

Simulation Learning System with Virtual Reality (SLS with VR): Introduction to SimX Moderator

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This guide is adapted from SimX’s Instruction Manual located on the SimX Administrator Portal. Elsevier, RELX, and their affiliates are not responsible for the information taken from the SimX manual or the Oculus website.

SLS for RN with Virtual Reality (SLS with VR) scenarios require a facilitator to begin and facilitate a simulation session while the student is wearing the headset in the VR play space.

When learners experience a case, the moderator plays an important role. They control patient and other virtual character speech, mark down interventions performed by the learners, monitor their progress, and may even help them along the way if they get stuck.

NOTE: **Facilitator** and **facilitate**, and **Moderator** and **moderate** are used interchangeably in our documentation, tools and SLS product contents.

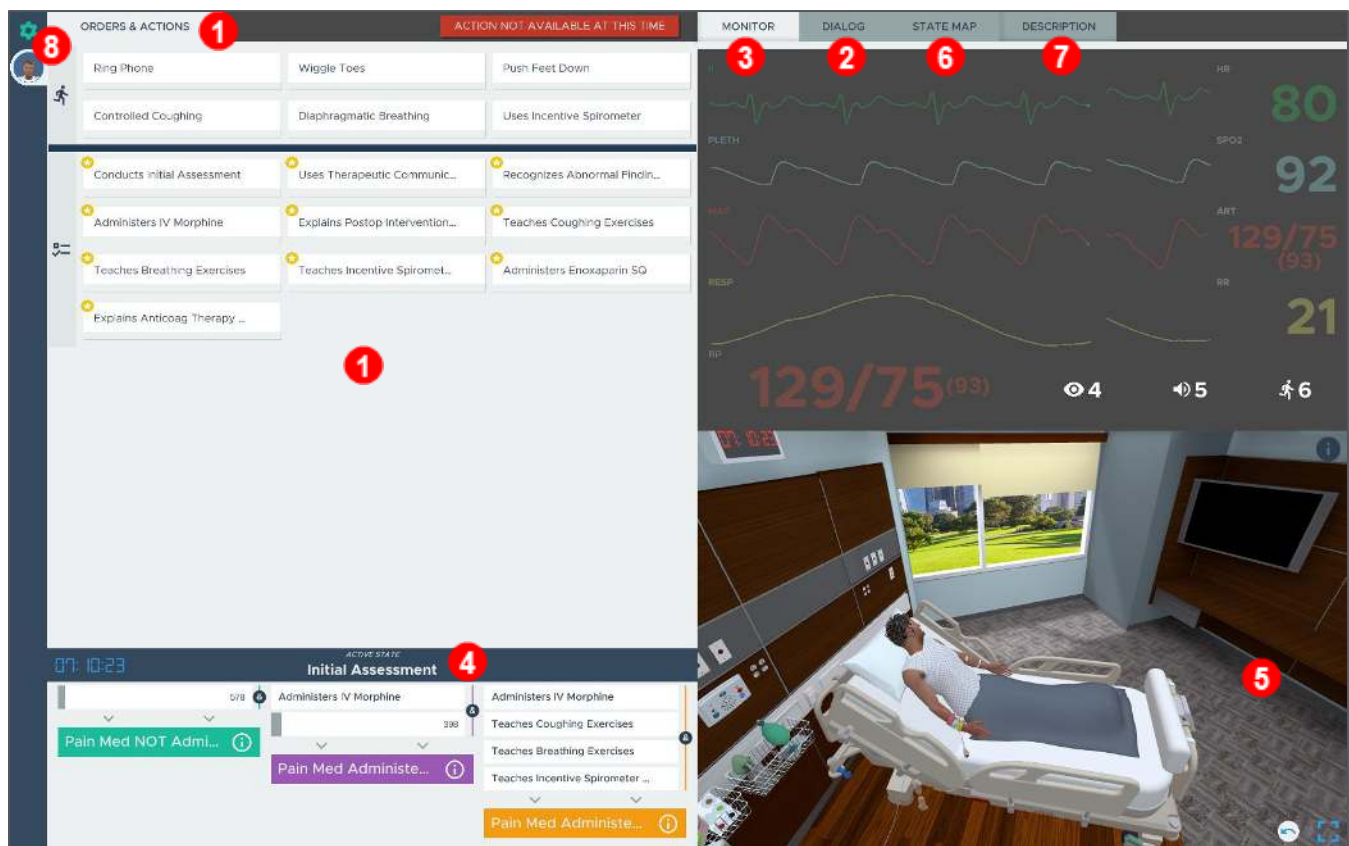
Overview

- In the SimX VR simulation system, **Case** describes a clinical scenario and its accompanying learning points. A case may be linear or have many branching points.
 - **NOTE:** The terms **Case** and **Scenario** are used interchangeably in our documentation, tools, and SLS product contents.
- A VR scenario on the SimX platform is made up of **States**. A State describes a point in time in the case where a learner must accomplish certain tasks before they can progress. These tasks are called **requirements**.
- In addition, each state may have **Critical Actions** that learners are expected to perform as part of the appropriate management of the patient. A Critical Action can be asking a certain question, administering a specific medication, or nearly anything else.
 - In many situations, the requirements to advance from one State to the next may include some or all critical actions for that state, but the requirement may also be a timer or some other event.
- Each case's requirements for state transitions, the critical actions, interventions, and patient vitals are defined for each state. SLS with VR scenarios follow their traditional lab-based scenario counterpart as closely as possible, though states may reflect several scenario phases as compared to the original SLS scenario.

SimX Moderator Interface




There are several main areas of the SimX Moderator along with sub-areas in the upper-right pane:

1. Orders & Actions pane
2. Dialog tab
3. Monitor tab
4. Required Actions pane
5. VR View pane
6. State Map tab
7. Description tab
8. Settings button



1. Orders & Actions Pane

The **Orders & Actions** pane is where the moderator will control the VR environment.

1. **Critical Actions** are marked with a  **yellow star** and are grouped with the  **checklist** icon.
 - Some Critical Actions will be tracked automatically, and others need to be selected manually by you.
 - a. **Manually tracked:** When selected, a **blue bar** will appear on the **Critical Action** button (at its bottom where the gray line is currently), and this manual tracking indicates the required task was completed.
 - Actions that are more subjective need to be manually tracked, such as **Uses Therapeutic Communication** in the example.
 - b. **Automatically tracked:** When a student completes an action in VR, e.g., **Administers IV Morphine** in the example, a **blue bar** will appear on the corresponding **Critical Action** button automatically (at its bottom where the gray bar currently is).
2. The pane may also contain **animation** buttons which allow you to control virtual character movement or environment actions as needed during the case, e.g., **Ring Phone, Controlled Coughing**, etc. in the example). These are grouped with the  **action** icon.
 - Many of the virtual patient's animations (and, if present, additional virtual characters' animations) will be automatic and in response to player actions, but some can be triggered by the moderator.
3. If there are multiple patients in a scenario (e.g., in Maternity or one of our multi-patient scenarios in Community and Leadership), there will be **tabs** on the left (under the Settings icon) with the **patient's pictures**.
4. **NOTE:** Critical Actions and animations buttons are specific to the state of the case that you are in and are defined ahead of time (during the Elsevier authoring stage). If an action is not available and you would like to notify participants, you can select the **ACTION NOT AVAILABLE AT THIS TIME** button

The screenshot displays the SimX Moderator interface. On the left is a sidebar with a gear icon, a user profile icon, and a red circle with the number 3 next to a walking person icon. Below these is a red square icon with a checkmark and a minus sign. The main area is titled 'ORDERS & ACTIONS' and contains a grid of action buttons. A red circle with the number 4 is in the top right corner, next to a red banner that reads 'ACTION NOT AVAILABLE AT THIS TIME'. The grid includes buttons for 'Ring Phone', 'Wiggle Toes', 'Push Feet Down', 'Controlled Coughing', 'Diaphragmatic Breathing', 'Uses Incentive Spirometer', 'Conducts Initial Assessment', 'Uses Therapeutic Communic...' (highlighted in blue with a red circle 1a), 'Recognizes Abnormal Findin...', 'Administers IV Morphine' (highlighted in blue with a red circle 1b), 'Explains Postop Intervention...', 'Teaches Coughing Exercises', 'Teaches Breathing Exercises', 'Teaches Incentive Spiromet...', 'Administers Enoxaparin SQ', and 'Explains Anticoag Therapy ...'.

ORDERS & ACTIONS		
Ring Phone	Wiggle Toes	Push Feet Down
Controlled Coughing	Diaphragmatic Breathing	Uses Incentive Spirometer
Conducts Initial Assessment	Uses Therapeutic Communic...	Recognizes Abnormal Findin...
Administers IV Morphine	Explains Postop Intervention...	Teaches Coughing Exercises
Teaches Breathing Exercises	Teaches Incentive Spiromet...	Administers Enoxaparin SQ
Explains Anticoag Therapy ...		

2. Dialog Tab

The **Dialog tab** in the upper-right corner of the pane is where moderators will spend most of their time. The Dialog tab allows you to control the speech of virtual patients or non-player characters, such as family members or other healthcare staff.

1. Dialog allows you to respond to learners' questions or prompt them with statements or questions from the virtual characters or for Telephone options.
2. **Dialog** is grouped by **Character** or **Telephone**. Click on the **Character** icon for his/her dialogue, then click the desired **Dialog** button to have the virtual patient or character speak within the VR scenario.
 - The virtual patient will look at the learners while delivering the dialog.
3. If dialog text is too long to be displayed on the button, click + by that option to expand the dialog. (When expanded, - will appear in place of +.)
4. If the learners ask a question for which there is no pre-recorded dialogue, you can answer with the **Yes** or **No** buttons, or try clicking other answers to redirect the student (**I don't know** or a **groan of pain**, for example.)

MONITOR	DIALOG	STATE MAP	DESCRIPTION
<div> <div>BD</div> <div>Boyd Dubois</div> </div>			
Hi	Hello		
Yes	No		
Okay	I don't know.		
Maybe	Thanks.		
Hi, I'm Boyd.	That feels normal.		
My name is Boyd Dubois.	Boyd D		
I'm 58 years old.	My birt		
I'm allergic to shellfish. I get hives.	I can hardly wait to get back on the golf course. ...		
When will I be able to get moving again?	I feel so helpless being strapped into this thing!		

3. Monitor Tab

The **Monitor** tab allows you to track the virtual patient's vital signs. Notably, the patient's vitals at any given time will be displayed to you whether they are visible to the learners.


1. The vitals on the monitor start out with dull and translucent coloration, but become brighter and more opaque if they are visible to the learners, allowing you to keep track of which vitals the learners are aware of and which they are not.
 - For example, if the learner places an SpO₂ monitor on the virtual patient, you will see the oximeter and accompanying waveform **light up**.
2. While the A-line pressure is always available to you, giving you a constant monitor of the **patient's current blood pressure**, the learners will only see the blood pressure that was delivered to them the last time they cycled the blood pressure cuff.
3. This pane also shows you the **Glasgow Coma Scale (GCS)** score of the patient during the current state, broken down in the **Eye, Verbal, and Motor score** displayed on the bottom right. This is never visible to the learners.

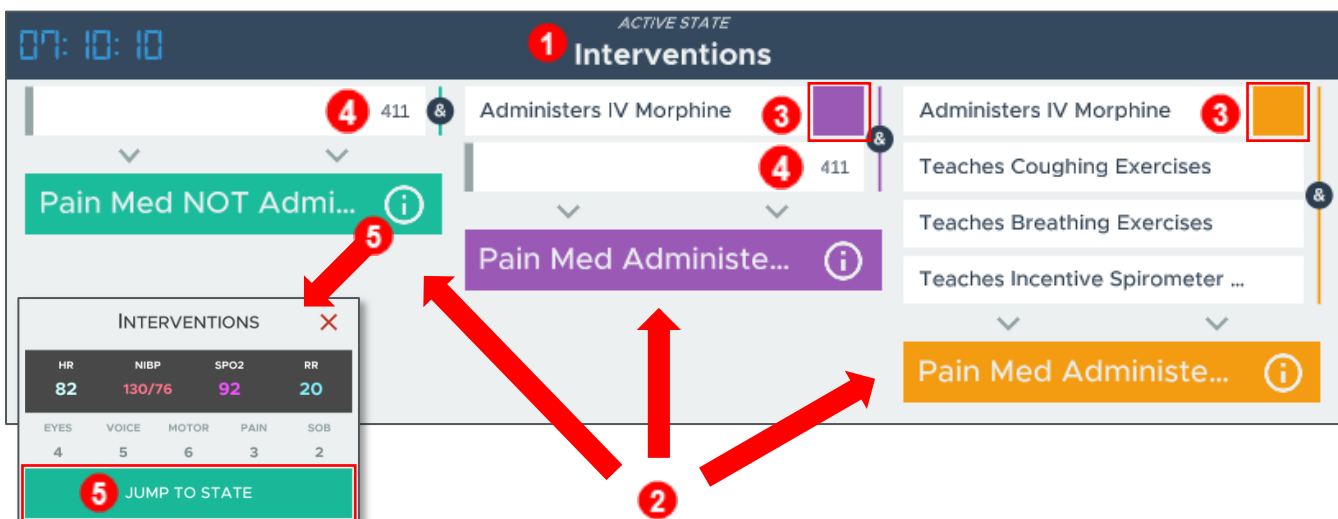


NOTE: There is no option to modify a patient's vitals manually from the SimX Moderator. This is intentional, to encourage careful case design and to discourage drastic deviation from the learning points within a case. This also allows you as the moderator/facilitator to focus less on manually adjusting patient vitals and more on ensuring your students learn what they need to from the case.

4. Required Actions Pane

The **Required Actions** pane allows you as the moderator to keep track of where the learners are in a case.

1. **Active State** is the current state of the scenario.
2. All states that branch off from the Active (or current) State.
3. **Required Actions** are the Critical Actions that need to be completed to advance to the next state.
 - The **indicators** on the right side of each action tell you if the action has already been performed (i.e., the purple square on **Administers IV Morphine** shows it has been completed.)
4. Some states will have a **timer** (411 in the example) listing the number of seconds left (and continuing to count down). This timer could be part of the case in general and serve as a Required Action, or it can serve as the amount of time the learner has to complete the required Critical Actions before the case advances to the next state.
5. View some details of the **Target State** by clicking on the  **information** button. The pop-up window displays the next state's patient vital signs and allows you to manually advance to that state by clicking the **Jump to State** button.
 - **NOTE:** Jumping between states can cause issues with the case, so this action can only be performed to jump forward a state (and cannot jump back/rewind a state as this time).



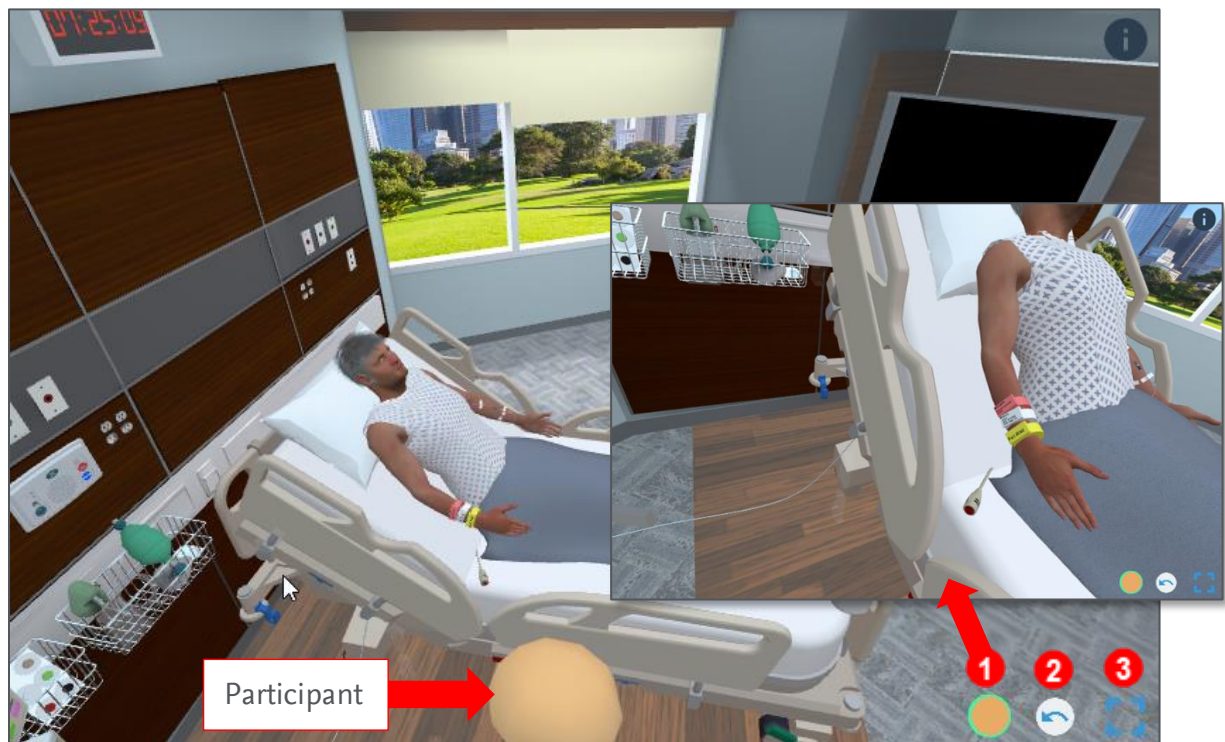
The screenshot displays the SimX Moderator interface. At the top, a clock shows 07:10:10. The main header is 'ACTIVE STATE Interventions'. Below this, a list of actions is shown: 'Administers IV Morphine' (with a purple indicator and a timer of 411), 'Teaches Coughing Exercises', 'Teaches Breathing Exercises', and 'Teaches Incentive Spirometer ...'. A pop-up window titled 'INTERVENTIONS' is open, showing patient vital signs: HR 82, NIBP 130/76, SPO2 92, RR 20, EYES 4, VOICE 5, MOTOR 6, PAIN 3, SOB 2. A red arrow points from the 'Jump to State' button in the pop-up to the 'Pain Med Administe...' action in the main pane. Another red arrow points from the 'Pain Med Administe...' action to the 'Pain Med NOT Admi...' action. A third red arrow points from the 'Pain Med NOT Admi...' action to the 'Pain Med Administe...' action. A fourth red arrow points from the 'Pain Med Administe...' action to the 'Pain Med Administe...' action. A fifth red arrow points from the 'Pain Med Administe...' action to the 'Pain Med Administe...' action.

5. VR View Pane

The **VR View** pane allows you to see what the learners are seeing in the VR environment. You will see the participants represented by their color-coded avatars as they move around the scene.

The default view allows you to use your mouse or finger to drag your view around the environment to view the simulation from different angles. There are several **buttons** along the bottom of this pane/area.

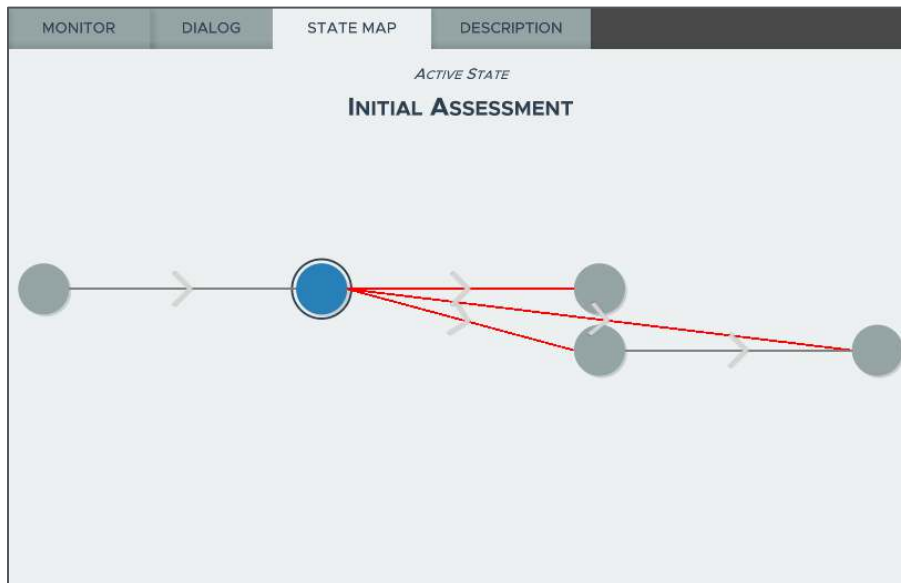
1. **Color-coded icons** can be selected to allow you to view the scene from the specific player's point of view. Shown in the inset is an example of the participant's view.
2. The **arrow** button allows you to move back to a third-person viewpoint.
3. The **square** button makes the VR view full screen.



6. State Map

The **State Map** tab allows you to see a tree that displays all the states involved in the case. This allows you to orient yourself to where the learners are within a case.

NOTE: Currently, you cannot navigate between states from this panel; you can only jump forward to a different state using the **4. Required Actions** pane.



7. Description

The **Description** tab repeats the information provided when first selecting a scenario prior to starting a case.

MONITOR **DIALOG** **STATE MAP** **DESCRIPTION**

Scenario FUN 10 - Boyd Dubois - Postoperative Pain Management and Care

Patient Data:
Boyd Dubois
58-year-old
Male

Estimated Case Time: 10 - 15 Minutes

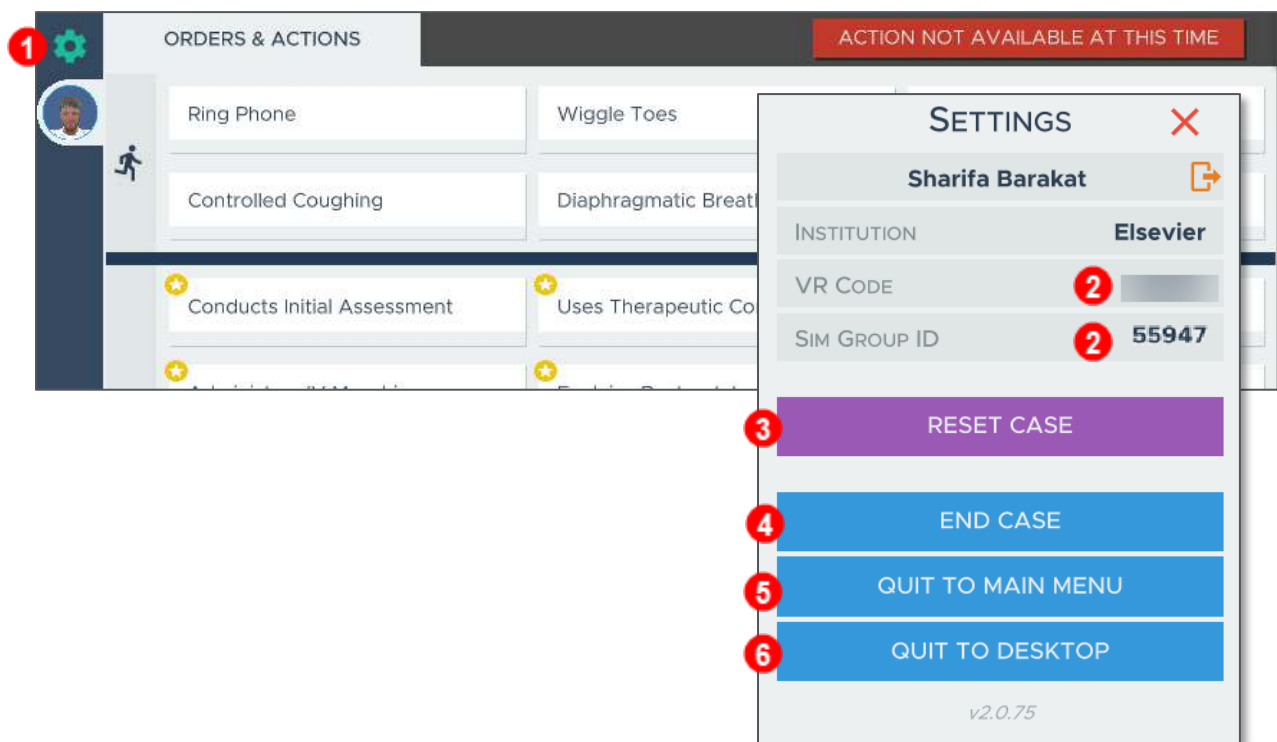
Primary Diagnosis:
Osteoarthritis

Secondary Diagnosis:
Total hip replacement

Simulation Challenge:

8. Settings

1. Click on the **Settings** button (gear icon) in the upper-left corner of the SimX Moderator to bring up the **Settings** menu (*inset, at right*).
2. Here, you can also view your **Institution VR Code** and **Sim Group ID** for the session.
3. Select **Reset Case** to start the same simulation over again.
4. Select **End Case** will end the scenario and produce a report in .html format to **Documents** in your local hard drive in a folder titled **SimX Case Reports**.
 - **NOTE:** Selecting **End Case** will also end the case for all participants.
5. Selecting **Quit to Main Menu** takes you back to the **Search Sim Groups/Start a Sim Group** home screen on the moderator. This allows you to exit a case as the moderator.
 - This is helpful if there are multiple moderators in a case, and one moderator would like to exit without ending the case.
6. **Quit to Desktop** closes the application.



See **Facilitating a VR Simulation** for information on how to run a simulation in VR.

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END OF GUIDE