University of California Irvine Scenario Template Companion

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Keith A. Beaulieu, MBA, BS, BA

UNIVERSITY OF CALIFORNIA, IRVINE | 836 Health Sciences Rd., Suite 2118, Irvine, CA 92697
(949) 824-8835

The blue boxes contain descriptors that will help you fill out that section of the document

This box contains descriptors

The red text labeled as [EXAMPLE] provides examples on how it should be written or what types of things go in that section.

Indicates that it is very important that this section be completed

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Medical Education Simulation Center

<<Scenario Name>>

Add a scenario name. This will be the title that goes into the scenario folder. You want to make it clear and succinct.

[EXAMPLE]- Induction Hypoxia

Section 1: Demographics

Case Title:

This should coincide with the scenario name but can be more expansive.

[EXAMPLE] - hypoxia of obese male with smoking history during general anesthesia induction

Case Description & Diagnosis:

Think of this as an abstract. You will describe the entirety of the case and how it will flow and include an overall diagnosis.

[EXAMPLE] - 44 year old female with a history of hyperlipidemia, obstructive sleep apnea on CPAP and GERD presents for outpatient laparoscopic vagal nerve stimulator implantation for morbid obesity. An initial awake fiberoptic intubation was attempted, however the endotracheal tube did not pass through the glottis. She was induced with propofol, however develops airway obstruction and mask ventilation is impossible. After the airway is eventually secured, she develops a tension pneumothorax due to barotrauma from the initial mask ventilation attempt.

Author(s):

You should list yourself as primary author followed by whomever else is helping write the scenario. Dr. Ricks will be listed as last author.

Editor: Keith A. Beaulieu, MBA, BS

Date(s) of Development:

List the month and year that you are creating this scenario

Target Audience:

Identify the audience or learner that the scenario will be designed for. When creating the rest of the scenario, your target audience will provide you with an idea as to how much intrinsic and extrinsic information to add into your scenario. It will also provide a guide to how much cognitive load you want to build into your scenario.

Specialties:

Add a specialty if the scenario will be built for a particular group of residents

Section 2: Curricular Information

Educational Rationale:

This section you introduce the scenario. You will want to explain why you chose this scenario and add important facts, figures, statistical data, and literary review that demonstrate why the scenario is being created. It should be written in narrative form

[EXAMPLE] - Difficulty ventilating can be a serious symptom for the Emergency physician and intensivist, and must be prepared to assess and treat. Problems with the endotracheal tube, right main stem bronchus intubation, pneumothorax, bronchospasm, and equipment failure can all cause difficult ventilation. 80% of patients admitted for acute decompensated heart failure present through the emergency Department[ref]. 1% of all ER visits are due to pulmonary edema or primary heart failure [ref]. Based on literary review using the search terms, "difficult airway," "pulmonary edema" 1,458 articles were selected, and 41 articles matched the information that was pertinent to this case. In fact, there are xx cases of difficult airway intubations per year at UCIMC. This represents xx% of total cases; furthermore, there were xx cardiac arrests 2013-2014, and xx represented by a primary cause of respiratory in nature [ref]. As evident by the statistics and the number of articles between years 2010-2014 suggest that difficulty ventilating is an important topic that simulation can help [residents] practice prior to patient care that downstream will increase patient safety and or mortality.

Prerequisite Knowledge and Skills:

Required Knowledge Background

- Anatomy related to airway and breathing
- Progression of symptoms of high spinal
- Intubation techniques
- Oxygenation delivery methods
- Respiratory/droplet precautions
- Fluid and blood products administration
- ACLS

Add the required prerequisite knowledge and skills that the learner will need to be successful in the scenario and subsequent debrief

Required Background Skills

- Airway Assessment
- Emergency Airway Management
  - o Bag Mask Ventilation

- o Proper use of oral and nasal airway
- o Performing bronchoscopy
- o Performing laryngoscopy
- o Perform suctioning
- o Advanced Cardiac Life Support Protocols

Add the required prerequisite background skills that the learner will need to be successful in the scenario. This means the skills they should have either experience doing or have mastered

ACGME Anesthesiology Milestones

	MILESTONES	"X" included in scenario
PC1	Pre-Anesthesia Patient Evaluation, Assessment, and Preparation	
PC2	Anesthetic Plan and Conduct	
PC3	Peri-procedural Pain Management	
PC4	Management of Peri-anesthetic Complications	
PC5	Crisis Management	
PC6	Triage and Management of the Critically-ill Patient in a Non-operative Setting	
PC7	Acute, Chronic, and Cancer-related Pain Consultation and Management	
PC8	Technical Skills: Airway Management	
PC9	Technically Skills: Use and Interpretation of Monitoring and Equipment	
PC 10	Technical Skills: Regional Anesthesia	
MK1	Knowledge of Biomedical, Clinical, Epidemiological, and Social-behavioral Sciences as Outlined in the ABA Content Outline	
SBP1	Coordination of Patient Care within the Health Care System	
SBP2	Patient Safety and Quality Improvement	
PBLI1	Incorporation of Quality Improvement and Patient Safety Initiatives into Personal Practice	
PBLI2	Analysis of Practice to Identify Areas in Need of Improvement	
PBLI3	Self-directed Learning	
PBLI4	Education of Patient, Families, Students, Residents, and Other Health Professionals	
P1	Responsibility to Patients, Families, and Society	
P2	Honesty, Integrity, and Ethical Behavior	
P3	Commitment to Institution, Department, and Collegues	
P4	Receiving and Giving Feedback	
P5	Responsibility to Maintain Personal Emotional, Physical, and Mental Health	
ICS1	Communication with Patients and Families	
ICS2	Communication with Other Professionals	
ICS3	Team and Leadership Skills	

Patient Care (PC)
Medical Knowledge (MK)
System-based Practice (SBP)
Practice-based Learning and Improvement (PBLI)
Professionalism (P)
Interpersonal and Communication Skills (ICS)

ACGME milestones = Residents
Each specialty will have separate milestones under the core competencies. Listed above are the Anesthesiology Milestones. Milestones for other specialties can be found on the Medical Education Simulation Center SharePoint or by going to the ACGME website.

AAMC Entrustable Practice Activites (EPA) = Medical Students
EPAs are a set of tasks that the AAMC states that every 4th medical student should know prior to residency. Milestones for other specialties can be found on the Medical Education Simulation Center SharePoint or by going to the AAMC website.

You will want to place an "X" in the milestones that the scenario covers.

Nursing Student requirements will be listed in this area as well. Examples may include local, NLN, or BRN requirements.

Learning Objectives:

- X
- X
- X
- **[UCI Required if procedure is built into scenario]**
  Demonstrate proper "time-out" protocol prior to invasive procedure(s), based on University of California Irvine Medical Center time out policy/protocols, without error.

Identify the learning objectives for the scenario. Learning objectives need to start with an action verb and be something that the learner does during the scenario or as a result of the session. It needs to be measureable.

Use verbs such as: Demonstrate, Recognize, Treat, Perform, coordinate, communicate, Apply

Stay away from verbs such as: know, understand, and appreciate.

[EXAMPLE] - At the end of this simulation, the learner will be able to:

1. **Recognize** indication for continuous pulse oximetry
2. **Formulate** a plan to rule out causes of dyspnea
3. **Recognize** hemoptysis as a cause of worsening oxygenation
4. **Identify and address** hypotension
5. **Anticipates** the need for escalating oxygenation and fluid requirements
6. **Manage** hypotension and hypoxia
7. **Prioritizes and delegates** tasks in time of crisis
8. **Communicates** the need for additional resources (consultants)

Additional documents are located in the Medical Education Simulation Center SharePoint

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References used:

List any references used in research and cited data from the educational rationale section. Although there is no specific reference style required, we suggest you use the AMA Manual of style to cite references. MLA and APA formats can be found on the internet. Purdue University has a nice website that explains both formats. Citationmachine.net has a decent generator you can use. Finally, the reference tab on your Word® product has built in styles.

Section 3: Preparation

1. Simulator
    a. SimMan 3G
2. Machines –
    a. Anesthesia machine,
    b. Code Cart
3. Misc
    a. Monitors – Basic Anesthesia and Patient Monitors
       Will need to have A-line and CVP options

Supplies (list specific quantities, sizes, and brand)
1. Airway
    a. Adult nasal cannula
    b. Adult face mask
    c. Adult non-re-breather mask
    d. Purple Oral airway
    e. 26 Nasal airway
    f. 7.0 or 7.5 endotracheal tube with lubricant on end to simulate mucous
    g. Laryngoscope with size 3 MAC blade
    h. Adult BVM
2. Medications/infusions
    a. X
    b. X
    c. X
    d. X
3. Kits
    a. X
4. Misc
    a. x

Supporting Materials:
1. Images
    a. CXR
    b. ECHO
2. Labs
    a. ABG
    b. CBC
    c. Chemistry
    d. Cardiac Enzymes
3. Handouts
    a. None
4. Misc
    a. Use EKG generated from Laerdal software (if required)
    b. Ultrasound (not available)

CXR, ECG, ECHO, Labs (CBC, BMP, ABG), ultrasound not available. A-line, Central line

> List every item you wish to use. This is important because the simulation specialists will use this section to build and prepare for your session. Please add as much detail as possible

Standardized Actors/Roles:

> Standardized actors play a key role in simulation scenarios, as they can assist the learner and/or keep the scenario on track.
>
> You scenario will likely have at least one confederate/actor to assist the learner. This section you will indicate the actors or roles needed to successfully run the scenario; key actions required to elicit behavior; and how the role should be played-i.e. helpful, distracted, confrontational, etc.)
>
> If you would like the actors to say something specific, provide a script or typical questions and answers.
>
> If the patient "simulator" has a script, you can place it in this section as well
>
> [EXAMPLE] - The actors involved in this scenario, except the OR nurse, are simulation staff. To give the scenario the realism, the OR nurse actor is a registered nurse or other well-trained simulation staff (note: this position may be filled by other medical professionals).
>
> - Surgeon
>   During handoff, the surgeon will simulate doing surgery and have small talk with first assist.
>   "What's going on? – when learner starts struggling
>   "I'm nowhere close to being done" – if learner states they need to stop surgery
>   "Lets get an Ioban on" – if learner decides to reposition to supine
>
> - 1st assist
>   This actor will have no specific scripting. This actor will perform small talk with the surgeon actor. This actor will also assist the OR nurse in retrieving the bed and repositioning of patient. The 1st assist actor will also be the individual that operates the modified suction machine.
>
> The key balance will be giving them enough to say or do to keep the scenario progressing without adding confusion to the scenario, making the scenario to easy (prompting), or too much dialogue for the actors to remember.

Time Duration

Set-up	15 minutes
Preparation	10 minutes
Simulation	15 minutes
Debrief	30 minutes

Adjust the simulation time as appropriate.

Set-up and prep time usually takes 25 minutes unless there is a lot of set-up involved.
Simulations run typically between 10-20 minutes.
Debriefing are usually twice as long as the simulation

Section 4: Simulation Exercise

Information for Participant

Case Stem to be read to participants:
(.):

> One to two paragraphs on pertinent patient and scenario information-this should be the stem for the learner and should include location, physician/help availability, family present, some form of history etc…

Additional information if asked (patient history, labs, physical findings, etc.):

> This area is for additional information you would like to make available if the learner asks for it in the stem.

Information for Facilitator/Simulator Operator <u>Only</u>

Initial presentation:

> This item should list the starting state of the patient at scenario start and include starting vitals in narrative form. This data should then mirror the data for baseline/state 1 in the events table below.

How the Scenario unfolds:

> This should be a narrative on how the scenario flows through the timeline

Critical Action Items:

> Bullet points should start with verbs, because these are actions that the learner will be required to complete otherwise the scenario is a "fail."
>
> [EXAMPLE]
> -Recognize and treat Hypotension
> -Recognize and treat Hypoxemia
> -Recognize patient appearance change: pale/blue
> -Recognize EKG change and identify– 2nd degree block or new BBB
>
> These critical action items will align with the overall learning objectives listed earlier in the document.

Actual course of events and outcomes (for real patient cases):

> If this scenario is taken from a real case, provide a narrative of how the actual case unfolded, and the actions that took place.
>
> This narrative is tied back in to the educational rationale for why you created the scenario in the first place.
>
> Remember to account for any HIPAA issues and ensure you de-identify all information including medical record number, patient name, and physician names. You can; however, state that you were a team member in this case and provide context if applicable.

Simulation Events Table

Minute (State)	Participant action/ Trigger	Patient Status (Simulator response) & Operator Prompts	Monitor Display (Vital Signs)
0:00 (Baseline)		Simulator voice: none Confederate script:	Rhythm: B/P: P: R: T: O2 sat:
0:00-1:00 (State 1)	Time-out	Simulator voice: none Confederate script:	Rhythm: B/P: P: R: T: O2 sat:
1:00-2:00 (State 2)	Induction	Simulator voice: none Confederate script:	Rhythm: B/P: P: R: T: O2 sat:
			Rhythm: B/P: P: R: T: O2 sat:

This table needs to be filled out, and it should mirror what you placed in the narrative "How the Scenario unfolds:"

Every vital sign change will be a separate state

This helps the simulation technicians program the scenario with handlers so that the scenario unfolds as it should.

Section 5: Debriefing & Evaluation

Debriefing

Reactions

1. What Happened?

2. How did you feel about _____?

Understanding (advocacy/inquiry)

1. What were you thinking when _____ happened?

2. It looked to me that _____?

3. I felt that you _____?

4. I saw you do/use _____?

5. What led you down that road?

6. Has this happened in your practice, if so how was it addressed?

7. Now that you have completed this simulation, how will this (if any) change your practice?

Summary

1. What did you do well?

2. What could you have done better/differently? (+/▲)

3. Takeaway

You do not need do anything with this section.

Teaching Points

Pathophysiology/etiology	Corresponding Learning Objective
•	
•	
•	
•	
•	
•	
•	

Teaching points are the items that the debriefer/facilitator or instructor wants to hit upon during the debrief and/or guided discussion. Each of these ach items coincide with the learning objectives of the scenario.

This is a cognitive aid in hitting key discussion points but through discussion of the teaching points, it ensure all the learning objectives are accounted for.

[EXAMPLE]

Teaching Point	Corresponding Learning Objective
Crisis Resource Management • Leadership • Resource acquisition • Situational Awareness • Closed-loop Communication	LO7 LO9 LO11 LO12

Evaluation

[X]	Instructor Evaluation	[ ]	Pre-Test
[ ]	Performance Checklist	[ ]	Post-Test
[ ]	BAT	[ ]	Team Evaluation
[ ]	ANTS		

This is the section where you will identify what method of evaluation that you will be performing on your students. Most medical simulation is experiential, so instructor evaluation is fine. If you have a checklist or some other grading tool, you can add here.

Section 6: Instructor's Notes

- Ensure the simulation environment is properly set-up (see section 3)

- Orientation (start of session) done in operating room

- Create a simulated OR environment

Briefing at start of session

1. Capabilities of simulator and simulation environment (done by simulation specialists)

2. Instructor the learner to call out all medications that are to be given and the associated dosages

3. Discussion of resources available

4. The learner should not assume there is a problem with the simulator

5. Establish a safe environment by explaining this is a training environment

6. Learner will sign both a consent and a video recording policy letter

This section is for the scenario designer to list anything specific the instructor needs to know if they are running the scenario. At a very basic level it discusses the orientation.

1.

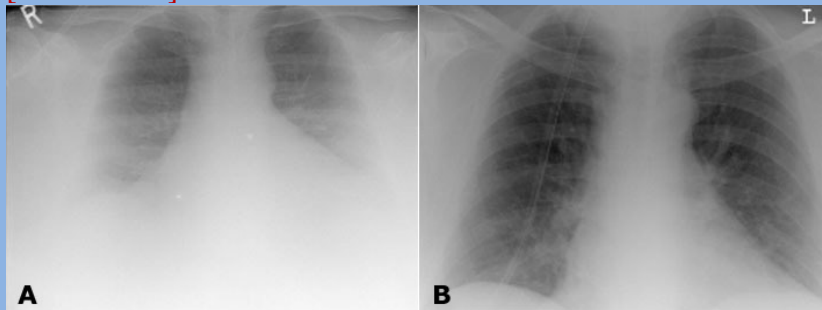This section will provide a preview of all the JPEG picture files that will accompany this scenario. Please ensure that the photographs are de-identified and HIPAA compliant.

[EXAMPLE]

Just a CXR of obese male with poor penetration, and panel B is better penetration (if they ask for a new CXR)

Appendix B
Handout: Labs

CBC

    WBC: 7.2 cells/uL
    Hgb: 10.5 g/dL
    Hct: 32%
    Plt: 280,000 cells/uL

Chemistry

    Na: 138 mEq/L
    K: 4.1 mEq/L
    Cl: 101 mmol/L
    HC03: 25 mmol/L
    BUN: 11 mg/dL
    Cre: 1.1 mg/dL
    Gluc: 122 mg/dL
    CA: 10.1 mg/dL
    Mg: 2.0 mg/dL
    Phos: 3.1 mg/dL

Coagulation Panel

    PT: 11 sec
    PTT: 27.1 sec
    INR: 1.1

UA (probably will not ask for this)

Prot: 78 mg/dL
Gluc: 89 mg/dL
Leuk: Neg
Nitrite: Neg
WBC: <2/hpf
RBC: 0/hpf
Bacteria:none

Cardiac Enzymes

Total CK: 51U/L (normal)
TropI: <.01 ng/mL (normal)
CK-MB: 3.4 ng/mL (normal)

Brain Naturietic Peptide (BNP)

2pg/mL

ABG
(if patient progresses to loss of consciousness/cardiac arrest)
pH 7.28
pCO2 44
pO2 85
HCO3 20
(if pt is resuscitated)
pH 7.38
pCO2 38
pO2 160
HCO3 23

The numbers listed are examples from another case.

We need lab values for lab work results that you will use. We will populate on a standardize form prior to scenario. The standardized form will have normal ranges listed.

After you have filled in the scenario to the fullest extent possible, email the director of operations for review. They will provide comments and email back to you. It will then get bounced around to the director and the simulation technicians. After that, you can do a pilot and make changes as necessary.

[SAMPLE ROUTING]

Project Flow Routing:

From:	To:	Date:
Author	Beaulieu/Ricks	xxx
Beaulieu	Author/Ricks	xxx
Author/Ricks	Beaulieu	xxx
Beaulieu	Techs	xxx
Techs	Beaulieu	xxx
Beaulieu	Ricks	xxx
Ricks	Beaulieu/Techs	xxx
FILE/PILOT		

Any questions, please feel free to contact the simulation center.