WINDOWS WORKSTATION | OPERATING GUIDE

ThrombUS+

Clinician and Patient User Manual

A practical guide to patient setup, scheduled monitoring, examinations, rehabilitation and recorded results.

Edition 1.0 | 17 November 2026 | Windows 10/11 x64 | English

1 Prepare — 2 Measure — 3 Save — 4 Review

For patients

Follow your assigned monitoring and exercise plan, understand prompts, and know when to ask for help.

Start with the patient quick start

For clinicians

Select the correct patient, configure examinations, prescribe activities and review retained evidence.

Start with the clinician checklist

Current implementation edition. This guide describes software operation in source revision **1a8cb20c2059**. Formal physical and clinical acceptance remains pending. Use the device manufacturers' instructions and your organization's authorized clinical protocol alongside this manual.

CHOOSE YOUR ROUTE

Contents

Patient chapters use plain step-by-step instructions. Clinician chapters describe setup, review and prescribing tasks. The shared chapters cover access, stopping, saving, troubleshooting and data care.

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START HERE | SHARED

01 Read this first

Understand what this guide covers before using the workstation.

ThrombUS+ is a local Windows application for patient records, thrombosis-related monitoring, device acquisition, recorded-data review, risk summaries and rehabilitation activities. The standard workflow uses predefined workstation modes and PINs rather than registration or sign-in with an individual medical specialist account.

Who should use which chapters?

- **Patients and assisting carers:** read chapters 1-2 and 4-11, then the shared recovery and troubleshooting chapters.
- **Clinicians:** read the shared chapters and chapters 3 and 12-24, including the relevant examination instructions before a handover.
- **Technical staff:** use the final data-care chapter with the separate deployment and device guides for installation, provisioning and backups.

Before first use

- [ ] Use the commissioned Windows 10/11 x64 workstation with WebView2 Runtime and the drivers required by the connected devices.
- [ ] Have a clinician establish the patient, examination settings, sensor placement and activity plan.
- [ ] Check that the actual devices and their identities match the intended examination.
- [ ] Keep the manufacturer's instructions available for fitting, placement, cleaning, electrical precautions and contraindications.
- [ ] Know the local contact for clinical questions and the local contact for technical problems.

> **CLINICAL USE BOUNDARY**
> Software connectivity, a completed recording, model execution and a saved file each mean something different. None alone establishes that a measurement is clinically valid. Formal physical and clinical acceptance remains pending in the current project documentation.

This manual supplies operating instructions, not a diagnosis, treatment recommendation or a device fitting protocol. Patients should follow their treating team's instructions and seek help if the displayed task, physical setup or response is unclear. The application is not an emergency contact service.

How to read the instructions

Bold text identifies visible labels and actions. An instruction such as **DVT Monitoring > Imaging > LRR** is a navigation path. Screenshots show production interface components with synthetic patients and simulated device responses; they illustrate controls and do not show a physical examination.

Controls depend on the operating mode, selected patient, device capabilities and current acquisition state. If a control is unavailable, use the displayed explanation and the troubleshooting chapter rather than trying to bypass it.

START HERE | SHARED

02 Modes and navigation

Check the patient and the mode before every task.

The standard application starts in **Clinician Mode**. The header identifies the current mode and selected patient. On smaller windows, use the menu button to open navigation.

Mode or workspace	What you can open	How you enter
Patient Mode	Dashboard, DVT Monitoring, Exercises and Games. DVT Monitoring opens the scheduled Monitoring view.	A clinician chooses **Select & Lock** or **Lock to patient**.
Clinician tools	Manage Patients, Patient Plans, Risk Assessment, LRR Sessions, VOP Sessions, Ultrasound Sessions and Exercise Studio.	Start the standard application or unlock clinician access with the configured clinician PIN.
Clinician patient workspace	The patient navigation plus **Clinician tools**. DVT Monitoring includes Imaging, Analysis and Monitoring.	Choose **Open as clinician** for a patient.
Maintenance Mode	Device Settings and Data Management for technical support.	Use Maintenance access and the configured maintenance PIN.

Unlock clinician access

01 Select the header lock control, labelled **Unlock clinician access**.

02 Enter the clinician PIN supplied by the workstation administrator.

03 Confirm that **Clinician Mode** is shown. The selected patient and current patient-workspace page are retained. With no selected patient, successful access opens Manage Patients.

Return the workstation to a patient

In the clinician patient workspace, open **Clinician actions** and choose **Lock to patient**. The current patient is preserved. If Imaging or Analysis was open, the workstation switches to Monitoring. Choose **Clinician tools** to return to the staff navigation when needed.

> **PROTECTED TRANSITIONS**
> Changing patient, leaving a page or changing mode can wait for an examination or save to finish. If navigation is refused, complete the existing Stop, save or recovery action on the current page. If mode confirmation fails, use **Retry** in the blocking view and wait for confirmed state.

Opening a link does not choose a different patient. The patient comes from the selected workstation context. Patient Mode cannot use Imaging or Analysis through a saved clinician link; those links open Monitoring instead.

START HERE | CLINICIAN

03 Patient records and handover

Create or select the correct record before recording or prescribing.

Clinician tools > **Manage Patients**

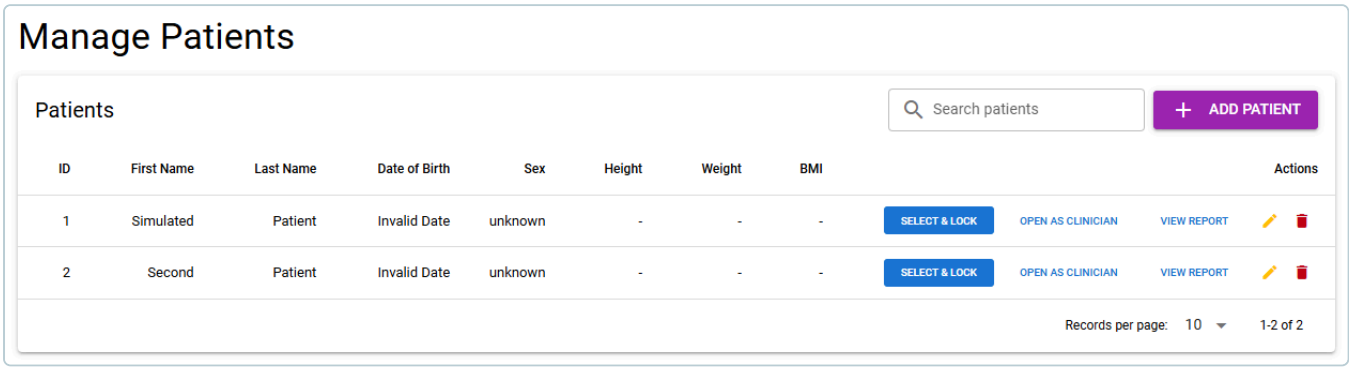


Figure 1. Patient roster with synthetic records. Check the row and patient identity before choosing an entry action.

Add or edit a patient

01 Choose **Add Patient**, or the edit pencil on the correct row.

02 Enter or review first name, last name, date of birth and sex at birth. Record height in centimeters and weight in kilograms when available. The application calculates BMI from height and weight.

03 Choose **Save** and check the saved row. Use **Search patients** and the sortable table columns to locate records.

Choose the entry action

- **Open as clinician:** select the patient and open Dashboard while retaining clinician privileges. Use this for preparation, examination and review.
- **Select & Lock:** select the patient, confirm Patient Mode and open Dashboard. Use this when the patient is ready to follow the assigned workflow.
- **View report:** select the patient in Clinician Mode and open the retained history report.

The header patient selector offers the same two workspace entry choices: Select & Lock and Open as clinician. View report is available on the patient's roster row. Patient switching waits for active examination and save guards. After a successful switch, verify the header before taking the next action.

> **DELETE IS A RECORD-MANAGEMENT ACTION**
> The roster includes a Delete Patient control. Use it only under your organization's retention and authorization process. Do not use deletion to clear an examination error or resolve a pending save.

PATIENT GUIDE | QUICK START

04 Your daily quick start

Use only the monitoring and activities your clinician has prepared for you.

01 **Check your name.** Confirm that the workstation shows your patient record and Patient Mode. If the name is wrong, stop and ask the clinician or assisting staff to correct it.

02 **Read Dashboard.** Review the patient summary, plan information and next actions. Ask your care team about any instruction you do not understand.

03 **Open DVT Monitoring.** Read **Next examination**, its date and the preparation text. Choose **Open examination** when you are ready.

04 **Prepare and check readiness.** Follow the on-screen placement and positioning guidance together with your clinician's instructions. An examination begins only after you press its Start control.

05 **Follow the prompts.** Stay on the examination page until it finishes and the saving status is resolved. For a problem, use the available Stop or Cancel control and ask for help.

06 **Check that saving completed.** If the screen says saving failed or shows **Retry save**, keep the application open and request assistance. Choose **Done** when offered after successful saving.

07 **Open Exercises or Games** for the activities assigned in your plan. Read the prescribed side, position, sets, repetitions and notes before beginning.

1. Check	2. Prepare	3. Start	4. Follow	5. Save
Your name and task	Position and devices	Press the Start control	Prompts and progress	Wait for confirmation

PRESSURE STOP

When an examination view is open, the red **Emergency stop** button and F8 request both pumps to stop and both release valves to open. Read the stop feedback and get assistance if release is not confirmed. Follow your care team's and device manufacturer's instructions if pressure or discomfort persists.

Do not change your own prescription, sensor identity or examination settings. If no examination, exercise or game appears, contact the clinician rather than selecting a different patient or trying to unlock staff access.

For detailed steps, continue with the monitoring and activity chapters. For recovery, see Stopping, saving and closing and Troubleshooting.

PATIENT GUIDE | SHARED WORKSPACE

05 Understand Dashboard

Dashboard brings the selected patient's summary and recent activity together.

Patient workspace > **Dashboard**

Area	What it shows	How to use it
Current Risk Assessment	The retained risk tier, headline and a summary appropriate to the current mode.	Patients read the patient summary. Clinicians also see confidence, validation and the next clinician action.
Activity Integrity	The latest LAM activity capture and weekly session count, active duration and adherence information.	Check that recent activity is represented. Missing activity or unavailable data needs review, rather than being read as a normal result.
Plan & Adherence	The active plan and its assignments, sets, repetitions, next due information and recorded completion metrics.	Use Exercises for the full instructions and player.
Recent Exams	Available recent examination summaries for the selected patient.	Clinicians use the result workspaces for detailed evidence and quality status.

Patient view

Read the summary together with the instructions from your treating team. A tier or percentage does not tell you to change medication, repeat an examination or alter an exercise on your own. If the summary seems wrong, outdated or unclear, ask your clinician to review it.

Clinician view

Review the assessment's date and retained evidence in the Risk Assessment workspace. Dashboard also exposes top contributors and suppressed lower-priority signals when available. Use **Open Risk Workspace** to inspect the sources, baseline information and validation history.

> **READ MISSING VALUES LITERALLY**
> No selected patient, no active plan, no recorded activity and a failed data request are separate situations. An empty card or unavailable value does not mean zero risk, zero disease or that the patient has completed a task.

When Dashboard cannot load

01 Check the selected patient and any displayed error.

02 Return to the page when the connection is restored, using an explicit Retry or Refresh control if offered.

03 Ask a clinician to inspect the retained examination or report if a recent event is missing.

PATIENT GUIDE | SCHEDULED EXAMINATIONS

06 Your monitoring schedule

Opening a scheduled item prepares the examination; you still choose when to start.

DVT Monitoring > **Your monitoring**

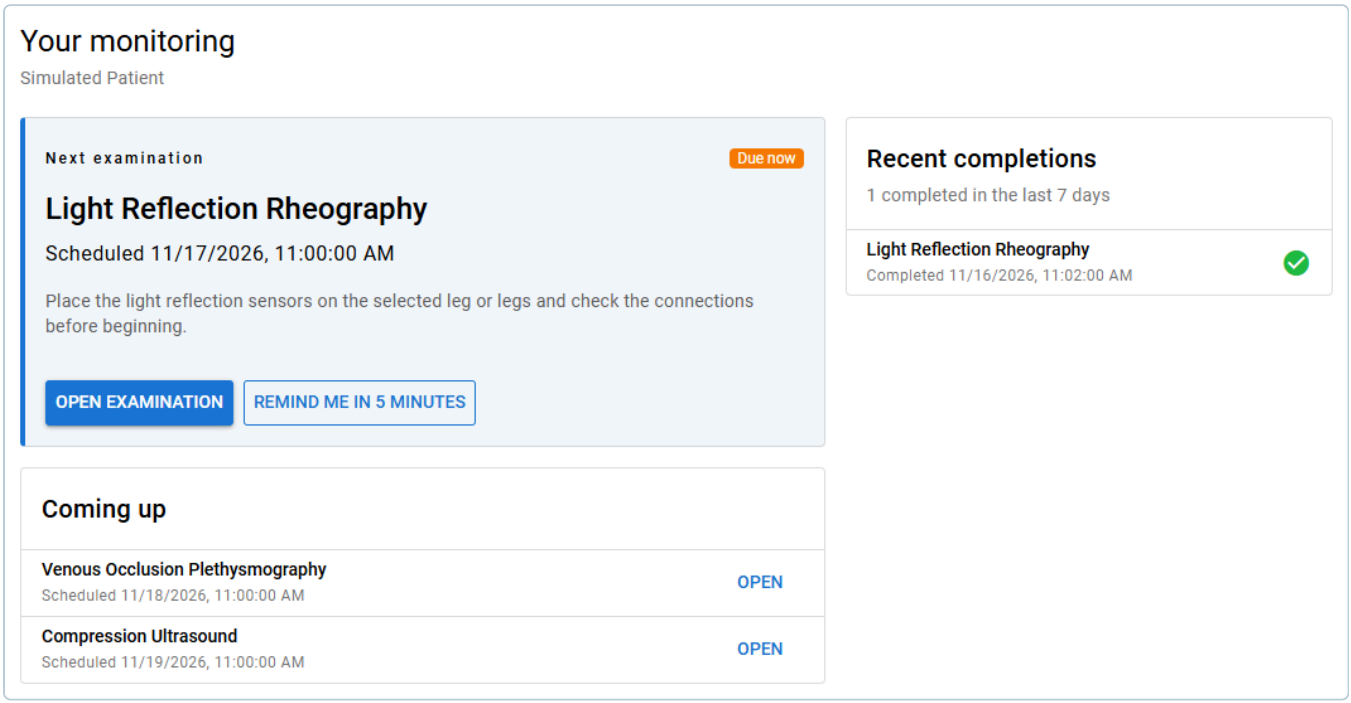


Figure 2. Patient monitoring overview with a synthetic schedule. Dates and status in your installation reflect your clinician's plan.

01 Read **Next examination**. An examination already running takes priority; otherwise the next pending item is shown.

02 Choose **Open examination**, or **Return to examination** for an item already in progress.

03 Read the preparation text and check device readiness below it. Press the examination's Start control when prepared.

04 Follow the modality instructions in the next three chapters, then wait for saving to finish.

05 Return to Monitoring and check the updated schedule.

Other schedule controls

- **Coming up:** open another listed examination; use **Show more examinations** to reveal further items.
- **Remind me in 5 minutes:** available for a due, pending next examination. It pauses that reminder temporarily; it does not complete or cancel the examination.
- **Recent completions:** shows recent completed items and a count for the last seven days. Patient Mode does not open historical clinical results from this list.

Reminder navigation respects an active examination and unsaved work. A reminder does not start acquisition. If no examinations are scheduled, ask the clinician to review the plan. For CUS and VOP, a clinician must prepare the saved patient settings before the monitoring examination can start.

PATIENT GUIDE | LRR

07 Follow an LRR examination

Light Reflection Rheography uses guided heel movements followed by a still refilling period.

DVT Monitoring > scheduled **Light Reflection Rheography** item

Prepare

Sit as instructed by your clinician and fit the selected sensor or sensors according to the supplied device instructions. Patient Mode uses the connected sensors and their confirmed device-side Left/Right assignments. A clinician must verify the intended sensors and sides before handover. If a sensor is unavailable, wake it as instructed and wait for it to show connected.

01 Read the preparation instructions. Use **Preview the tip-toe exercise** if you need to see the movement before starting.

02 Press **Start Exam** when the sensors and patient context are ready.

03 During preparation, keep your feet flat and follow the displayed countdown. The preparation guidance specifies seven seconds.

04 During the tip-toe phase, follow the raise-heels and lower-heels pictures and prompts for ten repetitions. Follow the application's rhythm.

05 During refilling, remain still with your feet flat until the application moves to analysis. The progress display counts the 600 refilling samples.

06 Read each leg's quality and saving status. Wait for successful saving before choosing **Done**.

If you need to stop or repeat

Choose **Cancel exam** during an active examination if it needs to end. The captured data is retained with its cancelled or incomplete status. Do not switch patient or close the application to stop it.

When the examination can finish, **Repeat** returns to preparation and wakes sensors; it does not immediately start a new examination. Repeat only when appropriate under your clinician's instructions, then press Start again.

> **SAVING AND QUALITY**
> A saved recording can still have a quality warning or be unsuitable for clinical analysis. Keep the page open if **Retry save** appears, and request help. For two-leg examinations, check the status for both legs.

Patients see immediate guidance, progress, recording quality and save status. Detailed model analysis, historical review and reanalysis are clinician tasks.

PATIENT GUIDE | VOP

08 Follow a VOP examination

Venous Occlusion Plethysmography coordinates impedance measurement with cuff pressure.

DVT Monitoring > scheduled **Venous Occlusion Plethysmography** item

Prepare

Follow your clinician's instructions for position, cuff and electrode placement. The saved patient settings supply the examination leg. The measurement module (EIM) and pressure controller (EAC) must both be ready before the autonomous Start control is available.

01 Read the preparation message and check the **Exam leg**.

02 Wait for the required EIM and EAC readiness indicators.

03 Press **Start Exam (Autonomous)** when prepared.

04 Follow the displayed stage messages during baseline, cuff operation and the measurement sequence. Keep the setup in the instructed position until the examination completes.

05 Wait while the software stops acquisition, checks release feedback and saves the recording.

06 Read the terminal message and saving status. Choose **Done** when offered after saving.

Cancel, repeat and recovery

Cancel Exam ends an active acquisition and retains the available data as cancelled. If pressure needs to be stopped, use **Emergency stop** or F8 and read the feedback. An external pressure stop invalidates the current VOP examination; retained data remains available for the clinician.

Use **Retry save** for a failed or pending save and keep the application open. If **Repeat** is offered, use it only under the clinician's instructions. An unconfirmed EAC stop requires assistance before another examination.

> **RELEASE NOT CONFIRMED**
> If the application cannot confirm pressure release, do not interpret a saved record as proof of physical release. Ask for immediate assistance and follow the device manufacturer's and your care team's instructions.

Patient Mode provides the autonomous VOP workflow. Manual VOP, Manual EIP, technical settings and detailed result review are clinician functions.

PATIENT GUIDE | CUS

09 Follow a CUS examination

Compression Ultrasound uses the clinician's saved imaging preferences and the server-controlled acquisition protocol.

DVT Monitoring > scheduled **Compression Ultrasound** item

01 Read the scheduled preparation text. Have the probe and cuff placed by the trained operator according to the device instructions and your clinician's protocol.

02 Wait for ultrasound readiness and the saved patient settings. If the profile is missing, stop and ask a clinician to prepare it.

03 Choose **Start ultrasound** when prepared. If acquisition was interrupted and can be resumed, the control may read **Resume ultrasound**.

04 Follow the displayed acquisition, recording and compression guidance. Starting the scheduled acquisition also starts strain processing and recording. Do not change the preset or seek staff-only controls.

05 When instructed to finish, choose **Stop recording** and wait for its save transition. Return to the Monitoring overview through DVT Monitoring navigation. If a recording is still active when leaving, choose **Stop and save** in the confirmation dialog, or **Keep recording** to stay.

06 Keep the page open until the visit closes successfully. Resolve any stop or save warning with the clinician, then check the schedule for the final status. A clip stopping does not by itself close the scheduled visit.

MONITORED COMPRESSION MAY BE UNAVAILABLE

The currently documented Artus setup supports imaging and strain recording, but its absolute acquisition timing has not been qualified. The software therefore blocks monitored compression on that setup. A message such as **Compression unavailable: acquisition timing unverified** needs clinician or technical review.

Do not use a staff pressure control to work around this restriction.

If the connection is interrupted

Ask the operator to check the probe and readiness message. Use **Retry connection** when offered. A new acquisition after reconnection reapplies the saved patient settings. Do not assume that an interrupted recording resumed or that the scheduled item completed.

If stopping or saving fails

Keep the existing visit open and use the available **Retry saving** action with clinician assistance. The software may retain an incomplete visit for review and offer **Open new visit** after the recovery conditions are resolved. A new visit does not make the earlier acquisition valid.

For a pressure concern, choose **Emergency stop** or press F8, then read the stop confirmation and seek assistance if release remains unconfirmed.

PATIENT GUIDE | REHABILITATION

10 Use your exercise plan

The Exercises page shows the activities assigned in your active plan.

Patient workspace > **Exercises**

01 Check the plan name, active status and any therapist notes.

02 Under **My plan exercises**, read the exercise name, position, leg, movement type, prescribed sets and repetitions, duration and notes.

03 Choose **Open exercise** on the correct card.

04 Read the exercise information next to the player and follow the clinician's instructions. Use **Fullscreen** if a larger view helps.

05 Check the **Sensor status** panel. Use **Start sensors** when the assigned activity requires the available sensor stream. Use **Stop sensors** to stop the stream you started.

06 Follow the player prompts through the assigned session. When leaving, use **Back** and respond to any confirmation dialog.

07 Check the completion and progress information after returning to the exercise list.

Leaving an exercise

If the application asks whether to leave, choose **Stay** to return to the player or **Leave exercise** to end that session's flow. Let the application resolve the activity and sensor state before changing patient or closing.

Read progress carefully

Completed today identifies an assignment with recorded completion for the current day. The progress ring summarizes the assigned exercises when progress is available. An unavailable progress message is not a confirmed zero or a confirmed completion.

What you see	What to do
No active plan	Ask the clinician to create or activate your plan.
Plan present, no assigned exercises	Ask the clinician to add the intended activities.
Sensor unavailable or in use	Check the clinician's placement instructions and ask for help. Do not interrupt another examination to take its sensor stream.
Session preparation or saving failed	Use **Retry** when offered and keep the current patient selected.

Exercise amounts shown in this guide are interface fields, not a recommended exercise dose. Use the values prescribed for you.

PATIENT GUIDE | REHABILITATION GAMES

11 Play an assigned game

Game availability depends on your active prescription and its required exercises and sensors.

Patient workspace > **Games**

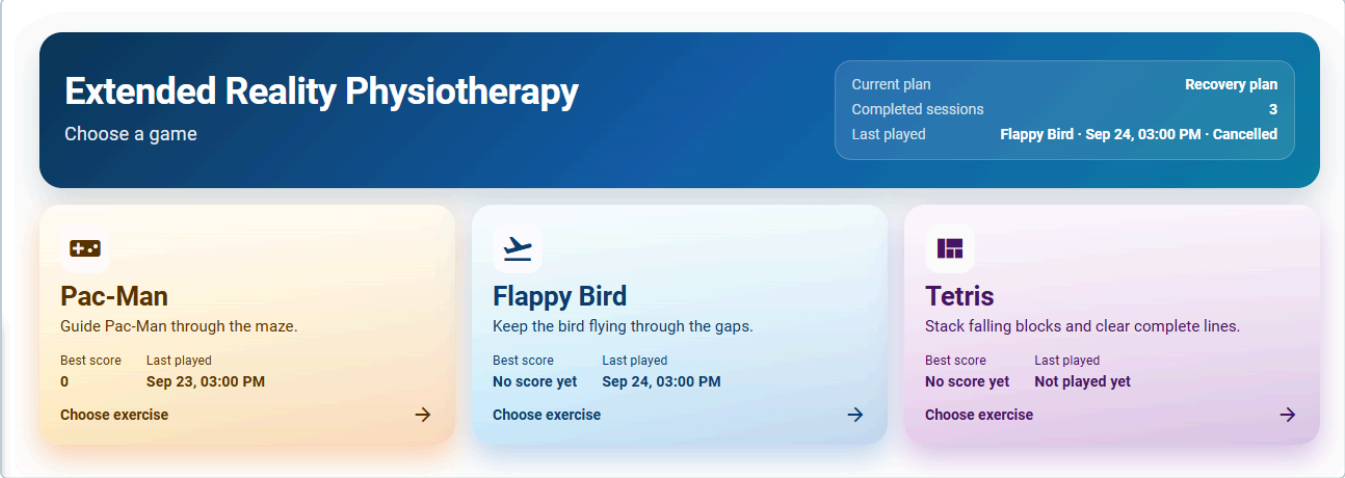


Figure 3. Games page with a synthetic patient context. Availability and progress depend on the patient's active plan.

01 Check the current plan and choose an available game card.

02 In the picker, **Choose an exercise** or **Choose an exercise combination**. Use the previous and next controls to see more mappings.

03 Review the selected movement, position and leg, then choose **Play**.

04 Wait for the game to load and follow its on-screen instructions with the prescribed sensor setup.

05 Use the game dialog's **Close game** control when finished and allow the application to settle the session.

06 Review completed sessions, best score and last-played information when available.

Why a game or combination may be missing

The integrated games are **Flappy Bird**, **Pac-Man** and **Tetris**. Every required exercise in a mapping must be present in the same active plan with the correct side, position, movement variant and valid master sensor. Paired mappings require the same master sensor. Bilateral exercises do not satisfy the current game rules.

Ask the clinician to review the prescription if no suitable mapping is offered. Use **Retry** for a loading failure, or **Choose another mapping** if that action is offered after a failed launch.

> **GAME PROGRESS AND EXERCISE COMPLETION**
> A two-exercise game combination is stored as one game session. It does not mark only the first exercise as completed. The current game integrations do not establish physical sensor accuracy, clinical benefit or guaranteed restoration of an in-game checkpoint.

CLINICIAN GUIDE | QUICK START

12 Prepare a patient workspace

Complete the configuration and verify the patient workflow before locking the workstation.

Before an examination

- [ ] Confirm Clinician Mode and verify the patient's record, name and date of birth.
- [ ] Choose **Open as clinician** in Manage Patients.
- [ ] Open **DVT Monitoring > Imaging** and select **Compression Ultrasound**, **LRR** or **VOP**.
- [ ] Check the actual device identity, correct leg or distinct sensor sides, readiness and manufacturer-required physical setup.
- [ ] For CUS or VOP, explicitly load the saved patient settings, or configure the first manual examination.
- [ ] For CUS or VOP, decide whether the preferences should be saved through **Patient settings > Save current settings** for future Monitoring use.
- [ ] Confirm the physical and clinical authorization applicable to your installation and protocol.

Before patient handover

01 Save CUS and VOP preferences as needed. For LRR, verify the connected sensors and their confirmed Left/Right assignments.

02 In **Patient Plans**, review the active exercise plan and the separate Monitoring plan.

03 Open the planned Monitoring item and confirm that the correct preparation and readiness information appear. Opening it must not start acquisition.

04 Resolve any active recording or pending save.

05 Use **Clinician actions > Lock to patient**, or re-enter the patient with **Select & Lock**.

06 Check that the header shows the correct patient and Patient Mode. Explain Start, Cancel, save confirmation and Emergency stop to the patient or assisting operator.

> **THREE DIFFERENT KINDS OF SETUP**
>
> **Patient examination preferences** control the saved choices used by an examination. **Monitoring schedules** determine which examinations appear and when. **Exercise prescriptions** determine assigned rehabilitation activities and game eligibility. Review all three where relevant.

Maintenance tasks require the separate Maintenance access control and configured PIN. They do not replace clinician examination preparation. Do not move into maintenance while an acquisition or save remains unresolved.

CLINICIAN GUIDE | PATIENT PREFERENCES

13 Save and load examination settings

CUS and VOP preferences are saved explicitly from their examination screens.

DVT Monitoring > **Imaging** > **Compression Ultrasound** or **VOP**

01 Confirm the patient and choose the modality.

02 Open the three-dot **Patient settings** menu near the examination header. It may show an attention icon if a settings problem needs review.

03 Choose **Load saved settings** if you want to apply that patient's existing preferences. **Refresh saved settings** updates profile information without applying it in Clinician Mode.

04 While no examination is active, adjust the supported settings for the intended setup.

05 Open **Patient settings > Save current settings** when those choices should be reused for this patient.

06 Read the saved-state feedback in the menu. If a stale or conflicting version is reported, choose **Refresh saved settings**, review the information, and retry deliberately.

Modality	Saved preferences	Key check
CUS	The supported thigh preset, imaging adjustments, inference preference and EAC PPV pump-power setting.	The connected probe must support the selected preset and adjustments.
VOP / EIP	Left/Right examination leg and manual EIP settings, including optional automatic-stop duration.	Check device-confirmed acquisition settings in the recording, rather than assuming every saved request was applied.
LRR	No saved-profile menu in the current LRR screen. Monitoring uses the connected sensors and their confirmed device-side assignments.	Identify the physical sensors and verify distinct Left/Right sides before handover.

What saving does and does not do

A clinician may perform a first manual examination without an existing saved profile. Adjusting settings does not automatically update the patient's profile. Save and Load are unavailable during the active modality examination.

Monitoring requires saved preferences for CUS and VOP and applies them before acquisition. This also applies to a new CUS acquisition after probe reconnection. If a profile is missing, the patient is directed back to a clinician. Stop, saving and recovery remain available.

> **RECORDED SETTINGS REMAIN HISTORICAL**
> Each recording retains the settings applied at acquisition. Changing a saved profile does not rewrite earlier recordings. CUS pressure, RF geometry, acquisition-age limits and strain policy remain controlled by the server protocol; saving preferences does not change that policy.

CLINICIAN GUIDE | CUS ACQUISITION

14 Acquire ultrasound images

A patient visit can contain multiple recorded clips and snapshots.

DVT Monitoring > **Imaging** > **Compression Ultrasound**

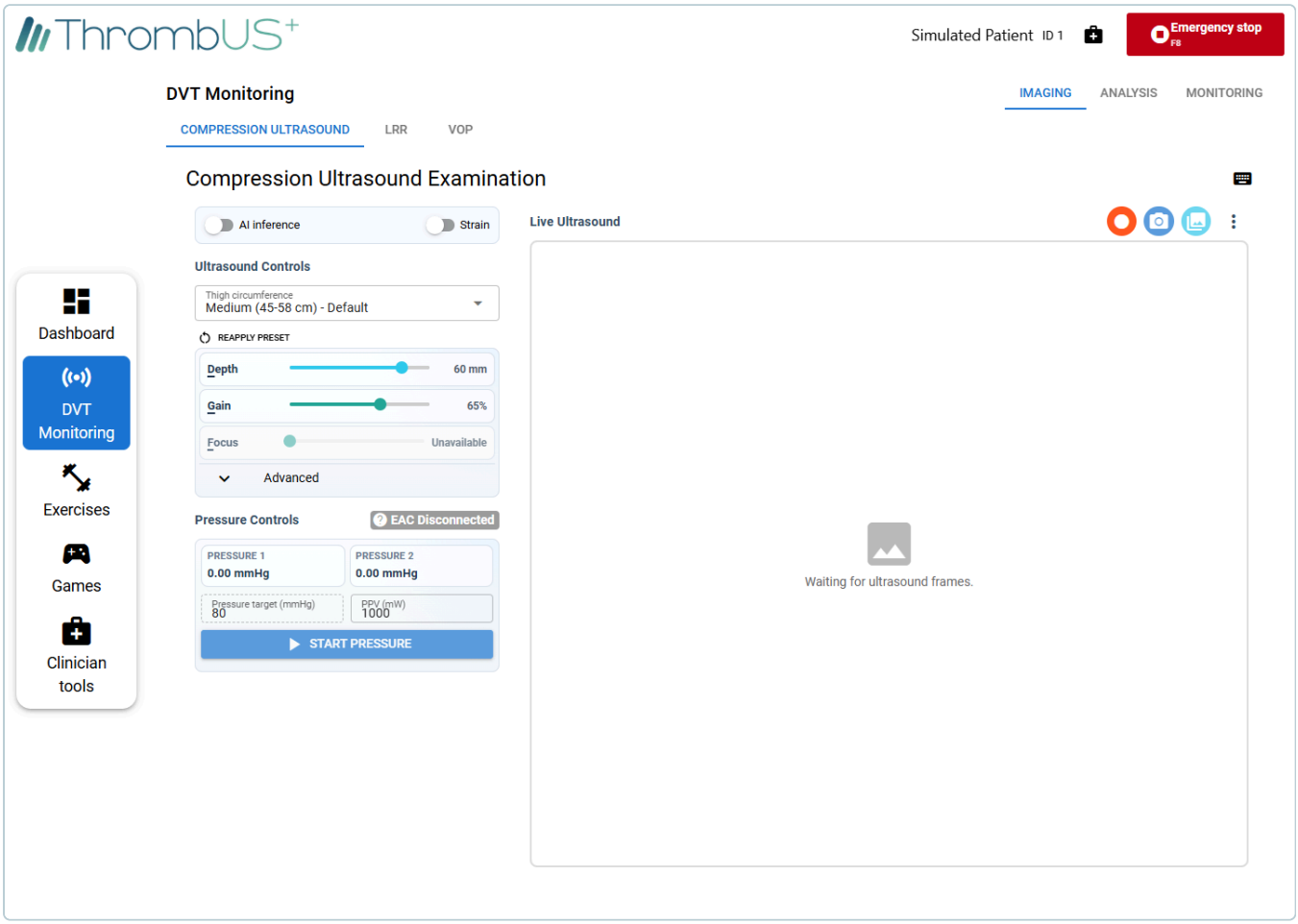


Figure 4. Clinician CUS workspace using simulated device responses. The image area and supported controls depend on the connected probe.

01 Verify the patient and wait for the visit and probe connection. Use **Retry connection** or **Retry opening visit** if offered.

02 Load the patient's saved settings, or choose the appropriate supported **Thigh circumference** preset and adjust imaging for the authorized examination.

03 Use the live image and supported controls to establish the view. Depth, gain, focus and TGC affect image presentation; additional supported power, dynamic range and frequency controls are under **Advanced**.

04 Choose whether to enable **AI inference** and **Strain**. These are separate functions. Read the strain and pressure chapter before enabling pressure.

05 Use **Start recording** for an intentional clip and **Stop recording** to finalize it. Wait for the recording transition and saving feedback.

Use **Snap shot** for a still image and the snapshot gallery to inspect retained captures.

07 Resolve all stop and save errors before leaving the visit or changing patient.

Preset and recording behavior

The current Medium preset uses a 60 mm image depth and a 20-45 mm RF region of interest. Large uses an 80 mm image depth and a 30-70 mm RF region. Use **Reapply preset** to restore the supported preset settings when appropriate before recording.

Imaging settings are fixed while a recording is active. Separate intentional clips from automatic preview footage when reviewing and exporting. A snapshot is a still capture; a visit is the containing patient encounter, not a single clip.

> **AI DISPLAY BOUNDARY**
> AI inference reports frame quality and retained image-analysis outputs. An AI-only ultrasound assessment is recorded as inconclusive. The models do not provide validated flow velocity, physical area, vessel diameter or a standalone compressibility diagnosis.

Useful controls

Open **Ultrasound Hotkeys** with the help control or H / ?. R toggles recording and S captures a snapshot when those actions are available. P operates the clinician pressure toggle; it is separate from recording. See the full keyboard reference in chapter 28.

CLINICIAN GUIDE | CUS STRAIN AND PRESSURE

15 Understand strain and pressure

Keep clinician manual pressure, recording and monitored compression distinct.

Clinician manual pressure

Start Pressure controls the EAC in Clinician Mode when there is a connected, ready controller and an active patient visit. It operates independently of the Strain toggle and recording. The current server-controlled measurement target is 80 mmHg. The editable **PPV (mW)** field is the EAC pump-power setting; set it only under the authorized device protocol. It is retained with saved CUS patient preferences.

01 Verify the physical setup, controller readiness and active patient visit under your authorized protocol.

02 Choose **Start Pressure** only when manual pressure is intended.

03 Choose **Stop Pressure** to request confirmed release and read the controller feedback.

04 Stop manual pressure explicitly when finished. Starting or stopping a clip does not start or stop manual pressure. Closing the visit also releases that visit's pressure ownership.

> **PRESSURE QUALIFICATION**
> The 80 mmHg endpoint is a software measurement target, not an independently validated safety limit. Software release confirmation is not a measured physical stopping deadline. Use **Emergency stop** or F8 when required and follow the approved physical response procedure if release is unconfirmed.

Live strain and retained peak

The Strain toggle starts RF-based processing alongside B-mode imaging. Live strain and each recording use a fresh zero baseline. The accumulated strain is the signed sum of consecutive increments; negative increments remain included. **StrainMax** retains the first highest accumulated value and its timestamp.

For example, increments of 1.00, 0.25, -0.40 and 0.10 produce totals of 1.00, 1.25, 0.85 and 0.95 percent, with StrainMax at 1.25 percent. The trace may decrease or become negative. It is not capped at 100 percent and is not percentage vein closure. There is no established normal range or numerical strain stop threshold in the current implementation.

Monitored compression

A monitored cycle requires a recording, a fresh baseline and valid finite strain with a supported acquisition-time bound no more than 200 ms old at startup and throughout compression. Each recording permits at most one monitored compression cycle; another cycle requires a new recording.

> **CURRENT ARTUS RESTRICTION**
> The documented connected Artus can provide imaging and record strain, but its absolute acquisition-time bound remains unqualified. Monitored compression is blocked on that setup. The 200 ms gate alone is not proof of safety or timing qualification. Clinician manual pressure does not satisfy or override this requirement.

Review and interruption

Stored review aligns the images, signed strain and both pressure channels by timestamp. Pressure1 is the analysis channel. Missing streams remain missing rather than becoming zero-valued measurements.

Acquisition, processing, storage or timing faults can interrupt recording and trigger release. An unconfirmed release leaves strain incomplete and its maximum unavailable, even if later saving succeeds. New recordings retain calculated strain and acquisition metadata; raw RF is transient, while historical raw RF may remain readable.

CLINICIAN GUIDE | LRR ACQUISITION AND ANALYSIS

16 Configure and review LRR

Confirm sensor identity and side before the guided examination begins.

DVT Monitoring > **Imaging** > **LRR**

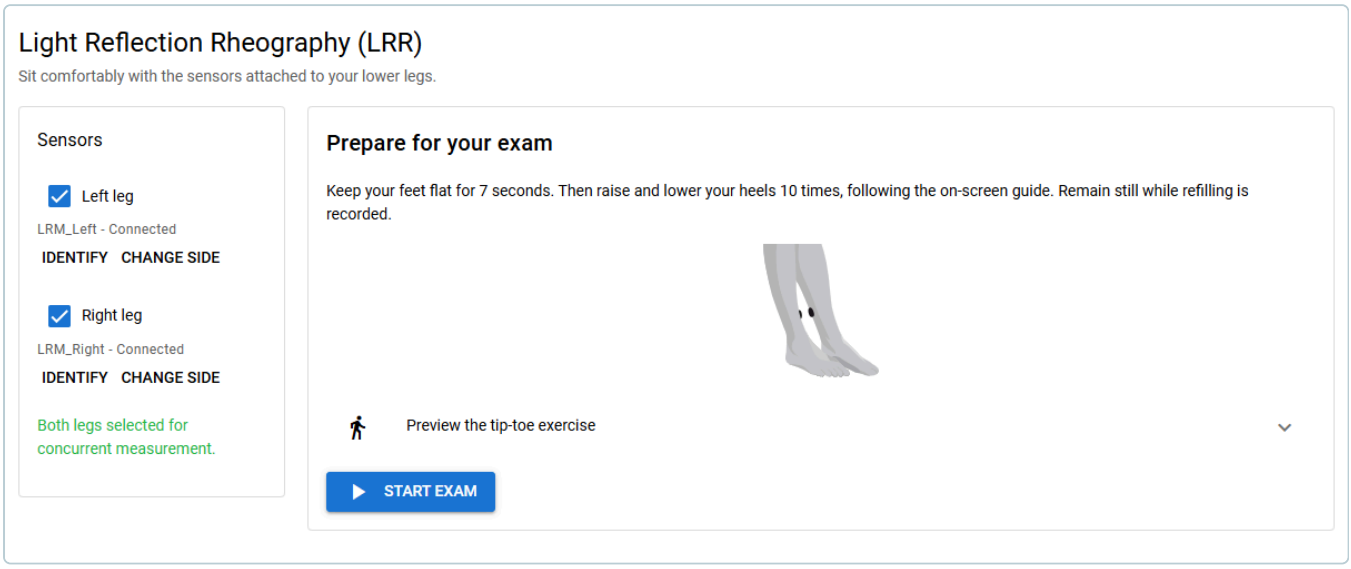


Figure 5. LRR preparation using simulated sensor status. The physical setup must be checked independently.

01 Select the patient and review the intended physical sensors and sides.

02 Wake the sensors and check their identity and connected status.

03 Select one or two sensors in Clinician Mode. Use **Identify** to identify a sensor and **Change side** if its assignment needs correction.

04 Ensure every selected sensor has a Left or Right assignment and that two selected sensors have distinct sides.

05 Before a patient-mode handover, verify the connected set again. Monitoring uses the connected sensors and their confirmed device-side assignments, rather than a saved LRR profile or the clinician's checkbox subset.

06 Press **Start Exam** and supervise the preparation, ten heel-raise/lower repetitions and still refilling phase.

07 Check each leg's recording, quality and save status. Use **Retry save** if needed and **Done** only when the examination can finish.

What the result represents

The viewer retains the full raw waveform together with T0 (refilling time), V0 (pump volume), available model outputs and failure history. An accepted model output and a complete acquisition are both required for eligible analysis. Do not interpret an unavailable probability as zero probability.

Current analyses validate the entire preparation, transition and 600-sample refilling recording, then use the last 800 canonical samples for the bundled V2 model. The application does not shorten the physical examination to 800 samples. The full raw data remains available.

Historical review and reanalysis

Open **Analysis > LRR** for the selected patient, or **LRR Sessions** in clinician tools. Choose the view control on the intended session. Use **Reanalyse** to append a new analysis from its retained original data and **Analysis history** to compare versions.

Reanalysis preserves original analyses, acquisition status and failure history. It does not make a historically failed acquisition clinically eligible. Older analyses can use a different input selection; inspect their recorded provenance before comparing outputs.

CLINICIAN GUIDE | VOP AND EIP

17 Run manual VOP or EIP

VOP uses the EIM measurement module and EAC controller; standalone EIP uses EIM without cuff control.

DVT Monitoring > **Imaging** > **VOP**

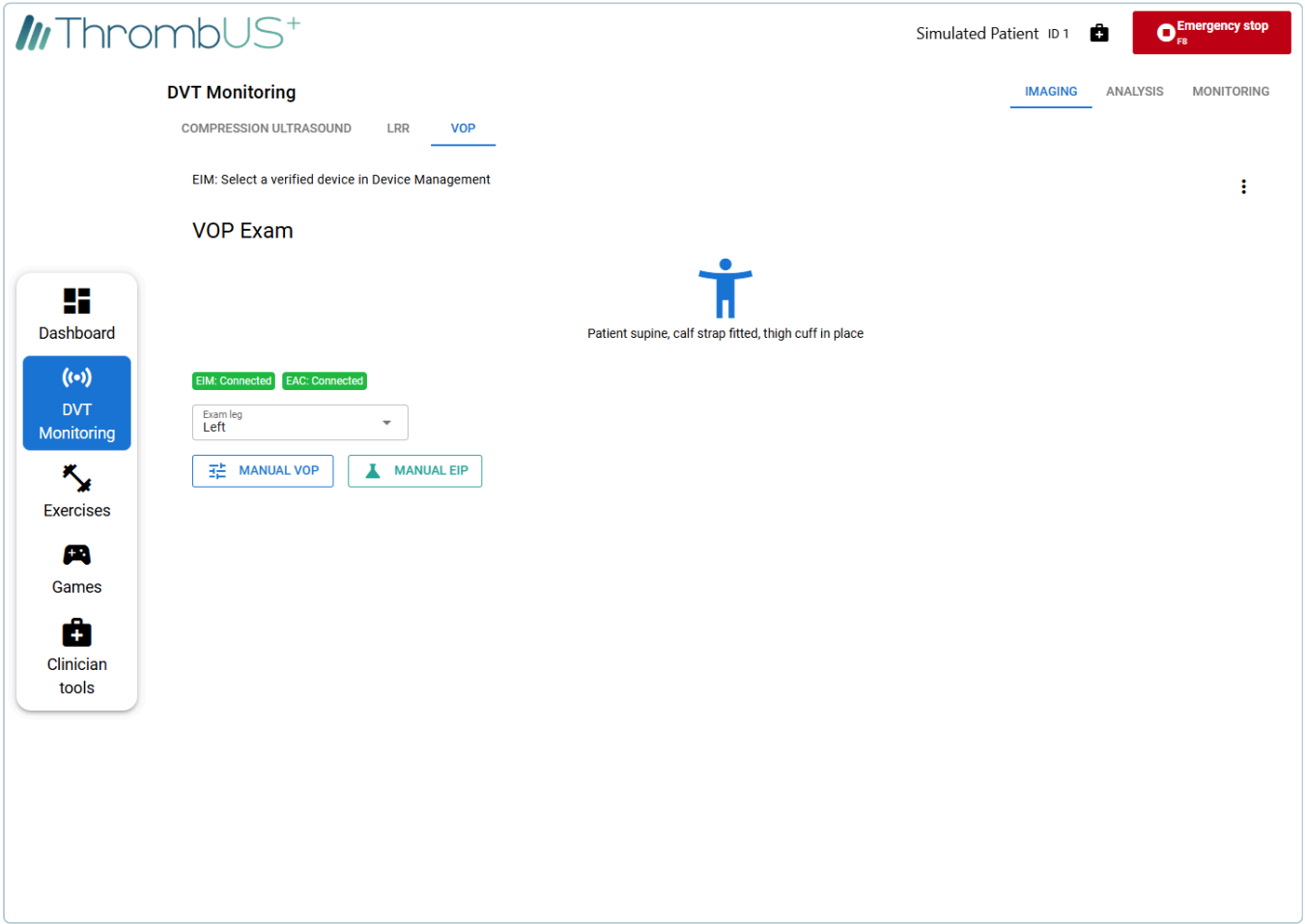


Figure 6. Clinician VOP and EIP entry screen with simulated device status.

Manual VOP

01 Verify the patient, selected EIM identity, Exam leg and required physical setup.

02 Wait for both EIM and EAC readiness and choose **Manual VOP**.

03 Inspect the live baseline. When baseline readiness is established and you have reviewed it, choose **Baseline looks good - Start VOP**.

04 Follow the stage messages and monitor the displayed live impedance and cuff pressure.

05 Wait for acquisition to stop, release feedback and saving. Review the result, failure details and diagnostic eligibility.

06 Choose **Done** after saving, or **Repeat** if offered and clinically appropriate.

Manual EIP

01 Choose **Manual EIP** and review **Configure EIP Measurement**.

02 Set the supported measurement mode, leads, sample rate, excitation current, frequencies and calibration options under the authorized device protocol.

03 Optionally set **Automatic stop after (seconds)** to an integer from 1 through 86400. Leave it empty for manual Stop.

04 Choose **Start EIP**. During measurement, select frequency chips to inspect available traces.

05 Enter text in **Annotation / Notes** and use **Save annotation** to retain it.

06 Choose **Stop** and wait for finalization. If an error retains the session, use **Retry finalization** and keep the application open.

Clear Graph clears the displayed live graph; it is not an instruction to discard the retained recording. The session's recorded acquisition configuration distinguishes requested settings from device-confirmed applied settings.

> **TERMINAL STATUS**
> VOP needs fresh stopped-measurement and released-controller feedback before successful finalization. Standalone EIP needs stopped-measurement feedback and drain completion, with no cuff-control requirement. An unconfirmed EAC stop needs physical attention even when a record can be saved with failure details.

Manual EIP recordings are reviewed in **VOP Sessions** with their mode and raw impedance data. Do not read an EIP recording as a completed VOP protocol result.

CLINICIAN GUIDE | RECORDED EVIDENCE

18 Review results and export data

Start from the patient, then verify the acquisition, quality and retained source.

DVT Monitoring > **Analysis** > **Compression Ultrasound**, **LRR** or **VOP**

01 Confirm the selected patient. Choose Analysis and the relevant modality.

02 Use the available date, leg and search filters to locate the session.

03 Open the session and verify patient, date, modality, leg or clip identity, acquisition status, saving status and any failure history.

04 Use playback and result controls appropriate to that modality.

05 Export the intended data and verify the completed file before sharing or relying on it.

Recorded trends

Above each modality's session list, use **Recorded trends > Metric** to choose the quantity to display. Point to, focus or select a measurement point to inspect its value, date, series and recording reference. Use the previous/next measurement controls when points are close together, then choose **Visit #...** to open that source.

CUS StrainMax curves group only compatible calculation versions and acquisition settings. VOP series distinguish leg, mode and frequency. LRR rejected-quality points are identified separately. A missing point means no available value for that series, not zero.

CUS review

Open the visit, then choose the intended saved clip or snapshot. Use **Play**, **Pause**, **Reset** and the available position controls. **Show AI** displays retained overlays when present. **Show strain** opens the strain and pressure panel; its divider can resize the image and strain areas.

Read StrainMax together with acquisition completeness and the recording's calculation version. A missing or incomplete strain result is not a zero peak. Historical recordings may contain a different calculation version or raw RF availability.

LRR and VOP review

Use the waveform replay controls to play, reset, seek and adjust supported playback speed. For LRR, inspect the full waveform, model-input selection, aligned importance and Analysis history. For VOP/EIP, check acquisition mode, applied settings, signal-quality information, failures and available impedance channels.

Export choices

Data	Control and contents
Ultrasound visit	**Export recorded clips and snapshots** exports the intentionally retained media. **More export options > Export full session** also includes automatic preview footage. The ultrasound export package includes its available images and DICOM material.

Data	Control and contents
CUS strain	**Export strain and pressures** exports the retained strain and pressure material. Older records with raw RF can show **Export raw RF and strain**.
LRR	**CSV** retains raw samples. **ZIP** includes recording and analysis artifacts, analysis history and aligned model input/importance data where available.
VOP / EIP	**Export recording and results** or **Export Raw Data** exports the retained session and linked SDK recording material.
Whole patient history	Use **Patient Report > Export complete history** for the report PDF. This is a history report, not an export of all raw measurement files.

Standalone session management

LRR Sessions, **VOP Sessions** and **Ultrasound Sessions** provide clinician lists across patients with filters and manual-examination entry points. Analysis is patient-scoped. Discard or delete actions are available where the particular viewer permits them. For example, clinician VOP Analysis can show **Discard Session**, and clinician CUS Analysis can show eligible preview deletion. Ultrasound visit discard remains in the standalone ultrasound management screen.

Use the relevant discard/delete control only under the local retention policy and after checking the exact selected source. Missing or deleted sources cannot be reconstructed by reopening an alert. Wait for active exports or reanalysis before changing patient or leaving.

CLINICIAN GUIDE | RISK WORKSPACE

19 Review risk and baseline inputs

The workspace combines stored assessment information with its contributors and baseline context.

Clinician tools > **Risk Assessment** > selected patient

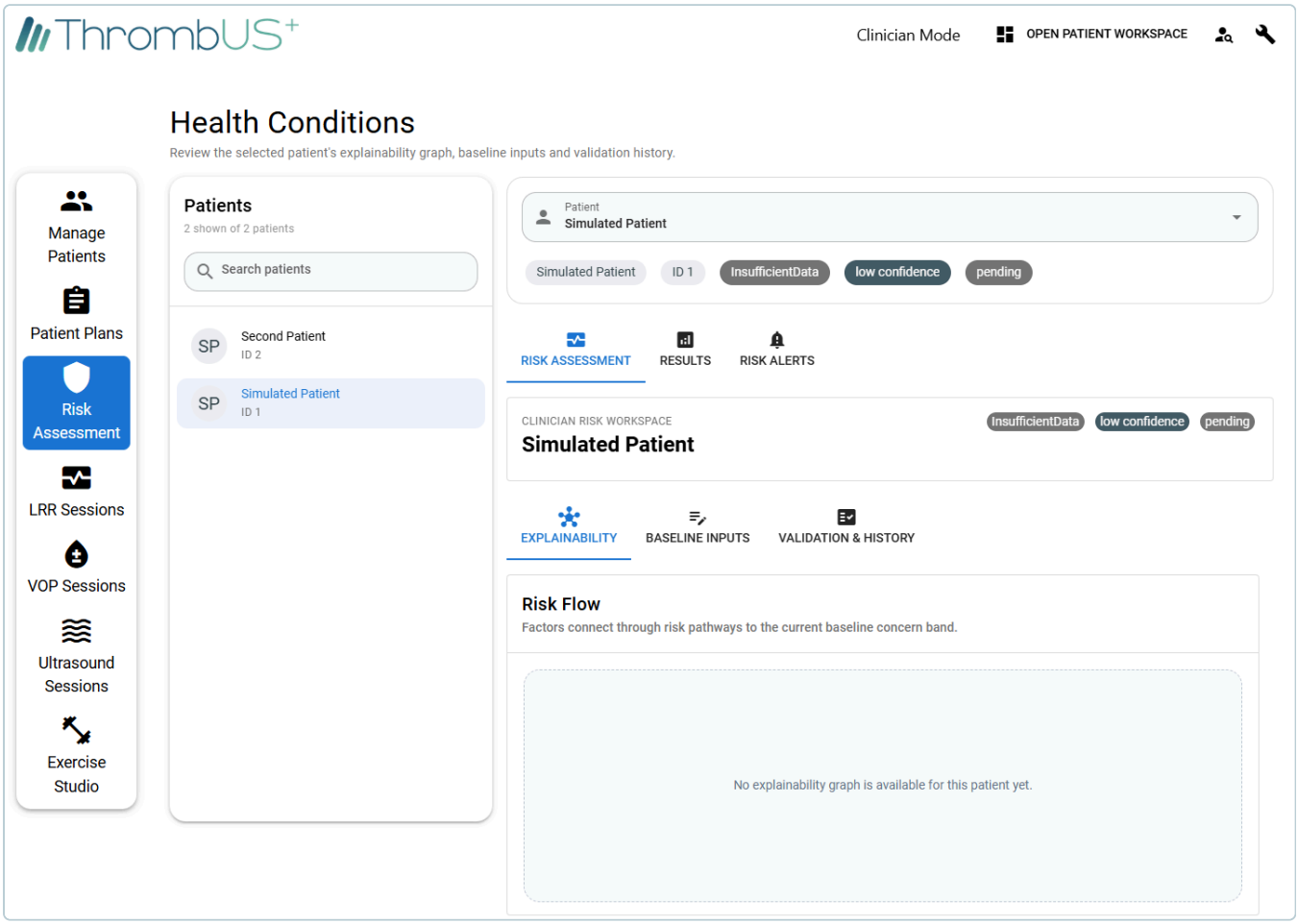


Figure 7. Risk workspace with synthetic patient data. Clinical interpretation requires review of the retained sources.

Explainability

Within the **Risk Assessment** tab, use **Explainability** to inspect the assessment headline, clinician summary, tier, confidence, validation status and contributor graph. Review active and inactive contributors, source details, freshness and any suppressed lower-priority signals.

Do not equate a device warning with a clinical risk alert. Check whether a source examination was complete and eligible for analysis. An unavailable or rejected model result must not be treated as a reassuring negative finding.

Baseline Inputs

01 Open **Baseline Inputs** for the intended patient.

02 Review demographics and body measurements, prior VTE, active cancer, smoking, mobility, pregnancy/postpartum information and renal context as applicable.

03 Review provenance and the last clinician-review date.

04 Review or add the available markers, medications and recent events with their dates and status.

05 Choose **Save & Recompute**, then inspect the resulting assessment and source information.

> **RECORDING CONTEXT, NOT PRESCRIBING TREATMENT**
> The medication fields record clinical context, including agent, dose and status. This guide does not supply a medication choice or dose. Assessment summaries and explanations need clinician interpretation under the authorized protocol.

Stored assessments retain their original narrative and history. Recomputing from updated inputs does not rewrite the original source examinations. Use Validation & History to inspect how the assessment was reviewed.

CLINICIAN GUIDE | CLINICAL REVIEW

20 Validate assessments and inspect alerts

Record the review decision against the intended stored assessment.

Validate the current assessment

Risk Assessment > **Validation & History**

01 Check the selected patient and assessment being reviewed.

02 Under **Validate Current Assessment**, enter **Validated by**, relevant **Notes** and an **Action summary**.

03 Choose the appropriate action: **Confirm**, **Dismiss**, **Retest** or **Modify plan**.

04 Verify the stored validation status in **Assessment History**, using **Refresh** when needed.

> **COMPLETE THE CLINICAL FOLLOW-UP EXPLICITLY**
> These controls record a validation decision and action summary. They do not themselves perform a new examination or edit an exercise prescription. Use Patient Plans or the relevant examination workflow to carry out the intended follow-up.

Results

The workspace's **Results** tab provides modality review and scheduled examination results for the selected patient. For a completed scheduled item, open its retained result. This uses the saved result identity rather than starting a new acquisition.

Risk Alerts

Risk Assessment > **Risk Alerts**

01 Open Risk Alerts to load stored Warning and Danger assessments with their latest validation status.

02 Read the date, summary, validation and retained source references.

03 Choose the relevant **Open CUS result**, **Open LRR result** or **Open VOP result** action.

04 For a CUS source alert, verify the exact source recording within its owning visit.

05 Use **Refresh alerts**, **Load older assessments** or the displayed Retry action when needed.

Risk Alerts refreshes when opened or explicitly refreshed. Technical acquisition warnings remain in examination viewers. A Warning or Danger entry is a retained assessment record and is not proof of a newly acquired measurement.

If a source is unavailable

The application checks patient ownership before opening a source. Missing or deleted source data is shown as unavailable. Use **Retry source** only for a recoverable loading problem and do not substitute another patient's or another recording's evidence.

Results and Risk Alerts remain available even when the separate risk-summary request fails. Use their own retry controls and status messages.

CLINICIAN GUIDE | REHABILITATION PRESCRIPTION

21 Create and maintain patient plans

Assign the intended exercises and activate the plan the patient should use.

Clinician tools > **Patient Plans**

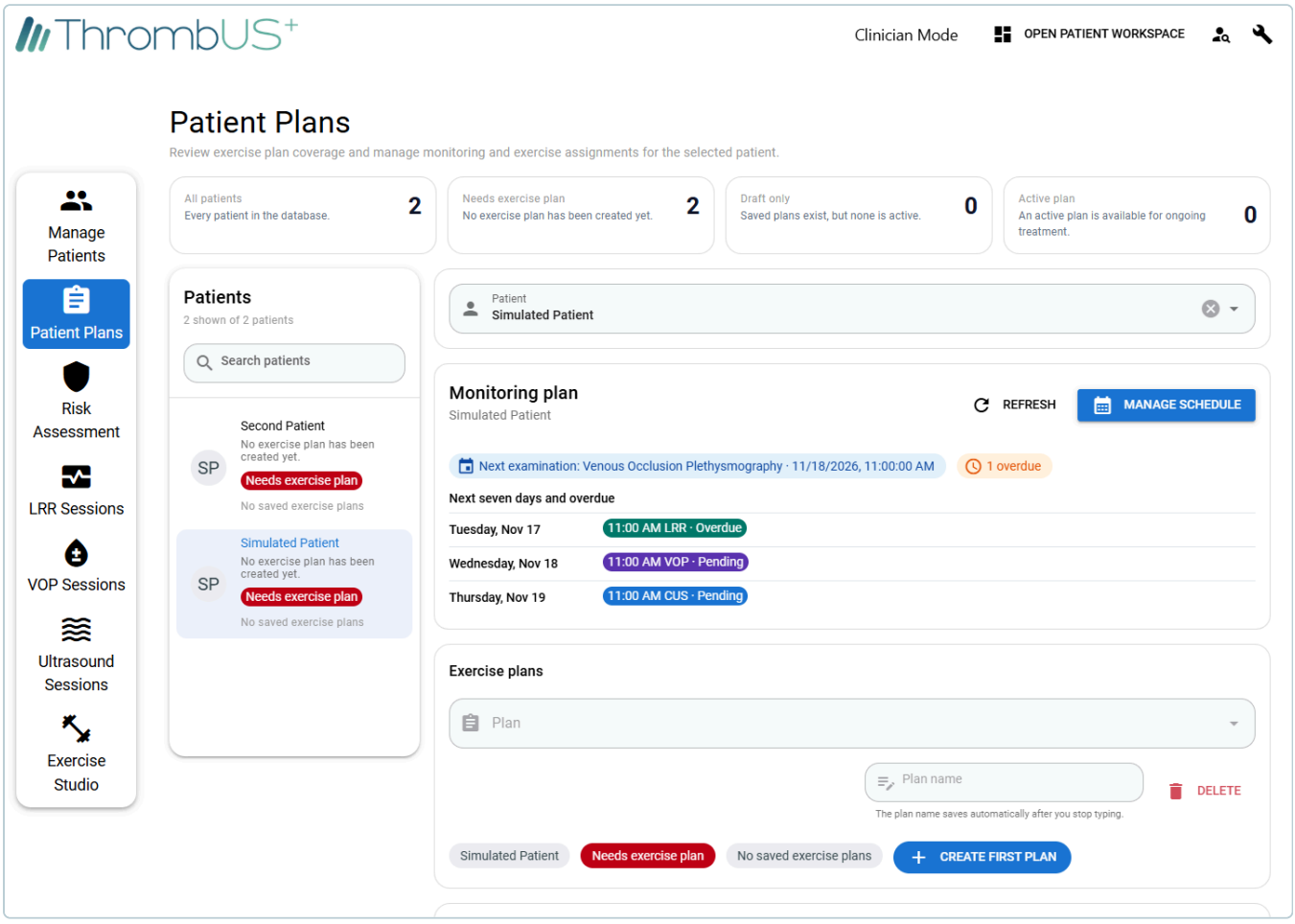


Figure 8. Patient Plans with a synthetic patient context. Monitoring scheduling is managed separately within this page.

01 Select the intended patient from the patient list or selector.

02 Choose an existing plan or **Create first plan** / **Create new plan**.

03 Edit **Plan name** as needed and wait for its saved indicator. The name field saves automatically; check for errors before leaving.

04 From **Exercise Library**, add the intended exercises to the plan. Check the exact position, side and continuous/intermittent variant.

05 Use the exercise preview to inspect the activity before prescribing it.

06 Use **Edit prescription** on an assigned exercise. Set **Sets**, **Repetitions** and patient-specific **Notes**, then choose **Save**.

07 Choose **Set Active** for the intended plan and check its status.

08 Open the patient's Exercises and Games views to verify what the active plan makes available.

Plan and assignment changes

The prescription editor permits 1-20 sets and 1-100 repetitions as interface input ranges; these are not clinical recommendations. Use the values authorized for that patient. Remove an assignment with its remove control when appropriate. Use plan **Delete** only after reviewing the local retention process and intended target.

Game eligibility

Games use one active plan, preferring the latest active plan according to the application's selection rules. Exercises from separate plans are not combined to satisfy a game mapping. Every required exercise in a game mapping must match side, position and movement variant and have a valid master sensor. Pairs need the same master sensor, and bilateral exercises are excluded.

Changing a prescription affects future eligibility. It does not change the original ownership and prescription links of previously saved game sessions.

CLINICIAN GUIDE | SCHEDULED MONITORING

22 Build the monitoring calendar

Schedule CUS, LRR and VOP examinations separately from exercise prescriptions.

Patient Plans > selected patient > **Monitoring plan** > **Manage schedule**

Add examinations

01 Confirm the patient and open **Manage schedule**.

02 Check the workstation's local date and time. The calendar displays local time.

03 Use **Today**, the previous/next controls or **Jump to date** to reach the intended date.

04 Select an available time slot and choose the required modality: CUS, LRR or VOP.

05 For a supported batch, choose a **Preset**, review its listed times and elapsed-today count, then choose **Apply to today**.

06 Wait for the saved feedback and inspect the resulting calendar entries. Calendar changes are saved immediately; **Done** closes the calendar.

Edit or cancel a pending examination

Select an entry's time to inspect its status and **Examination date and time**. For an editable item, adjust the date/time and choose **Save changes**, or choose **Cancel examination**. Select its modality label to change the examination type when allowed.

Repeat daily

01 Open an eligible pending, unstarted examination.

02 Set **Repeat daily until** to the intended local end date and choose **Save repeat**. The calendar also offers a repeat handle for supported pointer interaction.

03 Inspect the generated occurrences. Daily repeats are limited to a maximum 366-day range.

04 For a later series edit, check **Apply changes to** and choose the intended single occurrence or eligible following occurrences.

The series retains its time zone; a new series uses the workstation's detected local time zone when no stored zone is available. Verify the local-time intent, particularly around daylight-saving changes or when moving a workstation between time zones. Completed and started examinations retain their history and cannot be edited as pending items.

Verify the patient experience

Use the CUS/LRR/VOP filter chips to focus the calendar, then close it and open **DVT Monitoring > Monitoring**. Open a scheduled item and check preparation, saved settings and readiness. The item must wait for the user's Start action.

> **UNCERTAIN SAVE RESPONSE**
> If creation or an update has an uncertain outcome, use Refresh and inspect existing entries before creating another copy. A schedule item, its examination and its retained result are separate records.

CLINICIAN GUIDE | EXERCISE LIBRARY

23 Work in Exercise Studio

Manage shared exercise definitions before assigning them to a patient.

Clinician tools > **Exercise Studio**

01 Locate the exercise in the list and use its preview action to inspect it.

02 Choose **Add Exercise** for a new shared definition, or the intended row's edit control.

03 Enter the patient-facing **Exercise label** and a useful description.

04 Review the available difficulty, leg, position, pause inclusion and duration fields.

05 For a custom definition, supply the supported Data File, Thumbnail URL or Video URL only when the appropriate content is available.

06 Choose **Save**, reopen the preview and check that the label and content match.

07 Assign the exercise through Patient Plans with the intended sets, repetitions and patient-specific notes.

Update the shared library

Choose **Update Exercises** to synchronize the remote exercise library and download its available assets. Wait for the progress indicator and read the completion summary, including any warnings or failed-file count. After an update, preview the intended exercise again before assigning it. Synchronization requires access to the configured remote service.

Choose the correct scope

Exercise Studio manages a shared exercise definition. Use **Patient Plans > Edit Prescription** to adjust an individual patient's sets, repetitions and notes. Do not change a shared exercise simply to change one patient's prescription.

Preview and player availability

A definition with an unavailable media or motion asset may not produce a useful preview. Verify its content before handing it to the patient. Access to external media can depend on the network and hosting service; an exercise entry alone does not prove that its assets are reachable.

Game mappings

Creating a shared exercise does not automatically create a supported game mapping. The current games use the approved exercise identities and sensor rules. Ask technical support to review missing metadata or unsupported mappings rather than renaming an unrelated exercise to force eligibility.

> **SHARED DELETION**
> Exercise Studio provides a delete action. Review the exact definition and local retention requirements before using it. Use assignment removal for a patient-plan change rather than deleting shared content.

CLINICIAN GUIDE | LONGITUDINAL RECORD

24 Read and export Patient Report

The report combines retained activity, examinations and clinical risk history.

Manage Patients > patient row > **View report**

01 Open the report in Clinician Mode for the intended patient.

02 Check **Patient ID**, recorded-history range, generated time and the displayed time zone.

03 Review the whole-history totals and the chronological timeline, ordered oldest first.

04 Choose **All history**, **Activity**, **Examinations** or **Clinical risk** to focus the timeline.

05 Choose **Load more history** until you reach the intended entries or the end of retained records in that category.

06 Open an available examination source using its result link. The report opens its examination history as read-only review.

Export the complete history

01 In the desktop application, choose **Export complete history**.

02 Use the native save dialog to select the intended destination and filename.

03 Wait for the export outcome. If cancelled or failed, read the feedback before retrying.

04 Open the resulting PDF and verify the patient identity, time range and completeness before distributing it.

The complete-history export includes all retained entries across the report categories, not just the timeline rows currently loaded or the selected category. It does not replace the raw recording exports described in chapter 18.

Interpret history and follow-ups

Original results and later follow-ups retain their own timestamps and reference identities. A later validation or reanalysis is not a second acquisition. Use the retained source and follow-up references to understand the sequence.

> **RETAINED-HISTORY SCOPE**
> The report describes records retained for this patient in the current installation. An unavailable or deleted source is shown as unavailable. No history does not establish that the patient has never had an examination or activity elsewhere.

Use **Refresh** to reload history and **Retry report** for a failed request. Wait for an export to finish before changing patient or leaving the report.

SHARED REFERENCE | RECOVERY

25 Stopping, saving and closing

Finish the current acquisition and resolve saving before leaving.

Emergency pressure stop

01 When an examination view is open, choose the red **Emergency stop** control or press F8.

02 Read the stop feedback. The action requests both pumps off and both release valves open through a separate stop request.

03 If release is unconfirmed, request assistance and follow the manufacturer's and your organization's physical response procedure.

04 Review the affected examination's status before attempting another acquisition. An external stop during VOP invalidates that examination and preserves available data.

The control remains available for further requests while confirmation is pending. A software confirmation is controller feedback; it is not independent physical verification of cuff release.

What saving messages mean

State or action	Meaning and response
Saving	Finalization is still in progress. Keep the application open and retain the same patient context.
Saved	The application's save completed. Still check acquisition quality, failure history and analysis eligibility.
Saved with issues	The available record is retained with failures or incomplete acquisition. It is not a clean successful measurement.
Saved locally / Pending recovery	Some retained data or journal exists, but required finalization may remain incomplete. Follow the displayed recovery action and involve staff.
Retry save / Retry saving	Retry the original acquisition's save after resolving the reported storage or finalization issue. Do not create a different patient or examination to replace it.
Retry finalization	Complete the retained EIP stop/drain/save path. Keep the application open until it resolves.
Done	Finish the resolved examination and return to its idle or parent workflow.
Repeat	Prepare another examination where offered. Check readiness and follow the clinician's instruction before starting again.

Closing the desktop application

The window close button hides the application; it does not perform a full Exit. Use the application's explicit **Exit** command from the tray when a full shutdown is intended.

Exit coordinates stopping, draining, saving and release of native resources. A failed save can prevent successful Exit and keep the retry path available. Do not force termination to bypass that protection.

RESTART RECOVERY HAS LIMITS

Committed CUS data can be reconciled and retained LAM recordings can be retried by their acquisition identity. LRR and VOP/EIP support save retry in the running process and retain abandoned journals for technical inspection after restart. Unwritten memory buffers, pending snapshots and an unflushed journal tail can be lost if the process is forcibly terminated.

SHARED REFERENCE | TROUBLESHOOTING

26 Find and resolve a problem

Use the on-screen recovery path and preserve the original patient and recording.

Start with the visible symptom. Patients should involve their clinician for setup, settings or interpretation changes.

Symptom	What to check and do
No patient selected	A clinician opens Manage Patients or the header selector and chooses the correct patient. Confirm the name before continuing.
Wrong patient shown	Do not begin acquisition. If an examination is already active, stop and resolve it under its original identity before switching patient. Ask the clinician to review any affected record.
Mode cannot be confirmed	Use **Retry** in the blocking view. Wait for the backend-confirmed mode and selected patient before using clinical controls.
Clinician unlock fails	Use the PIN configured for this workstation and contact the administrator if it is unknown. Do not assume that an internet account password is the workstation PIN.
Start is disabled	Check the patient, device readiness, selected side/sensors, saved patient settings and any active acquisition or pending save. Read the detailed message below the control.
No examinations scheduled	The clinician checks **Patient Plans > Monitoring plan**. An exercise plan does not create a monitoring schedule.
Scheduled item unavailable	Return to Monitoring and reopen the current item. It may have changed, been cancelled or belong to another patient context.
Saved patient settings missing	For CUS or VOP, a clinician configures the modality under Imaging and opens **Patient settings > Save current settings**. LRR instead uses connected sensors with confirmed device-side assignments.
Settings save conflict	Refresh profile information, inspect the current values and explicitly Load or Save the intended settings. Do not overwrite a newer profile without reviewing it.
Device connected but not ready	Read the service-specific status. Check the actual device identity, power, network and reported acquisition capability. A paired-device record or network connection alone does not prove readiness.
LRR sensor missing or wrong side	Wake the intended sensor. A clinician checks identity with **Identify**, corrects **Change side**, and verifies distinct Left/Right assignments before starting.

Symptom	What to check and do
LRR quality rejected or probability unavailable	Review the acquisition and quality message with the clinician. Do not interpret a rejected or null output as a normal result. Repeat only when appropriate after resolving the cause.
EIM identity unavailable or ambiguous	Ask technical staff to select and verify the intended EIM in Device Settings. An IP address or shared hostname is not sufficient identity confirmation.
VOP baseline not ready	Check the physical setup, signal and device readiness. The clinician waits for baseline readiness before using **Baseline looks good - Start VOP**.
Pressure release unconfirmed	Use Emergency stop / F8 as needed and get assistance. Follow the physical response procedure. Do not rely on saving success as evidence of release.
Ultrasound image unavailable	Check probe readiness and the connection message. Use **Retry connection** if offered. Keep a retained failed visit available for review rather than assuming a new connection repaired it.
Compression timing unverified	The current Artus timing restriction blocks monitored compression. Contact the clinician/technical lead. Do not change timing limits or use manual pressure to bypass it.
Strain interrupted or maximum incomplete	Read acquisition, timing, worker and storage errors. Retain and review the affected recording. A new baseline or visit does not validate the earlier failed acquisition.
Save or finalization failed	Keep the application open and the original patient context. Use **Retry save**, **Retry saving** or **Retry finalization** as offered. Ask staff to check storage and device feedback.
Navigation or Exit is blocked	Return to the active examination, pending save, export or reanalysis and resolve it. The guard protects the retained workflow.
No exercises or games	The clinician checks the active plan and assignments. For games, check the full mapping, movement variant and master-sensor rules.
Game or exercise player fails to load	Use **Reload player** for an embedded player launch error, or the visible Retry control for a session/loading failure. Check asset/network availability with technical staff. Do not change patient to work around a session launch error.
Alert or report source unavailable	Verify patient and source identity. Use Retry for loading failures; a deleted source remains unavailable. Do not substitute another recording.
Export fails or report PDF not created	Check the destination and native export outcome. Use the desktop app for complete-history PDF export. Retry after resolving the reported problem and verify the final file.
Window disappeared after close	Check the application tray icon. The window close action hides the application; use its explicit Exit command when shutdown is intended.

Information to give support

- The application edition/build available on the workstation, current mode and page.
- The examination modality, affected session/recording reference, date/time and leg or device identity.
- The exact visible message and whether acquisition, stopping, saving or export is still pending.
- What action preceded the problem and whether a retry changed the status.

Share patient-identifying information and diagnostic files only through your organization's authorized support process. Do not post a patient screenshot or raw export to a public issue tracker.

SHARED REFERENCE | PRIVACY AND WORKSTATION CARE

27 Care for data and devices

Protect the local workstation and preserve both records and their referenced files.

Patient and clinician responsibilities

- Check the patient identity before recording, prescribing, reviewing or exporting.
- Lock the workspace to Patient Mode for a patient handover.
- Keep clinician and maintenance PINs with authorized staff and use the administrator's configured values.
- Keep exported PDFs, images, recordings and spreadsheets within the authorized storage and sharing process.
- Use the device manufacturer's instructions for cleaning, inspection, placement and handling. This software guide does not specify a cleaning agent or maintenance interval.

Local data and backup

The standard workstation stores its local database and recording assets under **%LOCALAPPDATA%/ThrombUS+**. Technical deployments can use a different configured data root. The database file is **thrombusdb.sqlite**.

A database file alone is not a complete recording backup. Ultrasound images, journals and other measurement assets are referenced from the records. Have the administrator back up the database and the referenced recording files together, with the application safely stopped and no unresolved acquisition.

Do not rename, move or edit recording files, journals or the database to resolve a UI error. Use the application's recovery and export controls and the administrator's backup/restore process.

When technical staff are needed

Device provisioning, network credentials, paired-device selection, firmware-specific setup, driver installation and data import/restore belong to the local technical workflow. Use the header's **Maintenance access** and the configured maintenance PIN for Device Settings and Data Management.

Setup progress can include Connecting, Configuring, Restoring network, Waiting for device and Ready. A saved configuration is not the same as an available or acquisition-ready device. If rediscovery expires, technical staff can use **Check again** and verify the same device identity.

> **ACCESS BOUNDARY**
> Workstation modes and PINs protect application workflows. They do not provide named-user authentication, institutional role assignment or a guarantee of export encryption. Use the deployment's Windows access controls, network restrictions and approved data-handling procedures.

Updates and restart

Let active acquisitions and saves finish before an update or restart. Supported existing installations upgrade their database through the normal application update process with backup and recovery handling. If startup reports an upgrade or recovery problem, keep the existing data and contact technical support.

SHARED REFERENCE | QUICK LOOKUP

28 Terms, keys and task finder

Use this reference to identify a module, a keyboard action or the right chapter.

Terms used in the interface

Term	Meaning in this guide
CUS	Compression Ultrasound: imaging, optional AI inference, RF strain and pressure-related examination functions.
USM	The ultrasound module/service that supplies imaging.
RF	Radio-frequency ultrasound data used by the strain calculation.
ROI	Region of interest used for RF processing and its image overlay.
TGC	Time gain compensation, used to adjust image gain with depth.
StrainMax	The retained highest accumulated signed strain and its first peak time, subject to acquisition completeness.
LRR / LRM	Light Reflection Rheography examination and its measurement module/service.
T0 / V0	LRR refilling time and pump-volume values displayed with the captured leg result.
VOP	Venous Occlusion Plethysmography using coordinated impedance and pressure acquisition.
EIM / EIP	The electrical impedance measurement module and the standalone impedance measurement workflow.
EAC	The pressure actuator/controller used for cuff pump and release operations.
LAM	The activity sensor module/service used for exercise and game telemetry and recording.
Visit / clip / snapshot	An ultrasound encounter, one recording within it, and one still image within it.
Profile / plan / schedule	Saved examination preferences, a rehabilitation prescription, and timed examination items.
Eligible for analysis	The retained acquisition and analysis meet the application's applicable gates. This does not itself establish clinical validity.
Validation	A stored clinician decision about a specific assessment.

Keyboard reference

Key	Action and context
F8	Emergency pressure-stop request while an examination view is open.
H or ?	Open the ultrasound hotkey map.
D, G, O, Y, F, Q	Select ultrasound Depth, Gain, Power, Dynamic range, Focus or Frequency respectively.
Tab / Shift + Tab	Cycle ultrasound parameter selection when its hotkey handler is active.
Arrow keys, + / =, -	Increase or decrease the selected supported ultrasound parameter when editing is permitted.
R / S / P	Toggle ultrasound recording / take a snapshot / toggle clinician manual pressure when the corresponding action is available.
Esc	Clear ultrasound parameter selection; use the dialog's own close control when needed.
Ctrl + F / Ctrl + P	Find text / print this HTML manual in a browser.

Ultrasound hotkeys do not operate inside editable fields or with Ctrl, Alt or Meta modifiers. Unsupported controls and acquisition-state locks still apply. Use the visible controls if there is any uncertainty.

Task finder

I need to...	Go to
Hand the workstation to a patient	3. Patient records and handover; 12. Prepare a patient workspace
Follow today's patient tasks	4. Your daily quick start; 6. Your monitoring schedule
Prepare settings for scheduled use	13. Save and load examination settings
Review strain or pressure behavior	15. Understand strain and pressure
Review or reanalyse a recording	16. Configure and review LRR; 18. Review results and export data
Review an alert or record a decision	20. Validate assessments and inspect alerts
Change a prescription or examination time	21. Patient plans; 22. Monitoring calendar
Export all retained patient history	24. Read and export Patient Report
Resolve a stop, save or connection problem	25. Stopping, saving and closing; 26. Troubleshooting

About this edition

Prepared from the current application routes, interface components and technical guides at source revision **1a8cb20c2059** on **17 November 2026**. Document edition 1.0 is a manual edition, not a claim of a new product release or clinical approval.

All eight interface figures use synthetic patient data and simulated service/device responses. This manual's content and document rendering have been checked; those checks do not qualify physical devices, sensor accuracy, model accuracy or clinical safety.

For installation and device setup, technical staff should consult the repository's Deployment Guide, Device Manager Guide, Hardware Integration, UI Navigation, CUS Strain, LRR Model Integration and Game Exercise Rules guides. The accompanying authoring README records exact source paths and rebuild instructions.