



Silhouette v4.6

Administration User's Guide

Note: This system is developed for use only by qualified medical professionals trained and experienced in its use. Do not use the system before reading and understanding this user's guide.

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ARANZ Medical Limited

Tel +64-3-374 6120, Fax +64-3-374 6130

Postal Address:

ARANZ Medical
PO Box 3894
Christchurch 8140
New Zealand

Delivery Address:

ARANZ Medical
47 Hereford Street
Christchurch 8013
New Zealand

CE Authorised Representative

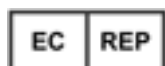
mdiEUROPA
Phone +49 (0)511 39089530
werner.sander@mdi-europa.com
Langenhagener Str. 71
30855 Langenhagen

FDA Authorised Representative

MDI Consultants
Phone +1 (516) 482 9001
alan@mdiconsultants.com

TGA Sponsor #55050

Brandwood Biomedical Pty Ltd
Phone +61 (0) 2 9906 2984
help@brandwoodbiomedical.com



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Document Number: 2018-00263 Rev5.0

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Introduction to Silhouette

This Administration User's Guide is intended for Silhouette administrators and is focused on the system administration features.

Other user guides available are:

- The Silhouette Installation and Configuration Guide, which covers the installation and initial configuration of SilhouetteCentral and SilhouetteConnect.
- The Silhouette Clinical User's Guide, which covers the clinical features for clinical users.

This guide is applicable to the following versions of the Silhouette components:

- SilhouetteCentral version 4.6.
- SilhouetteConnect version 4.6.
- SilhouetteStar 2 software version 1.7.
- SilhouetteLite version 1.5.
- SilhouetteLite+ version 1.5.

Document Conventions

Throughout this user's guide, screen, menu, and field names in Silhouette are displayed in a **bold font**. Series of actions are referred to as follows:

Admin > Organization > Settings

which means to select the **Settings** option in the **Organization** menu in the Silhouette Admin section.

The screens your browser displays may differ slightly from the screen captures shown in this document. However, such differences are minor and do not affect the performance of Silhouette.

Throughout this user's guide, references to Silhouette mean both the SilhouetteConnect Microsoft Windows application and the SilhouetteCentral web application. Where a feature or function is only applicable to one of the Silhouette applications then that application is specifically stated.

Topics

This user's guide is divided into the following high level topics:



[System Description](#)



[Using Silhouette](#)



[Silhouette Concepts and Operation](#)



[Clinical Data Export](#)



[Silhouette Administration](#)



[Appendices](#)

System Description

Wound Care

Silhouette is used in clinical practice by some of the world's largest healthcare providers, including the department of Veteran's Affairs in the US, the NHS in the UK, and many other clinics and hospitals in more than 30 countries. For clinical practice, Silhouette delivers:

- Reliable, accurate and timely wound documentation
- An easy to use solution for staff
- A non-invasive solution for patients
- Reduced commercial and litigation risk
- Improved patient satisfaction
- Fewer hospital admissions and visits
- Shorter hospital stays
- A reduction in the total cost of patient care.

Wound Research

Silhouette's ability to reliably capture, measure, and manage wound data has been proven in more than 70 clinical trials globally. For clinical research, Silhouette delivers:

- High quality data to support study endpoints
- Highly accurate, reliable, and repeatable measurements (inter- and intra-operability)
- Reliable data collection for pre-clinical through phase IV, post-marketing surveillance, and observational trials
- A scalable solution for studies from one site to 250+ investigator sites
- Immediate access to images, data, and reports for sponsors, CROs, adjudicators, and sites
- One-click PDF wound assessment reports can be used as source documentation
- Data exports on demand (future release)
- An easy to use solution for clinical sites.

More details on the system are available in the following topics:

- [System Components](#)
- [System Data Security](#)
- [Optional Features](#)

System Components

Silhouette is a computerized wound imaging, analysis, and documentation system.

SilhouetteCentral enables users to review, report, securely share and analyze the wound data collected by SilhouetteConnect, SilhouetteLite+ and SilhouetteLite applications. SilhouetteCentral is accessed via a web-based application and can collect wound data directly with a SilhouetteStar 2 device.

SilhouetteCentral is divided into two parts:

- Clinical - Provides access to the patient medical data stored in the Silhouette database for reviewing, editing, and updating. Reports, images, and wound measurement data can also be exported for further processing and importing into other applications.
- Administration - Provides facilities to manage units, groups, patients, and system users. SilhouetteCentral can also be used to configure and customize the Silhouette system.



In this version of SilhouetteCentral there is limited configurability available via the main web app. Contact ARANZ Medical Support if configuration changes need to be made.

SilhouetteConnect is the software installed on a Microsoft Windows tablet, laptop or desktop computer.

SilhouetteStar devices connect via USB to a computer running SilhouetteConnect. SilhouetteConnect enables wound assessments to be performed without connection to a network, and the data is synchronized with SilhouetteCentral when a network connection is available.

SilhouetteConnect can be used in two modes of operation:

- Standalone mode provides the power of Silhouette on a single PC. Data is collected and stored on the PC. PDF reports can be generated to share the results.
- Synchronized mode provides offline and wired SilhouetteStar device support for SilhouetteCentral systems. Data collected by SilhouetteConnect can be uploaded to SilhouetteCentral and data stored in SilhouetteCentral can be downloaded and used offline in SilhouetteConnect. In synchronized mode the system is mostly administered in SilhouetteCentral and the appropriate settings are downloaded during the synchronization process.



In this version of SilhouetteConnect there is limited configurability available via the main web app. Contact ARANZ Medical Support if configuration changes need to be made.

SilhouetteStar 1 is a device that captures wound images and non-contact 3D measurements of wounds at the point of care. SilhouetteStar 1 operates over a USB cable connected to a computer running SilhouetteConnect software.

SilhouetteStar 2 is a device that captures wound images and non-contact 3D measurements of wounds at the point of care. The images and data captured with SilhouetteStar 2 are uploaded to SilhouetteCentral over a secure Wi-Fi network or to SilhouetteConnect over a USB cable.

6 • System Components

SilhouetteStar 2 has software running on it. The software version for SilhouetteStar 2 is typically compatible with a limited range of SilhouetteCentral and SilhouetteConnect software versions. The software on a SilhouetteStar 2 upgrades or downgrades when it is connected to Silhouette to ensure it is compatible.

SilhouetteStar 2 is an IP network device. In wired mode, the device uses a IP network that is local to the computer running SilhouetteConnect. The USB device appears as a network interface in Microsoft Windows using the RNDIS protocol. In wireless mode, the device communicates over the Wi-Fi IP network directly to SilhouetteCentral.

SilhouetteLite+ is comprised of an application and a range finding sensor for Apple® iPhone®, iPod® touch and iPad® devices. SilhouetteLite+ enables users to take wound images, obtain non-contact 2D measurements, and record patient notes on their mobile device. The data collected at the patient's bedside is synchronized with SilhouetteCentral over a secure connection when available.

SilhouetteLite is an application designed for Apple® iPhone®, iPod® touch and iPad® devices. SilhouetteLite is a simplified application that enables users to add patients, wound images and simple notes (without measurements) to SilhouetteCentral. The data collected at the patient's bedside is synchronized with SilhouetteCentral over a secure network connection when available.

System Data Security

SilhouetteCentral Data Security

Patient demographic information and associated measurement data is stored in a Microsoft SQL Server database. The database uses standard SQL Server authentication mechanisms. SQL Server includes various mechanisms to encrypt both the database and the connection between the database and SilhouetteCentral.

SilhouetteCentral also stores some data in files directly on the file system. It is recommended to configure the host server to use drive encryption to provide encryption of data at rest. The data stored in files includes the following:

- Images are stored in a compressed, proprietary format with anonymized file names.
- Assessment reports requested by a SilhouetteCentral user are created in PDF format and are stored temporarily while being downloaded by the end user.
- Assessment reports generated by the system for Email attachments are stored in accordance to the Email purging configuration (default = 35 days).
- Data exports (csv files) are stored for a number of days (default = 3 days) to be made available for download by the user who created them.
- SilhouetteConnect databases that are uploaded as part of the Sync process are kept on the silhouette file system for a number of days (default = 10 days) to prevent data loss and allow any data conflict problems to be resolved.

Both the databases and associated files can be stored on the same or different machines depending on the installation criteria.

SilhouetteConnect Data Security

SilhouetteConnect stores data offline from SilhouetteCentral on a local disk of a PC. The database, images and PDF reports are stored unencrypted on the file system. It is recommended to deploy SilhouetteConnect on systems with BitLocker security (or similar) turned on to keep the patient data secure.

If synchronizing SilhouetteConnect to a SilhouetteCentral, it is recommended to use the HTTPS protocol to secure the communications.

To help protect data in use, SilhouetteConnect provides an application timeout that limits the time that patient data is displayed on the screen.

SilhouetteStar 2 Data Security

SilhouetteStar 2 captures images of wounds, creates a 3D model for measurements and uploads the images to SilhouetteCentral over a Wi-Fi network or a USB wired connection. The images are uploaded and removed from the device almost immediately. If there is a network issue which prevents the immediate uploading of images they are kept on the device only until it turns off.

SilhouetteCentral must be configured to use HTTPS to keep the data secure over the Wi-Fi network.

SilhouetteStar 2 displays the patient name, patient id and date of birth of the patient being assessed by a user via the SilhouetteCentral web interface. Once the clinician closes the web browser or navigates away from the patient, the patient information is removed from the screen and from the devices memory. If there is a communications issue the patient information will remain on the device screen until it enters sleep mode or successfully reconnects to the SilhouetteCentral, allowing images to be captured for that patient semi-offline.

All patient data or images are stored in volatile memory so it is lost if the device turns off.

SilhouetteLite and SilhouetteLite+ Data Security

The SilhouetteLite and SilhouetteLite+ apps support offline operation. A list of patients from Silhouette is stored on the mobile device as well as any assessments waiting to be uploaded. Once assessment data is uploaded to SilhouetteCentral it is removed from the mobile device.

Apple devices offer FIPS140-2 validated encryption for data stored on the device. The Apple [iOS Security Guide](#) provides a description of how file security works on the device and how it works with iTunes syncs and backups. To ensure the data displayed and stored on the device is safe the following configuration recommendations are made:

- Use Passcode security on the device to enable data file encryption and to protect the device from unauthorized users accessing it.
- Use Touch ID on the device to provide an additional authentication check when first launching the SilhouetteLite or SilhouetteLite+ apps. The use of Touch ID for access to the apps is enabled by default in SilhouetteCentral, but disabled if required.
- Use the Apple Configurator 2 app to supervise devices, in particular:
 - Disable screenshot capabilities, and
 - Disable the Allow pairing to computers for content sync setting or enable the Force encrypted backups feature.

Optional Features

SilhouetteCentral Optional Features

A number of optional features can be added to a SilhouetteCentral license.

Feature Name	Feature Description
Assessment Email Actions	The Assessment Email Actions feature allows SilhouetteCentral to be configured to send email alerts on assessment creation and / or updates. See "Assessment Email" for more details. Available for SilhouetteCentral v4.3 and above.
Clinical Data Export	The Clinical Data Export feature for SilhouetteCentral enables assessment data to be exported into comma separated values (csv) format. Available for SilhouetteCentral v4.4 and above.

SilhouetteConnect Optional Features

A number of optional features can be added to a SilhouetteConnect license.

Feature Name	Feature Description
Clinical Data Export	The Clinical Data Export feature for SilhouetteConnect enables assessment data to be exported into comma separated values (csv) format from SilhouetteConnect when operating in standalone mode (not synchronizing to SilhouetteCentral). In synchronizing systems, data export will only be available from SilhouetteCentral. Available for SilhouetteConnect v4.4 and above when operating in standalone mode.

Using Silhouette

This section describes the basics of using with Silhouette. It is divided into the following sections:



[Logging In to Silhouette](#)



[Navigating in Silhouette](#)



[Logging Out from Silhouette](#)

Logging In to Silhouette

To log in to SilhouetteCentral, navigate to the website address of your SilhouetteCentral instance using a Web Browser.

To log in to SilhouetteConnect, start the SilhouetteConnect application on your computer.

The log on screen will appear. Enter the **User Name** and **Password** supplied to you. Select **Login**.



It is important to log on using the **User Name** and **Password** assigned to you. Silhouette records the names of users viewing, creating, and modifying patient records, and using the correct user name ensures accurate auditing.

While logging on to Silhouette you may occasionally be prompted to change your password if a system administrator has made use of the password expiry features. In this case you will need to pick a new password that meets the password complexity requirements and enter it before Silhouette will allow you to log on.

When logging in to SilhouetteCentral, web browsers may prompt you to save a **User Name** and **Password**. If using a shared computer, it is recommended that you do not permit the browser to save your login detail for SilhouetteCentral. Doing so, means that anyone using your computer can log on, access and potentially modify patient medical records that will be recorded as having been completed by you.

Changing Passwords

For users with permission to manage Users and Groups, your own and others passwords are managed via the [Users](#) screen.

Note that user names and passwords are used across the Silhouette Product Suite, so you will also need to use the new password when logging in to SilhouetteCentral, SilhouetteConnect, SilhouetteLite or SilhouetteLite+.

For users without permissions to manage Users and Groups to change their Silhouette password:

1. Navigate to the **Admin > Profile** screen.
2. Select the **Change Password** button.
3. Enter your existing password in the **Current Password** box.
4. Enter your new password in both the **New Password** and **Confirm Password** boxes.
5. Select the **Save** button to update the system with your new password.

When SilhouetteConnect is operating in Synchronized mode, in addition to changing their password in SilhouetteCentral, as above, all users can change their password by accessing **Admin > Profile** in SilhouetteConnect. A synchronization must be performed before the password change is applied across the system. During synchronization SilhouetteConnect needs to ask for the user's old Silhouette password (which SilhouetteCentral still has) to successfully complete. If the old password can't be remembered the password can be reset via SilhouetteCentral, before the sync can proceed.

12 • Recovering Forgotten Password

Logging in to an offline SilhouetteConnect after a password has been changed in SilhouetteCentral requires the users original password until a synchronization is completed. When SilhouetteConnect is online, it allows the new password to be used.

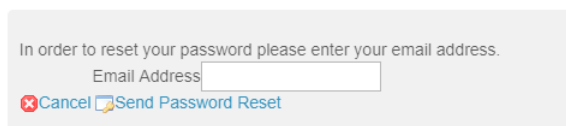
Recovering Forgotten Password

If you have forgotten your password, use the "**Forgot your Password?**" link on the SilhouetteCentral log in screen. This link is only available in SilhouetteCentral, not SilhouetteConnect. If you do not see this link, your administrator may have chosen to disable this feature, in which case contact your system administrator for further advice on how to regain access to your account.



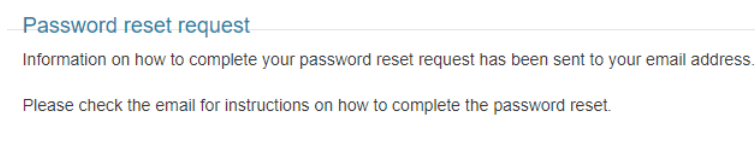
The image shows a login form with two input fields: "User Name" and "Password". Below the "User Name" field is a blue "Login" button. To the right of the "Password" field is a blue link that says "Forgot your password?".

Once the "Forgot your password?" link is selected you will be prompted to enter your email address. You should enter the email address that is associated with your Silhouette user name.



The image shows a form with the text "In order to reset your password please enter your email address." followed by an "Email Address" input field. Below the input field are two buttons: "Cancel" with a red 'x' icon and "Send Password Reset" with a blue envelope icon.

You will get a message that an email with instructions to reset your password has been sent to the email address you specified.



The image shows a message with the following text: "**Password reset request**" followed by a horizontal line, "Information on how to complete your password reset request has been sent to your email address.", and "Please check the email for instructions on how to complete the password reset." followed by another horizontal line.

When you check your email account and receive the email sent by Silhouette you will find a link that can be used to reset your password. Selecting the link will load the Silhouette website and prompt you to enter a new password.

Please enter the new password for 'test'.

The password must match the following criteria:

- A minimum of 3 characters.
- A maximum of 20 characters.

New Password *

Confirm Password *

You will receive a confirmation that your password has been changed and you can now proceed to log on with the new password.

Password Reset

Your password has been reset, please proceed to log on with your new password.

If you receive a password reset request email and do not remember requesting it, an additional link in the email may (depending upon system configuration) be provided that allows you to cancel the password reset request so any other person who manages to view the email can not reset your password.

Password reset request canceled. The link can no longer be used to reset your password.

User Name

Password

[Forgot your password?](#)

In some circumstances you may get a password reset email that indicates your user account is not able to have its password reset via email. In this scenario contact your system administrator for further instructions on how to reset your password.

Navigating in Silhouette

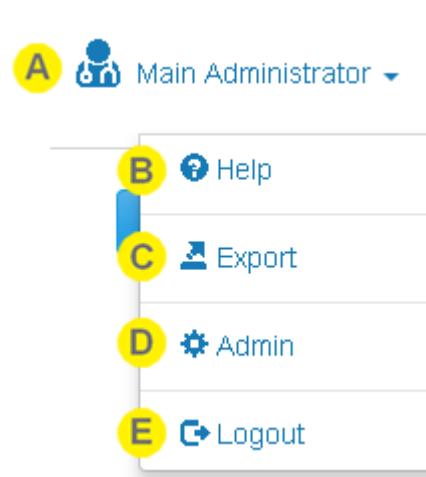
The basics of navigating within Silhouette are described in the following topics:

- [Application Menu](#)
- [Identifying Patients](#)
- [Searching and Selecting Patients](#)
- [Patient Sidebar](#)
- [Capturing Wound Images](#)

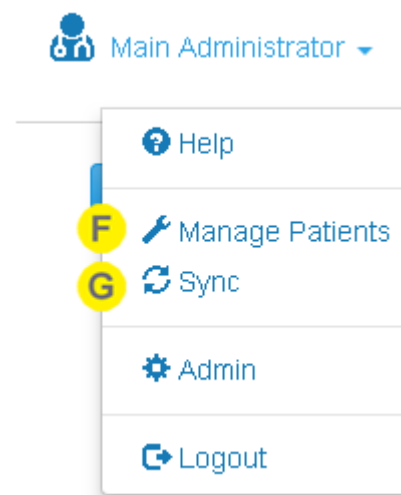
Application Menu

Once you have logged in to Silhouette, your name is shown in the top right-hand corner. Select your name to show the Application Menu. The options available in the application menu depend on the options available in your application and on your permissions.

Application Menu for SilhouetteCentral and SilhouetteConnect in Standalone mode.



Application Menu for SilhouetteConnect in Synchronized mode.



- A** Select your name in the top right of the application to show the Application Menu.
- B** **Help**
Contains links to the User Guides to help you use Silhouette. It also contains the links to legal and licensing information for Silhouette.
- C** **Data Export**
Opens the Data Export screen, where clinical data exports can be generated and downloaded.
This menu item is only shown if the current user has the **Can Export Data** permission.
This menu item is not available in SilhouetteConnect if it running in Synchronized mode.

- D Admin**
Change your account settings such as your name, email address and password.
Also, if your account has the correct permissions, then you can administer settings for the application. [See "Silhouette Administration"](#).
- E Logout**
Log out of SilhouetteCentral. [See "Logging Out from Silhouette"](#).
- F Manage Patients**
Opens the Manage Patients screen on SilhouetteConnect, allowing the selection of patients to download to this instance of SilhouetteConnect.

This menu item is only shown in SilhouetteConnect if it is running in Synchronized mode and if the current user has the **Can Manage Patients** permission.
- G Sync**
Initiates a Sync to SilhouetteCentral.

This menu item is only shown in SilhouetteConnect if it is running in Synchronized mode and if the current user has the **Can Synchronize** permission.

Identifying Patients

Silhouette uses three (3) pieces of information to positively identify patients. By default, this information is setup for clinical practice environments:

- Patient name (first name + last name)
- Patient ID
- Patient Date of Birth

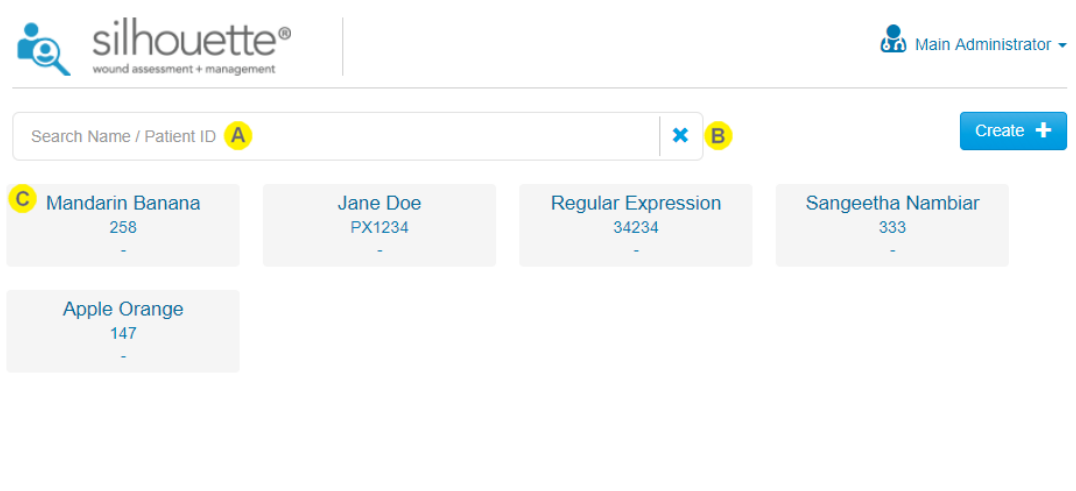
These bits of information are displayed throughout the system to help positive identification of the patient being imaged.

Silhouette requires that every patient in the system has an ID. The patients name and date of birth can be made optional for clinical research focused deployments.

Contact ARANZ Medical support to make changes to the patient identifiers.

Searching and Selecting Patients

In some Silhouette screens, you can search for patients by their first name, middle name, last name, or Patient ID.



A

Search box

Enter part of the patient's name or Patient ID. The search will be performed after the typing has stopped. For example, searching for the letters "an" filters the list so that it displays patients whose name or Patient ID begins with the letter sequence "an".

Narrow the search further by entering more of a patient's name or Patient ID.

B

Clear button

Select the x button to clear the search box and display the full list of patients.

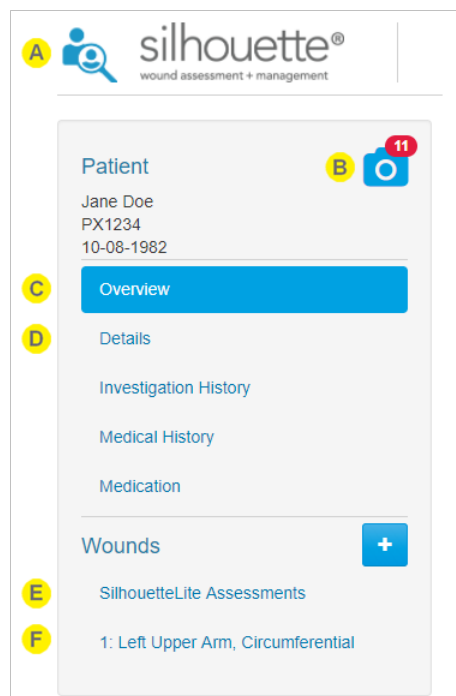
C

Search results

The patients that match the search criteria entered are displayed below the search box as a set of tiles. Select the patient tile to view the patient overview.

Patient Sidebar

Once a patient is selected a sidebar is displayed that can be used for navigating between sections. The current section is highlighted in blue.



- A** Select the patient search icon or the logo to go back to the **Patient Select** screen
- B** The camera icon opens the **Portfolio** dialog, containing the unassigned captured images and the SilhouetteStar connection information.
- C** Select **Overview** to opens the Patient Summary.
- D** Opens the **Patient Details** (name, date of birth, etc). The patient note sections available on the sidebar are configurable in the **Admin** section.
- E** View all the **SilhouetteLite** assessments
- F** Opens the **Wound Overview** for the selected wound

Note that it is possible to use multiple tabs to view SilhouetteCentral. Care should be taken to ensure the correct patient data is being reviewed when using this feature.

Capturing Wound Images



To get more comprehensive help with the Clinical UI in Silhouette, please see the Clinical User's Guide.

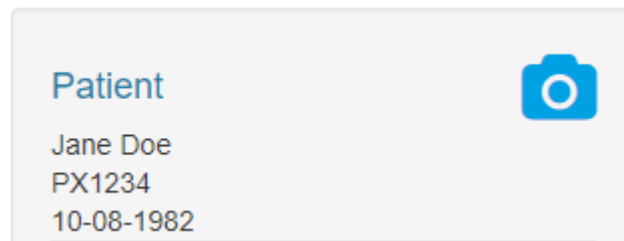
In order to capture wound images, Silhouette must be connected to a SilhouetteStar device.

Connecting a SilhouetteStar to SilhouetteConnect using USB

SilhouetteConnect allows connection of either the SilhouetteStar 1 or the SilhouetteStar 2 device via a USB cable.

The USB connected device automatically connects, if plugged in, once as the user is logged in to SilhouetteConnect.

To check that the device is detected and connected, either check the screen of the SilhouetteStar 2 or navigate to the portfolio dialog for a patient. The Portfolio dialog is accessed by selecting the **camera icon** on the Patient sidebar.



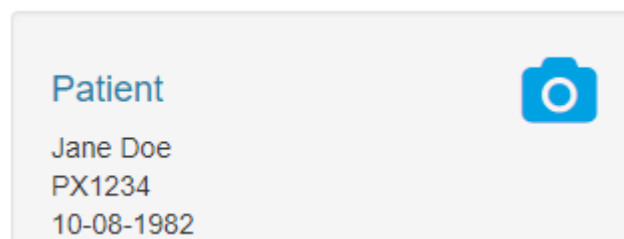
The portfolio dialog provides a message indicating that the device is connected and is ready to capture images.

Connecting a SilhouetteStar 2 to SilhouetteCentral using Wi-Fi

SilhouetteCentral allows connection of the SilhouetteStar 2 using Wi-Fi. For this, Silhouette needs at least one SilhouetteStar 2 network configured. See [Creating a Network Configuration](#).

To connect the device to SilhouetteCentral via Wi-Fi:

1. Open the Portfolio dialog by select the **camera icon** on the Patient sidebar.



2. If the Portfolio shows the captured images instead of the networks available, use the **Connect the SilhouetteStar** link.
3. The dialog will display a QR code. If there are multiple SilhouetteStar 2 networks configured, it will show a dropdown so that the correct network can be selected.
4. Press the button on the SilhouetteStar 2 to turn on the lasers.

5. Hold the SilhouetteStar 2 with the button facing up and form a star with the lasers on the QR code to connect to Silhouette.

Once it has connected, the Patient details will be shown on the SilhouetteStar 2 display, and images can be captured.

Using the SilhouetteStar to capture images

Images can be captured whenever the SilhouetteStar device (SilhouetteStar 1 or SilhouetteStar 2) is connected and there is a patient selected.

To capture images:

- Press the button on the SilhouetteStar to turn the lasers on.
- Form a star with the lasers inside the wound, making sure one laser is crossing the deepest part of the wound.
- Press the button on the SilhouetteStar to take the image, holding the device as still as possible for approx. 2 seconds. The SilhouetteStar 1 initiates the image capture when the button is pressed, while the SilhouetteStar 2 initiates the image capture when the button is released.
- The lasers turn off after a timeout. If the lasers turn off and there are still more images to be captured, then press the button to turn them on again.

Captured images are uploaded to the selected patient's portfolio and can be used when creating assessments. If using SilhouetteConnect, the images in the patient's portfolio are stored locally on the computer and are not synchronized to SilhouetteCentral. Images stay in the portfolio until they are used in an assessment or until they are deleted by the user.

The user is able to navigate between patients in Silhouette while the SilhouetteStar device is connected. When using a Wi-Fi connection to SilhouetteCentral, the SilhouetteStar 2 patient selection is synchronized to the user session in the browser tab it was originally connected to. If that browser tab is closed then the device is disconnected and must be re-connected to another browser tab by scanning the connection QR Code in that tab.

Disconnecting the SilhouetteStar

The SilhouetteStar will remain connected until the Silhouette user session ends (e.g. by logging out, by application lock timeout, by closing the web browser, etc).

When operating in Wi-Fi mode, the SilhouetteStar 2 will go to sleep after a period of inactivity to preserve the battery power. When the button is pressed, the device will wake up and attempt to reconnect to the last user session. If that user session has ended then the device will display a failed to connect message. Connect it to another session by scanning another connection QR Code.

If using the SilhouetteStar 2, the internal battery needs to be changed, even when operating in a USB connected configuration.

Logging Out from Silhouette

You can log out of Silhouette by using the Application Menu in the upper right-hand corner, and selecting the **Logout** option.

Note that you will be automatically logged out of Silhouette after a period of inactivity. This period is configurable, but by default is 10 minutes.

Silhouette Concepts and Operation

This section describes the basic concepts used within Silhouette and the details of various features and operations. It is divided into the following sections:



[Groups, Users, and Units in Silhouette](#)



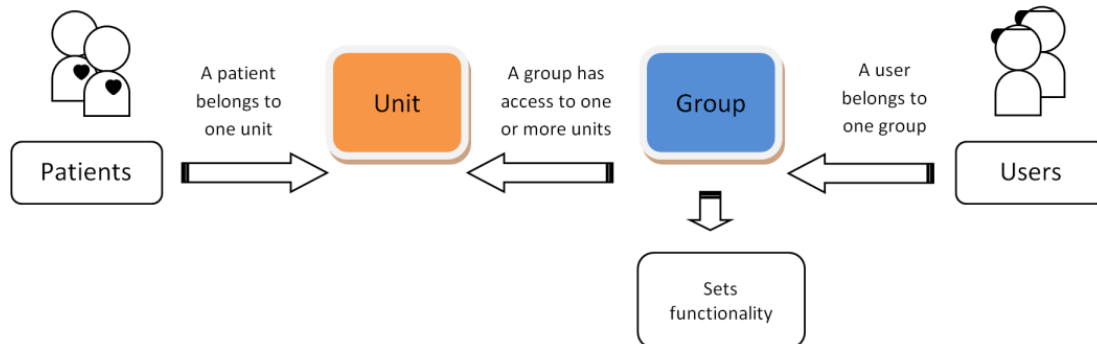
[Assessments and Patient Notes](#)



[Assessment Email](#)

Groups, Users, and Units in Silhouette

Access to the Silhouette data is managed through units and groups. Additionally, the group controls functionality available to the users.



Where:

- Every patient belongs to a single unit. While a patient can only belong to one unit at a time, this can change over time.
- Each user belongs to a single group.
- A group can be associated with any number of units within the organization.

A Silhouette user has access to:

- patients that belong to the unit(s) to which the user's group is associated with; and
- perform actions that are allowed by the user's group permissions.

As an example, your organization might have a set of users who belong to the same group that can only access patients from a specific unit in the organization. A user might also be limited in what changes they can make to patient records or might be prevented from creating new patients in the system. At the same time, there may be a set of users who belong to a different group that has access to every patient and can use any Silhouette feature available in the system.

It is also possible to create a group that doesn't have access to any units. In this case, the users of this group will not be able to view any clinical data within the system. This can be useful for setting up users that are able to receive emails from the system but should not be able to view any patient data within Silhouette.

Organizations use units in different ways, depending upon how the organization is structured. For example, an organization may use units to differentiate different departments, wards, or facilities. Clinical research organizations typically create a unit per research site.

Putting patients into Units within Silhouette is an important way of controlling who has access to patient data. It also controls how much patient data can be stored in offline devices using SilhouetteConnect, SilhouetteLite+ or SilhouetteLite.

Units can be defined in the [Unit Administration](#) screen. Group settings, including which units members of a group can access, are defined in the [Groups](#) screen. Users can be created and edited in the [Users](#) screen, which allows assignment of a user to one of the groups defined in the [Groups](#) screen.

When configuring Silhouette for your organization, first define and configure Units, then Groups and finally users.

Automated Groups, Users and Units Set Up

If you have access to the physical server running SilhouetteCentral you can alternatively make use of a more direct import process, as an alternative to using the administration user interface to configure additional groups, users, or units.

Files with the following special filenames can be placed in the Files\Setup folder of SilhouetteCentral's installation folder and will be automatically detected and processed during the next application pool restart. If successfully processed, the file will be deleted from the Files\Setup folder to indicate its successful import.

- Units.csv - a comma separated list of units to import into Silhouette.
- Groups.csv - a comma separated list of groups to import into Silhouette.
- Users.csv - a comma separated list of users to import into Silhouette.

As an example if you wanted to quickly add 50 additional units to a Silhouette installation you could create a Units.csv file describing the details of the 50 additional units and then place this file in the Files\Setup folder. Once the file is in place, restarting the IIS application pool would cause the 50 units to be imported into the system.

Please contact ARANZ Medical Limited support for assistance preparing the csv files for importing.

Assessments and Patient Notes

Assessments and Patient Notes are the method used in Silhouette to record information about a patient and their wounds.

Assessments

Assessments are the main charting method within Silhouette. Assessments appear on a patient's timeline and represent a set of data recorded at a point in time. Silhouette allows for two different types of assessments:

- Patient Assessments, which are about the patient as a whole (rather than a particular wound) and are useful to record patient risk assessments or similar whole of patient assessments.
- Wound Assessments, which are about a particular wound on the patient and are the main assessment used to track progress of a given wound.

Silhouette comes with some pre-loaded Patient Assessments and Wound Assessments. Extra assessments can be added to the system to suit your organization.

Patient Notes

Patient notes are like assessments except they do not relate to a point in time and record information about the patient as a person. For example, a patient's allergies may change over time but they are not assessed every week. Patient Notes appear in the patient sidebar whenever viewing the patient and can be appended to assessment reports.

Assessment Email

Silhouette Assessment Email is an optionally licensed feature. Assessment email is setup by:

- Performing Email Configuration.
- Creating Email Lists.
- Creating Assessment Email Actions.

The Silhouette Assessment Email works by going through the following steps:

- Periodically looking at a queue of system events, checking the configured Assessment Actions for email triggers, generating the required email content, generating any required attachments and placing the emails into a email queue.
- Periodically taking pending emails from the email queue and sending them via the configured SMTP email service.
- Periodically taking failed emails from the email queue and retrying them via the configured SMTP email service.
- Periodically purging old system events and emails from the queues.
- Recording the email actions in the email log.

System Events

Assessment Email is triggered on system events. System events are created when a user creates or updates an assessment.

When using SilhouetteCentral:

- An assessment create system event is caused whenever the user presses the **Save** button after pressing the **+** **Patient Assessment** or **+** **Wound Assessment** buttons.
- An assessment update system event is caused whenever the user presses the **Save** button after pressing the **Edit** assessment button.

When using SilhouetteConnect, system events are caused when the user performs a **Sync** with SilhouetteCentral:

- An assessment create system event is caused when a user has created an assessment within SilhouetteConnect.
- An assessment update system event is caused when a user has edited an assessment within SilhouetteConnect.
- Only one system event is caused for an assessment regardless of the number of times it has been edited offline. If an assessment is created, then edited, then a **Sync** is performed then a single assessment created system event is caused for that assessment.

When using SilhouetteLite or SilhouetteLite+, assessment created system events are caused when assessments are uploaded.

Assessment updated system events are not caused when items not recorded as part of an assessment are changed. For example, editing a wound description or a patient name does not cause a assessment updated system event.

Sending Email

Emails are sent via the configured SMTP server and a retry policy is applied if the email fails initially. With a default configuration and a low number of emails per minute being generated then an email should typically be submitted

28 • Email System Configuration

to the SMTP service within 1 minute of the system event which causes the email. Some of the policy around email sending is documented below:

- No emails older than a maximum number of days will ever be sent (default = 10 days). This policy can come into play if the SMTP email configuration has been disabled for some time and then it is later switched it on or if an old system backup is restored that had emails in the queue.
- Pending emails (ones that have never been attempted) are sent before emails that need to be retried.
- Failed emails that are pending retries are retried with increasing delay between each try. The email retry policy attempts to send approximately 10 times over 5 days, with more frequent attempts earlier in the period and less frequent attempts later in the period.
- If the email can not be sent successfully after all the retry attempts, then it is marked as failed permanently and does not get automatically retried.

Email System Configuration

There are system configuration items that can be set to control the email behavior. The configuration includes control of:

- The period of the jobs which process system events and send emails.
- The number of system events that will be processed in any one period.
- The number of emails that will be processed in any one period.
- The number of emails that will be submitted concurrently to the SMTP service.
- The number of days to keep the system events and emails in the queues.

Refer to the Configuration and Installation Guide for more details on these configuration items.

Email System Auditing

The email system audit information is kept in the email log, typically located on the SilhouetteCentral server in a directory called <application root>\files\logs. A new log is created daily and contains the following details:

- What the email system is doing.
- What system events are causing emails to be queued.
- Who (which system user) caused the system event.
- What assessment the system event is related to.
- When emails are being sent.
- Who emails are being sent to including the destination email address.

The information, except for destination email address, about users and assessments in the log file is presented as database identifiers, so access to the database is required to decode the identifiers to real data about patients and users.

If this information is important for your audit purposes then make sure the log files are backed up appropriately.

Clinical Data Export

Silhouette Clinical Data Export is an optionally licensed feature. The feature can be licensed for either SilhouetteConnect (applies to standalone mode only) or for SilhouetteCentral.

A clinical data export extracts patient, wound and assessment data into a comma separated values (CSV) file. See [Appendix E: Clinical Data Export Format](#) for more details on the data export format.

It is the responsibility of the person requesting and saving the data export output to protect that data once it is exported.

To perform an assessment data export the user performs the following steps:

- A user must have the **Can Export Data** permission.
- An export can be generated by selecting **Export > New Export** from the application menu or by selecting **Export Assessments** from the patient overview. [See "Creating a New Data Export"](#).
- Once the export is completed then the export can be downloaded by selecting **Export** from the application menu. [See "Downloading a Data Export"](#)



Clinical data exports create clear text documents containing patient information. Take care to protect the privacy of the exported data. Files downloaded from Silhouette need to be stored and transmitted in compliance to your organizations data privacy policies and procedures.

The Silhouette system performs the export by:

- New clinical data export requests are queued and executed one at a time.
- The export is performed by taking a temporary copy of the data to be exported. This is to minimize the amount of time that people can be changing data on the system as the data is being exported.
- The data is transformed into the export format and made available for download.
- In SilhouetteCentral, a file cleanup is run once a day. The file cleanup removes any exported files that are more than 3 days old (or the configured setting).
- In SilhouetteConnect, a file cleanup is run whenever a user logs in. The file cleanup removes any exported files that are more than 3 days old (or the configured setting).
- In SilhouetteConnect, an exported file is also removed from the system once the user has requested the download. The file is removed even if the user cancels on the Save File dialog.

The clinical data export includes the current active data in Silhouette, which includes any data changes or corrections made.

Creating a New Data Export

There are two ways to create a new data export.

- Clinical data export for multiple patients within a given date range.
- Clinical data export for a single patient.

To create a new data export your Silhouette user group needs the permission *Can Export Data*.

Clinical Data Export for Multiple Patients

To export data for multiple patients in either SilhouetteCentral or a standalone SilhouetteConnect:

- Select the **Export** option from the application menu to show the Clinical Data Exports screen.
- Select the **New Export** button from the Clinical Data Exports screen on Silhouette.

The Create Clinical Data Export screen is shown and is used to complete a new data export request for multiple patients.

A Export Type

Select the **Export Type** you wish to export from the list. A single assessment type or a wound export can be selected.

To export all assessment data, create an individual export request for each assessment type.

Wound assessment exports also include the wound state captured at the time of the assessment.

However, use the **Wound** export to export all wound state information, including wound state that has been set without performing a wound assessment (e.g. initial creation of the wound).

B Unit

Select the unit(s) you wish to export data from. Selecting **All Units** will export data for all patients that you have access to in Silhouette.

C From and To

Enter a date range for the assessments to include in the export.

The To cannot be less than the From date.

The date range entered is inclusive of assessments performed on that day. All assessments with a date time recorded from the beginning of the day on the **From** date to the end of the day on the **To** date are included in the data export.



There is no enforced limit on the date range you can enter. However, the Silhouette system places a 10 minute timeout on the database transaction used for data export and the export will fail. In this case, export the data in multiple exports covering smaller date ranges.

The number of assessments that can be included in a single export will depend on your specific database configuration.

D Time Zone

Select the **Time Zone** that is used to determine what the precise time the start of the **From** day is and the end of the **To** day is. The time zone options are limited to your local PC time zone setting or UTC (Coordinated Universal Time).

The selection of the time zone does not change the data exported, just the selection of which assessment data to export.

For example:

- There is an assessment recorded in the system with the date 28th of Feb 2018 at 1800 hours America/Los Angeles (Pacific Standard Time or UTC-8) which equates to 1st of March 2018 at 0200 hours UTC.
- Selecting to export assessments **From** the 1st of March 2018 based on the America/Los Angeles time zone will exclude the assessment from the export as it is before the 1st of March 2018 at 0000 hours in the America/Los Angeles time zone.
- Selecting to export assessments **From** the 1st of March 2018 based on the UTC time zone will include the assessment from the export as it is after the 1st of March 2018 at 0000 hours in the UTC time zone.
- The assessment date in the data export is 2018-02-28T18:00:00+8 and the assessment time zone is America/Los Angeles regardless of the **Time Zone** selection when creating the export.

E Export

Select the **Export** button to create the export request.

The Clinical Data Export screen will be shown with the newly created export highlighted in the table, see [Downloading a Data Export](#) for more details.

F Cancel

Select the **Cancel** button to cancel the export request.

Clinical Data Export for a Single Patient

To export data for a single patient (includes all assessments of that type without specifying a date range):

- Navigate to the Patient Summary screen for the patient by selecting **Overview** in the patient sidebar.
- Select the **Export** button from the top of the screen.

The Export Clinical Data dialog is shown and can be used to complete the data export request for the patient.



A Export Type

Select the **Export Type** you wish to export from the list. A single assessment type or a wound export can be selected.

To export all assessment data, create an individual export request for each assessment type.

Wound assessment exports also include the wound state captured at the time of the assessment.

However, use the **Wound** export to export all wound state information, including wound state that has been set without performing a wound assessment (e.g. initial creation of the wound).

B Export

Select the **Export** button to create the export request.

The Clinical Data Export screen will be shown with the newly created export highlighted in the table, see [Downloading a Data Export](#) for more details.

C Cancel

Select the **Cancel** button to cancel the export request.

Downloading a Data Export

To download a data export, select the **Export** option from the application menu to access the Clinical Data Exports screen in SilhouetteCentral or SilhouetteConnect (standalone mode only).

The Clinical Data Exports screen is also shown whenever you create a new data export, see [Creating a New Data Export](#).

Created A	Status B	Export Type C	Filter D	E
2019-07-26 15:47	Ready for Download	Wound	Patient PA-000001	Download
2019-07-26 15:47	Ready for Download	Wound Assessment	Patient PA-000001	Download
2019-07-26 15:47	Ready for Download	Lower Limb Assessment	Patient PA-000001	Download
2019-07-26 15:48	Ready for Download	Wound	Date range 2019-01-01 13:00 to 2019-07-01 12:00. Patients from all units.	Download
2019-07-26 15:48	Ready for Download	Wound Assessment	Date range 2019-01-01 13:00 to 2019-07-01 12:00. Patients from all units.	Download

F New Export

The table on the Clinical Data Exports screen shows the exports that are currently running or are finished and available to download. You can see and download only data exports which you have created.

If there are no exports to download there will be no table and a message stating that there are no exports to download.

A Created

The date and time the export was requested.

B Status

Shows the current status of the export. When an export is created it goes in to a queue of exports and the Silhouette system will run one export at a time.

The status refreshes at a rate of approximately 15 seconds.

Valid statuses that can show are:

- Queued - the request is in the data export queue waiting to start.
- Running - the export is currently being attempted.
- Failed - the export failed. Review the silhouette central log file for more insight into the failure. A typical reason for failure may be that the requested export was too big. The recommendation is to retry the export by creating a new export with a smaller date range and or a smaller set of units.
- Cancelled - the export was canceled by the user prior to it finishing.
- Ready for Download - the export has successfully completed and is ready for download.

C Export Type

The export type column lists the type of data included in the export.

D Filter

The filter column provides a summary of the filter used to create the export.

E If there is an action available for the export then a button is available on the right of the table.

Valid actions are:

- **Cancel.** Cancels the export creation if the status is Queued or Running.
- **Download.** In SilhouetteCentral this action downloads the export to your web browsers default download directory. In SilhouetteConnect this action causes a Save dialog to show and you can select a location to save the export to. In SilhouetteConnect the Download action can only be used once and causes the export to be removed from the system.

If the status of the download has changed by the time you press the action button, then a prompt to refresh the screen is shown and the action is not performed.



Clinical data exports create clear text documents containing patient information. Take care to protect the privacy of the exported data. Files downloaded from Silhouette need to be stored and transmitted in compliance to your organizations data privacy policies and procedures.

F **New Export**

Select the **New Export** button to create a new export request, see [Creating a New Data Export](#) for details.



Clinical data exports are removed from Silhouette after a number of days (the default is 3 days). If you do not download them, or want them again, they will need to be regenerated.

Silhouette Administration

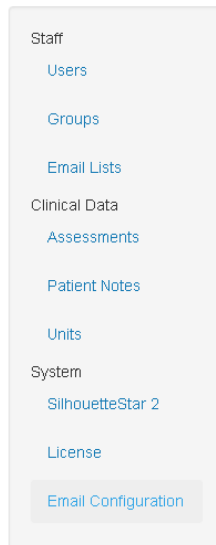
Silhouette administration is controlled through either SilhouetteCentral or SilhouetteConnect, see [Using Silhouette](#).

The administration options available depend on what application you are using and what mode it is operating in.

Each administration topic identifies specific application and mode dependency. A high level description of application and mode dependency is listed here:

- SilhouetteCentral (any mode) contains most administration, except wired mode specific settings for SilhouetteStar 2.
- SilhouetteConnect, Synchronized mode contains only administration settings applicable to the administration of the specific PC. All system wide settings are configured in SilhouetteCentral and updated in SilhouetteConnect when a synchronization is performed.
- SilhouetteConnect, Standalone mode contains a subset of all system administration. Settings that are not applicable to standalone (non-enterprise) settings are not available.

The admin section is accessed through the **Application Menu** and is organized into sections, which are displayed in the left hand sidebar.



[Users](#)



[Groups](#)



[Email Lists](#)



[Assessments](#)



[Patient Notes](#)



[Unit Administration](#)



[SilhouetteStar 2](#)



[Email Configuration](#)

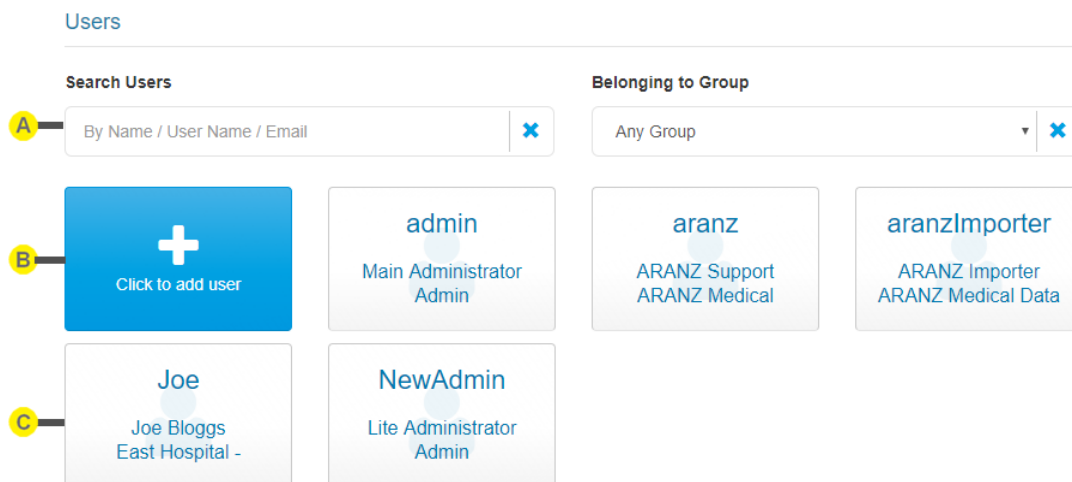


The sections displayed to a user will depend upon their assigned permissions.

Users

Users must have a user account to access any of the Silhouette applications (SilhouetteCentral, SilhouetteLite, or SilhouetteLite+). The **Users** screen allows you to add and manage Silhouette user accounts.

To define and manage users, select **Admin > Users**. The **Users** option is not available in SilhouetteConnect when it is running in synchronized mode. In Synchronized mode, user administration is performed in SilhouetteCentral.



- A Filter options**
Limit the users shown in the list using these options.
- B Create button**
[See "Creating a User"](#).
- C User tile**
Select the user tile to view or edit the user. [See "Editing a User"](#).

Creating a User

To add a new user to Silhouette, in the **Users** screen select the **Click to add user** button. The **Create User** screen is displayed, with compulsory fields marked with an asterisk. Enter the required information.

Note that every user within the organization must have a unique **User Name**.

The **Group** a user is assigned to determines what Silhouette features and patients the user has access to. See [Groups](#) for more information.

When you have entered the user's details, select the **Save** button at the bottom of the screen to save the user's information. After saving you are returned to the [Users](#) screen.

Editing a User

To edit an existing user's details (including your own), select that user's tile in the **Users** screen. The information for the user is displayed in a read-only view.

Details	
User Name * Joe	Status * Enabled
Group * East Hospital - Clinician - Ward A	
First Name * Joe	Middle Name -
Last Name * Bloggs	Phone Number -
Email Address joe.bloggs@company.com	
Force Password Reset At Next Logon * No	

A Reset Password

Select **Reset Password** to change the user's password.

B Delete

Select **Delete** to delete a user. A confirmation prompt is presented before the user is deleted.

A user can be disabled instead of deleted by selecting **Edit** and changing the **Status** field. The **Status** drop-down controls if a user can log in to Silhouette. A user is able to log in when their status is "Enabled". To temporarily stop a user from logging in, you can set their status to "Disabled". The status is set to "Locked" if the system has automatically disabled an account. The distinction between "Disabled" and "Locked" can be used to determine which user accounts have been explicitly disabled by a system administrator, and those which a user has accidentally disabled due to entering the incorrect password too many times.

C Edit

Select the **Edit** button to change from read-only mode to edit mode.

In Edit mode, compulsory fields are marked with an asterisk. After editing the user's details, select the **Save** button at the bottom of the screen to save the user's information and return you to the read-only view.

D Close

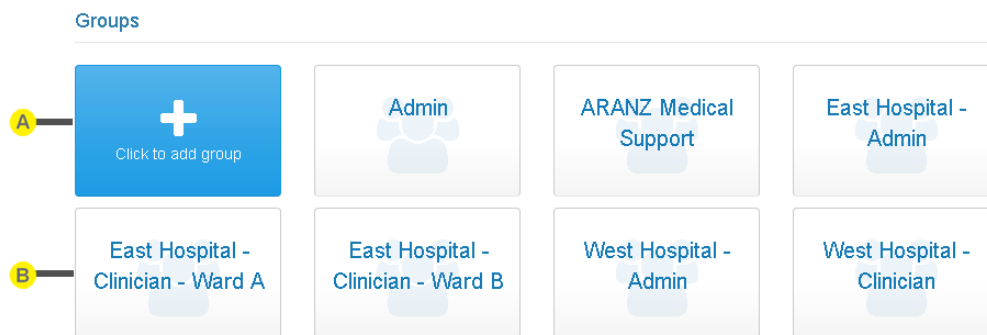
Select **Close** to go back to the [Users](#) screen.

Groups

To ease support burdens, individual user accounts are assigned to groups based upon similar needs with respect to the features and patients they are allowed to access. This allows the permissions to be configured once and applied immediately across a number of user accounts.

As an example, you may create a group to allow data correction tools to be utilized by research staff, while another group containing your clinical staff would not have access to these tools. Groups can also be used to restrict users to interacting with a subset of patients (via units).

To define and manage groups, select **Admin > Groups**. The **Groups** option is not available in SilhouetteConnect when it is running in synchronized mode. In Synchronized mode, group administration is performed in SilhouetteCentral.



A **Create button**
See ["Creating a Group"](#).

B **Group tile**
Select the group tile to view or edit the group. See ["Editing a Group"](#).

Creating a Group

To create a new group, in the **Group Administration** screen select the **Click to add group** button. The **Create Group** screen is displayed, with compulsory fields marked with an asterisk.

The Save and Cancel buttons are at the bottom of the screen.

Select the **Save** button at the bottom of the screen to create the group.

Select the **Cancel** button at the bottom of the screen to exit the screen without creating the group.

Group Details

Enter a **Group Name** and **Description**.

Details	
Name *	Description
<input type="text"/>	<input type="text"/>

Group and Unit Relationship

Each group must select which Units that the group permissions apply to in the **For The Following Units** section. The selection of unit limits the patients, users and groups that the group members can access. [See "Groups, Users, and Units in Silhouette"](#) for more information on how the relationship between Users, Patients, Groups and Units work.

For The Following Units				
A	All And Future Units	<input type="button" value="Yes"/>	<input type="button" value="No"/>	
B	East Hospital - Ward A	<input type="button" value="Yes"/>	<input type="button" value="No"/>	
	East Hospital - Ward B	<input type="button" value="Yes"/>	<input type="button" value="No"/>	
	West Hospital - Ward A	<input type="button" value="Yes"/>	<input type="button" value="No"/>	
	West Hospital - Ward B	<input type="button" value="Yes"/>	<input type="button" value="No"/>	
	West Hospital - Ward C	<input type="button" value="Yes"/>	<input type="button" value="No"/>	

A All And Future Units

Select Yes for **All And Future Units** to give the group access to all existing units and all new units as they are created within Silhouette.

Select No for **All And Future Units** to manually select which individual units the group has access to.

B Individual unit selection

Select which units this group of users has access to.

When a new unit is created in the system then any existing groups do not automatically get permission to access it.

It is possible to create a group that does not have access to any units, however the permissions available to the group will be limited.

Group Permissions

Below is a description of each permission that can be assigned to a group. The permissions are divided up into areas:

- Clinical Data Permissions.
- Silhouette Permissions.
- Administrator Permissions.

Clinical Data Permissions

Clinical Data Permissions control the access to patient data. A group with no unit access is not allowed access to any clinical data, so none of these permissions will be configurable.

Clinical Data Permissions	
A Can Create Patient Yes	B Can Edit Patient Yes
C Can Delete Patient Yes	
D Can Create Assessment Admission Assessment, SilhouetteLite Assessment, Discharge Assessment, Wound Assessment, Lower Limb Assessment, Visit Assessment	
E Can Edit Assessment Yes	F Can Create Report Yes
G Can Export Data Yes	H Can Delete Assessment Yes
I Can Create Wound Yes	J Can Edit Wound Yes
K Can Delete Wound Yes	

- A Can Create Patient**
Controls if users assigned to this group can create patients.
- B Can Edit Patient**
Controls if users assigned to this group can edit patient details or any of the patient notes.
The ability to view the patient notes in the Clinical UI is also linked to the application the user is using. [See "Patient Notes"](#) to show how to control which patient notes are visible in each of the Silhouette applications.
- C Can Delete Patient**
Controls if users assigned to this group can delete patients.
- D Can Create Assessment**
Controls which assessments (if any) the user is allowed to create. Creating assessments includes the ability to use images from the portfolio in an assessment (assigns the image to a wound) and perform measurements with that image.
This is a multi-selection list box, listing all of the assessment types available in the system. Leaving the selection list empty means that the user can not create any assessments.
The ability to create different assessments is also linked to the application the user is using. [See "Assessments"](#) to show how to control the assessments that are creatable in each of the Silhouette applications.
- E Can Edit Assessment**
Controls if users assigned to this group can edit assessments. Editing assessments includes the ability to add or remove images and edit image tracings after the initial assessment creation.
- F Can Create Report**
Controls if users assigned to this group can create reports for assessments.
- G Can Export Data**
Controls if users assigned to this group can export assessment and patient data to csv files. This permission is only available if Silhouette has the Clinical Data Export optional feature enabled.
- H Can Delete Assessment**
Controls if users assigned to this group can delete assessments.
- I Can Create Wound**
Controls if users assigned to this group can create wounds.
- J Can Edit Wound**
Controls if users assigned to this group can edit wounds.
- K Can Delete Wound**
Controls if users assigned to this group can delete wounds.

? A group with permissions to a unit can view all patients, wounds and assessments for that unit , i.e. there is no separate view permission above.

Silhouette Permissions

Silhouette Permissions control the access to system functions.

Silhouette Permissions	
A Can Synchronize Yes	B Can Manage Patients Yes

A Can Synchronize
Controls if users assigned to this group can synchronize a SilhouetteConnect with SilhouetteCentral.

B Can Manage Patients
Controls if users assigned to this group can add/remove patients from the offline dataset held in a SilhouetteConnect install. Groups with **Can Manage Patients** also need **Can Synchronize** permission. A group with no unit access will not be able to have this permission enabled.

Administrator Permissions

Administrator permissions control access to various sections in the admin sidebar.

Most of the options listed under administrator permissions are only available if the group is set to access **All And Future Units**. The administration permissions that are not available are hidden if **All And Future Units** is set to No. This is because some administrator functionality allows interaction with any patient within the system, or affects all users. See the description of **Can Manage Users and Groups** below.

Administrator Permissions	
A Can Manage Assessment Types Yes	B Can Manage Settings Yes
	C Can View Logs Yes
D Can Manage Units Yes	E Can Manage Users and Groups Yes
F Can Manage Clinical Data Yes	

A Can Manage Assessment Types

Controls if users assigned to this group can edit assessment types.

This permission controls the visibility of the **Admin > Assessments** and the **Admin > Patient Notes** items in the Silhouette admin sidebar.

B Can Manage Settings

Controls if users assigned to this group can access the organization settings.

This permission controls the visibility of the **Admin > SilhouetteStar 2** item in the Silhouette admin sidebar.

C Can View Logs

Controls if users assigned to this group can view the logs.

This permission only works for the ARANZ Support group.

D Can Manage Units

Controls if users assigned to this group can add/edit/delete units.

This permission controls the visibility of the **Admin > Units** item in the Silhouette admin sidebar.

E Can Manage Users and Groups

Controls if users assigned to this group can add/edit/delete users and groups.

This permission controls the visibility of the **Admin > Users** and **Admin > Groups** items in the Silhouette admin sidebar.

If a group does not have this permission then the users will have access to **Admin > Profile** to see their own user profile and will be able to change their own password.

The **Can Manage Users and Groups** administrator permission remains available, even when the group does not have access to **All And Future Units**. The scope of this permission is set by the Unit selection for the current group, allowing for the creation of limited administrators.

A limited administrator is a user who can manage users and groups for a limited set of units. A limited administrator is created by assigning a user to a group that has access to a limited set of units and has **Can Manage Users and Groups** enabled. A limited administrator can manage users and groups that have access to the same set (or a subset) of units that the limited administrator has access to. When creating or editing a group, a limited administrator can only select unit(s) for the group that the limited administrator has access to.

F Can Manage Clinical Data

Controls if users assigned to this group can perform clinical data administration tasks.




Clinical administration data tasks include the following tasks:

- Moving images to a different patient.
- Moving assessments to different wounds or patients.
- Changing the date and time recorded for an assessment.

Editing a Group

To edit a group to Silhouette, in the **Group Administration** screen, select the group from the groups list. The information for the group is displayed in a read-only view.

A **B** **C**

Details	
Name *	Description
West Hospital - Admin	Administrators for the West Hospital

For The Following Units			
All And Future Units			
No			
East Hospital - Ward A	East Hospital - Ward B	West Hospital - Ward A	West Hospital - Ward B
No	No	No	No
West Hospital - Ward C			
No			

Clinical Data Permissions		Silhouette Permissions	
Can Create Patient	Can Edit Patient	Can Synchronize	Can Manage Patients
Yes	Yes	Yes	No

A Delete

Select the **Delete** button to delete the group. Before deleting you will be asked to confirm the delete operation.

If a group has users assigned to it, then it can not be deleted.

B Edit

Select the **Edit** button to change to edit mode from read only mode. Update the information, as required. To save the group's settings, select the **Save** button at the bottom of the screen.

A user cannot edit the **Units** and **Can Manage Users and Groups** permission for its own group in order to prevent them from accidentally changing permissions they cannot restore. For example, if user has access to all units and was to change their own group permissions to limited unit access, they would then not be able restore their own permissions to all units as the system would see this as an attempt to escalate their own access to patient data. However, the user change the **Can Create Patient** permission for their own group, as they can always restore that permission.

C Close

Select the **Close** button to go back to the [Groups](#) screen.

Email Lists

Email Lists are an optionally licensed feature that provides the ability to group Silhouette users who need to receive the same Assessment Emails into lists. An Email List is a collection of up to 100 Silhouette users who will receive emails. An Assessment Action can reference more than one Email List if the number of recipients for a particular action needs to be higher, see [Creating an Assessment Action](#).

Select **Email Lists** from the admin sidebar to access the feature. **Email Lists** is only available in SilhouetteCentral for users who have the **Can Manage Users** permission and also have access to **All and Future Units**.

Email Lists



A **Add Email List button**
[See "Creating an Email List"](#).

B **Email list tile**
The tile shows the name of the Email List and the number of users currently in the list. Select the email list tile to view or edit the email list. [See "Editing a Group"](#).

Creating an Email List

To create a new Email List, select **Add Email List** in the Email Lists screen. The new email list screen is displayed.

Email List Details

A Name *

B Description

Recipients: 2 of 100 (adding 0, removing 0)

C Search Users

 ✕

D Belonging to Group

 ▼ ✕

E Recipients
Non Recipients

Name	Email	Staff Group	Status	F
Main Administrator	admin@aranzmedical.com	Admin	Enabled	<input type="button" value="Remove"/>
Test User	user1@aranzmedical.com	Admin	Disabled	<input type="button" value="Remove"/>

- A** **Name**
Enter a short name for the Email List.
- B** **Description**
Enter a longer description for the Email List.
- C** **Search Users**
Enter some search criteria to filter the list of users presented in both the **Recipients** and **Non Recipients** tabs. The search for users is based on the beginning of their first name, middle name, last name, user name or email address.
Use the ✕ button to clear the search criteria and to show all users again.
- D** **Belonging to Group**
Select a staff Group from the drop down to filter the **Recipients** and **Non Recipients** tabs to show only those Users belonging to the selected Group.
Use the ✕ button to clear the Group filter and show all users again.

E **Recipients and Non Recipients tabs**

Select the **Recipients** tab to review the list of Silhouette users that are part of Email List and to remove them.

Select the **Non Recipients** tab to review the list of Silhouette users that are not part of the Email List and to add them.

The list of users is split over multiple pages if there are too many to display at once. Paging controls provided at the bottom of the view.

F **Add and Remove**

Select the **Add** button or **Add all** button to add recipients to the list. The Email List can have a maximum of 100 recipients added to it. The **Add all** button cannot be used if it will cause the Email List to exceed the maximum number of recipients.

Select the **Remove** button or **Remove all** button to remove users from the list.

The **Add all** and **Remove all** buttons add or remove all users shown in all pages of the currently selected tab.

As recipients are added or removed the section header is updated to show the total number in the list. The section header also shows the total number of adds and removes that will be made when the list is saved.

The changes are not saved until the **Save** button is pressed.

The status of the Silhouette user accounts is shown in the list of Recipients. Adding recipients with Disabled or Inactive user accounts is allowed.



Recipients with a status of Disabled will not receive any emails.

Recipients with a status of Inactive and Enabled will receive emails.

Editing an Email List

Select an Email List tile in the **Email Lists** screen to display an Email List.

Name	Email	Staff Group	Status
Main Administrator	admin@aranzmedical.com	Admin	Enabled
Test User	user1@aranzmedical.com	Admin	Disabled

A Export

Exports the Email List as a zip file to enable an easier review of the list.

The Export zip file contains two comma separated values (csv) files:

- RecipientGroupEmailActions.csv contains a list of the Assessment Actions that reference this Email List.
- RecipientGroupMembers.csv contains a list of the users in the Email List.

These exports are provided to enable easier review of all recipients and their relationship to Assessment Actions. Changes can not be made in the exported files and then imported.

B Delete

Deletes the Email List. An Email List can not be deleted if it is used in an Assessment Action.

C Edit

Opens the Email List in edit mode so users can be added or removed from the list. [See "Creating an Email List"](#).

D Close

Return to the Email Lists administration screen.

E **Search Users and Belonging to Group**

Allows the list of users shown in the **Recipients** and **Non Recipients** tabs to be filtered. [See "Creating an Email List"](#) for more details.

F **Recipients and Non Recipients tabs**

Select the **Recipients** tab to review the Silhouette users that are part of the Email List.

Select the **Non Recipients** tab to review the Silhouette users that are not part of the Email List.

The list of users is split over multiple pages if there are too many to display at once. Paging controls provided at the bottom of the view.

The status of the Silhouette user accounts is shown in the list of Recipients.



Recipients with a status of Disabled will not receive any emails.

Recipients with a status of Inactive and Enabled will receive emails.

Assessments

Assessments are the main charting mechanism within Silhouette. Assessments appear on a patient's timeline and represent a set of data recorded at a point in time. Silhouette allows for two different types of assessments:

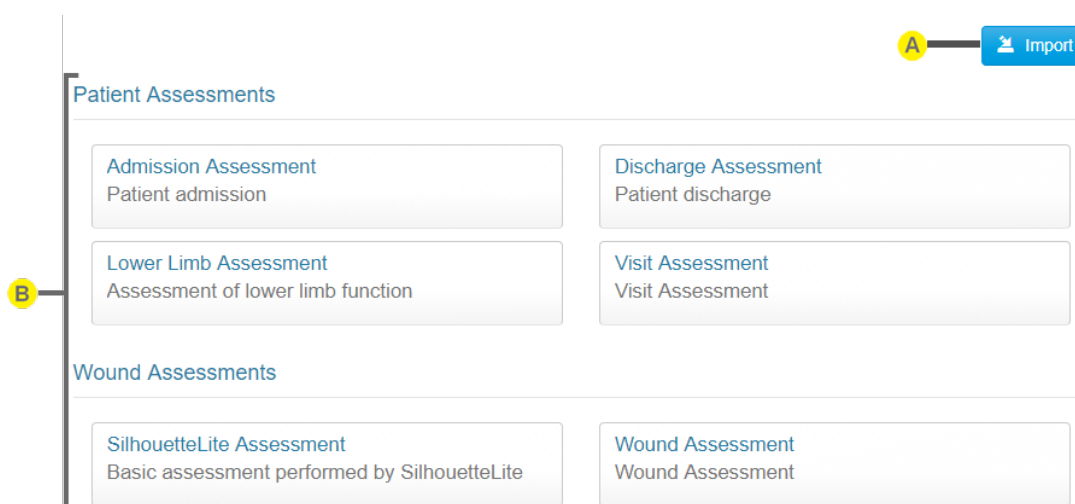
- Patient Assessments, which are about the patient as a whole (rather than a particular wound) and are useful to record patient risk assessments or similar whole of patient assessments.
- Wound Assessments, which are about a particular wound on the patient and are the main assessment used to track progress of a given wound.

Silhouette comes with some pre-loaded Patient Assessments and Wound Assessments. Extra assessments can be added to the system to suit your organization.

Assessments are different to patient notes, which appear in the patient sidebar and do not relate to a point in time. For example, a patient's allergies may change over time but they are not assessed every week. [See "Patient Notes"](#) for help administering patient notes.

To define and manage assessments, select **Admin > Assessments**. The **Assessments** option is not available in SilhouetteConnect when it is running in synchronized mode. In Synchronized mode, assessment administration is performed in SilhouetteCentral.

Assessments can also have automatic actions performed when they are created or updated. Assessment actions can be configured for each assessment if your system is licensed appropriately.



A Import button

Allows an assessment definition zip file to be imported, which either creates a new assessment or modifies the definition of an existing assessment.

A newly imported Assessment is not be accessible to any users by default. [See "Editing a Group"](#) for information on granting users access to create the new Assessment.

When importing Assessments, the assessment actions and any email templates are also imported. This import may cause additional units or email recipient lists to be created if they don't already exist. The configuration of assessment actions should be reviewed manually after import.

Contact ARANZ Medical Limited for help to configure the assessments you need.

B **Assessment Tiles**

Selecting an assessment opens the assessment definition to show the detail and allow editing, [See "Editing an Assessment Type"](#).



Use caution when modifying the definition of existing assessments. Assessments created offline, in either SilhouetteConnect or SilhouetteLite(+), with previous definitions may fail to sync if the new definition has changes such as making a field required that wasn't previously required.

Editing an Assessment Type

To edit an assessment in Silhouette, in the **Admin > Assessments** screen, select the assessment from the list. The information for the assessment is displayed in a read-only view.

Details	
Name	Type
Wound Assessment	Wound Assessment
Description	Can create within application
Wound Assessment	SilhouetteCentral, SilhouetteLite+

A **Export**

Select the **Export** button to download a zip file containing the assessment type definition. The assessment type can then be imported into another Silhouette system (e.g. between a test and production system) or provided to ARANZ Medical for modification.

B **Delete**

Select the **Delete** button to delete the assessment type. The system prevents you from deleting assessment types which have been used to create assessments for patients. If you wish to prevent more assessments being created of a given type then disable new assessments by unticking all applications under the **Can create within application** option.

C Edit

Select the **Edit** button and update the information as required.

- The **Name** is displayed to users when they create assessments and is displayed at the top of the assessment.
- The **Type** can be Wound Assessment or Patient Assessment.
- The **Description** is provided to show as additional detail to the user when they create the assessment.
- The **Can create within application** allows the selection of which application can be used to create an assessment of this type. Selecting SilhouetteCentral means both SilhouetteCentral and SilhouetteConnect.

Once edited, select the **Save** button at the bottom of the screen to save the settings.

D Close

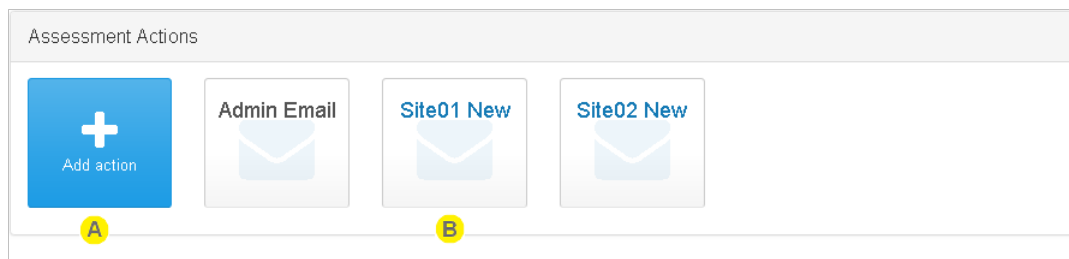
Select **Close** to go back to the [Assessments](#) screen.

Creating an Assessment Action

Assessment actions are only available in SilhouetteCentral and are an optionally licensed feature. The only assessment action available in Silhouette 4.6 is Automatic-Email, which provides the ability to send a list of users an email if an assessment is created or updated.

Each assessment that is created can optionally have many assessment actions. Each assessment action is made up of a trigger (controlling when the action will happen) and the action configuration.

To edit an assessment action in SilhouetteCentral, first select the assessment you wish to work with from the list in the **Admin > Assessments** screen. If your system is enabled for Assessment Actions there will be an Assessment Action section available.



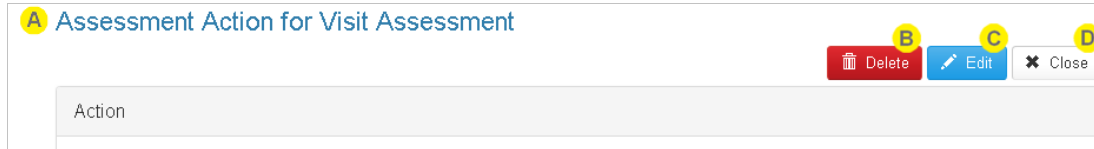
A Select the **Add action** button to add a new assessment action.

B The assessment actions already created for the assessment are listed as tiles with the assessment action name. Select the assessment action tile to view and edit an existing assessment action.

Disabled assessment actions are shown with grey titles and enabled assessment actions are shown with blue titles.

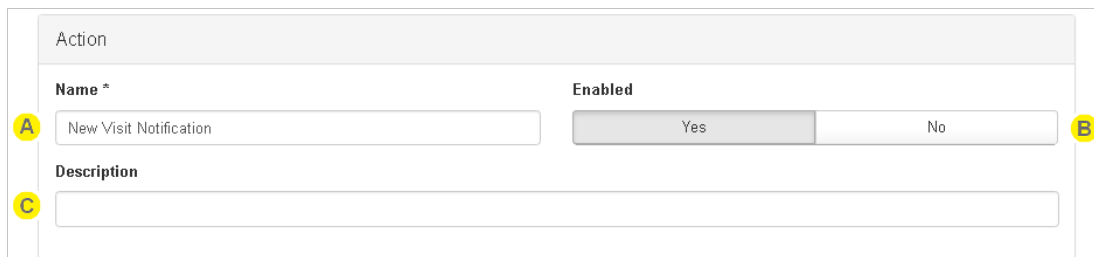
Editing an Assessment Action

To edit an assessment action in Silhouette, in the **Admin > Assessments > Assessment** screen, select the assessment action from the list. The information for the assessment action is displayed in a read-only view.



- A** The title of the screen provides information about which assessment this assessment action is for.
- B** Select the **Delete** button to delete the assessment action.
- C** Select the **Edit** button to switch to edit mode and make changes to the assessment action. See the details below.
In edit mode there are **Save** and **Cancel** buttons at the bottom of the screen.
- D** Select **Close** to go back to the Assessment screen.

Assessment Action Details



- A** Provide a short **Name** to help identify the action in the list.
- B** Set **Enabled** to Yes to enable the assessment action.
Set **Enabled** to No to disable the assessment action and prevent triggers from occurring.
- C** The **Description** field is optional and allows the recording of more details about what the action is intended for. This is helpful if there are a lot of actions that have slightly different conditions.

Trigger Details

A Select the assessment **Event(s)** that will cause the action to trigger. The events occur based on the user pressing the **Save** button on the assessment. At least one **Event** must be selected. The available events are:

- **Assessment created**
Actions including this event will trigger whenever a new assessment of the current type is first saved. Assessments can be created in any of the Silhouette components and this trigger will fire when the assessment gets uploaded (or synced) with SilhouetteCentral.
- **Assessment updated**
Actions including this event will trigger whenever a user edits and then saves an assessment.

B The **In Unit** selection drop down allows you to set this action to trigger only for assessments created and/or updated for patients in particular units.

- Select **All and future units** to cause the action to trigger on assessments for all patients (i.e no unit filter).
- Select one or more specific units from the list to restrict the action to only trigger on assessments for patients currently assigned to those units. If a new unit is defined in Silhouette then assessment actions with a specific In Unit filter set will need to be edited to include the new unit, if required.

The unit filter for the trigger is evaluated when the trigger is evaluated and does not remember the patient unit when the assessment was actually created or modified.

Example

Given an assessment action set to trigger for wound assessment created for patients **In unit** "Site01" and there is a patient "Patient A" in unit "Site01".

The following set of actions will cause the assessment action to trigger:

1. A wound assessment is captured in SilhouetteConnect.
2. The data from SilhouetteConnect is synced to SilhouetteCentral.

However, the following set of action will *not* cause the assessment to trigger:

1. A wound assessment is captured in SilhouetteConnect.
2. The patient is edited so that they are reassigned to unit "Site02".
3. The data from SilhouetteConnect is synced to SilhouetteCentral.



Optionally enter an expression as a **Condition** that must evaluate to true before the assessment action will trigger. [See "Conditional Expression Syntax"](#) for details on writing expressions.

The expression can use note field variables defined for the assessment. [See "Notes Definitions"](#) for the variables defined in the default set of assessment notes. Contact your ARANZ Medical representative for support in creating custom notes fields.

Use the **Validate** button to check the syntax of the entered expression. If the validation is bad then the **Condition** field will turn red.

The condition is evaluated based on the assessment notes values at the time of the trigger evaluation, not at the time the save button was pressed.

Example

Given there is a boolean note field "Ready to Email" in wound assessment that has a variable "wound_ready_to_email" and there is an assessment action with a trigger condition of "IsNull('wound_ready_to_email',false) == true".

The following set of actions will cause the assessment action to trigger:

1. A wound assessment is captured in SilhouetteConnect with the value of Ready to Email set to "Yes".
2. The data from SilhouetteConnect is synced to SilhouetteCentral.

However, the following set of action will *not* cause the assessment to trigger:

1. A wound assessment is captured in SilhouetteConnect with the value of Ready to Email set to "Yes".
2. The wound assessment is edited in SilhouetteConnect, changing the value of Ready to Email set to "No".
3. The data from SilhouetteConnect is synced to SilhouetteCentral.

Email Details

- A** Select one or more Email Recipient Lists in the **To** field.
- B** Enter a **Subject** line for the email.
- C** Set **Attach Report** to Yes to generate and attach a PDF report of the assessment to the email. The PDF reports generated and attached are not encrypted or password protected so consider carefully if patient data privacy can be protected before selecting Yes to **Attach Report**.
- D** The **Email template** sets the content of the email. A default email template is provided and can be downloaded by saving the Assessment Action and selecting the template filename in Edit mode. The default email template provided creates an HTML email in English with no patient data included. The Email body of the default Email template looks like:

A *<assessment type name>* has been created or updated.

Use this link to access the assessment: *<hyperlink to the assessment in SilhouetteCentral>*

The email template uses the ASP.NET Razor View Engine to form an HTML email and can access the data model of Silhouette to include data from the assessment into the body of the email. Contact your ARANZ Medical representative for support in creating custom Email templates.

Use the **Select** button to select a new email template.



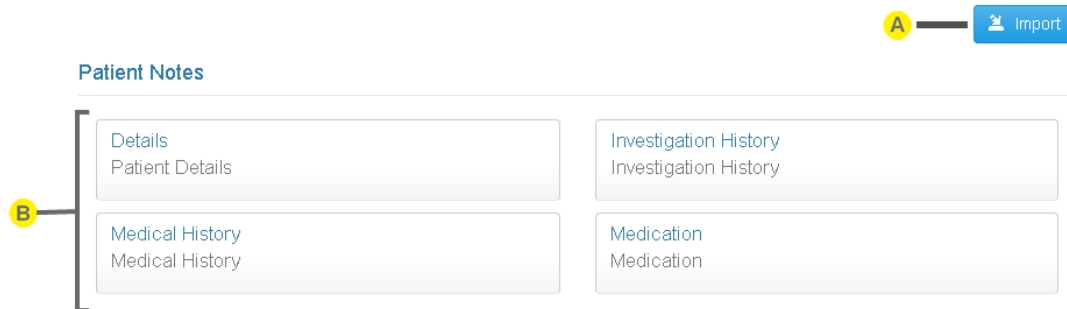
Consider patient information data privacy when sending emails from Silhouette. If any protected health information or any patient data is included in the email template or by attaching the PDF report then you need to consider any data privacy compliance issues, including processing by email sending providers and email recipient systems.

The default email template doesn't include any patient data and provides a link to SilhouetteCentral, where the recipient must authenticate before viewing the data.

Patient Notes

The Patient Notes admin section shows the patient notes categories which appear on the patient sidebar (includes Details, Investigation History, Medical History and Medication by default). Patients notes can be added or removed from the system to suit your organization.

To define and manage Patient Notes, select **Admin > Patient Notes**. The **Patient Notes** option is not available in SilhouetteConnect when it is running in synchronized mode. In Synchronized mode, assessment administration is performed in SilhouetteCentral.



A Import button

Allows patient notes definition zip file to be imported, creating a new patient note or modifying an existing patient notes.

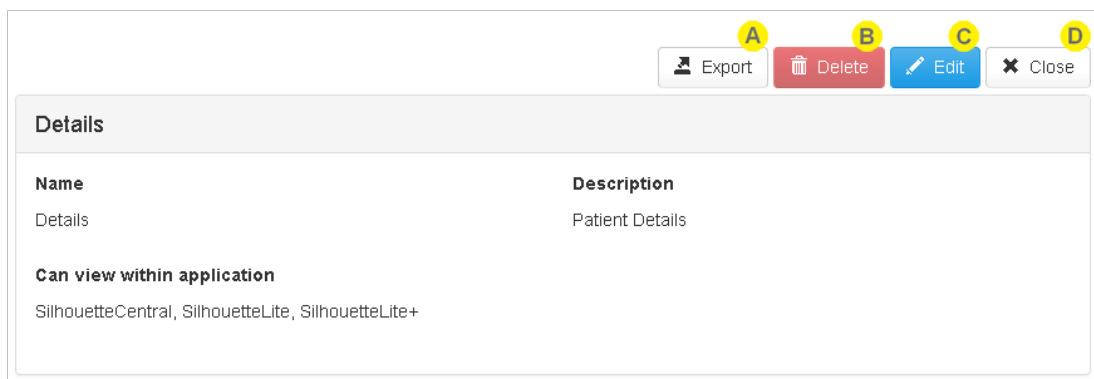
Contact ARANZ Medical Limited for help to configure the Patient Notes you need.

B Patient Note tile

Select the patient note to view and edit the details. [See "Editing Patient Notes"](#)

Editing Patient Notes

To edit Patient Notes setup in Silhouette, select the patient note tile from the list of patient notes in the **Admin > Patient Notes**. The information for the patients notes is displayed in a read-only view.



A Export

Select the **Export** button to download a zip file containing the patient notes definition. The patient notes can then be imported into another Silhouette system (e.g. between a test and production system) or provided to ARANZ Medical for modification.

B Delete

Select the **Delete** button to delete the patient notes from the system. The system allows you to delete patient notes even if there are some patients with notes recorded against them.

C Edit

Select the **Edit** button to update the information, as required.

- The **Name** is displayed in the patient sidebar.
- The **Description** allows some text to help keep track of what the patient notes are for.
- The **Can view within application** controls where the patient notes are visible. SilhouetteCentral means both SilhouetteCentral and SilhouetteConnect. Selecting SilhouetteLite or SilhouetteLite+ has no effect as these applications do not have features to view the patient notes.

Once edited, select the **Save** or **Cancel** button at the bottom of the screen to save or cancel the changes.

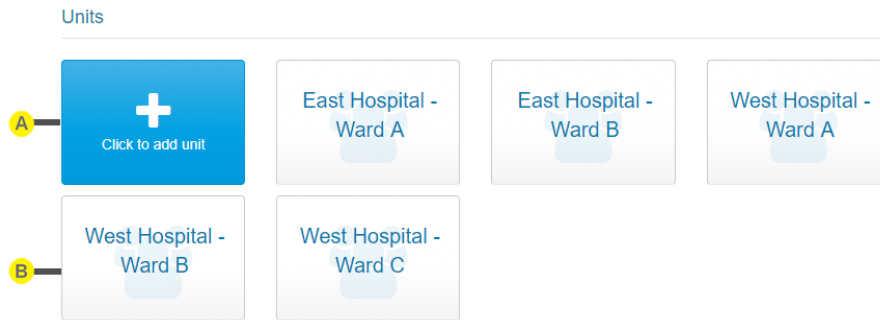
D Close

Select **Close** to go back to the [Patient Notes](#) screen.

Unit Administration

A unit defines an entity which patients can be assigned to. Different organizations use units in different ways, depending upon how the organization is structured. For example, an organization may use units to differentiate different departments, wards, or facilities.

To define and manage units, select **Admin > Units**. The **Units** option is not available in SilhouetteConnect when it is running in synchronized mode. In Synchronized mode, assessment administration is performed in SilhouetteCentral.

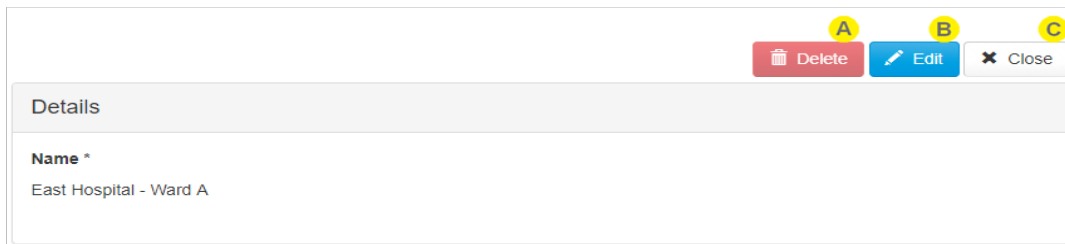


A Create button

B Unit tile
Select the tile for a unit to view and edit the unit, [See "Editing a Unit"](#).

Editing a Unit

To edit a unit in Silhouette, in the **Unit Administration** screen, select the unit from the units list. The information for the unit is displayed in a read-only view.



A Delete

To delete the unit, use the **Delete** button.
Silhouette does not allow all units to be deleted.
Silhouette prevents a unit with patients assigned to it from being deleted.

B

Edit

Select the Edit button to change from ready-only view to editing mode.

- The **name** is used through-out the system to represent the Unit, including when creating and editing patients.

Once edited, select the **Save** or **Cancel** button at the bottom of the screen to save or cancel the changes.

C

Close

Select **Close** to go back to the [Unit Administration](#) screen.

SilhouetteStar 2

The SilhouetteStar 2 settings available depend on if you are using the device in wired USB mode with SilhouetteConnect or in Wi-Fi mode with SilhouetteCentral.

- Wired mode with SilhouetteConnect has options for [SilhouetteStar 2 DHCP Configuration](#).
- Wi-Fi mode with SilhouetteCentral has options for [Network Configurations and Wireless Camera Tools](#).

SilhouetteStar 2 DHCP Configuration

When operating with SilhouetteConnect in wired USB mode, the SilhouetteStar 2 establishes a network connection with the computer using an Internet Protocol (IP) address. The SilhouetteStar 2 device provides the computer an IP address via the Dynamic Host Configuration Protocol (DHCP). The default IP address used by the SilhouetteStar 2 is 169.254.0.1 /30 and it assigns the address 169.254.0.2 /30 to the computer.

In some rare cases the default network used may not be suitable in the organization. In these cases a fixed network will need to be assigned for use by all SilhouetteStar 2 devices. The **Admin > SilhouetteStar 2** page provides SilhouetteStar 2 DHCP Configuration settings. These settings are available in SilhouetteConnect in both synchronized and standalone operational modes.

SilhouetteStar 2 DHCP Configuration

Computer IP Address *

A

SilhouetteStar 2 IP Address *

B

Subnet Mask *

C

D [Generate QR Code](#)

A Computer IP Address

Enter the IPv4 Address (in dotted decimal notation) that the SilhouetteStar 2 device should assign to the computer. This address must be in the same IPv4 subnet as the SilhouetteStar 2 IP Address, with respect to the Subnet Mask.

The default factory setting is 169.254.0.1

B SilhouetteStar 2 IP Address

Enter the IPv4 Address (in dotted decimal notation) that the SilhouetteStar 2 device will use. This address must be in the same IPv4 subnet as the Computer IP Address, with respect to the Subnet Mask.

The default factory setting is 169.254.0.2

C Subnet Mask

Enter the IPv4 Subnet Mask (in dotted decimal notation) for the SilhouetteStar 2 / Computer link network. This Subnet Mask must allow the network to span the Computer IP Address and the SilhouetteStar 2 IP Address.

The default factory setting is 255.255.255.252

D Generate QR Code

Once valid IP addresses have been entered, click on the **Generate QR Code** button. A QR Code encoding the settings is displayed on the screen.

SilhouetteStar 2 DHCP Configuration	Generated QR Code
<p>Computer IP Address *</p> <input type="text" value="169.254.0.2"/>	
<p>SilhouetteStar 2 IP Address *</p> <input type="text" value="169.254.0.1"/>	
<p>Subnet Mask *</p> <input type="text" value="255.255.255.252"/>	
<input type="button" value="Generate QR Code"/>	

Apply the Settings to SilhouetteStar 2

To apply the settings to the SilhouetteStar 2:

- With the device turned on and not connected to Silhouette (displaying *Please Connect*),
- Press the device button to turn on the lasers (begins scanning for a QR Code),
- Hold the device up to the screen with the button at the top and so that the lasers form a star over the QR code,
- The device will display "DHCP Updated" once the QR Code has been scanned and the settings have been applied.

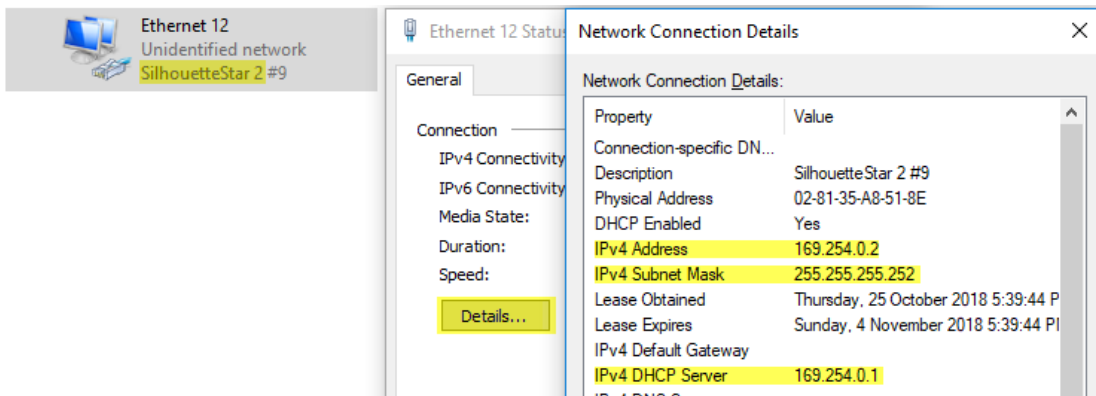
Once these settings are applied to a device, they are remembered even when the device firmware is updated.

The QR code can be printed and used to set all your SilhouetteStar 2 devices to the same settings. There is no need to generate a new QR code each time. The QR code in the example diagram above can be used to set the SilhouetteStar 2 back to default settings.

Checking the SilhouetteStar 2 DHCP Configuration

To confirm the DHCP settings the SilhouetteStar 2 is using, you can check the settings once the device is plugged into a PC by:

- Navigating to the Control Panel > Network and Internet > Network Connections.
- Right-click on the Ethernet Adapter that has a SilhouetteStar 2 label and selecting **Status**.
- On the Ethernet Adapter status page click the **Details...** button.
- The IPv4 Address, IPv4 Subnet Mask and IPv4 DHCP Server are all listed in the Network Connection Details dialog and correspond to the Computer IP Address, the Subnet Mask, and the SilhouetteStar 2 IP Address settings in Silhouette.

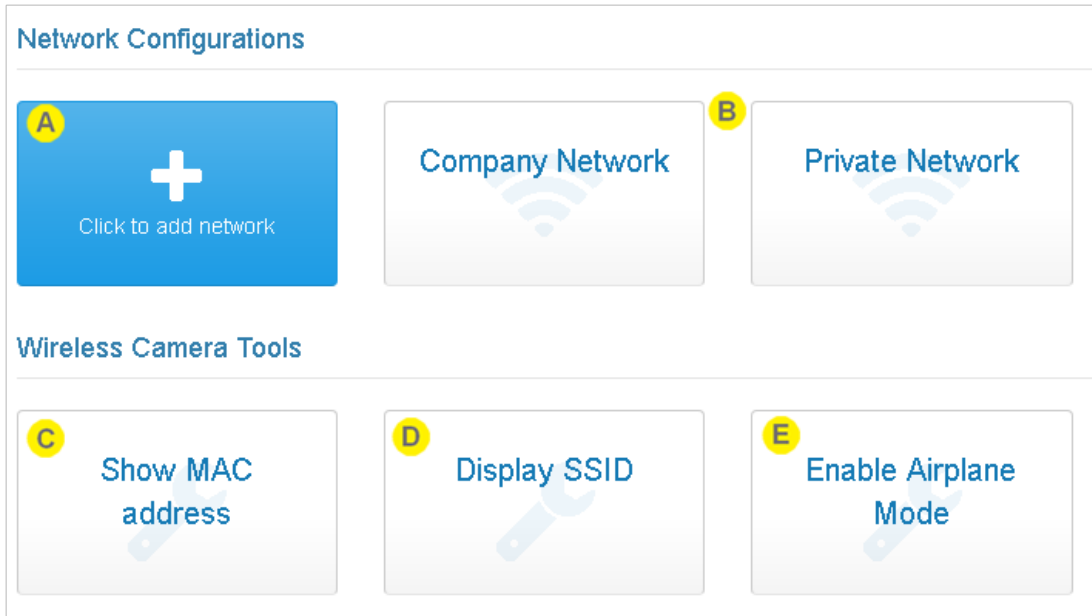


Network Configurations and Wireless Camera Tools

The settings in the **SilhouetteStar 2** screen are used to allow the SilhouetteStar 2 device to connect to the organization's Wi-Fi network.

These Wi-Fi networks are displayed within SilhouetteCentral in the connection QR code, which the device uses to read the network settings and connect to a users web session.

To define and manage network configurations, or to access the wireless camera tools, select **Admin > SilhouetteStar 2** in SilhouetteCentral. The **Network Configurations** and **Wireless Camera Tools** sections are not available in SilhouetteConnect.



A **Create button**
[See "Creating a Network Configuration".](#)

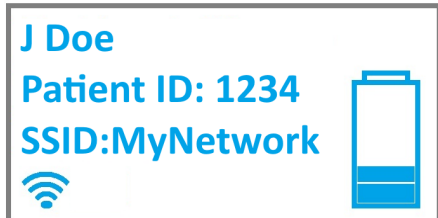
B **Network Configuration tile**
[See "Editing a Network Configuration".](#)

C **Show MAC Address**
Select **Show MAC address** to show a QR code that can be scanned by a SilhouetteStar 2 device to show the Wi-Fi MAC address of the device on its display.
Once scanned, the device shows the Wi-Fi MAC address until it is dismissed with a device button press.

D Display SSID

To confirm the SilhouetteStar 2 is attempting to connect to the correct Wi-Fi network, select **Display SSID** to show a QR code that can be scanned by a SilhouetteStar 2 device to cause the Wi-Fi network SSID to be displayed on the device screen.

The SSID is shown on the third line of the display, replacing the Patient DoB. The SSID of the Wi-Fi network is displayed whenever the device is connected to Silhouette, or if it is attempting to connect to a Wi-Fi network.



The SilhouetteStar 2 device continues show the SSID on the display until it is power cycled or until the **Display SSID** QR code is scanned again.

E Enable Airplane Mode

To turn off the Wi-Fi capabilities of the SilhouetteStar 2 select Enable Airplane Mode and use the SilhouetteStar 2 to scan the displayed barcode.

Once airplane mode is successfully enabled the SilhouetteStar 2 device shows the airplane icon in place of the Wi-Fi signal strength indicator.

To enable Wi-Fi again follow the normal SilhouetteStar 2 connection process.



The Wireless Camera Tools QR codes can only be scanned if the SilhouetteStar 2 is not already connected to a network.

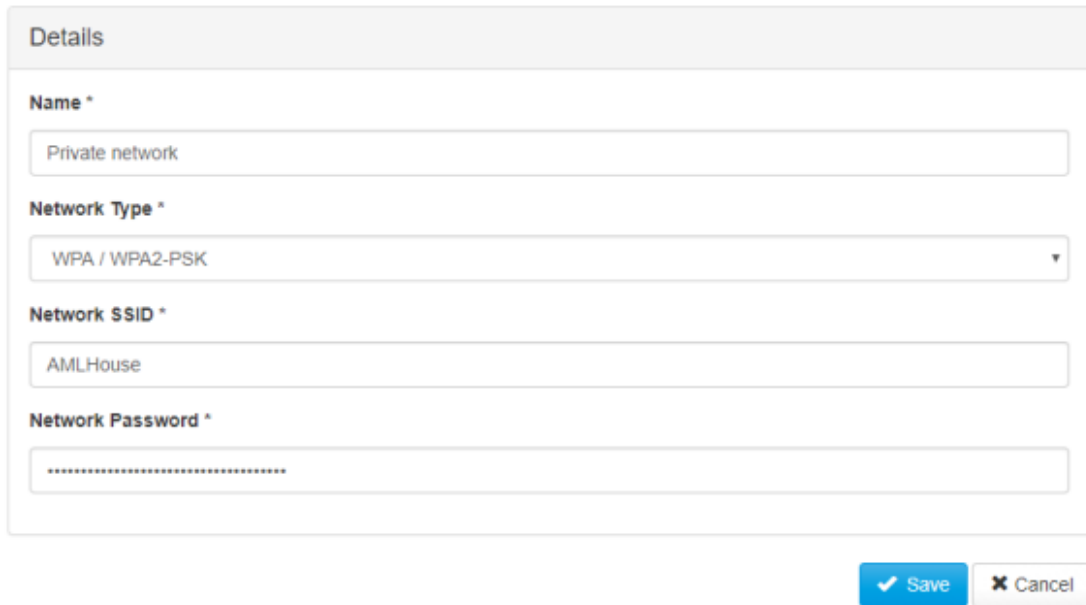


The Wireless Camera Tools QR codes can be printed, or downloaded as images and emailed. This may help if you need Silhouette users without admin access to scan them for diagnostic or setup purposes.

Creating a Network Configuration

Select the **Click to add network** button in the **SilhouetteStar 2** screen to create a new network configuration. The **Create Network** screen is displayed, with compulsory fields marked with an asterisk.

Enter a **Name**, **Type**, **Network SSID**, and **Network Password**. The network password must be at least 8 characters long.



The screenshot shows a 'Details' form with the following fields:

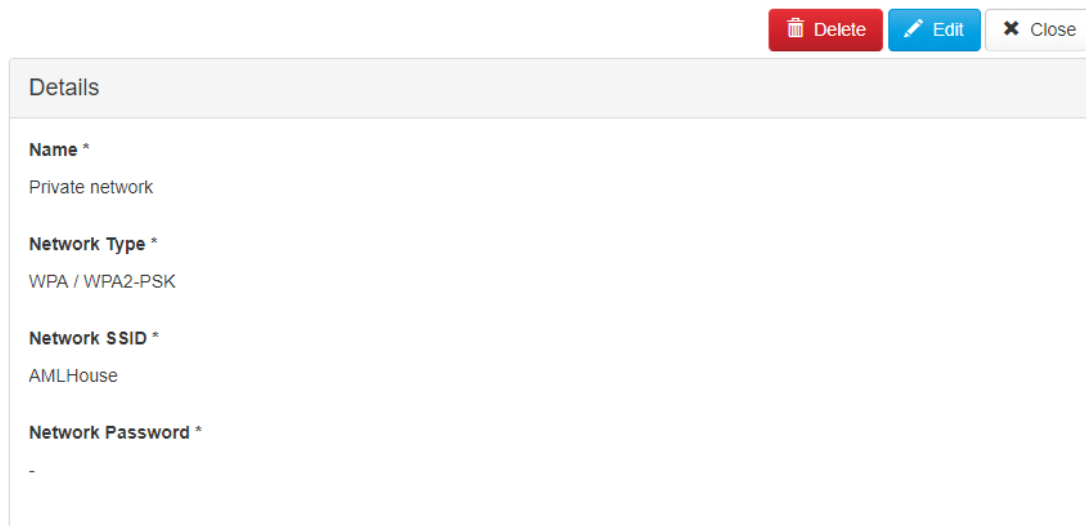
- Name ***: Text input field containing 'Private network'.
- Network Type ***: Dropdown menu showing 'WPA / WPA2-PSK'.
- Network SSID ***: Text input field containing 'AMLHouse'.
- Network Password ***: Password input field with masked characters.

At the bottom right of the form are two buttons: a blue 'Save' button with a checkmark icon and a grey 'Cancel' button with an 'X' icon.

To save the network settings, select the **Save** button at the bottom of the screen.

Editing a Network Configuration

To edit a network configuration, in the **SilhouetteStar 2** screen, select the network from the networks list. The information for the network is displayed in a read-only view.



The screenshot shows a 'Details' form in a read-only view. At the top right, there are three buttons: a red 'Delete' button with a trash icon, a blue 'Edit' button with a pencil icon, and a grey 'Close' button with an 'X' icon.

The form fields are:

- Name ***: Private network
- Network Type ***: WPA / WPA2-PSK
- Network SSID ***: AMLHouse
- Network Password ***: -

Select the **Edit** button to edit the network and update the information, see [Creating a Network Configuration](#).

To delete the network, use the **Delete** button.

Select the **Close** button to go back to the [Network Configurations and Wireless Camera Tools](#) screen.

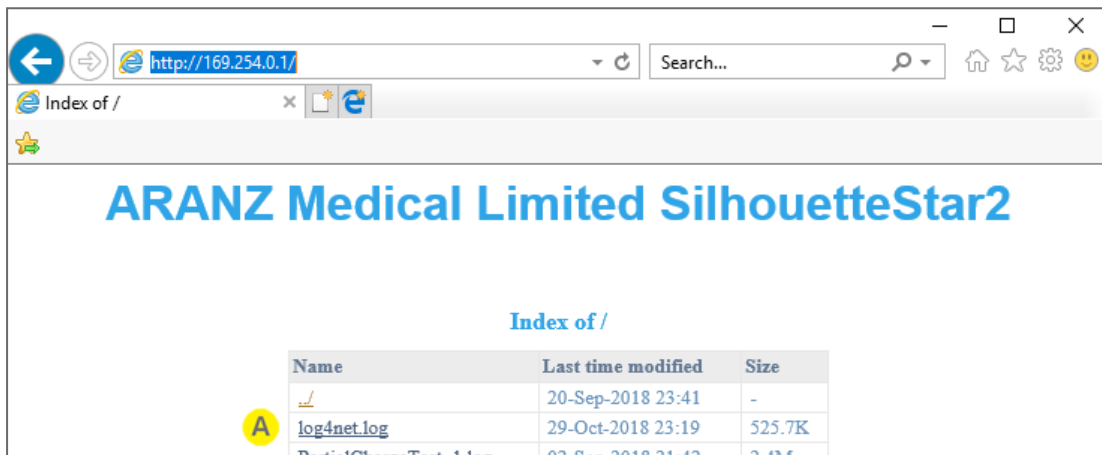
Retrieving SilhouetteStar 2 Device Logs

The SilhouetteStar 2 device keeps software logs, which can be accessed and sent to ARANZ Medical support if there are any problems with the SilhouetteStar 2.

The logs are able to be downloaded from a basic web site hosted on the SilhouetteStar 2. To access the web site:

1. Have the SilhouetteStar 2 turned on and plugged into the computer using the USB cable.
2. Use a Web Browser on the computer to access the web page at <http://169.254.0.1/>. See "[Checking the SilhouetteStar 2 DHCP Configuration](#)" to confirm the IP address that the SilhouetteStar 2 is using.

An example of the SilhouetteStar 2 device web site is shown below in the IE web browser.



A log4net.log

The log file(s) on the SilhouetteStar 2 device have the file name **log4net.log**.

To download a log file right-click on the file name and select *Save link as....* If you need to supply log files to ARANZ Medical Support:

1. Save the file(s) to your local computer into a folder named with the device serial number and the current date.
2. Zip the whole folder up.
3. Send the zipped log file folder to support@aranzmedical.com.

The SilhouetteStar 2 creates a new log file once the current log file reaches a size limit (nominally 1MB) and archives the older log files. Up to 10 older log files are kept on the device before being deleted.

- The current log file on the device is named log4net.log.
- The most recent archived log file is named log4net.log.1
- The oldest archived log file is named log4net.log.10.

There may be other files available for download but these can typically be ignored.

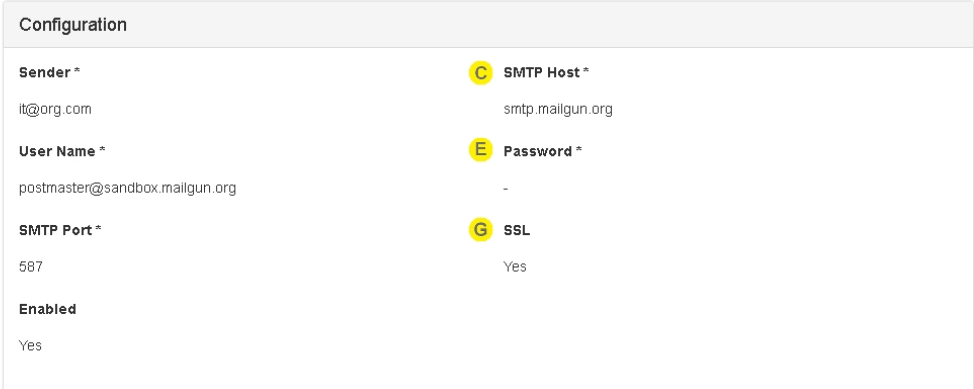
Email Configuration

The email configuration page contains both the email sending SMTP settings as well as some details as to the current state of the email system within Silhouette.

SMTP Configuration

The Email Configuration options must be enabled to allow certain system functions to operate, e.g. password reset, and can only be set in SilhouetteCentral.

Select the Email Configuration option in the admin sidebar to set the SMTP Email server settings.



The screenshot shows a configuration form titled "Configuration" with an "Edit" button in the top right corner. The form contains the following fields:

Field Label	Value
Sender *	lt@org.com
SMTP Host *	smtp.mailgun.org
User Name *	postmaster@sandbox.mailgun.org
Password *	-
SMTP Port *	587
SSL	Yes
Enabled	Yes

A Edit

Select the **Edit** button to change from read-only mode to edit mode.

In Edit mode, compulsory fields are marked with an asterisk. After editing the Email configuration details, select the **Save** button at the bottom of the screen to save the configuration and return to the read-only view.

The Edit button will not be present for SilhouetteCentral instances hosted by ARANZ Medical, as these instances have their email settings managed by ARANZ Medical. Please contact your Account Manager if you are a hosted SilhouetteCentral customer and wish to customize your email configuration.

B Sender

The reply to address used when sending email from Silhouette.

C SMTP Host

The Simple Mail Transfer Protocol (SMTP) host that is used to send Email.

D User Name

The user name of the account used to send mail on the SMTP host.

E Password

The password of the account used to send mail on the SMTP host.

- F SMTP Port**
The TCP port used to communicate with the SMTP host. Get this information from the SMTP host provider.
- G SSL**
Set to Yes if your SMTP Host supports sending Email using SSL.
- H Enabled**
Set to Yes to enable Email sending from SilhouetteCentral.
Set to No to disable all Email sending from SilhouetteCentral.

Email System Statistics

At the bottom of the Email Configuration page, there is a section showing the performance of the email system.

A Silhouette Email Dashboard

Emails Sent 3	System Events 3
------------------	--------------------

B Current Email Queue Statistics

Number of days to show statistics for: **C**

Pending Emails 0	Emails Pending Retries 0	Failed Emails 0	Successful Emails 3
---------------------	-----------------------------	--------------------	------------------------

- A System Email Dashboard**
This section shows the total number of emails sent and system events (e.g. assessment create or update events) that caused an email that have ever been generated by Silhouette. Typically the email sent count will be higher as a single system event can result in multiple emails generated with each email getting sent to multiple recipients as individual emails.

B**Current Email Queue Statistics**

This section shows the count of emails in the current processing queue. The queue only shows values for up to a maximum of 30 days, as the emails that have been sent by Silhouette that are older than this are removed from the System.

Pending Emails: The number of emails that are in the queue waiting to be sent

Emails Pending Retries: The number of emails that have failed to send at least once, but that Silhouette will attempt to send later

Failed Emails: The number of emails that have failed to send even after Silhouette has tried multiple times to send them.

Successful Emails: The number of emails that successfully been sent.

C**Current Email Queue Statistics Date Range**

Select the date range to show the current queue statistics for.

Appendices



[Appendix A: Getting Support](#)



[Appendix B: Anatomical Sites](#)



[Appendix C: Wound State Definitions](#)



[Appendix D: Notes Definitions](#)



[Appendix E: Clinical Data Export Format](#)



[Appendix F: Regular Expressions](#)



[Appendix G: Conditional Expression Syntax](#)

Appendix A: Getting Support

You can contact ARANZ Medical support by using the contact information listed below:

Customer Support

Email: support@aranzmedical.com

Phone (International): +64 3 961 1988

Phone (US Customers): 855 272 0341

Phone (UK Customers): 0800 011 9628

Sales Enquiries

Phone (International): +64-3-374-6120

Phone (US customers): 866-467-0934

Fax: +64-3-374-6130

Email: sales@aranzmedical.com

Please contact your system administrator for first level support contact information.

ARANZ Medical Website

www.aranzmedical.com

Appendix B: Anatomical Sites

Wounds recorded within SilhouetteConnect and SilhouetteCentral are always assigned to an anatomical site for reporting and identification purposes.

When specifying an anatomical site the user is prompted to select options from a series of hierarchical drop-down lists. The options available in the next drop-down list depend upon the selection the user made in the previous.

The following tables outline the available anatomical sites and the selections a user must make in the Gross Division, Handedness and Location drop-down lists in order to select them.

The anatomical sites described in this appendix reflect the default set of anatomical sites that SilhouetteCentral and SilhouetteConnect are setup with. They do not show any customisations made.

Head & Neck

Gross Division	Handedness	Location	Display within Silhouette
Scalp		Superior	Scalp, Superior
		Posterior	Scalp, Posterior
		Left Lateral	Scalp, Left Lateral
		Right Lateral	Scalp, Right Lateral
Forehead		Anterior	Forehead, Anterior
		Left Lateral	Forehead, Left Lateral
		Right Lateral	Forehead, Right Lateral
Temple	Left		Left Temple
	Right		Right Temple
Orbit	Left	Superior	Left Orbit, Superior
		Inferior	Left Orbit, Inferior
		Eyeball	Left Orbit, Eyeball
		Medial	Left Orbit, Medial
		Lateral	Left Orbit, Lateral
	Right	Superior	Right Orbit, Superior
		Inferior	Right Orbit, Inferior
		Eyeball	Right Orbit, Eyeball
		Medial	Right Orbit, Medial
		Lateral	Right Orbit, Lateral
Cheek	Left	Superior	Left Cheek, Superior
		Inferior	Left Cheek, Inferior
		Anterior	Left Cheek, Anterior
		Posterior	Left Cheek, Posterior
		Central	Left Cheek
	Right	Superior	Right Cheek, Superior
		Inferior	Right Cheek, Inferior
		Anterior	Right Cheek, Anterior
		Posterior	Right Cheek, Posterior
		Central	Right Cheek

Gross Division	Handedness	Location	Display within Silhouette
Ear	Left	Superior	Left Ear, Superior
		Inferior	Left Ear, Inferior
		Anterior	Left Ear, Anterior
		Posterior	Left Ear, Posterior
	Right	Superior	Right Ear, Superior
		Inferior	Right Ear, Inferior
		Anterior	Right Ear, Anterior
		Posterior	Right Ear, Posterior
Nose	Superior	Nose, Superior	
	Inferior	Nose, Inferior	
	Anterior	Nose, Anterior	
	Left Lateral	Nose, Left Lateral	
	Right Lateral	Nose, Right Lateral	
Lip	Upper	Lip, Upper	
	Lower	Lip, Lower	
	Left Angle	Lip, Left Angle	
	Right Angle	Lip, Right Angle	
Jaw	Anterior	Jaw, Anterior	
	Inferior	Jaw, Inferior	
	Left Lateral	Jaw, Left Lateral	
	Right Lateral	Jaw, Right Lateral	
Neck	Anterior	Neck, Anterior	
	Left Lateral	Neck, Left Lateral	
	Right Lateral	Neck, Right Lateral	
	Posterior	Neck, Posterior	

Torso

Gross Division	Handedness	Location	Display within Silhouette
Thorax	Left	Clavicular region	Left Clavicular region
		Axilla	Left Axilla
		Lateral region	Left Lateral region, Thorax
	Right	Clavicular region	Right Clavicular region
		Axilla	Right Axilla
		Lateral region	Right Lateral region, Thorax
Sternum		Superior	Sternum, Superior
		Inferior	Sternum, Inferior
Breast	Left	Superior	Left Breast, Superior
		Inferior	Left Breast, Inferior
		Anterior	Left Breast, Anterior
		Medial	Left Breast, Medial
		Lateral	Left Breast, Lateral
		Nipple	Left Breast, Nipple
	Right	Superior	Right Breast, Superior
		Inferior	Right Breast, Inferior
		Anterior	Right Breast, Anterior
		Medial	Right Breast, Medial
		Lateral	Right Breast, Lateral
		Nipple	Right Breast, Nipple
Abdomen		Right upper quadrant	Abdomen, Right upper quadrant
		Right lower quadrant	Abdomen, Right lower quadrant
		Left upper quadrant	Abdomen, Left upper quadrant
		Left lower quadrant	Abdomen, Left lower quadrant
		Midline - upper	Abdomen, Midline - upper
		Umbilical	Abdomen, Umbilical
		Midline - lower	Abdomen, Midline - lower
		Left flank	Abdomen, Left flank
		Right flank	Abdomen, Right flank

Gross Division	Handedness	Location	Display within Silhouette
Back	Left	Scapular region	Left Back, Scapular region
		Thoracic region	Left Back, Thoracic region
		Lumbar region	Left Back, Lumbar region
	Right	Scapular region	Right Back, Scapular region
		Thoracic region	Right Back, Thoracic region
		Lumbar region	Right Back, Lumbar region
Spine		Thoracic	Spine, Thoracic
		Lumbar	Spine, Lumbar

Pelvis

Gross Division	Handedness	Location	Display within Silhouette
Spine/Gluteal cleft		Sacrum	Sacrum
		Coccyx	Coccyx
		Peri-anal	Peri-anal
Buttock	Left	Superior	Left Buttock, Superior
		Inferior	Left Buttock, Inferior
		Central	Left Buttock
		Medial	Left Buttock, Medial
		Lateral	Left Buttock, Lateral
	Right	Superior	Right Buttock, Superior
		Inferior	Right Buttock, Inferior
		Central	Right Buttock
		Medial	Right Buttock, Medial
		Lateral	Right Buttock, Lateral
Misc. bony prominences	Left	Iliac Crest	Left Iliac Crest
		Greater trochanter	Left Trochanter
		Ischial Tuberosity	Left Ischial Tuberosity
	Right	Iliac Crest	Right Iliac Crest
		Greater trochanter	Right Trochanter
		Ischial Tuberosity	Right Ischial Tuberosity
Groin	Left		Left Groin
	Right		Right Groin
Genital Male		Scrotum	Scrotum
		Penis	Penis
		Perineum	Perineum
Genital Female		Vulva	Vulva
		Labia	Labia
		Perineum	Perineum

Upper Extremity

Gross Division	Handedness	Location	Display within Silhouette
Shoulder	Left	Superior	Left Shoulder, Superior
		Anterior	Left Shoulder, Anterior
		Posterior	Left Shoulder, Posterior
		Lateral	Left Shoulder, Lateral
	Right	Superior	Right Shoulder, Superior
		Anterior	Right Shoulder, Anterior
		Posterior	Right Shoulder, Posterior
		Lateral	Right Shoulder, Lateral
Upper Arm	Left	Anterior	Left Upper Arm, Anterior
		Posterior	Left Upper Arm, Posterior
		Medial	Left Upper Arm, Medial
		Lateral	Left Upper Arm, Lateral
		Circumferential	Left Upper Arm, Circumferential
	Right	Anterior	Right Upper Arm, Anterior
		Posterior	Right Upper Arm, Posterior
		Medial	Right Upper Arm, Medial
		Lateral	Right Upper Arm, Lateral
		Circumferential	Right Upper Arm, Circumferential
Elbow	Left	Anterior	Left Elbow, Anterior
		Posterior	Left Elbow, Posterior
		Medial	Left Elbow, Medial
		Lateral	Left Elbow, Lateral
		Circumferential	Left Elbow, Circumferential
	Right	Anterior	Right Elbow, Anterior
		Posterior	Right Elbow, Posterior
		Medial	Right Elbow, Medial
		Lateral	Right Elbow, Lateral
		Circumferential	Right Elbow, Circumferential

Gross Division	Handedness	Location	Display within Silhouette
Forearm	Left	Anterior	Left Forearm, Anterior
		Posterior	Left Forearm, Posterior
		Medial	Left Forearm, Medial
		Lateral	Left Forearm, Lateral
		Circumferential	Left Forearm, Circumferential
	Right	Anterior	Right Forearm, Anterior
		Posterior	Right Forearm, Posterior
		Medial	Right Forearm, Medial
		Lateral	Right Forearm, Lateral
		Circumferential	Right Forearm, Circumferential
Wrist	Left	Anterior	Left Wrist, Anterior
		Posterior	Left Wrist, Posterior
		Medial	Left Wrist, Medial
		Lateral	Left Wrist, Lateral
		Circumferential	Left Wrist, Circumferential
	Right	Anterior	Right Wrist, Anterior
		Posterior	Right Wrist, Posterior
		Medial	Right Wrist, Medial
		Lateral	Right Wrist, Lateral
		Circumferential	Right Wrist, Circumferential
Hand	Left	Palm	Left Hand, Palm
		Dorsum	Left Hand, Dorsum
		Medial	Left Hand, Medial
		Lateral	Left Hand, Lateral
		Circumferential	Left Hand, Circumferential
	Right	Palm	Right Hand, Palm
		Dorsum	Right Hand, Dorsum
		Medial	Right Hand, Medial
		Lateral	Right Hand, Lateral
		Circumferential	Right Hand, Circumferential

Gross Division	Handedness	Location	Display within Silhouette
Finger	Left	Thumb	Left Thumb
		Index Finger	Left Index Finger
		Middle Finger	Left Middle Finger
		Ring Finger	Left Ring Finger
		Little Finger	Left Little Finger
	Right	Thumb	Right Thumb
		Index Finger	Right Index Finger
		Middle Finger	Right Middle Finger
		Ring Finger	Right Ring Finger
		Little Finger	Right Little Finger

Lower Extremity

Gross Division	Handedness	Location	Display within Silhouette
Thigh	Left	Anterior	Left Thigh, Anterior
		Posterior	Left Thigh, Posterior
		Medial	Left Thigh, Medial
		Lateral	Left Thigh, Lateral
		Circumferential	Left Thigh, Circumferential
	Right	Anterior	Right Thigh, Anterior
		Posterior	Right Thigh, Posterior
		Medial	Right Thigh, Medial
		Lateral	Right Thigh, Lateral
		Circumferential	Right Thigh, Circumferential
Knee	Left	Anterior	Left Knee, Anterior
		Posterior	Left Knee, Posterior
		Medial	Left Knee, Medial
		Lateral	Left Knee, Lateral
		Circumferential	Left Knee, Circumferential
	Right	Anterior	Right Knee, Anterior
		Posterior	Right Knee, Posterior
		Medial	Right Knee, Medial
		Lateral	Right Knee, Lateral
		Circumferential	Right Knee, Circumferential
Lower leg	Left	Shin	Left Shin
		Calf	Left Calf
		Medial	Lower left leg, Medial
		Lateral	Lower left leg, Lateral
		Circumferential	Lower left leg, Circumferential
	Right	Shin	Right Shin
		Calf	Right Calf
		Medial	Lower right leg, Medial
		Lateral	Lower right leg, Lateral
		Circumferential	Lower right leg, Circumferential

Gross Division	Handedness	Location	Display within Silhouette
Ankle	Left	Medial Malleolus	Left Medial Malleolus
		Lateral Malleolus	Left Lateral Malleolus
		Ankle Flexure	Left Ankle Flexure
		Posterior	Left Ankle, Posterior
	Right	Medial Malleolus	Right Medial Malleolus
		Lateral Malleolus	Right Lateral Malleolus
		Ankle Flexure	Right Ankle Flexure
		Posterior	Right Ankle, Posterior
Foot	Left	Dorsum	Left Foot, Dorsum
		Sole	Left Foot, Sole
		Medial	Left Foot, Medial
		Lateral	Left Foot, Lateral
		Heel	Left Foot, Heel
	Right	Dorsum	Right Foot, Dorsum
		Sole	Right Foot, Sole
		Medial	Right Foot, Medial
		Lateral	Right Foot, Lateral
		Heel	Right Foot, Heel
Toe	Left	Big	Left Toe, Big
		Second	Left Toe, Second
		Third	Left Toe, Third
		Fourth	Left Toe, Fourth
		Fifth	Left Toe, Fifth
	Right	Big	Right Toe, Big
		Second	Right Toe, Second
		Third	Right Toe, Third
		Fourth	Right Toe, Fourth
		Fifth	Right Toe, Fifth

Appendix C: Wound State Definitions

Silhouette can record the current wound status or wound state with some optional notes. The table below shows the default set of states. In Silhouette version 4.6 these can only be modified by direct database manipulation.

Selectable Wound States

The default wound state selected when creating a new wound is the state with the lowest order index.

Name	Order Index	Wounds Display As
Open	0	Active
Healed	1	Inactive
Released from Follow-up	2	Inactive
Amputated	3	Inactive

Wound State Notes

The user is given the opportunity to record some relevant notes based on the wound state selected.

Wound State Notes: Open

Item	Properties	
Recurring	Data type	Boolean
	Active	Yes
	Required	No
	Variable	recurring
	Export name	Wound State - Recurring

Wound State Notes: Healed

There are no default notes captured with the Healed state.

Wound State Notes: Released from Follow-up

Item	Properties	
Wound release reason	Data type	List (single selection)
	Active	Yes
	Required	No
	Variable	wound_release_reason
	Export name	Wound State - Wound release reason
	Selectable list items:	
	<ul style="list-style-type: none"> • Discharged with wound • Patient lost to follow-up • Specialist wound care not required • Other 	
Wound release comment	Data type	Text
	Active	Yes
	Required	No
	Variable	wound_release_comment
	Multiline	No
	Max Length	255
	Export name	Wound State - Wound release comment

Wound State Notes: Amputated

Item	Properties
Amputation category	<p>Data type List (single selection)</p> <p>Active Yes</p> <p>Required No</p> <p>Variable amputation_category</p> <p>Export name Wound State - Amputation category</p> <p>Selectable list items:</p> <ul style="list-style-type: none">• Major• Minor

Appendix D: Notes Definitions

In addition to images and measurements SilhouetteConnect and SilhouetteCentral can be used to capture notes. Notes can be associated with a particular patient, visit or wound assessment. The following section of this document outlines the note fields available for clinicians to enter.

The notes described in this appendix reflect the default set of notes that SilhouetteCentral and SilhouetteConnect are setup with. They do not show any customisations made.

Patient admission

Details

Item	Variable	Data Type	Visibility	
Expected Discharge	expected_discharge_date	Date	Active	Yes
			Required	No
			Visible	Yes
Palliative Care	palliative_care	Boolean	Active	Yes
			Required	No
			Visible	Yes

Physicians

Item	Variable	Data Type	Visibility	
Treating	admission_and_discharge_treating_physician	Text	Active	Yes
		<ul style="list-style-type: none"> • Max Length: 255 • Multi-Line: No 	Required	No
			Visible	Yes
Referring	admission_and_discharge_referring_physician	Text	Active	Yes
		<ul style="list-style-type: none"> • Max Length: 255 • Multi-Line: No 	Required	No
			Visible	Yes

Patient Details

Details

Item	Variable	Data Type	Visibility	
Patient ID	details_patient_id	Text <ul style="list-style-type: none"> • Max Length: 128 • Multi-Line: No 	Active	Yes
			Required	Yes
			Visible	Yes
Unit	details_unit	Unit	Active	Yes
			Required	Yes
			Visible	Yes
Last Name	details_last_name	Text <ul style="list-style-type: none"> • Max Length: 128 • Multi-Line: No 	Active	Yes
			Required	Yes
			Visible	Yes
First Name	details_first_name	Text <ul style="list-style-type: none"> • Max Length: 128 • Multi-Line: No 	Active	Yes
			Required	Yes
			Visible	Yes
Middle Name	details_middle_name	Text <ul style="list-style-type: none"> • Max Length: 128 • Multi-Line: No 	Active	Yes
			Required	No
			Visible	Yes
Date of Birth	details_date_of_birth	Date	Active	Yes
			Required	Yes
			Visible	Yes
Gender	details_is_female	List (single selection)	Active	Yes
		<ul style="list-style-type: none"> • Male • Female 	Required	Yes
			Visible	Yes

Address

Item	Variable	Data Type	Visibility	
Street	address_street	Text <ul style="list-style-type: none"> • Max Length: 255 • Multi-Line: No 	Active	Yes
			Required	No
			Visible	Yes
Suburb	address_suburb	Text <ul style="list-style-type: none"> • Max Length: 255 • Multi-Line: No 	Active	Yes
			Required	No
			Visible	Yes
City	address_city	Text <ul style="list-style-type: none"> • Max Length: 255 • Multi-Line: No 	Active	Yes
			Required	No
			Visible	Yes
State	address_state	Text <ul style="list-style-type: none"> • Max Length: 255 • Multi-Line: No 	Active	Yes
			Required	No
			Visible	Yes
Postcode	address_postcode	Text <ul style="list-style-type: none"> • Max Length: 50 • Multi-Line: No 	Active	Yes
			Required	No
			Visible	Yes
Country	address_country	Text <ul style="list-style-type: none"> • Max Length: 255 • Multi-Line: No 	Active	Yes
			Required	No
			Visible	Yes

Contact

Item	Variable	Data Type	Visibility	
Home Phone	contact_home_phone	Text <ul style="list-style-type: none"> • Max Length: 50 • Multi-Line: No 	Active	Yes
			Required	No
			Visible	Yes
Mobile Phone	contact_mobile_phone	Text <ul style="list-style-type: none"> • Max Length: 50 • Multi-Line: No 	Active	Yes
			Required	No
			Visible	Yes
Work Phone	contact_work_phone	Text <ul style="list-style-type: none"> • Max Length: 50 • Multi-Line: No 	Active	Yes
			Required	No
			Visible	Yes

Patient discharge

Details

Item	Variable	Data Type	Visibility	
Reason	admission_status	List (single selection)	Active	Yes
	<ul style="list-style-type: none"> • Discharged • Lost to follow-up • Deceased 		Required	No
Comments	discharge_comments	Text <ul style="list-style-type: none"> • Max Length: 255 • Multi-Line: Yes 	Visible	Yes
			Active	Yes
			Required	No
			Visible	Yes

Assessment of lower limb function

Right

Item	Variable	Data Type	Visibility	
Warmth	lower_limb_assessment_warmth_right_leg	List (single selection)	Active	Yes
	<ul style="list-style-type: none"> • Cold • Cool • Warm • Hot 		Required	No
Venous signs	lower_limb_assessment_venous_signs_right_leg	List (multiple selection)	Active	Yes
	<ul style="list-style-type: none"> • Varicose veins • Atrophie blanche • Eczema • Lipodermatosclerosis • Hemosiderin staining 		Required	No
Calf muscle effectiveness	lower_limb_assessment_calf_muscle_effectiveness_right	Boolean	Active	Yes
			Required	No
Arterial signs	lower_limb_assessment_arterial_signs_right_leg	List (multiple selection)	Active	Yes
	<ul style="list-style-type: none"> • Hairless • Shiny • Capillary refill > 3 seconds • Dependent rubor • Atrophic nails • Cyanosis 		Required	No
			Visible	Yes

Item	Variable	Data Type	Visibility	
Pulses palpable	lower_limb_assessment_pulses_palpable_right	List (multiple selection)	Active	Yes
			Required	No
	<ul style="list-style-type: none"> • Dorsalis pedis • Posterior tibial 			
Dorsalis pedis pressure	lower_limb_assessment_dorsalis_pedis_pressure_right	Decimal	Active	Yes
			Required	No
			Visible	Yes
Posterior tibial pressure	lower_limb_assessment_posterior_tibial_pressure_right	Decimal	Active	Yes
			Required	No
			Visible	Yes
Brachial pressure	lower_limb_assessment_brachial_pressure_right	Decimal	Active	Yes
			Required	No
			Visible	Yes
Pulse signal	lower_limb_assessment_pulse_signal_right	List (multiple selection)	Active	Yes
			Required	No
	<ul style="list-style-type: none"> • Monophasic • Biphasic • Triphasic 			
ABPI result	lower_limb_assessment_abpi_result_right	Decimal	Active	Yes
			Required	No
			Visible	Yes
Toe pressure	lower_limb_assessment_toe_pressure_right	Decimal	Active	Yes
			Required	No
			Visible	Yes
TBPI	lower_limb_assessment_tbpi_right	Decimal	Active	Yes
			Required	No
			Visible	Yes

Item	Variable	Data Type	Visibility	
Thinnest ankle	lower_limb_assessment_thinnest_ankle_right	Decimal (cm)	Active	Yes
			Required	No
			Visible	Yes
Widest calf	lower_limb_assessment_widest_calf_right	Decimal (cm)	Active	Yes
			Required	No
			Visible	Yes

Ambulation

Item	Variable	Data Type	Visibility	
Ambulation	lower_limb_assessment_ambulation	List (single selection)	Active	Yes
			Required	No
			Visible	Yes
	<ul style="list-style-type: none"> • Independent - no aid or assistance • Independent with mobility aid or assistance • Chair bound • Bed bound 			
Client report of walking duration (minutes)	lower_limb_assessment_client_report_of_walking_duration_minutes	Decimal	Active	Yes
			Required	No
			Visible	Yes

Left

Item	Variable	Data Type	Visibility	
Warmth	lower_limb_assessment_warmth_left_leg	List (single selection)	Active	Yes
			Required	No
			Visible	Yes
	<ul style="list-style-type: none"> • Cold • Cool • Warm • Hot 			

Item	Variable	Data Type	Visibility	
Venous signs	lower_limb_assessment_venous_signs_left_leg	List (multiple selection)	Active	Yes
	<ul style="list-style-type: none"> • Varicose veins • Atrophie blanche • Eczema • Lipodermatosclerosis • Hemosiderin staining 		Required	No
Calf muscle effectiveness	lower_limb_assessment_calf_muscle_effectiveness_left	Boolean	Visible	Yes
			Active	Yes
Arterial signs	lower_limb_assessment_arterial_signs_left_leg	List (multiple selection)	Required	No
	<ul style="list-style-type: none"> • Hairless • Shiny • Capillary refill > 3 seconds • Dependent rubor • Atrophic nails • Cyanosis 		Visible	Yes
Pulses palpable	lower_limb_assessment_pulses_palpable_left	List (multiple selection)	Active	Yes
	<ul style="list-style-type: none"> • Dorsalis pedis • Posterior tibial 		Required	No
Dorsalis pedis pressure	lower_limb_assessment_dorsalis_pedis_pressure_left	Decimal	Visible	Yes
			Active	Yes
			Required	No

Item	Variable	Data Type	Visibility	
Posterior tibial pressure	lower_limb_assessment_posterior_tibial_pressure_left	Decimal	Active	Yes
			Required	No
			Visible	Yes
Brachial pressure	lower_limb_assessment_brachial_pressure_left	Decimal	Active	Yes
			Required	No
			Visible	Yes
Pulse signal	lower_limb_assessment_pulse_signal_left	List (multiple selection)	Active	Yes
			Required	No
			Visible	Yes
	<ul style="list-style-type: none"> • Monophasic • Biphasic • Triphasic 			
ABPI result	lower_limb_assessment_abpi_result_left	Decimal	Active	Yes
			Required	No
			Visible	Yes
Toe pressure	lower_limb_assessment_toe_pressure_left	Decimal	Active	Yes
			Required	No
			Visible	Yes
TBPI	lower_limb_assessment_tbpi_left	Decimal	Active	Yes
			Required	No
			Visible	Yes
Thinnest ankle	lower_limb_assessment_thinnest_ankle_left	Decimal (cm)	Active	Yes
			Required	No
			Visible	Yes
Widest calf	lower_limb_assessment_widest_calf_left	Decimal (cm)	Active	Yes
			Required	No
			Visible	Yes

Comments

Item	Variable	Data Type	Visibility	
Comments	lower_limb_assessment_comments	Text <ul style="list-style-type: none"> • Max Length: 255 • Multi-Line: Yes 	Active	Yes
			Required	No
			Visible	Yes

Visit Assessment

Vital signs

Item	Variable	Data Type	Visibility	
Weight	vital_signs_weight	Decimal (kg)	Active	Yes
			Required	No
			Visible	Yes
Height	vital_signs_height	Decimal (cm)	Active	Yes
			Required	No
			Visible	Yes
Pulse rate	vital_signs_pulse_rate	Decimal (/min)	Active	Yes
			Required	No
			Visible	Yes
Respiration rate	vital_signs_respiration_rate	Decimal (/min)	Active	Yes
			Required	No
			Visible	Yes
Blood pressure, systolic	vital_signs_blood_pressure_systolic	Decimal (mmHg)	Active	Yes
			Required	No
			Visible	Yes
Blood pressure, diastolic	vital_signs_blood_pressure_diastolic	Decimal (mmHg)	Active	Yes
			Required	No
			Visible	Yes
Temperature	vital_signs_temperature	Decimal (C)	Active	Yes
			Required	No
			Visible	Yes
Blood glucose level	vital_signs_blood_glucose_level	Decimal (mmol/L)	Active	Yes
			Required	No
			Visible	Yes

Related Pain (Non-Wound)

Item	Variable	Data Type	Visibility	
Location	related_pain_nonwound_location	Text <ul style="list-style-type: none"> • Max Length: 255 • Multi-Line: No 	Active	Yes
			Required	No
			Visible	Yes
Scale (0-10)	related_pain_nonwound_scale_010	Integer <ul style="list-style-type: none"> • Interval: 1 • Range: 0 to 10 	Active	Yes
			Required	No
			Visible	Yes
Occurrence	related_pain_nonwound_occurrence	List (multiple selection)	Active	Yes
			Required	No
			Visible	Yes
	<ul style="list-style-type: none"> • At dressing change • Night pain • On walking • On elevation • Dependent • Other 			
Comments	related_pain_nonwound_comments	Text <ul style="list-style-type: none"> • Max Length: 255 • Multi-Line: Yes 	Active	Yes
			Required	No
			Visible	Yes

Edema

Item	Variable	Data Type	Visibility	
Pitting	edema_pitting	Boolean	Active	Yes
			Required	No
			Visible	Yes

Item	Variable	Data Type	Visibility
Location (right)	edema_location_right	List (multiple selection)	Active Yes Required No Visible Yes
	<ul style="list-style-type: none"> • Toes • Foot • Gaiter • Above gaiter • Knee • Thigh 		
Location (left)	edema_location_left	List (multiple selection)	Active Yes Required No Visible Yes
	<ul style="list-style-type: none"> • Toes • Foot • Gaiter • Above gaiter • Knee • Thigh 		
Location: Other	edema_location_other	Text <ul style="list-style-type: none"> • Max Length: 255 • Multi-Line: No 	Active Yes Required No Visible Yes
Comments	edema_comments	Text <ul style="list-style-type: none"> • Max Length: 255 • Multi-Line: Yes 	Active Yes Required No Visible Yes

Factors Affecting Healing

Item	Variable	Data Type	Visibility
Impaired sensation (left)	factors_affecting_healing_impaired_sensation_left	Boolean	Active Yes Required No Visible Yes

Item	Variable	Data Type	Visibility	
Impaired sensation (right)	factors_affecting_healing_ impaired_sensation_right	Boolean	Active	Yes
			Required	No
			Visible	Yes
Braden outcome	factors_affecting_healing_ braden_outcome	List (single selection)	Active	Yes
			Required	No
			Visible	Yes
	<ul style="list-style-type: none"> • Low risk • Mod risk • High risk • Very high risk 			
PURA outcome	factors_affecting_healing_ pura_outcome	List (single selection)	Active	Yes
			Required	No
			Visible	Yes
	<ul style="list-style-type: none"> • Low risk • Mod risk • High risk • Very high risk 			

Item	Variable	Data Type	Visibility	
Nutritional Risk screen	factors_affecting_healing_nutritional_risk_screen	List (multiple selection)	Active	Yes
			Required	No
			Visible	Yes
	<ul style="list-style-type: none"> • Obvious underweight-frailty • Unintentional weight loss • Reduced appetite or food and fluid intake • Mouth teeth problems • Swallowing problems • Follows a special diet • Needs assistance to shop for food • Needs assistance to prepare food • Needs assistance to feed self • Obvious overweight affecting life quality • Unintentional weight gain 			
BMI outcome	factors_affecting_healing_bmi_outcome	List (single selection)	Active	Yes
			Required	No
			Visible	Yes
	<ul style="list-style-type: none"> • Underweight (<18.5) • Normal (18.5 - 24.9) • Overweight (25 - 29.9) • Obese (>30) 			

Wound Assessment

Images

Item	Variable	Data Type	Visibility
Wound Images	images_wound_images	Image Capture	Active Yes
			Required No
			Visible Yes
Trace images screen is enabled.			

Details

Item	Variable	Data Type	Visibility
Etiology	wound_history_etiology	List (single selection)	Active Yes Required No Visible Yes

Item	Variable	Data Type	Visibility
	<ul style="list-style-type: none"> • Pressure Ulcer: Stage 1 • Pressure Ulcer: Stage 2 • Pressure Ulcer: Stage 3 • Pressure Ulcer: Stage 4 • Pressure Ulcer: Unstageable (dressing/device) • Pressure Ulcer: Unstageable (eschar/slough) • Deep Tissue Injury • Venous Ulcer • Arterial insufficiency • Mixed Venous/Arterial • Diabetic • Neuropathic: Non-diabetic • Surgical: Closed • Surgical: Full thickness • Surgical: Partial thickness • Surgical: Dehiscence • Drainage Device • Trauma: Full thickness • Trauma: Partial thickness • Trauma: Superficial • Skin tear: Category 1 • Skin tear: Category 2a • Skin tear: Category 2b • Skin tear: Category 3 • Burn: Superficial thickness • Burn: Partial thickness • Burn: Full thickness • Cancerous: Fungating lesion • Cancerous: Ulcerating lesion • Cancerous: Other • Skin graft • Donor site • Pilonidal wound 		

Item	Variable	Data Type	Visibility	
Wound Margins	wound_margins_sloping	List (multiple selection)	Active	Yes
	<ul style="list-style-type: none"> • Sloping • Punched out • Rolled • Everted • Undermining • Sinus • Inflamed 			
Surrounding Skin	surrounding_skin_tissue_paper_skin	List (multiple selection)	Active	Yes
	<ul style="list-style-type: none"> • 'Tissue paper' skin • Peri-wound edema • Macerated • Erythema • Inflammation • Pustules • Eczema • Dry/scaly • Healthy 			

Item	Variable	Data Type	Visibility	
Signs of Critical Colonization or Infection	signs_of_critical_colonization_or_infection_cellulitis	List (multiple selection)	Active	Yes
	<ul style="list-style-type: none"> • Cellulitis • Suppuration • Lymphangitis • Sepsis • Bacteremia • Granulation changes • Exudate increase • Increase/new pain • Impaired/delayed healing • Wound breakdown/new slough 			
Exudate Volume	exudate_volume	List (single selection)	Active	Yes
	<ul style="list-style-type: none"> • None • Low • Moderate • High 			
Exudate Type	exudate_type	List (single selection)	Active	Yes
	<ul style="list-style-type: none"> • Serous • Serosanguineous • Sanguineous • Purulent 			

Wound Pain

Item	Variable	Data Type	Visibility	
Frequency	wound_pain_frequency	List (single selection)	Active	Yes
			Required	No
			Visible	Yes
	<ul style="list-style-type: none"> • Absent • Intermittent • Continuous 			
Nature of pain	wound_pain_nature_of_pain	List (multiple selection)	Active	Yes
			Required	No
			Visible	Yes
	<ul style="list-style-type: none"> • Throbbing • Shooting • Stabbing • Sharp • Cramping • Gnawing • Hot/burning • Aching • Heavy • Tender • Splitting • Tiring/exhausting • Sickening • Fearful • Cruel/punishing • Other 			

Item	Variable	Data Type	Visibility
Current interventions	wound_pain_current_interventions	List (multiple selection)	Active Yes Required No Visible Yes
	<ul style="list-style-type: none"> • Pharmacological • Non-pharmacological • Dressing/removal technique • Other 		
At dressing change (0-10)	wound_pain_at_dressing_change_010	Integer <ul style="list-style-type: none"> • Interval: 1 • Range: 0 to 10 	Active Yes Required No Visible Yes
Night pain (0-10)	wound_pain_night_pain_010	Integer <ul style="list-style-type: none"> • Interval: 1 • Range: 0 to 10 	Active Yes Required No Visible Yes
On walking (0-10)	wound_pain_on_walking_010	Integer <ul style="list-style-type: none"> • Interval: 1 • Range: 0 to 10 	Active Yes Required No Visible Yes
On elevation (0-10)	wound_pain_on_elevation_010	Integer <ul style="list-style-type: none"> • Interval: 1 • Range: 0 to 10 	Active Yes Required No Visible Yes
Dependent (0-10)	wound_pain_dependent_010	Integer <ul style="list-style-type: none"> • Interval: 1 • Range: 0 to 10 	Active Yes Required No Visible Yes
Other (0-10)	wound_pain_other_010	Integer <ul style="list-style-type: none"> • Interval: 1 • Range: 0 to 10 	Active Yes Required No Visible Yes
Comments	wound_pain_other_description	Text <ul style="list-style-type: none"> • Max Length: 255 • Multi-Line: Yes 	Active Yes Required No Visible Yes

Comments

Item	Variable	Data Type	Visibility	
Comments	assessment_comments	Text <ul style="list-style-type: none">• Max Length: 255• Multi-Line: Yes	Active	Yes
			Required	No
			Visible	Yes

Investigation History

Investigation History

Item	Variable	Data Type	Visibility	
Diagnostic	investigation_history_diagnostic	List (multiple selection)	Active	Yes
	<ul style="list-style-type: none"> • Venous duplex • Arterial duplex • Angiogram • X-ray 		Required	No
Pathology	investigation_history_pathology	List (multiple selection)	Active	Yes
	<ul style="list-style-type: none"> • Wound biopsy • Hb • Thyroid function • Albumin • Creatinine • HbA1c • FBC 		Required	No
Comments	investigation_history_comments	Text <ul style="list-style-type: none"> • Max Length: 255 • Multi-Line: Yes 	Active	Yes
			Required	No
			Visible	Yes

Medical History

Medical History

Item	Variable	Data Type	Visibility
Current conditions	medical_history_current_conditions	List (multiple selection)	Active Yes
			Required No
	<ul style="list-style-type: none"> • Diabetes • Cardiac condition • Anemia • COAD • Rheumatoid arthritis • Autoimmune disorder • Hepatic failure • Malignancy • Peripheral vascular disease • Neurological disorder • Inflammatory bowel disease • Renal disease • Other 		Visible Yes

Item	Variable	Data Type	Visibility
Contributing factors	medical_history_contributing_factors	List (multiple selection)	Active Yes Required No Visible Yes
	<ul style="list-style-type: none"> • Reduced mobility • Pressure • Shearing • Friction • Impaired sensation • Edema • Nutritional factors • Obesity • Radiotherapy • Smoking • Venous hypertension • Ischemia • Other 		
Smoking History	smoking_history	List (single selection)	Active Yes Required No Visible Yes
	<ul style="list-style-type: none"> • Smoker • Past smoker • Never smoked 		
Current cigarette consumption	current_cigarette_consumption	List (single selection)	Active Yes Required No Visible Yes
	<ul style="list-style-type: none"> • 1-10 per day • 11-20 per day • 21 or more per day 		

Item	Variable	Data Type	Visibility	
Past medical history	medical_history_past_ medical_history	Text <ul style="list-style-type: none"> • Max Length: 255 • Multi-Line: Yes 	Active	Yes
			Required	No
			Visible	Yes
Comments	medical_history_comments	Text <ul style="list-style-type: none"> • Max Length: 255 • Multi-Line: Yes 	Active	Yes
			Required	No
			Visible	Yes

Medication

Medication

Item	Variable	Data Type	Visibility
Medicines	medication_medicines	List (multiple selection)	Active Yes Required No Visible Yes
	<ul style="list-style-type: none"> • NSAIDS • Cytotoxics • Anti-coagulants • Beta blockers • Immune suppressants • Steroids • Antibiotics • Other 		
Comments	medication_comments	Text <ul style="list-style-type: none"> • Max Length: 255 • Multi-Line: Yes 	Active Yes Required No Visible Yes

Sensitivities

Item	Variable	Data Type	Visibility
Medicines	medication_sensitivities_medicines	Text <ul style="list-style-type: none"> • Max Length: 255 • Multi-Line: No 	Active Yes Required No Visible Yes
Dressings and adhesives	medication_sensitivities_dressings_and_adhesives	Text <ul style="list-style-type: none"> • Max Length: 255 • Multi-Line: No 	Active Yes Required No Visible Yes
Other	medication_sensitivities_other	Text <ul style="list-style-type: none"> • Max Length: 255 • Multi-Line: No 	Active Yes Required No Visible Yes

Appendix E: Clinical Data Export Format

When exporting clinical data into Comma Separated Values (CSV) documents the export includes the following sets of columns. All values in the csv file output are surrounded by double quote marks (") to allow for text that contains commas (,), line breaks and other special characters.

The output files are UTF-8 encoded and use Windows style line ends.

The sets of columns are generally included in the order they are listed below.

Silhouette Identifiers

The data export does not include the Silhouette identifier columns in a default configuration. Silhouette identifiers are only included in the data export if the organizational setting **Include identifiers in CSV exports** is enabled by ARANZ Medical support for your SilhouetteCentral instance.

The Silhouette identifiers columns can be useful to retain an identifier that is not modified by data changes within Silhouette.

For example, if the patient's name is updated then a new export will have the updated patient name. Rows in the old and new exports can be confirmed as the same patient using the PatientId column.

Column Name	Example Data	Description
PatientId	b24ce1f3-2aef-4fab-8d35-1afc85a31a80	A unique identifier used to identify the patient within Silhouette.
AssessmentId	b24ce1f3-2aef-4fab-8d35-1afc85a31a80	A unique identifier used to identify the assessment within Silhouette. This field is left empty for wound data exports where the row does not have an associated assessment.
WoundId	b24ce1f3-2aef-4fab-8d35-1afc85a31a80	A unique identifier used to identify the wound within Silhouette. This field is left empty for data exports of patient level assessments.
AnatomyId	b24ce1f3-2aef-4fab-8d35-1afc85a31a80	A unique identifier used to identify the anatomical site selected for the wound within Silhouette. This field is left empty for data exports of patient level assessments.

Column Name	Example Data	Description
UnitId	b24ce1f3-2aef-4fab-8d35-1afc85a31a80	A unique identifier used to identify the unit selected for the patient within Silhouette.

These columns are included in the data export as the first set of columns, if they are enabled. The exception is the UnitId column, which is included just before the Unit column, wherever the Unit column appears in the patient information.

Observation Information

The observation information columns are a static set of columns with data about the assessment or observation being exported.

If the export is an assessment export the following columns are provided.

Column Name	Example Data	Description
Assessment Type	Wound Assessment	The name of the assessment type being exported.
Assessment Date	2018-05-29T10:05:25+12	The date and time of the assessment. The date and time in an ISO 8601 format which includes the time in 24hr time and the timezone offset. For example, the assessment date 2018-05-29T10:05:25+12 means the assessment was taken on the 29th May 2018 at 10:05 AM in a timezone that is offset +12 hours from UTC.
Assessment Time Zone	Auckland/Pacific	The time zone name from the IANA Time Zone Database associated to the Assessment Date column.

If the export is a wound export the following columns are provided.

Column Name	Example Data	Description
Observation Date	2018-05-29T10:05:25+12	The date and time recorded with the wound observation. The date and time in an ISO 8601 format which includes the time in 24hr time and the timezone offset. For example, the assessment date <i>2018-05-29T10:05:25+12</i> means the assessment was taken on the 29th May 2018 at 10:05 AM in a timezone that is offset +12 hours from UTC.
Observation Timezone	Auckland/Pacific	The time zone name from the IANA Time Zone Database associated to the Assessment Date column.

Wound Information

The wound information columns are a static set of columns with data about the wound. These columns are left empty if the export is exporting a patient level assessment.

Column Name	Example Data	Description
Wound Label	A	The label for the wound. The value is either a number or a letter, as defined in the Silhouette organizational settings.
Wound Anatomical Site	Left Foot, Heel	The anatomical site label for the wound as it appears in Silhouette.
Wound Aux Text		The Aux text entered for the wound.

Patient Notes

The patient notes columns are a dynamic set of columns, which include all the patient notes defined within Silhouette.

The values listed in the patient notes fields are the current values recorded with Silhouette, not the value of the patient note recorded at the time of the assessment being exported.

For example. When a patients name is updated in Silhouette and then an assessment export is performed, the export will show the updated patient name for all historical assessments.

The following table describes the columns that can appear in the data export based on the data types of the patient note fields.

Data Type	Example Value(s)	Description
Boolean	Yes No	Shows 'Yes' or 'No' if there is a selection made by the user. Shows an empty column value if no selection as been made for the corresponding note field.
Date	1950-11-30	Shows the date in the format YYYY-MM-DD.
Decimal	2.1	The value entered or selected by the user.
Integer	2	The value entered or selected by the user.
List	Item 1	The text of the look-up value selected by the user. Look-up values that have been made inactive will still show in the export where they were selected for historical assessments.
Multi-Select List	Item 1;Item 3	The semi-colon (;) separated list of the text from the selected items in the multi-select list. Look-up values that have been made inactive will still show in the export where they were selected in historical assessments.
Text	free text possibly with multiple lines	The text as entered in the notes fields. Note that the export is UTF-8 encoded and some characters that can be entered in to the web site may not appear as expected in the data export.

Data Type	Example Value(s)	Description
Unit	Site 1	The name of the Silhouette unit the patient is selected in. This is a special patient note field that is used in the standard Details patient notes and no where else.

Note fields that are set as not visible are still shown in the data export.

Note fields that are set as not active are not shown in the data export.

Wound State Notes

The wound state columns include all the notes defined for capture with wound state observations.

These columns exist in wound exports and wound assessment exports. They do not exist in patient assessment exports.

The data types for the wound state notes fields are described within the [Patient Notes](#) section.

Assessment Notes

The assessment notes columns include all the notes defined within the assessment type being exported.

The data types for the assessment notes fields are described within the [Patient Notes](#) section.

The assessment notes can also have image capture fields included. The following table shows the additional information included for an image capture field.

Data Type	Column Name (appended to the Image Capture field name)	Description
Image Capture	Image Count	The number of images assigned to the image capture field.
	Image with Outline Count	The number of images with wound outlines drawn.
	Wound Fragment Count	The number of independent wound outlines drawn.
	Area cm2	The total area measurement for the image capture field.
	Perimeter mm	The total perimeter measurement for the image capture field.
	Island Count	The number of wound islands drawn.
	Island Area cm2	The total area for all the wound islands drawn.
	Island Perimeter mm	The total perimeter for all the wound islands drawn.
	Length mm	The calculated wound length.
	Width mm	The calculated wound width.
	Max Depth mm	The maximum depth for the wound.
	Mean Depth mm	The mean depth for the wound.
	Volume cm3	The volume of the wound.
	Ruler Count	The number of rulers drawn on the images.
Ruler Length mm	If there is a single ruler then this column contains the length of that ruler. If there are two (2) or more rulers then this column remains blank.	

Measurements for certain fields (e.g. Max Depth) may be omitted because the way the assessment is made or the capture device used doesn't support depth being calculated.

The measurement units used for the measurement columns is set by Silhouette organizational settings.

The number of decimal points included the data export is set by Silhouette organizational settings. The measurements can be exported as they appear in the Silhouette UI or set to a output as follows.

- Output to the nearest 1/10th of a mm for linear measurements.
- Output to the nearest 1/10th of a mm² for area measurements.
- Output to the nearest 1/10th of a mm³ for volume measurements.

Appendix F: Regular Expressions

Regular Expressions are patterns used to match character combinations in strings, for example a phone number or email address can be checked against a Regular Expression pattern.

Regular Expressions can be used in Silhouette to validate text field note entries. Users will not be able to enter values which do not conform to the specified Regular Expression pattern.

Regular Expressions use a definition language where characters have special meaning. There are many special characters, the ones used in the examples that follow are:

- Square brackets [], to specify the range of characters that are allowed.
- Curly brackets {}, to specify the number of times the previous pattern must match.
- Question mark ?, to specify the previous pattern must match 0 or 1 times.
- Carat ^, to specify the match must occur at the beginning of the string.
- Dollar sign \$, to specify the match must occur at the end of the string.
- Use of both ^ and \$ specifies that the whole input string must match the pattern.

Patient Identifier Examples for Silhouette

Example A

A 5 digit patient number would be written as:

- `^[0-9]{5}$`
- Values satisfying this regular expression include 12345 and 70319
- Values not satisfying this regular expression include A1234 and 123456

Example B

A 3 digit unit ID, a dash, then a 3 digit patient number would be written as:

- `^[0-9]{3}-[0-9]{3}$`
- Values satisfying this regular expression include 147-963 and 456-321

Example C

Two upper-case alphabetic character unit ID, then 4 digit patient number, optionally followed by a dash and free text would be written as:

- `^[A-Z]{2}[0-9]{4}-?`
- Values satisfying this regular expression include ZK1648 and VT7642-ABC

Example D

A three-digit unit ID, a dash, a patient number comprising 4, 5 or 6 numeric digits, and the last character being an upper-case A, B, or C to indicate three different study groups would be written as:

- `^[0-9]{3}-[0-9]{4,6}[ABC]{1}$`
- Values satisfying this regular expression include 010-01934A and 110-50012C

Through the simple use of regular expressions you can control the accuracy of information entered into a system and hence improve reliability and reduce errors.

Further reading and an interactive tutorial can be found here: <http://regexone.com/>

Other examples

- International phone numbers should begin with a plus “+” character – e.g. +64 for New Zealand.
- An email address should contain only one “@” character
- A bank account number should begin with a two-digit bank identification number
- A credit card number comprises four groups of four digits

- A financial amount can comprise numeric digits, decimal point, commas, and the dollar sign e.g. \$41,031.64
- A patient name comprising first name, optional middle name, and surname.

Using Regular Expressions the following types of structures can be specified:

- A character from a group of characters, e.g.:
 - A lower-case alphabetic character [a-z]
 - An upper-or-lower case alphabetic character [a-zA-Z]
 - A numeric digit [0-9]
 - Alphanumeric characters comprising lower-case alphabetic or numeric digits [0-9a-z]
 - Commonly occurring punctuation characters such as dash “-”, comma “,”, period “.”, brackets “[”, and braces “{”, etc.
- A character can occur a fixed number of times, e.g.:
Three characters which can be either a, b or c would be written as: [abc]{3}
- A single optional character is indicated by the question mark “?”, e.g.:
An optional uppercase alphabetic character would be written as: [A-Z]?
- 1 upper-case alphabetic or 2 numeric digits could be required using the special or operator “|”:
such as: [A-Z]|[0-9]{2}

Some real-world examples include:

- A credit card number - four groups of four digits separated by a dash:
`^[0-9]{4}-[0-9]{4}-[0-9]{4}-[0-9]{4}$`
- A New Zealand national phone number - a two digit area code in brackets, followed by three digits, then a dash, then four digits:
`^\(0[1-9]\)[0-9]{3}-[0-9]{4}$`

Things to Note

- The special treatment of the "(" and ")" characters –these have special meaning within Regular Expression language so when they need to be used as normal characters this needs to be indicated. Preceding special characters with the "\" ("slash") character tells the computer to treat the character as regular text - this is referred to as "escaping" a character. Other characters that may need escaping include "[", "]", even the slash itself requires escaping using a slash. "\\\".
- The dash "-" character generally doesn't require escaping, although it does have special meaning when used to designate a character range within the square brackets. If a dash is used outside a character range statement then it will be interpreted as a normal character.
- If any part of the input matches the Regular Expression then the validation passes. If you wish to match the whole entry field then it is important to use the beginning of string "^" and end of string "\$" anchors.
- Regular Expressions can become very complex and testing them carefully to ensure they both accept and reject the correct input is important. It is also recommended to test the regular expressions on all applications used for data entry (i.e. SilhouetteCentral, SilhouetteConnect and SilhouetteLite+).

Appendix G: Conditional Expression Syntax

Conditional expressions are used in a number of different features within Silhouette, including validation expressions, visibility expressions and triggers for emails. Conditional expressions should always be written as a boolean expression, evaluating as either true or false.

It is recommended to test conditional expressions on all target applications to ensure they provide consistent outcomes, e.g. test a visibility expression on SilhouetteCentral Web App and SilhouetteLite+ iOS App.

Conditional expressions can refer to any notes item that has been assigned a variable name. Variable name references are case sensitive.

As well as referring to variables, conditional expressions can contain constant values. Numbers must be written in decimal notation and text must be enclosed in single quotes, and boolean values are true or false e.g.

```
braden_score > 5
temperature <= 32.75
approval_status == 'undecided'
wound_state_recurring == true
```

As demonstrated in the previous sample expressions, it is possible to compare two or more values in an expression. The following logical operators are available.

Operator	Description	Example Expression
<=	Less than or equal to	height <= 150
<	Less than	height > 145
>=	Greater than or equal to	weight >= 275
>	Greater than	temperature > 35
==	Equal to	smoking_history == 'never smoked'
!=	Not equal to	admission_status != 'admitted'
!	Negation	ledema_present
&&	And	impaired_sensation_left && impaired_sensation_right
	Or	palliative_care edema_present

Simple calculations can also be performed using the following mathematical operators

Operator	Description	Example Expression
+	Addition	left_area + right_area > 25
-	Subtraction	Initial - final > 14
*	Multiplication	length * width == 45
/	Division	volume / depth == area
%	Modulo	x % 5 == 1

There are also a number of functions available for use that can perform specialist operations:

Function	Description	Example Expressions
HasNoValue(x)	Returns true if variable 'x' does not contain a value. This is a convenience instead of having to write !HasValue(x)	HasNoValue(admission_status)
HasValue(x)	Returns true if variable 'x' contains a value. In other words it will return true if the user has recorded a value in the notes items within Silhouette. NOTE: The single argument to HasValue must be a name of a variable.	HasValue(admission_status)
IsNull(x, y)	Returns the value of variable 'x' if the user has recorded a value in the notes field within Silhouette, otherwise returns the value 'y'. NOTE: The first argument to IsNull must be the name of a variable.	IsNull(wound_pain, 0) > 5
ListContains(x, y)	Returns true if the multi-select list variable 'x' contains item 'y'. NOTE: The first argument to ListContains must be the name of a variable.	ListContains(contributing_factors, 'Shearing')
ListLength(x)	Returns the number of items selected in a multi-select list variable 'x'. NOTE: The single argument to ListLength must be the name of a variable.	ListLength(contributing_factors) > 2
ParseInt(x)	Converts a string into an integer value. Causes an error if the argument is not correctly formatted. This function is useful if comparing the value of a selected lookup item. The values are returned as strings and the ParseInt function must be used to convert them to integers.	ParseInt(variable_name) <= 5

Expressions are evaluated with standard precedence of operators. You can place sub-expressions in brackets, or parenthesis to alter the precedence if required.