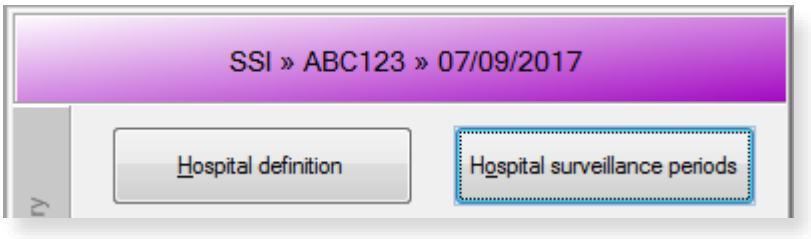
- *Entering SSI hospital data*
- *Defining optional ward data*
- *Entering Light denominator data*
- *Entering patient, operation and SSI data*

Entering SSI hospital data

Follow the procedure in this section to create a new **SSI** survey for each defined hospital, entering information to **Hospital surveillance periods**. Before you can create your survey, you must *define your hospital*

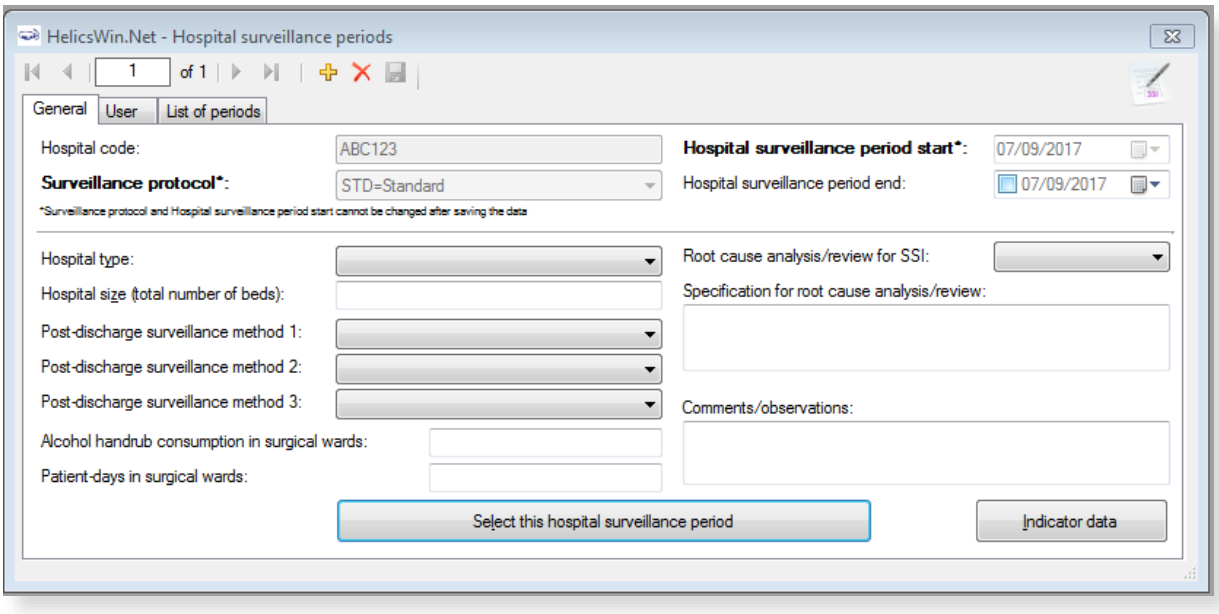
To create a hospital SSI Survey:

1. Click **Hospital surveillance periods** in the SSI ***main menu***.



   The **Hospital surveillance periods** form opens (for the hospital you have selected).

2. If not already open, click the **General** tab.
3. In the **General** tab, click the **Add item** icon to open the form for editing.



4. Enter the values for the fields in the **General** tab.

   Note that the **highlighted (bold)** options (for included wards only OR for hospital total) are required fields.

5. Click the **Save** icon or press **Ctrl+S**.

6. Enter the values for the fields in the **Form H2** and **Form H3** tabs, and save.

   Descriptions of the variables for Hospital surveillance periods General tab are given in the table below. If any mandatory or required data field is empty when you save, e.g. because you do not yet have the data, an error and/or warning message is shown and the field label is highlighted as a reminder - in red for a mandatory field (you cannot save) or blue for a required field. See *Understanding reported errors*.

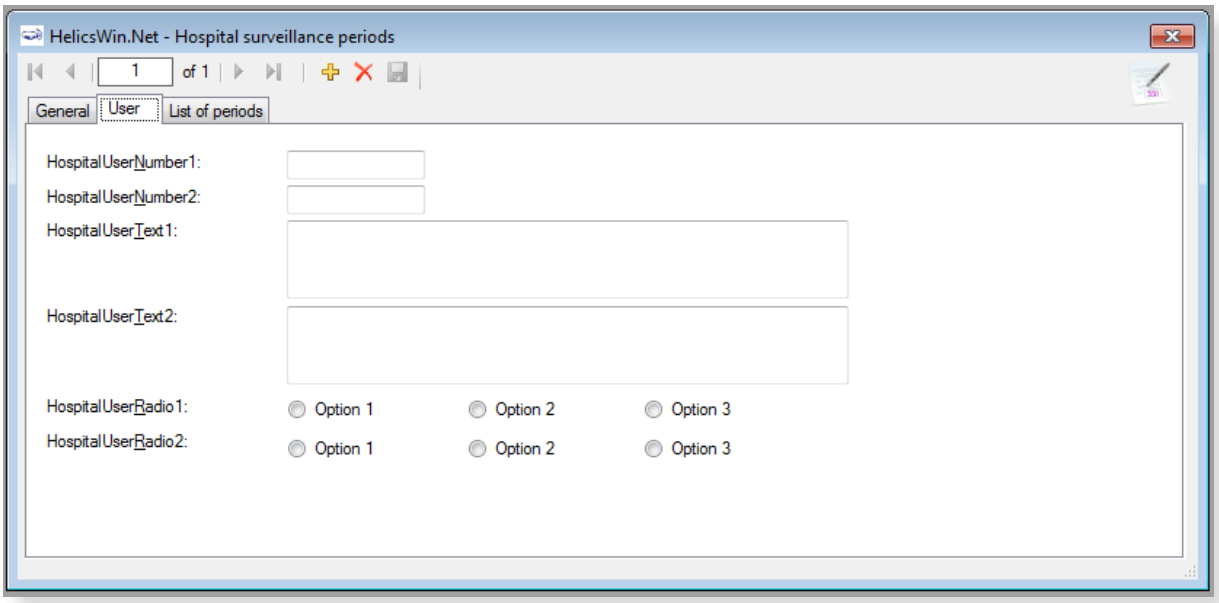
SSI Hospital surveillance periods tabs (General form) variables

Variable	Description
Form H1 tab	
Hospital code *	The hospital identifier/code assigned by national/regional SSI coordinating centre; unique code per surveillance network. Hospital codes should be unique within each surveillance network, and kept constant between the ECDC Antimicrobial Resistance and Healthcare-Associated Infection (ARHAI) surveillance protocols and from one year to the next. Inserted automatically based on the hospital selected during *Hospital definition*.
Surveillance protocol *	Select either **Standard** or **Light**. Note that you cannot add Light protocol data records to a SSI data collection defined to use the Standard protocol, or vice versa. Warning: You cannot change the **SSI protocol** after you have saved it.
Hospital surveillance period start *	Start date for the SSI surveillance period in the hospital. Warning: You cannot change the **Hospital surveillance period start** after you have saved it. If you save without having selected the correct **Hospital surveillance period start**, today's date is applied by default. Before saving, make sure that the start date of the surveillance period is earlier than date of operation in the Patient/operation information. If you need to change the **Hospital surveillance period start date**, you will have to contact your national or regional SSI co-ordinator.
Hospital surveillance period end	The date the last data were collected. You can enter the **Hospital surveillance period end** at a later time.
Hospital size	Total number of beds in the hospital. If, for reasons of confidentiality, the exact number of hospital beds cannot be given, please enter the number of beds rounded up to the nearest 50.

Variable	Description
Hospital type	Hospital type – PRIM: primary, SEC: secondary, TERT: tertiary, SPEC: specialised, missing=UNK. See *Hospital types*.
Post-discharge surveillance method 1/2/3	Indicate the hospital post-discharge surveillance method(s).
Alcoholic hand rub consumption in surgical wards	Total number of litres of alcoholic hand rub used in a given year (data from previous year if available) in the surgical wards; provide the number for the surgical wards only.
Patient-days in surgical wards	Total number of patient-days in a given year (data from previous year if available) in the surgical wards; provide the number for the surgical wards only.
Root cause analysis/review for SSI	Indicate whether root cause analysis/review for SSI is in place in the hospital.
Specification for root cause analysis/review for SSI	Specification if root cause analysis/review for SSI is in place in the hospital.
Comments/observations	Comments or observations on the Hospital surveillance periods information.

User tab

The **User** tab contains fields useful for users at national, regional or hospital level. They can be renamed and personalised to enable collection of information not included in the SSI protocol. These modifications are made using the **Translation** functionality in the **Settings** form, see *Translating the text in user forms*.



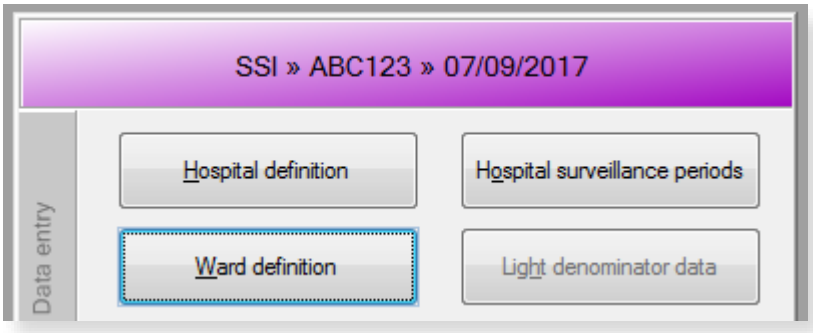
Defining optional ward data

Follow the procedure in this section to define wards for SSI surveillance in the selected hospital or select "Use Without wards" if you choose to enter the SSI data for the entire hospital without specifying wards.

The wards are defined in the **Ward definition form** tab.

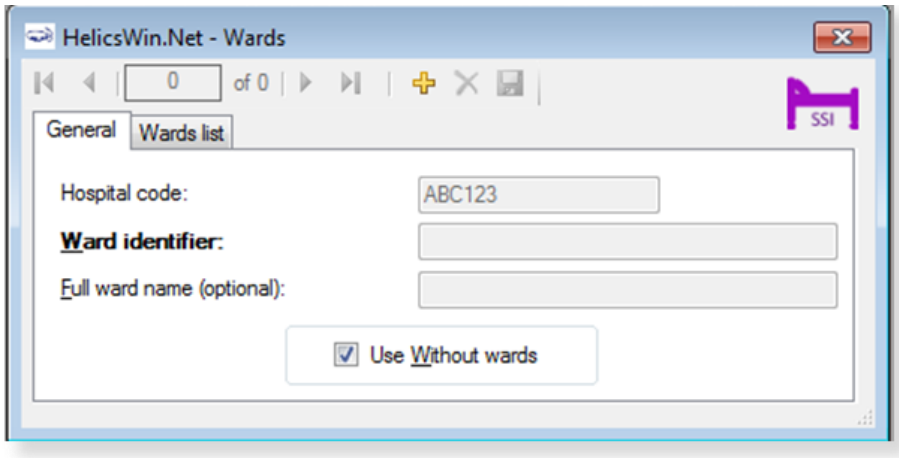
To define the wards:

6. Click **Ward definition** in the *main menu*.



The **Ward definition** form opens showing the current hospital code.

7. Click the **Add item** icon or press **Ctrl+N** to open the form for editing.



You cannot change the hospital code from this form.

8. For each ward (unit) included in the PPS, give the **Ward identifier**. If you choose to enter the SSI data for the entire hospital without specifying wards, tick the "Use Without wards" box and close the window.

9. If you have defined any wards, click the the **Save** icon or press **Ctrl+S**.

10. To start entering patient/operation data in the Standard protocol, exit this form and click **Patient/Operation/SSI** data in the *main menu*.

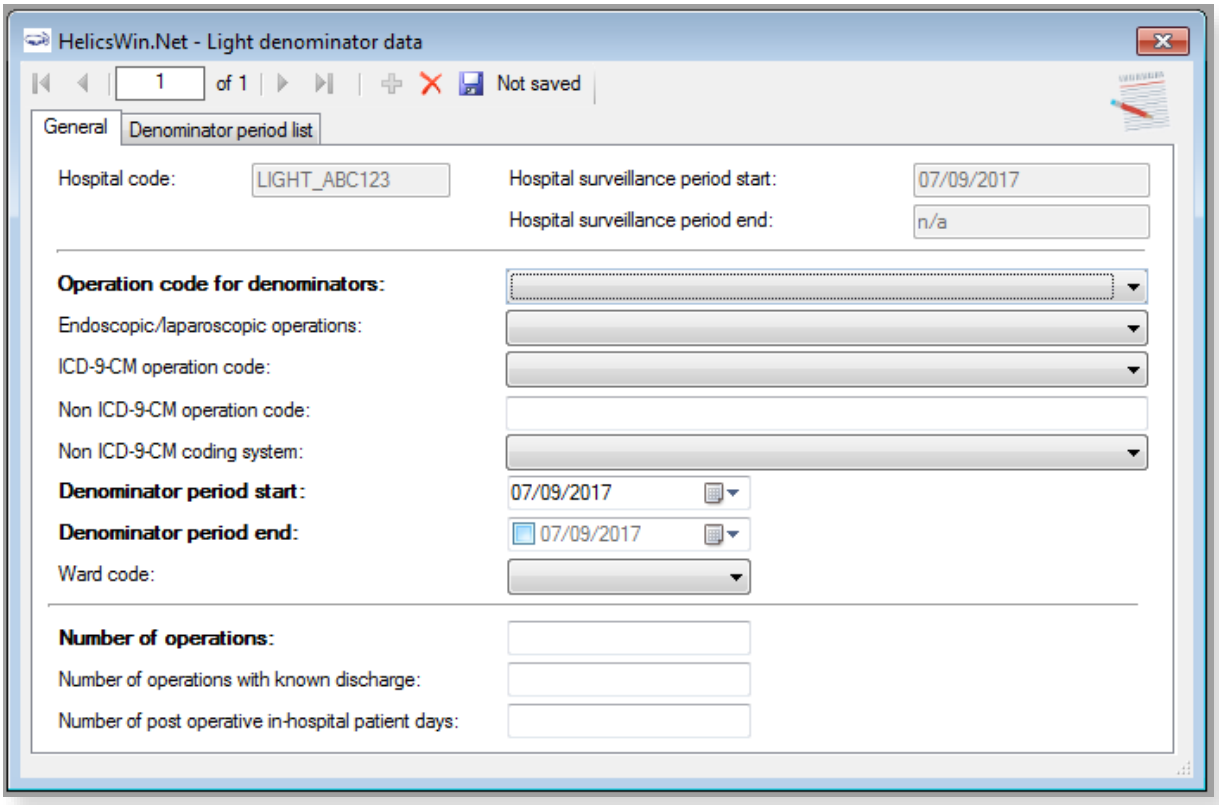
Warning: Defining wards and 'Use Without wards' are mutually exclusive; the **selection cannot be changed without removing all the data** (patient/operation/SSI) associated with the defined wards OR 'Use Without wards'. If you have defined wards, do not tick 'Use Without wards'.

Light protocol

The following instructions apply to the Light protocol only. In the Light protocol, the ward definition is performed as described above, but Light protocol has an additional mandatory **Light denominator data** form, and a button in the main menu to enter the Light denominator data for each surgical operation type (and possibly by other stratifications such as Endoscopic Yes/No and ICD-9-CM Code). **The combination in the denominator data for the operation code (and possible stratifications, such as Endoscopic Yes/No) have to match exactly with the surgical operation type (and possibly other stratifications such as Endoscopic Yes/No and ICD-9-CM Code) entered for the patients/operations**. This is verified during the *data quality check*, not during data entry. Only record Endoscopic Yes/No, ICD-9-CM Code and Non ICD-9-CM Code for the Light denominator data if you will record the same fields for the patient/operation data!

The Light denominator data are entered in the **Light denominator data General** tab, the fields in which are described in table. Mandatory fields are indicated by a red asterisk *. Required fields are indicated by a black asterisk *.

1. Enter the total number of operations for each operation type (and possibly other stratifications such as Endoscopic Yes/No and ICD-9-CM Code), i.e. the denominator data for the operation in each category.



Warning: In the Light protocol, denominator data are required and operation code and other stratifications need to match those entered in the patient/operation data! Make sure that the list of operation codes and other stratifications entered in this form include the exactly same stratifications that are used in the patient/operation/SSI form (this is verified by the *data quality check* before data export as well and is crucial for successful TESSy-export).

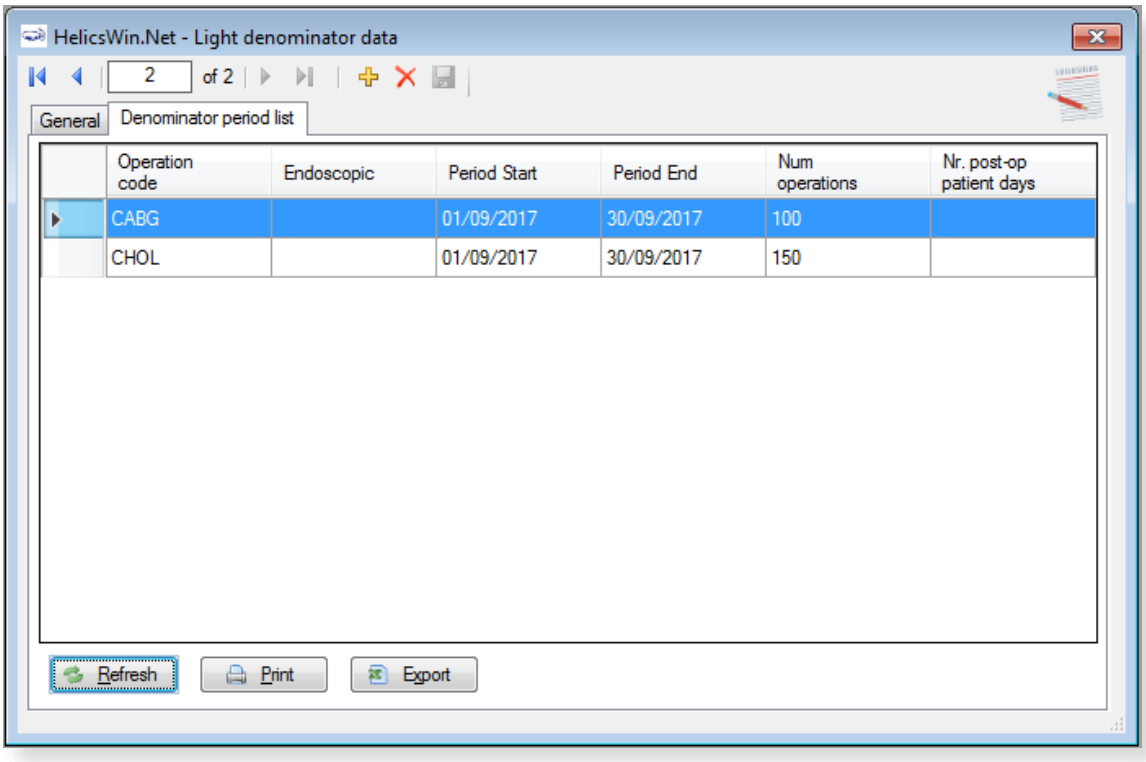
1. Click the **Add item** icon or press **Ctrl+N** to open the form for editing.

2. For each ward (if defined) and for each operation type included in the SSI surveillance, choose the **Operation code** from the drop-down list and enter the **Denominator period start** and **Denominator period end** and the **Number of operations** of the selected operation code in that ward (if ward defined/hospital if no wards defined).

   Repeat for each different combination of ward, operation code, denominator period.

   Fields **Endoscopic/laparoscopic operations**, **ICD-9-CM code**, **Non ICD-9-CM code**, **Non ICD-9-CM coding system** are OPTIONAL, only to be used if they are used in the patient/operation form!

3. Finally, you can see the total number of patients entered for that ward in the **Denominator period list** tab. Click **Refresh** to ensure that all recent data is included in this list. Remember that the field Endoscopic should appear empty if you do not enter the information on the patient/operation level!



Note: You can enter the Light denominator data retrospectively, after entering the patient/operation data. The denominator records are however mandatory.

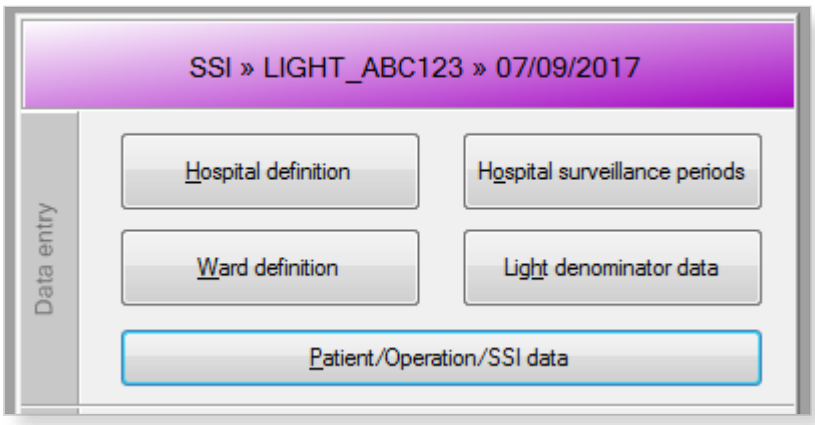
Entering patient, operation and SSI data

The way in which you enter these data depends on the protocol being used:

- In the **Light protocol**, you only enter patient/operation data for patients/operations with a surgical infection. Therefore, in the Light protocol, each patient record must include details of at least one SSI.

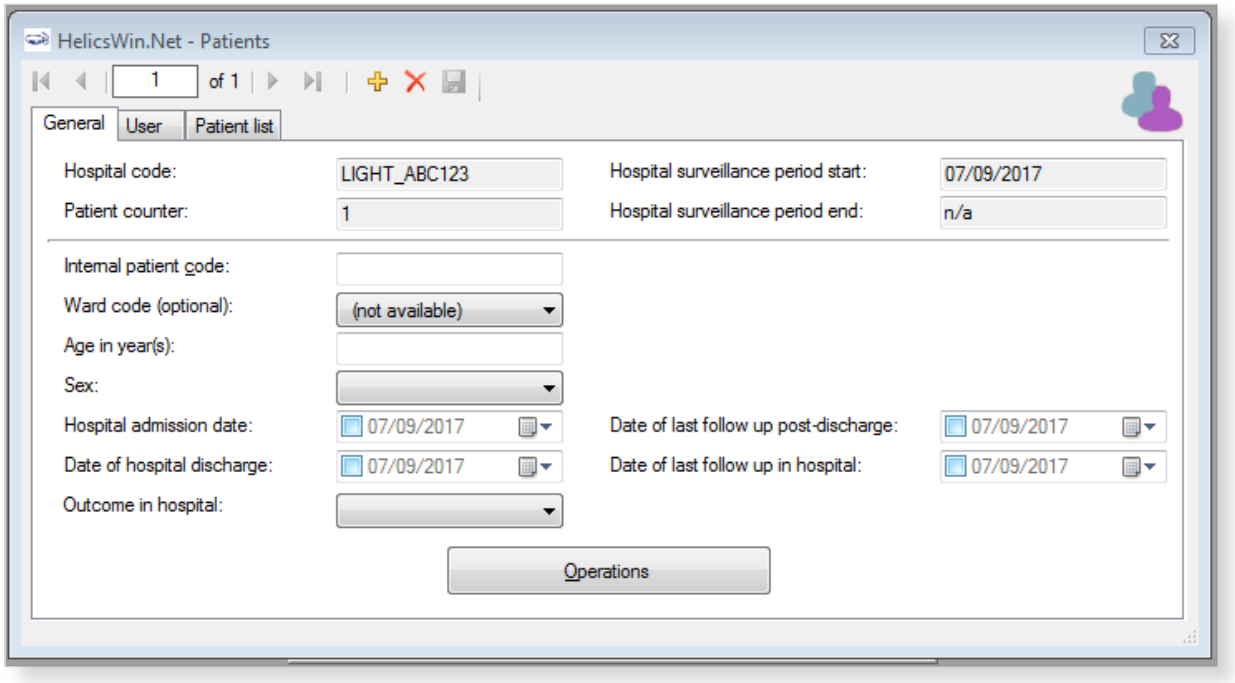
- In the (patient-based) **Standard protocol**, you enter all patient/operation data for all patients/operations, including those without SSI.

- To enter patient/Operation/SSI data, click **Patient/Operation/SSI data** in the *main menu*.



Patient form

When you select **Patient/Operation/SSI data** in the *main menu*, the **Patients** form opens at the **General** tab.



9. Click the **Add item** icon to activate the **Patients** form.

The patient counter is automatically incremented and defines a unique record within the hospital. The patient counter is an anonymous patient identifier (that is, it is not the true patient number), and it can contain only numbers; other characters are not allowed.

10. Optionally, you can also enter a patient identifier in the **Internal patient code** field.

This field is for local (hospital) use only. By default, data in this field is not exported as it may contain personal identifiers. However, HelicsWin.Net's export function allows you to choose to export it (see Exporting data from the database). To preserve patient confidentiality in compliance with Data Protection principles, the internal patient code data should not be included in the export file sent to the regional, national or EU level.

11. Select the check box to confirm the proposed date(s) or select a date(s) in the calendar pop-ups.

The date of hospital admission defaults to the hospital surveillance period start. If this is not the correct date, select the actual admission date from the calendar.

12. Select the ward code (ID) from the **drop-down** if wards are defined, otherwise HelicsWin.Net will automatically select (not available) for wards**.**

13. Complete the remaining fields as necessary.

Note that bold field labels denote mandatory fields. See the description of the variables in the **Patients** form in table below.

Patients form variables. Mandatory fields are indicated by a red asterisk *

Variable	Description
Hospital code	Inserted automatically based on the hospital selected during *Hospital definition*.
Patient counter	Inserted automatically. A system allocated sequential patient number for anonymised identification.

Variable	Description
Hospital surveillance period start	Inserted automatically based on the hospital selected during *Hospital surveillance periods.*
Hospital surveillance period end	Inserted automatically based on the hospital selected during *Hospital surveillance periods.*
Internal patient code	For hospital internal use only. Optional. Must be removed from any data submitted to ECDC/TESSy.
Ward code	Optional. Either (not available) if Use Without wards selected or a list of defined wards.
Internal patient code	For hospital internal use only. Optional. Must be removed from any data submitted to ECDC/TESSy.
Age in years	Patient's age in years. Enter respectively 0 or 1 if the patient is less than two years old.
Sex	Select from the listed options.
Date of hospital admission	Date patient was admitted to the hospital for the current hospitalisation (dd/mm/yyyy).
Date of hospital discharge	Date patient was discharged from the hospital for the current hospitalisation (dd/mm/yyyy).
Date of last follow up post-discharge	Date of last follow-up for the patient post-discharge (dd/mm/yyyy).
Date of last follow up in hospital	Date of last follow-up for the patient in the hospital (dd/mm/yyyy). Can be entered if the patient follow-up was discontinued during hospitalisation.
Outcome in hospital	Patient outcome at hospital discharge.

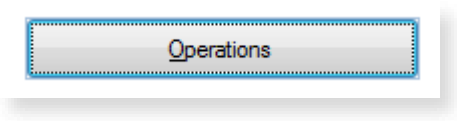
14. Click the **Save** icon or press **Ctrl+S**.

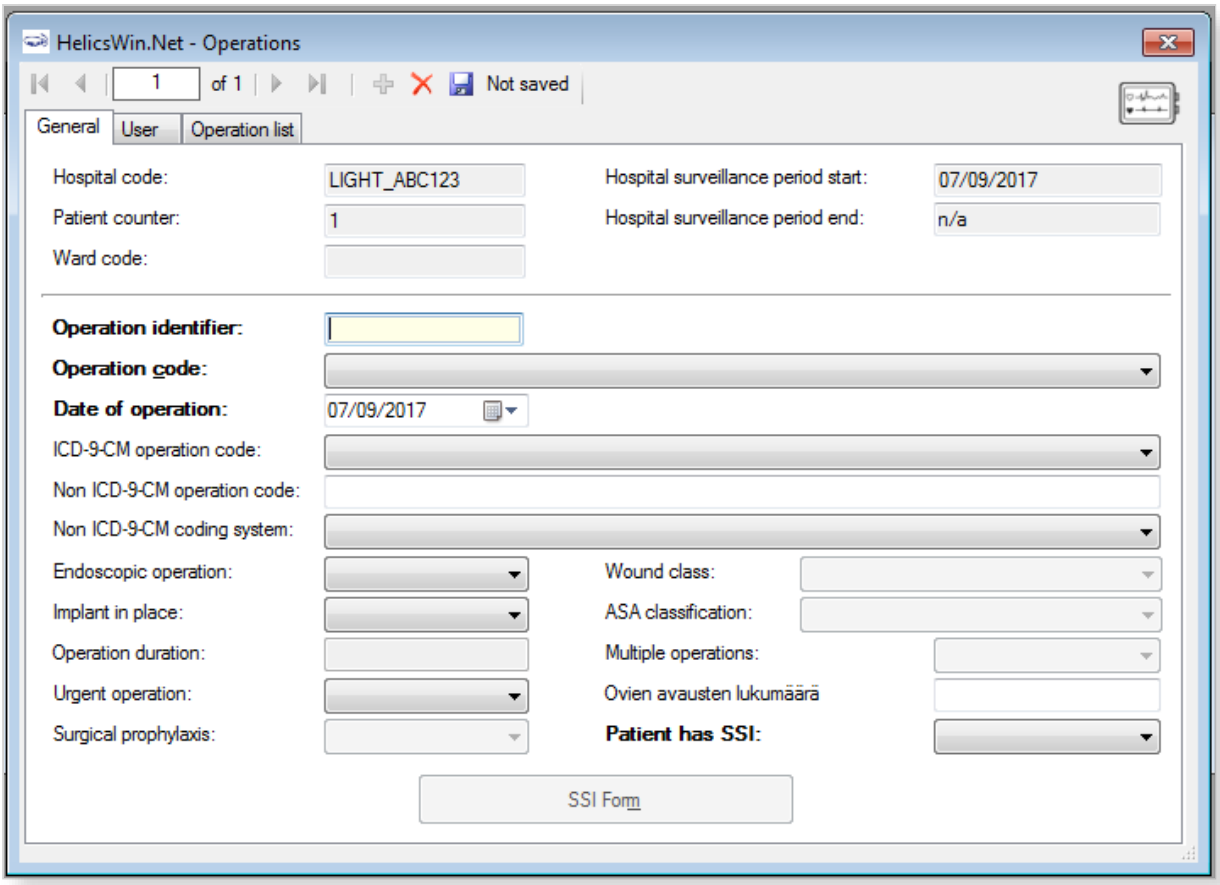
15. Click the **Operations** button to enter data on operations. Note that in SSI surveillance each patient should have at least one operations!

Operations form

Note:

- Operations data can only be accessed from **Patient** form via the button **Operations**





16. Click the **Add item** icon ✚ to activate the **Operations** form.

17. Complete the fields as necessary.

Note that bold field labels denote mandatory fields. See the description of the variables in the **Operations** form in table below.

*Operations form variables. Mandatory fields are indicated by a red asterisk **

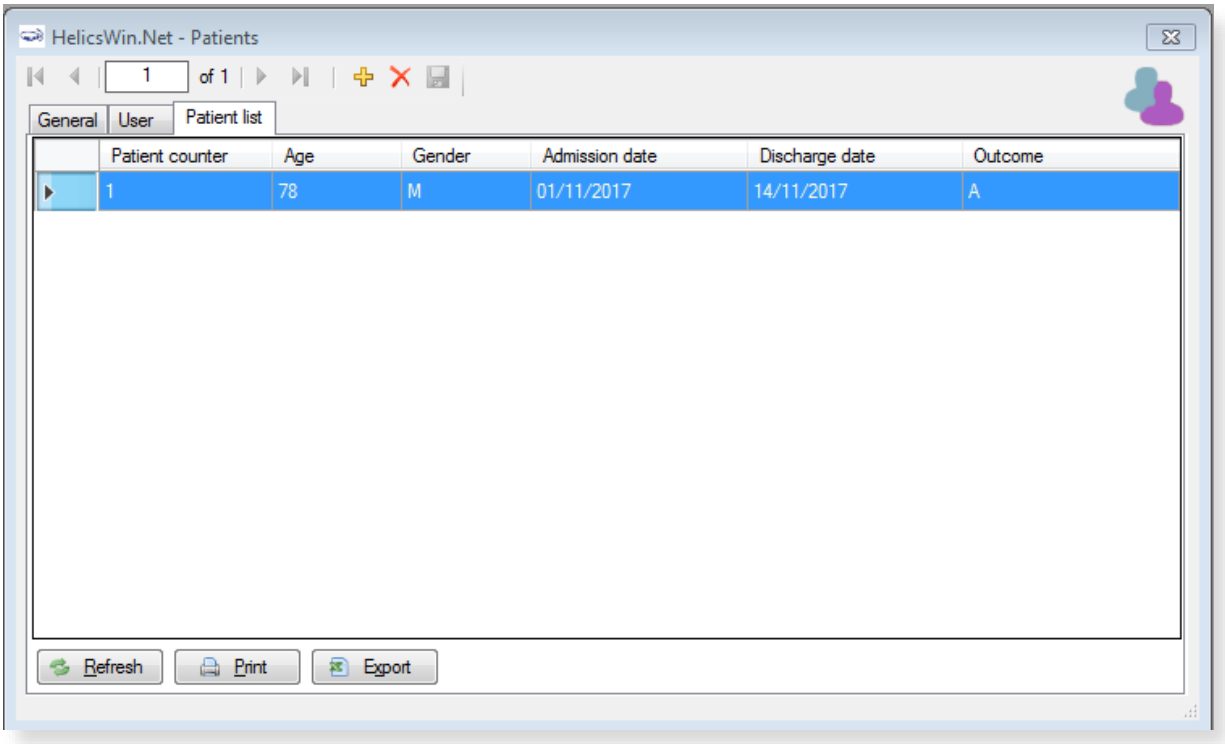
Variable	Description
Hospital code	Inserted automatically based on the hospital selected during *Hospital definition*.
Patient counter	Inserted automatically. A system allocated sequential patient number for anonymised identification.
Hospital surveillance period start	Inserted automatically based on the hospital selected during *Hospital surveillance periods.*
Hospital surveillance period end	Inserted automatically based on the hospital selected during *Hospital surveillance periods.*
Ward code	Inserted automatically as based on the *Patients form*
Operation identifier *	A sequential or other operation identifier for anonymised identification of the operation. Can be for example "1" for each unique operation of each patient.
Operation code *	Operation type (code).
Date of operation *	Date of operation.
ICD-9-CM Code	ICD-9-CM code of the primary operative procedure.
Non ICD-9-CM Code	Other code of the primary operative procedure. Alternative coding system to be used if ICD-9-CM code (above) cannot be reported.

Variable	Description
Non ICD-9-CM Coding system	Name of the other code system used for the primary operative procedure.
Endoscopic operation	Endoscopic/laparoscopic operation Yes/No/Unknown.
Operation duration	Operation duration in minutes.
Wound class	Would contamination class; W1 = Clean – W4 = Dirty or Infected.
ASA classification	Physical status classification; A1 = Normally health patient – A5 = Moribund patient who is not expected to survive for 24 hours with or without operation.
Implant in place	Implant in place Yes/No/Unk.
Urgent operation	Urgent operation Yes/No/Unk.
Multiple operations	Multiple operations Yes/No/Unk.
Number of OR door openings	Number of OR door openings during the operation.
Patient has SSI	Surgical site infections Yes/No. If yes, enter the SSI record.

18. Click the **Save** icon or press **Ctrl+S**.

Patient list and Operations list tabs

You can view, export and print listed information entered on all patients and all operations within the tabs **Patient list** and **Operation list**.



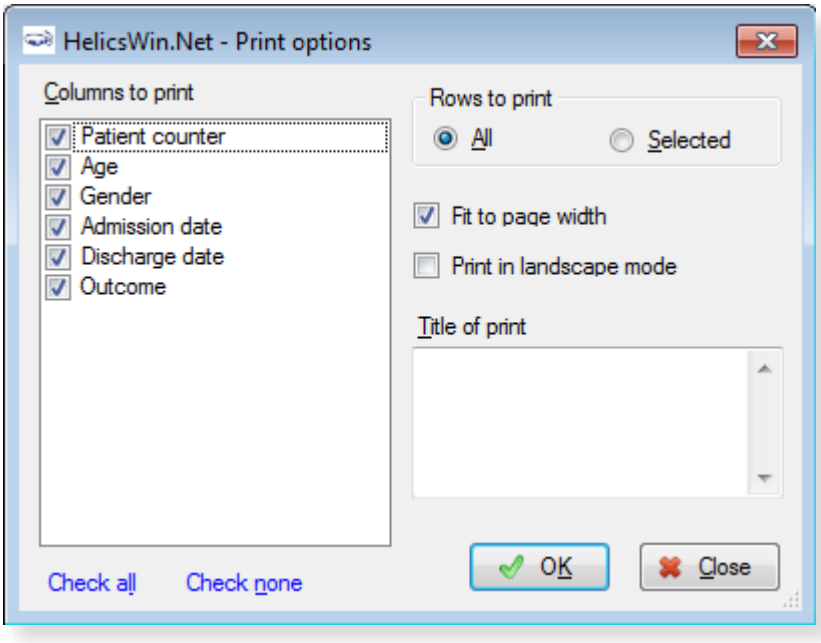
6. Click **Refresh** to show the latest added records.

7. Click any column header in the first row change the sort order of the list.

8. Click **Print** to print the list.

   The **Print options** form opens.

9. Select the fields and rows to be printed.



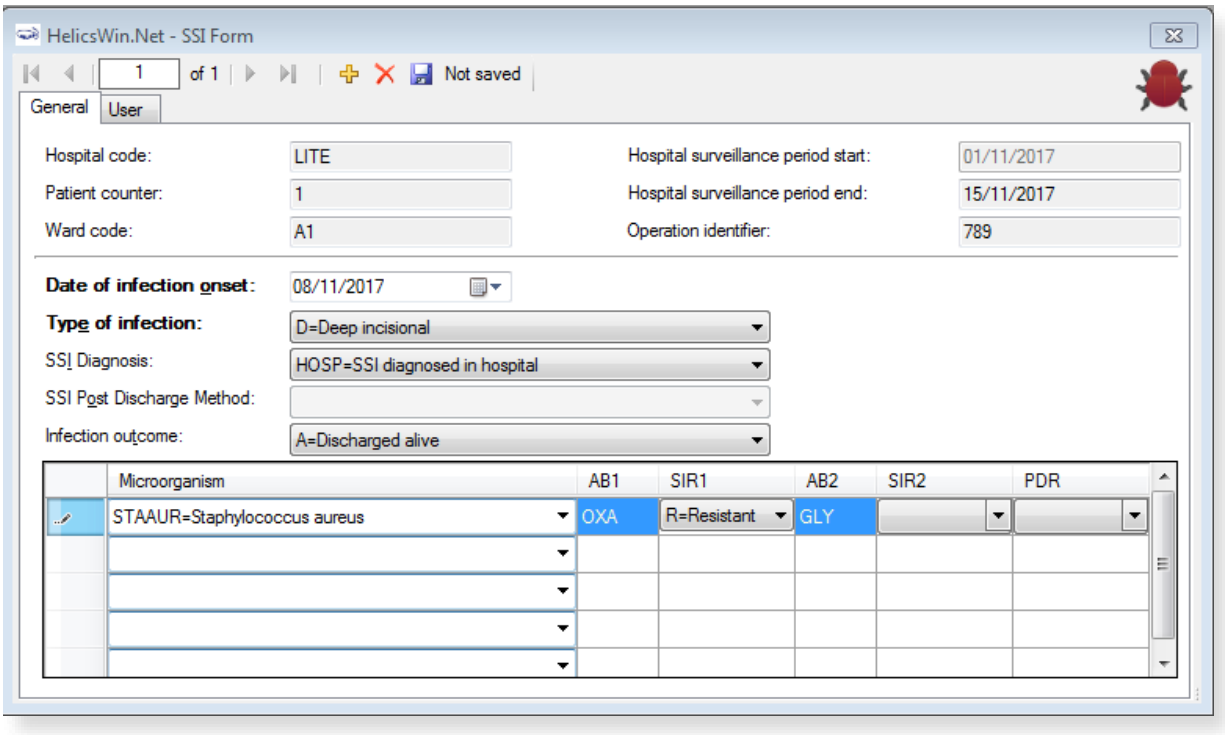
10. To add data for the next patient, click the **Add item** icon .

SSI Form

Note:

- SSI data can only be accessed from **Operations** form via the button **SSI Form**, which is only activated if Patient has SSI = Yes.

SSI data are entered through the **Surgical site infection (SSI)** form. This form is opened by clicking the **SSI Form** button in the **Operations** tab.



To specify SSI data for a patient/operation:

7. Click **SSI Form** in the Operations form.

8. The **SSI** form opens.

   Note

   - The date of onset of the SSI and the Type of infection should be specified
   - The resistance markers (phenotypes) do not have labels depending on the micro-organism.

9. Optionally, click the ***User** tab* to view or edit the HAI user variables.

10. Click the **Save** icon or press **Ctrl+S**.

Descriptions of the variables in the **SSI Form** tab are given in table below. Mandatory fields are indicated by a red asterisk *. Required fields are indicated by a black asterisk *.

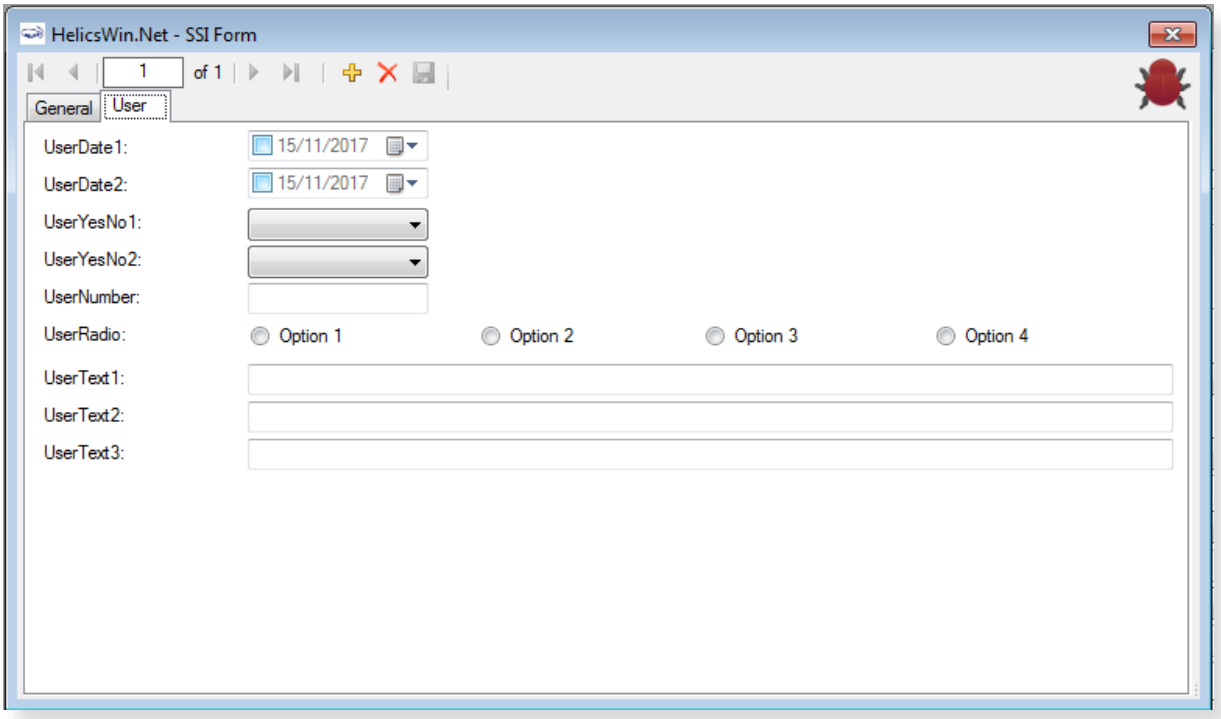
SSI General tab variables

Variable	Description
Header section	From ward data, Patient data and operation data
Date of infection onset *	Date of onset of the infection (dd/mm/yyyy).
Type of infection*	Type of infection: S=Superficial incisional; D = Deep incisional; O = Organ/space; UNK = Unknown
SSI Diagnosis	SSI diagnosis in-hospital or post-discharge.
SSI Post Discharge Method	If applicable (SSI Diagnosis = PD), method used for post-discharge surveillance of SSIs.
Infection outcome*	Outcome of the patient with infection on discharge from the hospital. In case of death, appreciation of the relationship of death to the infection by clinician and/or surveillance staff.

Microorganism	Microorganism isolate or reason why not available.
AB1/AB2	Antibiotic code tested for susceptibility, automatic labels depend on the selected microorganism.
SIR1/SIR2	Final interpretation result of all different susceptibility tests performed, for AB1 and AB2, respectively.
PDR	Microorganism is pandrug resistant: Not PDR/Possible PDR/Confirmed PDR/Unknown.

User tab

The **User** tab contains fields useful for users at national, regional or hospital level. They can be renamed and personalised to enable collection of information during the PPS that is outside of the SSI surveillance protocol. These modifications are made using the **Translation** functionality in the **Settings** form, see *Translating the text in user forms*.



Creating a HALT survey

HALT data collection is described in the following sections:

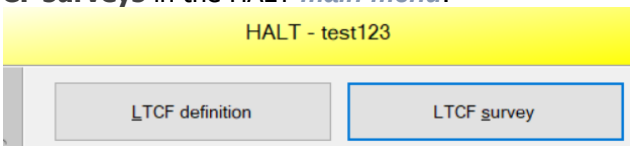
- Entering LTCF hospital data
- *Entering ward LTCF data*
- *Entering resident, antimicrobial use and HAI data*

Entering LTCF hospital data

Follow the procedure in this section to create a new **HALT** survey for each defined LTCF, entering information from Form H. Before you can create your survey, you must *define your LTCF and wards*.

To create a LTCF Point Prevalence Survey:

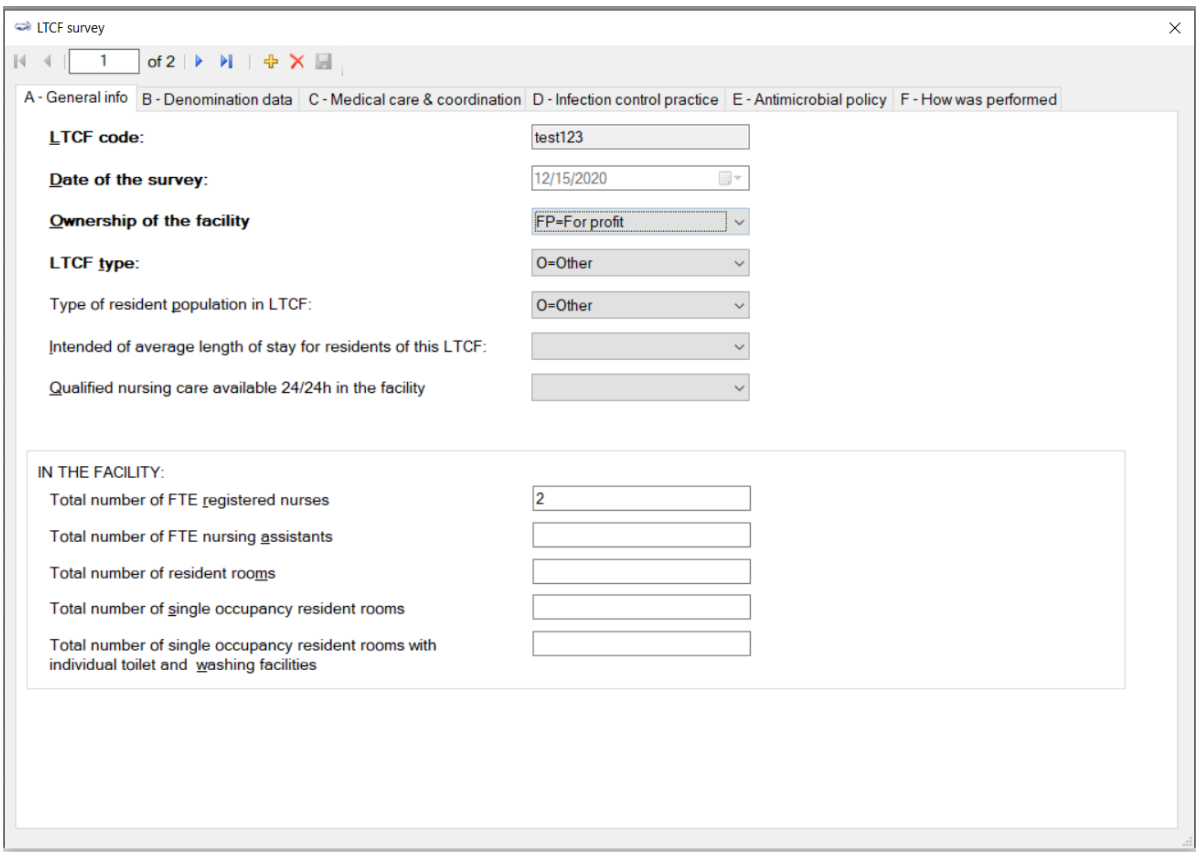
1. Click **LTCF surveys** in the HALT ***main menu***.



   The **LTCF survey** form opens (for the LTCF you have selected).

2. If not already open, click the **A-General info** tab.

3. In the **A-General info** tab, click the **Add item** icon to open the form for editing.



4. Click the **Save** icon or press **Ctrl+S**.

5. Enter the values for the fields in the **B-Demonitation Data, C-Medical Care & coordination, D-Infection control practicw, E-animicrobial policy** and **F-How was performed** tabs, and save.

   Descriptions of the variables for LTCF survey tabs are given in Table 24. If any mandatory or required data field is empty when you save, e.g. because you do not yet have the data, an error and/or warning message is shown and the field label is highlighted as a reminder - in red for a mandatory field (you cannot save) or blue for a required field. See *Understanding reported errors*.

HALT LTCF survey tabs variables

Variable	Description/definition
Facility survey number	LTCF identifier; code allocated by the national coordinating centre.
Qualified nurses available 24 hours a day in the facility	Qualified nurses are available day and night, i.e. physically present and/or contactable by phone/beeper 24 hours a day.
Total number of FTE registered nurses	Total number of full-time equivalent registered (graduated, qualified) nurses working in the LTCF (not only on the day of the PPS). Provide the current situation if possible, or for the most recent available situation. A 'registered nurse' is a nurse who has graduated from a college's nursing program or from a school of nursing and has passed a national licensing exam to obtain a nursing license. Do include 'agency nurses', 'bank nurses', 'interim nurses' or other registered nurses who are not permanently employed for that position in the LTCF. No distinction should be made between the administrative, scientific and/or clinical work of a nurse. Do not include students.

Total number of FTE nursing assistant	Total number of full-time equivalent (FTE) nursing assistants working in the LTCF (not only on the day of the PPS). Provide the current situation if possible, or the most recent available situation. A 'nursing assistant' is also referred to as 'nurses' aide', 'healthcare assistant', 'nursing auxiliary', 'auxiliary nurse', 'patient care assistant' or similar terms. Also include nursing assistants who are not permanently employed for that position in the LTCF. Nursing assistants work under the supervision of nurses or physicians to address the most fundamental elements of a resident's care. In general, they feed, dress, bathe and groom patients, but they can also perform more medically-oriented but basic duties such as measuring and recording temperature, blood pressure, and other vital signs. No distinction should be made between the administrative, scientific and/or clinical work of a nursing assistant. Do not include other licensed health professionals such as dietitians, physiotherapists or speech or occupational therapists, logistic personnel, students of any kind or volunteers who provide basic patient care without pay.
Total number of resident rooms	Sum of all resident rooms including single rooms and multi-bedded rooms. Public areas, utility rooms, etc. should be excluded.
Total number of single occupancy rooms in the facility	Total number of rooms in the facility that are designated for single occupancy (e.g. rooms with one bed). A room shared by partners should not be considered as a single occupancy room.
Total number of single/private rooms in the facility with individual toilet and washing facilities	Number of single occupancy rooms with individual toilet and washing facilities (sink and/or shower). An individual toilet alone or a commode (toilet chair) is not sufficient to qualify as a 'single occupancy room with individual toilet and washing facilities'. Rooms which have toilet and washing facilities in a communal area should not be counted.
Beds in the facility	The total number of resident beds in the LTCF, both occupied and unoccupied beds. Beds shared by partners should be counted as two beds.
Occupied beds	Total number of beds occupied by residents on the day of the PPS. This figure also includes beds occupied by residents who are absent on the day of the PPS due to hospitalisation, on holiday or with family, etc. Beds shared by partners should be counted as two beds.
Eligible residents, present at 8:00 AM and not discharged at the time of the survey	Total number of residents present at 8:00 AM and not discharged at the time of the survey
Age older than 85	Total number of eligible residents older than 85 years on the day of the PPS.
Male resident	Total number of eligible male residents on the day of the PPS.
Residents receiving at least one antimicrobial agent	Total number of eligible residents receiving one or more systemic antimicrobial agents (see 4.3.2) on the day of the PPS.
Residents with at least one infection	Total number of eligible residents with one or more infections (see 4.3.3) on the day of the PPS
Residents with any urinary catheter	Total number of eligible residents with a urinary catheter, i.e. any tube system in place to drain and collect urine from the bladder, e.g. an indwelling urinary catheter, suprapubic or abdominal wall catheter or a cystostomy. External catheters that do not drain urine directly from the bladder (e.g. condom catheters) should not be included.

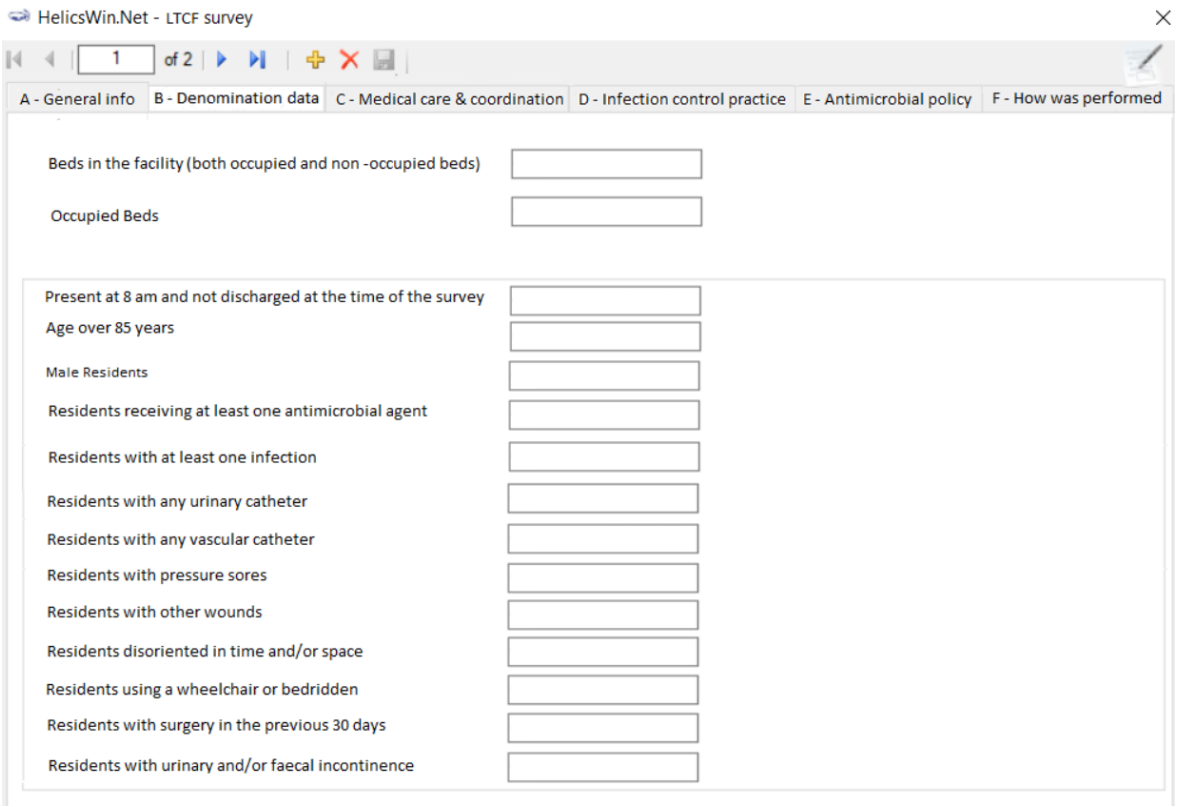
Residents with any vascular catheter	Total number of eligible residents with a tube system in place to access the vascular system (i.e. venous, arterial, arteriovenous fistulae) on the PPS day, e.g. a peripheral intravenous catheter, an implanted vascular access system, or any other intravascular access system.
Residents with pressure sores	Total number of eligible residents with a pressure sore on the day of the PPS. All grades of pressure sores should be included (e.g. the lowest grade, non-blanching erythema, characterised by discolouration of intact skin not affected by light finger pressure).
Residents with other wounds	Total number of eligible residents with a wound other than a pressure sore on the PPS day, including leg ulcers, traumatic or surgical wounds and insertion sites for percutaneous endoscopic gastrostomy (PEG), tracheostomy, urostomy, colostomy or suprapubic and peritoneal catheters.
Residents disoriented in time and/or space	Total number of eligible residents who suffer from periods of confusion especially relating to time, place or identification of persons (e.g. they cannot find their room, have no idea of time and/or are unable to recognise persons they know very well).
Residents using a wheelchair or that are bedridden	Total number of eligible residents who need a wheelchair or are bedridden on the PPS day.
Residents with surgery in the previous 30 days	Total number of eligible residents who had surgery in the 30 days preceding the PPS. Surgery is defined as a procedure where an incision is made (not just a needle puncture), with breach of mucosa and/or skin (incl. laparoscopic approaches). The procedure does not necessarily have to take place in operating theatres/room, but can also take place in interventional radiology rooms, cardiac catheterisation rooms, endoscopic rooms etc.
Residents with urinary and/or faecal incontinence	Total number of eligible residents with urinary and/or faecal incontinence (i.e. lack of control of the bladder or bowel sphincters resulting in an uncontrolled loss of urine or faeces) necessitating the use of diapers in the 24 hours prior to the PPS day (during the day and/or night). A resident with a urinary catheter should not be considered as incontinent for urine (this indicator is designed to measure work load of the LTCF staff).
Personal general practitioner (GP)	A medical doctor, chosen by the resident, who provided medical care outside of the hospital environment to the LTCF resident in the years before their LTCF residence.
GP group practice	GPs in one GP practice or a network of single GP practices that collaborate to attend to the everyday medical needs of individuals within a geographical area.
Medical staff employed by the facility	Medical doctors hired by the LTCF management to provide care to the residents. These physicians are not the residents' personal GPs (see above).
Coordinating physician	A medical doctor in charge of the coordination of medical activities and standardisation of practices/policies in the facility.
Infection prevention and control policy	A coherent series of precautions and actions to avoid infections and transmission of pathogens within a population.

Person with training in infection prevention and control	'A registered nurse, physician, epidemiologist or medical technologist who helps to prevent healthcare-associated 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.' (Source: Association for Professionals in Infection Control and Epidemiology) This person can work full-time on infection control and prevention activities or combine this with other duties such as general nursing duty, nursing supervision, quality assurance, etc.
Infection prevention and control (IPC) committee	A multidisciplinary committee consisting of at least the person with training in infection prevention and control (IPC) (IPC practitioner), the administrator, the coordinating physician (if present at the facility), the nursing supervisor(s) or by persons they designate. IPC committee members could also include quality assurance personnel, risk management personnel, representatives from microbiology, surgery, central sterilisation, pharmacy, environmental services, etc. The IPC committee functions may be merged with the performance improvement or patient safety programmes, but IPC must remain identifiable as a distinct programme. The IPC committee should meet regularly to review infection control data, review policies, and monitor programme goals and activities. Written records of meetings should be kept (Source: SHEA/APIC guidelines: Infection prevention and control in the LTCF, 2008).
Litres of hand alcohol	Total number of litres used during the course of the year preceding the PPS.
Hand hygiene training	Education of care professionals (i.e. nurses, nurse aides, doctors, physiotherapists, cleaning staff etc.), especially those new to the LTCF, on at least the importance of hand hygiene, the indications for hand hygiene, the technique and the products to use.
Hand hygiene opportunities	Number of hand hygiene opportunities or indications (moments) measured as part of hand hygiene campaigns or audits. Only the number of observed opportunities needs to be recorded, not how many of these opportunities were observed to be processed correctly (=compliance). According to the WHO, the four moments for hand hygiene in residential facilities should at least include (1) before touching a patient, (2) before a clean/aseptic procedure, (3) after a body fluid exposure risk and (4) after touching a patient. In specialized LTCFs, where residents are mainly cared for in dedicated space with dedicated equipment, moment 5 (i.e. after touching patient surroundings) also applies [6].
Restrictive list of antimicrobials to be prescribed	A list with antimicrobial agents which are authorised for prescription, those which should not be used or should not be used for empiric therapy of any infection in the facility. The purpose of this is to preserve certain antimicrobial agents for certain culture-proven infections. In some cases exceptions are allowed with written motivation forms, explaining the reasons for the choice of that antimicrobial agent.
Antimicrobial committee	This committee is in charge of the development of local guidelines and protocols for antibiotic use in the LTCF. The team should comprise (at least) doctors prescribing antimicrobial agents to LTCF residents, a pharmacist, a co-ordinating physician (if present) and an infection prevention and control practitioner and (if possible) a microbiologist.
Written guidelines for appropriate antimicrobial use	Recommendations for empirical and targeted treatment of the most frequent infections, including dosage, administration route and duration of treatment. Commonly a first and second therapy choice is proposed.
Annual antimicrobial consumption	A report on the quantity of antimicrobial agents prescribed/received during the past year, classified by class.
Drug resistance profiles	Follow-up of the evolution of antimicrobial resistance patterns for different micro-organisms in order to orient the choice of antimicrobial agents for treatment. Data are obtained by surveillance of resistance profiles provided by microbiological protocols.

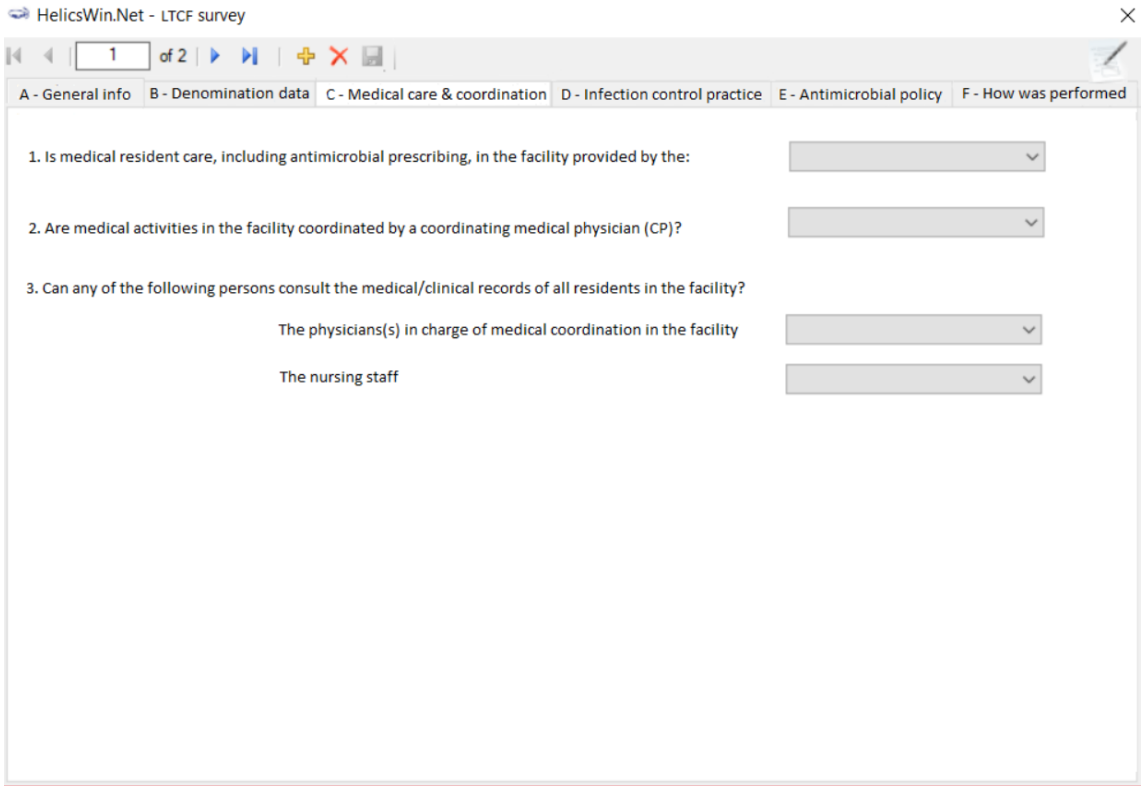
Therapeutic formulary	List of eligible antimicrobial agents by illness, intended as a manual for physicians to guide their prescriptions. The therapeutic formulary should include a specific chapter on antimicrobial therapy.
Urine dipstick test	Tests performed by dipping a paper or cardboard stick into urine to test it for the presence of white blood cells (leukocyte esterase) and/or nitrites. Results are indicated by colour changes on the stick. This test type should not be confused with 'dip slide' tests performed by laboratories to test for the presence of microorganisms in liquids by incubating 'dip slides'.

Further LTCF data can be recorded in the **Forms B, C, D, E** and **F** tabs. The fields are described in Table 24.If any mandatory or required data field is empty when you save, e.g. because you do not yet have the data, an error and/or warning message is shown and the field label is highlighted as a reminder - in red for a mandatory field (you cannot save) or blue for a required field. See *Understanding reported errors*.

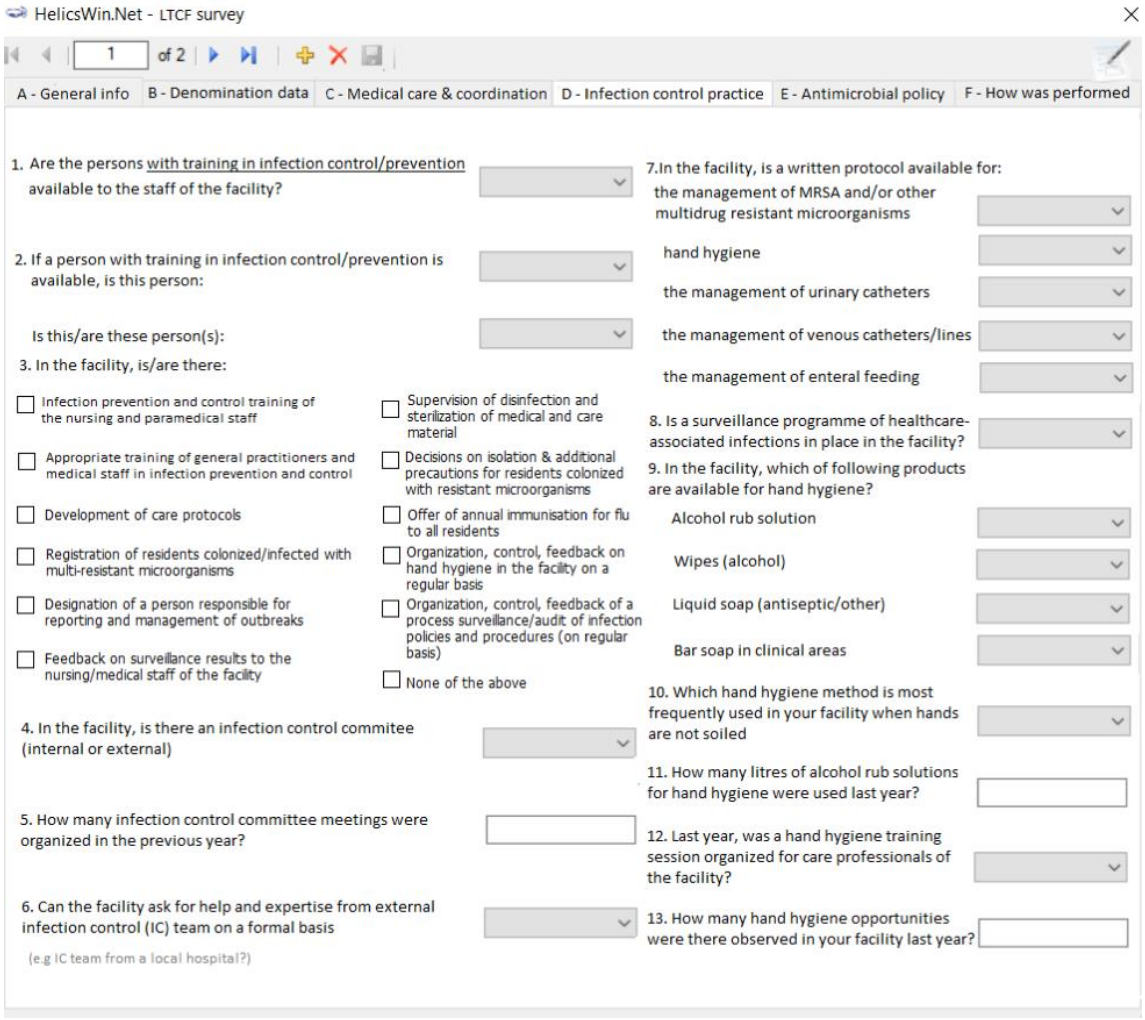
LTCF survey Form B tab



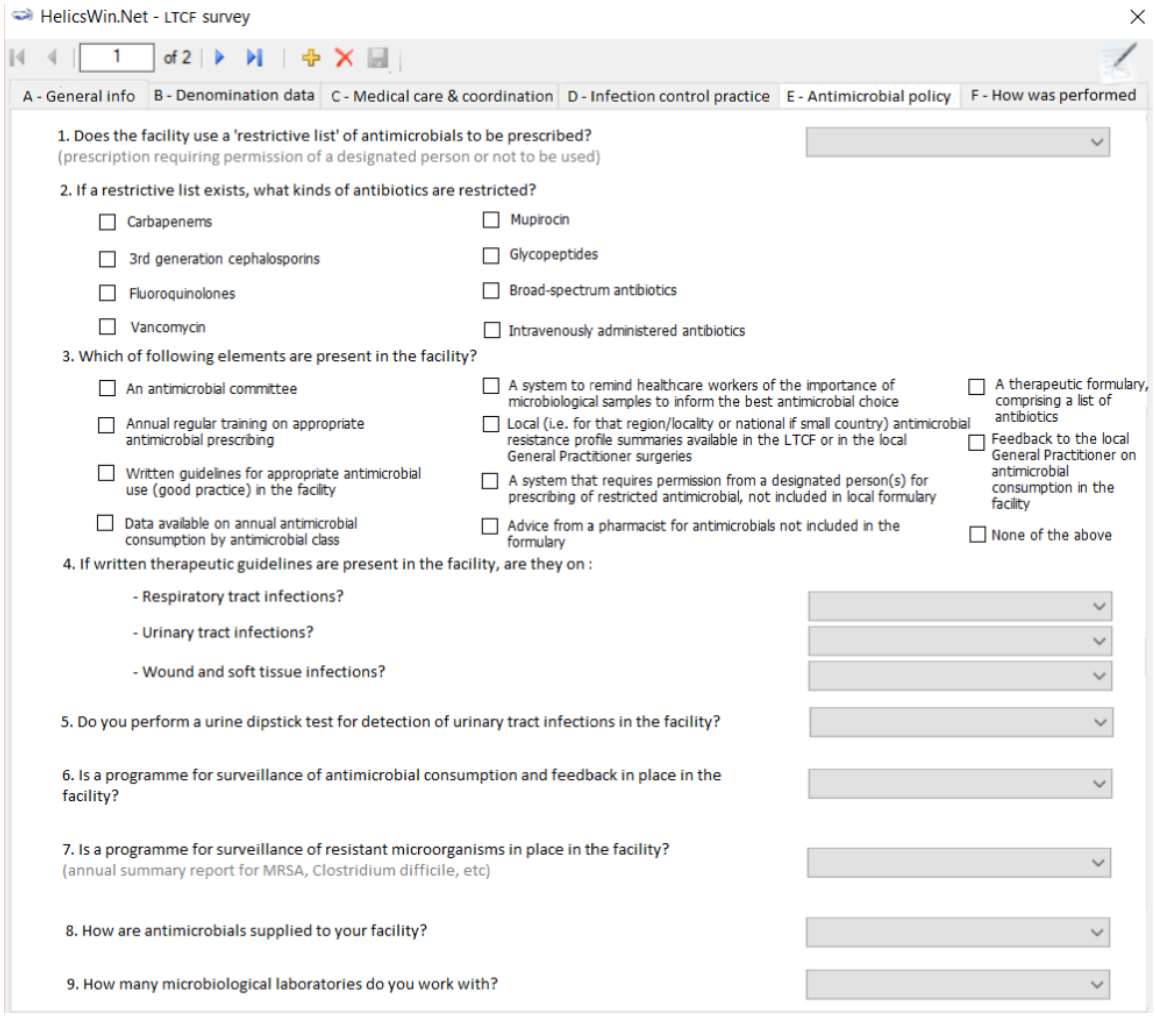
LTCF survey Form C tab



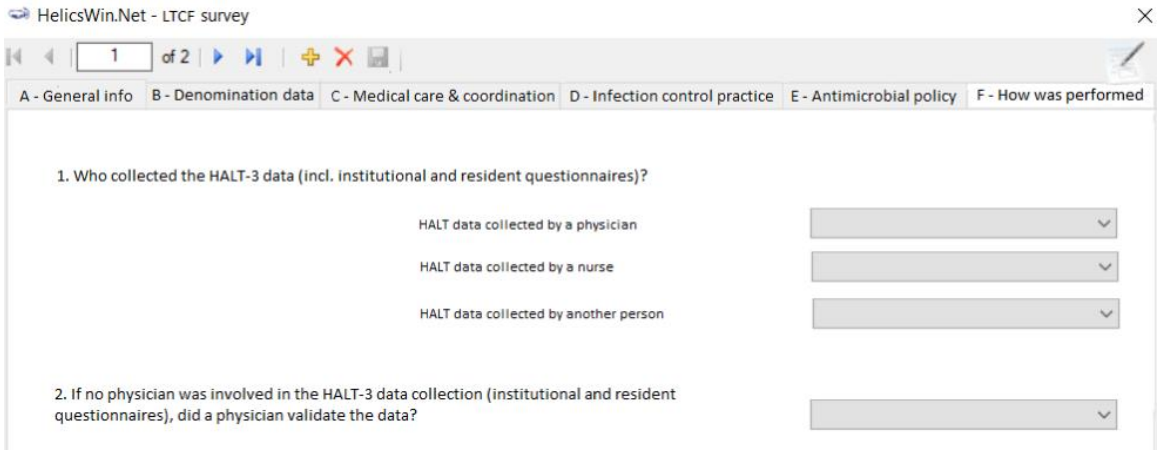
LTCF survey Form D tab



LTCF survey Form E tab



LTCF survey Form F tab



Entering HALT resident, antimicrobial use and HAI data

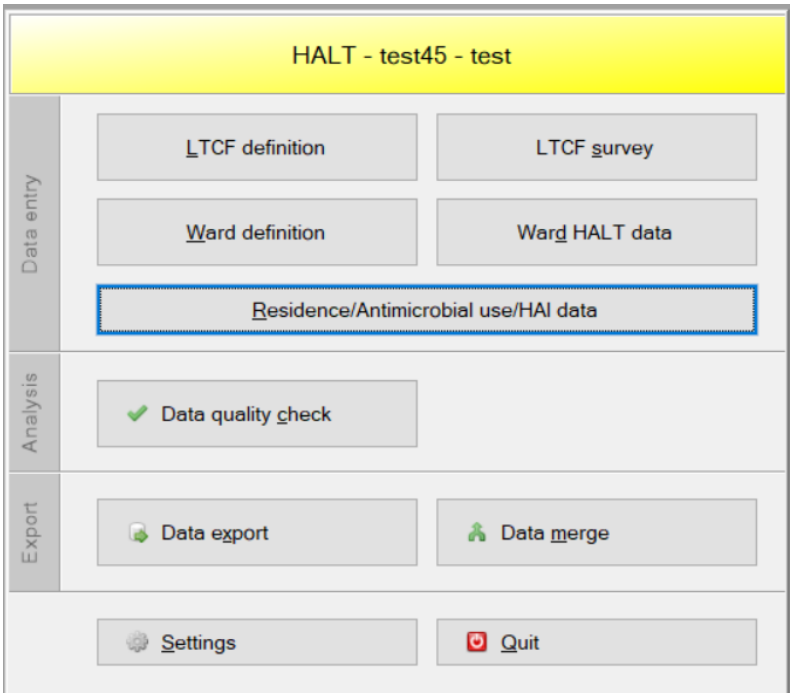
Note:

- Antimicrobial use data and HAI data can only be accessed from the **Residents** form.
- Only records which have HAI/AU specific data entered will be included in prevalence results during final analysis, e.g. in reports generated by ECDC after upload to the TESSy database.
- The **Antimicrobial use** button is activated when the field **Resident receives antimicrobial(s):** is set to **Yes.**

- The **HAI** button is activated when the field **Resident has at least one HAI:** is set to **Yes.**

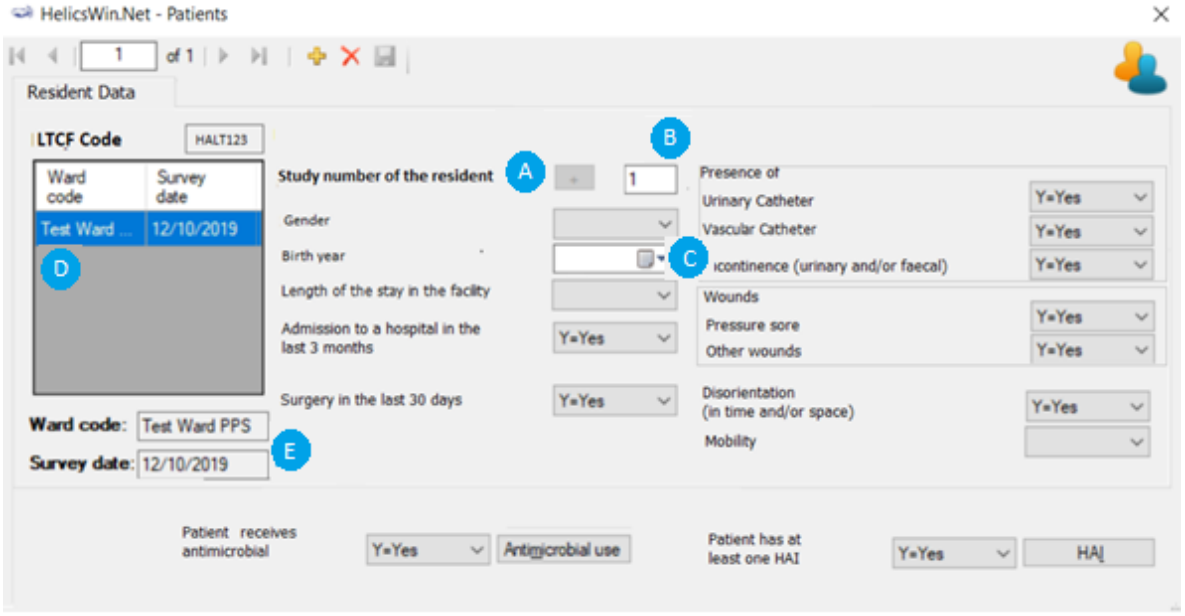
- No warning message is given if either of these fields are set to **Yes** and the corresponding AU/HAI data are not entered in the AU/HAI forms. These errors are only reported in the *data quality check*.

To enter patient data for antimicrobial use and HAI, click **Patient/Antimicrobial use/HAI data** in the ***main menu***.



Resident tab

When you select **Resident/Antimicrobial use/HAI data** in the *main menu*, the **Patients** form opens at the **Resident Data** tab.



1. Click the **Add item** icon to activate the form. Click **(A)** to increment the counter for the next patient number, or **(B),** enter the number manually.

   The patient counter defines a unique record within the LTCF (not within the ward). The patient counter is an anonymous patient identifier (that is, it is not the true patient number), and it can contain only numbers; other characters are not allowed.

2. Select the check box **(C)** to confirm the proposed date or select a date in the calendar pop-up.

   The date of LTCF admission defaults to the ward survey date once the ward is selected. If this is not the correct date, select the actual admission date from the calendar.

3. Select the ward code (ID) from the **Ward list (D)**, to update the **Ward code** and **Survey date** fields **(E)**.

   Only wards for which the survey date and ward specialty were previously entered appear in the Ward list.

4. Complete the remaining fields as necessary.

   Note that bold field labels denote mandatory fields.

5. Click the **Save** icon or press **Ctrl+S**.

Descriptions of the variables in the **Resident Data** tab are given in 4. Mandatory fields are indicated by a red asterisk *. Required fields by a black asterisk *.

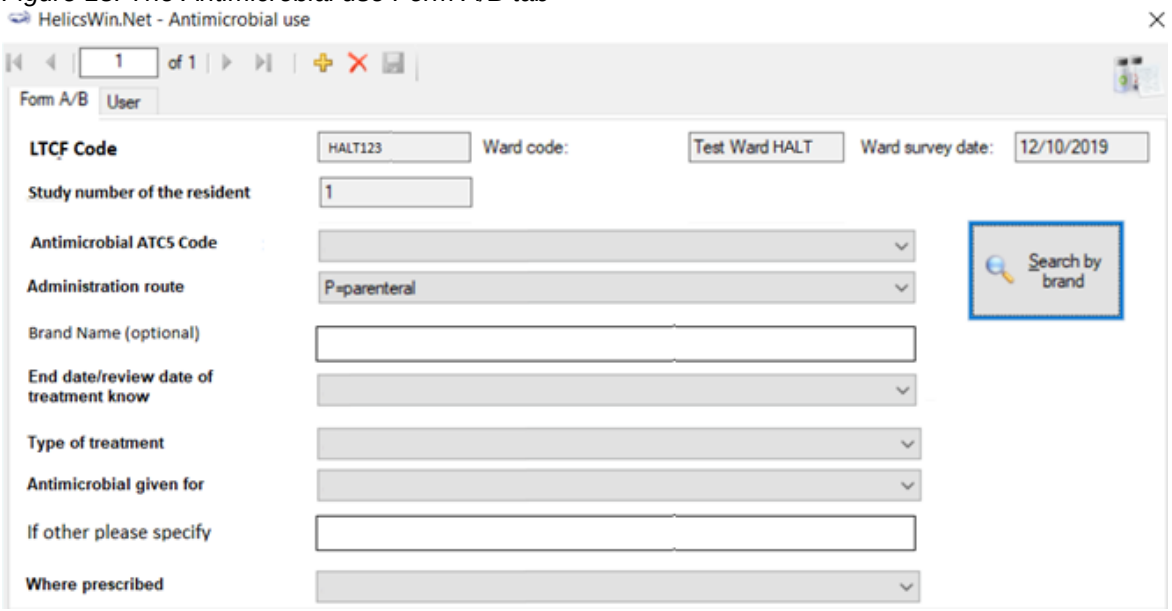
Variable descriptions from Resident Data tab

Variable	Description/definition
Resident survey number*	Unique code assigned to the resident by the local data collectors
Gender*	Gender of the resident: Male or Female
Birth year*	Year the resident was born (YYYY)
Length of stay in the facility*	The resident already has lived in the facility for EITHER less than one year OR one year or longer
Admission to a hospital in the last three months*	Was the resident admitted to a hospital in the three months preceding the PPS survey date? Only admissions to hospitals – i.e. hospitals with at least one medical or surgical ward - for at least one night should be considered.
Surgery in the previous 30 days	Did the resident undergo surgery in the 30 days preceding the PPS? Surgery is defined as a procedure where an incision is made (not just a needle puncture), with breach of mucosa and/or skin (incl. laparoscopic approaches). The procedure does not necessarily have to take place in operating theatres/room, but can also take place in interventional radiology rooms, cardiac catheterisation rooms, endoscopic rooms etc.
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. External catheters not draining urine directly from the bladder (e.g. condom catheters) should not be included.
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 or any other intravascular access system (including arteriovenous fistulae).
Urinary and/or faecal incontinence*	Lack of control of the sphincter from bladder or bowel resulting in an uncontrolled loss of urine or faeces and necessitating the use of diapers in the 24 hours prior to the PPS day (during the day and/or night). A resident with a urinary catheter should not be considered as incontinent for urine.
Pressure sores*	All grades of pressure sores should be considered, even the lowest grade characterised by discolouration of intact skin not affected by light finger pressure (non-blanching erythema)
Other wounds*	All wounds other than a pressure sore, including leg ulcers, traumatic or surgical wounds and insertion sites for percutaneous endoscopic gastrostomy, tracheostomy, urostomy, colostomy or suprapubic and peritoneal catheters.
Disoriented in time and/or space*	Residents who suffer from periods of confusion especially as to time, place or identification of persons (e.g. cognitive impairment).
Mobility*	In general, is the resident ambulant (he/she can walk alone with or without canes, crutches, walkers, etc), does he/she need a wheelchair for his/her movement or is he/she bedridden on the PPS day?

Antimicrobial use data

Antimicrobial use data are entered through the **Antimicrobial use Form A/B** tab. This form is opened by clicking the **Antimicrobial use** button in the **Patient | Resident Data** tab.

Figure 18: The Antimicrobial use Form A/B tab



A unique antimicrobial record is defined by the fields with a bold label in the **Antimicrobial use** form. These fields create a unique combination of:

- **ATC5 code + route + Brand name**

This means that it is possible to enter the same antimicrobial agent for more than one indication, for the treatment of more than one infection site, or for more than one route, in the same patient. De-duplication of the data will be done at the analysis level as necessary.

No warning message is given if the corresponding AU data are not entered in the AU form. These errors are only reported in the *data quality check*.

Typically you add patient data and antimicrobial consumption data, when you enter the survey data.

If data is incomplete, a Warning/Error message will open, listing required data items. Table 26 describes the variables in the **Antimicrobial use** form. Further details are provided in the HAI-Net PPS protocol (see *Related documents*).

To specify antimicrobial use data for a patient:

1. Click **Resident/Antimicrobial use/HAI data** in the ***main menu***.

   The **Patients** form opens displaying the **Resident Data** tab.

2. Scroll through the list of patients to locate the patient you are interested in and confirm that the patient details match the patient whose data you want to update.

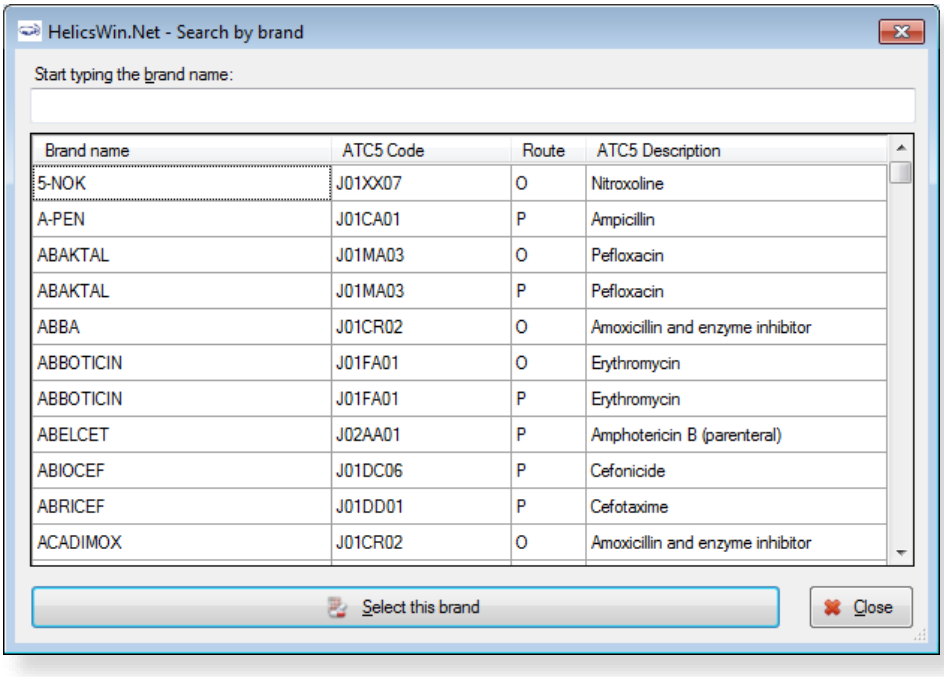
3. Select **Yes** for the **Patient receives antimicrobial(s)** field to activate the **Antimicrobial Use** button.

4. Click **Antimicrobial use**.

   The **Antimicrobial use Form A/B** tab (18) opens.

5. Click **Search by brand**.

   The **Search by brand** form opens.



6. Enter the brand name in the field or click the required brand in the list.

7. Click **Select this brand**.

   You return to the **Antimicrobial use** form, where the ATC5 code and route have been inserted.

8. Optionally, click the ***User** tab* to view or edit the antimicrobial use user variables.

9. Click the **Save** icon or press **Ctrl+S**.

Descriptions of the variables in the **Antimicrobial use General** tab are given in Table 26. Mandatory fields are indicated by a red asterisk *. Required fields are indicated by a black asterisk *.

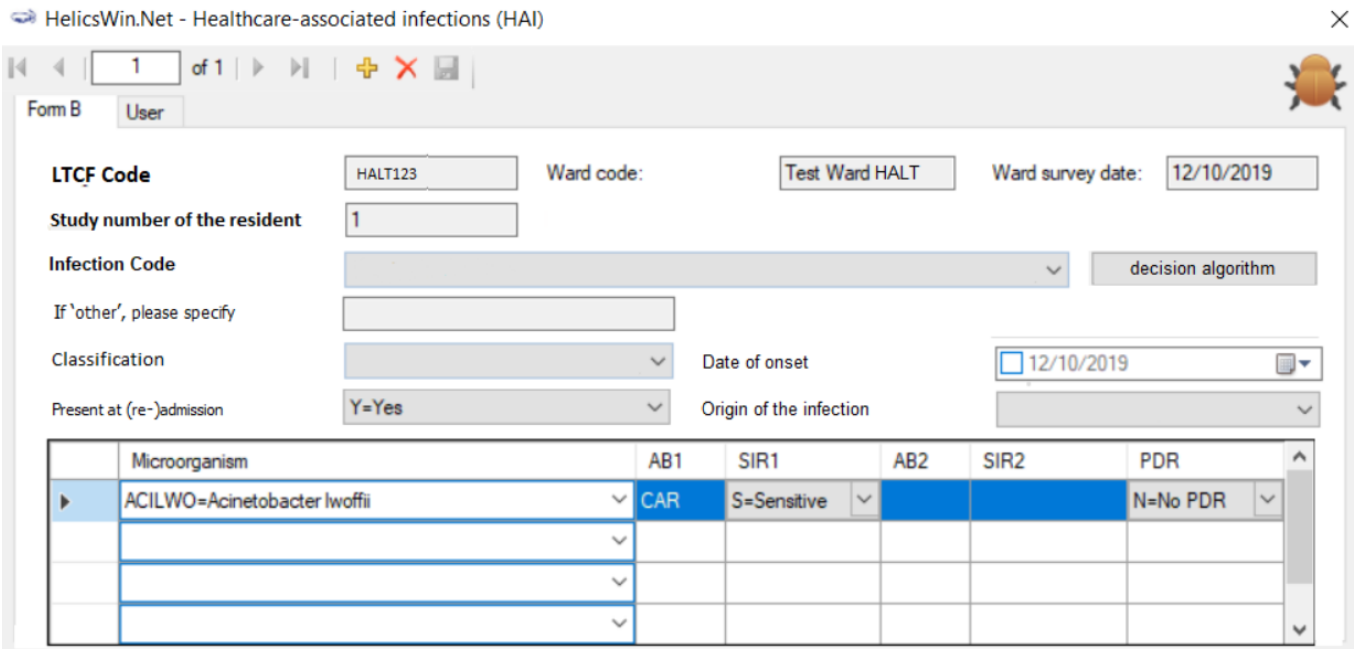
Antimicrobial use Form A/B tab variables

Variable	Description/definition
Antimicrobial name	Generic or brand name of the antimicrobial. These names should be converted to ATC5 codes by the national survey coordinator.
Administration route	Route of administration of the antimicrobial agent; oral, parenteral (intravenous (IV), intramuscular (IM) or subcutaneous (SC)) or other (e.g. rectal, inhalation).
End date/review date of treatment know	The resident's medical or nursing records clearly state the final date when the antimicrobial agents should be given (end date) or when the antimicrobial agents treatment should be revised by the prescriber (review date).
Type of treatment	Indication for antimicrobial use.
Prophylactic	Antimicrobial agents prescribed to prevent an infection. The resident presented no signs/symptoms of an infection when the antimicrobial agent(s) was prescribed.
Therapeutic	Antimicrobial agents prescribed to treat an infection. The resident presented signs/symptoms of an infection when the treatment was prescribed. Both empirical treatments (i.e. initiation of treatment before the causative pathogen is known) and microbiologically-documented treatments (i.e. with known pathogen known) should be considered.
Antimicrobial given for	Diagnosis group by anatomical site.
Where prescribed	Place where the antimicrobial was prescribed: In this facility (LTCF), in the hospital or elsewhere.

HAI data

HAI data are entered through the **Healthcare-associated infections (HAI)** form. This form is opened by clicking the **HAI** button in the **Patients | Resident** tab.

The Healthcare-associated infections (HAI) form



In the **HAI** form, a unique record is defined by the **Infection code**. The same HAI case infection code cannot be reported twice in the same patient record, even with a different date of onset, because this is not possible according to the ECDC-HALT protocol. Table 27 describes the variables in the HAI form. Further details are provided in the HAI-Net HALT protocol (see *Related documents*).

To specify healthcare-associated infection (HAI) data for a patient:

1. Click **Resident/Antimicrobial use/HAI data** in the *main menu*.

The **Patients** form opens displaying the **General** tab.

2. Scroll through the list of patients to locate the patient you are interested in and confirm that the patient details match the patient whose data you want to update.

3. Select **Yes** for the **Patient has at least one HAI** field to activate the **HAI** button.

4. Click **HAI**.

The **Healthcare-associated infections (HAI)** form (Figure 19) opens.

Note

- The date of onset of the HAI should be specified only if the HAI was not present at admission, that is, date of onset ≥ date of LTCF admission
- The resistance markers (phenotypes) do not have labels depending on the micro-organism.

5. Click the **Save** icon or press **Ctrl+S**.

Descriptions of the variables in the **HAI General** tab are given in Table 27. Mandatory fields are indicated by a red asterisk *. Required fields are indicated by a black asterisk *.

HAI General tab variables

Variable	Description/definition
Infection code	Data collectors must identify residents presenting signs and/or symptoms of an active infection on the day of the PPS. An active healthcare-associated infection (associated with a stay in a healthcare facility, e.g. LTCF or hospital) is defined as: A. signs/symptoms of the infection: • are present on the survey date AND are new or acutely worse a OR • were present in the two weeks (14 days) prior to the PPS AND were new or acutely worse a AND the resident is (still) receiving treatment for that infection on the survey date b AND B. the onset of symptoms occurred: • more than 48 hours (i.e. day 3 onwards) after the resident was (re-)admitted to the current LTCF OR • less than 48 hours (i.e. present on admission, on day of admission, or on day 2) after the resident was (re-)admitted to the current LTCF from another healthcare facility (e.g. LTCF or hospital) OR · deep and organ/space surgical site infections occurring less than 90 days after implant surgery OR · other surgical site infections occurring less than 30 days after an operation OR · Clostridium difficile infections occurring less than 28 days after discharge from a healthcare facility (e.g. LTCF or hospital).
If 'OTHER', please specify	If infection code='OTHER', please provide more information on the type of infection
Infection present at (re-) admission	Yes = signs/symptoms of the infection were present at admission or re-admission to the LTCF
Date of onset	Date of onset of the infection (dd/mm/yyyy). Not to be recorded if signs/symptoms are present at admission, but should be completed if onset during current stay in the LTCF. Record the date of first signs or symptoms of the infection. If unknown, record the date treatment was started for this infection or the date the first diagnostic sample was taken. If no treatment or sample, please estimate the date of onset.
Origin of the infection	Infection is associated with either (1) current LTCF stay; (2) stay in another LTCF; (3) hospital stay or (4) unknown.

Some types of errors detected

One common warning occurs when merging ward or patient data, when one of the two datasets has less detailed LTCF data. In this situation, if you are sure that the LTCF definitions relate to the same LTCF, it would be safe to merge the data.

Errors detected by the data quality check (but not detected on data entry) include the following:

- The variable *has_amu* is reported as *Yes*, but there are no antimicrobial use data reported in the **Antimicrobial use** form.
- The variable has_hai is recorded as Yes, but there are no healthcare-associated data reported in the HAI

Checking data quality

HelicsWin.Net performs a selected number of automatic validation checks during data entry. These checks do not pick up all possible problems. You are strongly recommended to perform a further level of in-depth checking *before* creating a report, exporting or merging data. The HelicsWin.Net *data quality check* function performs these in-depth checks. The checks must be started manually.

The data quality check verifies the internal consistency of all information entered into your database. This verification helps you to identify any problems, in turn greatly reducing the chances of producing inaccurate or inappropriate data outputs, and helping to ensure functional export of your data. As with all such data operations, you are advised to check your final data and ensure that the data make sense.

When you perform a data quality check, HelicsWin.Net produces messages at three severity levels: Error, Warning and Success. A data quality check output is produced, with each message including details of the issue identified.

Data quality check messages

Severity	Code	Description
Error	ERR	A fatal inconsistency has been identified in a record or across multiple records. The severity of the inconsistency is such that the data could be misreported, or there could be a failure of a merge, report or export operation. **User action:** You must locate and fix all such errors before proceeding with any merge, report or export operations.
Warnings	WARN	A significant inconsistency has been detected that indicates that data may be compromised in merge, report or export operations. **User action:** You must identify the inconsistency and then decide whether the issue identified might invalidate your data.
Success	SUCC	The data quality check found no issues with the record; the check was therefore deemed to be a success. **User action:** None.

Some types of errors detected

One common warning occurs when merging ward or patient data, when one of the two datasets has less detailed hospital data. In this situation, if you are sure that the hospital definitions relate to the same hospital, it would be safe to merge the data.

Errors detected by the data quality check (but not detected on data entry) include the following:

- The variable *has_amu* is reported as *Yes*, but there are no antimicrobial use data reported in the **Antimicrobial use** form.
- The variable *has_hai* is recorded as *Yes*, but there are no healthcare-associated data reported in the **HAI** form.
- In the Light protocol only:
  - A warning is generated when the user did not report denominator data by consultant/patient speciality for a given ward survey.
  - An error is generated if the total of the denominator data by consultant/patient speciality does not equal the value of *Total number of patients in ward* for a given ward survey.

- An error is generated if the consultant/patient specialty of a patient does not have a corresponding consultant/patient specialty record at the ward level.

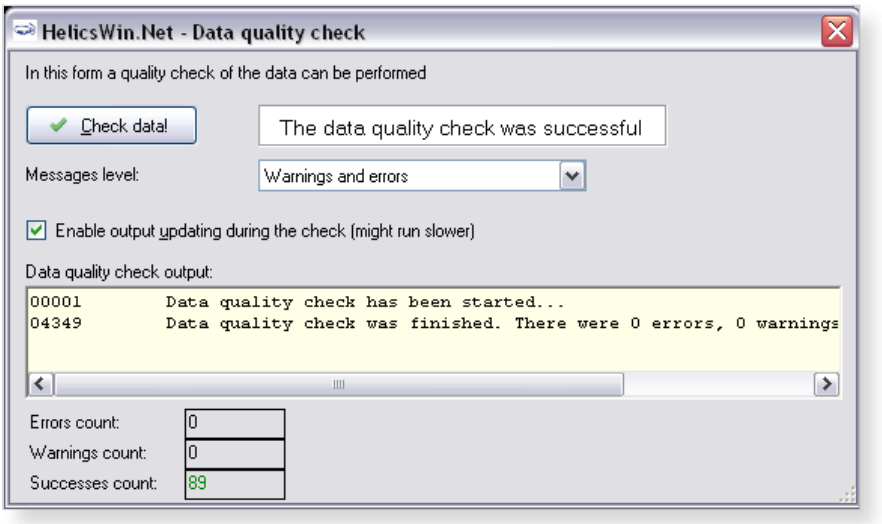
Running a data quality check

A data quality check checks the whole of the current HelicsWin.Net database.

To run a data quality check:

1. Click **Data quality check** in the ***main menu***.

   The **Data quality check** form opens.



2. In the **Messages level** field, select *Warnings and errors* (recommended).

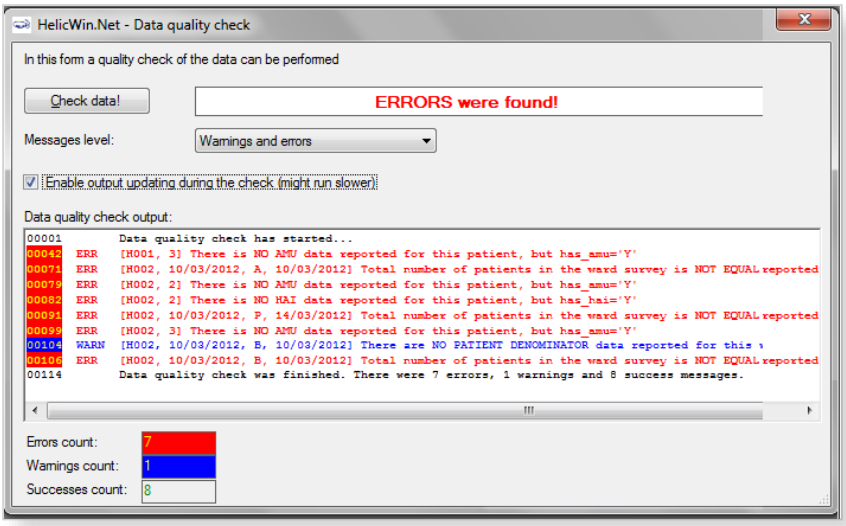
3. Deselect **Enable output updating during the check** (recommended).

   Enabling this option updates the data displayed in the *Data quality check output* field every time a new line is added. If this option is not enabled, updates are only made periodically.

   If the output consists of only 50 lines, for example, you can evaluate the output displayed in the *Data quality check output* field. However, if you have verbose output (Message level = all) and you have many patients, etc., thousands of lines of output might be displayed in the field. In such a case, if you enable this option (i.e. if you check this check-box), system response time can be very slow; whereas leaving this option unchecked will improve system speed.

4. Click **Check data**.

   When the processing has finished, the resulting messages are displayed in the data quality check output text box, and the (colour-coded) breakdown of the Error, Warning, and Success counts are shown underneath.


HelicWin.Net - Data quality check
In this form a quality check of the data can be performed
Check data!
ERRORS were found!
Messages level:
Warnings and errors
Enable output updating during the check (might run slower)
Data quality check output:
00001 Data quality check has started...
00042 ERR [H001, 3] There is NO AMU data reported for this patient, but has_amu='Y'
00071 ERR [H002, 10/03/2012, A, 10/03/2012] Total number of patients in the ward survey is NOT EQUAL reported
00079 ERR [H002, 2] There is NO AMU data reported for this patient, but has_amu='Y'
00082 ERR [H002, 2] There is NO HAI data reported for this patient, but has_hai='Y'
00091 ERR [H002, 10/03/2012, P, 14/03/2012] Total number of patients in the ward survey is NOT EQUAL reported
00099 ERR [H002, 3] There is NO AMU data reported for this patient, but has_amu='Y'
00104 WARN [H002, 10/03/2012, B, 10/03/2012] There are NO PATIENT DENOMINATOR data reported for this
00106 ERR [H002, 10/03/2012, B, 10/03/2012] Total number of patients in the ward survey is NOT EQUAL reported
00114 Data quality check was finished. There were 7 errors, 1 warnings and 8 success messages.
Errors count: 7
Warnings count: 1
Successes count: 8

Creating reports/analysis from survey data

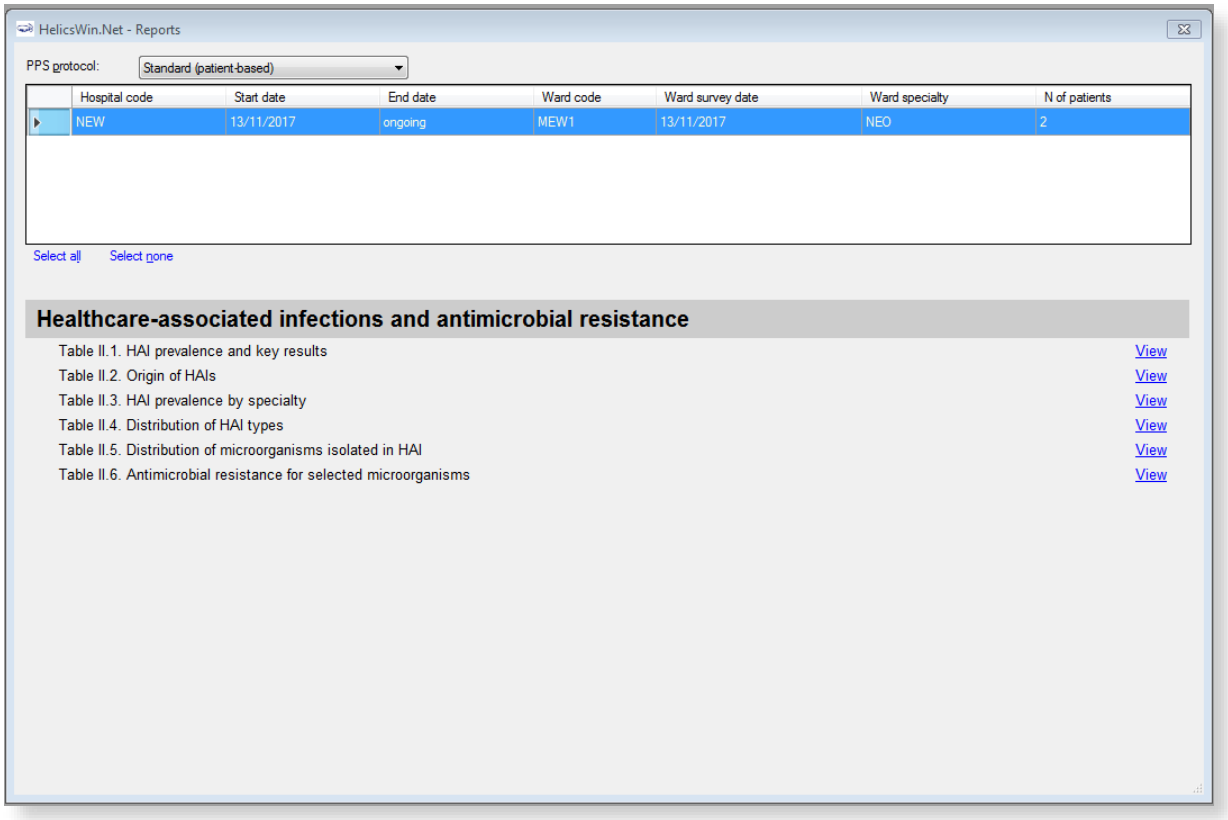
HelicsWin.Net provides forms for extracting data from existing surveys and collating these data into analysis/reports that may be viewed on a screen, printed, or exported as CSV files. You can create standard pre-formatted reports from templates that you select from a drop-down list. You can also customise your own specialised analysis, and save these customisations for future use.

The Analysis/Reports functionality is currently only available for the PPS module.

Reports

You create a report in the **Reports** form, which you access by clicking **Reports** in the *main menu*. This form has two main parts, the selection of the protocol and the selection of the Report.

Report form



Producing a report

To produce a report, you must first select the protocol and hospital(s):

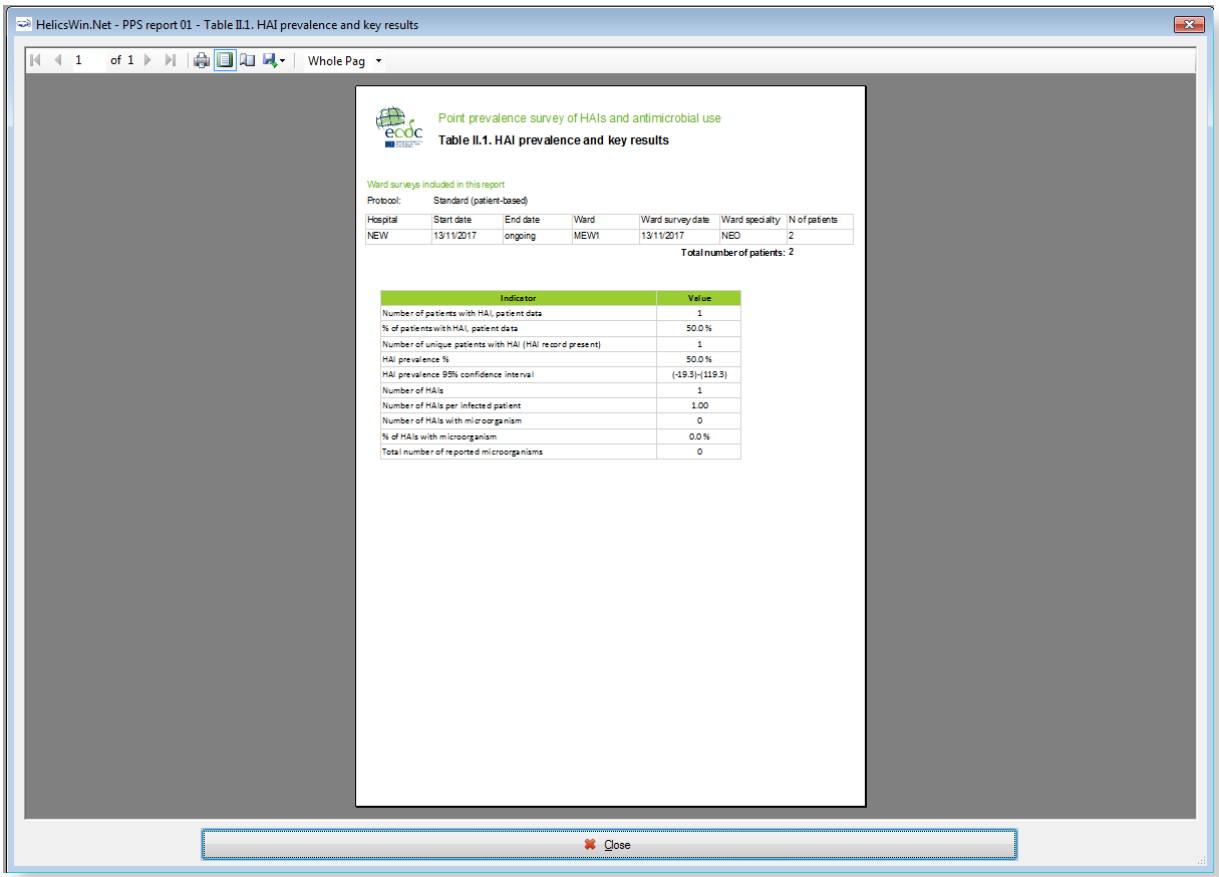
1. Click **Reports** in the *main menu*.
2. In the **protocol** field, select **Standard** or **Light** from the drop-down menu.

   Once you have made this selection, only Hospitals that used the Standard/Light protocol will be displayed.
3. Select a hospital you want to produce the report for.

The row containing the currently selected hospital is shaded.

4. To select additional hospitals for your analysis, press the **CTRL** key and then click each of the additional hospitals you want to select, in turn.
5. After selecting the protocol and hospital(s), select the report you want to view by clicking **View** in the right column. The report will open in a separate window where you can print or export the report to MS Word, MS Excel or .pdf.

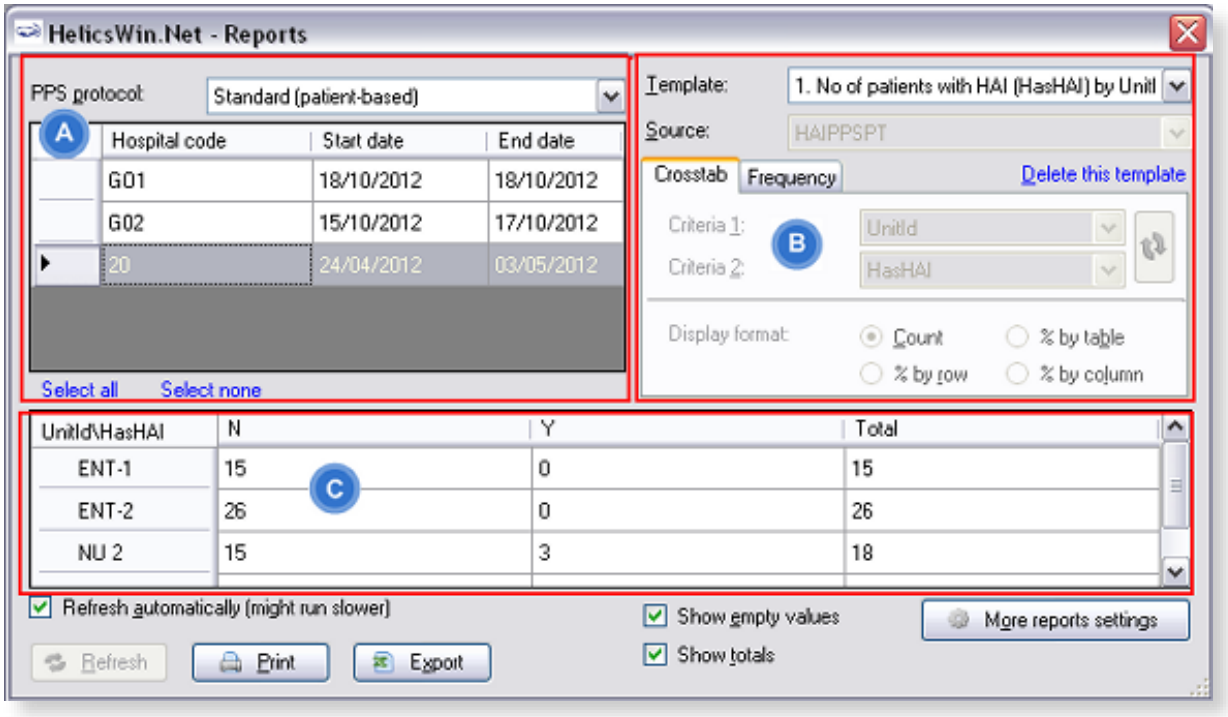
Example of a report window



Analysis

You create an analysis in the **Analysis** form, which you access by clicking **Analysis** in the *main menu*. This form has three main parts labelled **A**, **B**, and **C** in figure below.

Analysis form



On this form…

A	**Select PPS protocol and hospital(s).** Select a single or multiple hospitals. You can select multiple hospitals by pressing the **CTRL** key and clicking on any additional hospitals you want to perform analysis on. Analysis will show data for all selected hospitals together.
B	**Define outputs.** The dropdown menu for **Templates** contains four pre-prepared templates for tables, and the option **Custom**. Choosing **Custom** enables you to either (i) choose two variables to cross-tabulate in a table, or (ii) choose one variable for a tabulation of frequency. Note: you can only edit the type of data in a table when you are creating a custom template.
C	**Review the tabular results** that are displayed on the form. You can then use the buttons at the bottom of the form to print a hard copy of your report or export the report data as a CSV (comma separated variable) file for subsequent analysis in Microsoft Excel or other CSV compatible program.

Performing an analysis

To produce a report, you must first select the PPS protocol and hospital(s):

1. Click **Analysis** in the *main menu*.
2. In the **PPS protocol** field, select **Standard** or **Light** from the drop-down menu.

   Once you have made this selection, only Hospitals that used the Standard/Light protocol will be displayed.
3. Select a hospital you want to analyse.

   The row containing the currently selected hospital is shaded.

4. To select additional hospitals for your analysis, press the **CTRL** key and then click each of the additional hospitals you want to select, in turn.

Creating and printing an analysis from a template

After the protocol and hospitals have been selected in the previous procedure, then:

1. Select an analysis template from the Templates list.

   The following default options are available.

   a. Number of patients with HAI (HasHAI) by UnitID
   b. Number of patients with HAI (HAI data) by UnitSpecialty
   c. Number of patients receiving antimicrobials (ReceiveAntimicrobials) by MainUnitSpecialty
   d. Number of patients receiving antimicrobials (AM use data) by MainPatientSpecialty

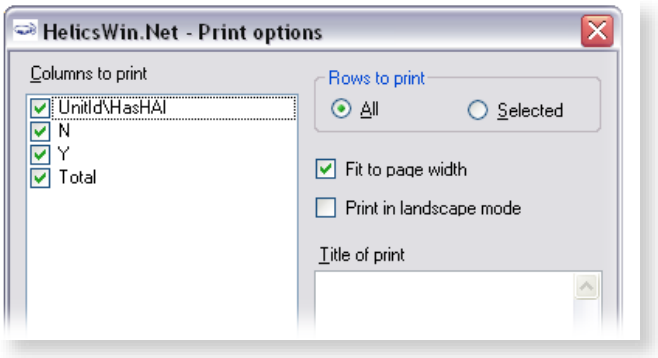
   Note: MainUnit/PatientSpecialty = the first three characters of the full specialty code, e.g. 'surgery' for 'orthopaedic surgery' (SURORT)

   Tip: If you cannot read the complete text on screen, expand the form by dragging the right edge to the right of the screen.

   The data to be analysed is automatically retrieved and, where necessary, calculated and displayed in the table. The **Crosstab** and **Frequency** tabs are not active for this option.

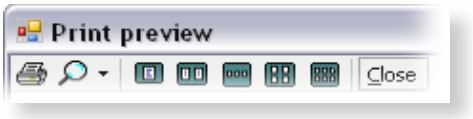
2. Click **Print** to initiate the printing the report.

   HelicsWin.Net prompts you to select which columns you want to print:



3. Make your selections, and click **OK**.

4. Follow the on-screen prompts and check the print preview before deciding to print.



5. In the **Print preview** window, click the **Print** icon to complete the print request, and then close the window.

Creating custom analysis and analysis templates

Use the **Crosstab** or the **Frequency** tab – see area **B** in the **Reports** form. As with the provided templates, custom reports are viewed in the tabular results area **C** in the **Reports** form, and

optionally printed or exported as a CSV file. Once you have defined your custom report, you can either save it as a named template, or simply discard it. If you save the template, its name will appear as an option for future use in the Template drop-down list in area **B** in the **Reports** form.

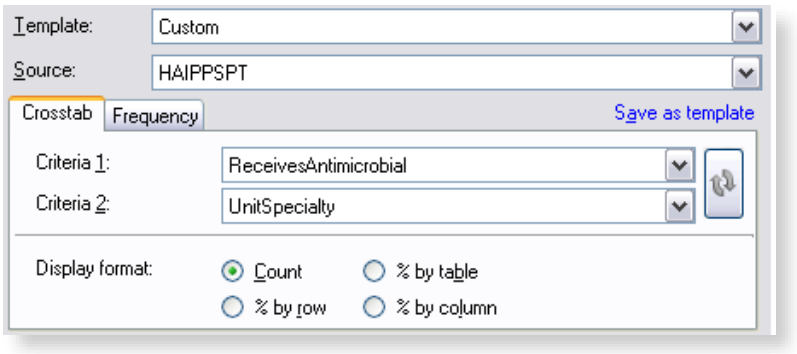
The two tabs represent two different ways of viewing the selected data.

Crosstab	Create a table with two different variables on the each axis (and shown in the row and column headers). You then have the option of specifying whether the cells contain numbers or percentages; and if the latter, what the percentages are how they are displayed.
Frequency	Create a table with the values that can be taken by a single variable (for example, *HasHAI* has possible values of Yes (Y) and No (N)) on one axis and the frequency of occurrence on the other.

To create a custom report:

6. Click **Reports** in the ***main menu***.
7. Select one or more hospitals and the protocol.
8. In the **Template** field, select **Custom**.
9. In the **Source** field select your source for your data.

   The number of options depends on the protocol you have selected.



10. Select the **Crosstab** tab, and specify the variables you want to see in a table, and the format of the data within the cells in that table.

Option	Description
Criterion 1	Defines the vertical axis, i.e. row headings
Criteria 2	Defines the horizontal axis, i.e. column headings
Count	The cells contain raw* data; and the column and row totals are unscaled numerical values.
% by table	Each cell contains a percentage of the raw* total for the whole table.
% by row	Each cell in a row contains a percentage of the sum of the raw* values for that row.
% by column	Each cell in a column contains a percentage of the sum of the raw* values for that column.

*the raw value is the numerical value in the table before any calculations are made.

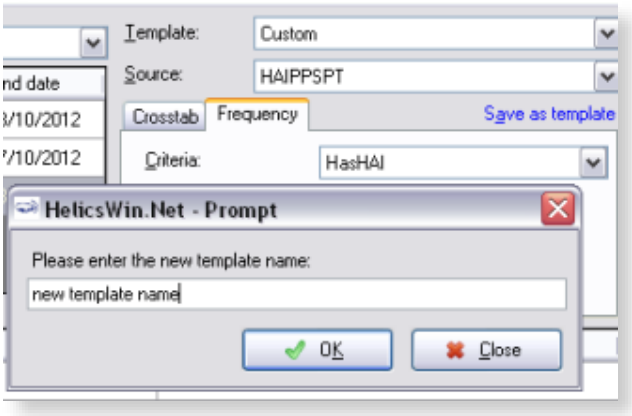
11. Alternatively, select the **Frequency** tab and select the variable (criterion) whose data you want to display, in this case HasHAI (from the field **Patient has active HAI**). The frequencies, in terms of the count and percentage, are shown for each value of the selected variable.

HasHAI	Frequency	Frequency (%)
N	202	91%
Y	19	9%
Total	221	100%

12. Optionally, as for the default templates, click **Print** to print the table, or **Export** to export the data as a CSV file.

13. Click **Save a template**, to save these table settings as a named templete.

The template is automatically added to the Template drop-down list, so that you can reuse these settings again later.



Note: You cannot save a template that is identical in function to an existing template; if you try this, you simply get an error message.

Changing the display precision settings

You can change the number of decimal places on the reports, and whether sub-precision values are displayed. On the **Reports** form, click **More report settings** to change the number of decimal places displayed, and whether sub-precision values are displayed.

Precision

Precision refers to the number of decimal places in the displayed results. The following table shows the displayed frequency results for the quotient 202 / 221 for different display precisions.

Precision of displayed results

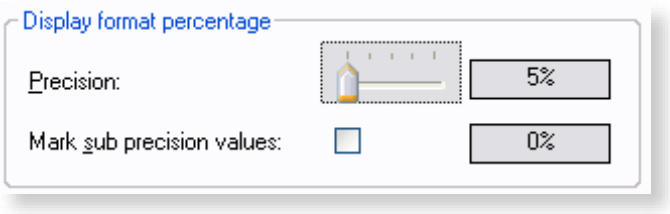
Decimal places	**0**	**1**	**2**	**3**	**4**

Displayed results	91%	91.4%	91.40%	91.403%	91.4027%

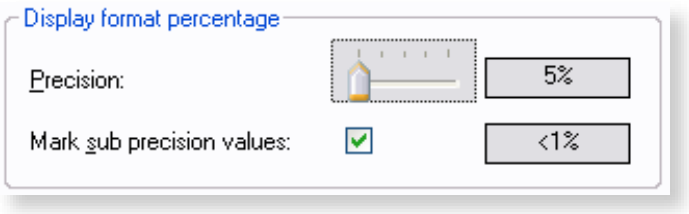
Sub-precision values

Sub-precision values are those values that would give a value of zero when expressed as percentages, when rounded down. This can be misleading if the results tables shows non-zero results.

The following tables demonstrate the effect of selecting and deselecting the **Mark sub precision values** checkbox when the precision set to the lowest level. A frequency of 3 in 347 corresponds to 0.86%. With **Mark sub precision values** deselected, this value is displayed as 0%; if **Mark sub precision values** is selected, the value is displayed as <1%, which most users will find more informative.

Settings	Displayed results
	

HasHAI	*Frequency*	*Frequency (%)*
N	344	100%
Y	3	0%
Total	347	100%



HasHAI	*Frequency*	*Frequency (%)*
N	344	100%
Y	3	<1%
Total	347	100%

Changing precision values in analysis

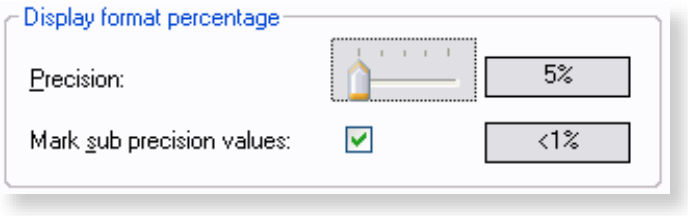
To change the precision, and sub-precision values in reports:

1. Click **Analysis** in the *main menu*.
2. Click on the **More analysis settings** button.

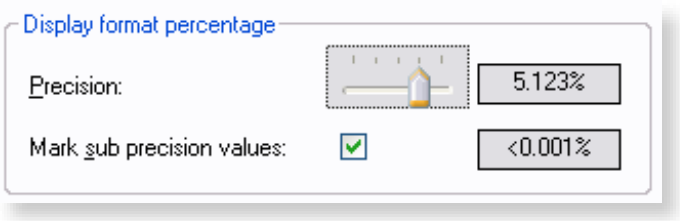
   A form opens with contains a slider control and checkbox, as shown below.

   Sliding the slider fully to the left gives zero decimal places (e.g. 5%). Sliding it three steps to the right gives three decimal places (e.g. 5.123%).

Settings	Displayed results



HasHAI	Frequency	Frequency (%)
N	202	91%
Y	19	9%
Total	221	100%



HasHAI	Frequency	Frequency (%)
N	202	91.403%
Y	19	8.597%
Total	221	100.000%

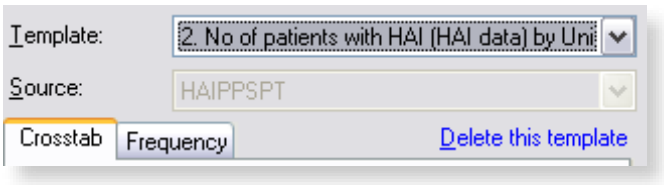
3. Tick the option **Mark sub-precision values:** to change the format of data below the minimum value.

Removing analysis templates

You can remove built-in and custom analysis templates one at a time if you find you do not need those templates again. Alternatively, you can reset the list of templates to its initial status: any missing built-in templates will be restored; all custom templates will be permanently deleted.

To remove a report template:

1. Open the **Analysis** form:



2. In the Template drop-down list, select the template you want to delete.

   You can select either a custom template or a built-in template.

3. Click **Delete this template**.

   HelicsWin.Net prompts you to confirm the deletion.

   Caution: The selected template will be deleted from the list.

   If you delete an existing custom template, you cannot get it back without recreating it from scratch.

4. Click **OK**.

   The selected template is deleted, and you return to the **Reports** form.

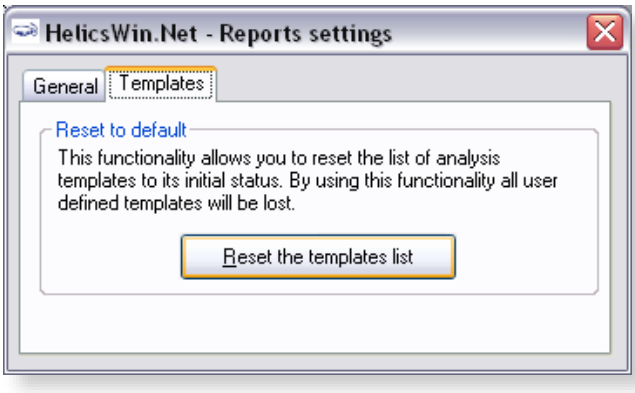
Resetting the templates list

To return your templates to their initial status, you need to reset the templates list. This procedure

- Restores any built-in templates that have been deleted.
- Permanently deletes all custom report templates from the list.

To reset the templates list:

1. In the **Reports** form, click **More reports settings**.
2. Click the **Templates** tab.



3. Click **Reset the templates list**.

   HelicsWin.Net asks you to confirm your request, and then confirms that all user-defined templates are deleted.

Exporting data from the database

Before exporting data, always perform a data quality check and correct any data errors that you find. We recommend using the HelicsWin.Net *data quality check* functionality to help you achieve this (see Section 0).

You can export in the original Access database format (as an .mdb file compressed in a ZIP file) or in the TESSy CSV format.

Exporting data in Microsoft Access format

You can export data from the HelicsWin.Net database files as a zipped Access .mdb file.

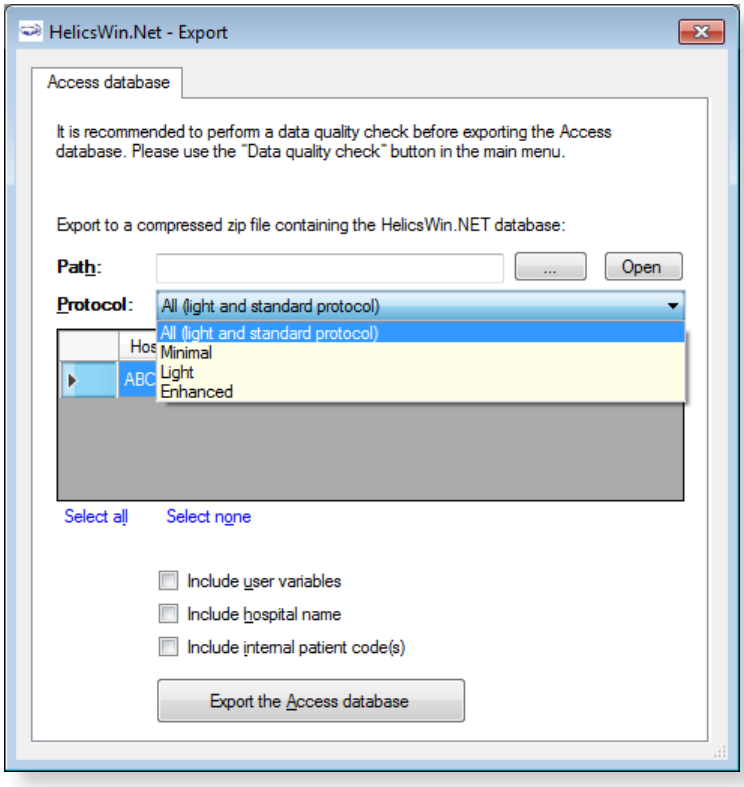
Before you start, make sure that the survey start and end dates are defined in the **Hospital data** form for each hospital for which you want to export data.

To export data in Microsoft Access format:

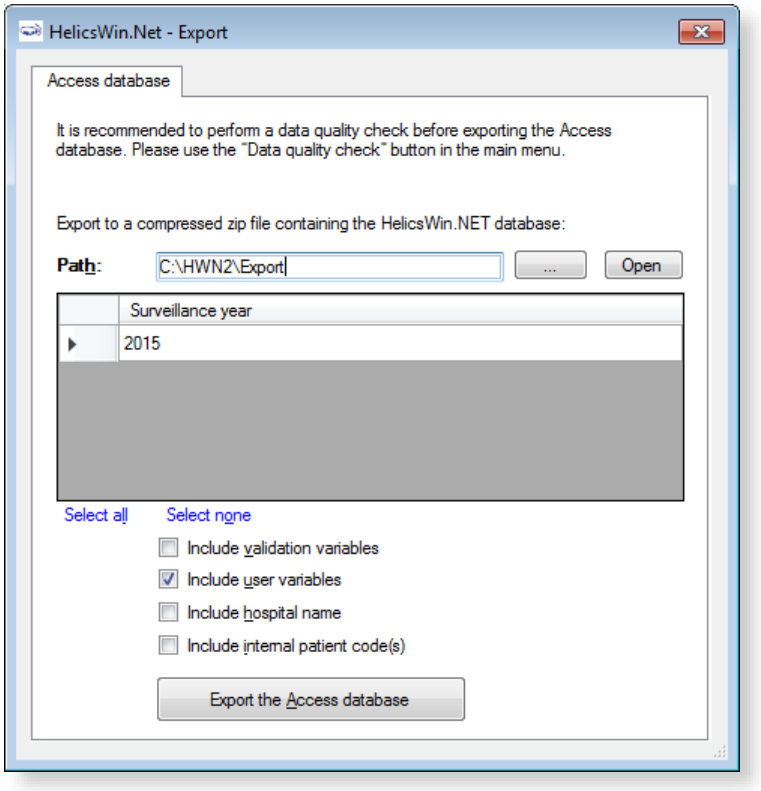
- Click **Data export** in the *main menu*.

  The **Export** form opens, by default in the **Access database** tab.

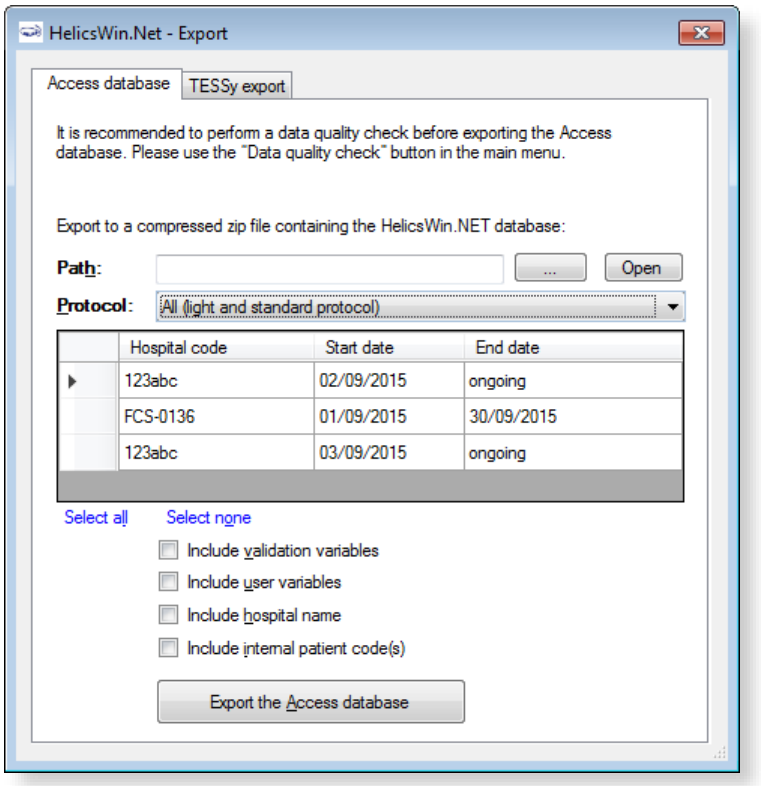
  CDI



ICU


HelicsWin.Net - Export
Access database
It is recommended to perform a data quality check before exporting the Access database. Please use the "Data quality check" button in the main menu.
Export to a compressed zip file containing the HelicsWin.NET database:
Path:
C:\HWN2\Export
...
Open
Surveillance year
2015
Select all
Select none
Include validation variables
Include user variables
Include hospital name
Include internal patient code(s)
Export the Access database

PPS


HelicsWin.Net - Export
Access database
TESSy export
It is recommended to perform a data quality check before exporting the Access database. Please use the "Data quality check" button in the main menu.
Export to a compressed zip file containing the HelicsWin.NET database:
Path:
...
Open
Protocol:
All (light and standard protocol)
Hospital code
Start date
End date
123abc
02/09/2015
ongoing
FCS-0136
01/09/2015
30/09/2015
123abc
03/09/2015
ongoing
Select all
Select none
Include validation variables
Include user variables
Include hospital name
Include internal patient code(s)
Export the Access database

- Click the **Open** button (to the right of the **Path** field), to locate the folder to which you want to send the exported file, and then click **OK**.

  For example, to use the folder C:\HWN2\Export, go to the folder C:\HWN2, and create the folder **Export** manually.

- CDI and PPS: In the data grid, select the code(s) and survey dates for the hospital-survey(s) for which you are exporting the data. You can select more than one hospital-survey by holding down the control button, and then clicking on each hospital code you wish to select or select all hospitals by clicking the **Select all**.

  Make sure that the CDI / PPS start and end dates are defined in the **Hospital data** form.

- ICU: The entire selected surveillance year for the current hospital will be exported.

- Optionally, use the checkboxes to choose whether to include additional sets of variables in the exported files. These are data entered relating to:
  a. Validation studies (not for CDI)
  b. Users
  c. Hospital names
  d. Internal patient codes (for both primary and validation data).

  As some of these may contain confidential information, they are not exported by default.

  If a checkbox is left unchecked, the corresponding variables will be empty in the export file.

  For the pilot study of the HAI-Net ICU protocol v2.0, user variables include the feasibility questionnaire data and need to be included in the export.

  To preserve patient confidentiality in compliance with Data Protection principles, the internal patient code data must not be included in the export file sent to the regional, national or EU level, and must not be included in any data sent to ECDC/TESSy.

- Click **Export the Access database**.

  HNW generates a ZIP file containing the exported database file **HelicsWinNet_export.mdb** or **HelicsWinNetICU_export_yyyymmdd_hhmmss.mdb**

  The ZIP file is date and time stamped with the file name having the format: **HWN_yyyymmdd_hhmmss.zip (PPS) or HWN_ICU_yyyymmdd_hhmmss.zip**

- In the **Access database** form, click **Open** to view the contents of the folder you have exported your file to.

- ICU pilot: attach the exported zip file containing the Access database to an email and send it to your national HAI surveillance coordinator.

Exporting data to TESSy CSV format

This feature is not yet available for the CDI or ICU modules.

You can also export data for a given hospital and survey in a TESSy CSV (comma-separated values) file. TESSy (The European Surveillance System) is ECDC's online system for upload and analysis of data for different networks for surveillance of communicable diseases, and can only be accessed by nominated national/regional contact points. The format of the exported data is defined in the CDI / ICU / PPS protocol, and in the supporting documents on the TESSy website at *https://tessy.ecdc.europa.eu/TessyWeb*.

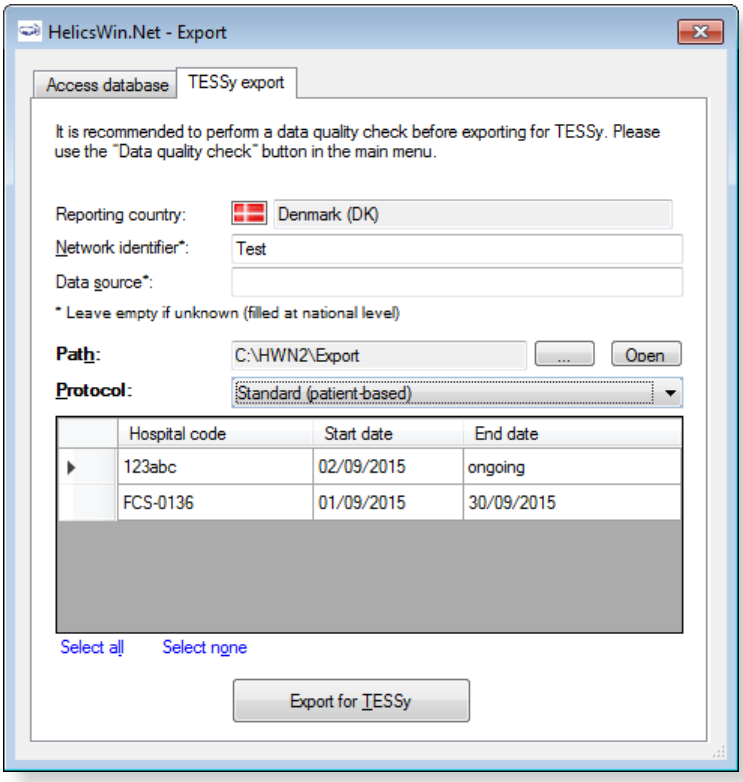
Some variables need to be added to the TESSy format, such as the data source (usually the national surveillance institute) or the network ID (for example, if there is more than one surveillance network for the same disease in the same country). It is possible for any user to enter values for the variables *Network identifier* and *Data Source*. In general, this specific information is not known at the hospital level, and so these variables can be left empty, e.g. until entry by the nominated contact points. The freeware tool ***csved*** can be used to add the information to the CSV file.

To export data in TESSy format:

1. Click **Data Export** in the ***main menu***.

   The **Export** form opens.

2. Click the **TESSy export** tab to open the corresponding form.



3. Enter the **Network identifier** and **Data source**, if known.

   Usually, this information is not known at the hospital level, in which case these variables should be left empty and subsequently entered by the nominated contact points.

4. Click the **Browse** button (**...** to the right of the **Path** field), to locate the folder to which you want to send the exported file. You can either use an existing folder or create a new folder by clicking **Make New Folder** to create e.g. C:\HWN2\Export. You can also open the selected path by clicking the **Open** button.

5. In the **Protocol** field, select the protocol for the file to export.

6. In the data grid, select the code for the hospital(s) for which you are exporting the data. You can select more than one hospital-survey by holding down the control button, and then clicking on each hospital code you wish to select or select all hospitals by clicking **Select all**.

   Make sure that the start and end dates are defined for your PPS.

7. Click **Export for TESSy**.

The CSV export may take some time to finish. HWN generates five CSV files, with following names:

Standard protocol:

- 1.HAIPPS.csv
- 2.HAIPPSPT.csv
- 3.HAIPPSPTAM.csv
- 3.HAIPPSPTINF.csv
- 4.HAIPPSPTINFRES.csv

Light protocol:

- 1.HAIPPSLIGHT.csv
- 2.HAIPPSLIGHTDENO.csv
- 3.HAIPPSLIGHTDENOAM.csv
- 3.HAIPPSLIGHTDENOINF.csv
- 4.HAIPPSLIGHTDENOINFRES.csv

The numbers at the beginning of the file names designate the level of the data in the hierarchical database, for example, the first level 1.HAIPPS.csv file contains the hospital data.

Note: Values for national and some hospital variables are not included in the first level export file (1.HAIPPS.csv). These values should be completed by the National/Regional PPS Co-ordinating Centre before uploading to TESSy HAIPPS: *DataSource*, *NetworkID*, *HospitalLocation* (*NUTS1* code) and *SampleHospital* (which specifies whether this hospital belongs to a national sample for the PPS/survey).

Warning: The file names do not contain the hospital code or the time stamp, so when data are exported for a second hospital, any previous TESSy export csv files in the same directory are overwritten.

To prevent this, compress the files into a zip file and include the name of the hospital in the file name, before sending the data to the national/regional PPS coordinating centre. It is also recommended that you transfer the TESSy export files together with the Access database export file.

Converting to TESSy CSV using Stata

Stata conversion programmes are available from ECDC for national PPS coordinating centres to convert both Standard- and Light-protocol Access data to TESSy CSV files. These Stata programmes ask for user input for the data that must be completed by the national coordinating centre.

Recommendation: Transfer the TESSy export files together with the Access database export file to your National/Regional PPS Coordinating Centre.

Merging data

The data merge facility enables you to merge data in different databases that relate to the same ward or hospital. At the national or regional level, you can merge data from different hospitals so that you can collect combined statistics for all the hospitals, and run reports on the combined database.

Recommendations

Before you attempt to perform a merge on two or more databases:

- You must have a complete backup of each database file (HelicsWinNet.mdb) in its current state.
- You must run a *data quality check* on each database before you perform the merge. In addition, you must identify the causes of all errors and warnings in the results list.

Merging two database files for the same hospital

Typically you need to merge data whenever you have collected survey data on more than one computer. In the scenario described here, there are two computers, named A and B, each of which contains data collected from the same hospital (hospital code G01), but different wards. We are going to merge the data from computer B with that on computer A. The computers share a networked drive P.

The following table summarises the database names, location, and content:

Hospital code	Computer	Wards	Original database	Location of database files	Data quality check required
G01	A	W01, W02	HelicsWinNet.mdb	C:\HWN2	Yes
G01	B	W11, W12	HelicsWinNet.mdb	P:\HWN2	Yes

On computer A

Backup the current database and select hospital G01 as the active hospital

1. Copy the file HelicsWinNet.mdb to a backup folder (on computer A).

   The merge process modifies the original file, so if anything does go wrong, you may need this backup.

2. Click Hospital definition in the ***main menu***.

   The **Hospitals** form opens.

3. Select the hospital with code G01, and then click **Select this hospital**.

   The form closes and the code G01 is displayed at the top of the main menu.

On computer B

Export the file HelicsWinNet.mdb database to the common P drive.

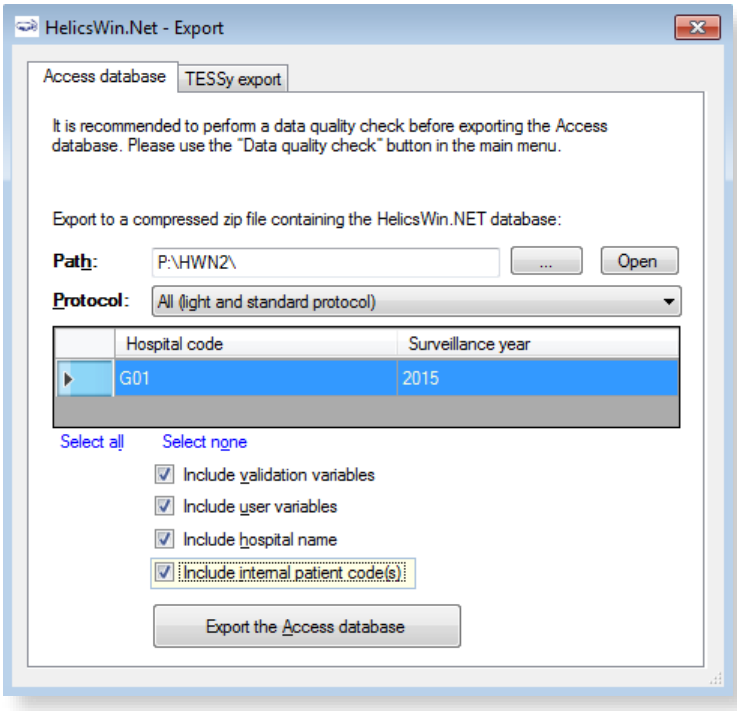
Note: You do not need a backup of the database on computer B, because you will be working with a copy and the original will remain unchanged.

1. Create a folder HWN2 on the P drive.
2. Click **Hospital definition** in the *main menu*.

   The **Hospitals** form opens.
3. Select the hospital with code G01, and then click **Select this hospital**.

   The **Hospitals** form closes.
4. Click **Data Export** in the main menu.

   The **Export** form opens.



5. In the **Access database** tab, click the **Open** button (situated to the right of the **Path** field), and navigate to the folder you just created on the P drive, and then click **OK**.

   The text P:\HWN2 is added to the path field. You cannot edit this field directly.

   Note: The following steps match those described above in the section *Exporting data from the HelicsWin.Net database*.
6. In the **Protocol** field, select the protocol(s) as necessary for your survey(s).
7. Select the hospital code **G01,** and check the start and end dates to confirm that you have the correct survey.
8. Optionally, tick relevant checkboxes.

9. Click **Export the Access database**.

   The database is exported as a zip file.

10. Note the name of the zip file and click **OK**, and then close the **Export** form.

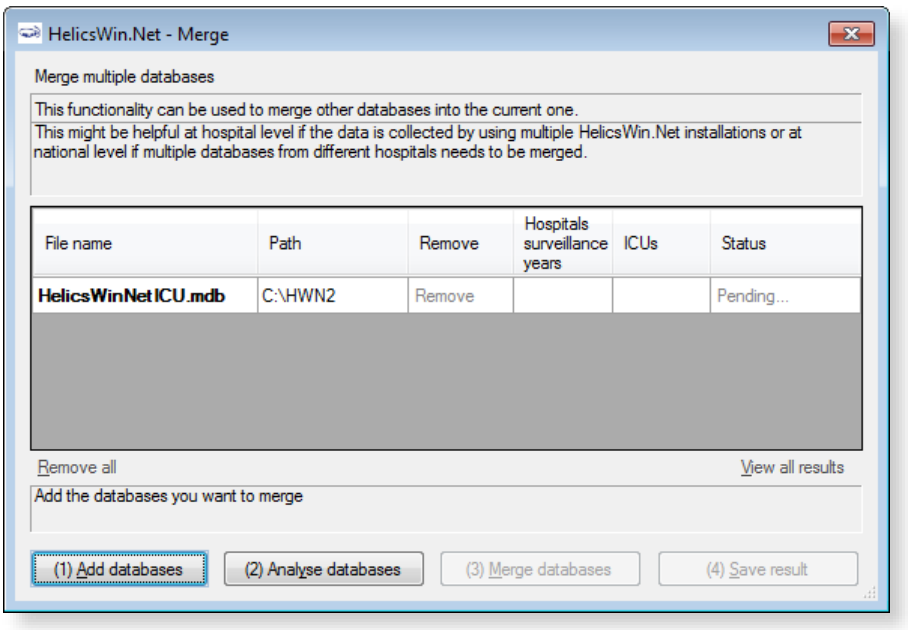
    Navigate to the P folder and unzip the file (HelicsWinNet.mdb) to P:\HWN2.

On computer A

With hospital G01 selected, open the Merge form and add the database from computer B, now stored on the P drive.

1. Click **Data merge** in the *main menu*.

   The **Merge** form opens.



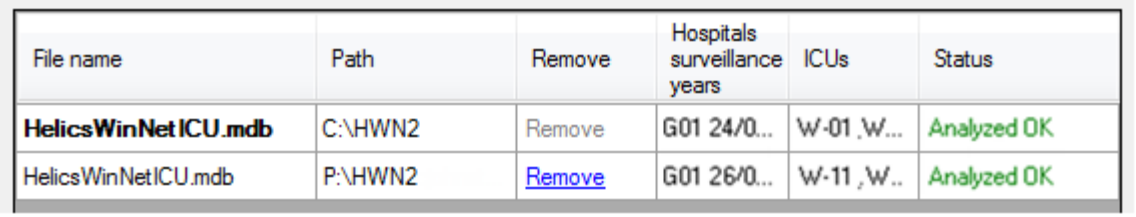
2. Click **(1) Add databases**.

3. Navigate to the folder containing the file you want to merge, in this case it is HWN2 on the P drive, and then select **HelicsWinNet**.mdb.

   The P database is added to the list.

Click **(2) Analyse databases**.

If the files are correctly formatted, the status **Analysed OK** is returned. In addition, the hospital survey dates and ward names are displayed for each database.



File name	Path	Remove	Hospitals surveillance years	ICUs	Status
HelicsWinNetICU.mdb	C:\HWN2	Remove	G01 24/0...	W-01 ,W...	Analyzed OK
HelicsWinNetICU.mdb	P:\HWN2	Remove	G01 26/0...	W-11 ,W..	Analyzed OK

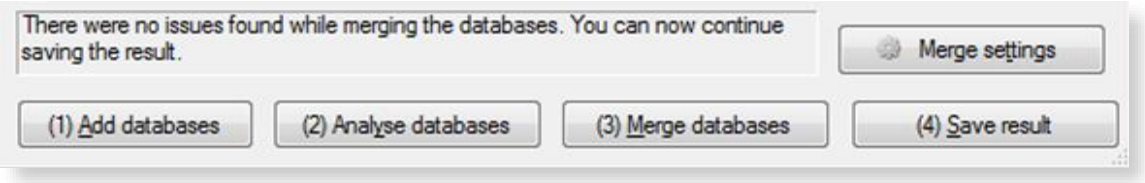
4. Check that the survey dates and ward names, as displayed, represent the correct data.

   You can expand the column widths to read the data as necessary.

5. Check that the survey dates and ward names, as displayed, represent the correct data.

6. Click **(3) Merge databases**.

   If successful, the following message appears at the bottom of the **Merge** form.



7. Click **(4) Save result.**

   A warning box opens. This warns you that saving the data will change the dataset that is active in your HelicsWin.Net to be a merged version of the datasets selected in the previous steps, i.e. from computers A and B.

8. Click **Yes.**

9. Optionally, restart HelicsWin.Net to ensure that the data is refreshed. This is recommended.

10. Additionally, we recommend running a Data quality check from the ***main menu***, following the merge, and a restart, to identify any issues**.**

To check patient data

You can check your new data in the **Patients** form.

1. Click **Hospital definition** in the ***main menu***.

   The **Hospitals** form opens.

2. **Select the hospital you wish to check.**

3. Click **Patient/Antimicrobial use/HAI data**.

   The **Patients | Risk Factors** form opens

4. Click the **Patients list** tab.

   The list opens. You can sort the list by column header, if necessary.

5. To examine the list in detail, click **Export**.

   HWN exports the data as a CSV file, which you can open in Excel.

Troubleshooting data merges

Warnings

I get warnings when I try to merge data from a single survey made on two different computers.

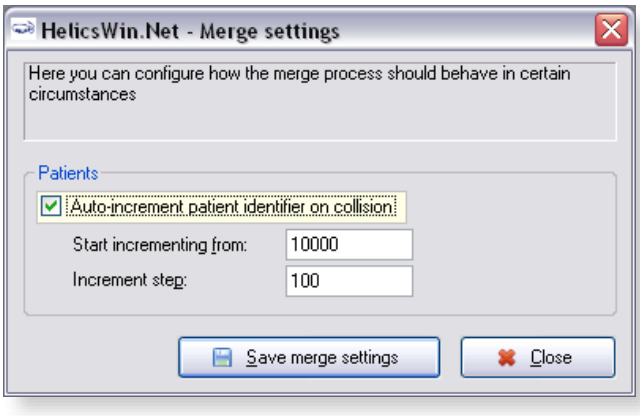
The most common reason for warnings is that your hospital definitions are not identical in the two databases. In such cases you will get a warning message, but you will still be able to merge the data. If you are sure you are not going to lose data, you can go ahead and merge. In these cases, HWN discards the second hospital definitions and uses the one in the database you are merging data into.

Duplicate patient IDs and collision detection

There are several scenarios that can lead to having duplicate patient IDs. The action you need to take depends on several factors:

Scenario 1: **If you are merging two distinct databases that contain the same patient IDs, but these IDs belong to different patients:**

- You need to turn on the **Auto-increment patient identifier on collision** setting in the **Merge settings** form.



1. To access the **Merge settings** form, click **Data merge** in the *main menu*, and then click **Merge settings**.

The default values usually work, but you may need to change these if you are doing multiple merges, for example.

Scenario 2: **You really do have some duplicate data with the same patient records occurring more than once.**

- In this case, make sure you turn off (clear) the auto-increment setting.

  Any duplicates will **not** be uploaded.

Caution	It is possible to get a situation where both scenarios are true in part. If this is the case, you can only make progress by examining each record in turn.

Modifying settings

You can modify basic settings in HelicsWin.NET to suit your own personal preferences.

To change settings:

1. Click **Settings in the** ***main menu***.

   The **Settings** form opens; by default the content of the **General** tab is displayed.

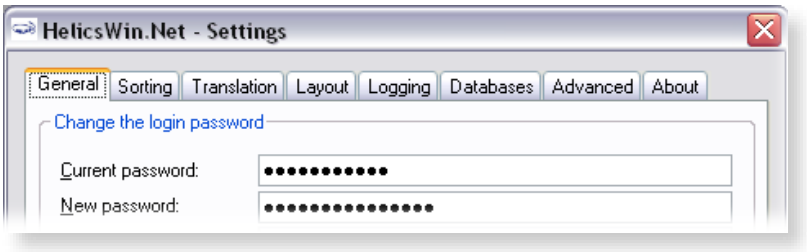


Table below outlines which settings you can change.

Tab	Functions
General	- Reset password and restore hidden notification messages
Sorting	- Set the sort order for data display and reports
Translation	- Edit translation texts that appear in the user interface. - Check the translation for missing or hidden text. - Automatically fix inconsistencies in the translation file.
Layout	- Restore the application to its default layout settings. The application remembers your screen layout if you resize any screen elements. - Scale the application, including text size and button size, to suit your screen. - A set of miscellaneous controls.
Logging	- View the location of the folder where the logs are stored; open the folder. - Set the level of detail collected in log files. Note: setting the level to trace may slow down the application.
Databases	- Lists the current database in use. - Backs up all databases to the back folder to a chosen backup folder.
Advanced	- Resets all customizations made to your application.
About	- Contact information. - Links to documentation, i.e. the protocol and forms, and this manual. - Version number and license agreement

Changing your log-in password

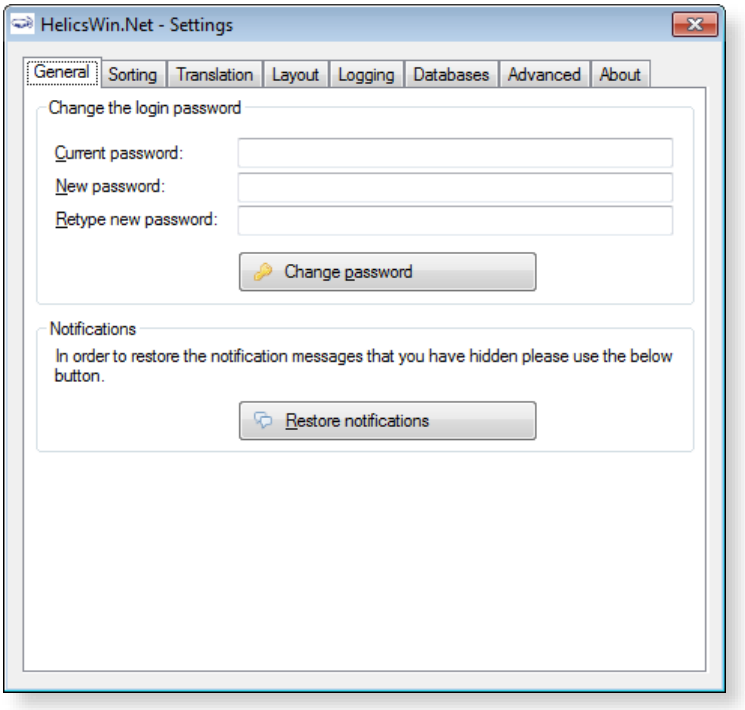
You can replace your existing password with a new one from the **General** tab in the **Settings** form. However, you do need to know your existing password to be able to replace it.

Important:	For security reasons, if you forget your password you will not be able to recover it and so you will be locked out of the application. Re-setting your password requires special intervention from your National PPS Co-ordinating Centre or equivalent.

To change your log-in password:

1. Click **Settings** in the *main menu*.

   The **Settings** form opens; by default the **General** tab is displayed.



2. In the **Current password** field, enter your existing password.

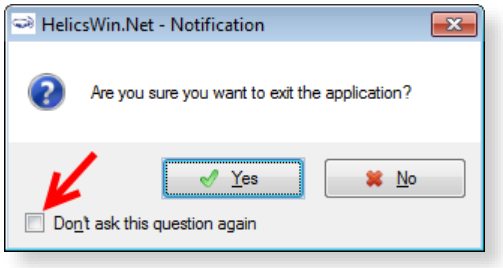
3. In the **New password** field, enter your new password, and then enter it again in the **Retype new password field**.

4. Click **Change password** to implement the change.

The **General** tab also allows you to *restore notifications*.

Notifications

A number of dialog boxes allow you to select not to see that particular notification again.

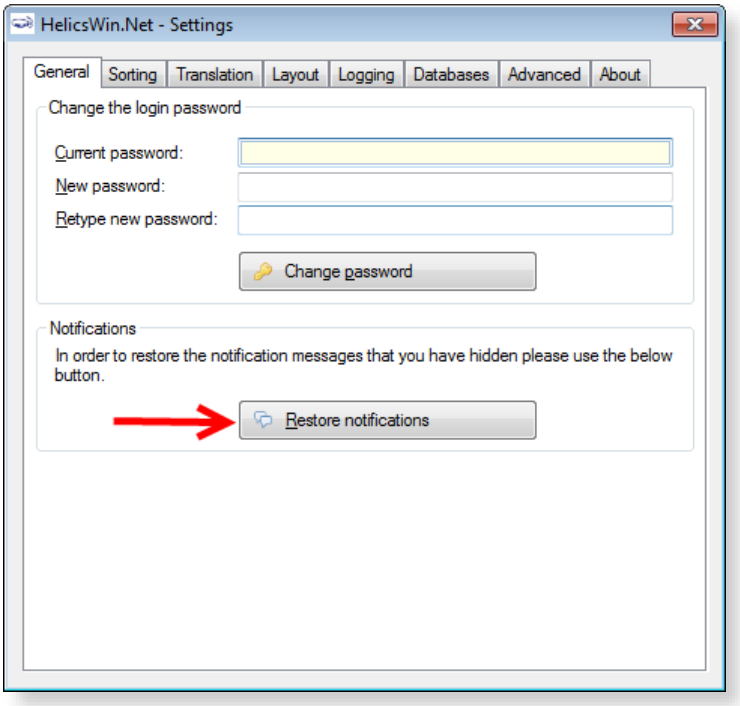


If you later wish to see all the notifications that you have selected not to see:

1. Click **Settings** in the *main menu*.

   The **Settings** form opens; by default the **General** tab is displayed.

2. **Click Restore notifications**.



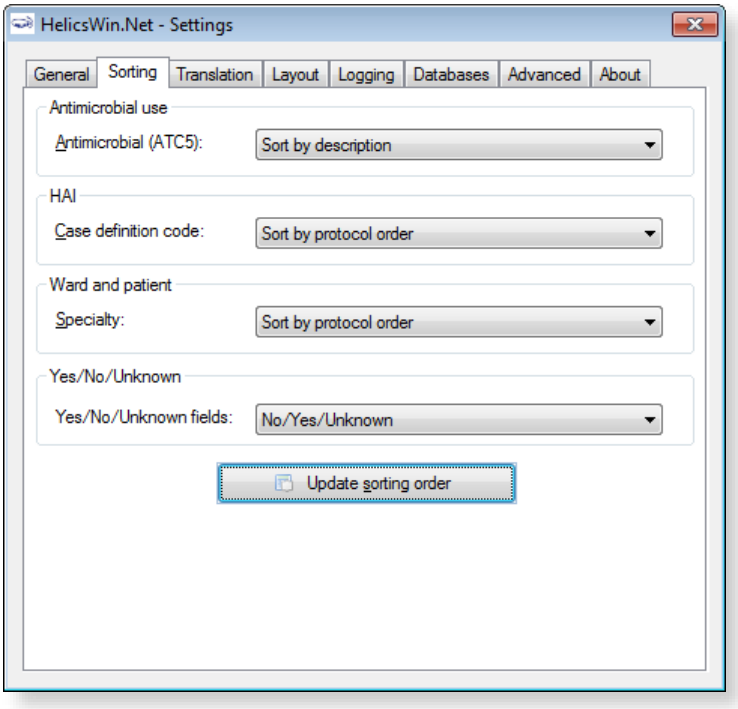
Sorting drop-down lists

To change the sorting order for options displayed in drop-down lists:

1. Click **Settings** in the *main menu*.

   The **Settings** form opens; by default the **General** tab is displayed.

2. Click the Sorting tab.



3. For each section on this form, select your preference for the sorting order, see Table below.

4. Click **Update sorting order**.

The preferences you have set are now available in the software application.

List	Options
Antimicrobial use	Sort by description. Sort by code (alphabetically).
HAI – Case Definition	Sort by protocol. Sort by code (alphabetically).
Ward and patent - Speciality	Sort by protocol. Sort by code (alphabetically).
Yes/No/Unknown fields	Either 'No/Yes/Unknown' or 'No/Unknown/Yes'. Also, you will be requested to choose this if you translate the HelicsWin.Net user interface.

Translating the text in user forms

HelicsWin.Net is very flexible when it comes to translation. You can translate the texts manually from the default language, which is English. The items that can be translated include: Labels on the forms, Buttons, Form titles, and Error and warning messages.

The customizations you implement apply only to your current PC. However, it is possible to export a language translation file **Translation.mdb**. This pre-prepared file can then be run on any other PC running HelicsWin.Net. ECDC invites users and coordinating centres who have made a translation to send their zipped translation file **Translation.mdb** to *hainet@ecdc.europa.eu*. In this way, a central language database can be made available to all users.

Recommendation: To avoid duplication of work, translations are best performed at the national level. The National PPS Coordinating Centre can then distribute the database file Translation.mdb to the hospitals.

You can either translate user form labels and texts:

- Directly in HelicsWin.Net – see *Translating user forms in HelicsWin.Net*

or

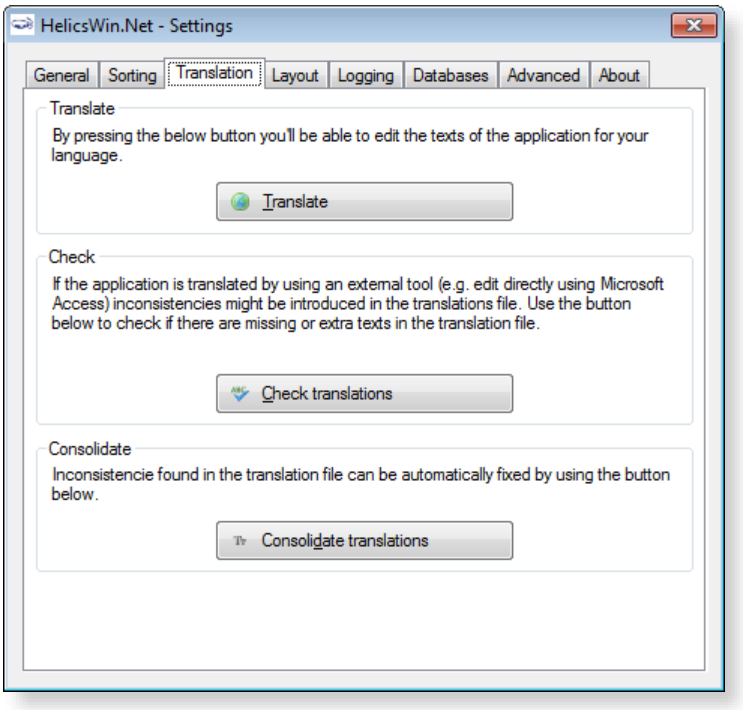
- In either MS Access or MS Excel – see *Translating user forms using a pre-prepared file*.

Translating user forms in HelicsWin.Net

To translate the default labels to your language in HelicsWin.Net:

1. Click **Settings** in the ***main menu***, and then click the **Translation** tab.

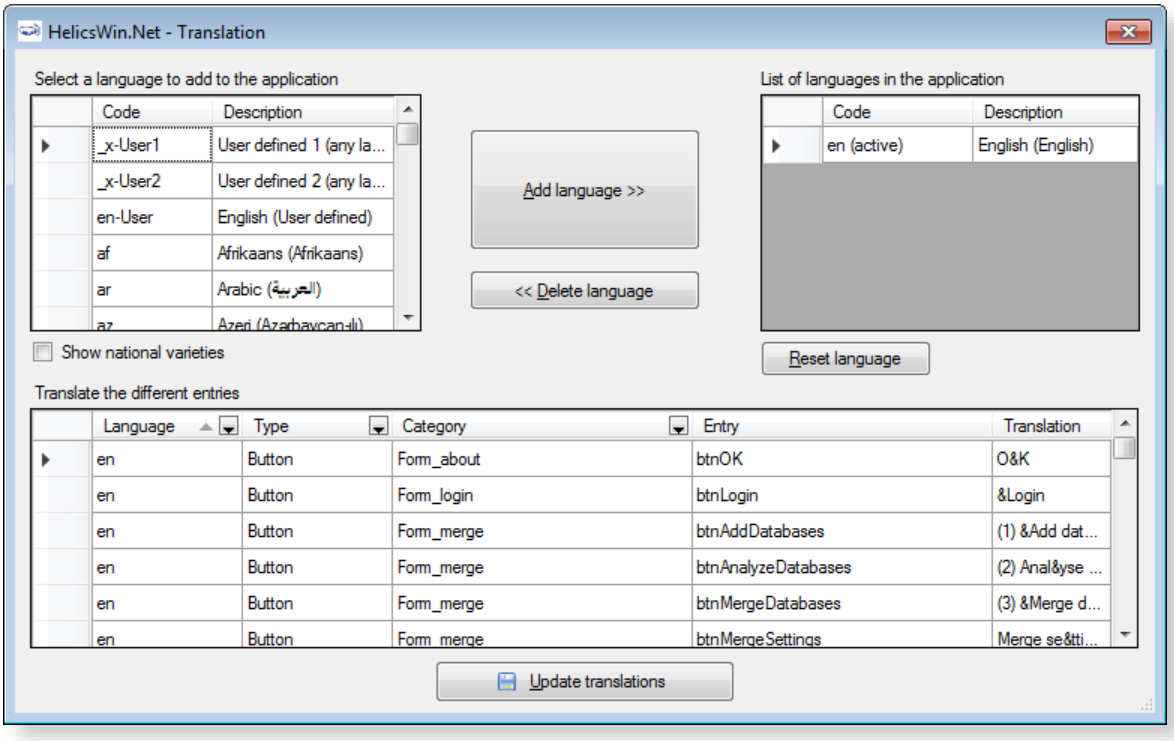
   The **Translation** form opens.



   Please note that the Check translations and Consolidate translations options are only used in connection with *translating user forms using a pre-prepared file*.

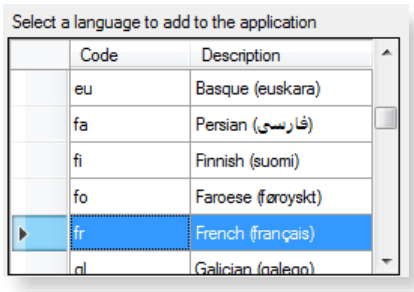
2. Click **Translate**.

   The **Translation** form opens.



3. In the **Select a language...** list, select the language you want to translate to, for example,

fr French (français)

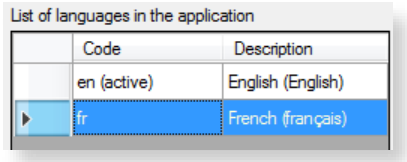


4. Click **Add language**.

The selected language is added to the list under **List of Languages in the application.**

5. Select the new language from this list.

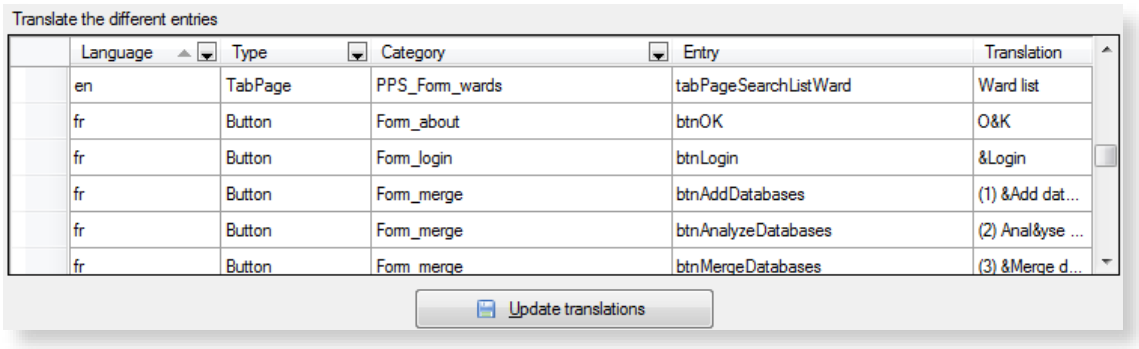
The selection indicator ▶ points to the selected language.



The labels for the foreign language are shown in the **Translate the different entries** grid at the bottom of the form.

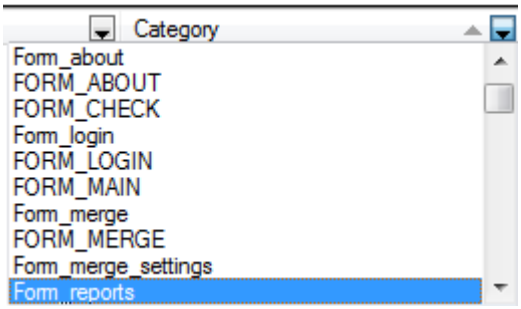
The entries in the **Translate** column are initially simply the English labels, and you must translate them one by one.

6. You can make the data easier to manage if you apply filters to the column headers to reduce the number of items visible in the table, for example:

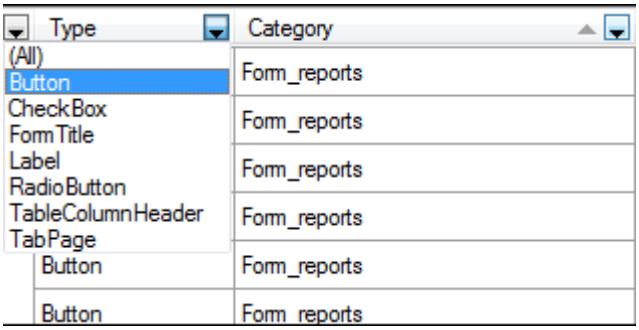


You can filter each column just as would do in Excel or Access, by clicking the down arrow, and making a selection. **Examples:**

To show only the names in the **Reports** form:
Click the down arrows to the right of **Category**, and select **Form-reports**.



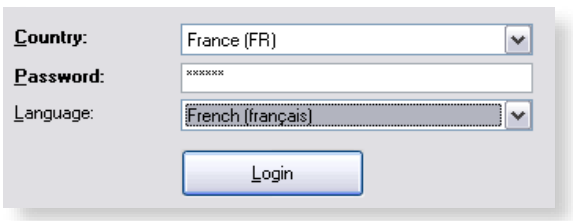
To show only the button names in the **Reports** form:
Expand the **Type** column header and select **Button**.



7. In the translation column, replace the English text, for example, "Cancel" with the corresponding text is your language, for example, "Annuler" in French.

8. Repeat these steps for all labels in the user interface that you want to change.

9. After each update, restart the application. When when you login, select the language which you translated (for example, French).



Creating and translating keyboard shortcuts

In any user form, any text character that is preceded by "&" (ampersand character) is displayed underlined; HWN automatically assigns a keyboard shortcut ***Alt+underlined_character.*** The characters preceded by "&" do not need to be used in the English language (e.g. D&éfinition).

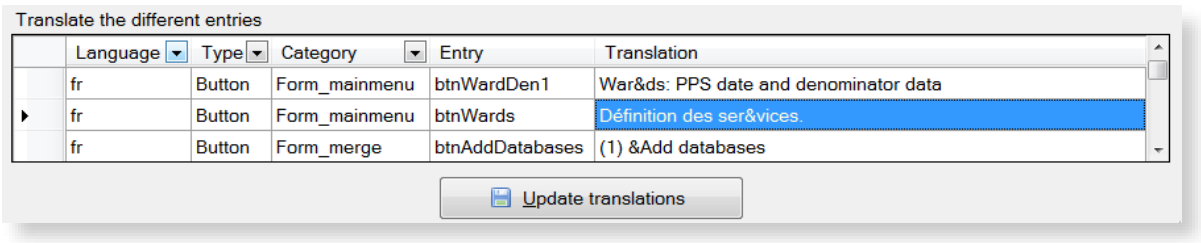
The behaviour for each control type is as follows:

Control type	Behaviour
Field	Cursor moves into the field
Button	Same as clicking the button
Tab	Same as clicking the tab

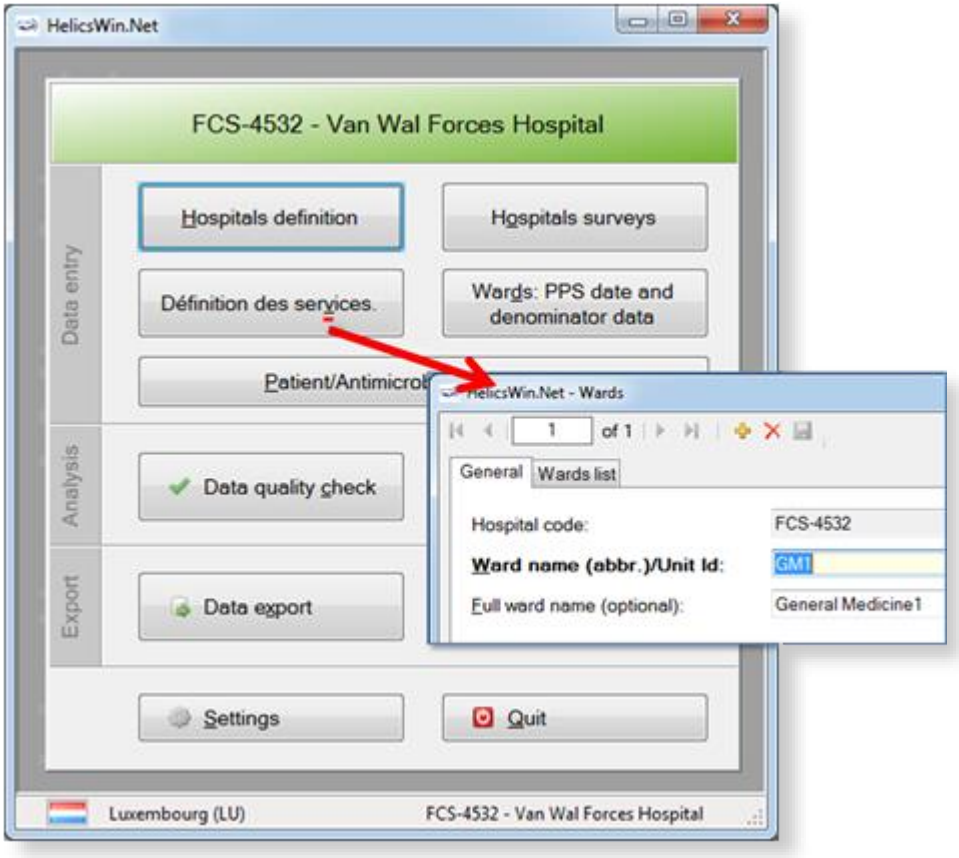
Translating keyboard shortcuts

When you switch to another language, translating text will remove the original keyboard shortcuts connected to that text. Keyboard shortcuts can be implemented in the translation tool, within the text entered in the column labelled **Translation**, by entering '&' (the ampersand symbol) before the letter for the shortcut. This is illustrated in the following example.

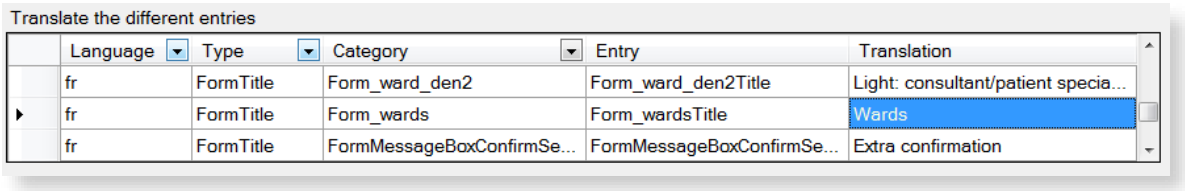
The following screenshot shows that the French translation of the button in the *main menu* for **Ward definition** has been translated to **Définition des services.** The shortcut has been set to **v** by placing '&' before the v in services, i.e. **Définition des ser&vices.**



The following screenshot shows the result of the translation. The button Ward definition has been changed to Définition des services. The shortcut V is indicated by underlining, i.e. Définition des services. Clicking v here will open the **Wards** form.

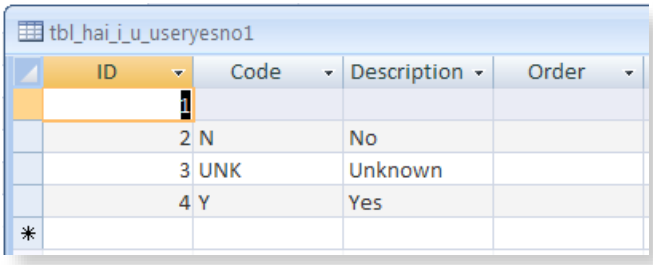


Note that the **Wards** form is still labelled HelicsWin.Net – Wards. This field is translated in the Translation form in Type *FormTitle*.



Translating drop-down list items

The labels in the drop-down lists are not stored in the file Translation.mdb, and therefore you cannot find them in the **Translation** form. These labels are stored in a separate database file, **Reference.mdb**. These can be translated there using Microsoft Access. See also *Translating user forms using a pre-prepared file*.



For example, in a French translation, you can change the value in the **Description** field from "Unknown" to "Inconnu".

Warning:	Do not change the values of any code (for example, "UNK") in Reference mdb. If you do, the application may not work properly, and you will also have problems when you come to upload your data to TESSy (nationally nominated users only.)
Note:	If you change the labels (descriptions) in the Reference.mdb file, the change is implemented for all languages, independently of the language chosen at login. Therefore, always make a backup copy of the original Reference.mdb before starting to translate the value labels.

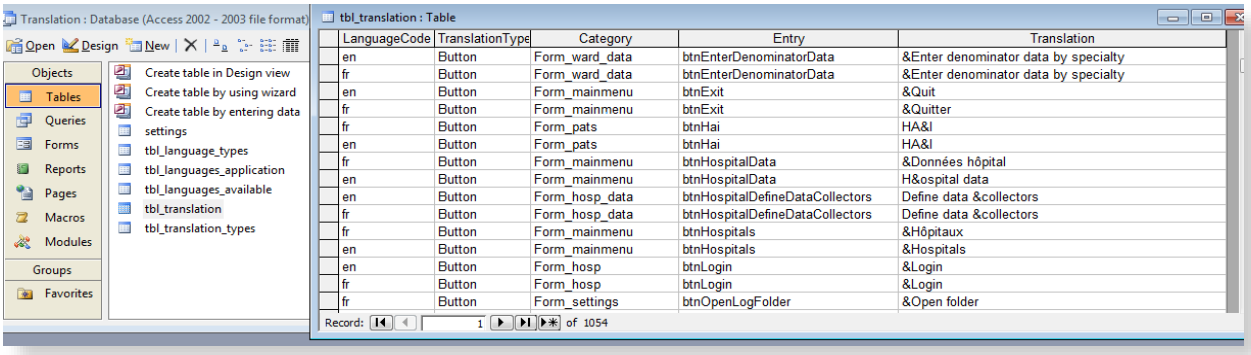
Translating user forms using a pre-prepared file

As an alternative to *translating user forms directly in HelicsWin.Net*, you can edit the translation file, **Translation mdb** in Microsoft Access.
To translate HelicsWin.Net labels in Microsoft Access:

1. Repeat steps 1 to 5 in the procedure *Translating user forms in HelicsWin.Net*.
2. Click **Update**.
3. Close HelicsWin.Net.

   This ensures that the labels for your language will be available in Microsoft Access. HelicsWin.Net only saves your changes in the **Transaction.mdb** file when HelicsWin.Net is closed.
4. Open the **Transaction.mdb** file in Microsoft Access.

   This file is located in the HWN folder (the default is C:\HWN2).
5. Open the **tbl_translation** table.
6. Filter the **Language** column to show only entries for you language (for example, "fr" for French).



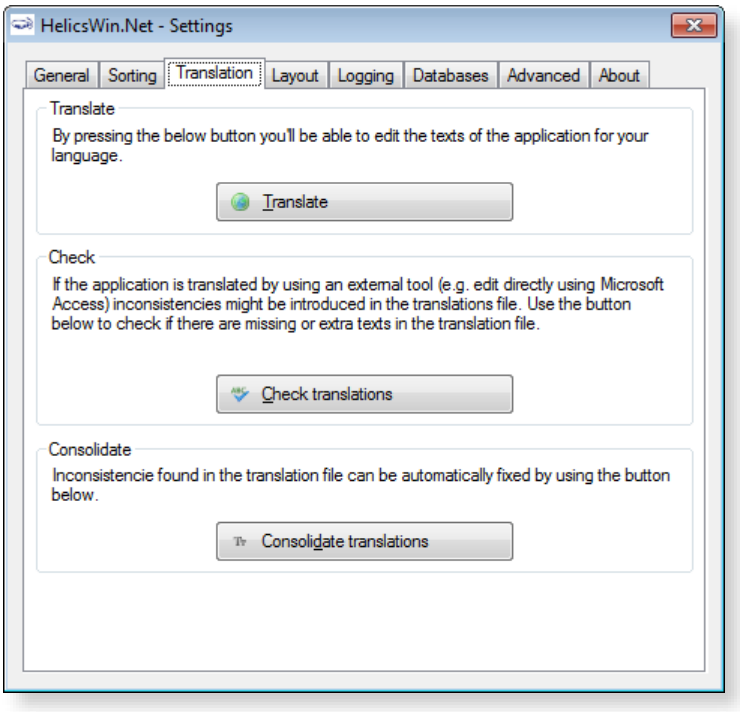
7. Add your translations to **Translation** column.
8. Save **Transaction.mdb**.
9. Copy your updated **Transaction.mdb** to the HWN folder and overwrite the existing Translation.mdb.
10. Restart HelicsWin.Net.
11. Check the translation in HelicsWin.Net, see *Checking your translation*.

Checking your translation

When you have translated outside HelicsWin.Net, there is a risk of errors occurring in the **Transaction.mdb** file – for example, an accidental change to a field outside the Translation column, or the unintentional deletion or insertion of a row.
Once you have replaced the **Transaction.mdb** file in in the HWN folder (the default is C:\HWN2), you should check the translation database for errors:

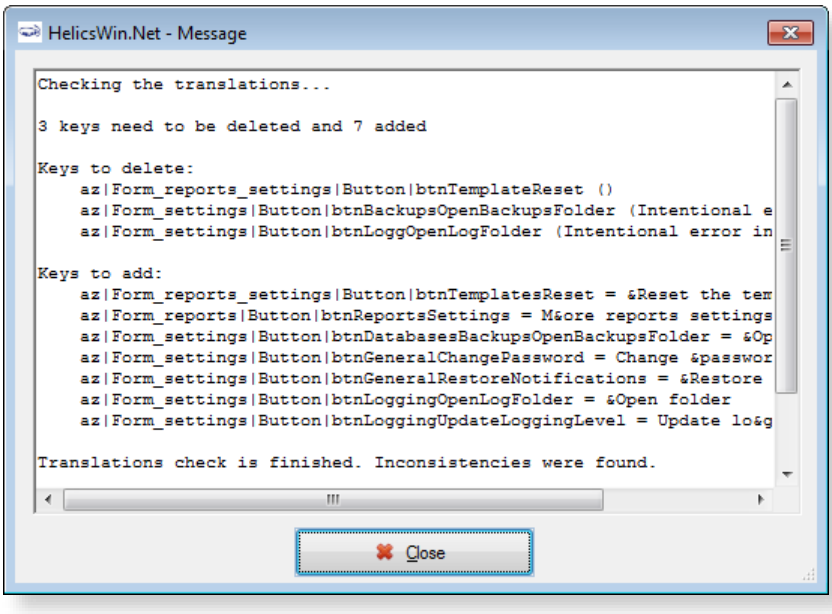
1. Close and restart HelicsWin.Net to reload the translation database.
2. Click **Settings** in the *main menu*, and then click the **Translation** tab.

   The **Translation** form opens.



3. Click **Check translations**.

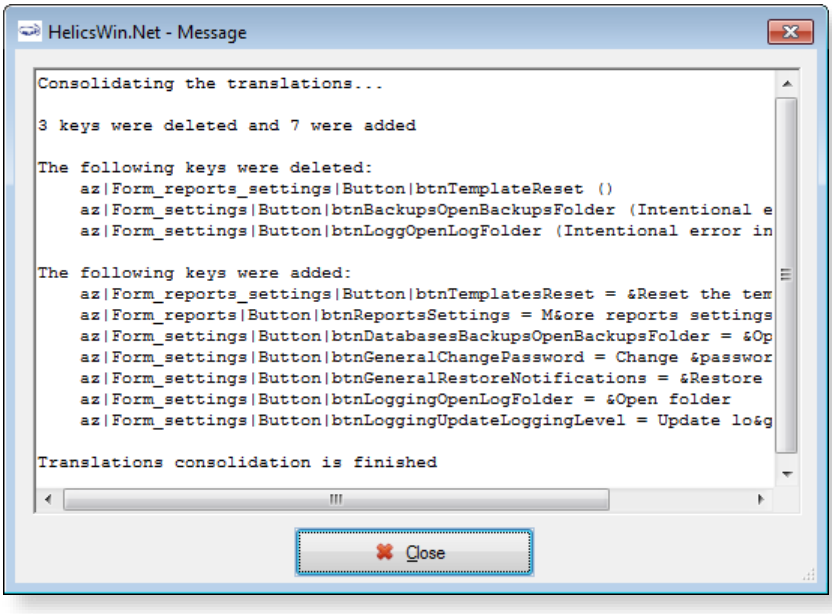
If there are errors, a list of these is displayed.



4. Click **Close**.

5. Click **Consolidate translations**.

   A list of the corrections made is displayed.

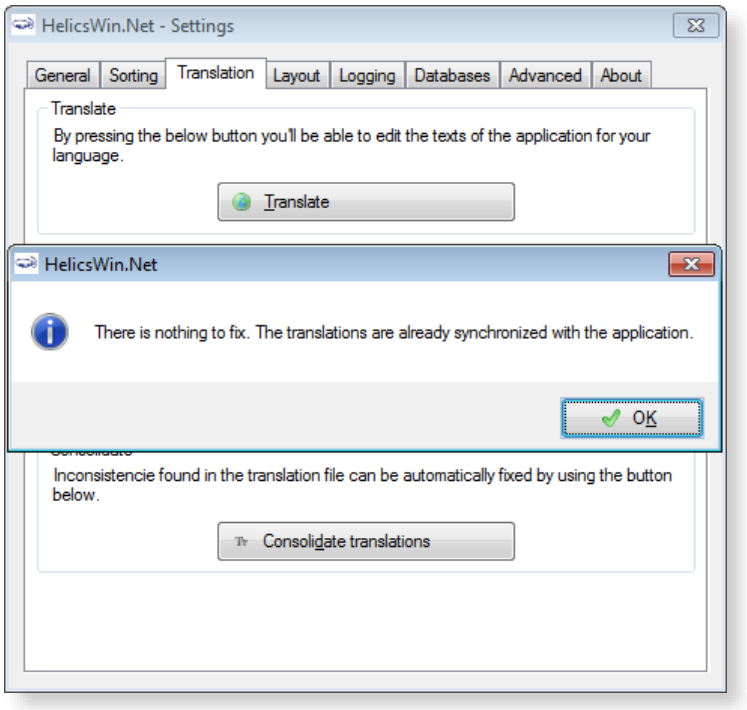


   The corrections made do not, of course, insert a translation, but only restore the default setting for the incorrect key.

6. Note the errors.

7. Finalise correction of the errors by manually translating the keys using the procedure described in *Translating user forms in HelicsWin.Net*).

If your translation of the **Transaction.mdb** file contains no errors, the following message is displayed when you click **Check translations**.



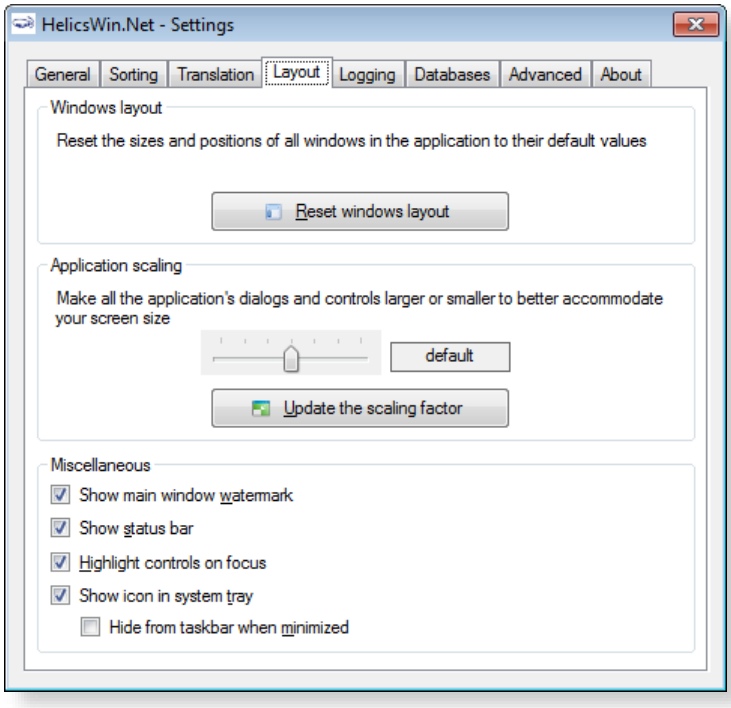
Resetting form layout options

If you change the size or the position of the windows, HWN remembers the windows settings the next time HWN is launched.

To reset the size and position of all HWN windows to their original values:

1. Click **Settings** in the *main menu*, and then click the **Layout** tab.

   The **Layout** form opens.

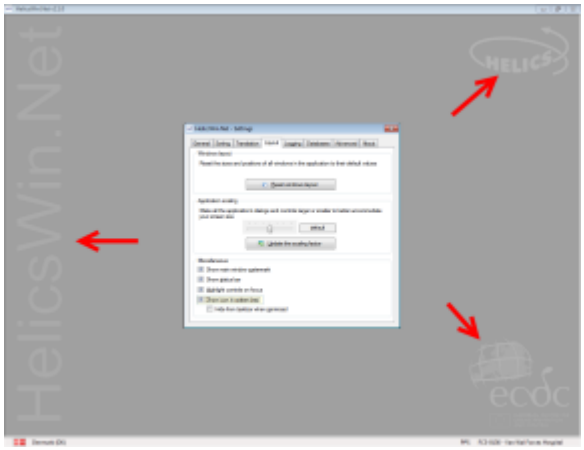


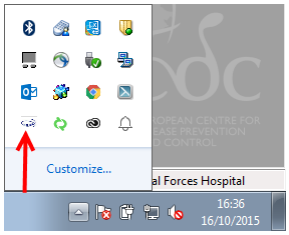
2. Click **Reset windows layout** to revert to HelicsWin.Net's default display settings.

   Or

3. Use the slider to increase or decrease the size of the HelicsWin.Net windows (requires you to log in again).

4. Select or deselect the miscellaneous settigns options, see table below.

Setting	Description
Show main window watermark	Display the HelicsWin.Net watermarks. 
Show status bar	Show HelicsWin.Net status information in a horizontal bar at the bottom of the screen. 
Highlight controls on focus	A control is highlighted when the cursor hovers over it, or when you tabulate to it.

Show icon in system tray	Add the HelicsWin.Net icon in the system tray (located in the Windows taskbar at the bottom of the screen next to the clock) for quick access to HelicsWin.Net. 
Hide from taskbar when minimized	When HelicsWin.Net is minimized, the HelicsWin.Net icon is not displayed on the taskbar at the bottom of the screen.

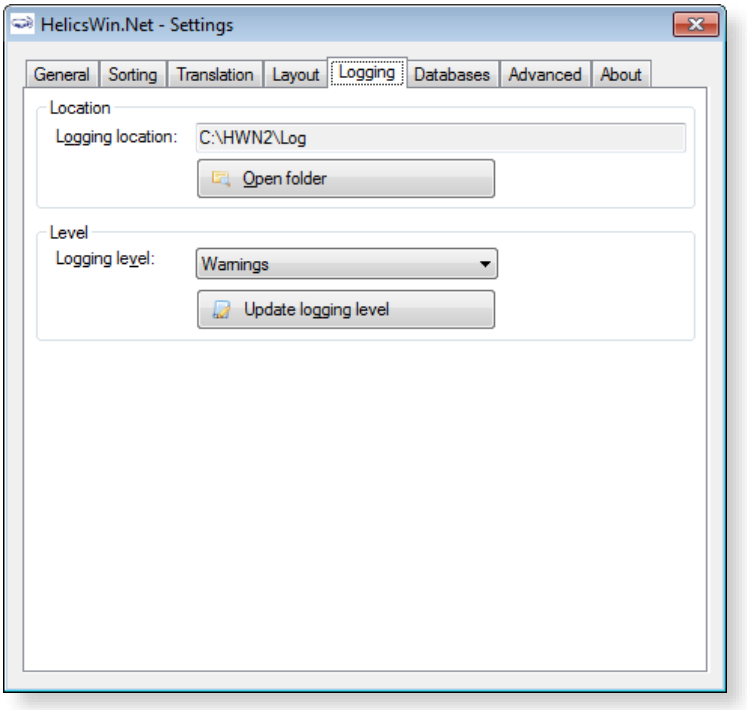
Log file for debugging

Each session of HWN is logged so potential issues can be easily diagnosed. Using these files can save debugging time in the event of a crash of the application at user level.

The log files are saved in the **Logs** folder in the HelicsWin.Net installation folder. You can set the logging level to produce logs at different levels of detail.

1. Click **Settings** in the *main menu*, and then click the **Logging** tab.

   1. The **Logging** form opens.



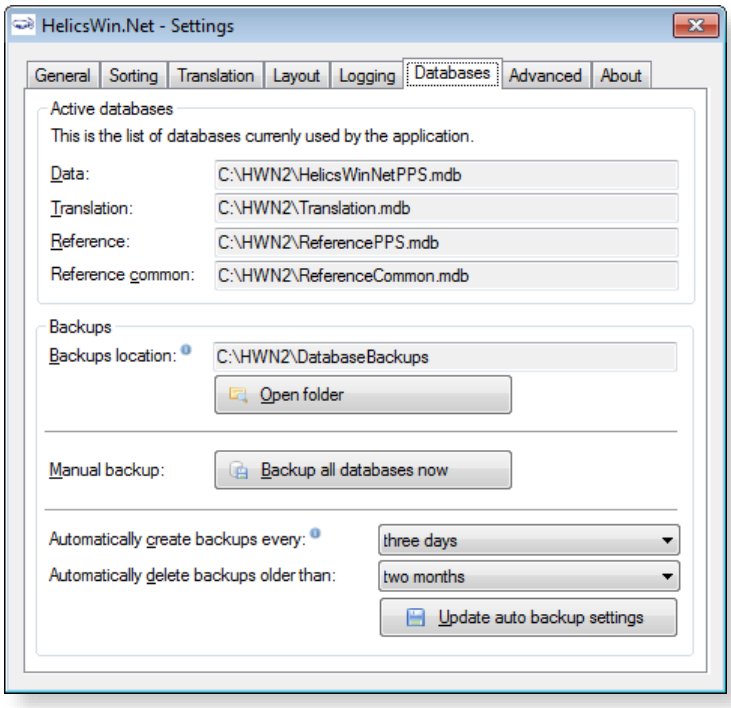
2. Click **Open folder** to access the log files.
3. Adjust the logging level, if desired.
4. Click **Update logging level**.

Level	Logging
None	No messages are logged.
Errors	Only error messages are logged.
Warnings	Warning and error messages are logged.
Info	Information, warning and error messages are logged.
Trace	Trace, information, warning and error messages are logged.

See Data quality check messages for a description of error and warning messages.

HelicsWin.Net databases

The **Databases** tab shows the paths to the database **.mdb** files and the backup locations.



1. Click **Open folder** to select a backup location.
2. Click **Backup all databases now** to make a backup.

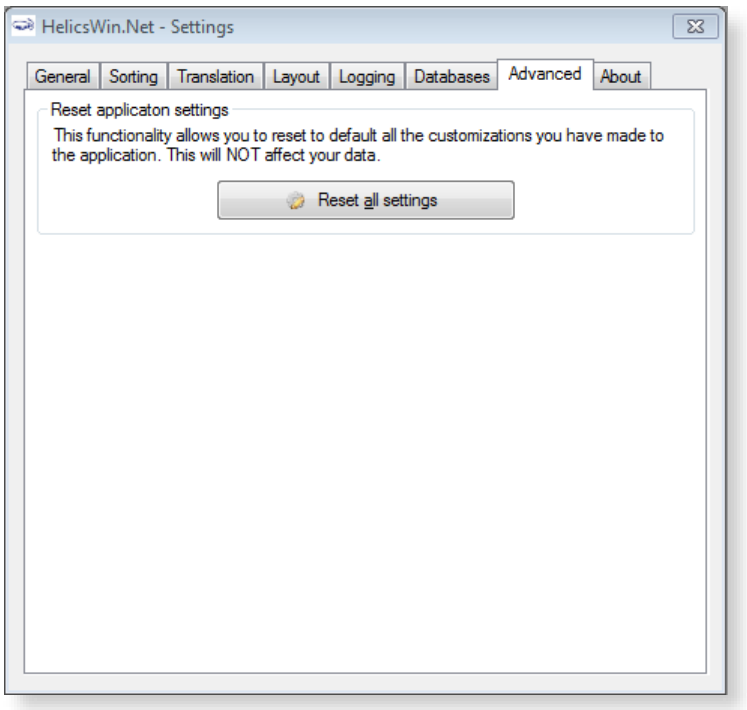
HelicsWin.net allows you to select automatic backup creation and deletion:

1. Select a frequency for the automatic backup creation and deletion from the respective drop-down lists.
2. Click **Update auto backup settings** to apply your choice.

Resetting default settings

The **Advance** tab enables you to remove all configurations you have made to HelicsWin.Net by restoring the default settings.

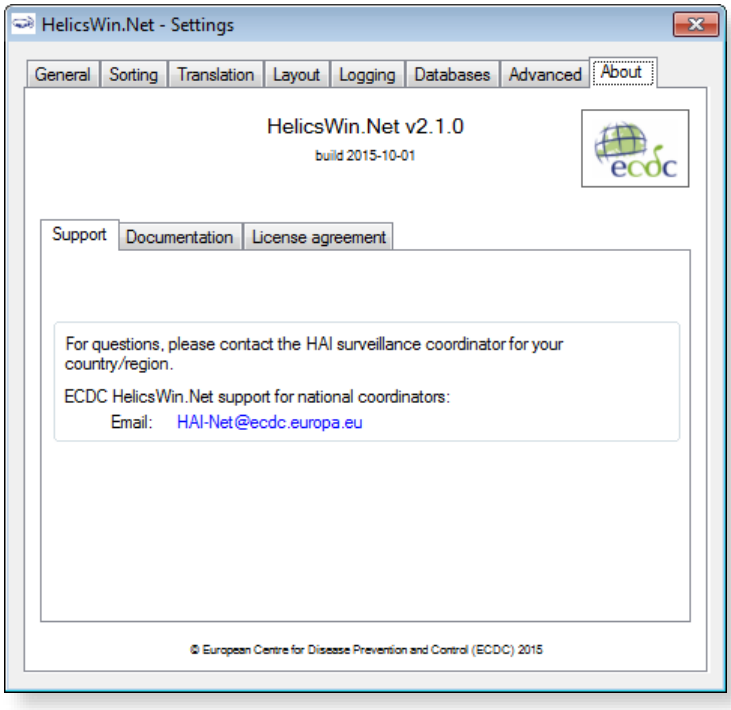
Click **Rest all settings** to remove all your configurations.



About HelicsWin.Net

The **About** tab in the **Settings** form contains three tabs:

- *Support*
- *Documentation*
- *License agreement*



HelicsWin.Net HelpDesk support

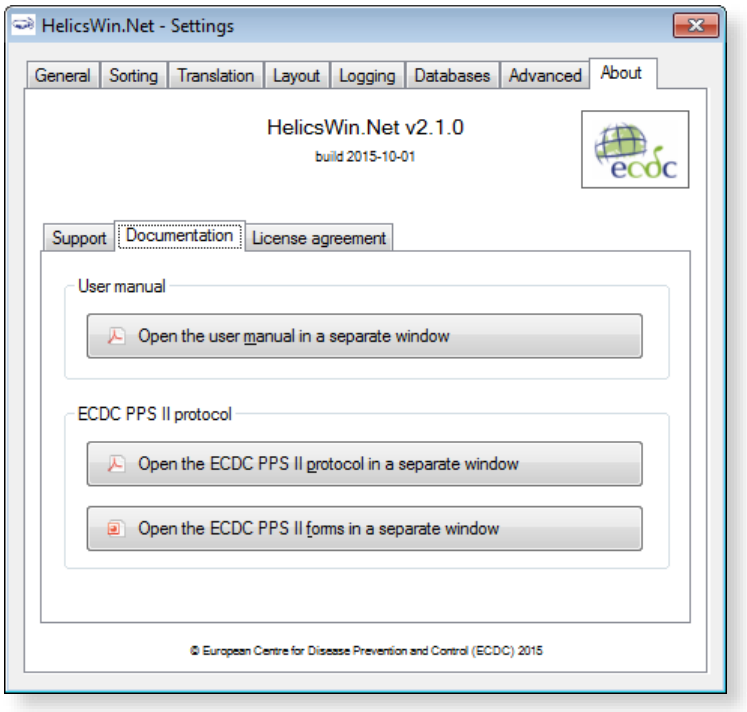
The first-line HelpDesk for HelicsWin.Net is at the national level, ensured by the national/regional PPS coordinator. These coordinators may refer questions to ECDC by posting them on the HAI-Net Extranet, or by sending an email to *HAINET@ecdc.europa.eu*.

Accessing documentation, protocols and forms

The **Documentation** tab contains links to:

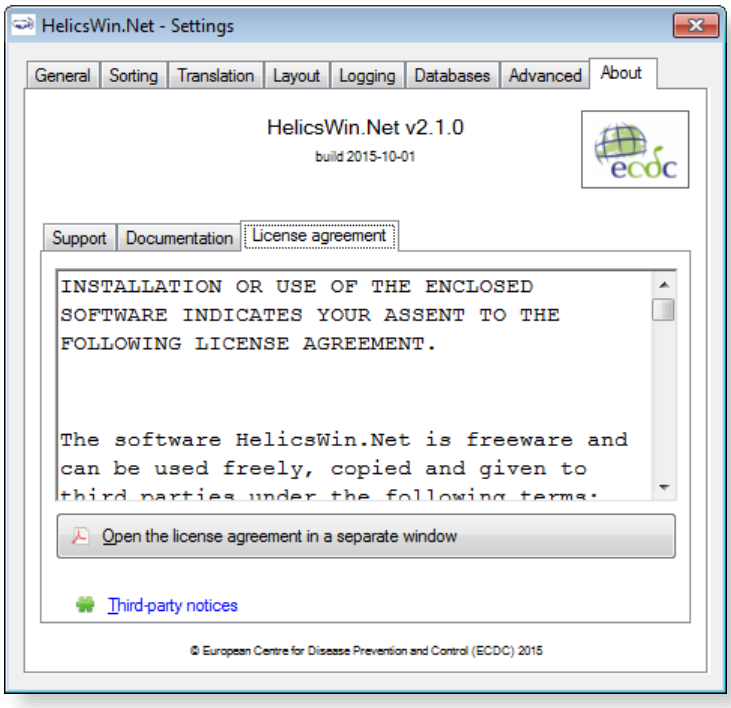
- A PDF version of the user manual.
- The PPS and ICU protocols.
- The PPS and ICU forms.

These documents can also be found in the **Documentation** folder (e.g. C:\HWN2\Documentation).



License agreement

The **License agreement** tab contains a transcript of the HelicsWin.Net license terms (which you are requested to read closely) and a link to information on the third-party products included in HelicsWin.net.



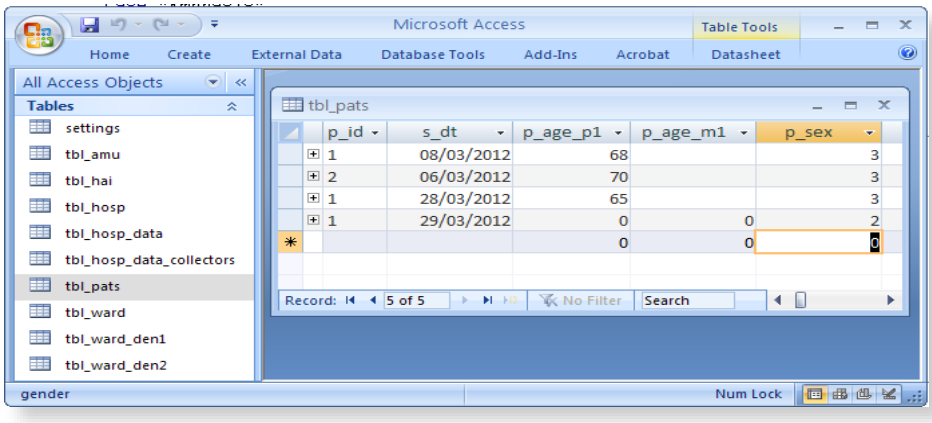
HelicsWin.Net database files

The database files used to store your data and settings are accessible to anyone who has access to the PC on which the application is installed.

Structure of the HelicsWinNet.mdb database

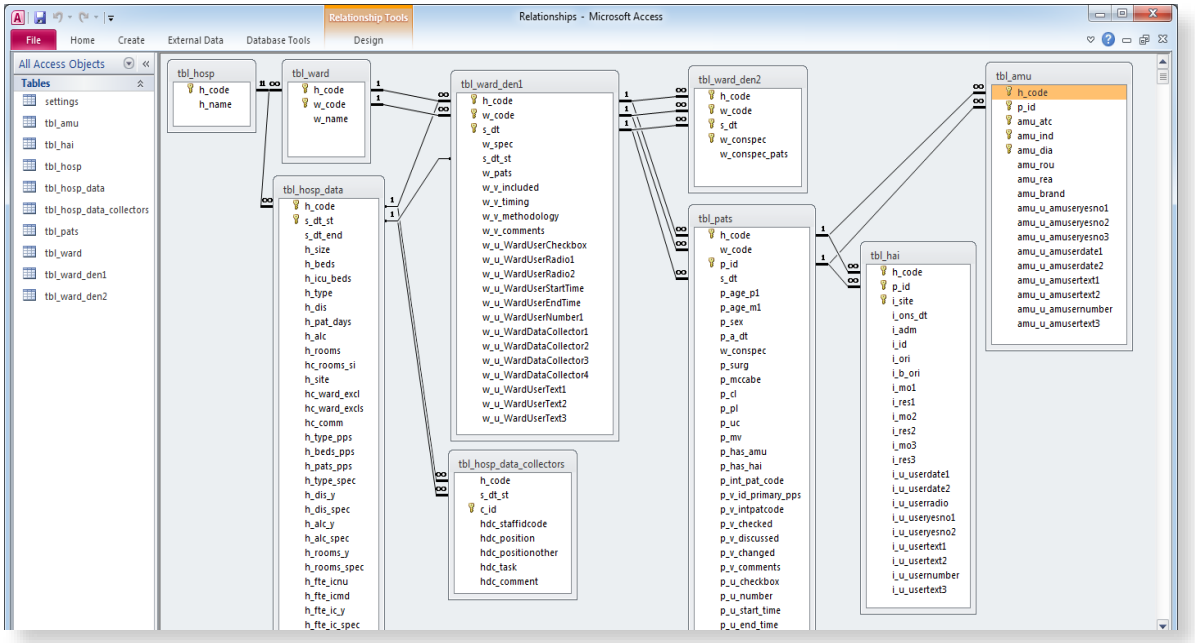
The data are stored in the internal software format in the HelicsWinNet.mdb database (Microsoft Access 2000 format) which is stored in the folder where the programme was installed. For data transfer to a national coordinating centre, this .mdb file can be sent by email, preferably after compression using a password.

If you open the file in Microsoft Access, you can see the tables and their data, as shown below:



Relationships

You can view the relationships between the tables in the HelicsWinNet.mdb database using standard Access tools.



HelicsWin.Net variables and values

The internal data structure of the HWN databases differs from that of the TESSy database. The variable names and code values stored in the database are also different. The internal code values of HWN are stored in the Reference.mdb database.

For a description of the HWN variable names and the corresponding TESSy variables, see the HelicsWin.Net protocols.

The following screenshot shows the internal code values in HWN that are stored in the ID field in the tables in Reference.mdb