**Section 1: Case Summary**

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| **S****cenario Title:** | **Unstable SVT** |
| Keywords: | SVT, cardioversion, unstable, ACLS, supraventricular tachycardia |
| Brief Description of Case: | 68 y.o. female admitted to HAU with Sepsis secondary to community acquired pneumonia. History of COPD, smoking, DMII, and HTN. Patient will have had increased SOB and ECG changes ~15 minutes ago, with the ECG from 10 minutes ago showing aflutter at 160 and CXR showing diffuse consolidation. The case will start with the patient normotensive initially but will become hypotensive, unstable, and have increased shortness of breath. The team should decide to electrically cardiovert and increase O2 delivery modality (ultimately ending up with intubation). |

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| **Goals and Objectives** | |
| Educational Goal: | Practice treating unstable SVT |
| Objectives:  (Medical and CRM) | * Recognize and practice treating unstable SVT as per ACLS algorithm * Recognize and treat deteriorating respiratory status * Establish role clarity and distribute the workload * Communicate effectively, including closed-loop communication, clear commands and requests, sharing mental model/plan of care, and fostering input of information * Mobilize resources early and use cognitive aids as needed |

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| **Learners, Setting and Personnel** | | | | | | |
| Target Learners: | Junior Learners | | Senior Learners | | | Staff |
| Physicians | Nurses | | RTs | Inter-professional | |
| Other Learners: | | | | | |
| Location: | Sim Lab | | In Situ | | | Other: |
| Recommended Number of Facilitators: | Instructors: 1 | | | | | |
| Confederates: 1 – only if no physicians present | | | | | |
| Sim Techs: 1 | | | | | |

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| **Scenario Development** | |
| Date of Development: | 2018.08 |
| Scenario Developer(s): | Lisa Ewart |
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| Last Revision Date: | 2020.01 |
| Revised By: | Christina Choung |
| Version Number: | 2 |

**Section 2A: Initial Patient Information**

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| 1. **Patient Chart** | | | | | | |
| Patient Name: Barbara Walters | | | | Age: 68 | Gender: F | Weight: 70kg |
| Admitting diagnosis: Sepsis 2° Community Acquired Pneumonia (CAP) | | | | | | |
| Temp: 38.2°C | HR: 168 | BP: 105/68 | | RR: 22 | O2Sat: 90% on Opitflow | FiO2: .55 |
| Cap glucose: 6.3 | | | | GCS: 15 (E4 V5 M6 ) | | |
| Handover:  It’s change of shift.  Barbara was admitted 2 days ago with Sepsis 2° CAP. She has a history of COPD, smoking, DMII, and HTN. She’s in the HAU as she initially required vasopressors. She was weaned off Levo after some fluid resuscitation but she’s now had increasing FiO2 requirements over the past shift with significant desaturation on exertion. 10 minutes ago she flipped into a SVT and become more SOB. An ECG was done which showed A.Flutter. She had another CXR done which was unchanged from previous – just generalized consolidation. Her BP has been stable at around 105/68. She currently still has a HR of 168, BP of around 105/68, and GCS of 15. She’s on Optiflow with a FiO2 of 0.60, increased from 0.50 about 15 minutes ago, for a SpO2 of 90% and RR of 22. Urine output has been about 45mL/h over the last shift; Barbara’s been using the bedpan due to the desaturation which occurs when she gets up. She’s on Piptazo q6h for her pneumonia and has been taking the rest of her usual meds PO. She has a CVC in her R IJ that’s just running NS TKVO and a R radial art line. | | | | | | |
| Allergies: NKDA | | | | | | |
| Past Medical History:   * COPD – on 2LPM NP at home * Smoking x 45 years * DMII * HTN | | | Current Medications:   * Piptazo 3.375g IV q6h * Metformin 500mg BID * Ramipril 10mg OD – on hold * Usual HAU PRNs | | | |

**Section 2B: Extra Patient Information**

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| **A. Further History** | |
| *n/a* | |
| **B. Physical Exam** | |
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| Cardio: A.flutter, heart feels fast. Cap refill ~4-5 sec since started; previously <3 sec | Neuro: Normal |
| Resp: Coarse crackles throughout | Head & Neck: Normal |
| Abdo: Normal | MSK/skin: Normal |
| Other: | |

**Section 3: Technical Requirements/Room Vision**

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| **A. Patient** |
| Mannequin: Adult, with ability to electrically cardiovert |
| Standardized Patient |
| Task Trainer |
| Hybrid |
| **B. Special Equipment Required** | |
| |  |  |  | | --- | --- | --- | | * CVC drainage to R IJ in situ * Art line R radial in situ * Optiflow in situ * Ambubag | * BiPAP mask and machine available * Intubation equipment available | * 60mL syringe * 3 way stopcock * Crash cart / defibrillator | | |
| **C. Required Medications** | |
| |  |  |  | | --- | --- | --- | | Cardioversion   * Adenosine 6mg and 12mg IV * Amiodarone 300mg IV | Sedation and Analgesia   * Midazolam vial IV * Fentanyl vial IV * Ketamine vial IV * Morphine vial IV | Paralytics   * Rocuronium vial IV * Succinylcholine vial IV | | |
| **D. Moulage** | |
| n/a | |
| **E. Monitors at Case Onset** | | |
| Patient on monitor with vitals displayed – art line in situ  Patient not yet on monitor | | |
| **F. Patient Reactions and Exam** | | |
| See Section 2, Handover | | |

**Section 5: Scenario Progression**

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| **Scenario States, Modifiers and Triggers** | | | | |
| Patient State/Vitals | Patient Status | Learner Actions, Modifiers & Triggers to Move to Next State | | Facilitator Notes |
| **1. Baseline State**  Rhythm: Aflutter  HR: 168  ABP: 105/68  RR: 22  O2SAT: 90%  T: 38.1oC  GCS: 15 | Neuro: fine  Resp: still feeling short of breath  CV: heart still feels fast  Otherwise normal | Expected Learner Actions  Begin assessment | Modifiers  -n/a  Triggers  -After 15 seconds, proceed to phase 2 |  |
| **2. Unstable SVT**  Rhythm: Aflutter  HR: ↑ 181 over 40 sec  ABP: ↓ 76/42 over 40 sec  RR: 22  O2SAT: ↓ 81% over 40 sec  Remainder unchanged | Complains of feeling dizzy and increased SOB; chest feels funnier | Expected Learner Actions  Notice change in status  Call for help (including RT)  Recognize unstable SVT  Communicate changes to team  Call for physician; SBAR report given  Inform patient of change and plan of care  Discuss need for electric/chemical cardioversion  Discuss need for increased FiO2 delivery or decrease in metabolic demand  Plan of care decided upon and verbalized to team  ACLS algorithm for unstable SVT followed  Effective communication takes place (see objectives)  Tasks delegated and communicated; team leader clearly identified | Modifiers  - no change in SpO2 until patient sedated or placed on more invasive O2 delivery method: then ↑ SpO2 to 88% over 10 sec  - if Adenosine given: HR ↓ 80 for 3 seconds then ↑ back to 181  - if Amiodarone given: no change  - if sedation given: RR ↓ 16 over 20 sec; SpO2 ↑ 88% over 10 sec; eyes close halfway  - if Propofol given: SBP ↓ 60  - if cardioversion done without sedation: patient will scream  - if cardioversion done with sedation but without analgesia: patient will moan  Triggers  - After cardioversion of 200J or greater:  ---If case has run for 10 minutes or less at this point, move to Phase 3  ---If case has run for over 10 minutes at this point, end scenario here |  |
| Continue only if case has been less than 10 minutes at this point | | | | |
| **3. Successful cardioversion; intubation**  Rhythm: Sinus Rhythm  HR: 91  ABP: 106/68  RR: 16  O2SAT: 88% or as per previous |  | Expected Learner Actions  Notice and communicate change in status  Prepare for intubation  Team lead communicates medications and plan of care for RSI  RSI completed using closed-loop communication and effective teamwork  Placement verified by CO2 and chest rise  Manual ventilations begin  Call for X-Ray  Plan of care verbalized | Modifiers  -if paralytic given – RR ↓ 0, eyes close  -when patient intubated – SpO2 ↑ 92%  Triggers  -case ends after successful intubation and next steps verbalized |  |

**Appendix A: Laboratory Results**

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| CBC  WBC 14.6  Hgb 123    Lytes  All normal  ABG on Optiflow 0.55  pH 7.36  pCO2 52  pO2 78  HCO3 40  Lactate 2.1 | Cardiac/Coags  All normal  Biliary  All normal |

**Appendix B: ECGs, X-rays, Ultrasounds and Pictures**



