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|  | Coastal Simulation Program  Closed 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 male  Weight: 80 kg  Immunizations:  *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.  Mannitol  Furosemide. | 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 85  FiO2 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 ?** |  |  |  |