

## APPENDIX K: SEVERE PREECLAMPSIA/ECLAMPSIA IN LDR V2.0 SimMan 3G: Program Algorithm & GUI Notes

### Severe Preeclampsia and Eclampsia in LDR Unit v2.0 SimMan3G

#### Part 5 - Program Algorithm & GUI Notes

<p>Patient: Monitor: OB</p> <p><b>Initial State</b></p> <p>Sinus Rhythm: 93 bpm Monitor Controls SpO2 = 98% Tperi = 98.2 °F Respiration Rate: 12 CO2 Exhalation: Off Blood Pressure: 177/110 Handler:</p>		<ol style="list-style-type: none"> <li>1. This is a case of a patient on L&amp;D who is being induced for mild preeclampsia on a magnesium drip. The patient develops severe preeclampsia and eclampsia. Either 2 doses of hydralazine or 3 doses of labetalol will be required to control BP. Despite maximal magnesium therapy, the patient may require additional medications to control seizures. The case will end when the patient's BP and seizures are well controlled.</li> <li>2. There is a great emphasis on appropriate medication &amp; timing to insure staff are following ACOG &amp; CMQCC guidelines for preeclampsia &amp; eclampsia. Since labetalol and hydralazine require 10-20 min for effect, the instructors will speed up the case by announcing 10 minutes has passed for each minute after labetalol or hydralazine is given. See frames below for details.</li> <li>3. The SimMan 3G GUI operator will be the voice of the patient and will use the seizure feature on this simulator. Since the seizure feature has limited realism, it is recommended that a confederate notify the team that the patient is having a seizure if the treatment team does not recognize this. This same programming can be used with a standardized patient as well. In that case, the patient would mimic a tonic clonic seizure.</li> <li>4. In this frame, the patient calls the nurse because she has a moderate headache. The responding nurse should note the VS and report the BP to the physician or CNM that responds to the call for help.</li> <li>5. Once the physician or CNM orders either labetalol or hydralazine, or vocalizes the diagnosis of severe preeclampsia, then click "Advance next frame." In the next frame, the patient begins to seize for the first time.</li> <li>6. NOTE: The "Seizure airway" handler – this will restore SpO2 to 98% when the airway is opened after the patient seizes</li> </ol>			
<p>Call for physician</p>	<p>Call for additional nurse</p>	<p>Advance to next frame</p>	<p>ORDER Labetalol</p>	<p>ORDER Hydralazine</p>	<p>Dx of Severe Preeclampsia</p>
<p><b>SEIZURE #1</b></p> <p>Eyes Eyes half open Blinking speed: Off Convulsions: Tonic-Clonic Fluids &amp; Secretions Froth: On Airway Trismus: On Start Trend: Seizure desaturation</p>		<ol style="list-style-type: none"> <li>1. The patient is now seizing. When using SimMan3G, the seizures are most notable if the arms are out from the body &amp; visible to the participants. If using the bodily fluid function of the simulator, the patient will foam at the mouth as well.</li> <li>2. Note the trend: "Seizure desaturation" which causes the SpO2 to fall into the 80's. The team should reposition the patient's head &amp; keep the airway open, which will restore the SpO2 to normal levels.</li> <li>3. The team should be working to administer an antihypertensive &amp; an additional magnesium bolus.</li> <li>4. The seizure will last 60 sec &amp; the scenario will advance automatically. Click "Advance next frame" to advance more quickly if desired.</li> </ol>			
<p>Check airway patency</p>	<p>Open airway</p>	<p>Advance to next frame</p>	<p>FT=1:00</p>	<p>ORDER Magnesium bolus</p>	<p>Oxygen</p>
<p><b>SEIZURE #1 STOPS</b></p> <p>Convulsions: None Eyes Blinking speed: Normal Fluids &amp; Secretions Froth: Off Airway Trismus: Off Blood Pressure: 179/109</p>		<ol style="list-style-type: none"> <li>1. The seizure stops &amp; the patient is post-ictal. She will respond to simple questions &amp; commands, but will have somewhat slurred speech. The patient must appear awake enough to protect her airway or the team may try to intubate the patient. If the team has not already done so, they must reposition the head and open the airway to restore a normal SpO2!</li> <li>2. The scenario advances when either labetalol or hydralazine is given. Alternatively click "Advance next frame" to advance.</li> <li>3. The team should be administering an additional magnesium bolus at this time.</li> </ol>			
<p>4g Magnesium GIVEN</p>	<p>10mg Hydralazine GIVEN</p>	<p>Advance to next frame</p>	<p>20mg Labetalol GIVEN</p>	<p>5mg Hydralazine GIVEN</p>	<p>4g Magnesium GIVEN</p>
<p><b>10 Min Since Anti-HTN and Mag Bolus</b></p> <p>Blood Pressure: 175/100</p> <ol style="list-style-type: none"> <li>1. At approximately one minute into this frame, the instructor should call out that 10 minutes have passed which should prompt an additional BP check.</li> <li>2. If labetalol was given initially, another dose is indicated. The scenario will advance when the next dose of labetalol is given.</li> <li>3. If hydralazine was initially given, click "Advance next frame" as it is given q20 min pm.</li> </ol>					
<p>40mg Labetalol GIVEN</p>	<p>Advance to next frame</p>	<p>Click to add learner event</p>			
<p><b>20 min</b></p> <p>Convulsions: None Fluids &amp; Secretions Froth: Off Eyes Blinking speed: Normal Airway Trismus: Off Blood Pressure: 167/100</p>		<ol style="list-style-type: none"> <li>1. In this frame, approximately 20 min have passed since HTN meds and magnesium were given.</li> <li>2. At approximately one minute into this frame, call out that an additional 10 minutes have passed. This should prompt an additional BP check. The BP has improved but requires another dose of labetalol or hydralazine.</li> <li>3. The instructor should also call out that the mag bolus is complete. Click on either medication or "Advance next frame" and the case will end.</li> <li>4. If desired, click "Advance to Seizure #2" and the patient will seize again.</li> </ol>			
<p>Advance to Seizure#2</p>	<p>10mg Hydralazine GIVEN</p>	<p>Advance to next frame</p>	<p>80mg Labetalol GIVEN</p>		
<p><b>SEIZURE #2</b></p> <p>Eyes Eyes half open Blinking speed: Off Convulsions: Tonic-Clonic Fluids &amp; Secretions Froth: On Airway Trismus: On Start Trend: Seizure desaturation (Start: 0 min)</p>		<ol style="list-style-type: none"> <li>1. The patient is seizing despite maximal magnesium therapy &amp; should prompt the team to use other meds to control the seizure.</li> <li>2. The team should consider benzodiazepines or dilantin.</li> <li>3. The seizure lasts minute &amp; go back to the previous frame to insure that the additional dose of labetalol or hydralazine is given.</li> </ol>	<p>Check airway patency</p>	<p>Check breathing</p>	<p>Advance to next frame</p>
<p>20 min</p>	<p>20 min</p>	<p>FT=1:00</p>	<p>ORDER Benzo</p>	<p>Benzo GIVEN</p>	<p>Click to add learner event</p>
<p><b>END</b></p> <p>Eyes Eyes wide open</p>		<ol style="list-style-type: none"> <li>1. At approximately one minute into this frame, call out that 10 minutes have passed.</li> <li>2. The BP &amp; seizures are now controlled.</li> <li>3. If indicated, the patient is now stable to go to the OR for c-section.</li> </ol>	<p>Click to add learner event</p>	<p>Click to add learner event</p>	<p>Click to add learner event</p>