**Section 1: Case Summary**

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| **S****cenario Title:** | **Chemotherapy Reaction for BCCA and Oncology**  |
| Keywords: | Chemotherapy, reaction, hypotension, cancer, GOOVCATM, cytokine storm, non-antibody mediated reaction, anaphylactoid |
| Brief Description of Case: | A 58-year-old patient with ovarian cancer is receiving a new infusion of GOOVCATM (paclitaxel and carboplatin). She develops back pain, weakness and hypotension. The team must recognize a moderate (Grade II) reaction, escalate to MRP, and manage the symptoms via medications, halt infusion, and plan restarting.  |

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| **Goals and Objectives** |
| Educational Goal: | 1. Recognizes moderate reaction to paclitaxel infusion and defines per grading scale (Grade II)
2. Differentiates between non-antibody mediated reaction (cytokine storm versus and anaphylaxis)
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| Objectives:(Medical and CRM) | 1. Utilizes available resources to manage infusion and treat reaction (supplied: BC Cancer Agency Protocol for Management of Infusion-Related Reactions to Systemic Therapy Agents (2021))
2. Utilizes SBAR to report reaction to MRP
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| **Learners, Setting and Personnel** |
| Target Learners: | [x]  Junior Learners | [x]  Senior Learners | [ ]  Staff |
| [x]  Physicians | [x]  Nurses | [ ]  RTs | [ ]  Inter-professional |
| [ ]  Other Learners:  |
| Location: | [x]  Sim Lab | [x]  In Situ | [ ]  Other:  |
| Recommended Number of Facilitators: | Instructors: 1 |
| Confederates: 0  |
| Sim Techs: 1 |

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| **Scenario Development** |
| Date of Development: | Feb 18 2021 |
| Scenario Developer(s): | Jackie Demmy reviewed by Crystal Heywood, CNE BC Cancer Agency |
| Affiliations/Institutions(s): | Fraser Health Authority |
| Contact E-mail: | Simulation@FraserHealth.ca |
| Last Revision Date: | July 7 2021 |
| Revised By: | Jackie Demmy |
| Version Number: | 2 |

**Section 2A: Initial Patient Information**

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| 1. **Patient Chart**
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| Patient Name: Denise  | Age: 48 | Gender: F | Weight: 81kg |
| Presenting complaint: Receiving Chemotherapy for ovarian cancer |
| You are coming on shift and receive this report:“Denise is on day 1 of receiving GOOVCATM infusion. I gave her Dexamethasone 50mg, Diphenhydramine 50 mg and Famotidine 20mg IV and have just started her on Paclitaxel 5 minutes ago. She is feeling well, but is a little anxious about her first chemotherapy” |
| Allergies: none |
| Past Medical History:Ovarian ca, currently recovering from tumor removal surgeryHypothyroid | Current Medications: Levothyroxine 0.88mcg po OD Hydromorphone prn (none taken today)Pre-infusion meds given 45 mins ago: * Dexamethasone 20mg IV
* DiphehydrAMINE 50 IV
* Famotidine 20 mg IV
* Ondansetron 8mg po
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| Family/Social History:Lives with husband |

 **Section 2B: Confederate**

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| **Confederate and Standardized Patient Roles and Scripts** |
| *Role* | *Description of role, expected behavior, and key moments to intervene/prompt learners. Include any script required (including conveying patient information if patient is unable)* |
| MRP (if not available to participate in sim) | Responds to phone call, is unable to attend immediately, but is helpful and supplies PPO. See script under “modifiers” |
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**Section 3: Technical Requirements/Room Vision**

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| **A. Patient** |
| [x]  Mannequin  |
| [x]  Standardized Patient |
| [x]  Task Trainer |
| [ ]  Hybrid |
| **B. Special Equipment Required** |
| Porta Cath connected to drainage bagIV PumpPrint appropriate resources:[BC Cancer Protocol Summary for Primary Treatment of No Visible Residual (Moderate-High Risk) Invasive Epithelial Ovarian, Fallopian Tube and Primary Peritoneal Cancer Using CARBOplatin and PACLitaxel](http://www.bccancer.bc.ca/chemotherapy-protocols-site/Documents/Gynecology/GOOVCATM_Protocol.pdf)[PROTOCOL CODE: SCDRUGRX Preprinted Order A: Immediate management of infusion-related reaction and resumption of infusion](http://www.bccancer.bc.ca/chemotherapy-protocols-site/Documents/Supportive%20Care/SCDRUGRX_PPPO_A-Immediate%20Management.pdf) [BC Cancer Protocol Summary for Management of Infusion-Related Reactions to Systemic Therapy Agents](http://www.bccancer.bc.ca/chemotherapy-protocols-site/Documents/Supportive%20Care/SCDRUGRX_Protocol.pdf) |
| **C. Required Medications** |
| DiphehydrAMINE 50mg/mlHydrocortisone 50mg/ml |
| **D. Initial Patient Set-up & Moulage** |
| [ ]  IV drainage bag with attached tubing[x]  IV setup of PACLitaxel 319mg in 500cc NS via non-DEHP bag and tubing, with 0.2 micron in-line filter. Running at 166cc/hour via pump (165cm, 72.7kg =1.82BSA x 175mg/m2, over 3 hours) via porta Cath  |
| **E. Monitors at Case Onset** |
| [ ]  Patient on monitor with vitals displayed[x]  Patient not yet on monitor |
| **F. Patient Reactions and Exam** |
| *Include any relevant physical exam findings that require mannequin programming or cues from patient* *(e.g. – abnormal breath sounds, moaning when RUQ palpated, etc.) May be helpful to frame in ABCDE format.**A: Alert/patent**B: Resps easy, A/E clear RR 16, Sp02 99% R/A**C: Pulses strong,84/min, warm dry & flesh coloured, 141/98 (112)**D: Feels tired but anxious. GCS 15**E: no rash, temp 37.1* |

**Section 4: 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 |
| **Phase 1****Infusion Begins**Rhythm: N/AHR: 84BP: 141/98 (112)RR: 16O2SAT: 99% R/AT: 37.1GCS: 15 (E4 V5 M6) | A: Alert/patientB: Resp easy, A/E clearC: Pulses strong, warm dry & flesh colouredD: Feels tired and is anxious, but not dizzy E: no rash | Expected Learner Actions [ ]  Introduces self [ ]  Checks premedications were given, and PACLitaxel infusion running correctly[ ]  Assesses patient for signs of reaction[ ]  Inform patient what to watch for, and to alert nurse should she experience any symptoms [ ]  Ensure patient comfortable, call bell within reach | Modifiers-If nursing does not inform patient of what symptoms to watch for, patient will ask “should I be nervous? What might happen?”Triggers*Completion of assessment/time*-3 minutes  | -alcohol in infusion, normal side effect to be drowsy/dizzy, suggested to not operate vehicle  |
| **Phase 2** **\*7 minutes later\***Rhythm: N/AHR: 98BP: 117/62 (80)RR: 20O2SAT: 99% R/AT: 37.9GCS: 15 (E4 V5 M6) | A: patent/alert, no angioedema/ hoarse voiceB: Resps easy, A/E clearC: Feels weak/dizzy, no CP, flushed faceD: Weak/Dizzy, GCS 15E: no rash, experiencing “deep aching” back pain and shivers | Expected Learner Actions [ ]  Assess ABCs for stability, assessed for signs of reaction [ ]  Takes Vital Signs, recognizing hypotension [ ]  Recognizes this is a non-antibody medicated reaction, probable cytokine storm, not anaphylaxis [ ]  Identifies Grade 2 or Moderate reaction [ ]  Stops PACLitaxel infusion and hangs rescue line of isotonic crystalloid [ ]  Notifies MRP via SBAR[ ]  Receives PPO [ ]  DiphehydrAMINE 50 IV[ ]  Hydrocortisone 100mg IV | Modifiers-Patient calls nurse to tell her about back pain -If team does not recognize reaction, patient gets increasingly dizzy and BP drops to 104/55-If team treats as anaphylaxis, patient becomes very symptomatic with epi- HR increases 148/min and BP drops to 104/55, patient becomes jittery and weak -If team still does not recognize cytokine storm, Confederate MRP calls back to check on patient, and alerts team that “that doesn’t sound like an anaphylactic reaction. Don’t give any more epi”. Triggers* - DiphehydrAMINE & Hydrocortisone given
 | Patient experiencing cytokine storm Physician must be notified for any reaction greater than mild/grade 1 (dizziness, back pain, chills, hypotension >20mm/hg below baseline)  |
| **Phase 3.** Rhythm: N/AHR: 88BP: 126/71 (89)RR: 18O2SAT: 100% R/AT: 37.4GCS: 15 (E4 V5 M6) | “Oh, I feel so much better now”A: patent/alert, no angioedema/ hoarse voiceB: Resps easy, A/E clearC: Feels better, warm dry & flesh colourD: Weak/Dizzy, GCS 15E: no rash/pain | Expected Learner Actions [ ]  Assesses for resolution of symptoms [ ]  Restarts paclitaxel infusion and articulates plan to give:25% of rate for 5 mins (41.cml/hr)50% for 5 mins (83 ml/hr)75% for 5 mins (124.5ml/hr)100% after the 15 mins (166ml/hr)[ ]  Explains to patient medication is safe to restart slowly, and she will be monitored  | Modifiers-If patient not informed medication restarting, patient to ask “is it ok for me to have this? It made me feel so badly before”Triggers-END |  |

 **Appendix A: Facilitator Cheat Sheet & Debriefing Tips**

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| *Include key errors to watch for and common challenges with the case. List issues expected to be part of the debriefing discussion. Supplemental information regarding any relevant pathophysiology, guidelines, or management information that may be reviewed during debriefing should be provided for facilitators to have as a reference.* What would be the plan of action, should this patient worsen to Grade III? What medications could you have proactively ready to go?What is the criteria for restarting the infusion?  |

**References**

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| 1. BC Cancer Agency. June, 2021. BC Cancer Protocol Summary for Primary Treatment of No Visible Residual (Moderate-High Risk) Invasive Epithelial Ovarian, Fallopian Tube and Primary Peritoneal Cancer Using CARBOplatin and PACLitaxel Retrieved July 6 2021 from: <http://www.bccancer.bc.ca/chemotherapy-protocols-site/Documents/Gynecology/GOOVCATM_Protocol.pdf>
2. BC Cancer Agency. Feb, 2021. PROTOCOL CODE: SCDRUGRX Preprinted Order A: Immediate management of infusion-related reaction and resumption of infusion. Retrieved July 6, 2021 from <http://www.bccancer.bc.ca/chemotherapy-protocols-site/Documents/Supportive%20Care/SCDRUGRX_PPPO_A-Immediate%20Management.pdf>
3. BC Cancer Agency. Feb, 2021. BC Cancer Protocol Summary for Management of Infusion-Related Reactions to Systemic Therapy Agents. Retrieved July 6 2021 from <http://www.bccancer.bc.ca/chemotherapy-protocols-site/Documents/Supportive%20Care/SCDRUGRX_Protocol.pdf>
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