Simulation Design Template

Date: 8/31 **File Name:** Adolescent Asthma
Discipline: Nursing **Student Level:** Students in Pediatric Nursing course/Basic
Expected Simulation Run Time: 15-20 minutes **Guided Reflection Time:** 30 minutes
Location: Simulation Lab **Location for Reflection:** Debriefing room, near Sim Lab

Admission Date: August 31

Today's Date: August 31

Brief Description of Client

Name: Julio Morales
Gender: Male
Age: 14 **Race:** Hispanic
Weight: 63.5 **kg** **Height:** 167**cm**
Religion: Catholic

Major Support: mother
Phone: 777-0009

Allergies: No known drug allergies

Immunizations: Current per CDC recommendations

Attending Physician/Team: Pediatrician, Dr. Marla Goodrich

Past Medical History: No pertinent medical or surgical history. Patient diagnosed with asthma at age 4 years. Emergency Department visits X 2 in past 2 years for exacerbation of asthma. Has multiple environmental allergies including grass, mold, and animal dander. Uses albuterol metered dose inhaler PRN.

History of Present Illness: Mild wheezing began last night. Increasing distress noted during the night, mother brought patient to Emergency Department this morning due to no reported response to inhaler

Social History: Lives with mother, father, grandmother, and 4 younger siblings. Is in 8th grade at local middle school.

Primary Medical Diagnosis: Exacerbation of asthma

Surgeries/Procedures & Dates: None

Psychomotor Skills Required Prior to Simulation

Exacerbation of asthma
Basic respiratory assessment
Use of pulse oximeter
Oxygen administration
Communication skills/developmentally appropriate
Use of metered dose inhaler

Cognitive Activities Required prior to Simulation [i.e. independent reading (R), video review (V), computer simulations (CS), lecture (L)]

Attendance at lecture: Pediatric Respiratory Illness (L)
Oxygen Lab
Read Chapter on Asthma (R)
Medication review: Inhaler
Pharmacology review: Albuterol

Simulation Learning Objectives

1. Perform focused respiratory assessment

2. Identify signs of respiratory distress

3. Implement non-pharmacologic methods to aid breathing, i.e. positioning

4. Review physician orders

5. Administer oxygen PRN

6. Administer albuterol safely

7. Evaluate effectiveness of interventions

8. Communicate effectively with pediatric patient and family

Fidelity (choose all that apply to this simulation)

Setting/Environment

- [x] **ER**
- [ ] **Med-Surg**
- [ ] **Peds**
- [ ] **ICU**
- [ ] **OR / PACU**
- [ ] **Women's Center**
- [ ] **Behavioral Health**
- [ ] **Home Health**
- [ ] **Pre-Hospital**
- [ ] **Other**

Simulator Manikin/s Needed: SimMan as 14 year old boy

Props: baseball cap, hospital gown with gym shorts underneath

Equipment attached to manikin:

- [ ] **IV tubing with primary line _____ fluids running at _____ mL/hr**
- [ ] **Secondary IV line _____ running at _____ mL/hr**
- [ ] **IV pump**
- [ ] **Foley catheter _____ cc output**
- [ ] **PCA pump running**
- [ ] **IVPB with _____ running at mL/hr**
- [ ] **O_2 _____**
- [ ] **Monitor attached**
- [x] **ID band** Morales, Julio, include DOB
- [ ] **Other _____**

Equipment available in room

- [ ] **Bedpan/Urinal**
- [ ] **Foley kit**
- [ ] **Straight Catheter Kit**
- [ ] **Incentive Spirometer**
- [ ] **Fluids**
- [ ] **IV start kit**
- [ ] **IV tubing**
- [ ] **IVPB Tubing**
- [ ] **IV Pump**
- [ ] **Feeding Pump**
- [ ] **Pressure Bag**
- [x] **O_2 delivery device (type)** nasal canula and simple mask
- [ ] **Crash cart with airway devices and emergency medications**
- [ ] **Defibrillator/Pacer**

Medications and Fluids

- [ ] **IV Fluids:**
- [ ] **Oral Meds:**
- [ ] **IVPB:**
- [ ] **IV Push:**
- [ ] **IM or SC:**

Diagnostics Available

- [ ] **Labs**
- [ ] **X-rays (Images)**
- [ ] **12-Lead EKG**
- [ ] **Other**

Documentation Forms

- [x] **Physician Orders**
- [ ] **Admit Orders**
- [ ] **Flow sheet**
- [x] **Medication Administration Record**
- [ ] **Kardex**
- [ ] **Graphic Record**
- [ ] **Shift Assessment**
- [ ] **Triage Forms**
- [ ] **Code Record**
- [ ] **Anesthesia / PACU Record**
- [ ] **Standing (Protocol) Orders**
- [ ] **Transfer Orders**
- [ ] **Other**

Recommended Mode for Simulation (i.e. manual, programmed, etc.)

Scenario can be run manually

☐ **Suction**
☒ **Other** Albuterol MDI

Roles / Guidelines for Roles

- ☒ **Primary Nurse**
- ☒ **Secondary Nurse**
- ☐ **Clinical Instructor**
- ☒ **Family Member #1** Patient's mother is in room with patient
- ☐ **Family Member #2**
- ☐ **Observer/s**
- ☐ **Recorder**
- ☐ **Physician / Advanced Practice Nurse**
- ☐ **Respiratory Therapy**
- ☐ **Anesthesia**
- ☐ **Pharmacy**
- ☐ **Lab**
- ☐ **Imaging**
- ☐ **Social Services**
- ☐ **Clergy**
- ☐ **Unlicensed Assistive Personnel**
- ☐ **Code Team**
- ☐ **Other**

Important Information Related to Roles

Patient is upset about being in the hospital; he is missing a basketball game in school today. His mother is worried, upset with son about not using his inhaler often enough

Significant Lab Values

Physician Orders

Admit to peds observation unit
VS q 1 hour
Continuous pulse oximetry
Administer oxygen to maintain SpO2 > 95%
Albuterol MDI (90 micrograms/inhalation), 2 puffs Q 15 minutes X 2
Labs – CBC and Basic metabolic panel
Chest x-ray - AP and lateral

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

Julio was just admitted to the Observation Unit, needs an assessment. His mother says he was wheezing a little last evening, during the night he began wheezing more and coughing, could not sleep. She said he has an inhaler but she does not know if and when he uses that. He reportedly tried during the night but distress continued. Lab and x-ray have not been here yet. Dr. Goodrich just wrote the orders.

Time: 0900

References, Evidence-Based Practice Guidelines, Protocols, or Algorithms Used For This Scenario: (site source, author, year, and page)

Asthma is a chronic inflammatory disorder of the airway with obstruction that can be partially or completely reversed, and increased airway responsiveness to stimuli.

In asthma, the inflammation causes the normal protective mechanisms of the lungs (mucus formation, mucosal swelling, and airway muscle contraction) to react excessively in response to a stimulus, (a "trigger.")

Airway narrowing results from airway swelling and production of copious amounts of mucus. Mucus clogs small airways, trapping air below the plugs, causes muscle spasm that can become uncontrolled in the large airways.

Diagnosis of asthma has 4 key elements: symptoms of episodic airflow obstruction; partial reversibility of bronchospasm with bronchodilator treatment, exclusion of alternate diagnosis, and confirmation by spirometry of measurement of peak expiratory flow variability.

Bronchodilators (i.e. albuterol) relax smooth muscle in airways, results in bronchodilation within 5-10 minutes, has some side effects such as tachycardia, nervousness, nausea, and vomiting

OUTCOMES: Patient will evidence stable vital signs and be afebrile, exhibit unlabored respirations and patent airway, tolerate full diet, tolerate age-appropriate activity with evidence of respiratory distress, weakness, or exhaustion, have moist mucus membranes, verbalize understanding and demonstrate cooperation with respiratory therapy

Supplemental oxygen may be required, humidified preferred, best administered by face mask or nasal canula. Place patient in sitting or upright position to promote ease of breathing.

Discharge planning: child and family need a thorough understanding of asthma, how to prevent attacks and how to treat to avoid unnecessary hospitalization.

Reference

London, M.L., Ladewig, P.W., Ball, J.W., & Bindler, R.C. (2003). The Child with Alterations in Respiratory Function (pp.1035-1046), Maternal-Newborn & Child Nursing, Family-Centered Care. Upper Saddle River, NJ: Prentice Hall.

2007 NCLEX-RN Test Plan Categories and Subcategories

Choose all areas included in the simulation

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
- ☐ 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

Timing (approximate)	**Manikin Actions**	**Expected Interventions**	**May Use the Following Cues**
First 5 minutes	Patient is flat in bed Temp: 37.2 BP: 110/68 P: 90 reg RR: 22 SpO2: 91% Wheezing bilaterally Normal heart and bowel sounds Use of faculty,staff or student as patient voice: "I hate coming to the hospital. I have a game today."	Wash hands Introductions, address patient and his mother Elevate HOB Perform assessment, focus on respiratory with bilateral auscultation and pulse oximetry as priorities. Teamwork, primary and secondary nurse work together to assess and perform interventions	**Role member providing cue:** Patient's mother **Cue:** "Why does he keep having this breathing trouble? We have been here for this same thing before."
Next 10 minutes	Wheezing persists RR ^ to 24 SpO2: 89% "I hate this, it's hard to catch my breath" "I used the stupid puffer."	Review physician orders Administer oxygen via nasal canula at 2 L/min Administer albuterol via metered dose inhaler, utilizing 5 rights of med administration, assessing patient's knowledge, and giving age appropriate instructions	**Role member providing cue:** Patient (sounds short of breath with talking) **Cue:** "I had that inhaler a long time. Since I was in 7th grade last year. I always have to use it when I'm running, and when I'm outside, and if the cat comes in the house"
Final 5 minutes	Slight improvement in wheezing after albuterol and oxygen RR to 18 HR to 108 SpO2: 95 "How come my heart is pounding. I hate this."	Continuous assessment of respiratory status Assess inhaler knowledge and use. When and how often is inhaler used? How long has patient had inhaler? Does he know how to check whether it is empty? Begin teaching of inhaler and side effects	**Role member providing cue:** Patient **Cue:** "What do I have to do so my mom won't bring me back here again? I'm old enough to take care of myself."

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 taking care of Julio and his mom?
2. What were your priorities for this patient?
3. How did the team determine who would do what? How did you communicate?
4. What do you know about individualizing Julio's care based on his age? (developmentally appropriate)
5. What did you do well? Were your interventions effective?
6. To Observers: What questions or comments do you have for the team?
7. What will this family need to know prior to discharge? How can you help them manage Julio's asthma?
8. What do you want to know more about after caring for Julio?
9. What is the most important thing you learned from this case?

Complexity – Simple to Complex

Suggestions for Changing the Complexity of This Scenario to Adapt to Different Levels of Learners

- Julio could have disability such as developmental delay or other chronic illness
- Patient could be in school nurse, pediatrician or nurse practitioner office
- Patient could be unresponsive to q 15" treatments, could require consult with physician