

# Scenario Design



An open access professional development module for simulationists

# How to use this module



**Module progresses from foundational concepts to advanced practice. Self direct how deep you want to go!**

**Exercises are designed to work on your own or to discuss with a friend over coffee.**



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# Scenario Design

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## Overview :

The scenario is the foundation and backbone of a simulation. A poorly written scenario can endanger the fiction contract with participants or lead to disengagement from current and future simulation education. Conversely, a well-designed and executed scenario can create an authentic learning experience for individual participants and improve teamwork through reflection, discussion and a better understanding for the actions and reasoning of other team members.

A scenario should be purposefully designed around learning objectives, which in turn are based on a learning needs assessment. Almost all other decisions – modality, case flow, equipment, location – are informed by the identified learning objectives.

Scenario design requires a lot of attention to detail and you will find yourself faced with unique obstacles and considerations. This module is designed to familiarise yourself with the process of scenario design and to provide tips and pearls for your future simulations.

## Exercise 1 : Foundational principles

**Listen to the following podcast:**

- [Simulcast Podcast Episode 11: Building Better Sim Cases<sup>1</sup>](#)

**Ask yourself :**

- How does the podcast change your view on scenario design?

**Retrieval practice :**

- Can you remember the four most important steps for writing a scenario?
- Challenge your recall abilities and try to write those steps down, then compare them with the provided answers at the end of the module.

**Another great starting point is the following post on 'Life In The Fast Lane':**

- [Simulation Scenario Design<sup>2</sup>](#)

**Thorny question:**

- Is a simulation really the best modality to achieve your objective outcomes?

**Optional deep dive:**

- For a deeper dive into the principles of simulation design read [INACSL's Standards of Best Practice for Simulation Design<sup>3</sup>](#).



## Exercise 2 : Writing effective learning objectives

In exercise 1 we considered the importance of learning objectives.

In this exercise, start creating your own learning objectives for a healthcare scenario relevant to your service.

### Ask yourself:

- What are you trying to achieve with this simulation?
- Who are your learners? What are their needs?
- Are the participants a homologous group of learners or is your scenario directed at a multidisciplinary team? How can you avoid becoming overly focused on one “tribe”?
- Are you a content expert in your field?
- Who could you collaborate with to create up-to-date content that is relevant to all participants?
- What should the learner be able to do, or do differently, after participating in the simulation? Do you have a specific task in mind which you want the team to rehearse?
- How do you expect learner behaviour to change as a result of participation in your simulation?

Use [Bloom’s Taxonomy](#)<sup>4</sup> to help you create specific, achievable and relevant objectives.

### Thorny questions:

- Have you considered defining a needs assessment for your potential simulation program? Are you aware of different curriculum and program needs? How might this change your objectives?
- What would be your other options to facilitate those objective learning outcomes?
- Where is the ‘sweet spot’ in the number of learning objectives for a sim?

### A concrete example:

- For an example of incorporating educational learning objectives, psychomotor skills rehearsal and systems testing into your scenario design explore the '[Paediatric Head Injury](#)'<sup>5</sup> simulation package from Children's Health Queensland.
- How does the package attempt to meet the specified learning objectives?

## Exercise 3 : Craft a narrative and plot the flow

After clearly defining your learning objectives, you finally get to write the actual scenario!

Start by finding the template that suits your facility best; feel free to play with the template and adjust it to your and your learners’ needs.

A good starting template is provided by [EM Sim Cases](#)<sup>6</sup>.

### Ask yourself:

- What is the ideal modality to match your objectives? Is a manikin or a simulated patient/ patient actor better suited to promote transfer of learning for the participants?
- Could you consider a [VEMS \(Visually Enhanced Mental Simulation\) as an alternative simulation delivery format?](#)<sup>7</sup>
- Have you contemplated all resources you require for your simulation?
  - xrays/ imaging, ECGs, pathology results, fictional yet realistic medical records
  - props (e.g. medication, iv fluid, IVC etc), equipment (e.g. ultrasound, defibrillator), moulage
  - human resources: simulation technician, simulated patient actor, nursing “allies”/ role-players, pre- and debrief lead
  - voice in ceiling (“VIC”), phone consultation, switch
  - high quality learning resources/ prereading for participants
- Can you clearly determine the different phases or states of your scenario? Have you established trigger points and expected actions that will advance participants to the next stage? What will determine the end of the scenario?

## Exercise 4 : Rethinking 'fidelity'

The term 'high fidelity' is used frequently within the simulation community with significant inconsistency regarding what that means and implies.

### Ask Yourself:

- Does 'High Fidelity' simulation automatically correspond to optimal educational effectiveness?
- How much emotional, conceptual and physical realism is required to promote learners' engagement and immersion?

### Read the article:

- [Reconsidering Fidelity in Simulation-Based Training](#)<sup>8</sup>
- Explore the comments from the [Simulcast Journal Club on the article](#)<sup>9</sup> or listen to the [accompanying podcast](#)<sup>10</sup>.

### Discuss with a colleague:

- Has your perspective on the term fidelity changed since reading these articles?
- Does that change your approach to scenario design? If so, how?

## Exercise 5 : Preparing to pilot your scenario

Most scenarios are not quite on target after the initial draft. Before you ask your peers or mentors to review and evaluate your scenario there are some useful questions to ask yourself.

### When revising the draft, ask yourself these four brief questions:

- Are the scenario objectives clear?
- Does the case make sense in its flow?
- Is the biomedical content sound?
- Does the case meet the objectives?

### Other important considerations:

- Is your scenario cognitively overwhelming?
  - You can read more about intrinsic, germane and extraneous cognitive load here:
  - [Using Cognitive Load Theory to Inform Simulation Design and Practice](#)<sup>11</sup>.
- Have you appropriately pitched the scenario to the learners' level?
  - You can read more about the 'zone of proximal development' to help find the sweet spot for learners: [Cognitive Load & The Struggle Zone](#)<sup>12</sup>
- Have you considered possible safety risks?
  - Read the following article: [Simulation Safety First: An Imperative](#)<sup>13</sup> and follow up blog post [Simulation safety spotlight – a call for safety briefings in sim?](#)<sup>14</sup>.
  - Contemplate the different risks to the participants, to patients and even to the hospital system.
  - Could you integrate or attach the safety checklist to your scenario?
- Does your scenario promote equity, diversity and inclusion in a meaningful manner? On the other hand, can you think of recent examples (in simulation, in education or on the floor) when these principles were harmed?
  - Read this blog post for food for thought: [Equity, Diversity, and Inclusion in Simulation – A Reflexive Tool for Simulation Delivery Teams](#)<sup>15</sup>.

## Answers to Exercise 1 : Foundational Principles

- Define your learning objectives
- Clearly script the phases or different stages of the simulation.
  - Consider what template suits your purposes best.
- Gather your relevant resources: ECGs, imaging, blood results, medical notes etc.  
Browse FOAM resources, e.g. LITFL, EM Sim Cases, radiopaedia, ECGlibrary...  
Maybe you have an interesting VBG or imaging which you want to use in your scenario?
- How can you pilot test your case?

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## About the Author :



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Mitzi is an emergency physician and medical educator, currently completing a fellowship in Medical Education at the Gold Coast University Hospital. After graduating from the TU Medical School in Munich and commencing orthopaedic training in Germany, she decided to move to Australia and swapped Orthopaedics for Emergency Medicine. During her emergency training, she discovered her passion for medical education, using teaching to empower and elevate those around her.

Outside of work she tries to go to the beach as much as possible, for walks with her dog, surfs with her husband and splashes with her daughter.

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