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Designing Effective Simulation Scenarios for Health Educators

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What does simulation mean to you?

THINK

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Objectives of the Workshop

Recognize	Name	Describe	Apply
Recognise three situations when simulation learning can be applied in your workplace	Name five benefits of using simulation learning in your role as a teacher	Describe the six steps needed to create a clinical scenario based on Bambini's model	Apply the knowledge gained during this workshop to create a clinical scenario independently



Where does simulation come from?

How is simulation used in medicine?

https://www.youtube.com/watch?v=u7J7T06THyA

Three Major Movements

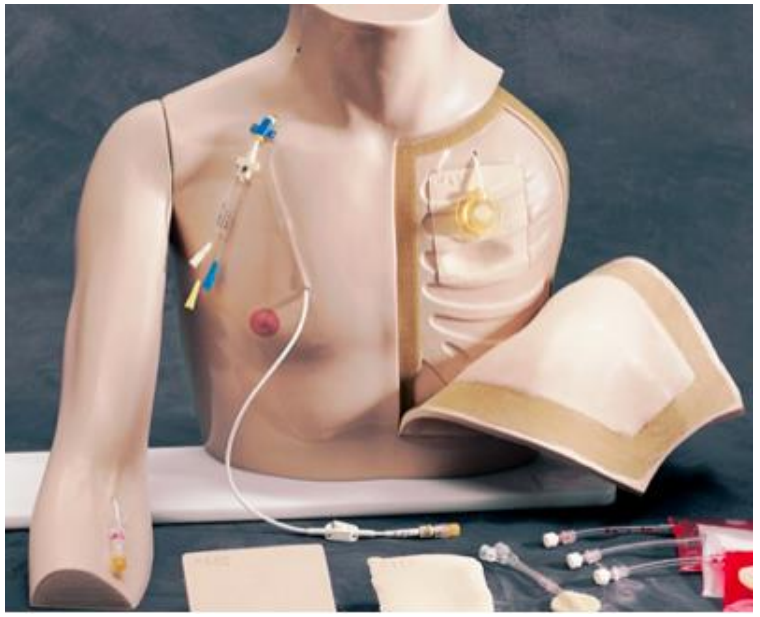
Rescue Anne in 1960

Simulators with human aspects in 1960s

Reform of medical education in the twentieth century

Four Types of Simulation

- **Part-task trainers**
- **Computer based system**
- **Complex manipulation**
- **Integrated simulators**



Part-task trainers: https://www.georgebrown.ca/simulation_centre/Mannequin_List.aspx, Computer-based system: https://www.theverge.com/2018/8/14/17670304/virtual-reality-surgery-training-haptic-feedback-fundamentalvr, Complex manipulation: https://www1.udel.edu/researchmagazine/issue/vol3_no1_humanities/standardized_patients.html , Integrated simulators: https://www.healthysimulation.com/high-fidelity-simulation

How can we apply simulation to our learning environments?

https://caehealthcare.com/blog/employing-best-practices-in-team-based-simulation-training/

Let's play…FAMILY FEUD

Advantages

- Risks avoided
- Undesired interference is reduced
- Tasks/scenarios can be created to demand
- Skills can be practised repeatedly
- Training can be tailored to individuals
- Retention and accuracy are increased
- Transfer of training from classroom to real situation is enhanced
- evaluate student performance and diagnose educational needs

Challenges

- **Cost**
- **Administrative challenges**
- Need **time** to create and to run the scenarios
- To make the situation **real**
- To identify those **competencies**
- Use metrics to conduct the assessment in a fair and reliable manner
- **Technical difficulties**
- **Programming difficulties**
- **Attitude of learners**

Let's talk about building a scenario today…

Group A

Step 1: Build scenario A

Step 2: **Facilitate** scenario A

Step 3: **Participate** in scenario B

Group B

Step 1: Build scenario B

Step 2: **Participate** in scenario A

Step 3: **Facilitate** scenario B

TODAY'S SCENARIO IS ON PROVIDING FEEDBACK

RECAP OF PENDELTON MODEL

- **Ask the student:** "What do you think went well?"
- The **teacher states** areas of agreement and elaborates on good performance
- **Ask the student**: "What do you think could be done differently?", "What could be further improved?"
- The **teacher states** what he/she thinks could have been improved

Mutually agreed action plan is formed: "How can this be achieved?"

Six Steps of Building a Simulation

STEP 1: **DETERMINE THE OUTCOME**

STEP 2: **DETERMINE THE CONTEXT**

STEP 3: **CREATE YOUR OBJECTIVES**

STEP 4: **CONSTRUCT THE FLOW**

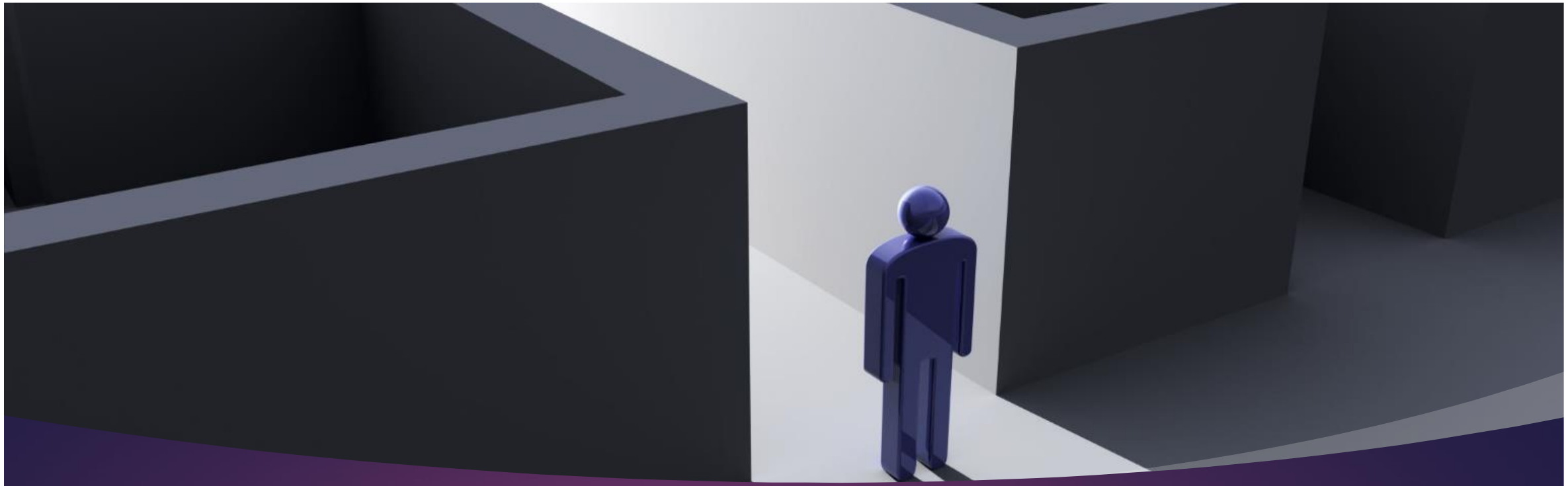
STEP 5: **BACK TO THE BEGINNING**

STEP 6: **ADDING COMPLEXITY**

STEP 1: DETERMINE THE OUTCOME

Outcome refers to the knowledge and behaviors you want to see in your learners as a result of having participated in the simulation. (Bambini, 2016).


COMPLETE STEP 1

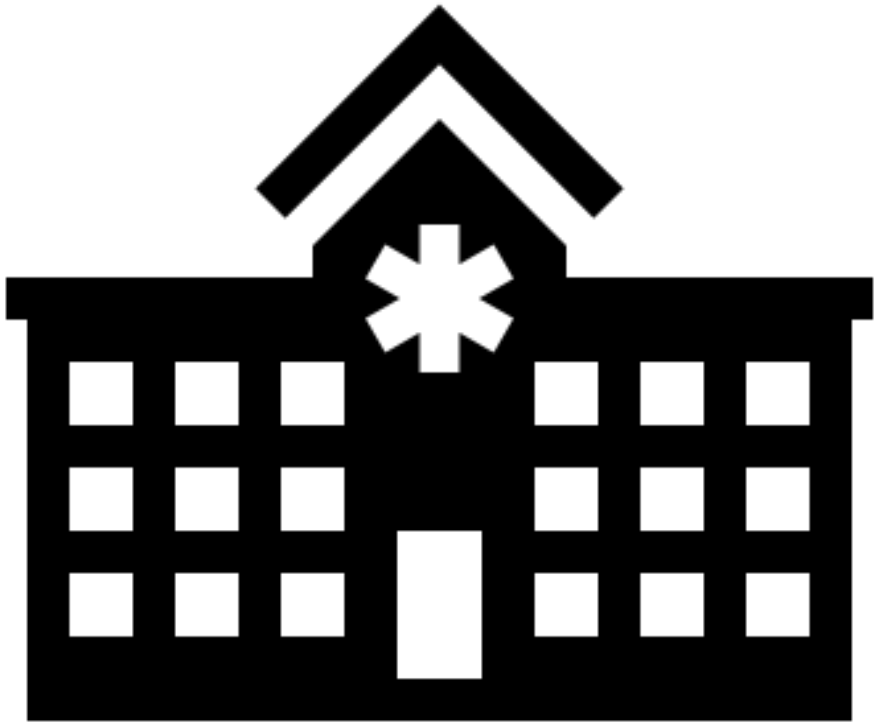


STEP 2: DETERMINE THE CONTEXT

- Includes physical, conceptual and psychological environment
- Must be congruent with the desired outcome(s)

Physical/ Environmental Fidelity

- How realistically the physical context of the simulation-based activity replicates the actual
  - EXAMPLE: patient(s), simulator/manikin, standardized patient, environment, equipment, embedded actors, and related props.

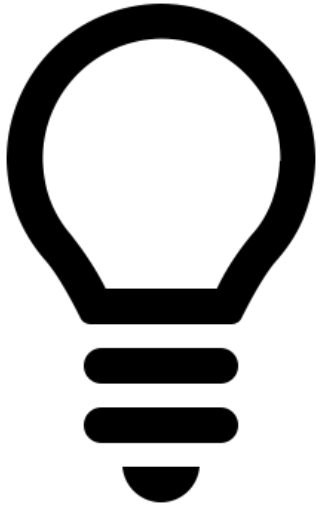


Conceptual Fidelity

- All elements of the scenario or case relate to each other in a realistic way so that the case makes sense as a whole to the participant(s)
  - EAXMPLE: (e.g., vital signs are consistent with the diagnosis). To maximize conceptual fidelity, cases or scenarios should be reviewed by subject matter expert(s) and pilot tested before use with participants.

Psychological Fidelity

- Maximizes the simulation environment by mimicking the contextual elements found in clinical environments
  - EXAMPLE: an active voice for the patient(s) to allow realistic conversation, noise and lighting typically associated with the simulated setting, distractions, family members, other health care team members, time pressure, and competing priorities.

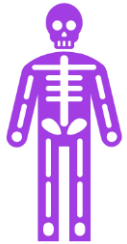



COMPLETE STEP 2

STEP 3: CREATE YOUR OBJECTIVES

- Your objectives are the specific behaviors you want your learner to perform, hence they are action-oriented
- Your objective will begin with "The learner will…" and continue with a verb, followed by an object

Write SMART goals to guide the planning of any simulation.



Be specific about what the learners should walk away with (e.g., understanding their role in the care of a sepsis patient, knowing the protocol for the facility, etc.).

Objectives should be measurable.

Consider the knowledge and experience of the participants when setting the objectives.

The simulation exercise must be relevant to the participants. Use simulation to reinforce skills and behaviors necessary to quickly recognize and treat sepsis.

Each simulation should be respectful of the participants' time and timely to the current situation

1

By the end of this educational event, the learner will be able to…

2

Select the action verb that describes the learner's performance

3

Describe the specifics of what the learner will be doing when mastery has occurred (Consider whether you need to specify context)

Knowledge	Understand	Apply	Analyze	Evaluate	Create
Define	Explain	Solve	Analyze	Reframe	Design
Identify	Describe	Apply	Compare	Criticize	Compose
Describe	Interpret	Illustrate	Classify	Evaluate	Create
Label	Paraphrase	Modify	Contrast	Order	Plan
List	Summarize	Use	Distinguish	Appraise	Combine
Name	Classify	Calculate	Infer	Judge	Formulate
State	Compare	Change	Separate	Support	Invent
Match	Differentiate	Choose	Explain	Compare	Hypothesize
Recognize	Discuss	Demonstrate	Select	Decide	Substitute
Select	Distinguish	Discover	Categorize	Discriminate	Write
Examine	Extend	Experiment	Connect	Recommend	Compile
Locate	Predict	Relate	Differentiate	Summarize	Construct
Memorize	Associate	Show	Discriminate	Assess	Develop
Quote	Contrast	Sketch	Divide	Choose	Generalize
Recall	Convert	Complete	Order	Convince	Integrate
Reproduce	Demonstrate	Construct	Point out	Defend	Modify
Tabulate	Estimate	Dramatize	Prioritize	Estimate	Organize
Tell	Express	Interpret	Subdivide	Find Errors	Prepare
Copy	Identify	Manipulate	Survey	Grade	Produce
Discover	Indicate	Paint	Advertise	Measure	Rearrange
Duplicate	Infer	Prepare	Appraise	Predict	Rewrite
Enumerate	Relate	Produce	Break down	Rank	Role-play

COMPLETE STEP 3

Example Learning Objective: *At the conclusion of this workshop, the participant will be able to write learning objectives for a specific simulation learning experience.*

STEP 4: CONSTRUCT THE FLOW

Structure the simulation to have a defined starting point (e.g., pt. arrives in ED) and ending point (e.g., EMS handoff to ED RN or ED RN handoff to ICU RN).

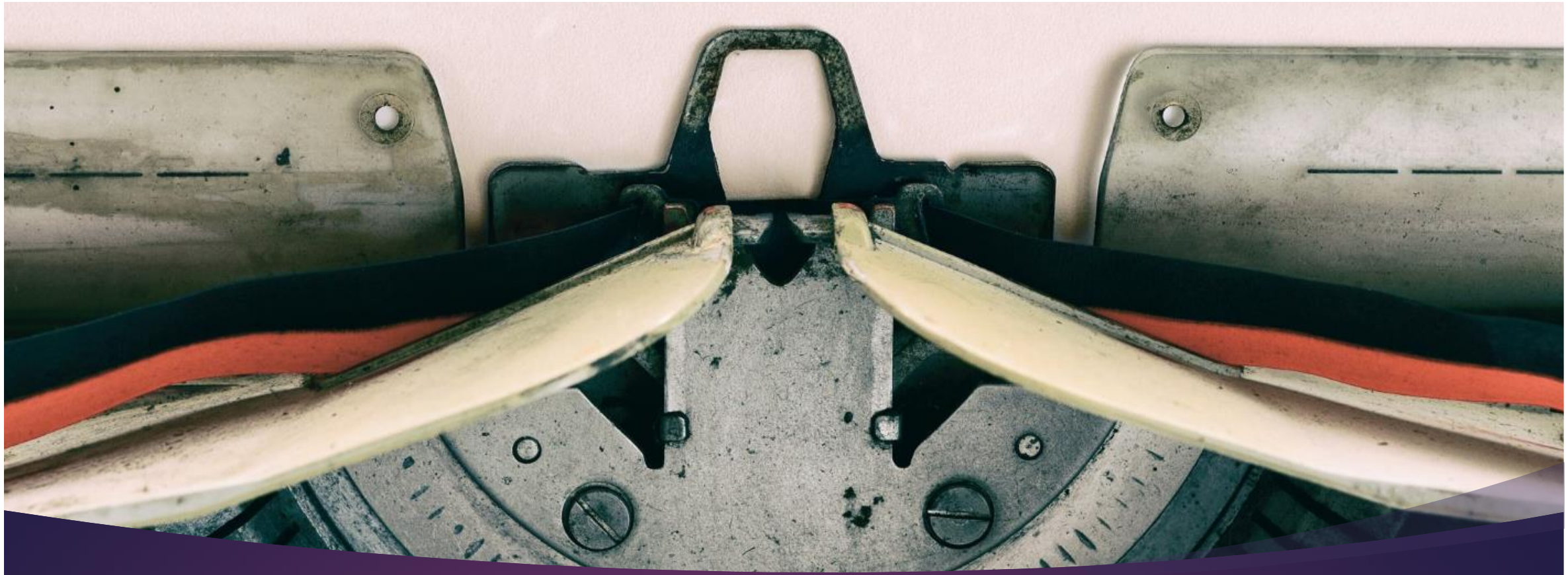
Develop a process flow map that runs through the scenario with yes/no decision points

Beginning: How will the learner know what is happening prior to stepping into the simulation (e.g., SBAR report)?

Middle: What steps do the participants need to take to achieve the outcomes & objectives?

End: What is the end-point for the simulation? The end-point can be when the objectives, participant skills and behaviors are achieved, or time runs out.

COMPLETE STEP 4



STEP5: BACK TO THE BEGINNING

After designed the overall flow of the scenario, it's time to add details that will make it even more realistic.

Add elements related to the clinical experience (drawing inspiration from your patients)

Add biopsychosocial information (reason of admission, medical history, family history, prior laboratory or diagnostic results, previous interventions, medication, autonomy, living environment, family, network)

Provide details about the physical environment and available resources during the scenario

Review the scenario to ensure that cues are sufficient for the learners to allow for each aspect of clinical judgment.

Make sure the scenario meets the objectives

STEP 6: ADDING COMPLEXITY

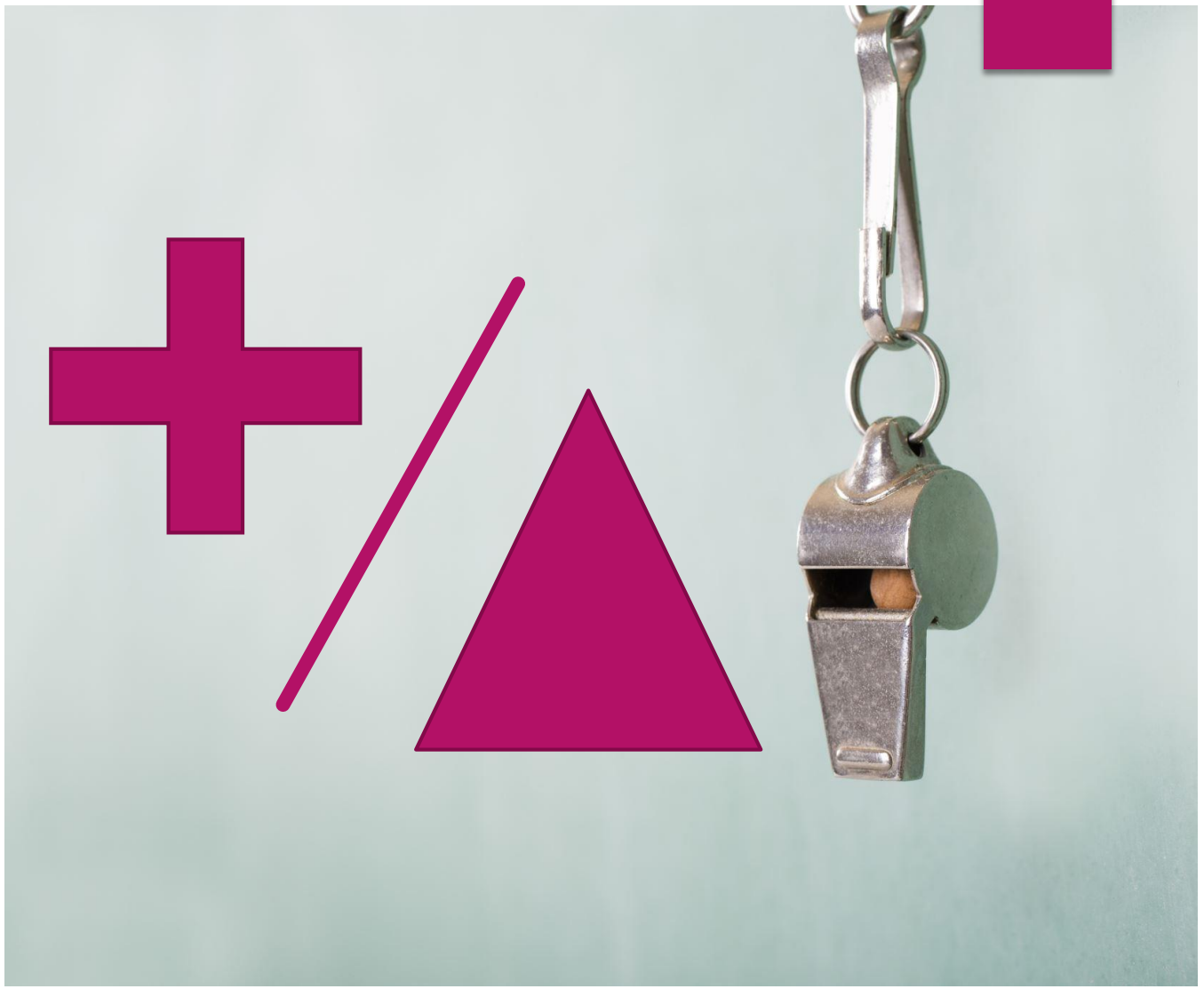
- Once the scenario has been created, it can be adapted and used by students of different levels. Begin with the basic scenario and add challenges depending on learner's level.
- One way to enhance complexity to scenarios is to add distractors, which are irrelevant clues that can lead to the wrong diagnosis.

SIMULATION EXERCISES SHOULD START WITH:

-Introduction to the room/environment/ safety message

CONCLUDE WITH:

-Debriefing and Evaluation



COMPLETE STEP 5, 6 & Introduction

FRIST SCENARIO

GROUP A – FACILITATE

GROUP B - PARTICIPATE

DEBRIEF SCENARIO 1

SECOND SCENARIO

GROUP 2 – FACILITATE

GROUP 1 - PARTICIPATE

DEBRIEF SCENARIO 2

What does simulation mean to you…NOW?

https://www.polleverywhere.com/multiple_choice_polls/EX1iuRUIVC4KUP6xLQnX7

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