TECHNICAL DOCUMENT

HELICSwin.Net 1.3.8
User manual

Point prevalence survey of healthcare-associated infections and antimicrobial use in European acute care hospitals

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ECDC TECHNICAL DOCUMENT

HELICSwin.Net (HWN) 1.3.8
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Point prevalence survey of healthcare-associated infections and antimicrobial use in European acute care hospitals

This document applies to HELICSwin.Net (WN) version 1.3.8, and to any future product releases unless contra-indicated in the new editions.

While every effort has been made to ensure that the information contained in this guide is accurate and complete, no liability can be accepted for any errors or omissions in this guide including, but not limited to, actual information changed during the development of the HELICSwin.Net after completion of current version of this guide. Information contained in this guide is subject to change without any prior notice.

Contents

About HelicWin.net

HelicsWin.Net is a software application developed for the manual entry of data collected during the ECDC Point Prevalence Survey (PPS) of healthcare-associated infections (HAI) and antimicrobial use (AMU) in acute care hospitals.

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.
- A software prerequisite is Microsoft .Net Framework version 3.5 SP1 or later (available free of charge by Microsoft).

HelicsWin.Net versions

HelicsWin.Net has been published in incremental versions: from 1.0 to 1.3. The current release is a minor release with version number 1.3.8.

Note: The data stored in the version v1.3 or later are not directly compatible with that of earlier versions.

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.

What's new in HelicsWin.Net version 1.3.8

Version 1.3.8 is 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.

Related documents

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

- 'ECDC Technical Document: Point prevalence survey of healthcare-associated infections and antimicrobial use in European acute-care hospitals.'
- Protocol version 4.3; Full-scale survey and code book. ECDC_HAI_AU_PPS_prot_codebook.
- Forms V4.3 ECDC_HAI_AU_PPS_forms_v4_3.ppt
- Master copies of data collection forms.

These documents are available on the ECDC Internet site at
http://www.ecdc.europa.eu/en/activities/surveillance/HAI/about_HAI-Net/Pages/PPS.aspx.

ECDC Portal > English > Activities > Surveillance > Healthcare-associated Infections Surveillance Network (HAI-Net) > About the network > Point prevalence survey (PPS)

Helpdesk

For any questions, please refer to your National PPS Coordinating Centre (usually HAI surveillance coordinating centre) that may refer questions to hainet@ecdc.europa.eu, or post them on the HAI-Net extranet Q&A forum at https://extranet.ecdc.europa.eu/HAINet/default.aspx.

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.

Screenshots in this manual

Because HelicsWin.Net pop-ups can be larger than the width of a page, some screenshots have been internally cropped with a vertical section of the image being removed, with the join indicated by a white bar. Put simply, this is not a reproduction error (see Figure 1.A).

Figure Error! No text of specified style in document.**.A Example of a screenshot whose width has been reduced (i.e. the white vertical bar)**
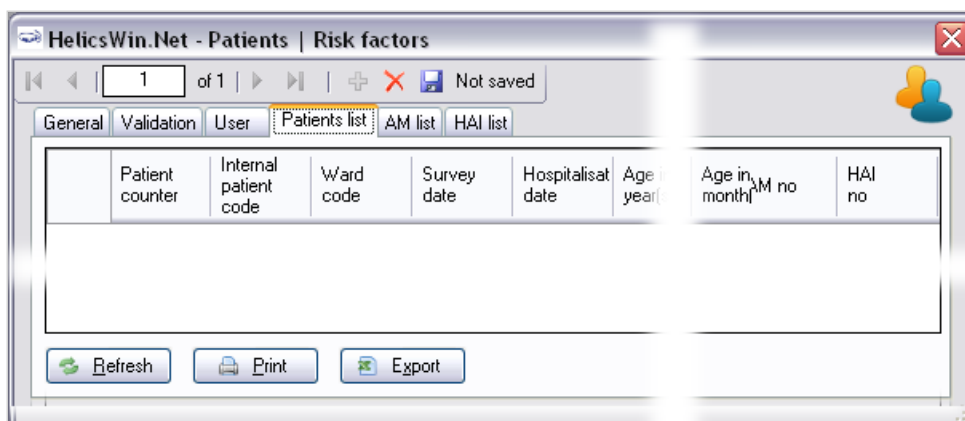
1.   Installation

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:/HWN1.3.

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.

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

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.   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 manually, go to this link and follow the on-screen instructions:

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

Installing HelicsWin.Net

The application comes as two files, one of which is an .msi file which contains the full application.

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

To install HelicsWin 1.3.8

This installation requires administration rights

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 installtion 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 and then click setup.exe.

     The installer opens.

4.   Follow the on-screen instructions.

Installed files

The application files are installed, by default, in the folder C:\HWN1.3. The following table 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; ECDC PPS main protocol, forms and validation protocol
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
HelicsWinNet.mdb	Database file: *HelicsWinNet.mdb*: is initially the empty database (Microsoft Access format) for this application. This file is the most important single file in the application, as it contains all the PPS data entered to date. **Recommendation:** make regular backups of this file.
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) were the user has write rights/access (for example, C:\HWN1.3), 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 new merge facility, it is relatively easy to merge these data into a single database for the hospital as a whole (see section 0).

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

Creating a shortcut to HelicsWin.Net

Optionally, you can create a shortcut to the application and put it on your desktop. You then simply click the shortcut on your desktop to start the application.

To create a shortcut to HelicsWin.Net on your desktop

1.   Open the folder **C:\HWN1.3**

If the file is on a server, you have to locate the folder HWN1.3 (or whatever the installer called it) on the server.

2.   Right-click on the filename **HelicsWin.Net.exe**, and select **Create Shortcut**.

The shortcut is created in the current folder:

Name
Documentation
Log
Res
HelicsWin.Net.exe
HelicsWin.Net.Common.dll
HelicsWin.Net.Components.L...
HelicsWin.Net.Helpers.dll
Ionic.Zip.dll
uninstall.ico
HelicsWinNet.mdb
Reference.mdb
Translation.mdb
license.rtf
license_3rd_party_notices.rtf
HelicsWin.Net.exe.config
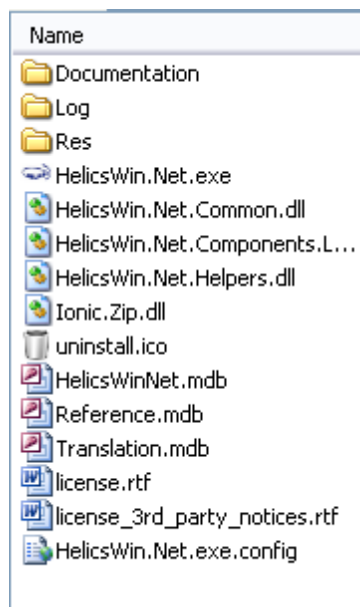
3.   Select the shortcut, copy it (**Ctrl+C**) and paste it (**Ctrl+V**) on your desktop.

From now on you can you can simply click the shortcut to open the HWN application.

2.   Getting started

To launch the software, open installation folder, (default is HWN1.3) and run the file HELICSwinNet.exe.

1.   From your desktop, click:

Start > **My Computer** > **System** (C:) > **HWN1.3** > **HelicsWin.Net.exe**

The splash screen appears:
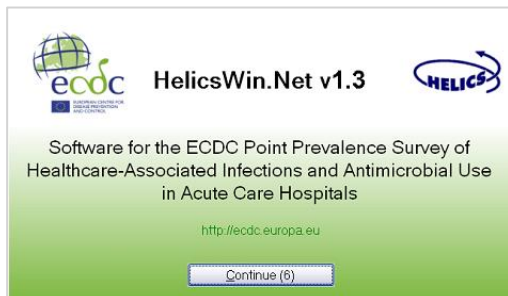
2.   Click **Continue** to go to the first (login) form.

3.   Select your country and language.

If this is the first time anyone has used this installation, the default password is *helics*. You will 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.

4.   Click **Login**.

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

5.   Click the yellow **Add new item** icon ⊹.

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

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

7.   Click the **Save icon** 💾 to save the data. Alternatively, use the keyboard shortcut **Ctrl+S**.

A record for this hospital is saved to the database.

8.   Click **Select this hospital** to make changes to or view data on this hospital.

3. 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
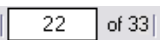
> **Caution**: Each time you log in, the software opens the first record in the database. Therefore, if you start entering data without creating a new empty record, the first record will be overwritten when data are saved!

1.   Use the toolbar to perform basic tasks:
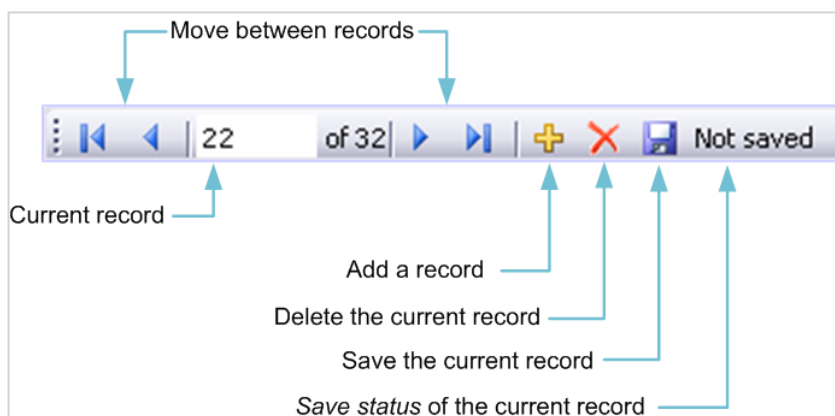
The following table describes these functions.

Table 1 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, type **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, type **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 delete the record permanently.

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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, type **Ctrl+S** to save the current record.

Table 2 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

2. Data quality checks and data entry validation:

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

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 generates a mini report in the form of a message before saving.

There are two types of validation in HWN:

- **Error:** mandatory fields are left blank or have been assigned impossible values: the relevant fields appear in red, and you cannot save the data.
- **Warning:** required fields are left blank or are impossible; the concerned fields will appear in blue, saving is possible.

The following figure shows a selection of possible errors that could be seen when you save a record in the **Hospital data** form. Note that in this case, there are three errors and the application is not able to save the data until these errors are removed.

Figure 2. Example of errors and warnings
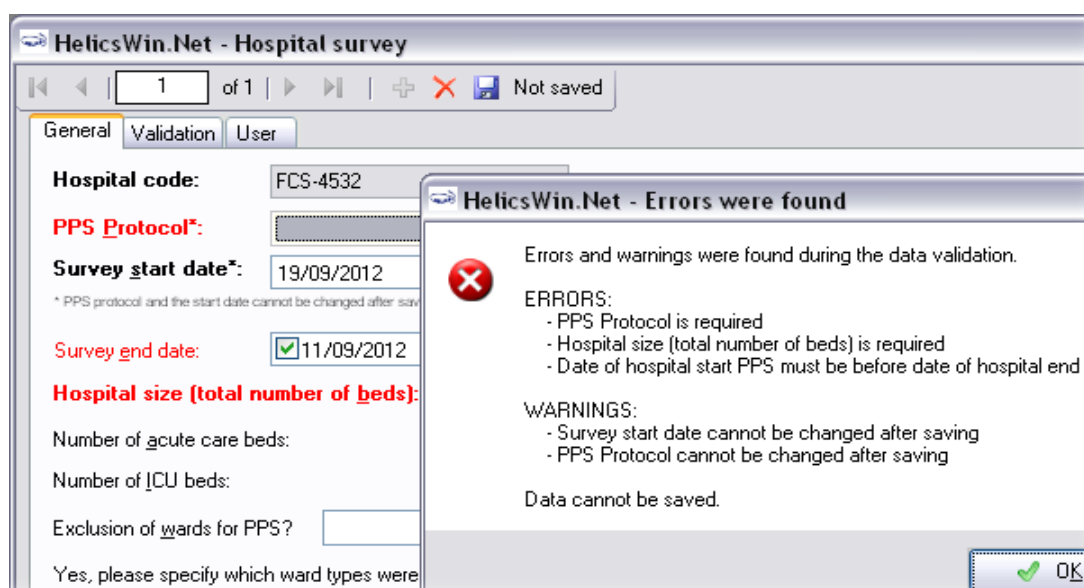
Note: Not all validation rules are implemented at data entry; some more complex rules are implemented only in the *data quality check*, see below.

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 type **Alt+P** in the hospital form, the focus moves to the **PPS Protocol** field. Once the focus is on the field, type 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.

Figure 3. Data hierarchy
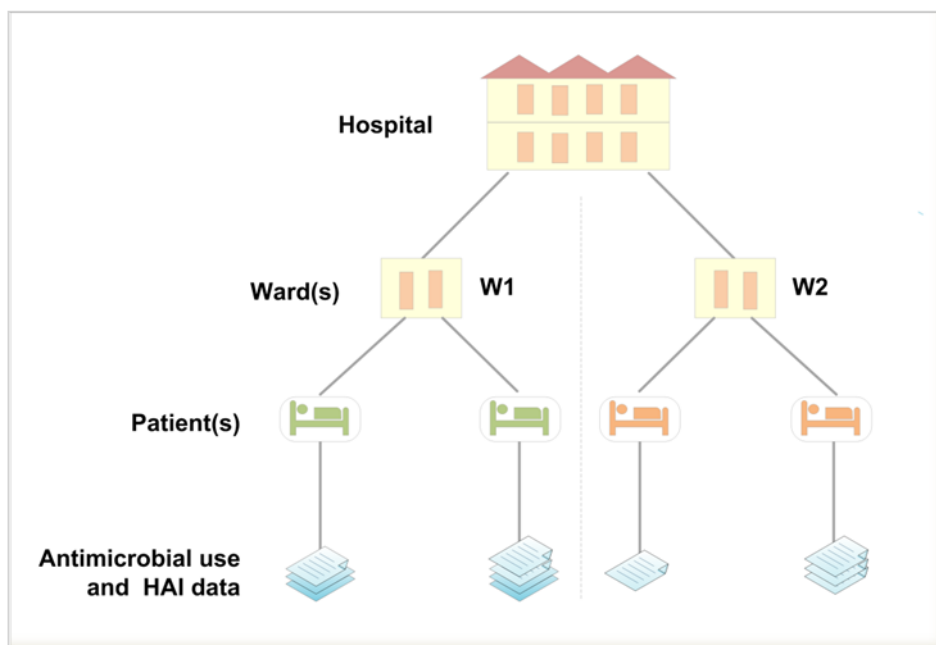
One consequence of this data hierarchy is that if you delete a definition at one level you automatically delete the data that depend on that definition, at the lower levels. For example, if you delete a ward definition (W2), all the data belonging to patients on that ward are also deleted (**Figure** 5). 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.

Figure 4. Data hierarchy – warning message

Figure 5. **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 of the PPS. These forms are arranged in hierarchical order, based on hospital-, ward-, and patient-level data.

Table 3 Summary of main menu functions

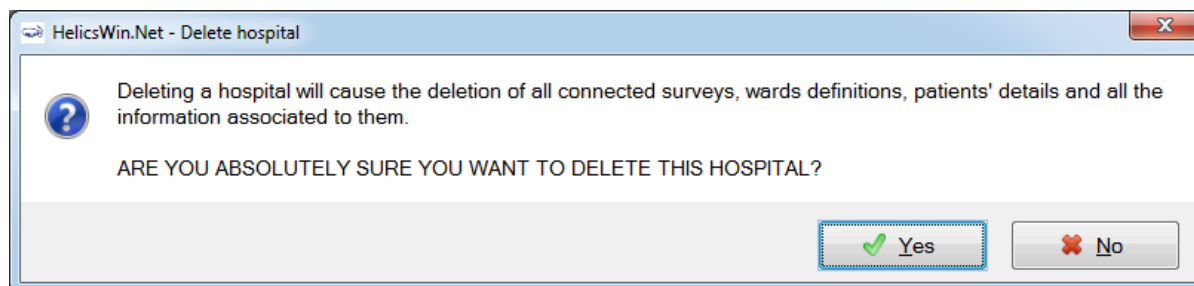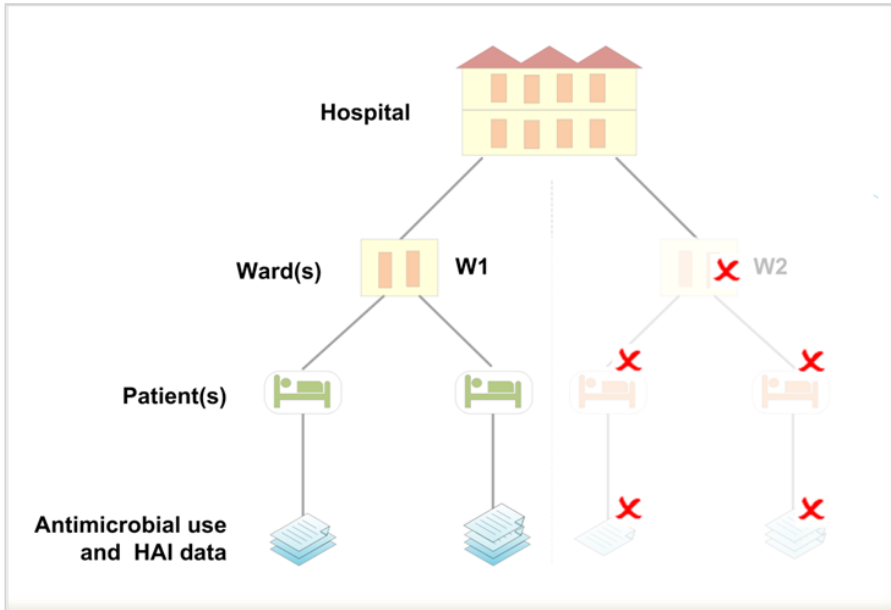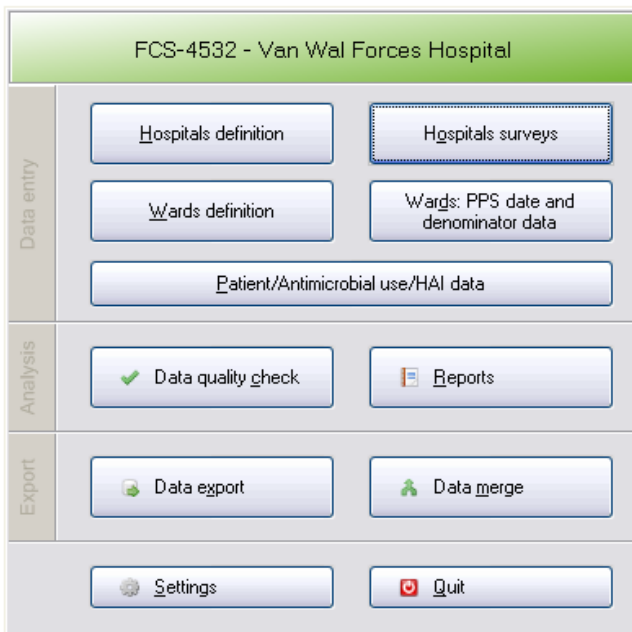| Button	Actions(s)
Hospitals definition	Enter the name and code of a new hospital in the system. You can enter the data for different hospitals (sites) in the same database, e.g. hospitals within 'hospital trusts' or organizations. This also enables national/regional coordinating centres to enter different 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'.
Hospital surveys	Enter data from the hospital questionnaire. These data include the hospitals' survey dates, the PPS protocol used, measures of hospital size and type, and the number of specialist doctors and nurses.
Wards definition	Define all ward ID codes (abbreviated names). Optionally and in addition, full ward names can be entered.
Wards: PPS date and denominator data	For each ward enter the date the PPS was performed and the ward specialty. For the LIGHT protocol: also enter the denominator data, i.e. patients on ward at 8am.
Patient/Antimicrobial use /HAI data	For the STANDARD protocol: enter each patient's demographic data and risk factors. For the LIGHT protocol: enter demographic data for each patient with at least one HAI or antimicrobial. For both protocols: you can also 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.
Data export	Exporting 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.
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).
Quit	Shuts down the programme.

Defining hospitals

If you are working in a single hospital, create the definition for that hospital. Once a hospital definition has been created, then you can 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.   Open the Main menu form, and click **Hospitals definition**.
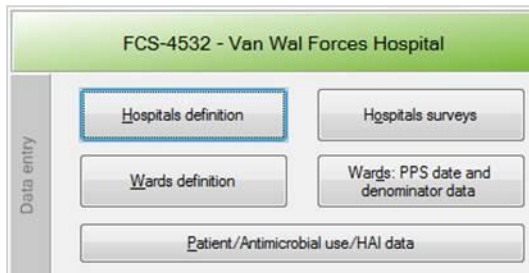
The **Hospitals** form opens.
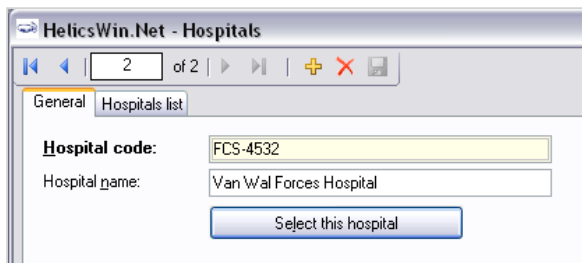
If no hospitals have been defined yet, the fields are blank.

2.   Click the ⊕ icon on the toolbar.

The Hospital code and Hospital name fields clear.

3.   Enter the new hospital code and name (in this example, 'FCS-4532' and 'Van Wal Forces 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** form opens. You are now able to enter this hospital's survey information and ward information using the **Hospital surveys** and **Ward definition** buttons on the main menu (see below).

To select 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, follow these steps:

6.   As in step **1.** above, open the Main menu form, and click **Hospitals definition** to open the **Hospitals** form.
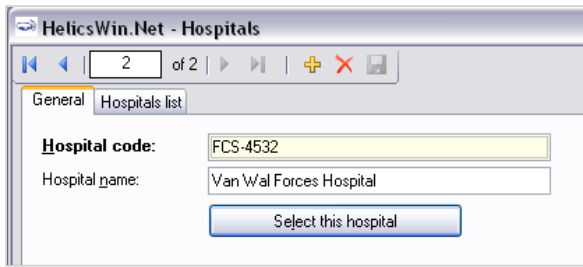
7.   Click on the tab 'Hospitals list'.

A list of all defined hospitals opens.
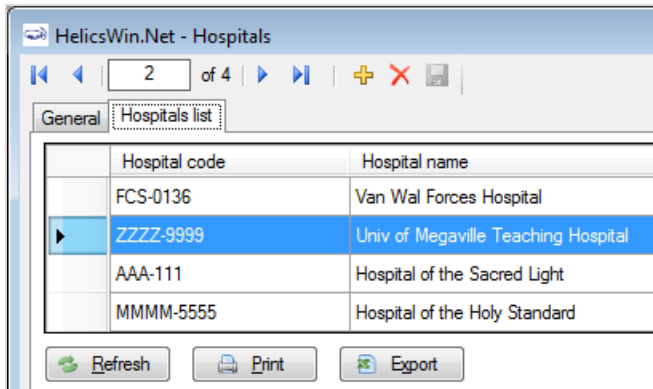
8.   Click on **Refresh**.

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

9.   To choose the hospital, double click on its code.

This re-opens the tab 'General', and shows the hospital you chose.
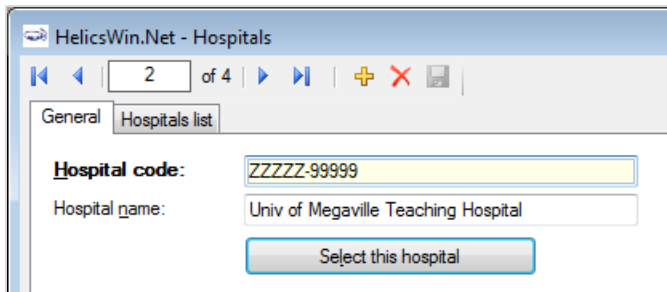
10.   To select this hospital, click on 'Select this hospital'.

Defining wards

You can define wards (units) to be included in the Point Prevalence Survey. For each ward in the hospital, 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.

To create a ward definition

1.   Open the Main Menu, and click Wards definition.

The **Wards** form opens showing the current hospital code.

If this is not the correct hospital, click [X] to close. To select the correct hospital, as described above, click 'Hospitals definition' on the Main menu, choose a defined hospital from the Hospitals list, and click on 'Select this hospital'.

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

The **Wards** page opens for editing.

3.   In the **Ward names** field, specify the abbreviated Ward name (up to 20 characters) or a ward ID.

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

4.   Optionally, specify the full (expanded) name of the ward in the Full ward name field.

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

6.   Click Wards list tab to view all the wards for which a record has been created.
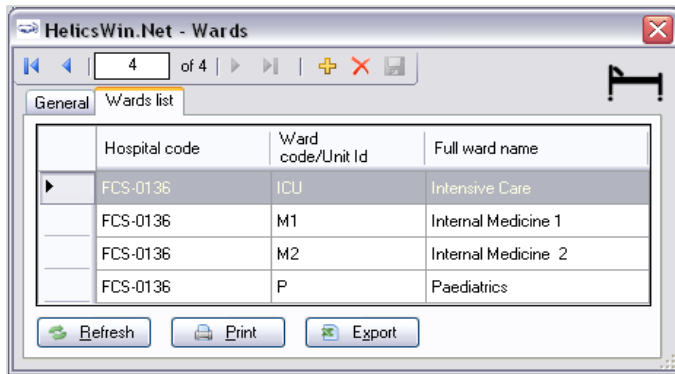
Note: The ward specialty is defined in the form 'Wards: PPS date and denominator data' (because it may change from one PPS to another).

Creating a hospital's point prevalence survey

Follow this procedure to create a new survey for each defined hospital, entering information from Form H.

To create a Point Prevalence Survey

1.   On the Main menu, click **Hospital survey**.
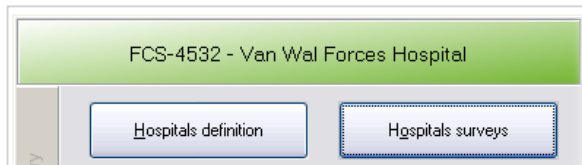
The **Hospital survey** form opens (for the hospital you have selected).

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

3.   In the **General** tab, click the **Add item** icon ➕ to open a form for editing.
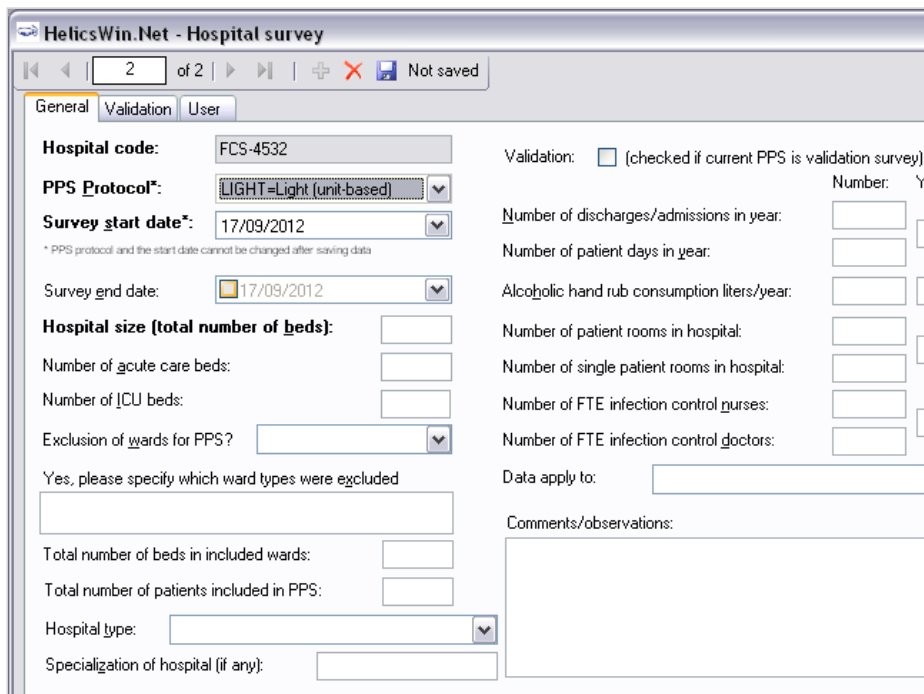
4.   Specify values for these mandatory fields. Data can only be saved one they are entered:

Warning	You cannot change the variables *Start date hospital survey* and *PPS protocol* after you have saved them.
	Before entering any data, make sure that the start date of the hospital PPS is earlier than any ward survey date. If you need to change a hospital survey start date, you will have to contact your national or regional PPS co-ordinator.

PPS Protocol	Specify the PPS protocol to be used. You can select either Standard or Light.
	Note that you cannot add Light protocol data records to a PPS data collection defined to use the Standard protocol, and vice versa.
Survey Start Date	The start and end dates of the survey entered in the hospital data form are used to define the (reporting) periods in the export form.
	Caution: You cannot change these values once they have been defined.
	The hospital is uniquely identified within the country by a combination of Hospital code and survey start date, which is why these parameters (i) are required, and (ii) cannot be changed after the initial save.
Hospital size	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.

5.   Click the **Save** icon .

A Warning message will open, listing nine other required data items. Full descriptions of all variables on this form are provided within the protocol (pg.9-11 of protocol version 4.3). The nine required variables are summarised below:

Total number of beds in included wards	Sum of 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.
Incl. wards/Total	This drop down menu indicates whether the data you provide for seven variables refer only to wards included in the survey (which is preferable), of to the entire hospital (which is less preferable).
Number of discharges/admissions in year	Sum of number of hospital discharges in a year. If available, this should be the most recent complete year. Specify the year in the next column. If discharge data are not available, use admission data. Indicate whether data refer to included wards or the entire hospital in the dropdown list '**Incl. wards/Total**'
Number of patient days in year	Sum of hospital patient days in a year, for the same year and wards as entered for the discharges/admissions. Specify the year in the next column. Indicate whether data refer to included wards or the entire hospital in the dropdown list '**Incl. wards/Total**'
Alcoholic hand rub consumption litres/year	Total litres of alcohol hand rub used in a complete year. Specify the year in the next column. Indicate whether data refer to included wards or the entire hospital in the dropdown list '**Incl. wards/Total**'
Number of patient rooms in hospital.	Total rooms in included wards or in the hospital. Indicate which in the dropdown list '**Incl. wards/Total**'. Indicate the year this applied in the separate column.
Number of single patient rooms in hospital.	Ensure that the data in this column refer to the same year and wards as entered for the number of patient rooms in hospital.
Data apply to	This dropdown list indicates whether the data apply to a hospital/site with one address, or to an administrative group of hospitals (also referred to as 'trusts', 'fusions' or 'chains').

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6.   Click the **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 achieved using the **Translation** functionality in the **Settings form**, as described within Chapter 8

Additionally, the **User** tab of the **Hospital surveys form** also contains a button enabling you to record the details of all persons who will collect or enter data. Later on, you can assign the ID Code for the data collectors to Wards (see the User tab in **Wards: PPS date and denominator data** form).

7.   Optionally, click **Define data collectors**.

You can define the hospital data collectors (HDC): ID Code, Position (function) and survey-related task(s). This is optional.
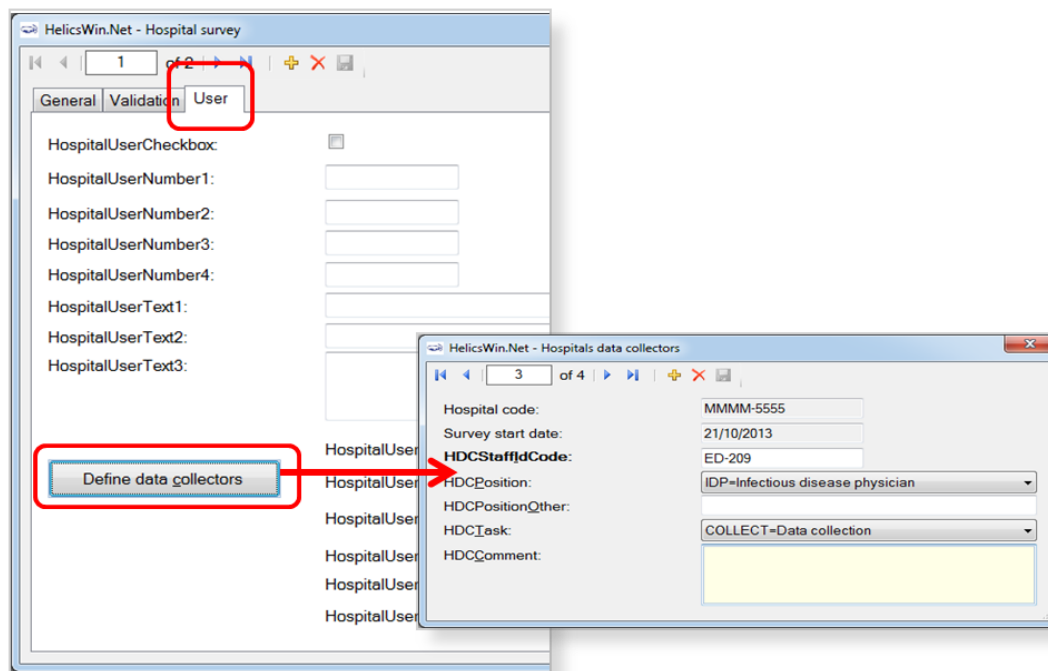
The Validation tab

This tab is used by 'Validation Teams' to enter data if a validation survey is performed. Use of this validation tab is described within a separate document, the '**PPS Validation Protocol, version 2.1**'. This is available within the HelicsWin.Net software, within Settings>About>Documentation.

Specifying each ward's PPS date, specialty and denominator data

For each ward (unit) included in the PPS, you need to choose the ward and date 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.

To specify PPS date, specialty and denominator data

1.   Open the Main Menu in HWN; and click **Wards PPS date and denominator data**.

The **Wards** form opens showing the current hospital code.

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

The Wards: PPS date and denominator page opens for editing.
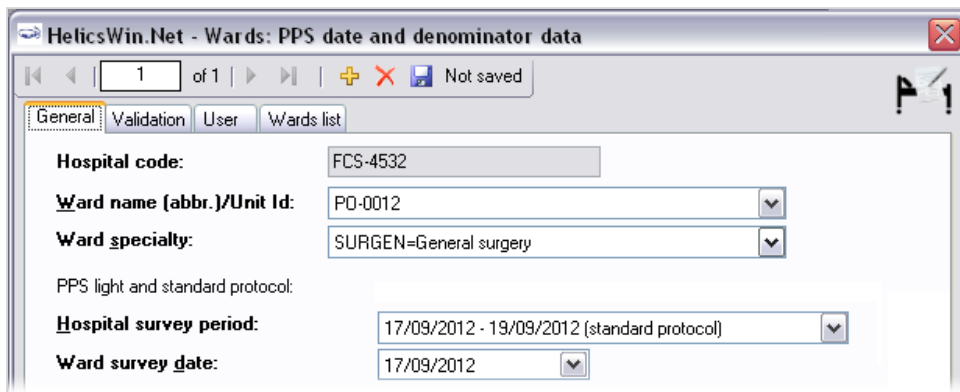
You cannot change the hospital code from this form.

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.

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

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

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 in the **Data Quality Check**, not at data entry.

1.　Enter the total number of included patients in ward, i.e. the denominator data in the box **Total number of patients in ward**.
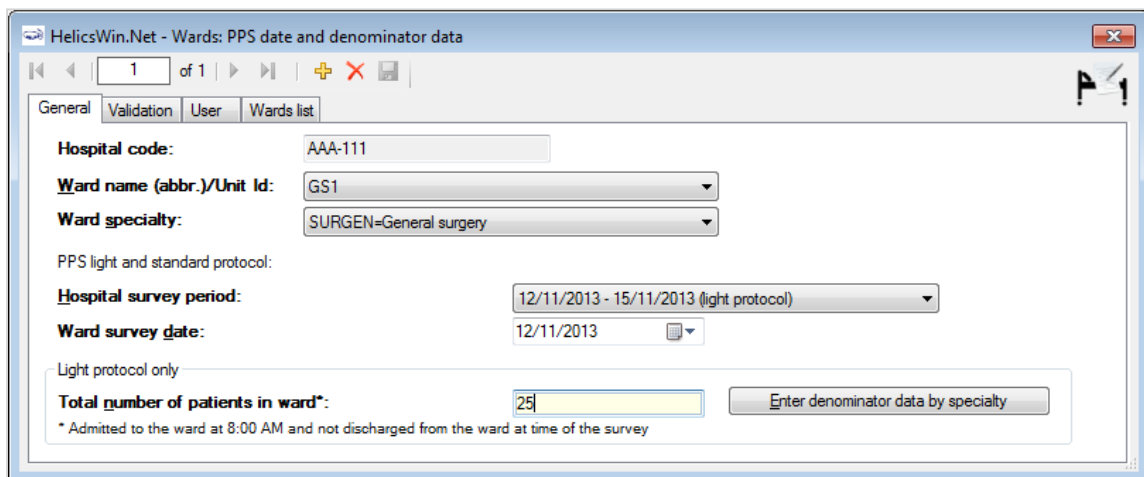
2.　Click the button **Enter denominator data by specialty** to enter denominator information separately for consultant(s)/patient speciality(s) within that same ward.

The **Light: consultant/patient speciality denominator data form opens.**
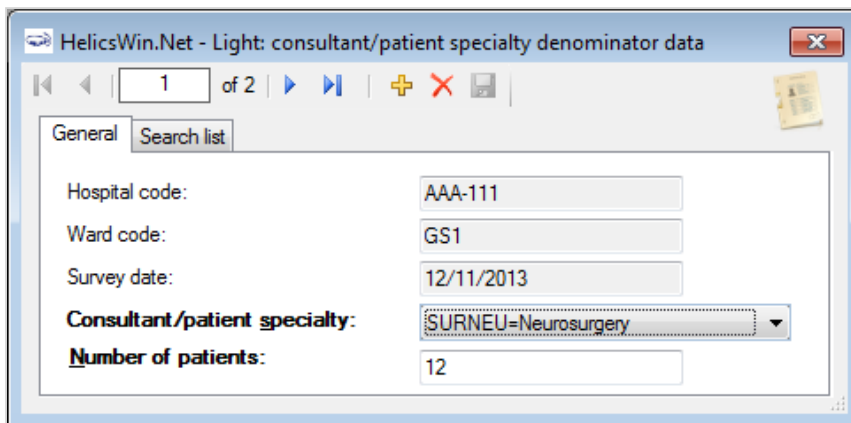
Warning: In the Light protocol, denominator data by ward AND by consultant/patient specialty are mandatory. If the detailed denominator data by consultant/patient specialty are not known, enter at least one record with the total number of patients (using the unit specialty instead). Also make sure that 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.   Optionally, you can see the total number of patients entered for that ward within the tab marked 'Search list'. Click Refresh to ensure that all recent data is included in this list.
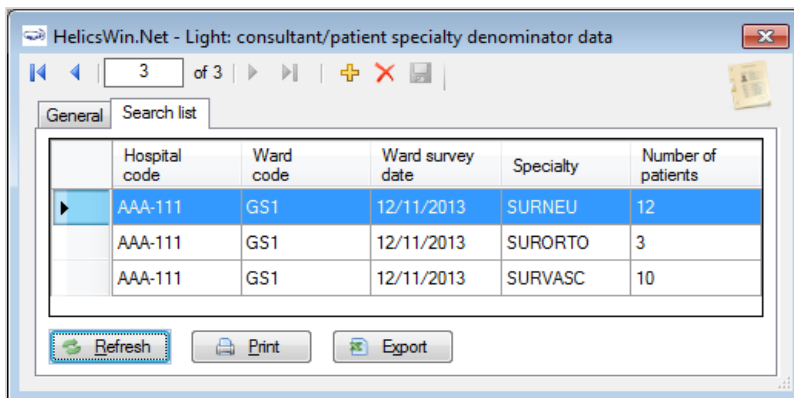
The Validation tab

This tab is used by 'Validation Teams' to enter data if a validation survey is performed. Use of this validation tab is described within a separate document, the '**PPS Validation Protocol, version 2.1**'. This is available within the HelicsWin.Net software, within Settings>About>Documentation.

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

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 achieved using the **Translation** functionality in the **Settings form**, as described within Chapter 8.

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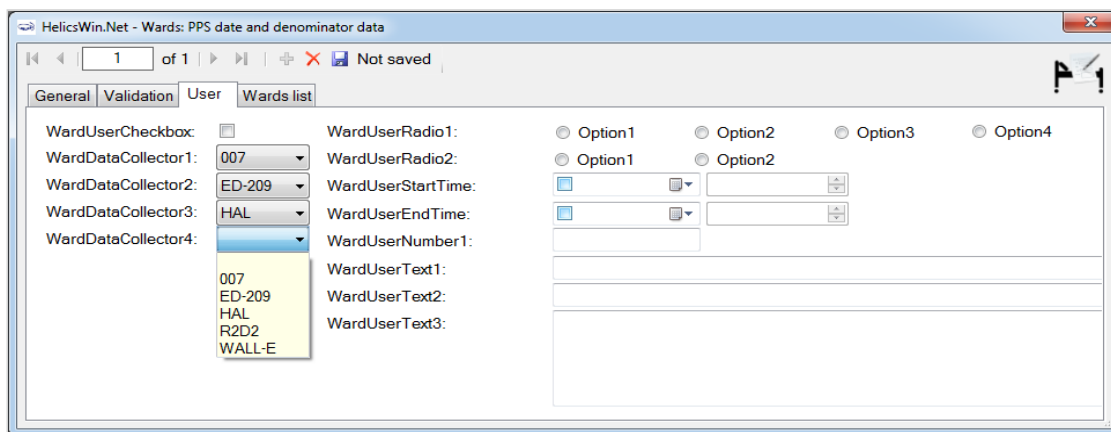
Specifying HAI and antimicrobial use data for patients

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.

Note:

- Antimicrobial use data and HAI data can only be accessed from the Patient's 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 use data for Antimicrobial use and HAI

1. In the **Main menu** form, click the button **Patient/Antimicrobial use/HAI data**.
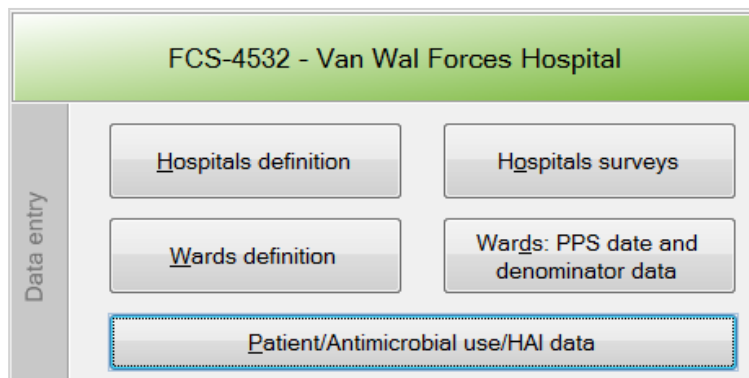
2.   The **Patients | Risk factors** form opens at the **General** (tab) page.

3.   Click the Add 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; characters are not allowed.

4.   Optionally, you can also enter an patient identifier in the field **Internal patient code**.

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 Section 0). As per Data Protection principles, to preserve patient confidentiality, we recommend that the internal patient code data is not included in the export file sent to the regional, national or EU level.

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

The Patients settings box opens.

Selecting **Use last selected ward survey**, and clicking on **Save patient settings** automatically moves the Ward chosen in **(D)** that the Ward code and survey date information **(E)** ensure moves

6.   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.
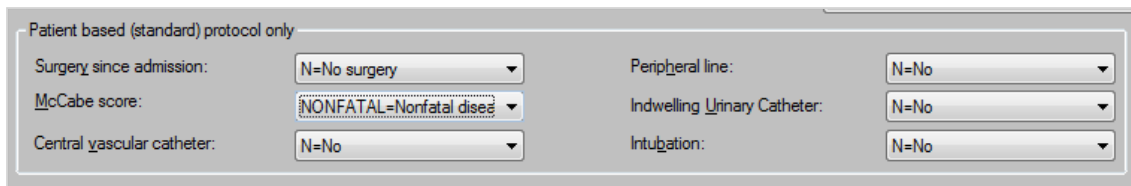
7.   Select the ward code (ID) from the **Ward** list **(D)**, and then click the transfer button **(E)** to update the **Ward code** and **Survey date** fields **(F)**.

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

8.   Complete the remaining fields as necessary.

Note that bold field labels denote mandatory fields.

9.   If you are using the Standard protocol, complete the additional risk factors that appear when the ward is selected.
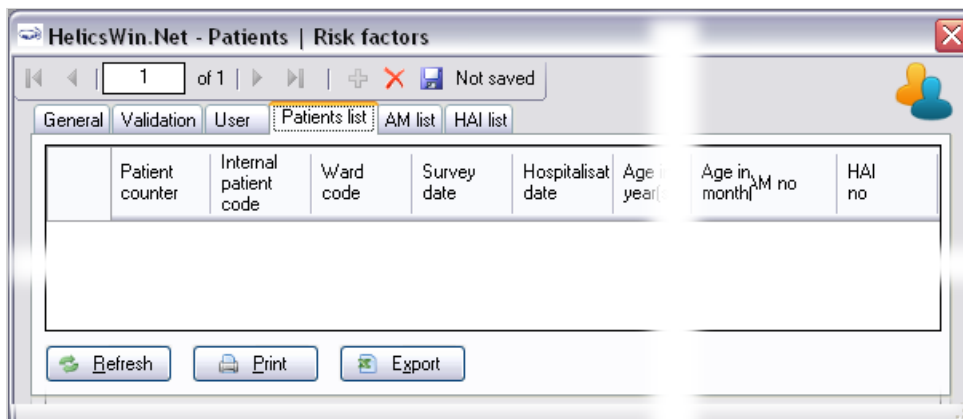

10.   Skip the Validation tab.

This tab is used by 'Validation Teams' to enter data if a validation survey is performed. Use of this validation tab is described within a separate document, the '**PPS Validation Protocol, version 2.1**'. This is available within the HelicsWin.Net software, within Settings>About>Documentation.

11.   Skip the Users 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 achieved using the Translation functionality in the **Settings** form, described within Chapter 8.

12.   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**.

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

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

13.   Click **Print** to print the list. In **Print options**, select the fields and rows to be printed.

14.   To add data for the next patient, click the Add icon ➕.

Antimicrobial use data

A unique antimicrobial record is defined by fields that are bold on the **Antimicrobial use** form. These 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.

Note: The **Antimicrobial Use** button is activated when the field Patient receives antimicrobial(s): is set to Yes. 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.

To specify antimicrobial use data for a patient

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

1.   In the **Main Menu**, click **Patient/Antimicrobial use/HAI data**.

The **Patients | Risk factors** form opens.

2.   Scroll through the list of patients to locate the patient you are interested in.

3.   Confirm the patient details match the patient whose data you want to update.

4.   On the **General** tab, click the **Antimicrobial use** button.

The **Antimicrobial use** form opens.

5.   Specify values for the required fields, Antimicrobial (ACT5), Route, Indication, and Diagnosis.

6.   Optionally to specify a brand name, click **Search by brand t**o lookup antimicrobial agents and ATC5 codes from the commercial brand names.

The ATC5 code and route are entered automatically when a commercial product is selected. The following screenshot shows the Antimicrobial brand lookup tool.

7.   Click (select) the required brand from the list, and then click **Select this brand**.

You return to the **Antimicrobial use** form.

8.   Click the **User** tab**.**

The **Antimicrobial Use –User tab** opens.

Note: If necessary, you use the can use the Translation function in **Settings** to change the language of labels of the fields.

Healthcare-associated infection data

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, 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. Similarly, related codes for the same site should not be reported: for example, 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.

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

9.   In the **Main Menu**, click **Patient/Antimicrobial use/HAI data**.

The **Patients | Risk factors** form opens.

10.   Scroll through the list of patients to locate the patient you are interested in.

11.   Confirm the patient details pertain to patient whose data you want to update.

12.   On the **General** tab, click the **HAI** button.

The **Healthcare-associated infections (HAI)** form 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.

13. View the antimicrobial resistance marker table from the protocol by clicking **Antimicrobial resistance help**.
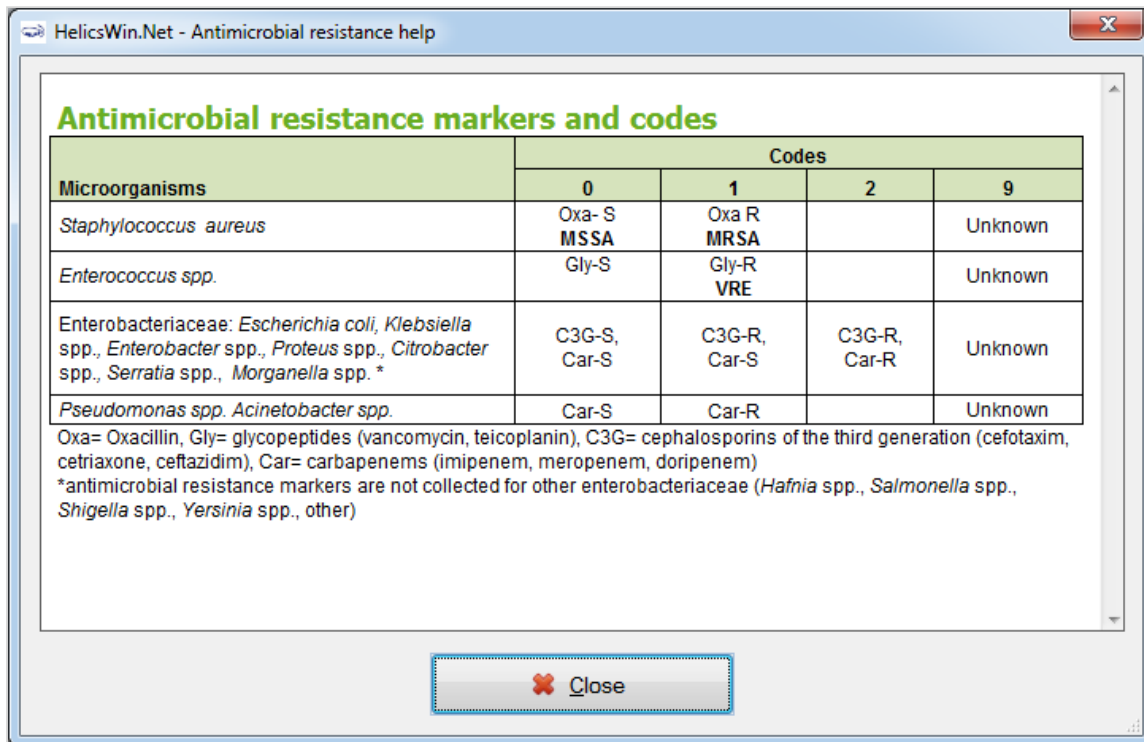
14. Optionally, view or edit the HAI user variables on the **User** page.

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 achieved using the **Translation** functionality in the **Settings form**, as described within Chapter 8.
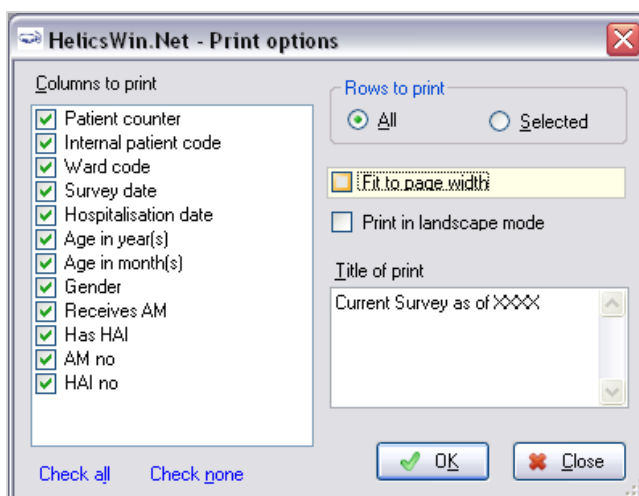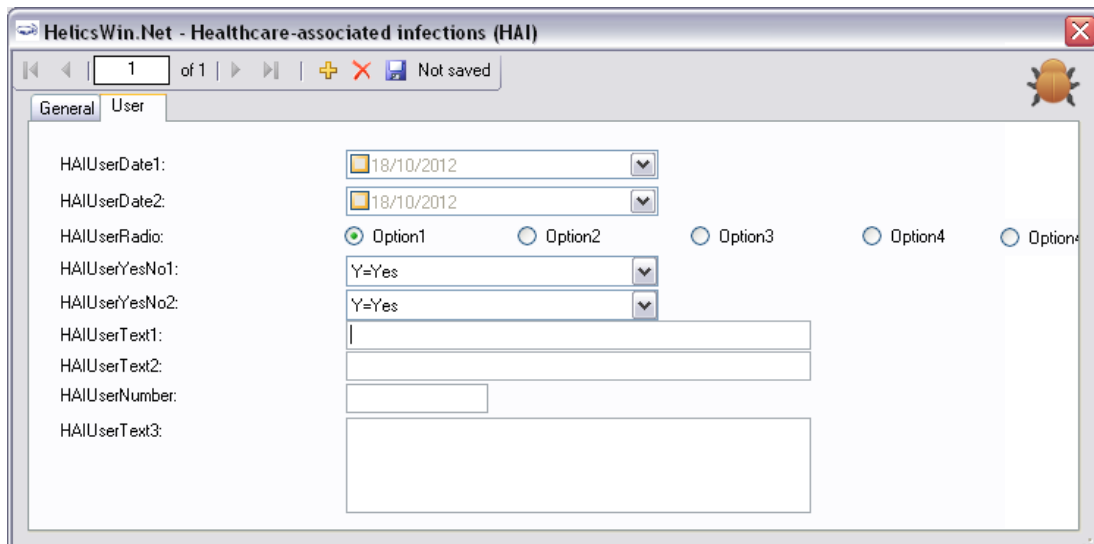
Validation forms

The **Validation pages** (tabs) in the forms **Hospital surveys**, **Wards: PPS date and denominator** and **Patient/Antimicrobial use/HAI data** 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 within the Validation Protocol. Validation protocol version 2.1 is available within the HelicsWin.Net software v.1.3.8, within *Settings>About>Documentation*.

The validation tab in the Hospital surveys form

The validation tab in the Wards: PPS date and denominator form

The validation tab in the Patient/Antimicrobial use/HAI data form

4.   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 function '***Data quality check***' performs these in-depth checks. The checks must be started manually.

Data quality check verify the internal consistency of all information entered into your database. These help 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 perform a 'sanity check' on your final data, i.e. to ensure that the data make sense.

Quality check results

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.

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

To run a data quality check

When you run a data quality check it checks the whole of the current HelicsWin.Net database.

1.   Click **Data quality check** in the Main menu window.

The Data quality check form opens.
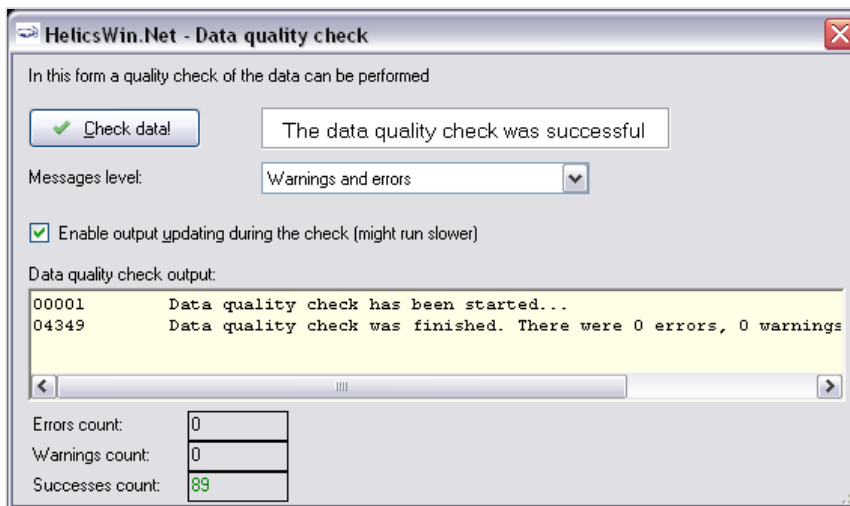
2.   In the **Messages level** field, select *Warnings and errors* (recommended).

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

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.
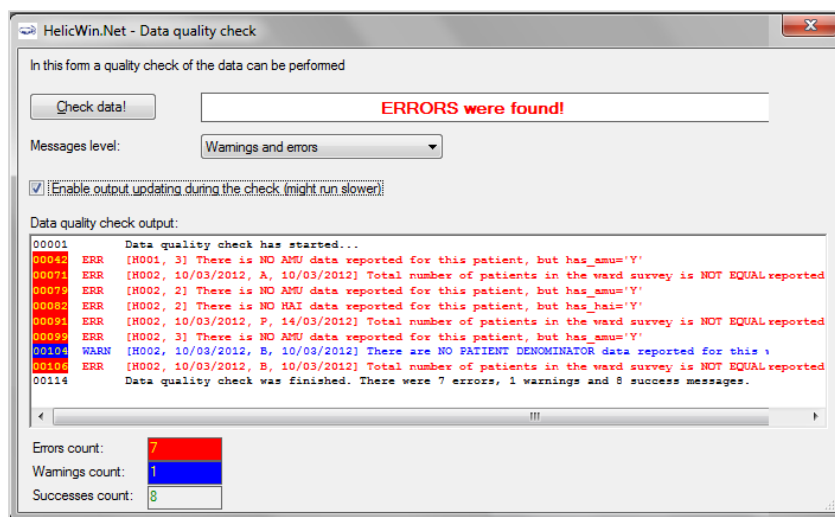
5. Creating reports from survey data

HelicsWin.Net provides a form for extracting data from existing surveys and collating these data into 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 reports, and save these customisations for future use.

Using the Reports form

You create reports in the Reports form, which you access directly from the **Main menu** by clicking the **Reports** button. This form has three main parts labelled as A, B, and C in the graphic below.

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 report on. Reports 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 crosstabulate 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.

Creating reports

The following procedures take you through the steps you need to print a report, starting from the HelicsWin.Net main menu.

To select PPS protocol and hospital(s)

1. In the Main menu, click **Reports**.

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 create a report on.

The row containing the currently selected hospital is shaded.

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

To create and print a report from a template

With the selection of hospitals made in the previous procedure:

1.   Select a report template from the Templates list.

The following default options are available.

1.   Number of patients with HAI (HasHAI) by UnitID
2.   Number of patients with HAI (HAI data) by UnitSpecialty
3.   Number of patients receiving antimicrobials (ReceiveAntimicrobials) by MainUnitSpecialty
4.   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 report is data 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:
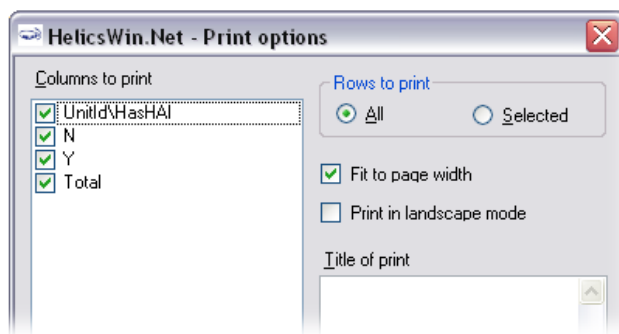
3.   Make your selections, and click **OK**.

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 reports and templates

Use the **Crossstab** or the **Frequency** tab

As with the provided templates, custom reports are viewed in the tabular results area (C), and optionally print or export 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 in the Template field in area (B) for future use.

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

1. Open the **Reports** form as before.

2. Select one or more hospitals and the protocol.

3. In the **Template** field, select **Custom**.

4. In the **Source** field select your source for your data.

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

5. 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.

6. 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%

7. Optionally, as for the default templates, use the Print button to print the table, or Export to export the data as a CSV file.

8.   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 on the **More report settings** button 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.

Table: 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
	<table><tr><td>HasHAI</td><td>Frequency</td><td>Frequency (%)</td></tr><tr><td>N</td><td>344</td><td>100%</td></tr><tr><td>Y</td><td>3</td><td>0%</td></tr><tr><td>Total</td><td>347</td><td>100%</td></tr></table>

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

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

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

1.   Open the **Reports** form as before.

2.   Click on the **More report 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
Precision: 5% / Mark sub precision values: <1%	<table><tr><td>HasHAI</td><td>Frequency</td><td>Frequency (%)</td></tr><tr><td>N</td><td>202</td><td>91%</td></tr><tr><td>Y</td><td>19</td><td>9%</td></tr><tr><td>Total</td><td>221</td><td>100%</td></tr></table>

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 report templates

You can remove built-in and custom report 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 Reports form:
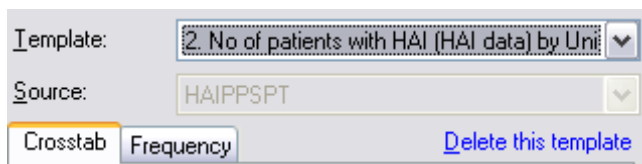
2.   In the Template drop-down list, select the template you want to delete.

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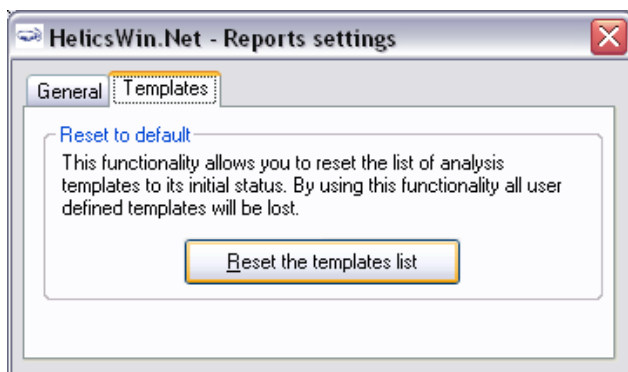
3.   Click **Reset the templates list**.

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

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6.   Exporting data

Before exporting the PPS data, always perform a data quality check and correct any data errors that you find. We recommend using the HelicsWin.Net **Data quality check** function to help you achieve this (see Section 0. above). The export function includes an export of the original (Access) database HELICSWinNet.mdb (compressed in a ZIP file) and an export in the TESSy csv format.

Exporting data from the HelicsWin.Net database

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

Before you start, make sure that the PPS 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

1.   In the **Main menu** form, click **Data Export**.

The **Export** form opens, by default with the **Access database** page open.

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

For example, to use the folder C:\HWN1.3\Export, go to the folder C:\HWN1.3, and create the folder **Export** manually.

3.   In the **Protocol** field, select the protocol used in the file you wish to export.

4.   In the data grid, select the code(s) and survey dates for the hospital-survey(s) for which you are exporting the data. More than one hospital-survey can be selected at once by holding down the control button, and then clicking on each hospital code you wish to select.

Make sure that the PPS start and end dates are defined in the hospital data form.

5.   Optionally, use the checkboxes to choose whether to include additional sets of variables in the exported files. These are data entered relating to (i) validation studies, (ii) users, (iii) hospital names, and (iv) 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.

As per Data Protection principles, to preserve patient confidentiality, we recommend that the patient code data is not included in the export file sent to the regional, national or EU level.

6.   Click **Export the Access database**.

HNW generates a ZIP file containing the exported database file **HELICSWinNet_export.mdb**.

The ZIP file is date and time stamped with the file name having the format:
HWN_yyyymmdd_hhmmss.zip

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

Exporting data to TESSy

You can also export data for a given hospital and PPS 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 PPS protocol (pg 25 of version 4.3), 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.

To export data in TESSy format

1.   In the **Main menu** form, click **Data Export**.

The **Export** form opens.

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

The freeware tool *csved* is recommended for implementing these conversions.

3.   Click the **Path** button (situated to the right of the **Path** field), to locate the folder that you want to send the exported file to, and then click on **OK**.

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

5.   In the data grid, select the code for the hospital for which you are exporting the data.

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

6.   Click **Export for TESSy**.

The csv export may take some time to finish. HWN generates 5 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).

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.

Conversion 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.

7.   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:

Table 4 Properties used for merging Ward data

Hospital code	Computer	Wards	Original database	Location of database files	Data quality check required
G01	A	W01, W02	HelicsWinNet.mdb	C:\HWN1.3	Yes
G01	B	W11, W12	HelicsWinNet.mdb	P:\HWN1.3	Yes

On computer A

Backup 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.   In the HWN main menu, click **Hospital definitions**.

     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 HWN1 on the P drive.

2.   In the HWN main menu, click **Hospital definitions**.

     The hospitals form opens.

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

     The hospitals form closes.

4.   In the HWN main menu, click **Data Export**.

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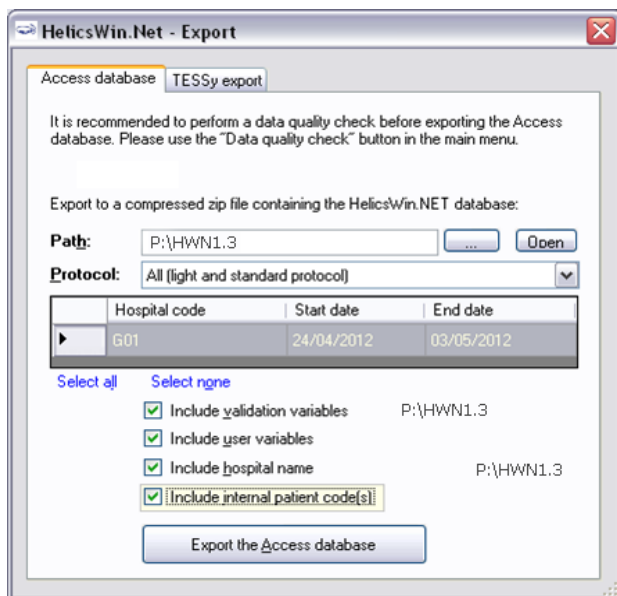
5.   In the **Access database** tab, click the **Path** button (situated to the right of the **Path** field), and navigate to the folder you just created on the P drive, and then click **OK**.

      The text P:\HWN1 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:\HWN1.3.

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.   On the Main menu, click **Data merge**.

      The Merge form opens.
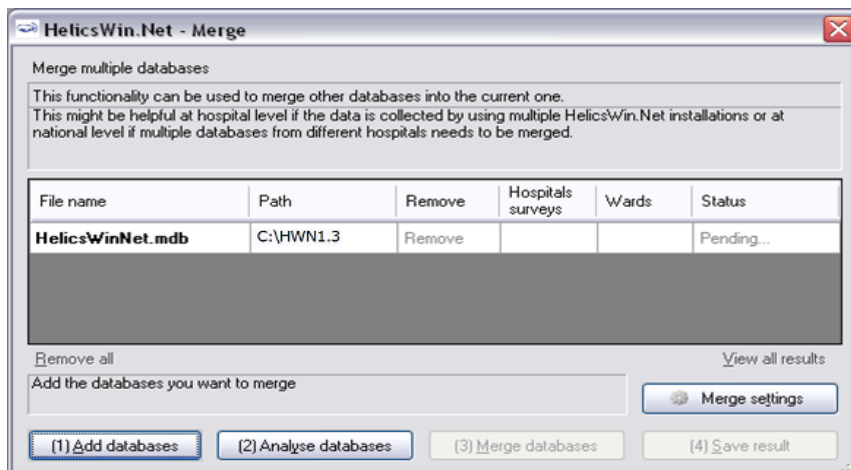
2.   Click (1) **Add databases**.

3.   Navigate to the folder containing the file you want to merge, in this case it's HWN1.3 on the P drive, and then select **HelicsWinNet**.mdb.

The P database is added to the list.

File name	Path	Remove	Hospitals surveys	Wards	Status
HelicsWinNet.mdb	C:\HWN1.3	Remove			Pending...
HelicsWinNet.mdb	P:\HWN1.3	Remove			Pending...

4.   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 surveys	Wards	Status
HelicsWinNet.mdb	C:\HWN1.3	Remove	G01 24/0...	W-01 ,W...	Analyzed OK
HelicsWinNet.mdb	P:\HWN1.3	Remove	G01 26/0...	W-11 ,W..	Analyzed OK

5.   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.

6.   Click **(3) Merge databases** Check that the survey dates and ward names, as displayed, represent the correct data.

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

There were no issues found while merging the databases. You can now continue saving the result.

[Merge settings]

[(1) Add databases]   [(2) Analyse databases]   [(3) Merge databases]   [(4) Save result]

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. Click Yes.

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

9.   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** and select the hospital you wish to check.

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

The **Patients | Risk Factors** form opens

3.   Click the **Patients list** tab.

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

4.   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.
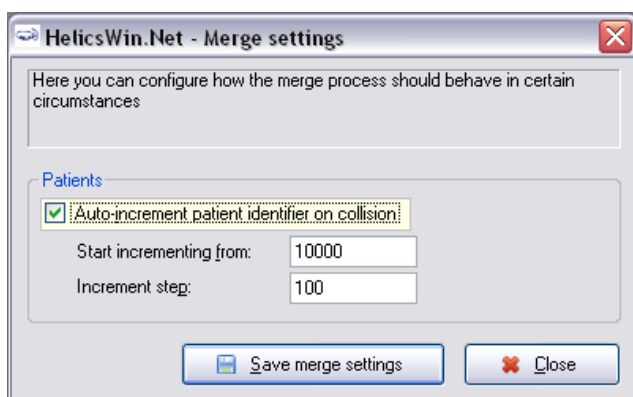
1. To access this **Merge settings** form, click **Data merge** in the main menu, and then click **Merge settings**.

   The default values usually work OK, 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.

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8.   Modifying settings

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

To open the Settings form

1.   Log on to HelicsWin.Net.

   The **Main menu** form opens.

2.   Click **Settings**.

   The **Settings** form opens; by default the content of the General tab is displayed.
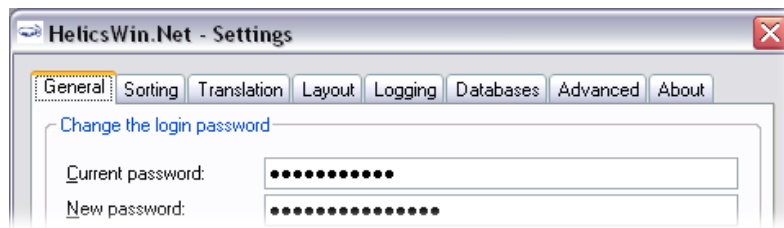
The following table outlines which settings you can change.

Table 5 **Settings form**

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 your 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 exiting 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.   In the **Main menu** form, click **Settings**.

The Settings form opens; by default the General tab is displayed.
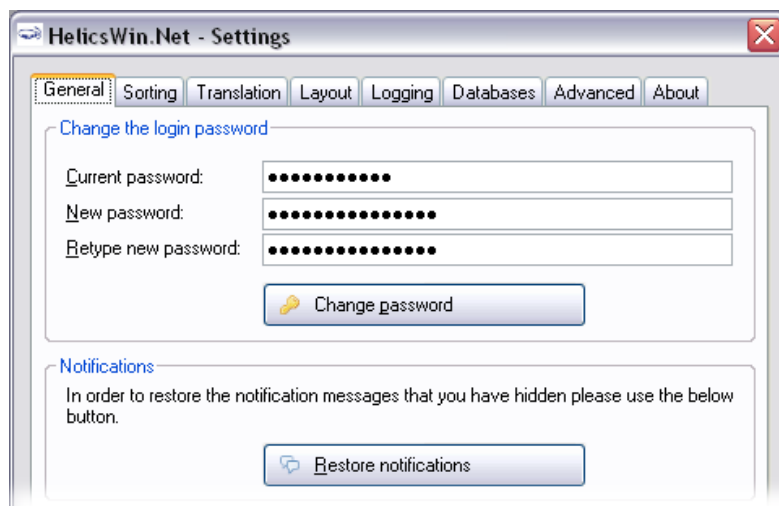
2.   In the **Current password** field, type your existing password.

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

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

Sorting drop-down lists

You can change the sorting order of certain drop-down lists, namely:

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.

To change sort order for drop-down lists

1.   In the **Main menu** form, click **Settings**.

The **Settings** form opens.
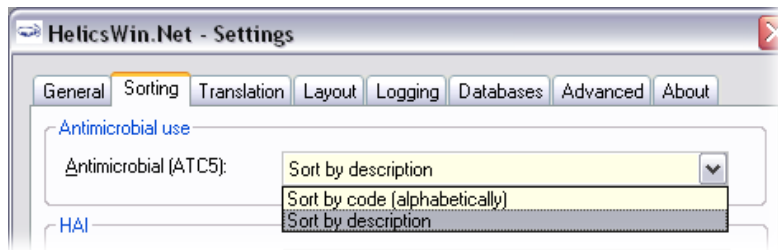
2. Click the **Sorting** tab.

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

4. Click **Update sorting order**.

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

Translating the text shown 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.

Translating HelicsWin.Net using a pre-prepared file

To install a language on your computer using a pre-prepared Translation.mdb file

1. Overwrite the existing Translation.mdb file in the folder were HelicsWin.Net is installed (the default is 'C:\HWN1.3\').

2. Open HelicsWin.Net.

Translating HelicsWin.Net manually

To translate the default labels to your language

1. In the HelicsWin.Net **Main menu** form, click **Settings**, and then click the **Translation** tab.

The **Translation** page opens.
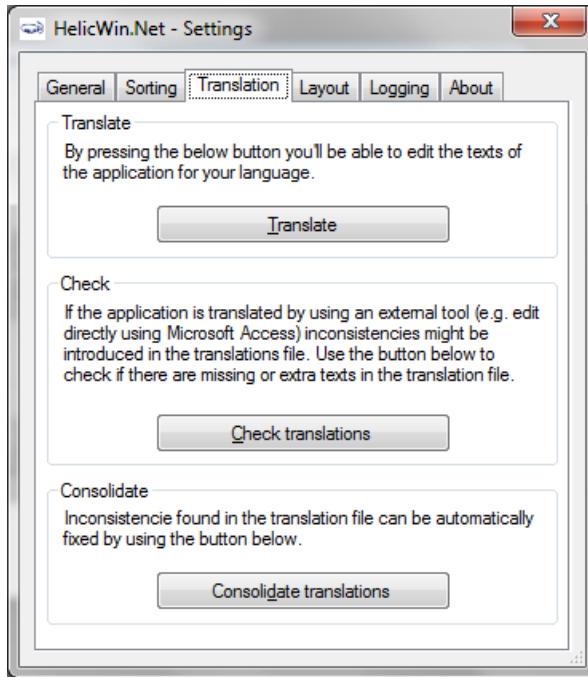
2.   Click **Translate**.

The Translation form opens.
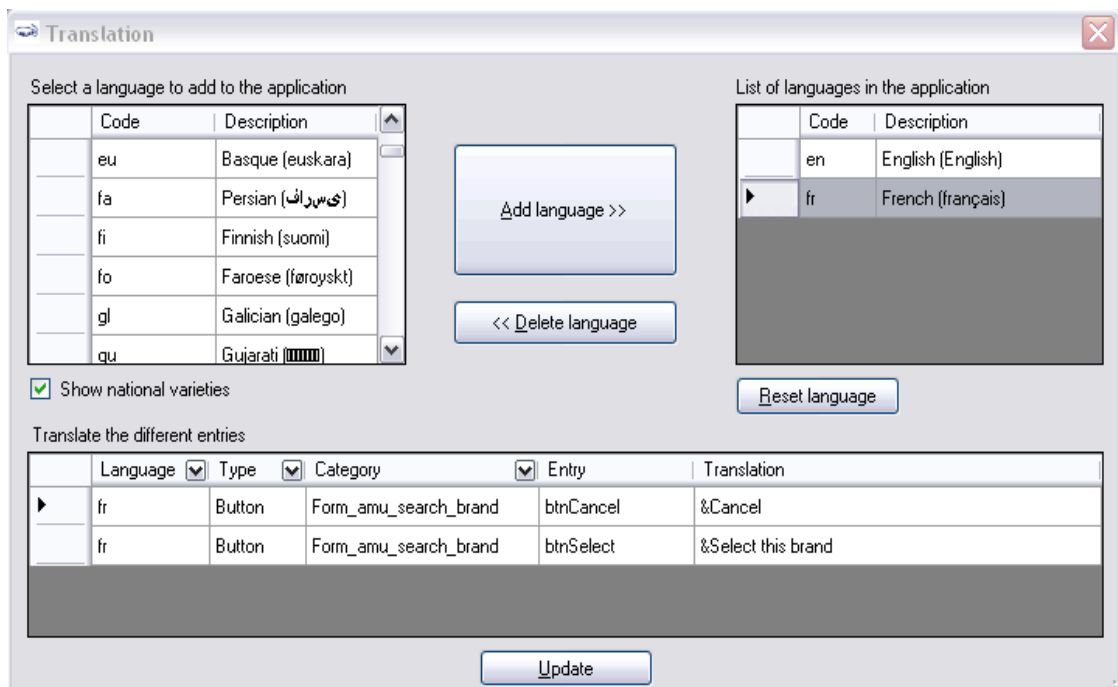
3.   In the **Select a language...** list, select the language you want to translate to, for example,
fr French (français)
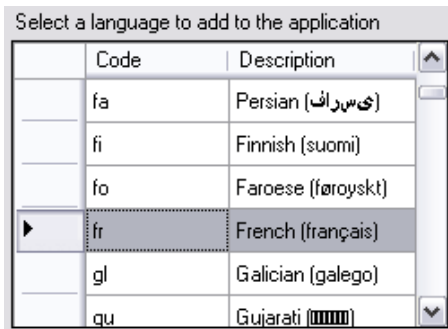
4.   Click **Add language**.

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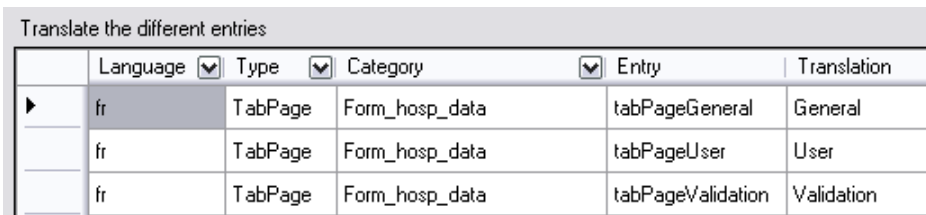
You can filter each column just as would do in Excel or Access, by clicking the down arrow, and making a selection. **Examples:**

To show only the tab names in the Hospitals form:

*   Click the down arrows to the right of **Category**, and select **Form-hosp_data** from the list.
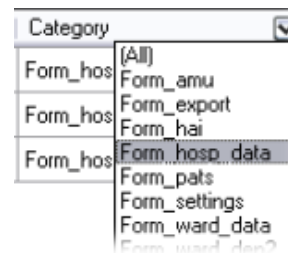
To show only the tab names in the Hospitals form:

*   Expand the **Type** column header and select TabPage.

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).

Country:	France (FR)	∨
Password:	xxxxxx	
Language:	French (français)	∨
	Login	
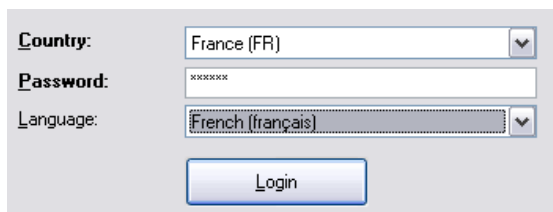
Translating drop-down list items

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.

▦ tbl_hai_i_u_useryesno1			
ID ▾	Code ▾	Description ▾	Order ▾
1			
2	N	No	
3	UNK	Unknown	
4	Y	Yes	
*			

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.

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 ser<u>v</u>ices**. Clicking v here will open the **Wards form**.
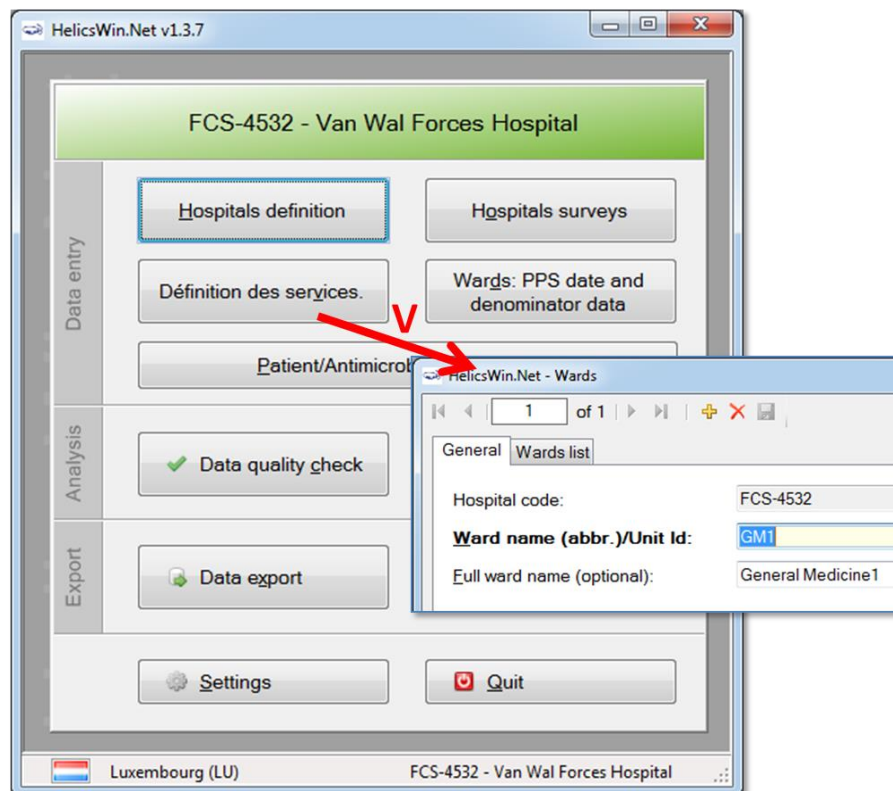
Note that the Wards form is still labelled 'HelicsWin.Net – Wards'. This field is translated in the Translation form, within Type 'FormTitle'.

Translation using Microsoft Access

Alternatively, you can use Microsoft Access to perform the translation by editing the translation file, **Translation mdb**, directly.

To translate HelicsWin.Net labels in Microsoft Access

1.   Repeat steps 1 to 5 in the procedure 'To show translated labels for your language'.

2.   Click **Update** and then close HelicsWin.Net.

        This ensures that the labels for your language will be available in Access. Only when you close HelicsWin.Net are the changes saved to the translation file.

3.   In Microsoft Access, open the file **Transaction.mdb**.

        This file is located in the installation folder, which by default is C:\HWN1.3.

4. Open the table **tbl_translation**.

5. Filter the **Language** column to show only entries for you language (for example, "fr" for French).
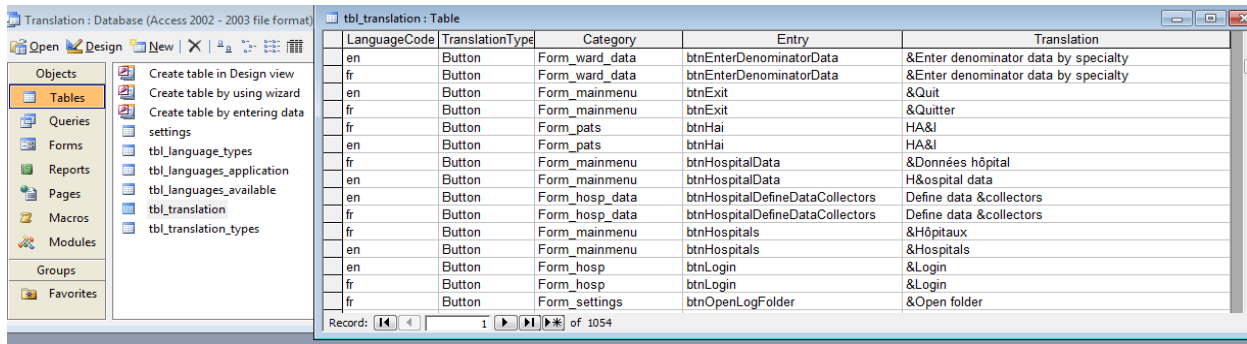
6. Add your translations to Translation column.

7. Save the database, and restart HelicsWin.Net.

Log file for debugging

Each session of HWN v1.3 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. If the logging level is set to **Trace**, for example, three files are generated each day: one verbose, one with warnings only, and one with errors only.
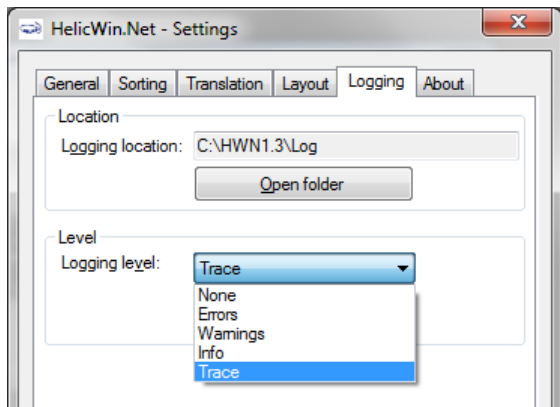
Resetting form layout options

If you change the size or the position of the windows, HWN remembers the windows settings the next time HWN is launched. If you want to reset the size and position of all HWN windows to their original values, use the **Layout** tab in the **Settings** form.
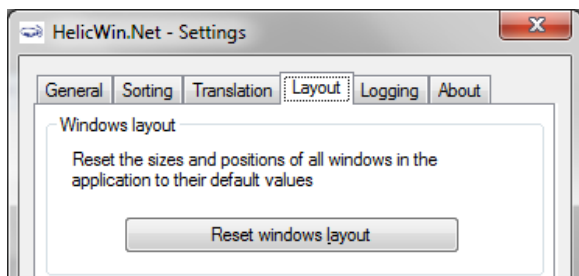
HelicsWin.Net Helpdesk support

The **About** tab in the settings window contains three tabs, the first of which, **Support,** shows the date the current version of HWN was build and provides information on 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.
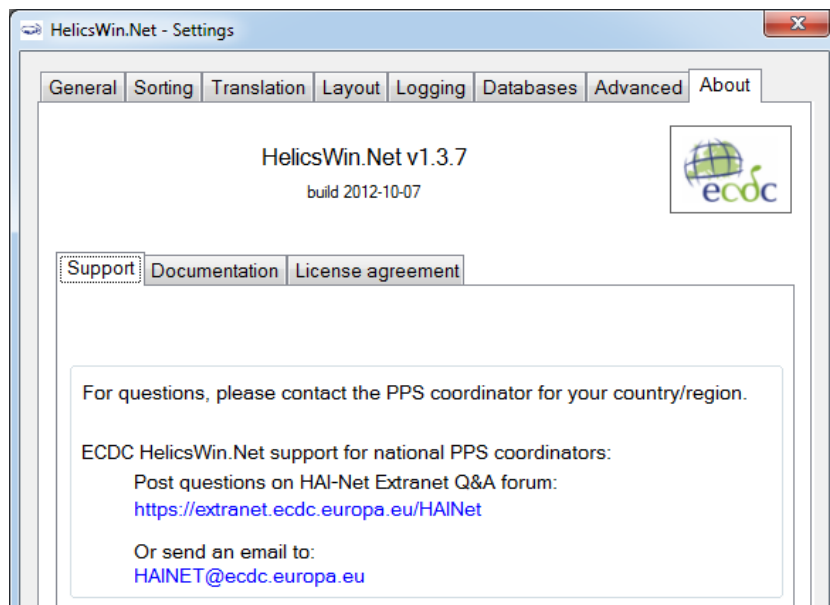
Accessing documentation, protocols and forms

On the **Settings** form, the **About** tab's second tab is labelled **Documentation**. This contains links to a pdf of the user manual, the ECDC PPS protocol and its forms, and the validation protocol.
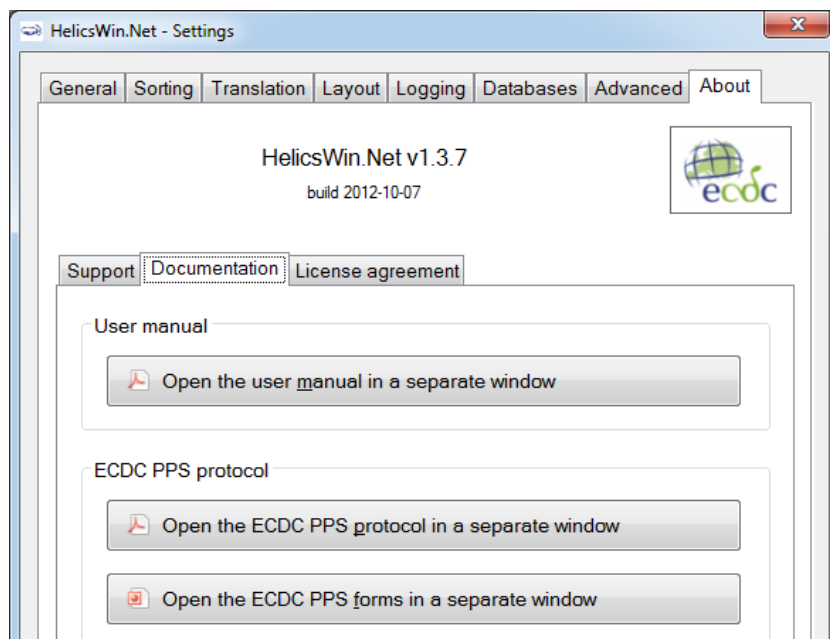
9. Accessing HelicsWin.Net database files

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 the national PPS coordinating centre, this 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:
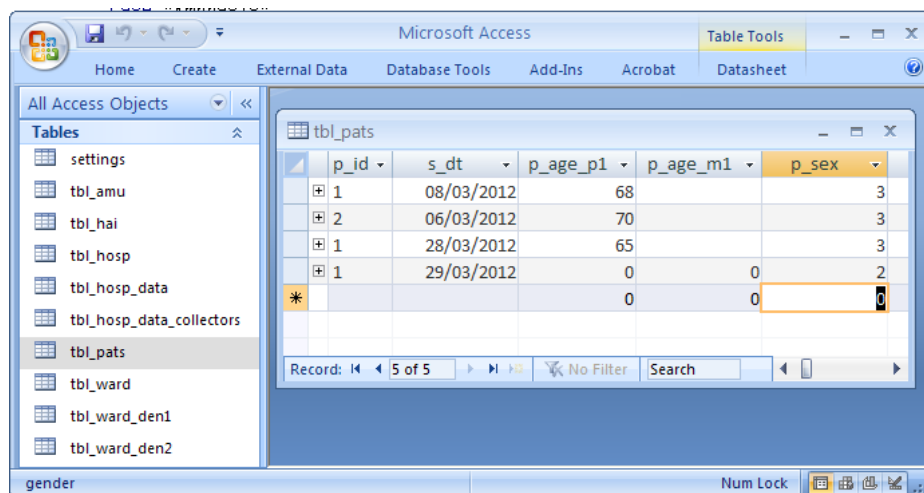
Relationships

You can view the relationships between the tables in the HELICSWinNet.mdb database using standard Access tools.
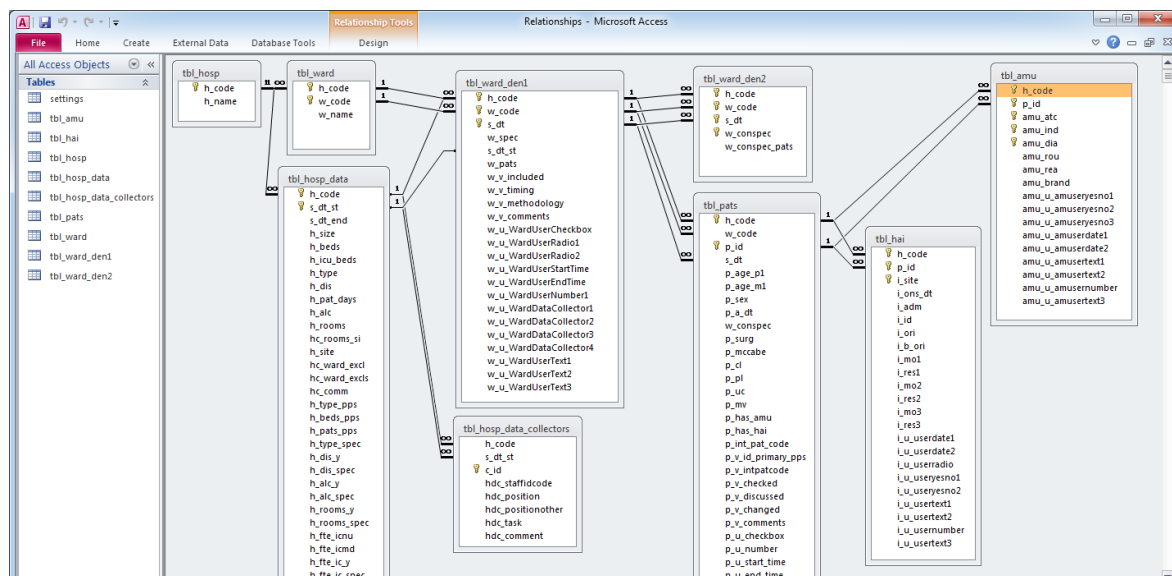
HelicsWin.Net variables and values

The internal data structure of the PPS database in HWN 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 *HelicsWin.Net variables and values* on page 51.

The following screenshot shows the internal code values in HWN that are stored in the ID field in the tables in Reference.mdb
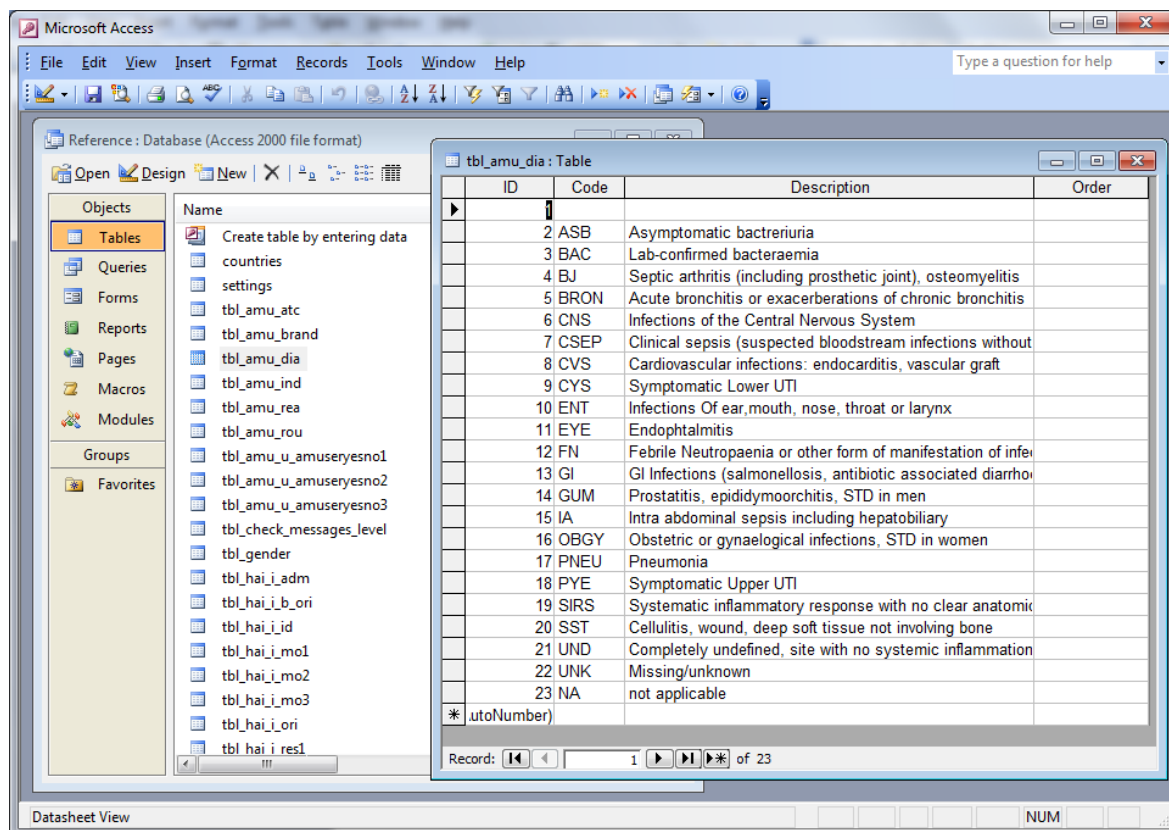
ODBC access to HELICSWinNet.mdb database

To access the database directly, for data analysis with Stata or for data conversion to TESSy (a convertor program in Stata is available on the ECDC extranet), you must define the HELICSWinNet.mdb database as an ODBC Data Source.

To define HELICSWinNet.mdb database as an ODBC data source

Use the Windows program **ODBC Data Source Administrator** to define an ODBC data source. The instructions are given for Windows XP. They are similar for Windows 7, although you access the Control Panel in a different way.

1. In Windows XP, click **Start** > **Settings** > **Control Panel** > **Administrative Tools** > **Data Sources ODBC.**

   The **ODBC Data Source Administrator** dialog box opens.

2. Click **Add.**

3. Select the driver: **Microsoft Access Driver** (*.mdb).

For accessing a 32-bit Access Driver in 64-bit Windows 7, run c:\windows\sysWOW64\odbcad32.exe

4. Click **Finish.**

5. In the window **ODBC Microsoft Access Setup**, define the following values

Data Source Name	HWN
Description	HELICSWin.Net database

6. Click **Select,** and then select HELICSWinNet.mdb in the folder where HELICSWin.Net was installed (for example, C:\HWN1.3)

7. Click **OK** twice.
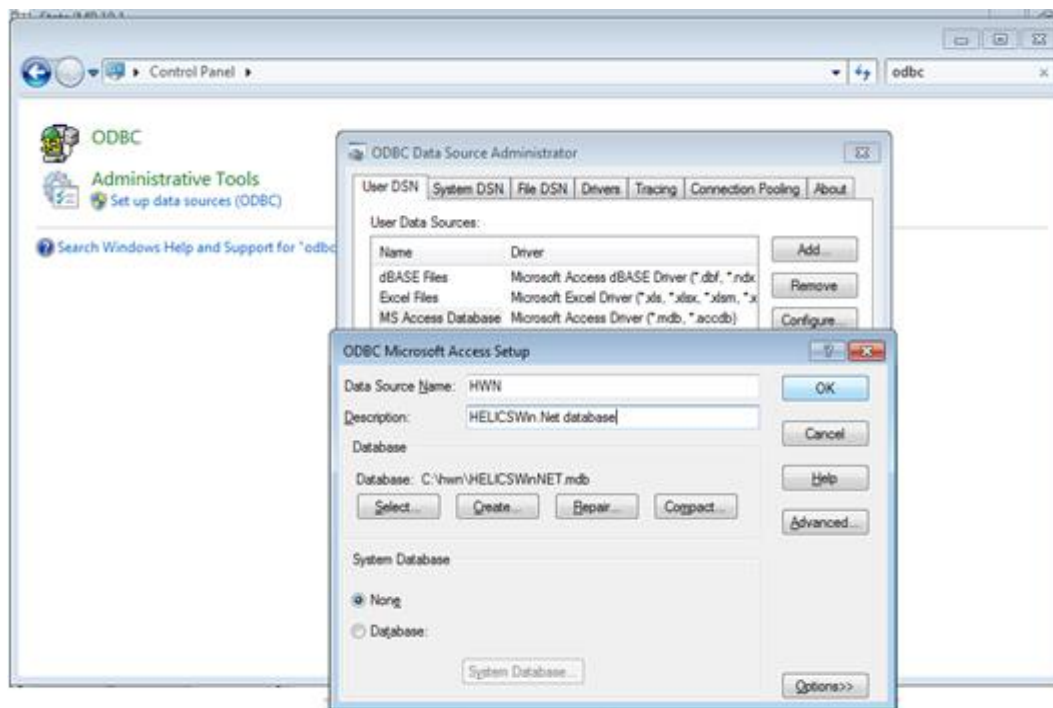
To open the HELICSWinNet.mdb ODBC data source database in Stata:

1. Type **odbc query HWN**

2. Click a table and load.

List of variables in HelicsWin.Net and TESSy

The table below lists the variable names used in the HELICSWinNet.mdb database, together with the corresponding field and record type in TESSy. For the value labels of the variables in HelicsWin.Net, refer to the file **Reference.mdb**. More detailed information on each variable, and information on validation rules, are documented within the TESSy metadata.

Website URL: http://www.ecdc.europa.eu/en/activities/surveillance/tessy/Pages/TESSy.aspx

Table 6 Mapping of HelicsWin.Net variables to TESSy variables

HWNtable	HWNvarname	TESSy Record Type / TESSy Varname	Description	Access Export	TESSy Export
Hospital data	PPS protocol variables				
tbl_hosp	h_code	HAIPPS HospitalId	Unique identifier/code for each hospital – should remain identical in different PPS periods	Yes	Yes
tbl_hosp	h_name	-	Name of the hospital	Optional	No
-	-	HAIPPS/~LIGHT RecordId	Unique identifier for this hospital-PPS within each Network. A unique record is defined by a combination of [NetworkId] +[HospitalId] +[DateUsedForStatistics]	No	Yes
tbl_hosp_data	h_type_pps	HAIPPS/~LIGHT RecordType	HAIPPS/HAIPPSLIGHT - standard/light	No	Yes
-	-	HAIPPS/~LIGHT Subject	Disease to report	No	Yes
-	-	HAIPPS/~LIGHT DataSource	The data source (surveillance system) that the record originates from	No	Yes
-	-	HAIPPS/~LIGHT ReportingCountry	The country reporting the record.	No	Yes

HWNtable	HWNvarname	TESSy Record Type / TESSy Varname	Description	Access Export	TESSy Export
-	-	HAIPPS/~LIGHT DateUsedForStatistics	Date Point Prevalence Survey was started in current hospital.	No	Yes
-	-	HAIPPS/~LIGHT NetworkId	Unique identifier for each network – MS selected and generated. Can be omitted if the hospital identifiers are unique within the reporting country/data source	No	Yes (empty)
tbl_hosp_data	h_code	HAIPPS/~LIGHT HospitalId	Unique identifier/code for each hospital – MS selected and generated, should remain identical in different surveillance/PPS periods/years.	Yes	Yes
tbl_hosp_data	s_dt_st	HAIPPS/~LIGHT DateOfHospitalStartPPS	Date Point Prevalence Survey was started in current hospital	Yes	Yes
tbl_hosp_data	s_dt_end	HAIPPS/~LIGHT DateOfHospitalEndPPS	Date Point Prevalence Survey was ended in current hospital	Yes	Yes
tbl_hosp_data	h_size	HAIPPS/~LIGHT HospitalSize	Total number of beds in the hospital or rounded down to the closest 100 beds.	Yes	Yes
tbl_hosp_data	h_beds	HAIPPS/~LIGHT NumHospitalAcuteBeds	Number of acute care beds in the hospital or rounded down to the closest 100 beds.	Yes	Yes
tbl_hosp_data	h_icu_beds	HAIPPS/~LIGHT NumHospitalICUBeds	Number of Intensive Care Beds in Hospital	Yes	Yes
tbl_hosp_data	h_beds_pps	HAIPPS/~LIGHT NumHospitalSurveyBeds	Total number of beds in wards included in PPS	Yes	Yes
tbl_hosp_data	h_pats_pps	HAIPPS/~LIGHT NumHospitalSurveyPatients	Total Number of patients included in the PPS	Yes	Yes
tbl_hosp_data	h_type	HAIPPS/~LIGHT HospitalType	Hospital type	Yes	Yes
tbl_hosp_data	h_type_spec	HAIPPS/~LIGHT HospitalSpecialization	Specialization of hospital (if any)	Yes	Yes
-	-	HAIPPS/~LIGHT HospitalLocation	Region as NUTS-1 code where hospital is located.	No	Yes (empty)
tbl_hosp_data	h_dis	HAIPPS/~LIGHT NumHospitalDischarges	Number of discharges per year in hospital	Yes	Yes
tbl_hosp_data	h_pat_days	HAIPPS/~LIGHT NumHospitalPatientDays	Number of patient days per year in hospital	Yes	Yes
tbl_hosp_data	h_dis_y	HAIPPS/~LIGHT YearOfHospitalDenom	Year for number of discharges and patient days	Yes	Yes
tbl_hosp_data	h_dis_spec	HAIPPS/~LIGHT HospitalDenomSpec	Specification for the number of discharges and patient days	Yes	Yes
tbl_hosp_data	h_alc	HAIPPS/~LIGHT NumAlcoholHandRubLiters	Litres of alcohol hand rub consumed per year	Yes	Yes
tbl_hosp_data	h_alc_y	HAIPPS/~LIGHT YearOfAlcoholHandRub	Year for alcohol hand rub consumption	Yes	Yes
tbl_hosp_data	h_alc_spec	HAIPPS/~LIGHT AlcoholHandRubSpec	Specification for alcohol hand rub consumption	Yes	Yes
tbl_hosp_data	h_rooms	HAIPPS/~LIGHT NumHospitalRooms	Total number of rooms in hospital	Yes	Yes
tbl_hosp_data	hc_rooms_si	HAIPPS/~LIGHT NumHospitalSingleRooms	Total number of single rooms in hospital	Yes	Yes
tbl_hosp_data	h_rooms_y	HAIPPS/~LIGHT YearOfHospitalRooms	Year for number of rooms	Yes	Yes
tbl_hosp_data	h_rooms_spec	HAIPPS/~LIGHT HospitalRoomsSpec	Specification for number of rooms	Yes	Yes
tbl_hosp_data	h_fte_icnu	HAIPPS/~LIGHT NumInfControlNursesFTE	Full time equivalent infection control nurses	Yes	Yes
tbl_hosp_data	h_fte_icmd	HAIPPS/~LIGHT NumInfControlDoctorsFTE	Full time equivalent infection control doctors	Yes	Yes
tbl_hosp_data	h_fte_ic_y	HAIPPS/~LIGHT YearOfInfControlStaff	Year for infection control staff data	Yes	Yes
tbl_hosp_data	h_fte_ic_spec	HAIPPS/~LIGHT InfControlStaffSpec	Specification for number of infection control staff FTEs	Yes	Yes

HWNtable	HWNvarname	TESSy Record Type / TESSy Varname	Description	Access Export	TESSy Export
tbl_hosp_data	h_site	HAIPPS/~LIGHT HospitalDataType	Hospital Type to which PPS data apply to	Yes	Yes
tbl_hosp_data	hc_ward_excl	HAIPPS/~LIGHT ExclusionOfWards	Were any wards excluded from the hospital sample?	Yes	Yes
tbl_hosp_data	hc_ward_excls	HAIPPS/~LIGHT ExclusionComment	Specify which wards were excluded	Yes	Yes
-	-	HAIPPS/~LIGHT SampleHospital	Hospital is part of national sample	Yes	Yes
tbl_hosp_data	hc_comm	HAIPPS/~LIGHT HospitalComment	Free comments from hospital (also for validation if applicable)	Yes	Yes
Hospital data	Validation variables				
tbl_hosp_data	h_validation	HAIPPS To be defined	Current hospital PPS is a validation survey	Optional	No
tbl_hosp_data	h_v_prim_h_code	HAIPPS To be defined	Hospital code primary PPS	Optional	No
tbl_hosp_data	h_v_prim_s_dt_st	HAIPPS To be defined	Date start primary PPS	Optional	No
tbl_hosp_data	h_v_sampling	HAIPPS To be defined	Sampling validation survey	Optional	No
Hospital data	User variables				
tbl_hosp_data	h_u_hospitalusercheckbox	-	Checkbox (Y/N)	Optional	No
tbl_hosp_data	h_u_hospitalusernumber1	-	Numeric	Optional	No
tbl_hosp_data	h_u_hospitalusernumber2	-	Numeric	Optional	No
tbl_hosp_data	h_u_hospitalusernumber3	-	Numeric	Optional	No
tbl_hosp_data	h_u_hospitalusernumber4	-	Numeric	Optional	No
tbl_hosp_data	h_u_hospitalscale1	-	Numeric scale 1-5, dropdown	Optional	No
tbl_hosp_data	h_u_hospitalscale2	-	Numeric scale 1-5, dropdown	Optional	No
tbl_hosp_data	h_u_hospitalscale3	-	Numeric scale 1-5, dropdown	Optional	No
tbl_hosp_data	h_u_hospitalscale4	-	Numeric scale 1-5, dropdown	Optional	No
tbl_hosp_data	h_u_hospitalscale5	-	Numeric scale 1-5, dropdown	Optional	No
tbl_hosp_data	h_u_hospitalscale6	-	Numeric scale 1-5, dropdown	Optional	No
tbl_hosp_data	h_u_hospitalusertext1	-	Free text	Optional	No
tbl_hosp_data	h_u_hospitalusertext2	-	Free text	Optional	No
tbl_hosp_data	h_u_hospitalusertext3	-	Free text	Optional	No
tbl_hosp_data	h_u_hospitaluserradio1	-	Radio button (numeric 1-3)	Optional	No
tbl_hosp_data	h_u_hospitaluserradio2	-	Radio button (numeric 1-3)	Optional	No
tbl_hosp_data	h_u_hospitaluserradio3	-	Radio button (numeric 1-3)	Optional	No
tbl_hosp_data	h_u_hospitalusertext4	-	Free text	Optional	No
tbl_hosp_data	h_u_hospitalusertext5	-	Free text	Optional	No
"_collectors	h_code	-	Link to hospital data table, hospital ID	Yes	No
"_collectors	s_dt_st	-	Link to hospital data table, date of start PPS in hospital		No
"_collectors	c_id	-	Unique ID data collector		No

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HWNtable	HWNvarname	TESSy Record Type / TESSy Varname	Description	Access Export	TESSy Export
"_collectors	hdc_staffidcode	-	ID code/Abbreviated name (for example, initials) of data collector (VT or PPS team, as appropriate)		No
"_collectors	hdc_position	-	Position/function/profession of data collector		No
"_collectors	hdc_positionother	-	Specify position/function if other		No
"_collectors	hdc_task	-	Tasks for PPS: involved in data collection/data entry/both		No
"_collectors	hdc_comment	-	Comment for current data collector		No
Ward data	PPS protocol variables				
-	-	HAIPPSLIGHT$DENO RecordId (light)	Unique identifier for each record within the file (level of hierarchy). A unique record is defined by combination of ParentId + UnitId + PatientSpecialty	No	Yes
-	-	HAIPPSLIGHT$DENO ParentId (light)	Identifies the record (which RecordId Hospital) in the parent record type that the record refers to = HospitalId + DateUsedForStatistics)	No	Yes
		HAIPPSLIGHT$DENO RecordType	HAIPPSLIGHT$DENO	No	Yes
tbl_ward	h_code	-	Hospital ID (link with hospital level, tbl_hosp_data)	Yes	Yes
tbl_ward	w_code	HAIPPSLIGHT$DENO UnitId	Ward name (abbr.)/Unit Id	Yes	Yes
tbl_ward	w_name	-	Full ward name (optional)	Yes	Yes
tbl_ward_den1	h_code	-	Hospital ID (link with hospital level, tbl_ward)	Yes	Yes
tbl_ward_den1	w_code	-	Unit ID (link with tbl_ward)	Yes	Yes
tbl_ward_den1	s_dt	HAIPPSLIGHT$DENO DateOfSurvey	Date PPS was carried out in this ward	Yes	Yes
tbl_ward_den1	w_spec	HAIPPSLIGHT$DENO UnitSpecialty	Specialty of the Unit (Ward)	Yes	Yes
tbl_ward_den1	s_dt_st	-	Date start PPS in hospital (link with hospital level, tbl_hosp_data)	Yes	No
tbl_ward_den1	w_pats	HAIPPSLIGHT$DENO NumUnitDenom	Total number of patients admitted to the ward before 8 AM and not discharged from the ward at the time of the survey	Yes	Yes
tbl_ward_den2	h_code	-	Hospital ID (link with tbl_ward_den1)	Yes	Yes
tbl_ward_den2	w_code	-	Unit ID (link with tbl_ward_den1)	Yes	Yes
tbl_ward_den2	survey date	-	Date PPS was carried out in this ward (link with tbl_ward_den1)	Yes	Yes
tbl_ward_den2	w_conspec	HAIPPSLIGHT$DENO PatientSpecialty	Consultant/Patient specialty	Yes	Yes
tbl_ward_den2	w_conspec_pats	HAIPPSLIGHT$DENO NumSpecialtyDenom	Number of patients in ward for this consultant/patient specialty	Yes	Yes
Ward data	Validation variables				
tbl_ward_den1	w_v_included	To be defined To be defined	Patients included for validation survey	Optional	No
tbl_ward_den1	w_v_timing	To be defined To be defined	Timing of validation survey	Optional	No
tbl_ward_den1	w_v_methodology	To be defined To be defined	Validation method (blinded/unblinded)	Optional	No
tbl_ward_den1	w_v_comments	To be defined To be defined	Comments validation at ward level	Optional	No
Ward data	User variables				

HWNtable	HWNvarname	TESSy Record Type / TESSy Varname	Description	Access Export	TESSy Export
tbl_ward_den1	w_u_WardUserCheckbox	-	Checkbox (Y/N)	Optional	No
tbl_ward_den1	w_u_WardUserRadio1	-	Radio button (numeric 1-4)	Optional	No
tbl_ward_den1	w_u_WardUserRadio2	-	Radio button (numeric 1-2)	Optional	No
tbl_ward_den1	w_u_WardUserStartTime	-	Date/time	Optional	No
tbl_ward_den1	w_u_WardUserEndTime	-	Date/time	Optional	No
tbl_ward_den1	w_u_WardUserNumber1	-	Numeric	Optional	No
tbl_ward_den1	w_u_WardDataCollector1	-	Ward data collector one (list defined in hospital data)	Optional	No
tbl_ward_den1	w_u_WardDataCollector2	-	Ward data collector 2	Optional	No
tbl_ward_den1	w_u_WardDataCollector3	-	Ward data collector 3	Optional	No
tbl_ward_den1	w_u_WardDataCollector4	-	Ward data collector 4	Optional	No
tbl_ward_den1	w_u_WardUserText1	-	Free text	Optional	No
tbl_ward_den1	w_u_WardUserText2	-	Free text	Optional	No
tbl_ward_den1	w_u_WardUserText3	-	Free text	Optional	No
Patient data	PPS protocol variables				
-	-	HAIPPS$PT RecordId (standard)	Unique identifier for each record within the file (level of hierarchy). A unique record is defined by a combination of [Parent Id]+[PatientCounter]	No	Yes
-	-	HAIPPS$PT RecordType	Structure and format of the data. This field is only used with the TESSy CSV format.	No	Yes
-	-	HAIPPS$PT ParentId (standard)	Identifies the record (which RecordId) in the parent record type that the record refers to. Defined as [Network Id]+[HospitalId]+[DateUsedForStatistics]	No	Yes
tbl_pats	h_code	-	Hospital ID (link with tbl_ward_den1)	Yes	Yes
tbl_pats	w_code	HAIPPS$PT UnitId	Abbreviated Unit Name	Yes	Yes
tbl_ward_den1	w_spec	HAIPPS$PT UnitSpecialty	Specialty of the Unit (Ward)	Yes	Yes
tbl_pats	s_dt	HAIPPS$PT DateOfSurvey	Date PPS was carried out for this patient (in this ward/unit)	Yes	Yes
tbl_pats	p_id	HAIPPS$PT PatientCounter	Numeric Code for each patient, unique within hospital (not within one unit/ward). Anonymous code assigned by hospital to specify patient.	Yes	Yes
tbl_pats	p_age_p1	HAIPPS$PT Age	Age in years; for infants younger than 24 months, enter age in months as well	Yes	Yes
tbl_pats	p_age_m1	HAIPPS$PT AgeMonths	Age of patient in months if less than two years of age	Yes	Yes
tbl_pats	p_sex	HAIPPS$PT Gender	Gender of the patient.	Yes	Yes
tbl_pats	p_a_dt	HAIPPS$PT DateOfHospitalAdmission	Date of admission in the hospital (current hospitalisation)	Yes	Yes
tbl_pats	w_conspec	HAIPPS$PT PatientSpecialty	Specialty of patient or physician in charge of the patient, may differ from ward specialty	Yes	Yes

HWNtable	HWNvarname	TESSy Record Type / TESSy Varname	Description	Access Export	TESSy Export
tbl_pats	p_surg	HAIPPS$PT SurgerySinceAdmission	Patient has undergone surgery during current hospitalisation	Yes	Yes
tbl_pats	p_mccabe	HAIPPS$PT McCabe	McCabe Score	Yes	Yes
tbl_pats	p_cl	HAIPPS$PT CVC	Patient has central vascular catheter in place on survey date.	Yes	Yes
tbl_pats	p_pl	HAIPPS$PT PVC	Patient has peripheral vascular catheter in place on survey date.	Yes	Yes
tbl_pats	p_uc	HAIPPS$PT UrinaryCatheter	Patient has indwelling urinary catheter in place on survey date	Yes	Yes
tbl_pats	p_mv	HAIPPS$PT Intubation	Patient is under intubation with or without mechanical ventilation (endotracheal tube or tracheostomy) on survey date	Yes	Yes
tbl_pats	p_has_amu	HAIPPS$PT ReceivesAntimicrobial	Patient receives antimicrobial agent (former name p_abu)	Yes	Yes
tbl_pats	p_has_hai	HAIPPS$PT HasHAI	Patient has healthcare-associated infection (former name p_has)	Yes	Yes
Patient data	Validation variables				
tbl_pats	p_v_id_primary_pps	HAIPPS$PT To be de fined	Patient counter for this patient in the primary PPS database	Yes	No
tbl_pats	p_v_intpatcode	HAIPPS$PT To be defined	Internal patient code primary PPS (not exported)	Yes	No
tbl_pats	p_v_checked	HAIPPS$PT To be defined	Validation results checked with primary PPS results	Yes	No
tbl_pats	p_v_discussed	HAIPPS$PT To be defined	Discordant results discussed	Yes	No
tbl_pats	p_v_changed	HAIPPS$PT To be defined	Validation team decision changed after discussion	Yes	No
tbl_pats	p_v_comments	HAIPPS$PT To be defined	Validation team comments for this patient/AM/HAI	Yes	No
Patient data	User variables		Pilot validation configuration		
tbl_pats	p_int_pat_code	-	Internal patient code (optional, not exported)	No	No
tbl_pats	p_u_checkbox	-	Checkbox (Y/N)	Optional	No
tbl_pats	p_u_number	-	Numeric	Optional	No
tbl_pats	p_u_start_time	-	Date/time	Optional	No
tbl_pats	p_u_end_time	-	Date/time	Optional	No
tbl_pats	p_u_useryesno1	-	Yes/No/Unknown dropdown list	Optional	No
tbl_pats	p_u_useryesno2	-	Yes/No/Unknown dropdown list	Optional	No
tbl_pats	p_u_text1	-	Free text	Optional	No
tbl_pats	p_u_text2	-	Free text	Optional	No
tbl_pats	p_u_text3	-	Free text	Optional	No
AM use data	PPS protocol variables				
-	-	HAIPPSPTAM/ ~LIGHT$DENO$AM RecordId	Unique RecordId (ParentId + ATCCode + AntimicrobialRoute+ AntimicrobialIndication + AntimicrobialDiagnosis)	No	Yes
-	-	HAIPPSPTAM/ ~LIGHT$DENO$AM RecordType	HAIPPSPTAM (standard)/ HAIPPSLIGHT$DENO$AM (light)	No	Yes
-	-	HAIPPSPTAM/ ~LIGHT$DENO$AM ParentId	Link to RecordId in previous level (standard: patient; light: ward denominator)	No	Yes

HWNtable	HWNvarname	TESSy Record Type / TESSy Varname	Description	Access Export	TESSy Export
tbl_amu	h_code	-	Hospital ID (link with tbl_pats/ ward denominator data)	Yes	Yes
tbl_amu	p_id	~LIGHT$DENO$AM PatientCounterAM	Patient counter (link with tbl_pats) - in TESSy format only included in light	Yes	Yes
tbl_pats	s_dt	-	Date PPS was carried out in this ward/unit (link with ward denominator data in light)	Yes	Yes
tbl_pats	p_age_p1	~LIGHT$DENO$AM AgeAM	Age in years (light only)	Yes	Yes
tbl_pats	p_age_m1	~LIGHT$DENO$AM AgeMonthsAM	Age in months when <2 yrs old (light only)	Yes	Yes
tbl_pats	p_sex	~LIGHT$DENO$AM GenderAM	Gender of the patient (light only)	Yes	Yes
tbl_pats	p_a_dt	~LIGHT$DENO$AM DateOfHospitalAdmissionAM	Date of admission in the hospital (light only)	Yes	Yes
tbl_pats	p_hai	~LIGHT$DENO$AM HasHAIAM	Patient has healthcare-associated infection (light only)	Yes	Yes
tbl_amu	amu_atc	HAIPPSPTAM/ ~LIGHT$DENO$AM ATCCode	Antimicrobial ATC5 code	Yes	Yes
tbl_amu	amu_rou	HAIPPSPTAM/ ~LIGHT$DENO$AM AntimicrobialRoute	Route of antimicrobial administration	Yes	Yes
tbl_amu	amu_ind	HAIPPSPTAM/ ~LIGHT$DENO$AM AntimicrobialIndication	Indication for antimicrobial use	Yes	Yes
tbl_amu	amu_dia	HAIPPSPTAM/ ~LIGHT$DENO$AM AntimicrobialDiagnosis	Diagnosis group by anatomical site (for treatment only; NA otherwise)	Yes	Yes
tbl_amu	amu_rea	HAIPPSPTAM/ ~LIGHT$DENO$AM ReasonInNotes	Reason for prescription in patients notes	Yes	Yes
tbl_amu	amu_brand	-	Antimicrobial commercial brand name (optional)	Yes	No
AM use data	User variables				
tbl_amu	amu_u_amuseryesno1	-	Yes/No/Unknown dropdown list	Optional	No
tbl_amu	amu_u_amuseryesno2	-	Yes/No/Unknown dropdown list	Optional	No
tbl_amu	amu_u_amuseryesno3	-	Yes/No/Unknown dropdown list	Optional	No
tbl_amu	amu_u_amuserdate1	-	Date/time	Optional	No
tbl_amu	amu_u_amuserdate2	-	Date/time	Optional	No
tbl_amu	amu_u_amusertext1	-	Free text	Optional	No
tbl_amu	amu_u_amusertext2	-	Free text	Optional	No
tbl_amu	amu_u_amusernumber	-	Numeric	Optional	No
tbl_amu	amu_u_amusertext3	-	Free text	Optional	No
HAI data	PPS protocol variables				
-	-	HAIPPSPTINF/ ~LIGHT$DENO$INF RecordId	Unique RecordId (ParentId + InfectionSite)	No	Yes
-	-	HAIPPSPTINF/ ~LIGHT$DENO$INF RecordType	HAIPPSPTINF (standard)/ HAIPPSLIGHT$DENO$INF (light)	No	Yes
-	-	HAIPPSPTINF/ ~LIGHT$DENO$INF ParentId	Link to RecordId in previous level (standard: link to patient = h_code+p_id; light: link to ward denominator = h_code+w_code+i_dt)	No	Yes

HWNtable	HWNvarname	TESSy Record Type / TESSy Varname	Description	Access Export	TESSy Export
tbl_hai former name (before v1.3): tbl_inf	h_code	-	Hospital ID (link with tbl_pats)	Yes	Yes
tbl_hai	p_id	~LIGHT$DENO$INF PatientCounter	Patient counter (link with tbl_pats) - (light only)	Yes	Yes
tbl_hai	i_dt	-	Date PPS was carried out in this ward/unit (link with ward denominator data in light)	Yes	Yes
tbl_pats	p_age_p1	~LIGHT$DENO$INF Age	Age in years (light only)	Yes	Yes
tbl_pats	p_age_m1	~LIGHT$DENO$INF AgeMonths	Age in months when <2 yrs old (light only)	Yes	Yes
tbl_pats	p_sex	~LIGHT$DENO$INF Gender	Gender of the patient (light only)	Yes	Yes
tbl_pats	p_a_dt	~LIGHT$DENO$INF DateOfHospitalAdmission	Date of admission in the hospital (light only)	Yes	Yes
tbl_pats	p_abu	~LIGHT$DENO$INF ReceivesAntimicrobial	Patient receives antimicrobial agent (light only)	Yes	Yes
tbl_hai	i_site	HAIPPSPTINF/ ~LIGHT$DENO$INF I nfectionSite	Case definition code of HAI	Yes	Yes
tbl_hai	i_id	HAIPPSPTINF/ ~LIGHT$DENO$INF InvasiveDevice	Relevant invasive device in 48 hours (7 days for UTI) preceding the infection.	Yes	Yes
tbl_hai	i_adm	HAIPPSPTINF/ ~LIGHT$DENO$INF HAIAtAdmission	HAI was present at admission	Yes	Yes
tbl_hai	i_ons_dt	HAIPPSPTINF/ ~LIGHT$DENO$INF DateOfOnset	Date of onset HAI	Yes	Yes
tbl_hai	i_ori	HAIPPSPTINF/ ~LIGHT$DENO$INF HAIOrigin	Origin of the HAI	Yes	Yes
tbl_hai	i_b_ori	HAIPPSPTINF/ ~LIGHT$DENO$INF BSIOrigin	Origin (source) of the bloodstream infection	Yes	Yes
-	-	~INFRES RecordId		No	Yes
-	-	~INFRES RecordType	HAIPPSPTINF$RES (standard)/ HAIPPSLIGHT$DENO$INF$RES (light)	No	Yes
-	-	~INFRES ParentId		No	In prep.
tbl_hai	i_mo1	~INFRES ResultIsolate	Microorganism one - Translates to different structure in TESSy (1 record per bug-drug combination)	Yes	In prep.
tbl_hai	i_res1	~INFRES Antimicrobial + SIR	Antimicrobial resistance marker for mo1 - See protocol for conversion of res AMR marker codes to bug-drug combinations	Yes	In prep.
tbl_hai	i_mo2	~INFRES ResultIsolate	Microorganism two - Translates to different structure in TESSy (1 record per bug-drug combination)	Yes	In prep.
tbl_hai	i_res2	~INFRES Antimicrobial + SIR	Antimicrobial resistance marker for mo2 - See protocol for conversion of res AMR marker codes to bug-drug combinations	Yes	In prep.
tbl_hai	i_mo3	~INFRES ResultIsolate	Microorganism 3 - Translates to different structure in TESSy (1 record per bug-drug combination)	Yes	In prep.
tbl_hai	i_res3	~INFRES Antimicrobial + SIR		Yes	In prep.
HAI data	User variables		Pilot validation configuration		
tbl_hai	i_u_userdate1	-	Date/time	Optional	No

HWNtable	HWNvarname	TESSy Record Type / TESSy Varname	Description	Access Export	TESSy Export
tbl_hai	i_u_userdate2	-	Date/time	Optional	No
tbl_hai	i_u_userradio	-	Radio button (numeric 1-5)	Optional	No
tbl_hai	i_u_useryesno1	-	Yes/No/Unknown dropdown list	Optional	No
tbl_hai	i_u_useryesno2	-	Yes/No/Unknown dropdown list	Optional	No
tbl_hai	i_u_usertext1	-	Free text	Optional	No
tbl_hai	i_u_usertext2	-	Free text	Optional	No
tbl_hai	i_u_usernumber	-	Numeric	Optional	No
tbl_hai	i_u_usertext3	-	Free text	Optional	No