Montgomery College Nursing Simulation Scenario Library

Scenario File: **CODE BLUE**

Discipline: Nursing

Expected Simulation Run Time: 20 minutes

Guided Reflection Time: 30 minutes

**Admission Date:** 4/14/xx

**Today’s Date:** 4/15/xx

**Name:** John Goldman

**DOB:** 4/1/19xx

**Gender:** Male  **Age:** 80

**Race:** Caucasian

**Weight:** 76 kg  **Height:** 178 cm

**Religion:** Catholic  **Major Support:** Wife

**Phone:** XXX-XXX-XXXX

**Immunizations:** Flu & Pneumovax last Sept.

**Attending Physician/Team:** Hospitalist

**Past Medical History:** CAD, HTN, and CHF.  
Medications:
- Lasix 20mgPO QD
- HCTZ 25mg QD

**Allergies:** NKA

**History of Present illness:** Palpitations with anxiety since two days ago

**Social History:** 40 pack year smoker – none in 20 years, drinks alcohol occasionally. He is retired and lives with his wife in an apartment in a 65+ community.

**Primary Medical Diagnosis:** Palpitations with Anxiety reaction and shortness of breath.

**Surgeries/Procedures & Dates:** None

**Scenario Overview:**

An 80-year-old man with a history of coronary artery disease, hypertension, and CHF was admitted to an inpatient Intermediate Care Unit (Telemetry Unit) for heart palpitation and anxiety. On second hospital day, he had sudden onset of confusion, bradycardia, and hypotension. He lost consciousness, and a "code blue" was called.

**Psychomotor Skills Required Prior to Simulation**

- Vital Signs
- Physical Assessment – cardiac
- BCLS
- Administer IV Push medication
- Communication
- Interdisciplinary Team Work

**Cognitive Activities Required Prior to Simulation**

[i.e. independent reading (R), video review (V), computer simulations (CS), lecture (L)]

- Read Pelico 1st Ed. Ch. 15 pp. 437 – 438; ch 17 pp. 461 – 488
- Read Lewis, 8th Ed. Chapters 34, 36, and Appendix A “Cardiopulmonary Resuscitation and Basic Life Support for Health Care Providers”
- Complete Cardiac Rhythm self-study packet (Course Guide)
- Study Montgomery College CPR guidelines for adults
- Watch video: [http://www.youtube.com/watch?v=YEjjiHmeOZk&feature=share&list=PL_2IMx1vzUkDHFWjz_unmLIFNmtsESo9N](http://www.youtube.com/watch?v=YEjjiHmeOZk&feature=share&list=PL_2IMx1vzUkDHFWjz_unmLIFNmtsESo9N)
- Receive orientation to Code Team roles
- Receive orientation to crash cart
- Receive orientation to LifePak

**Nursing Diagnosis:** Decreased Cardiac Output r/t cardiac rhythm disturbance

**Collaborative Problems:** Respond appropriately and carry out roles of Code Blue Team

Simulation Learning Objectives
1. Assemble an organized code blue team response.

2. Perform duties appropriate to the participants’ role on the interdisciplinary team.

3. Identify the heart rhythm (VF, VT, Asystole) on monitor.

4. Identify appropriate treatment for the heart rhythm.

5. Initiate proper BLS, as specific in Montgomery College CPR check list for adults.

6. Be able to state defibrillator may be applied as many as three times (200 joules, 200/300 joules, and 360 joules or equivalent) for VF or pulseless VT.

7. Exhibit competent role performance under stressful conditions.

8. Demonstrate therapeutic communication in care of the patient and family.


Program / Curriculum Specific Objectives
Fidelity (choose all that apply to this simulation)

<table>
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<th>Setting/Environment</th>
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<td>o Pre-Hospital</td>
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Simulator/Manikin/s Needed:
- High Fidelity manikin

Props: Cardiac simulator; Vtach – Vfib – Asystole; ACLS algorithms

Equipment Attached to Manikin:
- IV tubing with primary line NSS fluids running at _50___ cc/hr
- Secondary IV line ___ running at ___ cc/hr
- IV pump
- Foley catheter ________cc output
- PCA pump running
- IVPB with ___ running at ___ cc/hr
- 02 NC @ 2L/min
- Monitor attached
- ID band
- Other: Crash cart with cardiac simulator and Lifepak, adult monitor pads, epinephrine, Vasopressin

Equipment Available in Room
- Bedpan/Urinal
- Foley kit
- Straight Cath Kit
- Incentive Spirometry
- Fluids: NSS 1000mL
- IV start kit
- IV tubing
- IVPB Tubing
- IV Pump
- Feeding Pump
- Pressure Bag
- 02 delivery device __Ambu Bag______
- Crash cart with airway devices and emergency medications
- Defibrillator/Pacer
- Suction
- Other

Medications and Fluids
- Oral Meds
  - IV Fluids: NSS 1000mL
  - IVPB
    - IV Push:
      - Epinephrine
      - Vasopressin
  - IM / Subcut / Intradermal
  - Other

Diagnostics Available
- X-rays (Images) result
- Labs
- 12-Lead EKG
- Other

Documentation Forms
- Admit Orders
- Physician Orders
- Flow sheet
- Medication Administration Record
- Kardex
- Graphic Record
- Shift Assessment
- Triage Forms
- Code Record
- Anesthesia / PACU Record
- Standing (Protocol) Orders
- Transfer Orders
- Other: Two patient's charts
  - For 1st scenario, need chart with a DNR order on it.
  - 2nd scenario Full Code order.

Recommended Mode for Simulation
(i.e. manual, programmed, etc.)
- High Fidelity
### Roles/Guidelines for Roles
- Primary Nurse
- Secondary Nurse
- Clinical Instructor
- Family Member #1 (wife)
- Family Member #2
- Observer
- Physician / Advanced Practice Nurse (Runs the code)
- Respiratory Therapy
- Anesthesia
- Pharmacy
- Lab
- Imaging
- Social Services
- Clergy
- Unlicensed Assistive Personnel (Patient Care Technician/Tech)
- Code Team
- Other___Supervisor / Recorder

### Important Information Related to Roles
- The Instructor hands students role cards, asks students to identify the rhythm, calls for Defibrillation - and in the first scenario calls off the code when the DNR order is found.
- During the second code, the patient converts to sinus rhythm and breaths spontaneously after the epi + 2nd defib.

### Significant Lab Values:
- Chest X-ray result:
  - Pulmonary Congestion + radiographic Cardiomegaly
  - K. 2.8

### Physician Orders
- MD order on Admission:
  - IV NSS @ 50 mL/hr
  - NPO for possible CATH
  - Cardiac Monitor
  - Bedrest with BRP
  - DNR (first patient scenario only)
  - Electrolytes
  - Chest X-ray

### Student Information Needed Prior to Scenario
- Has been oriented to simulator
- Understands guidelines / expectations for scenario
- Has accomplished all pre-simulation requirements
- All participants understand their assigned roles
- Has been given time frame expectations
  - Other ____________________________

### Report Students Will Receive Before Simulation:

#### Scenario Overview:
John Goldman, an 80-year-old male, history of coronary artery disease, hypertension, and congestive heart failure admitted to Intermediate Care Unit last night for heart palpitations and anxiety. This morning, he had sudden onset of confusion, bradycardia, and hypotension. He lost consciousness, and a "code blue" was called.

You are on the code team and are answering the call.

(Overhead “CODE BLUE, SIM LAB, ROOM XXX”)

As students enter the room – HAND CARDS in this order:
- **Primary RN:** CALL FOR HELP & INITIATE CODE BLUE
- **TECH:** BRING CRASH CART, APPLY LEADS, APPLY CPR BOARD, & ALTNERATE COMPRESSIONS
- **Respiratory Therapist:** OXYGENATE THE PATIENT WITH BAG-MASK VENTILATIONS
- **SUPERVISOR:** RECORD THE CODE & run the Lifepak / retrieve meds FROM CART
- **IV NURSE:** CHECK IV AND ADMINISTER MEDICATIONS
Lasix 20mg IV push, BID
HCTZ 25mg PO, daily with sip of H2O.

Physician Order During Code:
1. Defibrillate with 200 joules
2. Administer Epinephrine, 1mg IV. Push.
3. Defibrillate with 300 joules again.
4. Administer Vasopressin 40 Unit, IV. Push as a single dose for maintaining blood pressure and heart rate and rhythm in second scenario.

- SECONDRY RN: BRING THE PATIENT”S CHART & CHECK ORDERS
- CLERGY: SUPPORT WIFE
- WIFE: ASKS QUESTIONS AS A SPOUSE WHO IS WORRYING ABOUT HUSBAND'S LIFE
- FACULTY/ADVANCED PRACTICE NURSE: ORDER MEDS, DEFIBRILLATOR, & ALL OTHER ORDERS
Mad Scientists ACLS Algorithms:

**General Approach**

Tap shoulder, "Are you all right?"

**NO movement or response?**
Look for breathing

**Not breathing or only gasping**
Call 911, get AED

*(Lay rescuers begin CPR)*

10-second pulse check
**Signs of life or DEFINITE pulse?**

- **Obviously alive with pulse**
  - Ventilate if necessary 1 breath every 5-8 seconds
  - Check pulse every 2 min
  - Oxygen
  - Insure airway
  - Start IV

- **Rhythm too fast?**
  - Tachycardia Algorithm

- **Rhythm too slow?**
  - Bradycardia Algorithm

- **Hypotension?**
  - Fluid bolus
  - Recheck for cause

- **Simply unresponsive?**
  - Evaluate for stroke, drugs, other pathology

- **Not obvious pulse**
  - Lone rescuer and asphyxial arrest?
    - 5 cycles CPR before leaving patient to call 911

- **No pulse**
  - Chest compressions "Hard and Fast" >100/min
  - Release completely

- **Open airway**
  - 2 breaths every 30 CC

- **Defibrillator or AED arrives**
  - Shockable rhythm?
    - **V-fib Algorithm**
      - Give 1 shock at "effective dose"
      - Resume CPR immediately

    - **Other rhythm?**
      - Resume CPR
      - Check rhythm every 2 min (five cycles of CPR)

        - **Complexes?**
          - **EKG waves seen?**
            - PEA Algorithm
          - **Flatline**
            - Asystole Algorithm

*Based on 2010 guidelines*
## CPR Guidelines

- for health care providers -

<table>
<thead>
<tr>
<th></th>
<th>Adult</th>
<th>Child (&lt; 8 yr)</th>
<th>Infant (&lt; 1 yr)</th>
<th>Newborn</th>
</tr>
</thead>
</table>
| Lone rescuer priority | Activate 911  
Call for/ get AED  
Chest compressions  
Airway/breaths  
If known asphyxial arrest, 5 cycles CPR before calling 911 | Chest compressions  
Airway/breaths  
5 CPR cycles then call 911  
Call for/ get AED  
If witnessed, sudden collapse, 911 and AED before CPR |  | Ventilation first  
Compressions for HR<60  
911 ASAP |
| Compression method | 2-hand | 1-hand or 2-hand | 2-thumbs or 2-finger if single rescuer | 2-thumbs or 2-finger for access to umbilical vein |
| Compression rate | at least 100/min |  |  | 120/min |
| Compression depth | at least 2 inches | 1/3 chest diameter | 2 inches | 1-1/2 inches | 1/3 chest diameter |
| Ratio of compressions to ventilations | 30:2 until intubated, 8-10 breaths/min after ET. | 10:2 for single rescuer, 15:2 for 2 rescuers, 3-10 breaths/min after ET. |  | 3:1 |
| Use of AED | Immediate AED. Consider 5 cycles CPR if > 4-5 min down after unwitnessed arrest. |  | 5 cycles  
For sudden collapse, AED to be applied immediately. |  
CPR first  
Manual defibrillator preferred.  
May use AED |

Based on 2010 guidelines
Ventricular Tachycardia (with pulse)

Assist breathing as needed
Oxygen

Take blood pressure
Begin working on IV line
Cardiac monitor

Serious signs or symptoms?

Stable

QRS type

Single QRS form
If regular and monomorphic
Consider Adenosine as therapeutic trial

Amiodarone 150 mg
Give over 10 min
(may repeat x 2)
OR,
Procainamide 20-50 mg/min
(up to 17 mg/kg)
OR,
Sotalol, 100 mg over 5 min

V-tach persists or patient becomes unstable?
Cardioversion

Polyorphic

Consider immediate shock
If non-sync shock not done:

Expert consultation!

Correct magnesium or electrolyte abnormality

Long baseline QT or obvious torsades?
Magnesium 2-4 gram
NICT torsades?
Amiodarone 150 mg
(may repeat x 2)

Isoproterenol 2-10 mcg/min
Overdrive pacing

Cardioversion

Unstable

Sedation

Non-synchronised shock if polymorphic
Cardiovert 100 j
Cardiovert 200 j
Cardiovert 300 j
Cardiovert 360 j

Amiodarone 150 mg
(repeat if required)

Cardiovert 350 j

Search for cause:
Hypovolemia
Hypoxia
Hydrogen ion (acidosis)
Hypo/hyperkalemia
Hypoglycemia
Hypothermia
Toxins
Tamponade
Tension pneumo
Thrombosis (PE, MI)
Trauma (ICP)

Based on 2010 guidelines
V-fib and Pulseless V-tach

From "General Approach" Algorithm
Chest compressions underway
30:2 ventilations, airway open
AED or defibrillator shows V-fib

Shock once at "effective setting"
(360 monophasic, 120-200 biphasic)
Resume CPR immediately after shock

Search for cause:
Hypovolemia
Hypoxia
Hydrogen ion (acidosis)
Hypoti/Hypokalemic
Hypoglycemia
Hypothermia
Toxins
Tamponade
Tension pneumothorax
Thrombosis (PE, MI)
Trauma (ICP)

Special circumstances?
Hyperkalemia or tricyclic toxicity? Hyperkalemia? Torsades de pointes?
Bicarbonate 1 mEq/kg
Magnesium 1-2 gram

Otherwise:
Amiodarone 300 mg bolus
second dose 150 mg

if not available,
Lidocaine 1 to 1.5 mg/kg
up to total 3 mg/kg

Check rhythm • Resume CPR • Shock

Oxygen
Start IV

Simultaneous 5 cycles of CPR

Check rhythm • Resume CPR • Shock

Epinephrine 1 mg Q 3-5 min
Consider Vasopressin 40 units
in place of 1st or 2nd Epi dose

Simultaneous 5 cycles of CPR

Check rhythm • Resume CPR • Shock

Intubate or LMA when ready

Rhythm check Q 2 minutes
Switch compressors
Epi 1 mg Q 3 min

Simultaneous 5 cycles of CPR

Based on 2010 guidelines
Safe and Effective Care Environment
Management of Care

- Advance Directives
- Advocacy
- Case Management
- Client Rights
- Collaboration with Interdisciplinary Team
- Concepts of Management
- Confidentiality / Information Security
- Consultation
- Continuity of Care
- Delegation
- Establishing Priorities
- Ethical Practice
- Informed Consent
- Information Technology
- Legal Rights and Responsibilities
- Performance Improvement (QI)
- Referrals
- Resource Management
- Staff Education
- Supervision

Safety and Infection Control

- Accident Prevention
- Disaster Planning
- Emergency Response Plan
- Ergonomic Response Plan
- Error Prevention
- Handling Hazardous and Infectious Materials
- Home Safety
- Injury Prevention
- Medical and Surgical Asepsis
- Reporting of Incident/Event/
- Irregular Occurrence/Variance
- Security Plan
- Standard /Transmission-Based /
- Other Precautions
- Use of Restraints/Safety Devices
- Safe Use of Equipment

Health Promotion and Maintenance

- Aging Process
- Ante/Intra/Postpartum and Newborn Care
- Developmental Stages and Transitions
- Disease Prevention
- Expected Body Image Changes
- Family Planning
- Family Systems
- Growth and Development
- Health and Wellness
- Health Promotion Programs
- Health Screening
- High Risk Behaviors
- Human Sexuality
- Immunizations
- Lifestyle Choices
- Principles of Teaching/Learning
- Self-Care
- Techniques of Physical Assessment

Psychosocial Integrity

- Abuse/Neglect
- Behavioral Interventions
- Chemical and Other Dependencies
- Coping Mechanisms
- Crisis Intervention
- Cultural Diversity
- End of Life Care
- Family Dynamics
- Grief and Loss
- Mental Health Concepts
- Mental Health Concepts
- Psychopathology
- Religious and Spiritual Influences
- on Health
- Sensory/Perceptual Alterations
- Situational Role Changes
- Stress Management
- Support Systems
- Therapeutic Communications
- Therapeutic Environment
- Unexpected Body Image Changes
Physiologic Integrity

Basic Care and Comfort
- Assistive Devices
- Complementary and Alternative Therapies
- Elimination
- Mobility/Immobility
- Non-Pharmacological Comfort Interventions

Nutrition and Oral Hydration
Palliative/Comfort Care
Personal Hygiene
Rest and Sleep

Pharmacological and Parenteral Therapies
- Adverse Effects/Contraindications
- Blood and Blood Products
- Central Venous Access Devices
- Dosage Calculation
- Expected Effects/Outcomes
- Medication Administration

Parenteral/Intravenous Therapies
Pharmacological Agents/Actions
Pharmacological Interactions
Pharmacological Pain Management
- Total Parenteral Nutrition

Reduction of Risk Potential
- Diagnostic Tests
- Lab Values
- Monitoring Conscious Sedation
- Potential for Alterations in Body Systems
- Potential for Complications of Diagnostic Tests/Treatments/Procedures
- Potential for Complications from Surgical Procedures and Health Alterations
- System Specific Assessments
- Therapeutic Procedures
- Vital Signs

Physiologic Adaptation
- Alterations in Body Systems
- Fluid and Electrolyte Imbalances
- Hemodynamics
- Illness Management
- Infectious Diseases

Medical Emergencies
Pathophysiology
Radiation Therapy
Unexpected Response to Therapies
# Scenario Progression Outline

<table>
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<tr>
<th>Timing (approximate)</th>
<th>Manikin Actions</th>
<th>Expected Interventions</th>
<th>May Use the Following Cues</th>
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</thead>
</table>
| **First 5 minutes**  | Manniken is not breathing; cardiac monitor shows V-Fib | • Students answer code quickly, receive roles, initiate care  
• First student assesses for pulse, finds none, calls for help, initiates compressions  
• Second student brings cart, applies monitor pads, places patient on resuscitation board, clears the room of visitors and extra equipment & alternates compression  
• Third student begins bag-mask ventilations  
• Fourth student begins documentation, retrieves ordered medications, sets LifePak for defibrillation  
• Fifth student checks IV and administers Epinephrine when ordered (Vasopressin in second scenario) | Role member providing cue:  
Wife: my husband is not responding  
Tech: Do you need crash cart?  
Instructor (Resident)  
• What is the Rhythm? (VF)  
• What is the treatment that is called for?  
• Prepare for Defibrillation  
• I’m clear, You’re clear, we’re all clear  
• Continue CPR  
• What is the Rhythm?  
• What is the treatment? |
| **Next 5-10 minutes** | • Manniken not breathing.  
• Monitor shows V-fib (First time scenario is run, shows Asystole after defib)  
• (Second time scenario is run, shows sinus rhythm after 2nd defib)  
• Supervisor defibrillates when called for  
• First student: gets set of vital signs  
• BP is low  
• IV nurse: Gives Vasopressin IV push as ordered  
• First RN checks VS and reports normal values. | • Sixth student takes wife aside and consoles her  
• Seventh student brings chart from desk & reviews orders  
• Eighth student asks questions as patient's wife | Role member providing cue:  
Instructor:  
• Cue:  
Give Epinepherine 1 mg IV Push  
Repeat Defibrillation  
I’m clear, You’re clear, we’re all clear  
(First time scenario is run: “STOP CPR – Patient has DNR order on chart”)  
(Second time: “Stop CPR – patient has converted to NSR – continue to monitor”) |
Debriefing / Guided Reflection Questions for this Simulation
(Remember to identify important concepts or curricular threads that are specific to your program)

1. How did you feel throughout the simulation experiences?
2. Describe the objectives you were able to achieve?
3. Which ones were you unable to achieve (if any)?
4. Did you have the knowledge and skills to meet objectives?
5. Were you satisfied with your ability to work through the simulation?
6. To Observer: Could any person on the Code Team have handled any aspects of the simulation differently?
7. If you were able to do this again, how could you have handled the situation differently?
8. What did the group do well?
9. What did the team feel was the primary nursing diagnosis and/or collaborative problems?
10. What were the key assessments and interventions?
11. Is there anything else you would like to discuss?

Scenario Specific Questions:

1. How did you feel when the Resident told you to stop CPR in the first scenario?
2. Do you think there was effective use of Delegation? Why or Why not?

Program/Curricular Specific Questions:

Complexity – Simple to Complex
Suggestions for changing the complexity of this scenario to adapt to different levels of learners: