

ARANZ Medical

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# Hands on Training for Clinical Practice

SilhouetteStar + SilhouetteConnect v3





# aranzmedical

helping people heal people

# Topics

Silhouette™ Product Suite  
Using SilhouetteConnect  
Performing an Assessment  
Noteworthy Topics  
Care and Warnings  
Troubleshooting  
Support

# Silhouette™ Product Suite

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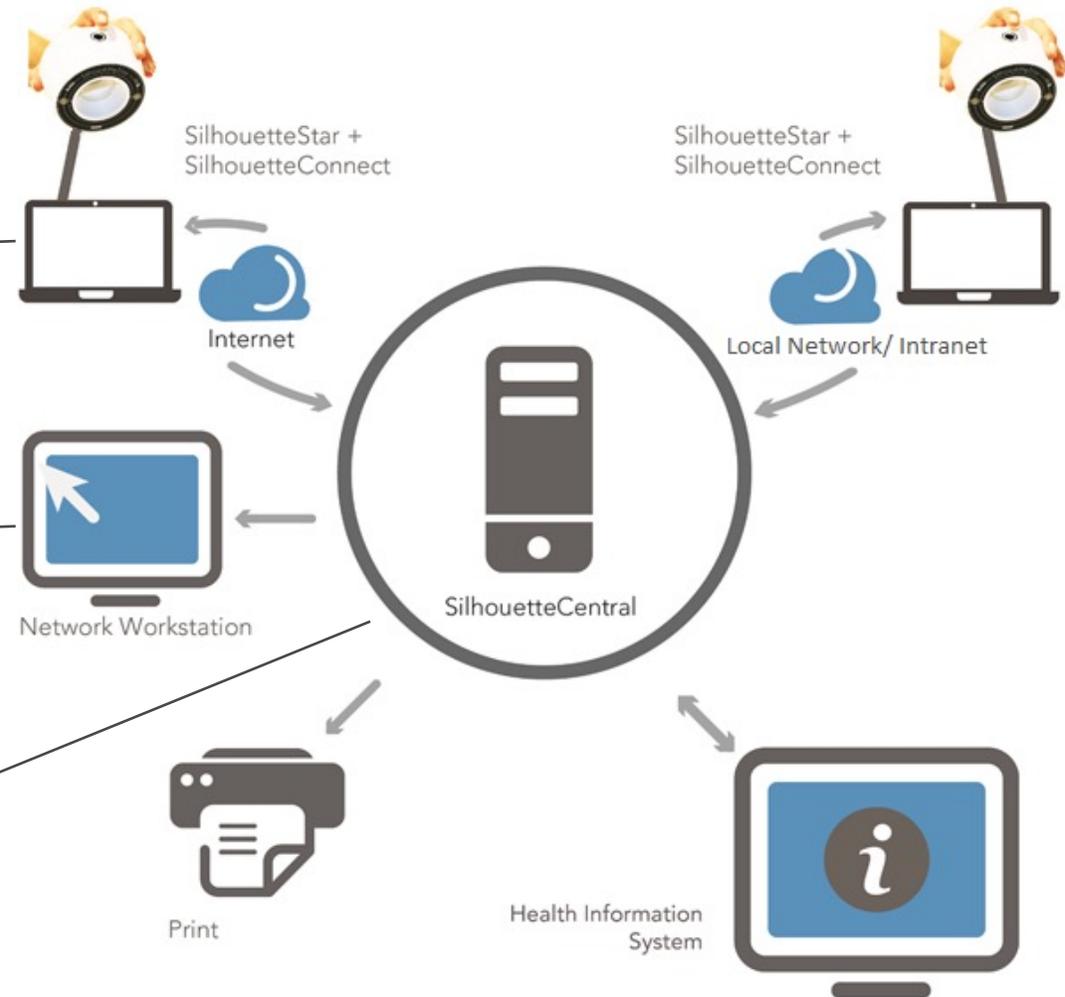
# Silhouette Product Suite

## The Components

SilhouetteStar + SilhouetteConnect:  
Point-of-care device

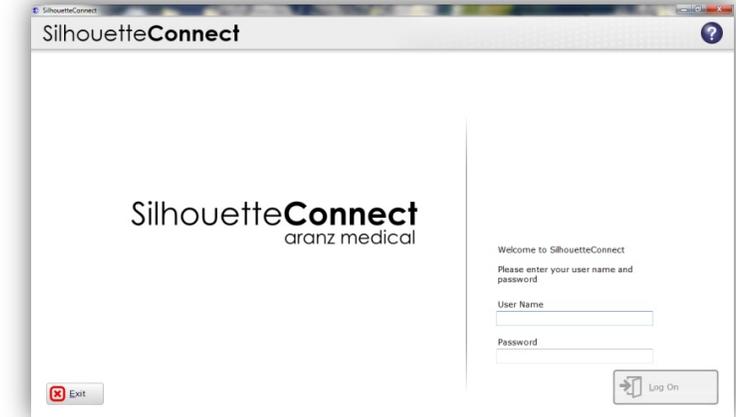
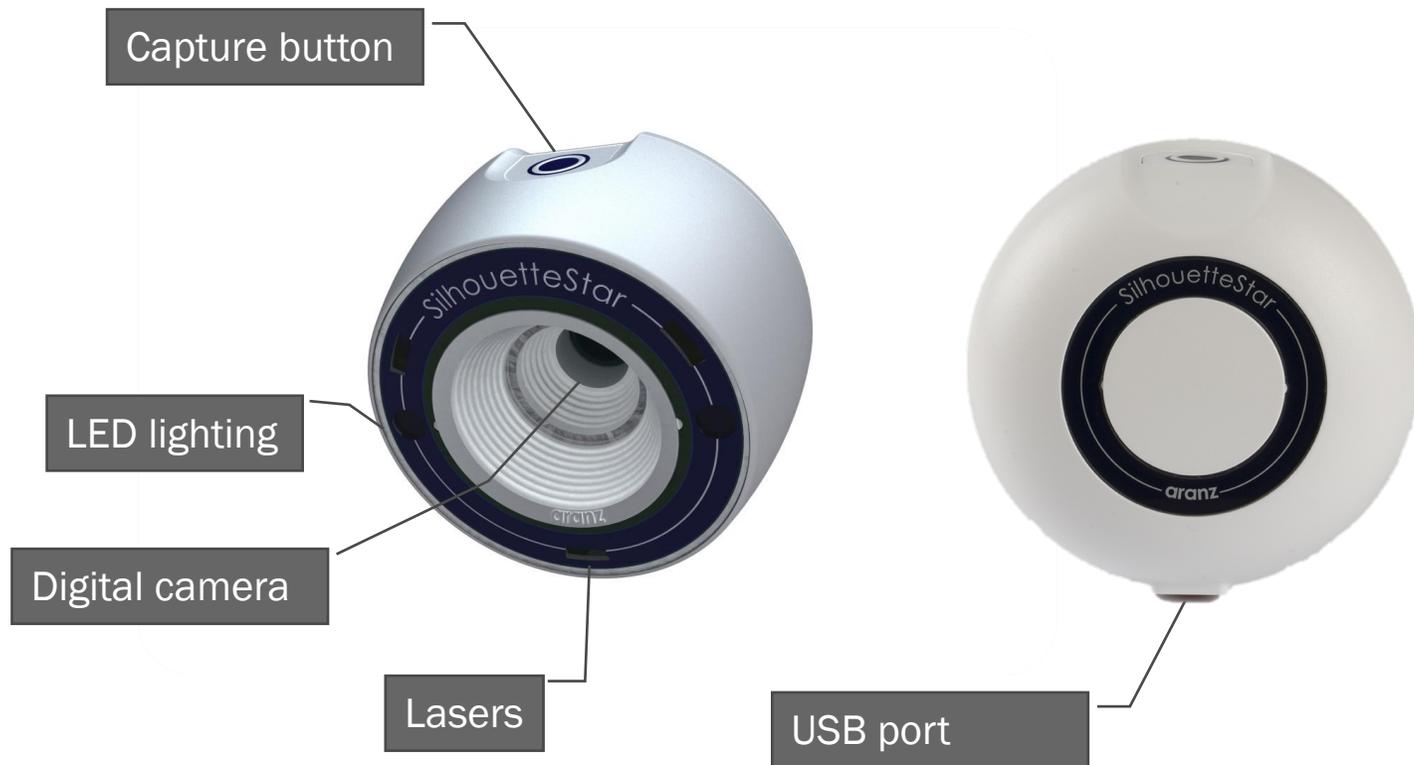
Workstation: Remote access to  
SilhouetteCentral via the Network

SilhouetteCentral:  
Centralized patient  
database & administration



# Silhouette Product Suite

## SilhouetteStar + SilhouetteConnect



SilhouetteConnect Log-On Screen

## Silhouette Product Suite



### Model 2001.xx

- 3MP
- 3D measurement
- Single Button
- USB connected
- Star imaging guidance



### Model 2005.xx

- 5MP
- 3D measurement
- Single Button
- USB connected
- Star imaging guidance

# Silhouette Product Suite

## SilhouetteCentral

- Central storage location
  - For all collected data (images, measurements, reports, etc.)
  - From all users, sites, etc
- Enables review by personnel from remote location
- Interfaces with hospital EMR / health information system (HL7)
- Provides administration functionality for Silhouette including
  - Data management
  - Defining clinical notes



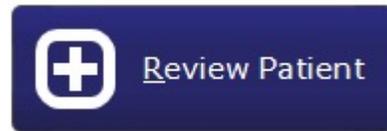
# Using SilhouetteConnect

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# Using SilhouetteConnect

## User Interface Concepts

- Blue rectangle buttons:
  - Primary advancing action (only one per screen)



- Arrows: move to previous screen



- Light Blue outlines: selected focus



- System controls (top right):



Admin, Lock, Help

# Using SilhouetteConnect

## Starting SilhouetteConnect

- Starting SilhouetteConnect
  - Select the SilhouetteConnect icon on your desktop
  - Enter your personal user name and password that has been provided to you
  - Select 'Log On'



Welcome to SilhouetteConnect

Please enter your user name and password

User Name

Password

 Log On

# Using SilhouetteConnect

## Patient Selection

Your name and site details

Search for an existing patient

Select a patient for whom you wish to review or collect new data

Create patients

- enter details for a new patient

Last Name	First Name	Middle Name	Domain ID	Date of Birth
B	J		02-003	1948-02-08
U	F		02-002	1968-07-14
M	P		02-001	1960-09-19

Edit details

- if you need to update the patient's information

Review Patient

- to continue with the selected patient

Delete patients

- cannot delete if there is data recorded against the patient

# Using SilhouetteConnect

## Create Patient – Information to Enter

- Patient ID
- Unit
- Patient's name
- Date of Birth
- Gender
- Address
- Phone numbers

The items with a \* are required fields.

**SilhouetteConnect - Create Patient**

**SilhouetteConnect**

**Details**

ID \*

Unit \*

Last Name \*

First Name \*

Middle Name

Date of Birth \*

Gender \*  Male  Female

**Address**

Street Address

Suburb

City

State

Postcode

Country

**Contact**

Home Phone

Work Phone

Mobile Phone

# Using SilhouetteConnect

## Review Patient: Patient Dashboard

### Displays:

- Patient's details
- Patient's wounds
- Graphs
- Images
- Visit list
- Assessments
- Reports

### Create:

- The Wound
- Notes
- Reports

Select the summary data to view

New Wound  
Select to create first wound

Edit the Assessment

Select the assessment to view

Select what is shown on the image

**John B** Domain ID: 02-003  
Date of Birth: 1948-02-08 Age: 69 years old

**Wounds** + New  
A Left Lateral Malleolus

**Graph: Area cm<sup>2</sup> vs Visit Timeline**

Visit Date	Area (cm <sup>2</sup> )
2017-06-15	24
2017-06-18	12
2017-06-21	10
2017-06-24	8
2017-06-27	6
2017-06-30	5
2017-07-03	4

**Visits** + New

- 2017-07-03 13:04
- 2017-06-26 13:02
- 2017-06-19 12:57
- 2017-06-12 12:52

**Measurements**

Date	2017-07-03
Time	13:05
Area	3.5cm <sup>2</sup>
Max Depth	2mm
Mean Depth	1mm
Volume	0.4cm <sup>3</sup>
Reports	[Icons]

**Image Data:** Area: 3.5cm<sup>2</sup> Max Depth: 2mm Mean Depth: 1mm Volume: 0.4cm<sup>3</sup>  
Granulation: 100.00%  
Captured: 2017-07-03 13:05

# Using SilhouetteConnect

## Synchronization with SilhouetteCentral

- Select Sync on the Patient Selection screen
- Communication is established between the computer and SilhouetteCentral over the internet or intranet
- Once the link is established, information is uploaded to SilhouetteCentral



SilhouetteConnect - Patient Selection

**SilhouetteConnect** Mary Brown Site 002

Search

Last Name	First Name	Middle Name	Domain ID	Date of Birth
B	J		02-003	1948-02-08
U	F		02-002	1968-07-14
M	P		02-001	1960-09-19

**J B**  
 ID: **02-003**  
 DOB: **1948-02-08**  
 Last Assessment:  
 Address  
 Not Available

Export Data  
 Edit Details  
 Review Patient

Create Patient Manage Patients Sync  
 Log Off Delete Patient

# Using SilhouetteConnect

## Manage Patients

On the Patient Selection Screen:

- Press the Manage Patients button



On the Manage Patients Screen:

- Select the patients you wish to download to SilhouetteConnect (your computer) in the right hand pane
- Press the right to left arrow
- Select the patients you wish to remove SilhouetteConnect (your computer) in the left hand pane
- Press the left to right arrow
- Press the Sync Button to apply the changes

Patients available in this SilhouetteConnect

Patients available in SilhouetteCentral

SilhouetteConnect - Manage Patients
Main Administrator Site 002

### Patients on this SilhouetteConnect

Search  Within Site 002

Last Name	First Name	Middle Name	Don
<input type="checkbox"/> B	John		02-
<input type="checkbox"/> U	F		02-

←

→

### Available Patients

Search  Within Site 002

Last Name	First Name	Middle Name	Don
<input type="checkbox"/> M	P		02-

Cancel
Select All
Deselect All

Select All
Deselect All
✓ Sync

The manage patients feature maybe partly or completely automated in your organization

# Using SilhouetteConnect

## Hands on Session

- To do:
  - Create a new patient
  - Create a new wound
  - Synchronize to SilhouetteCentral
  - Manage Patients



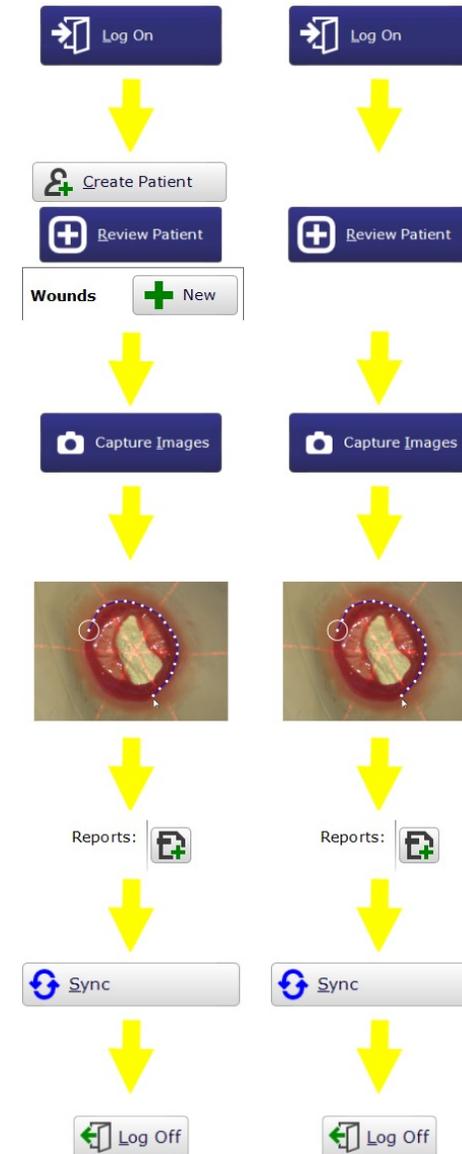
# Performing an Assessment

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# Performing an Assessment

## Wound Assessment Steps

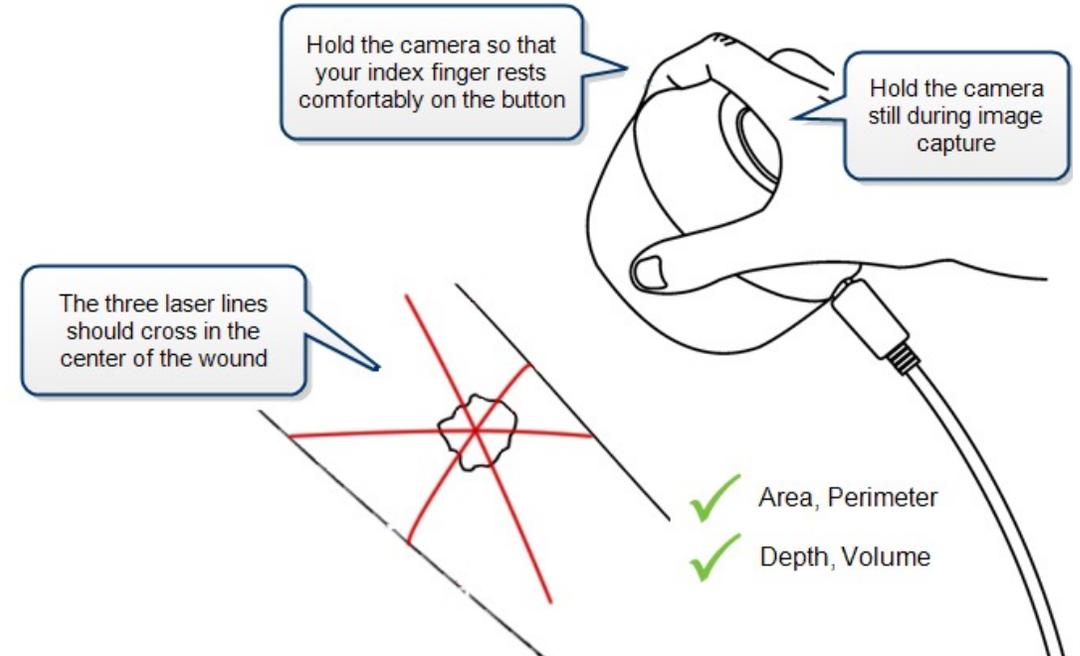
- Start SilhouetteConnect & Log On
- Select patient / create patient
- Review patient using the Patient Dashboard
  - Review patient details (graphs, etc.)
- Data collection
  - Capture image
  - Assign image to wound
  - Trace image
- Sync to SilhouetteCentral
- Log off and/or exit



# Performing an Assessment

## Capturing Images

- Ensure SilhouetteStar is connected to the computer
- Select the 'Capture Images' button
- Hold SilhouetteStar directly over the wound
- Line up the 3 laser lines so they form an \* shape
- The laser lines should cross in approximately the center of the wound
- One of the laser lines should cross the deepest part of the wound
- Hold SilhouetteStar still during image capture

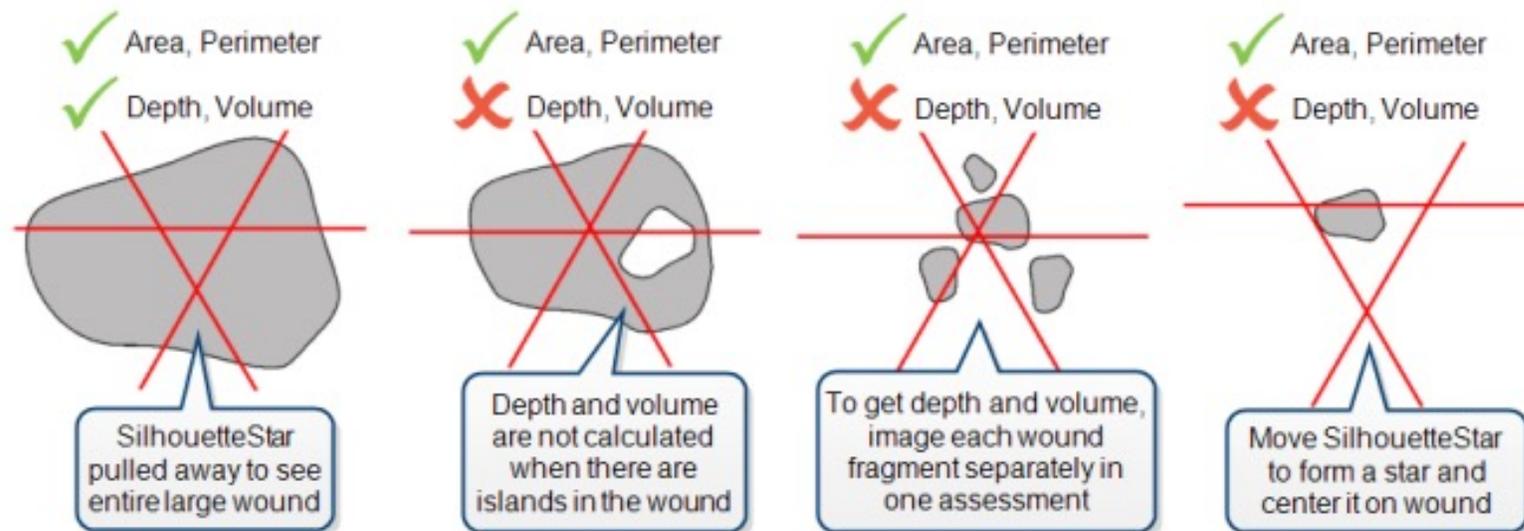


Tip: Always orient SilhouetteStar's capture button to the patient's head. This is important for image review purposes.

# Performing an Assessment

## Star imaging guidance

- The laser lines do not need to cross in a perfect star shape, but the star point needs to be inside the wound for depth and volume to be calculated
- An outline within an outline is called an island – depth and volume will not be calculated for a wound outline containing an island



# Performing an Assessment

## Image Capture: Lighting Requirements

- Normal office lighting levels
- Indirect, white and bright light preferable
- Do not capture images in direct sunlight
- Do not illuminate wound directly with a lamp

# Performing an Assessment

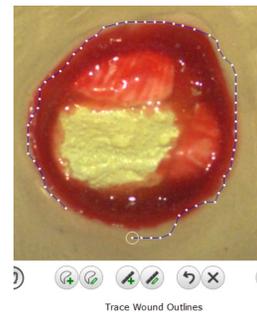
## Assigning and Tracing a Wound

Sequence:

1. Assign image to a wound

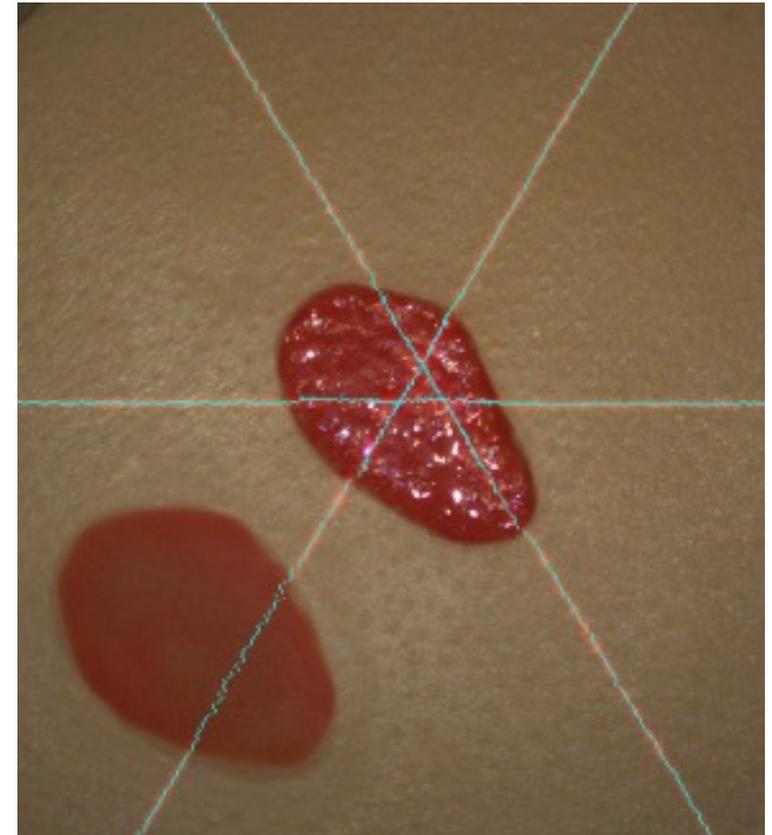


2. Trace outline using mouse or stylus



# Image Quality

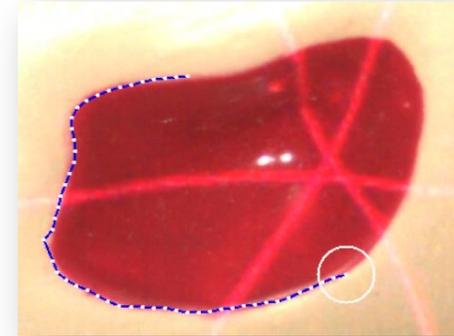
- Ensure there are plenty of laser detections
  - Indicated by the blue/green overlays both inside and outside the wound.
  - If the composite image shows blue/green dots or bright spots in or near the wound that don't correspond to the laser line then consider retaking the image with less ambient light (e.g. have someone shade the wound area)
  
- The 3 laser lines cross inside the boundary
  
- One of the laser lines crosses through the deepest part of the wound



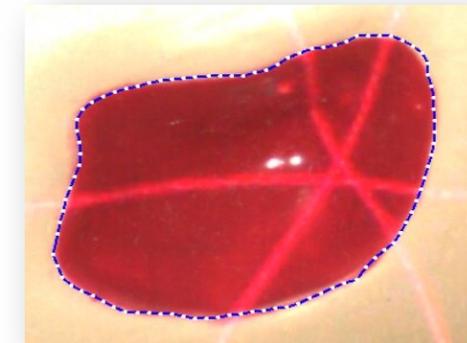
# Performing an Assessment

## Tracing the Outline

- Zoom in so that the wound fills the screen
- Using the stylus or mouse, either draw continuously or dot an outline over the wound boundary in one continuous motion, always in the same direction (e.g. clockwise)
- Stop before the circular target is reached
- Select the circular target to close the wound
- You will not be able to continue (via the 'Done' or 'Trace Tissue' button) until the boundary is closed
- You can adjust any of the points as necessary



Open wound outline



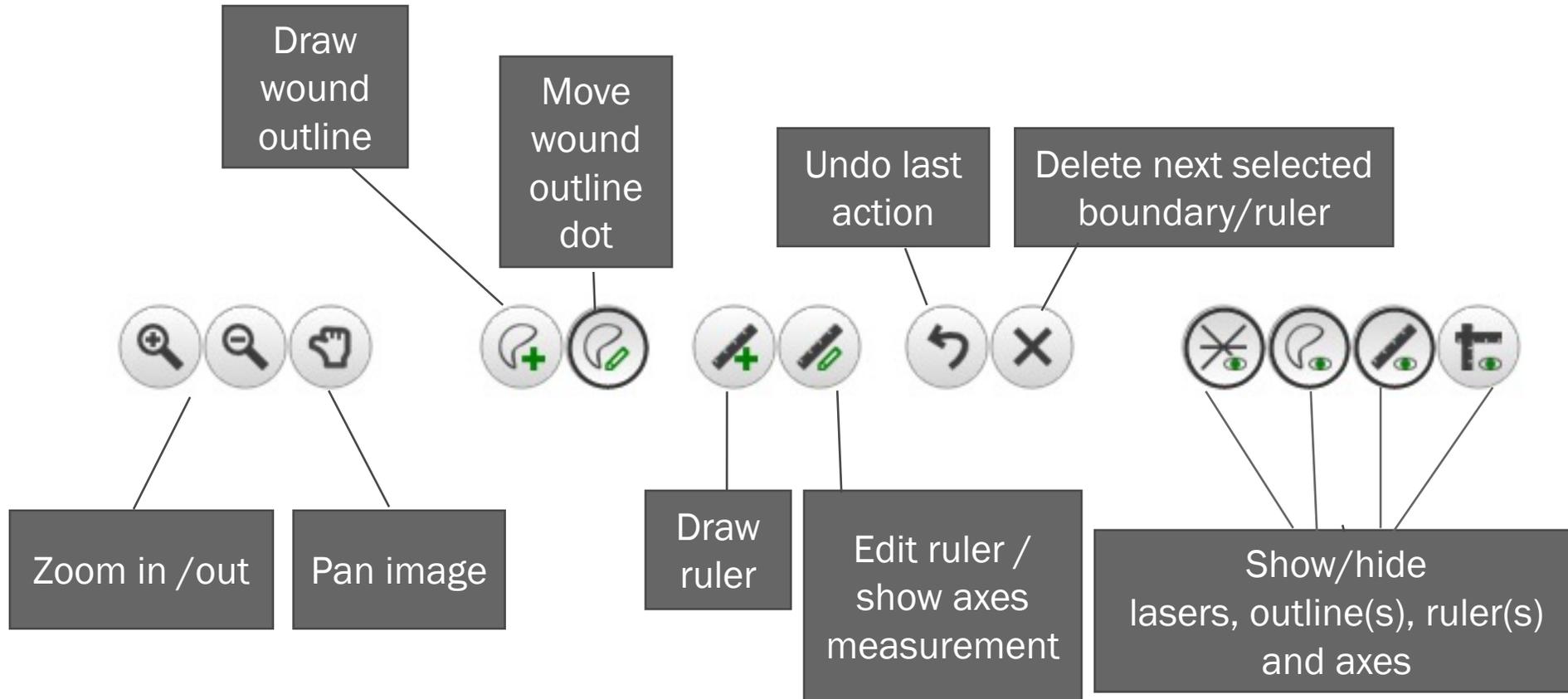
Closed wound outline



The target

# Performing an Assessment

## Toolbar on the Image Tracing Screen



# Performing an Assessment

## Measurement Complete

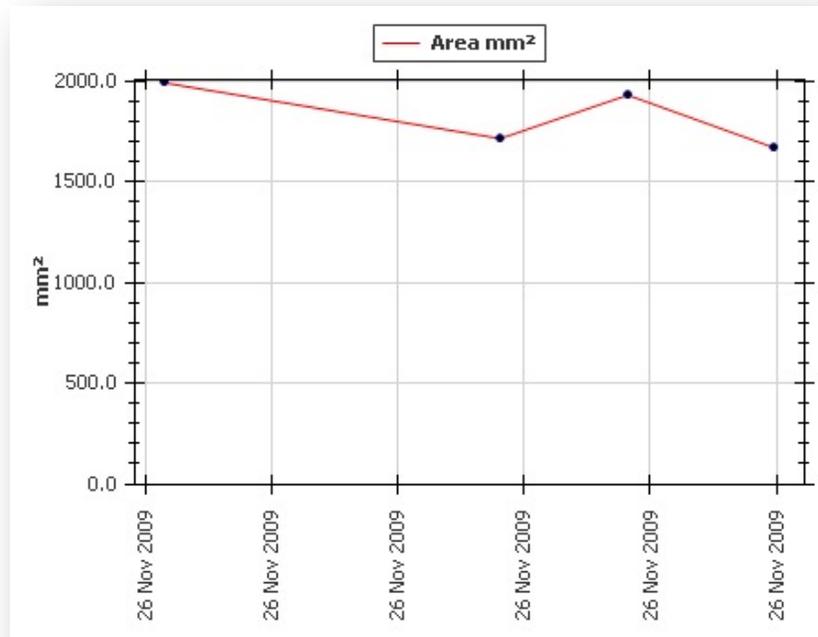
Once you have traced the outline, SilhouetteConnect will display the measurement immediately

Area, depth, volume measurements

If the image has been assigned to the wrong wound, then you can go back to reassign the image



# Wound Boundary Outline Interpretation



Assessment 1



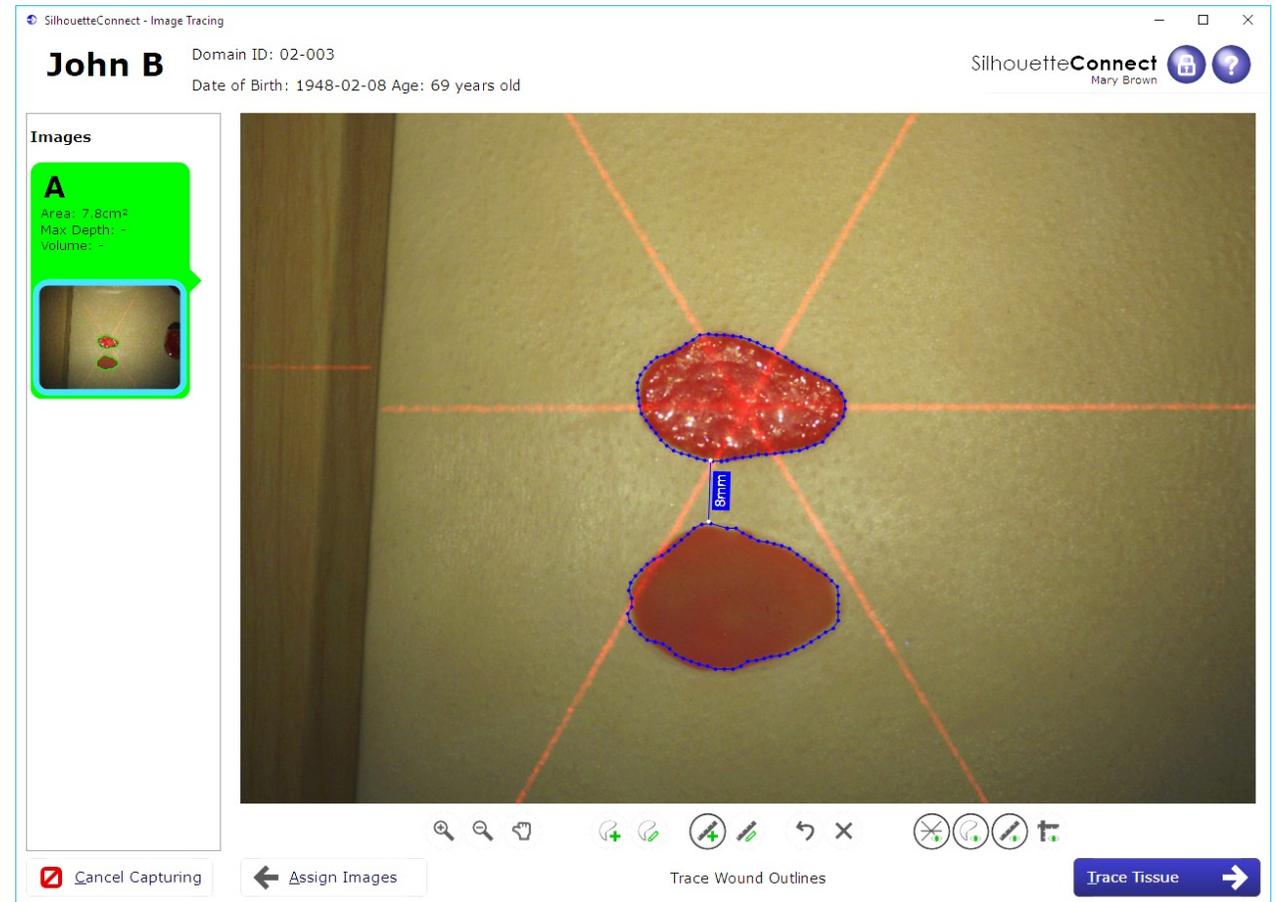
Assessment 2



# Performing an Assessment

## Using the Ruler

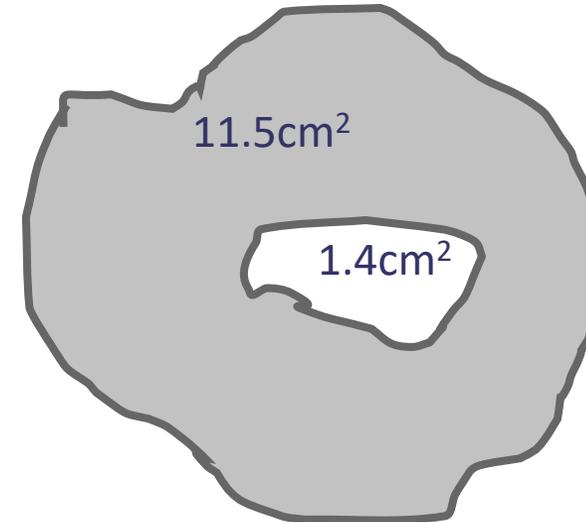
- Select the create ruler tool and click at the start and finish to create a ruler



# Performing an Assessment

## Imaging a Wound with an Island

1. Image ulcer
2. Outline ulcer
3. Draw separate outline of island
4. Area of island will be subtracted from area of target ulcer
5. Multiple islands can be managed
6. Volume will not be calculated



Reported area of wound is 10.1cm<sup>2</sup>

# Performing an Assessment

## Hands on Session

- To do:
  - Image and measure wound



# Performing an Assessment

## Notes - 1

There are 3 types of notes:

- Patient level notes: for information that doesn't tend to change, for example, past medical history
- Visit level notes: patient information captured at the visit, eg vital signs, levels of edema
- Wound level notes: information related to a particular wound, eg wound appearance, type and amount of exudate

To add or edit the information in the notes, from the Patient Dashboard, select the 'Notes' button



# Performing an Assessment

## Notes - 2

- Select the notes type by selecting the relevant notes button
- Enter the necessary information
- Select 'Done' when finished

**John Brown** Domain ID: 12370  
Date of Birth: 1947-04-05 Age: 65 years old

SilhouetteConnect

**Patient**

**Visit**  
2013-03-02 14:25

**Wound Etiology**

Vascular

Neuropathic  Autonomic  Motor   
 Sensory

Pressure

Surgical

Skin tear

Burns

Cancerous wound

Pilonidal wound

Skin graft

Donor site  NA  Yes  No

Wound etiology: Other

Wound precursor

Duration of wound at assessment (weeks)

Recurrent wound  NA  Yes  No

**Medical History**

Current conditions

Diabetes  Cardiac condition  
 Anemia  COAD  
 Rheumatoid arthritis  Autoimmune disorder  
 Hepatic failure  Malignancy  
 Peripheral vascular disease  Neurological disorder

New Note...

Cancel  Done

# Performing an Assessment

## Generating a Wound Assessment Report

From the Patient Dashboard:

1. Select the visit from the visit list
2. Select the 'Create Report' icon on the measurement tab
3. Change the content of the report by selecting the relevant hyperlink
4. Select 'Generate'

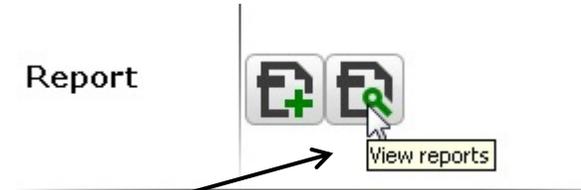


# Performing an Assessment

## Viewing a Wound Assessment Report

From the Patient Dashboard:

- Select the visit from the visit list
- Select the 'View Report' icon from the measurement tab
- The selected report can be viewed (or deleted or exported)



### View Assessment Reports

Assessment 2013-01-28 05:36:40 p.m.

Wound A Left Calf

Reports

Type	Creation Date
Wound Assessment	2013-01-31 09:31:55 a....

Close
Delete
Export
 View

# Performing an Assessment

## Hands on Session

- To do:
  - Create some Notes
  - Generate a Wound Assessment Report
  - Synchronize with SilhouetteCentral



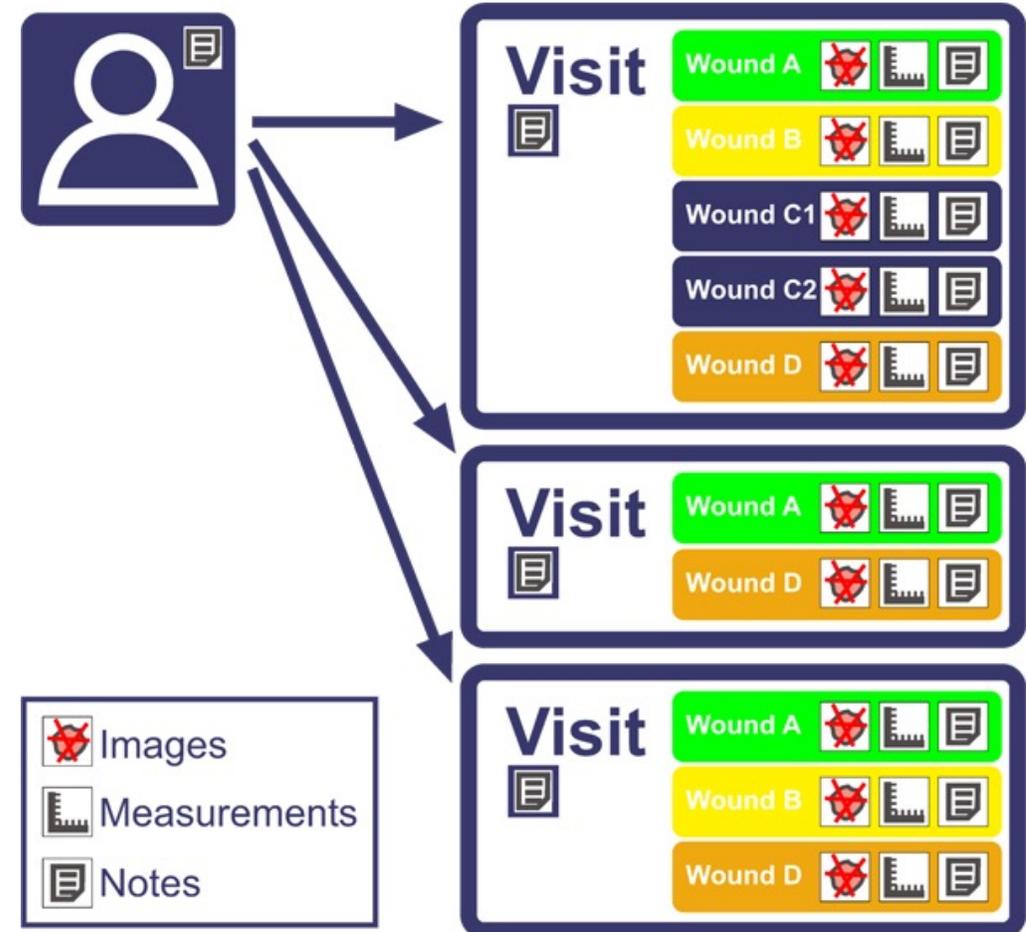
# Noteworthy Topics

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# Concepts: Visits and Assessments

## Visits and Assessments

- Visit
  - A distinct period of time over which one or more assessments from one or more wounds are captured for a particular patient
  - A visit can be no longer than 12 hours (by default)
- Assessment
  - A combination of image(s) and notes collected at a point in time for a particular wound, resulting in a single set of area, depth and volume measurements and/or wound notes



# Healing a Wound

- To indicate a wound has healed:
  - Select the gear icon on the wound you wish to signify as healed
  - Select 'Heal Wound' from the pop-up box and enter the date the wound healed
  - When a wound has been signified as healed, the wound appears grayed, and moves to the bottom of the list
  - You can “reopen” a wound by selecting the gear icon on the wound you wish to “reopen” and then select 'Reopen Wound'



## Changing the Anatomical Site

- On the dashboard, select the gear icon on the wound label whose anatomical site you need to change
- Select 'Change Anatomical Site', and make the necessary changes



### Change Anatomical Site

A
Left Shoulder

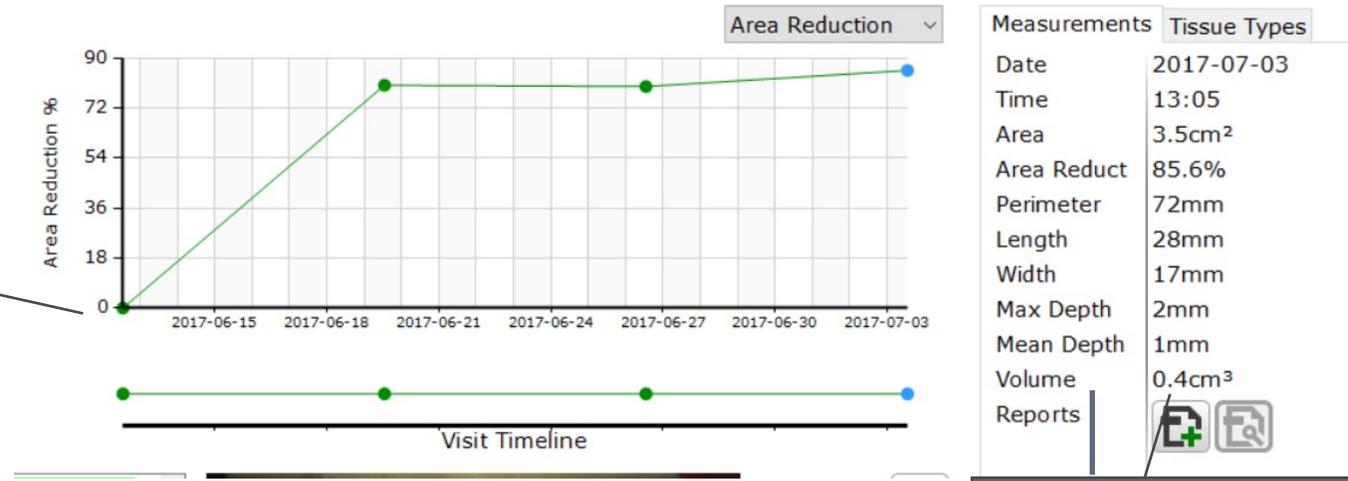
Group	<input type="text" value="Upper Extremity"/>
Gross Division	<input type="text" value="Shoulder"/>
Handedness	<input type="text" value="Left"/>
Region	<input type="text"/>
Aux. Text	<input type="text"/>

Cancel
 Update

# Area Reduction and Wound Baseline

- Area reduction is the % change in area compared to a baseline measurement
- By default the baseline measurement is the first assessment that has an area measurement but it can be changed

First dot on the graph is the baseline and is always at 0%



Measurements for the currently selected Assessment

## Changing the Area Reduction Baseline

- On the dashboard, select the gear icon on the wound label whose baseline you need to change
- Select 'Change Baseline'
- Select the assessment that you want to be the baseline measurement and press update



## Editing an Image / Measurement

- From the Dashboard select the edit button

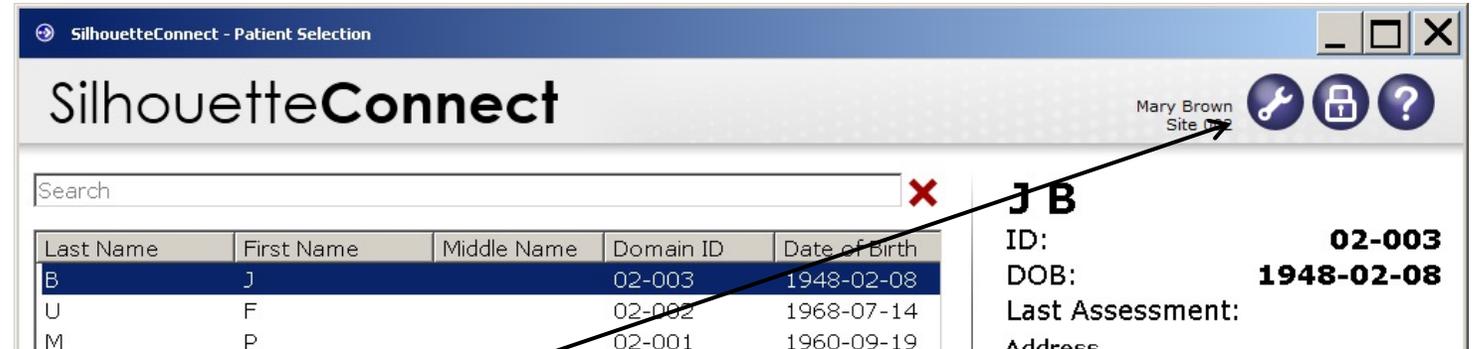


- Use the following tools, to edit or redraw the wound outline, etc

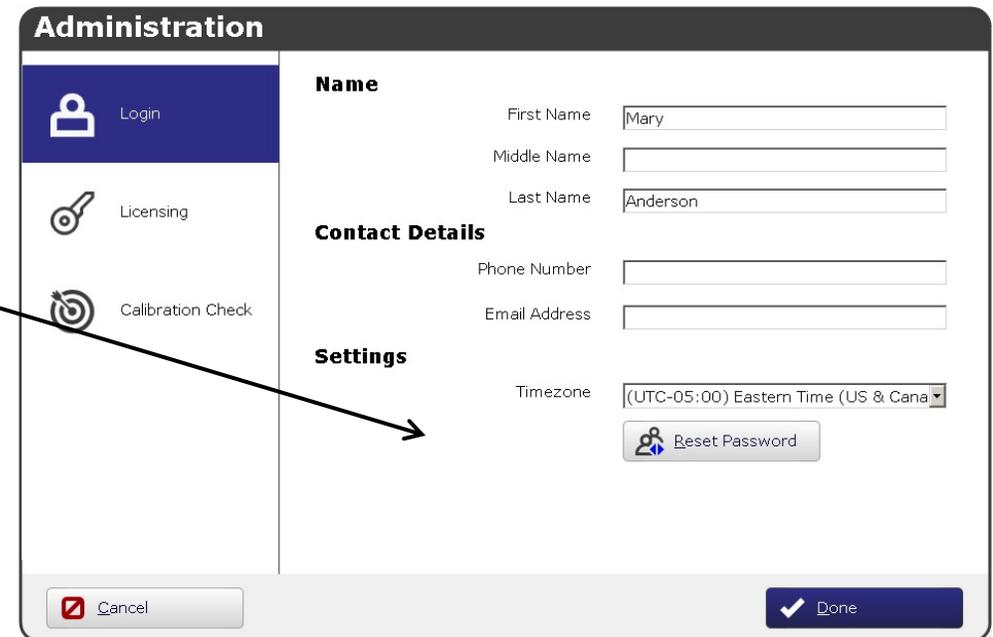


- Select 'Done' to save the changes

# Resetting a Password



- Users can reset their own password at any time, by selecting the admin (wrench) icon from the Patient Selection screen
- Select the 'Reset Password' to initiate the process



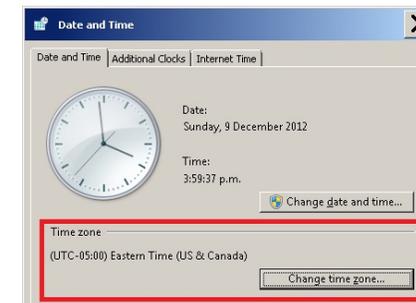
# Your Computer

## Date, Time, Time-zone:

- The computer's clock is used by Silhouette for the date/time of the assessment, visit, etc - please ensure it is always correct

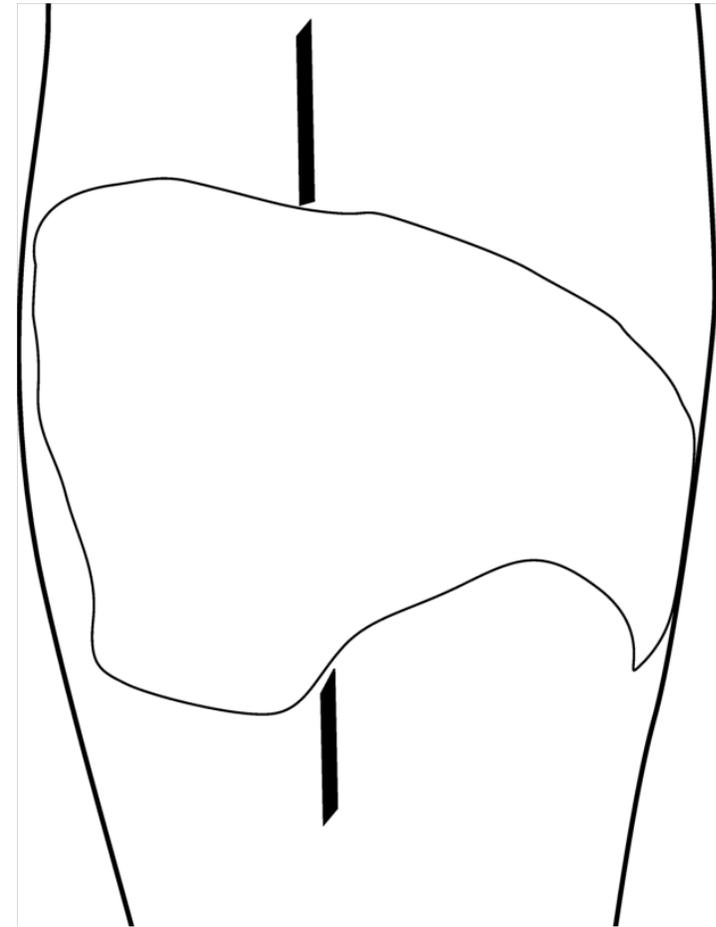
## Batteries:

- When not using your laptop or tablet, keep it charging
- For a tablet, it is recommended to keep the battery life above approximately 20% - but keep near 100%



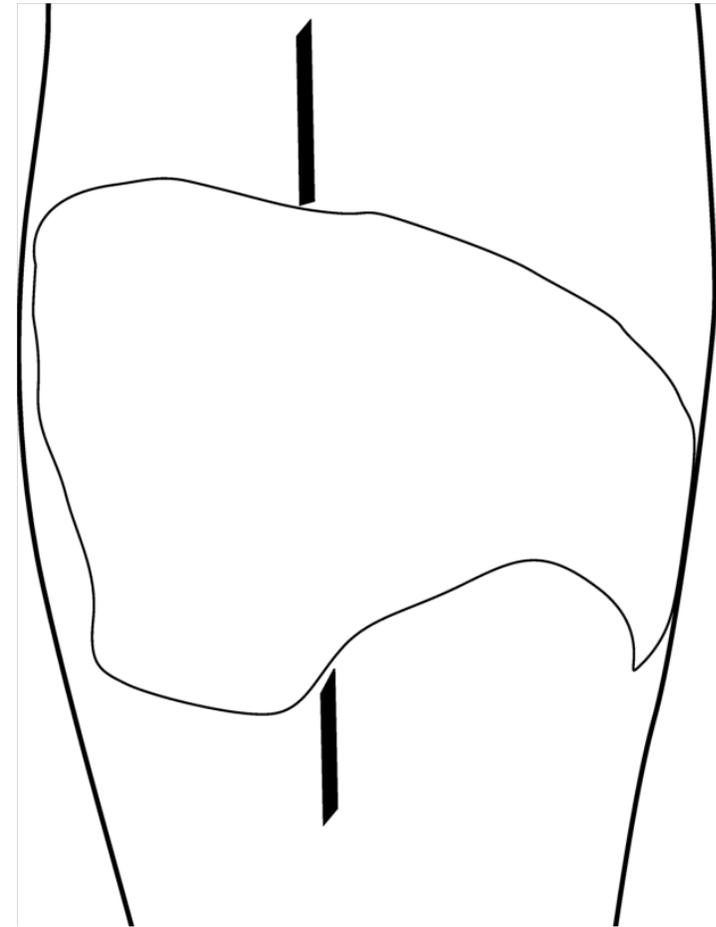
## Capturing a Multiple Image Assessment - 1

- A wound that is approximately 20cm on its longest side and viewable from a single camera viewpoint can be captured in one image
- For larger wounds or wounds where images can't be captured in one viewpoint, multiple images need to be taken
- SilhouetteConnect automatically combines measurements from images assigned to the same wound in the same assessment



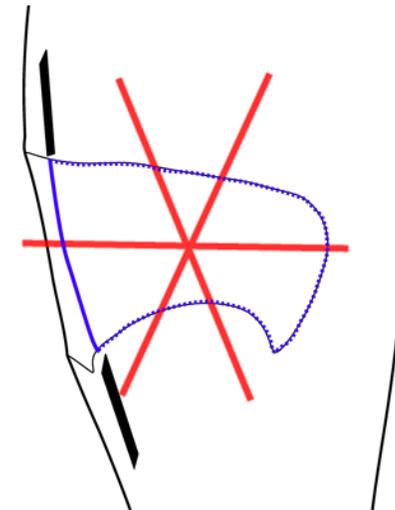
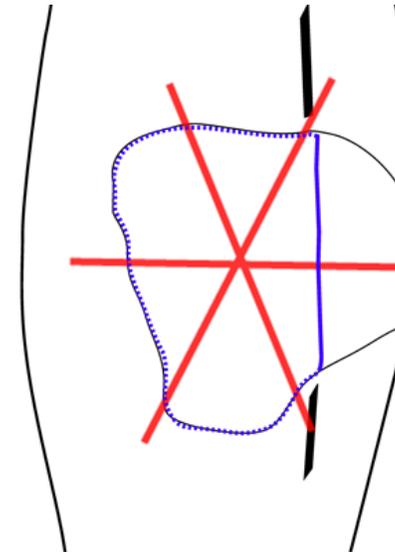
## Capturing a Multiple Image Assessment - 2

- Steps
  1. Plan where the different images of the wound will be captured
  2. Use a surgical marker to mark on healthy skin where the edges of the different images will be located



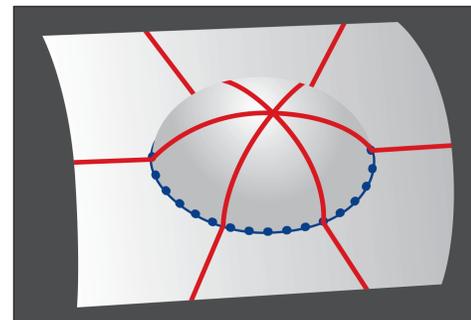
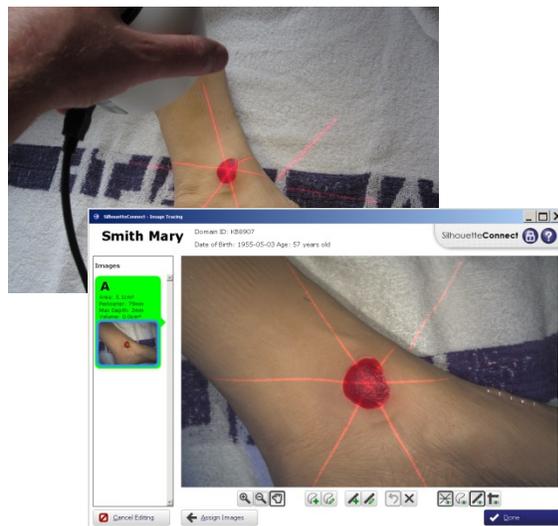
## Capturing a Multiple Image Assessment - 3

3. Capture an image of each segment of the wound and the surgical marker lines. Ensure the laser crossing point is located within the wound segment
4. Assign each image to the same wound (eg. all Wound A)
5. For the first image, start at the surgical marker point and trace the wound boundary, stopping when you reach the other surgical marker point, then select the target to close the wound outline
6. For the next image, trace the second segment



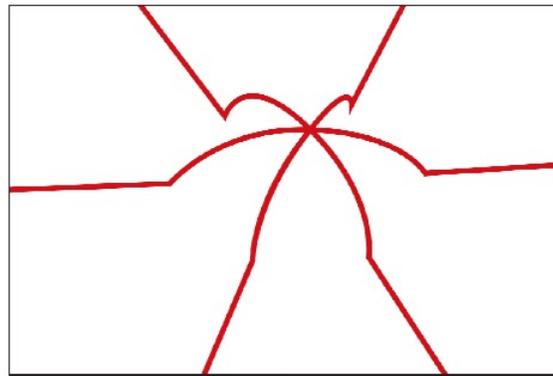
# How Does Silhouette Make Measurements

- When the image capture button is pressed SilhouetteStar captures a series of images with and without laser lines
- From these it creates a 3D mathematical model of the wound
- From this model, and together with the user-drawn outline, the wound dimensions are determined

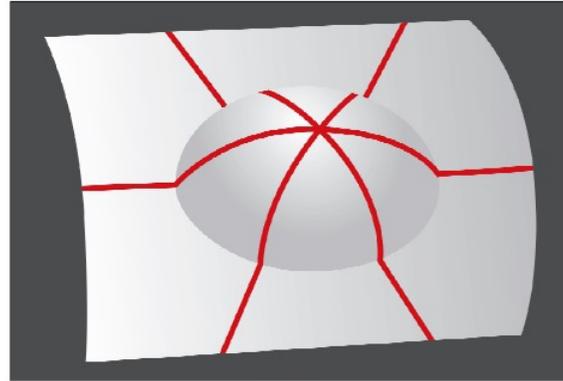


Area  
Perimeter  
Maximum depth  
Mean depth  
Volume

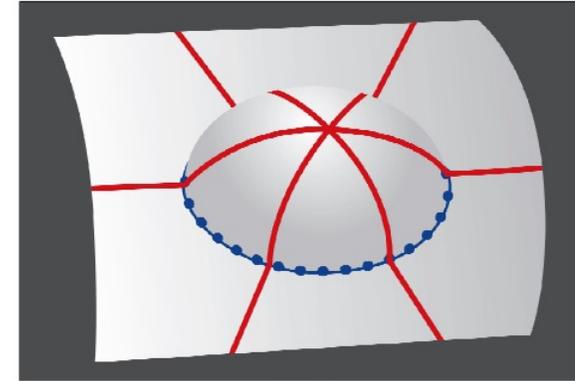
## Wound Model Creation – Convex Surface



(a)



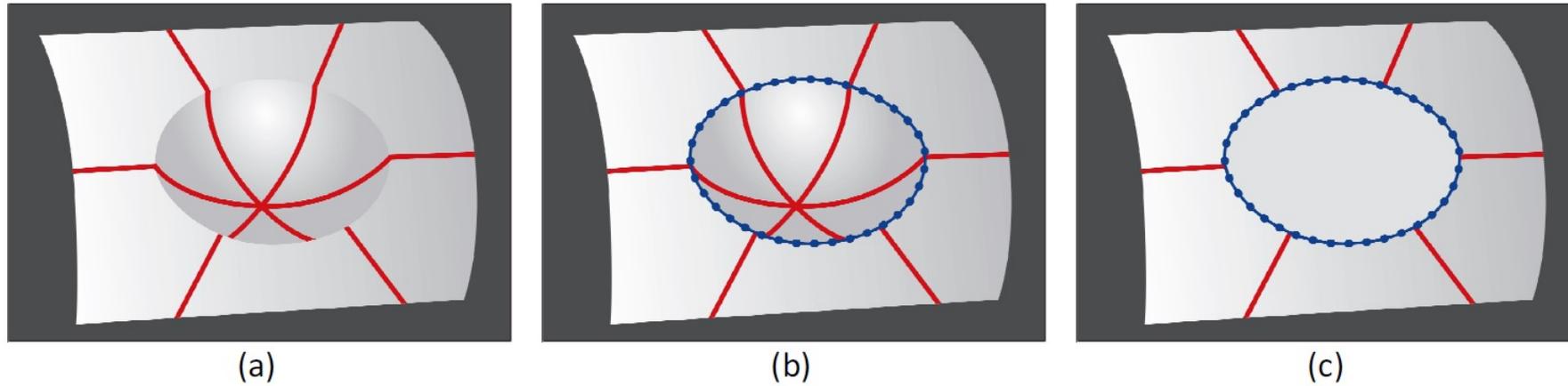
(b)



(c)

- a) the laser lines in three dimensional space
- b) a surface is stretched over the three laser lines
- c) the user drawn outline (blue dotted line) is added to the wound model

## Wound Model Creation – Concave Surface



- a) a surface is stretched over the three laser lines
- b) the user-drawn outline (blue dotted line) is added to the wound model
- c) a cap is stretched across the user-drawn outline, over the concavity

# Care and Warnings

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## General Care

- Laser and LED lighting may interfere with other equipment in the clinical environment.
- If cable becomes lost or damaged, please contact support for a replacement (do not use a generic USB cable).
- Do not use in high humidity or high temperature conditions.
- If you need to return SilhouetteStar for service please ensure that the camera is thoroughly wiped clean prior to shipping.
- Don't leave the camera in places where it will be exposed to temperature extremes for extended periods of time, e.g. don't leave in a vehicle in the hot sun or in freezing conditions.
- More detail in the Quick Reference Guide supplied with the camera.

## Care and Maintenance

- SilhouetteStar should be cared for as for any precision optical instrument
  - Do not knock, drop or shake any components of the device
  - Ensure there is no dirt, moisture or scratching over the camera, laser and LED apertures on the front of the device
- After use, SilhouetteStar should be placed face down onto a smooth flat surface
- Care should be taken to avoid placing SilhouetteStar on abrasive surfaces since this may cause scratching to the front optical cover
- Care should also be taken to ensure the cable is carefully placed to avoid tripping and snagging
- There are no user servicable parts in SilhouetteStar

# Cleaning the SilhouetteStar

## ➤ Compatible Cleaning Agents

- *Mild Detergent* - water based wipes
- *Alcohol (isopropyl) based wipes*
- *Hydrogen Peroxide based wipes*

Ensure excess fluid from wipes does not enter camera openings. Do not submerge.

## ➤ Cleaning Agents to Use With Caution

- *Manual physical cleaning* - avoid abrasive materials. Scratching of the optical covers may negatively impact measurement accuracy.
- *Bleach based wipes, low effective concentration (1:50, 1:100)* - avoid long term exposure.
- *Bleach based wipes, high effective concentration (1:10)* - avoid long term exposure.

# Cleaning the SilhouetteStar

- **Non-Compatible Cleaning Agents**

- *Ultrasonic cleaning* – SilhouetteStar is not designed for liquid submersion.
- *Ultra-Violet cleaning* – SilhouetteStar is not designed for exposure to high levels of ultra-violet light. Damage to the optical components could occur.
- *Steam* – SilhouetteStar is not designed for contact with steam.
- *Thermal Disinfection* – SilhouetteStar is not designed for thermal disinfection.

- Complete document available in the User's Guide

# Laser Safety

- Read the appropriate sections of the User's Guide or Quick Reference Manual.
- SilhouetteStar incorporates lasers. These are Class 1 lasers for all operational procedures. However, the following precautions are recommended:
  - Never stare into the laser beam and warn patients not to stare into the laser beam. Young children, or patients whose natural aversion reflex may be dulled due to medication or a medical condition, may be advised to wear a blindfold
  - Do not use in a manner that causes the laser light to shine into people's eyes
  - Operate the device so that it is pointing away from windows, doors, mirrors and other shiny reflective surfaces, and areas where other people are working
  - Do not view the lasers with optical instruments
  - There are no controls, adjustments or user serviceable parts that can affect the laser output. In the event of equipment failure, contact the manufacturer or agent for repair and servicing

# Computer Related

- Appropriate procedures must be in place to safeguard the physical security of the computer
- Do not try to view Silhouette program file data (i.e., via the Windows Explorer menu) unless specifically directed to do so by a Silhouette administrator or support personnel
- Ensure wireless interface(s), such as Bluetooth and Wi-Fi are secured

# Troubleshooting

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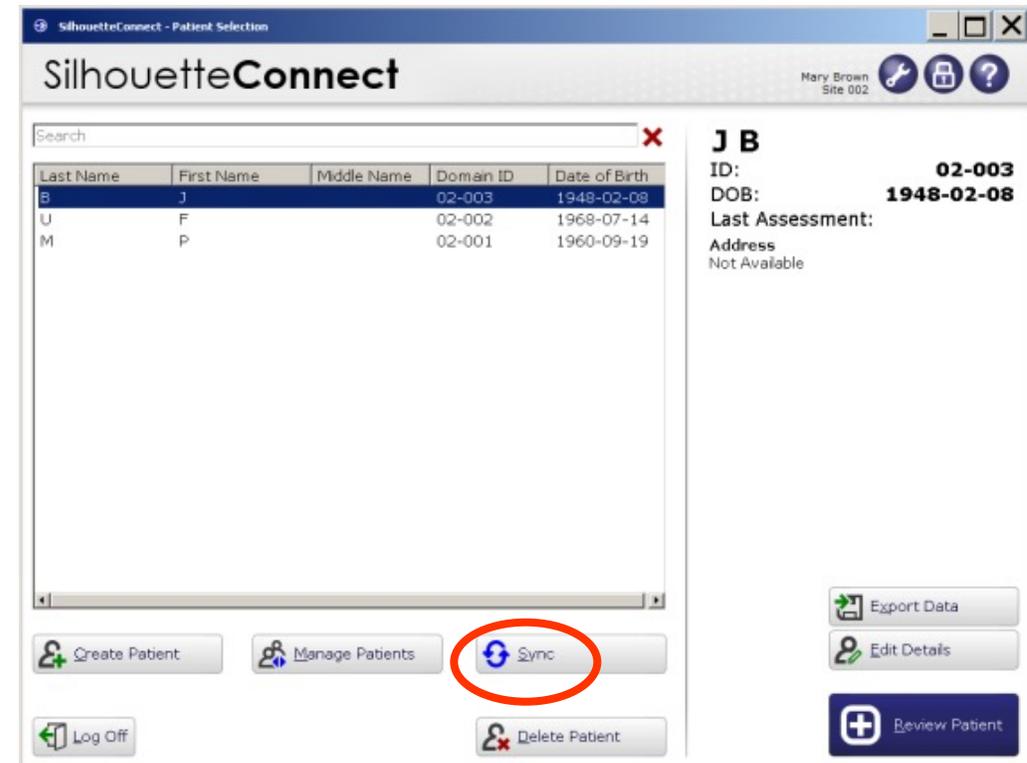
# Troubleshooting: The USB Connection

- If you are asked to connect SilhouetteStar
  - Ensure SilhouetteStar is connected with both ends of the USB cable plugged in fully
  - Note that it may take up to 30 seconds for the computer to recognize SilhouetteStar (when plugged into a USB port for the first time)
  - If this does not resolve the issue, try these different steps:
    - Disconnect the USB cord from the computer and then reconnect
    - Try different USB port
    - Restart SilhouetteConnect
    - Reboot your computer and retry
  - If you continue to experience problems, please contact your support contact person
  
- Note: Normal SilhouetteStar process of connecting via USB
  - Every time SilhouetteStar connects to the PC, it follows a connection, disconnection and reconnection process
  - If the sound is on, you will notice the PC chiming 3 times; i) rising chime when it connects, ii) falling chime when it disconnects, iii) rising chime when it reconnects. This process generally takes 5 seconds

# Troubleshooting

## Synchronization

- Synchronization to SilhouetteCentral
  - If the 'Sync' button does not show: Contact your support contact person (your synchronization link to SilhouetteCentral is not configured)
  - If synchronization fails - are you connected to the internet? Check by opening Internet Explorer and attempt to browse the Internet
  - Does your office environment have a proxy server or firewall in place, that may prevent the software reaching silhouettecentral.com?
- If you continue to experience synchronization problems, please contact your support contact person



# Support

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## Contact Details

Please replace this slide with details of how user would contact customer support.



# Training Complete



