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|  | Coastal Simulation ProgramClosed Head Injury |  |

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| Learning Objectives:By the end of the debriefing the participants should be able to:*Knowledge & Skills*: **Perform proper neurologic exam of head injured patient.** **Recognize change in neurologic exam.** **Anticipate hemodynamic changes in head injured patient.** **Recognize rhythm changes. Treat appropriately.***Attitudes and Judgement:***Assessment of patient must lead to recognition of emergency situation.** **Rapid deployment of team in evolving emergency situation.***Patient Safety:***Avoidance of perseveration on a single monitor / vital sign.** **Ability to complete assessment while recognizing emergency situation.** |
| Patient Description:Name:Age: 64 maleWeight: 80 kgImmunizations: *Hx of current condition*:**Closed Head Injury. Pedestrian struck in crosswalk yesterday. Non surgical diffuse axonal injury. CT scan diffuse swelling and petechial hemorrhage. No mass or blood.****Cervical collar in place. Also cast on right leg post closed reduction ankle fracture.****Intubated. BP 160/80 PR 85 SpO2 96%****Sedated with proposal infusion at 40 ug/kg/min.****Orders to maintain RASS goal -4 and Systolic BP between 140 and 180.****Prn Hydralazine 2-4 mg prn and Labetolol 5 to 10 mg.**Social Hx: **Family gone home. First assessment post shift change.**Diagnosis: | Skills required prior to simulation/learner assessment:Psychomotor: **Recognition of patient deterioration and possible code situation.****Defibrillator skills. CPR skills.**Cognitive: **CNS Exam in sedated patient. Rhythm assessment. Monitor integration.**Teamwork: **Task distribution between treatment and recording.**Who are my learners? **Nurses 1,2. RT 1.** |
| Monitors: EKG, SpO2, BP cuff, arterial line, CVP. |
| Physical Props/Equipment: **IV pump infusing propofol. Ventilator. O/G tube. Defibrillator.**Aspen cervical collar. Bandage / cast to right leg. | References, Resources, Protocols, Algorithms, or Evidence Informed Practice Guidelines: |
| Equipment available in room: |
| Room set up: Intubated patient on monitor. Defibrillator. Stethescope. | Medications & Fluids: N/S infusing.Propofol infusing.Hydralazine.Labetolol.Atropine.Epinephrine.MannitolFurosemide. | Diagnostics:Colour capnograph. | Documentation forms:Nursing notes.Code form. | Confederates |
| Mannequin:EKG, SpO2, BP Cuff. Arterial line.Central line.ETT in site.Enteric feeds infusing. |
| Personnel:Primary nurse - discovers issue.Secondary nurse - administers meds.Respiratory therapist for airway management.Recording nurse. |

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| Scenario Transitions / Patient Parameters | Effective Management | Consequences of Ineffective Management | Notes |
| phase 1 Setting: |
| Stable patient. Intubated.Sinus rhythm at 80 bpm.SpO2 96% Bp 160/80 PR 85FiO2 0.50 BP increases to 220/100.PR decreases to 55.Alarms sounding.Right pupil now dilated. | 1. Assess patient.
2. Confirm hypertension
3. Treat hypertension / increase sedation.
4. Reassess patient to determine why hypertensive.
 | Patient Bradycardia.Rhythm degenerates to asystole. | Goal is to simultaneous treat BP but also realize there is underlying rise in ICP displayed by change in pupil. |
| phase 2  |
| Dilated pupil.BP not responding to interventions of stage 1. | Contact physician.Orders received for mannitol 1mg/kg and furosemide 40 mg iv and sedation increased. | HR decreases further 30-35. |  |
| phase 3 |
| HR decreases further. Rhythm degenerates to asystole.With effective CPR and epinephrine, rhythm changes to vfib….defibrillate and restoration of sinus rhythm | 1. CPR
2. Epinephrine
3. Defibrillation
 | SpO2 deteriorates.Rhythm remains asystole. |  |
| phase 4 |
| **Possible debrief points:**1. **What were you thinking when change in vital signs in this patient ? What was underlying cause ?**

**2. What happened to this patient ?****3. Did the team recognize what was happening and that this was an emergency situation ?** |  |  |  |