

# SAFETY

simulation for medical practice

SIMULATION APPROACH FOR  
EDUCATION AND TRAINING  
IN EMERGENCY

## Emergencies in pregnancy

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BODY INTERACT™  
VIRTUAL PATIENTS



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## DOCUMENT VERSION 00

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## Scenario Description

Learning Target	Description	Participants
<p><b>Medical:</b></p> <ul style="list-style-type: none"> <li>-Patient evaluation (ABCDE) and monitoring (both mother and foetus)</li> <li>-Differential diagnosis of seizures during pregnancy</li> <li>- Eclampsia management (vital support and specific treatment)</li> <li>- Structured handover (SBAR)</li> </ul> <p><b>CRM:</b></p> <ul style="list-style-type: none"> <li>-Call for help</li> <li>-Anticipate and plan</li> <li>-Use the 3Cs to communicate (citing names, clear instructions, close the loop)</li> <li>-Situation awareness (be aware of the initial situation and re-asses)</li> <li>-Share the mental model and gather team feedback</li> <li>-Organise team:</li> <li>--Distribution of roles</li> <li>--Distribution of tasks</li> </ul>	<p><b>Where:</b></p> <ul style="list-style-type: none"> <li>- Emergency room of a tertiary care hospital</li> </ul> <p><b>Frame conditions:</b></p> <ul style="list-style-type: none"> <li>- Monitoring, blood tests, US, cardiotocographic monitoring</li> <li>- Possibility of transfer to other hospital facilities (OR for example)</li> </ul>	<ul style="list-style-type: none"> <li>-Medical student 5<sup>th</sup> or 6<sup>th</sup> year or resident 1<sup>st</sup> year</li> <li>-Nurse student 4<sup>th</sup> year</li> <li>-Midwife 1<sup>st</sup> year</li> </ul>

Notes:

This scenario can be performed either by the whole team as participant (medical and nurse/midwife role) or one participant (medical or nurse role) and an actor.

Learning targets could be different for nursing, midwife and medical students, ie: medical management only for medical students

## Scenario Briefing

Briefing (everyone)	Additional Briefing (individual positions)	Case Briefing (roleplayers)
<p>A 38 years-old, 32w pregnant woman is brought to ER after presenting generalized seizures. At her arrival she is obtunded, barely responding short orders with her eyes closed.</p> <p>When she is monitored:</p> <ul style="list-style-type: none"> <li>• BP 160/100 mmHg</li> <li>• HR 110</li> <li>• satO2 96.</li> </ul> <p>She had had a normal pregnancy without any complications.</p>	<p><b>Medical student or resident:</b> -You are working in the emergency department. You are asked to attend a patient with a complaint of severe headache. You will work with a colleague nurse.</p> <p><b>Nurse/Midwife student:</b> - You are working in the emergency department. A patient with a complaint of severe headache just arrived. You are asked to take care of her. You will enter the room with the medical student. In the room there is a nurse assistant</p>	<p><b>Patient:</b> You are obtunded, in a postictal seizures state. Eyes closed, opened to an order. After a while you complain about headache and dizziness. You had a previous pregnancy without incident</p> <p><b>Next of kin:</b> You explain that she had complained about a strong headache during the morning. She just fainted and started to convulse during 5 minutes. You called for help. You are very nervous and worried about your wife and baby.</p> <p><b>Emergency doctor:</b> You are a general practitioner on duty with scarce experience in obstetrics emergencies. You are attending a patient in another box and available if the participant asks for help.</p> <p><b>Nurse assistant:</b> You are an ER nurse. You monitor the patient at her arrival. You suggest for additional exams if the participant do not request them.</p>

Notes:

- This scenario briefing is for 2 students (medical and nurse).
- If the only participant is a medical student then, the nurse assistant will be replaced by an emergency nurse that will remain in the scenario from the beginning helping the student (confederate). A second medical student can be added, either from the beginning of the case or as help to the first student.
- If the only participant is a nurse student, the senior emergency doctor will remain in the scenario from the beginning. A second nurse student can be added, either from the beginning of the case or as help to the first student.

## Script Sim Nurse/Co-Instructor

List of Material	Set-Up Room	Set-Up Simulator
<ul style="list-style-type: none"> <li>- Patient monitor (ex Tablet)</li> <li>- Monitoring app (ex: SimMon)</li> <li>- Simulated belly</li> <li>- Monitoring: EKG leads, pulse oximeter, non-invasive blood pressure cuff, temperature probe</li> <li>- Nasal prongs and venturi mask</li> <li>- Face mask</li> <li>- Equipment for peripheral intravenous cannulation: skin cleansing material, gauzes, tourniquet, intravenous cannula, line, bag</li> <li>- Anticonvulsant medication: magnesium sulphate, diazepam</li> <li>- Other medication</li> <li>- Cardiotocograph probe</li> <li>- Ultrasound probe</li> <li>- Pre-recorded foetus cardiac activity and US video.</li> <li>- Device to reproduce foetus cardiac activity and US video</li> <li>- Crash cart</li> </ul>	<ul style="list-style-type: none"> <li>- When the participants arrive the patient is in the room with the nurse assistant (confederate). They are briefed by the emergency doctor at the door, (confederate).</li> <li>- The patient:               <ul style="list-style-type: none"> <li>- Spontaneous ventilation in air room</li> <li>- Not monitored</li> <li>- Has not a peripheral intravenous line</li> </ul> </li> <li>- In the room:               <ul style="list-style-type: none"> <li>- Crash cart</li> <li>- Ultrasound machine</li> <li>- Cardiotocograph</li> </ul> </li> </ul>	<p>Hybrid simulator (actress with a simulated belly)</p> <p>Patient monitor with a tablet and APP (ex: SimMon)</p>

## Scenario Saver

How to react if the medical problem is not identified	How to react if the medical problem is identified too quickly	Other comments, material needed for savers (e.g. white coat)
<p>- If the participant/s are not able to reach a diagnosis or if they reach a diagnosis but they don't treat the patient accordingly, the senior emergency doctor (confederate) will enter the scenario and will guide the participant through all the steps for the resolution of the case.</p>	<p>- When the scenario is solved, regardless of the timing, the senior emergency doctor (confederate) will enter the scenario and the participants will resume the case If something relevant is missing the confederates will point it out (ex: call the ICU...). He/She can also suggest a differential diagnosis for seizures in a pregnant woman.</p>	<p>- If the participants are starting a treatment or doing an action that might be harmful for the patient, the emergency doctor will enter the scenario to reconduct the situation.</p>



## Scenario End Criteria

Scenario ends when ...	Timing	
<ul style="list-style-type: none"> <li>- It ends when the following statements are true:               <ol style="list-style-type: none"> <li>1. The diagnosis of eclampsia/preeclampsia is reached</li> <li>2. Support treatment is started</li> <li>3. Specific treatment is started</li> <li>4. Verbalizes what is the next step after adequate management for the critical situation has been made</li> </ol> </li> <li>- Then the emergency doctor (confederate) will enter the scenario, they will ask the participants a briefing of the situation. Afterwards the scenario ends.</li> <li>- These can be achieved by the participants on their own or with help of the scenario saver</li> </ul>	<p>The scenario is planned to last 15 minutes.</p> <p>Instructors could help if the previous points have not been achieved within the stipulated time.</p>	

Notes: Don't let the patient die!

General note – end the scenario saying:

“The patient is now going to be taken care of, thank you for solving the case”

## Simulator Set-Up, Steering

	<b>Phase 1 Start</b>	<b>Phase 2 BP stabilises</b>
<b>Vitals</b>	HR:110/min BP: 160/100mmHG SpO2 96% in room air, 98% with oxygen RR: 20/min Temp:36,5°C EKG: sinus rhythm, no abnormalities	As before BP lowered according to local guidelines and standards
<b>Text for patient</b>	She is obtunded, barely responding short answers and with her eyes closed. Progressively, she becomes more awake and reactive to orders. She complains of headache and dizziness. She does not remember about what has happened. She asks how the baby is and what has happened.	Both the patient and the next of kin understand the situation when it is explained. They ask if it is absolutely necessary to end the pregnancy.
<b>Expected management during scenario</b>	ABCDE evaluation. anamnesis (next of kin and patient) Physical examination to the patient Monitoring Oxygen iv-line	<ul style="list-style-type: none"> <li>- Identify the critical situation (differential diagnosis of the convulsions).</li> <li>- Initiate anticonvulsant and antihypertensive treatment.</li> </ul> Consult with OB/GYN about further procedure - Explain everything to the patient and companion.

Notes: How to perform obstetric ultrasound will not be a learning target

## Abstract

<b>Learning Target:</b>	Diagnosis and treatment of a patient with preeclampsia/eclampsia
<b>Description:</b>	<ul style="list-style-type: none"> <li>- Signs and symptoms recognition</li> <li>- Basic monitoring</li> <li>- Supportive treatment of eclampsia/preeclampsia</li> <li>- Definitive treatment of eclampsia/preeclampsia</li> </ul>
<b>Participants:</b>	Medical student 5 <sup>th</sup> or 6 <sup>th</sup> year or resident 1 <sup>st</sup> year and/or Nurse student 4 <sup>th</sup> year and/or midwife 1 <sup>st</sup> year
<b>Case Briefing:</b>	A 38 year-old 32w pregnant woman with preeclampsia/eclampsia in is the ER
<b>List of Material:</b>	<ul style="list-style-type: none"> <li>- Basic monitoring</li> <li>- Simulated belly</li> <li>- Medication: anticonvulsant, antihypertensive, others</li> <li>- Cardiotocograph, US probe, pre-recorded foetus cardiac activity/US video</li> </ul>
<b>Set-Up Room</b>	<ul style="list-style-type: none"> <li>- Emergency room</li> <li>- Hybrid simulator on bed</li> </ul>
<b>Set-Up Simulator:</b>	<ul style="list-style-type: none"> <li>- Hybrid simulator (actor with a simulated belly)</li> <li>- Vital signs remote control (Tablet and APP, ex: SimMon )</li> </ul>
<b>Scenario Saver:</b>	Emergency nurse can guide the participants during the scenario Emergency doctor
<b>Scenario End Criteria:</b>	From control room and with confederates. Possibility of communication with confederate (walkie talkie)
<b>Management during Scenario:</b>	
<b>Other:</b>	Limitations <ul style="list-style-type: none"> <li>- Intravenous cannulation</li> <li>- Real time performance of foetus cardiac activity and US</li> <li>- Gynaecological examination</li> </ul>