

SECTION I: SCENARIO OVERVIEW

Scenario Title:	Hyperglycemia in 13 year old male in school setting
Original Scenario Developer(s):	M.F. Cosby, MPA, MSN, RN; D. Baker PhD, APRN-BC, PNP; C. Sense MSN, RN, CNS; D. Brady DNP, RN, CNS
Date - original scenario	01/14
Validation:	M.A. Miller, MA, RN; M. F. Cosby MPA, MSN, RN
Revision Dates:	08/14, 08/18 S. Blackburn, PhD
Pilot testing:	03/14
QSEN revision:	Included in original scenario

Estimated Scenario Time: 12-15 minutes

Debriefing time: 15 minutes

Target group: School Nurses

Core case: – Hyperglycemia in 13year old newly diagnosed with diabetes. Has not informed school.

QSEN Competencies: Patient Centered Care; Evidence-based Practice, Patient Safety; Teamwork Quality Improvement, and Collaboration

Brief Summary of Case: The school nurse is called by administrative assistant to see 13 year old with “flu” like symptoms. During history and assessment, the nurse determines that student recently missed four days of school due to severe viral illness. Learner is expected to assess client, collect relevant background information and obtain “diabetic” stuff from client’s backpack, check urine ketones, finger stick blood glucose (FBSG), arrange for interpreter, contact child’s parents and 911. As indicated; deliver situation, background, assessment and recommendation (SBAR) to emergency medical services (EMS) personnel arriving on scene and document according to policy.

EVIDENCE BASE / REFERENCES (APA Format)

Burns, C.E., Dunn, A.M., Brady, M.A., Starr, N.B, & Blosser, C.G. (2009). <i>Pediatric primary care 4e</i> . Saunders: Elsevier. ISBN: 978-1-4160-4087-.
Butler, S., Kaup, T., Swanson, M.A., & Hoffman, S. (2013). Diabetes management in the school setting. In J. Selekmán (Ed.), <i>School nursing: A comprehensive text</i> (2 nd ed., pp. 872- 898). Philadelphia, PA: F.A. Davis.
Chiocca, E.M. (2010). <i>Advanced pediatric assessment</i> . Philadelphia, PA: Wolters Kluwer Lippincott Williams & Wilkins. ISBN: 0-7817-91650
Cosby, M.F., Miller, N.B., & Youngman, K. (2013). Acute measures for emergent problems. In J. Selekmán (Ed.), <i>School nursing: A comprehensive text</i> (2 nd ed. pp. 516- 577). Philadelphia, PA: F.A. Davis.
Marett, B.E. (2013). Metabolic emergencies. In B. Hammond & P. Zimmerman (Eds.), <i>Sheehy’s manual of emergency care</i> (7 th ed. pp.303- 317). Des Plaines, IL : Elsevier.
Taylor, S. (Ed.) (2011). <i>The green book: Guidelines for specialized physical healthcare services in school settings</i> (2 nd ed). Sacramento California: California School Nurses Organization.

SECTION II: CURRICULUM INTEGRATION

A. SCENARIO LEARNING OBJECTIVES

Learning Outcomes

1. Utilize critical analysis/clinical decision making to interpret data and implement appropriate care.
2. Communicate in a compassionate and client centered manner.
3. Synthesize data to determine need for blood glucose test, urine ketones, insulin meds & medical treatment
4. Utilize effective communication protocols with parents and emergency response personnel

Specific Learning Objectives

1. Implement pediatric assessment triangle and focused assessment; determines triage category
2. Recognize symptoms of distress and hyperglycemia
3. Prioritize blood glucose tests / test ketones in urine
4. Initiate the appropriate communication with interpreter, parents, and administrator
5. Manage emergent situation with school staff
6. Recognize need to obtain permission to search backpack to avoid legal consequences
7. Review elements of order sheet to ensure validity

Critical Learner Actions

1. Greet child in calm, open manner; professionally and calmly asks onlookers to move away.
2. Quickly prioritize life-saving assessments.
3. Remain calm in obtaining correct equipment to evaluate child.
4. Direct school secretary or staff to locate Emergency Contact Card, admin. notification, & possible 911 call.
5. *Delegate call for Hmong interpreter to contact and communicate with parents.*
6. Initiate visual/verbal assessment; completes Pediatric Assessment Triangle (PAT) and determines triage category.
7. Locate and refer to an emergency care plan for any student with diabetes with hyperglycemia.
8. Ask student for permission to check in his backpack for diabetic supplies.
9. Ask child to check finger stick blood glucose (FSBG); while simultaneously performing a secondary visual assessment of child.
10. Obtain urine specimen and checks urine ketones.
11. Consider validity of the school medication administration form found in backpack when directing student to self-administer/administering insulin.
12. Encourage water intake.
13. Consider possible emergent issues.
14. Contact the parents and the doctor's office; considers call to 911 if unable to reach parents
15. Initiate call to 911 if indicated. .
16. Deliver SBAR to emergency personnel

B. PRE-SCENARIO LEARNER ACTIVITIES

Knowledge	Skills/ Attitudes
<input type="checkbox"/> Pediatric Assessment Triangle and Triage	<input type="checkbox"/> Physical assessment skills
<input type="checkbox"/> Signs/Symptoms of hyperglycemia	<input type="checkbox"/> Use of glucometer
<input type="checkbox"/> Protocol: hyperglycemia in school setting	<input type="checkbox"/> Use of ketones strips
<input type="checkbox"/> Standard insulin dosages	<input type="checkbox"/> Insulin administration
<input type="checkbox"/> Need for and how to access interpreter	<input type="checkbox"/> Works with an interpreter in a school setting

SECTION III: SCENARIO SCRIPT

A. Case summary

School nurse is called by school secretary/administrative assistant to see 13 year old with “flu”-like symptoms. The nurse utilizes the PAT and determines a triage category. During the history and assessment, the student discloses that he recently missed four days of school reportedly related to a severe viral illness. Although the student presents as a possible viral syndrome or use of illicit drug/alcohol, unbeknownst to the nurse the student is a newly diagnosed diabetic. Neither he nor his parents have shared this information with school staff because the student does not want anyone to know of his condition. They felt he could manage his diabetes on his own and the diabetes educators with whom they spoke emphasized the importance of self-management. The parents did not fully grasp the potential complications from Type 1 diabetes, because grandma has the “same sweet blood” and has managed it for years.

As the school nurse completes the assessment, the student eventually confides that he was recently diagnosed with diabetes and has recently lost weight and feels lousy. The school nurse asks permission to look through his backpack, locates diabetic supplies and a completed school medication administration form in the student’s backpack. The school nurse validates the form for inclusion of parent and physician signatures, and then directs the student to self-test blood sugar and ketones, and to self-administer insulin according to the findings and orders. The nurse makes arrangements to contact the parents considering possible language barrier and plans for repeated reassessments.

If school nurse does not obtain supplies from back pack and if insulin is not administered, the student becomes more incoherent and confused, respirations increase, and the student complains of severe abdominal pain. A call is made to 911. Contact with school administration and parent is initiated. The school nurse uses SBAR for hand off to emergency medical services (EMS) personnel (fire, paramedics and/or emergency medical technician).

B. Key contextual details

- Hyperglycemia
- Undisclosed recent Dx of diabetes
- Busy school office
- Language barrier
- Availability of translator on campus upon request
- Legal implications around searching student’s personal belongings
- Validation of school medication authorization form

C. Scenario Cast

Patient/ Client	X High fidelity simulator Sim Jr,	
	X Standardized patient age range teenage years	
Role	Brief Descriptor	Standardized Participant (SP) or Learner (L)
RN 1	School Nurse	Learner
RN 2	School Nurse	Learner
School Secretary	Staff person	Computer Programmer
Interpreter	School interpreter Hmong	Computer programmer
EMS	Voice on Phone	Computer Programmer

D. Patient/Client Profile				
Last name:	Fang		First name:	Dao
Gender: Male	Age: 13 yr	Ht: 60	Wt: 100 lbs.	Code Status: Full
Spiritual Practice: Mormon		Ethnicity: Southeast Asian: Hmong		Primary Language spoken: Student English Parents: Hmong but have English language skills
1. History of present illness				
Healthy until 10 days ago, onset of severe flu-like illness, passed out at home. Brought to ED and admitted, Dx Diabetes Type I; sent home 36 hours later after stabilization, and diabetes education from a Diabetes Educator who is Hmong				
Primary Medical Diagnosis		Healthy, typically developing 13 yo male/ recent dx Type I diabetes (Dx was unknown to school staff)		

2. Review of Systems	
CNS	Alert, but slightly anxious
Cardiovascular	None no murmur
Pulmonary	Hyperventilating, rapid shallow
Renal/Hepatic	NA
HEENT	No cold symptoms; normal BREATH is fruity smelling/ like sweet alcohol
Gastrointestinal	Normal (eventually c/o severe abdominal pain if no insulin is administered)
Endocrine	New Dx Type I Diabetes
Heme/Coag	NA
Musculoskeletal	WNL
Integument	Flushed
Developmental Hx	WNL
Social Hx	Lives at home by parents; 6 siblings. Parents speak Hmong; limited English skills
Alternative/ Complementary Medicine Hx	Uses herbs for illness

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

3. Current medications	Drug	Dose	Route	Frequency
	None listed for student			

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:		
CXR:		ECG:			
CT:		MRI:			
Other:					

E. Baseline Simulator/Standardized Patient State
(This may vary from the baseline data provided to learners)

1. Initial physical appearance	
Gender: Male	Attire: T-shirt/ jeans/ shoes / socks Has backpack on floor which contains <ul style="list-style-type: none"> • diabetic supplies: insulin glucometer, ketone test strips, and • crumpled school medication administration form

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

BP: 104/60	HR: 110	RR: start at 30 and quickly go up to 38	T: 99	SpO ² :
CVP:	PAS:	PAD:	PCWP:	CO:
AIRWAY:	ETCO ² :	FHR:		
Lungs: Sounds/mechanics	Left: Clear		Right: Clear	
Heart:	Sounds:	normal		
	ECG rhythm:			
	Other:			
Bowel sounds:	normal		Other:	

3. Initial Intravenous line set up					
	Saline lock	Site:			IV patent (Y/N)
	IV #1	Site:		Fluid type:	Initial rate:
	Main				
	IV #2	Site:		Fluid type:	Initial rate:
	Main				
4. Initial Non-invasive monitors set up					
x	NIBP		ECG First lead:		ECG Second lead:
x	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:	

Environment, Equipment, Essential props

1. Scenario setting: (example: patient room, home, ED, lobby)	
<ul style="list-style-type: none"> • School nurse office setting, gurney and 2 chairs, small table, thermometer, assorted sizes of BP cuffs, stethoscope; 2x 2's, tape; urine specimen container; fake emesis • Personal protection equipment/supplies (hand cleanser, gloves, container for needle disposal etc) • A file with an assortment of student emergency contact cards, one of which is for this student. • Binder with emergency procedures guidelines for school personal • Student back pack with diabetic supplies and insulin: <ul style="list-style-type: none"> ○ glucometer and ketone test strips ○ crumpled doctor's order/medication administration form filled out for school containing the following: <ul style="list-style-type: none"> ▪ matches sliding scale insulin coverage listed in scenario below ▪ is signed by parent and physician • Fruity smelling substance (gum) to apply to manikin to simulate fruity breathe odor 	

2. Equipment, supplies, monitors (In simulation action room or available in adjacent core storage rooms)					
	Bedpan/ Urinal		Foley catheter kit		Straight cath. kit
	IV Infusion pump		Feeding pump		Pressure bag
	Nasogastric tube		ETT suction cath		Oral suction catheters
	Defibrillator		Code Cart		12-lead ECG
	PCA infusion pump		Epidural pump		Central line Kit
	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							
x	Health Care Provider orders <i>In back pack</i>		Med Admin Record		H & P		Lab Results
	Progress Notes		Graphic record		Anesthesia/PACU record		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 <i>Binder with emergency procedures guidelines for school personal</i>				Other <ul style="list-style-type: none"> • Student Emergency Contact Card • MD order sheet for schools in back pack, crumpled up : signed by the student's physician and parent, which includes sliding insulin scale dosing 		

5. Medications (to be available in sim action room)							
#	Medication	Dosage	Route	#	Medication	Dosage	Route
	Insulin (<i>see below</i>)						

MD orders for school:

- Insulin (pen), Novolog: based on correction dose (sliding scale): at arrival at school, pre-lunch and before getting on bus to go home.
- Student also receives 1 unit of Novolog to 7 grams of carbohydrate intake at lunch.
- At lunch student receives the carb count for insulin dose PLUS the correction dose (or sliding scale)
- Insulin - Lantus 50 units at bedtime at home
- Glucagon – emergency use (severe hypoglycemic symptoms)
- **Lunchtime dose is a combination of the Novolog Correction Dose (sliding scale) and carbohydrate ratio (1 unit of Insulin to 7 grams of carbohydrates).**
- Correction dose (sliding scale)
 - 1 unit if BG is 151-200 mg/dl
 - 2 units if BG is 201-250 mg/dl
 - 3 units if BG is 251-300 mg/dl
 - 4 units if BG is 301-350 mg/dl
 - 5 units if BG is 351-400 mg/dl
 - 6 units if BG is 401-450 mg/dl

If greater than 350 check ketones and contact parent

CASE FLOW / TRIGGERS/ SCENARIO DEVELOPMENT STATES

Initiation of Scenario :

The student is a 13 year old male, Dao Fang, born in the US, of Hmong origin, who was healthy and had never been seen by the school nurse. He recently lost weight and missed 4 days of school due to “flu” –like symptoms. He presents the school nurses office where the school secretary/administrative assistant intervenes and calls to the school nurse. She reports, “we have another one, I think, some of these kids, you know kinda try alcohol, will you come take a look. He is confused and vomited, you know like they do. He had a severe viral illness and returned to school today but still does not feel well”. Note: school secretary is basing this on somewhat unclear statements from the student and his “fruity- alcoholic smelling breath”

STATE / PATIENT STATUS	DESIRED LEARNER ACTIONS & TRIGGERS TO MOVE TO NEXT STATE		
<p>1. Baseline</p> <p>13 year old Asian male sitting up on gurney in the school office.</p> <p>Skin flushed; respirations rapid and deep.</p> <p>Responds to nurses questions hesitantly “I just feel crummy”; “I have had the flu and vomited again” “I’m thirsty”</p>	<p>Operator</p> <p>HR 130; RR 36 BP 104/60 Trend HR to 140; RR 38 Temp 100.0°F</p> <p>Triggers: Assessment complete or 5 minutes time elapsed</p>	<p>Learner Actions</p> <p>Learner engages student (client) and asks what is going on</p> <p>Completes PAT and focused assessment</p> <p>Determines triage category (sick not quick and urgent respectively)</p> <p>Continues with focused question and answers with the student</p> <p>Obtains vital signs to minimally include heart rate, resp rate; possibly temp and considers obtaining a blood pressure; notices skin signs (flushed; fruity breath smell)</p>	<p>Debriefing Points:</p> <p>Initial assessment analysis – priority findings/action</p> <p>Priority assessments and rationale</p> <p>Strategies for gaining client cooperation with focused questions.</p>

<p>2. Continues to respond but more slowly with facial expressions of anxiety/pain Answers orientation questions correctly.</p> <p>Responds to question about vomiting: "I think I vomited about 3 or 4 times this morning"</p> <p>Responds to questions about pain: "I have some stomach pain"</p> <p>Responds to question "Is there anything else I should know". "I just found out I have diabetes" "Can we keep it a secret? I really don't want anyone at school to know"</p> <p>"I have insulin supplies in my back pack"</p>	<p>Operator: continues trending vital signs to more abnormal states. Respirations become more deep and rapid.</p> <p>Blood pressure 85/52</p>	<p>Learner Actions: Nurse continues to assess for hydration (checks skin turgor which is poor; notes mouth is dry; and breath is fruity smelling; Nurse asks the student how many times he has vomited over the last 8 hours or so (thinking alcohol or other drugs/ flu, and possible GI issue; Nurse assesses blood pressure Nurse asks if he has any pain; Anything else I should know?</p>	<p>Debriefing Points: Clinical decision making skills with new information about new diagnosis of diabetes, Type 1 What changed when the client reveals he has diabetes? How did you manage your communication tone and technique to have staff assist in making appropriate phone calls? What physical assessment findings concerned you most?</p>
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<p>4. IF insulin is administered: Client verbalizes that he feels better & becomes more alert</p> <p>IF insulin NOT given: Client becomes more distressed and complains of severe abdominal pain.</p>	<p>Operator: IF insulin is administered: Respirations quieter, slower at rate of 36</p> <p>IF insulin is NOT given: Respirations increase to 40, rapid & shallow.</p>	<p>Learner Actions: Assists student in administering the insulin available in back pack</p> <p>If insulin given, Nurse talks with parents and arranges for a transport to the doctor's office.</p> <p>If parents unable to arrange to pick student up to transport to doctor's office or ED: Nurse considers 911 call while monitoring student</p> <p>IF insulin is NOT given: nurse should call 911 and deliver SBAR to EMS personnel on arrival.</p>	<p>Debriefing Points: Onset of action of administered insulin. Length of time before response expected.</p> <p>Key assessment findings indicating the level of transport</p>
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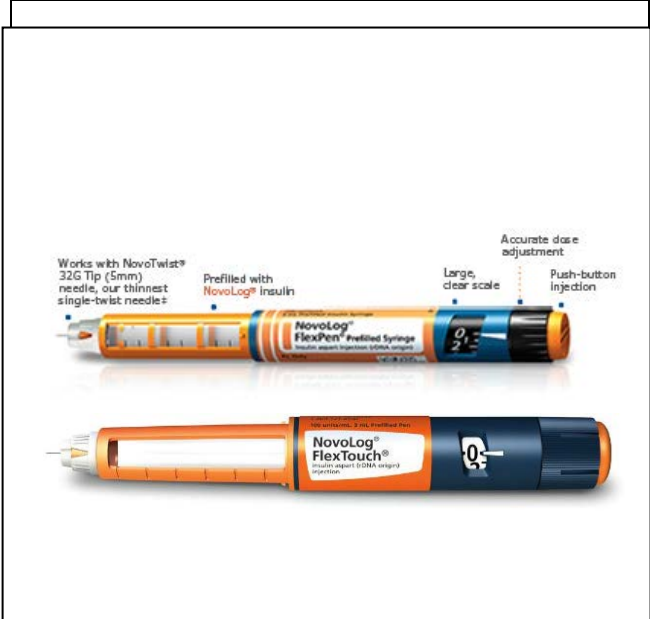
STATE / PATIENT STATUS	DESIRED ACTIONS & TRIGGERS TO MOVE TO NEXT STATE		
5. Continues same pattern Feels more anxious	Operator: Continue current VS setting Triggers:	Learner Actions: Updates 911 Parents, and Administrator who have arrived on scene	Debriefing Points: Were there key aspects of the assessment data helped you determine the level of transport you requested? Where there other treatments you wanted to consider?
Scenario End Point: SBAR given to emergency personnel			
Suggestions to <u>decrease</u> complexity: Basic level of complexity. Could decrease by having client a stable, identified diabetic without language limitations. Suggestions to <u>increase</u> complexity: Client found unconscious in bathroom or has grand mal seizure in classroom.			

APPENDIX A: HEALTH CARE PROVIDER ORDERS

Diagnosis: Type 1 Diabetes (new onset)

HEALTH CARE PROVIDER ORDERS AND SIGNATURE

<p>Medications at school MD orders:</p>	<ul style="list-style-type: none"> • Insulin (pen), Novolog: based on correction dose (sliding scale): at arrival at school, pre-lunch and before getting on bus to go home. • Student also receives 1 unit of Novolog to 7 grams of carbohydrate intake at lunch. • At lunch student receives the carb count for insulin dose PLUS the correction dose (or sliding scale) • Insulin - Lantus 50 units at bedtime at home • Glucagon – emergency use (severe hypoglycemic symptoms) • Lunchtime dose is a combination of the Novolog Correction Dose (sliding scale) and carbohydrate ratio (1 unit of Insulin to 7 grams of carbohydrates). • Correction dose (sliding scale) 1 unit if BG is 151-200 mg/dl 2 units if BG is 201-250 mg/dl 3 units if BG is 251-300 mg/dl 4 units if BG is 301-350 mg/dl 5 units if BG is 351-400 mg/dl 6 units if BG is 401-450 mg/dl <p><i>If greater than 350 check ketones and contact parent</i></p>
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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 checked="" type="checkbox"/> Evidence-based Practice	
X Safety	<input checked="" 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 student feel for you and the school office 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 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 your school nurse practice? 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. What are some special considerations when working with an interpreter to manage care? 13. What are some of the special legal circumstances regarding entering a student's private back pack in a school setting? 14. Discuss roles and responsibilities of the school nurse during an emergent situation. 			
Notes for future sessions:			