

SECTION I: SCENARIO OVERVIEW

Scenario Title:	Hypoglycemia and Glucagon at school	
Original Scenario Developer(s):	C. Sense MS CNS RN, D. Brady DNP RN CNS	
Date - original scenario	01/14	
Validation:	N. Miller, MA MS RN, M. Miller, MA, RN, CHSE	
Revision Dates:	06/14, 08/14, 10/14	
Pilot testing:	03/14	
QSEN revision:	Included in original scenario 01/14	
<p><u>Estimated Scenario Time:</u> 12-15 minutes <u>Debriefing time:</u> 15 minutes</p> <p><u>Target group:</u> School Nurses pursuing continuing education course reviewing pediatric assessment, School Nurse Green Book Protocols with evidence based practice.</p> <p><u>Core case:</u> 12 year old female student with low cognitive level and Type I diabetes walks to school (per parent request) in the AM and feels “weak” and goes to the school’s RN nursing office where she passes out.</p> <p><u>QSEN Competencies:</u> Patient Centered Care; Patient Safety; Teamwork and Collaboration</p> <p><u>Brief Summary of Case:</u> The client is a 12 year-old student who has Type I diabetes and due to her low cognitive level is not able to manage self-diabetic care or an insulin pump. The parents are inconsistent with diet management, but do administer insulin prior to her coming to school each AM. Blood sugars are routinely checked immediately upon arrival at school. The morning blood sugars have been within normal limits or slightly elevated without hypoglycemic events (which has been carefully monitored because she is walking to school alone with per parent permission). An emergency card with a list of contacts is on file along with an emergency care plan.</p>		

EVIDENCE BASE / REFERENCES (APA Format)
Avner, J.R., Olympia, R.P., Wan, E., (2005) <i>The preparedness of schools to respond to emergencies in children: a national survey of school nurses. Pediatrics.</i> 116 (6), 738-745.
Bauchowitz, A., Clark, W., Cox, D., Gonder-Frederick, L., Kovatchev, B., Lee, J., Ritterband, L., Zrebiec, J. (2008) <i>Detection of hypoglycemia by children with type 1 diabetes 6 to 11 years of age and their parents: a field study. Pediatrics.</i> 121 (3), 489-495.
Bowden, V. & Smith Green, C., (2014) <i>Children and their families continuum of nursing care</i> (3 rd ed). Lippincott Williams & Wilkins. Philadelphia.
Hegenbarth, M.A., and the Committee on Drugs (2008) Preparing for pediatric emergencies: drugs to consider. <i>Pediatrics</i> 121 (2), 433-443.
Taylor, S. (2011). <i>The green book: Guidelines for specialized physical healthcare services in school settings</i> (2ed). Sacramento California: California School Nurses Association

SECTION TWO: CURRICULAR INTEGRATION

A. SCENARIO LEARNING OBJECTIVES

Learning Outcomes
1. Communicates in a compassionate and client centered manner.
2. Implements airway, neurological and diabetic assessments.
3. Recognizes signs and symptoms of hypoglycemia and hyperglycemia.
4. Implements administration of rescue medication Glucagon.
5. Synthesizes case study data to determine need for additional medical treatment follow-up.
Specific Learning Objectives
1. Implements safety positioning and airway monitoring for unresponsive student.
2. Recognizes symptom of low blood sugar and potential for a significant poor outcome if low blood sugar is not immediately rectified.
3. Initiates the appropriate communication with Emergency Personnel, parents, and administrator.
4. Demonstrates appropriate prioritization by assessing glucose level and administration of emergency medication Glucagon.
5. Identifies appropriate airway management intervention by turning student on side to avoid aspiration complication with potential vomiting.
6. Communicates with healthcare team members in hand off report.
7. Completes full body assessment and vital signs.
8. Identifies that key people have been notified of event, (i.e. 911, parents, administrator at school after emergency interventions have been put into place.
Critical Learner Actions
1. Rapid airway/breathing assessment
2. Position for safety by taking student to floor with assistance.
3. Professional and calm voice is used in directing onlookers and staff.
4. Implements emergency care plan for diabetic student
5. Checks finger stick blood sugar and at the same time makes a visual assessment of child.
6. For low finger stick results administers glucagon and completes full body assessment
7. Assesses vital signs
8. Reassess airway and responsiveness post medication.
9. Provides verbal SBAR and written report to Paramedic team calling in.
10. Follows up with call to parents and administrator.

B. PRE-SCENARIO LEARNER ACTIVITIES

Prerequisite Competencies	
Knowledge	Skills/ Attitudes
<input type="checkbox"/> Signs/Symptoms of hypoglycemia	<input type="checkbox"/> Physical assessment skills
<input type="checkbox"/> Management of loss of consciousness with hypoglycemia	<input type="checkbox"/> Use of accucheck <input type="checkbox"/> Use of Glucagon Pen
<input type="checkbox"/> Rationale, dosing, and administration of Glucagon hypoglycemia	<input type="checkbox"/> Patient Centered Care <input type="checkbox"/> Interprofessional team communication

SECTION III: SCENARIO SCRIPT

A. Case summary

The client is a 12 year-old student who has Type I diabetes and due to her low cognitive level is not able to manage self-diabetic care or an insulin pump. The parents are inconsistent with diet management, but do administer insulin prior to her coming to school each AM. Blood sugars are routinely checked immediately upon arrival at school. The morning blood sugars have been within normal limits or slightly elevated without hypoglycemic events. An emergency card with a list of contacts is on file along with an emergency care plan.

B. Key contextual details

- Unconscious (breathing/airway patent)
- low blood sugar (40)

C. Scenario Cast

Patient/ Client	X High fidelity simulator Sim Jr, dressed as a female	
	<input type="checkbox"/> Mid-level simulator	
	<input type="checkbox"/> Task trainer	
	<input type="checkbox"/> Hybrid (Blended simulator)	
	Standardized patient (age range (5-8))	
Role	Brief Descriptor (Optional)	Standardized Participant (SP) or Learner (L)
RN 1	School Nurse	Learner
RN 2	School Nurse	Learner
School Secretary	Staff person	Standardized Participant
Parent	Parent of child	Standardized Participant
EMT	Voice on Phone	Computer Programmer

D. Patient/Client Profile				
Last name:	Kumure		First name:	Lorie
Gender: Male	Age: 12 yr	Ht: 60	Wt: 100 lbs.	Code Status: Full
Spiritual Practice: none		Primary Language spoken: English		Ethnicity: Middle Eastern
1. History of present illness				
History of Type I diabetes since 6 years of age. Has no history of needing glucagon pen in the last 6 years. Does have history of poor control with diabetes				
Primary Medical Diagnosis		Late preterm infant; Type I Diabetic		

2. Review of Systems	
CNS	Unconscious
Cardiovascular	None no murmur
Pulmonary	Loud snore like breaths
Renal/Hepatic	NA
HEENT	No cold symptoms; normal
Gastrointestinal	normal
Endocrine	6 year history of Type I Diabetes
Heme/Coag	NA
Musculoskeletal	Flaccid
Integument	Pale
Developmental Hx	WNL
Social Hx	Cared for at home by mom and dad; no siblings

Medication allergies:	None	Reaction:	
Food/other allergies:	Dust and pollens	Reaction:	sneezing

3. Current medications	Drug	Dose	Route	Frequency
	Lantus	50 units	Sub-Q	At bedtime
	Glucagon	1 unit =1 mg	IM	As needed for severe hypoglycemia
	Novolog	Sliding scale <u>1 unit</u> if BG is 151-200 mg/dl <u>2 units</u> if BG is 201-250 mg/dl <u>3 units</u> if BG is 251-300 mg/dl <u>4 units</u> if BG is 301-350 mg/dl <u>5 units</u> if BG is 351-400 mg/dl <u>6 units</u> if BG is 401-450 mg/dl If greater than 450 contact parent	Sub-Q	Arrival at school, pre-lunch & end of school day
	Novolog	ADDITIONALLY: 1 unit of Novolog to 7 grams of carbohydrate intake at lunch during instructional day. Therefore: At lunch student receives the carb count for insulin dose PLUS the correction dose (or sliding scale)		

4. Laboratory, Diagnostic Study Results NONE					
Na:	K:	Cl:	HCO3:	BUN:	Cr:
Ca:	Mg:	Phos:	Glucose:	HgA1C:	
Hgb:	Hct:	Plt:	WBC:	ABO Blood Type:	
PT	PTT	INR	Troponin:	BNP:	
Ammonia:	Amylase:	Lipase:	Albumin:	Lactate:	
ABG-pH:	paO2:	paCO2:	HCO3/BE:	SaO2:	
VDRL:	GBS:	Herpes:	HIV:		

E. Baseline Simulator/Standardized Patient State	
1. Initial physical appearance	
Gender: Female	Attire: Leggings with blouse and boots, dot earrings back pack.

2. Initial Vital Signs Monitor display in simulation action room:		
No monitor display	Monitor on, but no data displayed	Monitor on, standard display

BP:	HR: 60	RR: 12	T: 98.6	SpO ² :
CVP:	PAS:	PAD:	PCWP:	CO:
AIRWAY:	ETCO ² :	FHR:		
Lungs:	Left: Rhonchi snore		Right: Rhonchi snore	
Heart:	Sounds:	normal		
Bowel sounds:	normal	Other:		

3. Initial Intravenous line set up					
Saline lock	Site:				IV patent (Y/N)
IV #1	Site:		Fluid type:	Initial rate:	IV patent (Y/N)
Main					
IV #2	Site:		Fluid type:	Initial rate:	IV patent (Y/N)
Main					
4. Initial Non-invasive monitors set up					
NIBP		ECG First lead:		ECG Second lead:	
Pulse oximeter		Temp monitor/type		Other:	
5. Initial Hemodynamic monitors set up					
A-line Site:		Catheter/tubing Patency (Y/N)	CVP Site:	PAC Site:	
6. Other monitors/devices					
Foley catheter	Amount:	Appearance of urine:			
Epidural catheter	Infusion pump:	Pump settings:			
Glucose monitoring (Accucheck) Equipment			Internal	External	

Environment, Equipment, Essential props

1. Scenario setting: (example: patient room, home, ED, lobby)

School office; Desk, File with Emergency Cards and Emergency Care Plans, Accucheck, thermometer, blood pressure cuff, stethoscope. Medications: Glucagon Pen, Insulin Pen with Novolog and various other medications with other student's names (as distractors)

2. Equipment, supplies, monitors

(Stethoscope/ baby scales / growth chart for preterm infants)

Bedpan/ Urinal	Foley catheter kit	Straight cath. kit	Incentive spirometer
IV Infusion pump	Feeding pump	Pressure bag	Wall suction
Nasogastric tube	ETT suction cath	Oral suction catheters	Chest tube insert kit
Defibrillator	Code Cart	12-lead ECG	Chest tube equip
PCA infusion pump	Epidural infus pump	Central line Insert Kit	Dressing Δ equip
IV fluid Type:	IV fluid additives:	Blood product _____ ABO Type: _____	# of units: _____

3. Respiratory therapy equipment/devices

Nasal cannula	Face tent	Simple Face Mask	Non re-breather mask
BVM/Ambu bag	Nebulizer tx kit	Flowmeters (extra supply)	

4. Documentation and Order Forms

Health Care Provider orders	Med Admin Record	H & P	Lab Results
Progress Notes	Graphic record	Anesthesia/PACU	ED Record
Medication reconciliation	Transfer orders	Standing (protocol) orders	ICU flow sheet
Nurses' Notes	Dx test reports	Code Record	Prenatal record

Actual medical record binder, constructed per institutional guidelines

- 1) Emergency Contact Card- parent's phone numbers, addresses and back up people phone numbers, addresses and permission to pick up student from school.
- 2) Emergency care plans for all students at school
- 3) MD orders - this student's orders were found crumpled up in back pack. MD order sheet has sliding scale for insulin administration and also carbohydrate to insulin ratio for meals. Includes name and dose of Insulin for bedtime dose. Includes Glucagon dosing for PRN (as needed) dosing for severe hypoglycemia. Will be placed in medical record binder at end of case.
- 4) Emergency procedures/guidelines for urgent issues for school personal

5. Medications (to be available in sim action room)

#	Medication	Dosage	Route
	Insulin: Lantus	50 units	SQ at bedtime
	Glucagon Pen	1 mg.	IM as needed for severe hypoglycemia

CASE FLOW / TRIGGERS/ SCENARIO DEVELOPMENT STATES			
<p>Initiation of Scenario: School Nurse RN arrives at school at 8:00 AM. School starts at 8:30 AM. Student with Diabetes has been walking to school for the last 6 months without incidence. Nurse is in a classroom doing a teaching on hand hygiene and is notified that a student with diabetes has come to the office and now appears unresponsive sitting in chair. The nurse goes to the office. A finger stick machine, glucagon pen, and Emergency Card and Emergency Care Plan are available in the office.</p>			
STATE / PATIENT STATUS	DESIRED LEARNER ACTIONS & TRIGGERS TO MOVE TO NEXT STATE		
<p>1. Baseline Sitting in the office chair, unresponsive</p>	<p>Operator Frame 1: HR 126; RR 22; clear breath sounds; nonverbal</p> <p>Triggers: Non responsive patient to questions or change in position</p> <p>Operator: No change in status; does not respond to finger stick pain.</p>	<p>Learner Actions</p> <ol style="list-style-type: none"> 1. Assesses students airway/breathing; 2. Asks for help to moves student to floor, turns patient on her side. 3. Asks secretary to call 911, parents and administrator 4. Directs secretary to obtain 5. Accucheck machine 6. Checks finger stick; result is 40 	<p>Debriefing Points:</p> <p>With student who is unresponsive what is your first priority.</p> <p>What are your thoughts on how to most safely position this student?</p> <p>What is your initial concern given this patient's history?</p> <p>How did you manage your communication tone and technique to have staff assist in making appropriate phone calls.</p> <p>What physical assessment findings concerned you most?</p>

STATE / PATIENT STATUS	DESIRED ACTIONS & TRIGGERS TO MOVE TO NEXT STATE		
2.	<p>Operator: No change in VS</p> <p>Trigger: 2 minutes after glucagon student starts to moan then talk weakly.</p>	<p>Learner Actions:</p> <ol style="list-style-type: none"> 1. Consults Emergency Care Plan 2. Draws up the Glucagon 3. administers Glucagon using appropriate technique 4. Re assesses airway/ respiratory sounds/vital signs (HR RR BP, temp) 5. Assesses heart /abd, extremity pulses for signs of shock. 6. Confirms that 911, parents, and administrator have been called. 7. Continues to monitor student and potential for vomiting. 	<p>Debriefing Points:</p> <p>Safety considerations (med vial shaken, dose drawn up, dose given IM at correct site).</p> <p>Decision making/ Priority setting Tell us about your priorities after you administer Glucagon?</p> <p>Delegation skills</p> <div style="border: 1px solid black; background-color: #ffffcc; padding: 5px; margin-top: 10px;"> <p>Pharmacological information about Glucagon</p> <ul style="list-style-type: none"> <input type="checkbox"/> Hypotension can last for two hours <input type="checkbox"/> increased HR <input type="checkbox"/> Blood glucose rises within 10 min <input type="checkbox"/> Maximal concentration is obtained at approximately 30 minutes after injection <input type="checkbox"/> Duration is 60-90 minutes </div>

<p>3. Student is on floor, weak, but alert</p> <p>Student requesting parents Student vomits</p>	<p>Operator: Continue current VS setting</p>	<p>Learner Actions:</p> <ol style="list-style-type: none"> 1. Update phone calls Parents, and Administrator who have arrived on scene 2. Turns patient on side 3. Update report to 911. 	<p>Debriefing Points: Family Communication</p> <p>What key assessment findings helped you determine the level of transport you requested?</p> <p>Safety: Rationale for side-lying position</p> <p>Interprofessional communication</p> <p>Were there other treatments you wanted to consider?</p> <p>Summary: Known diabetic priority is to check glucose level Administer medications as needed. Monitor airway/breathing</p>
<p>Scenario End Point: Report to Paramedics on 911 call Patient responsive and parent arrives</p>			
<p>Suggestions to <u>decrease</u> complexity: basic as writer; student could respond to initial treatment Suggestions to <u>increase</u> complexity:</p> <ol style="list-style-type: none"> 1. Psychosocial/Ethical: Parent declines to have patient transported; states she does not have the financial resources to pay for an ambulance bill. 2. Clinical: fall or collapse with potential head injury. 			

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APPENDIX C: DEBRIEFING GUIDE

General Debriefing Plan			
<input type="checkbox"/> Individual	X Group	<input type="checkbox"/> With Video	X Without Video
Debriefing Materials			
<input type="checkbox"/> Debriefing Guide	<input type="checkbox"/> Objectives	X Debriefing Points	X QSEN
QSEN Competencies to consider for debriefing scenarios			
X Patient Centered Care	X Teamwork/Collaboration	<input type="checkbox"/> Evidence-based Practice	
X Safety	<input type="checkbox"/> Quality Improvement	<input type="checkbox"/> Informatics	
Sample Questions for Debriefing			
<ol style="list-style-type: none"> 1. How did the experience of caring for this patient feel for you and the team? 2. Did you have the knowledge and skills to meet the learning objectives of the scenario? 3. What GAPS did you identify in your own knowledge base and/or preparation for the simulation experience? 4. What RELEVANT information was missing from the scenario that impacted your performance? How did you attempt to fill in the GAP? 5. How would you handle the scenario differently if you could? 6. In what ways did you check feel the need to check ACCURACY of the data you were given? 7. In what ways did you perform well? 8. What communication strategies did you use to validate ACCURACY of your information or decisions with your team members? 9. What three factors were most SIGNIFICANT that you will transfer to the clinical setting? 10. At what points in the scenario were your nursing actions specifically directed toward PREVENTION of a negative outcome? 11. Discuss actual experiences with diverse patient populations. 12. Discuss roles and responsibilities during a crisis. 13. Discuss how current nursing practice continues to evolve in light of new evidence. 14. Consider potential safety risks and how to avoid them. 15. Discuss the nurses' role in design, implementation, and evaluation of information technologies to support patient care. 			
Notes for future sessions:			