ATI Real Life Student Packet
N201 Nursing Care of Special Populations
2022

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ATI Scenario: PED 2: Type 1 Diabetes Mellitus

<u>To Be Completed Before the Simulation</u>

****** Blue boxes should be completed using textbook information. What do you expect to find? This information should be collected before you start the ATI simulation.

Medical Diagnosis: Diabetes Mellitus Type 1

NCLEX IV *(8)*: **Physiological Integrity/Physiological Adaptation**	**NCLEX IV** *(7)*: **Reduction of Risk**
<u>Anatomy and Physiology</u> <u>Normal Structures</u> -Insulin is a hormone made from beta cells in the islets of Langerhans of the pancreas. Insulin is continually released into the bloodstream in small amounts. Insulin in secreted in larger amounts when food is ingested. Insulin lowers blood glucose and facilitates a stable, normal blood glucose level (70-110mg/dL). Insulin promotes glucose transport into cells so that cells can breakdown glucose down for energy. Liver and muscle cells store excess glucose in the form of glycogen. -Fall of insulin levels during normal overnight fasting promotes the release of stored glucose from the liver, protein from the muscles, and fat from adipose tissue. Skeletal muscle and adipose tissue have receptors for insulin, meaning they are insulin dependent tissues. Insulin is required to ‘unlock’ cells to allow transport of glucose. -Brain, liver, and blood cells do not directly depend on insulin for glucose transport but they do require an adequate glucose supply for normal functioning. -Counter regulatory hormones: glucagon, epinephrine, growth hormone, cortisol. These hormones increase blood glucose by stimulating glucose production and release by the liver to decrease movement of glucose into the cells. Helps to maintain balance.	<u>Pathophysiology of Disease</u> -DM is chronic, multisystem disease characterized by hyperglycemia due to abnormal insulin production, impaired insulin use, or a mix of both. -Type 1 DM is an autoimmune disorder in which the body develops antibodies against insulin or beta cells that make the insulin. -Accounts for 5-10% of people with diabetes. Typically affects those younger than 40 yrs (formally called Juvenile diabetes). -Islet cell autoantibodies are responsible for beta cell destruction are present for months to years before the onset of symptoms. Manifestations occur when the patient’s pancreas no longer make enough insulin to maintain normal glucose levels. Once this occurs, symptoms are usually rapid and the patient typically presents with ketoacidosis. May present with symptoms of recent weight loss, polydipsia, polyuria, or polyphagia. -Will require exogenous insulin to sustain life. -Newly diagnosed patients will have a honeymoon phase (3-12months) in which they won’t require a lot of insulin, however this will eventually increase once more or all of beta cells are destroyed.

Anticipated Patient Problems, Goals, & Interventions Based on Medical Diagnosis

** This worksheet should be completed before you begin the ATI simulation.

Problem #1: Risk for unstable glucose; type 1 diabetes mellitus

Patient Goals:

1. Pt will maintain a blood glucose between 70-110mg/dL during my time of care.

2. Pt will correctly self-administer insulin by the end of my care.

Assessments:

- Assess blood glucose q4h, assess I&O q4h, assess skin turgor and mucous membranes q6h, assess cap refill q4h, assess readiness to learn q shift.

Interventions (In priority order):

1. Administer insulin per MD order.
2. Teach the self-administration of insulin during my time of care.
3. Teach the signs and symptoms of hyperglycemia during my shift.
4. Teach the signs and symptoms of hypoglycemia during my shift.
5. Teach the importance of adhering to insulin regimen/schedule during my care.
6. Teach the importance of proper nutrition during my care.

Problem #2: Deficient fluid volume; DKA

Patient Goals:

1. PT will have an intake of fluids >60 ml/hr during my time of care.

2. PT will have a urine output of at least 30 ml/hr during my time of care.

Assessments:

- Assess BP, HR, and RR q4h, monitor I&O q2h, assess LOC q6h, monitor weight q shift, assess orthostatic hypotension BID, assess skin turgor.

Interventions (In priority order):

1. Administer 0.9% NaCl IV per MD during my time of care.
2. Administer 5% dextrose IV per MD order during my time of care.
3. Encourage intake of fluids of 150ml q2h.
4. Teach the signs and symptoms of dehydration during my time of care.
5. Explain the importance of adequate hydration q shift.
6. Provide frequent mouth care q4h or PRN complaints of dry mouth.

To Be Completed During the Simulation

Nursing Notes

I have uploaded a hand written copy of my PIE notes separately.

Time	I or E	Notes	Specify NDx #
7/15 1300	E	Arrived at PCP office due to c/o fatigue, wt loss, nocturia, enuresis, polydipsia	1,3
		Polyphagia and blurred vision. Dipstick urine analysis positive for moderate ketones	
		And glucose of 100mg/dL. Blood glucose via glucometer 271mg/dL. --------------JR	
1310	I	Explained need to be admitted to hospital to treat possible symptoms of type 1 DM	1,2
1330	E	Resting in bed w/HOB elevated. Blood glucose 274 mg/dL. Mom stated “I feel	1,2
		Overwhelmed with all of the new information” --------------------------------------- JR	
1345	I	Explained the purpose of insulin, how to admin and when to admin. -------------- JR	1,2
1400	E	Hemoglobin A1C result of 12%. Mother asked what hgb A1C is. ------------------ JR	1,2
1430	I	Explained Hgb A1C and administer 4 units of insulin subq in R upper arm. ----- JR	1,2
1600	E	c/o hunger and requested a snack. -- JR	3
1615	I	Provided snack and explained importance of snacks before bedtime to prevent	1,2,3
		Hypoglycemia. -- JR	
1620	E	Verbalized understanding. -- JR	2
7/16 0930	E	Resting in bed. Mom c/o pt tearing, sweating, and increased irritability. Blood	1
		Glucose 58mg/dL	
0940	I	Provided 4 oz orange juice. -- JR	1,3
1015	E	Blood glucose 82 mg/dL-- JR	1
1100	I	Taught importance of having simple carbs on hand to prevent hypoglycemia. Taught	1,2,3
		Different types of insulin, onset and peak times, and when to admin. -------------- JR	
1115	E	Verbalized understanding. -- JR	1,2,3
1130	I	Taught self-administration of insulin and rotation of sites. --------------------------- JR	1,2
1200	E	Verbalized understanding. Mom asked about insulin pens and pumps. ------------ JR	1,2
7/17 0900	I	Provided information on insulin pumps and pens. ---------------------------------- JR	1,2
0930	E	Verbalized understanding. Mom questioned playing sports. ---------------------- JR	1,2
1000	I	Explained the importance of exercise and how to manage blood glucose before and	1,2
		After exercise. -- JR	
1030	E	Verbalized understanding. Confirmed follow up appointment with PCP. ------- JR	1,2
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Initials/ Signature J. Rigby SNB

Actual Patient Problems & Goals

** This worksheet should be completed after you complete the ATI simulation.

Problem #1: Risk for unstable glucose; Type 1 diabetes mellitus

Patient Goals:

1. DN will maintain a fasting glucose level of 70-110 mg/dL during my time of care . Met ☐ Unmet ☐

2.DN will utilize the teach back method of self-administration of inulin by the end of my care. Met ☐ Unmet ☐

Problem #2: Deficient knowledge; diabetes

Patient Goals:

1. DN will verbalize the importance of monitoring blood glucose via fingerstick by end my care. Met ☐ Unmet ☐

2. DN will verbalize the signs and symptoms of hyper/hypoglycemia by the end of my care. Met ☐ Unmet ☐

Problem #3: Imbalanced nutrition: less than body requirements

Patient Goals:

1.DN will eat 2000 calories per day during my time of care. Met ☐ Unmet ☐

2. DN will utilize the teach back method of appropriately counting carbohydrates with each meal during my time of care. Met ☐ Unmet ☐

Problem #4: Risk for deficient fluid volume; uncontrolled diabetes/ DKA

Patient Goals:

1. DN will have a fluid intake of at least 60ml/hr during my time of care. Met ☐ Unmet ☐

2.DN will have a urine output of at least 30ml/hr during my time of care. Met ☐ Unmet ☐

Problem #5: Risk for impaired skin integrity; slower healing process r/t diabetes

Patient Goals:

1. DN will maintain skin integrity demonstrated by no break in the skin during my time of care. Met ☐ Unmet ☐

2. DN will maintain a diet of 2000 calories and fluid intake of > 1000 ml per day. Met ☐ Unmet ☐

Patient Resources: Dietician, diabetic education binder, diabetic educator.

Patient Teaching: s/sx of hyper/hypoglycemia, purpose of blood glucose checks, purpose of Hgb A1C, self-administration of subq insulin.

To Be Completed After the Simulation

The orange boxes should be filled out with your simulation patient's actual results, assessments, medications, and recommendations.

NCLEX IV ***(7)*****: Reduction of Risk**

Actual Labs/ Diagnostics
-Urine dipstick: positive for ketones (moderate amount), 100 mg/dL glucose
-Blood glucose fingerstick: 271 mg/dL
-Hemoglobin A1C: 12%
-Fasting blood glucose: 126 mg/dL

NCLEX II ***(3)*****: Health Promotion and Maintenance**

Signs and Symptoms
-generalized malaise, polydipsia, polyphagia, nocturia, enuresis
-Weight loss of 8lbs in the past 6 months despite an increase in appetite
-Blurred vision (having to squinting while reading)
-Abrasion on left knee that is slow to heal (2 weeks)

NCLEX II ***(3)*****: Health Promotion and Maintenance**

Contributing Risk Factors
-Autoimmune
-age < 40 yrs

Therapeutic Procedures
Non-surgical
-Checking blood glucose via glucometer

Surgical
N/A

NCLEX IV ***(7)*****: Reduction of Risk**

Prevention of Complications
(Any complications associated with the client's disease process? If not what are some complications you anticipate)
-Hypoglycemia: fasting blood glucose lower than 70 mg/dL
-Hyperglycemia: fasting blood glucose greater than 110 mg/dL
-Diabetic Ketoacidosis: insulin deficiency characterized by extreme hyperglycemia, ketonuria, acidosis and dehydration.

NCLEX IV ***(6)*****: Pharmacological and Parenteral Therapies**

Medication Management
-Insulin 0.4 units/kg/day in 4 divided doses
-Insulin NPH/regular mixture (70/30) before breakfast and at bedtime
-Regular insulin before lunch and dinner
-Glucagon 1mg IM or subq prn severe hypoglycemia with decreased LOC and inability to swallow

NCLEX IV ***(5)*****: Basic Care and Comfort**

Non-Pharmacologic Care Measures
-Diet: 2000cal per day with a limit of 225g of carbs per day
-Fingerstick's throughout the day

NCLEX III ***(4)*****: Psychosocial/Holistic Care Needs**

Stressors the client experienced?
-Felt embarrassed while performing fingerstick in front of peers
-Stress/anxiety of a new diagnosis

Client/Family Education

Document 3 teaching topics specific for this client.
•Self-administration of insulin and where to inject it.
• Signs/symptoms of hypoglycemia and how to treat.
•Importance of counting carbohydrates and distinguishing the difference between simple and complex.

NCLEX I ***(1)*****: Safe and Effective Care Environment**

Multidisciplinary Team Involvement
(Which other disciplines were involved in caring for this client?)
-Primary care provider, nurse in the hospital and at the doctor's office, laboratory, dietician, social worker.

Reflection Paper

Directions: Write a 1-page reflection paper for each patient using Times New Roman, 12 pt. font and double-spaced. Include the following:

1. Describe an “Aha” moment you experienced during this learning experience.
2. What were the most important aspects of this simulation and what did you learn?
3. How will this simulation experience impact your nursing practice?

Reflection typed on the following page.

My ‘Aha’ moment during this simulation was during the initial encounter with Derek and his mother in the doctor’s office. Derek’s mother was under the impression that Derek had the flue or some other illness. During that encounter, I realized how easy it can be mistaking the symptoms of diabetes for a different illness, especially if you have no medical background. The early signs of diabetes can be very vague and can be easily overlooked, such as weight loss and generalized fatigue. It can be even more difficult to assess the warning signs in a child because they may be unable to verbalize all of symptoms they may be experiencing.

The most important aspects of this simulation were educating Derek and his mom about the new diagnosis of Type 1 Diabetes Mellitus, developing a routine in managing blood glucose day to day, and assisting in the emotional transition of a new medical diagnosis. Derek’s mom verbalized feeling overwhelmed with all the new information being given to her in such a short amount of time. The nurse provided written instructions, information, and a checklist in a binder to help reinforce the new teaching topics. The nurse made sure to include Derek in each conversation so that Derek would be able to apply the information once discharged from the hospital. Utilizing the teach back technique and use of demonstration was useful when teaching administration of insulin and the use of a glucometer to monitor blood glucose levels. Teaching was a huge focus of this simulation because it was a new diagnosis, and the family had no prior knowledge of diabetes. This is an important role of the nurse because we are spending the majority of our time with the patients, so we are constantly evaluating what topics need to be clarified or reinforced. The nurse also addressed Derek’s feelings of embarrassment regarding having to check his blood glucose in front of his friends. The emotional wellbeing of the patient is just as important as their physical wellbeing. Validating Derek’s feelings is important, but it is also important to emphasize adherence with diabetic management and the treatment plan.

This simulation has impacted the nursing care that I will deliver as a nurse by reinforcing the importance of patient teaching and helping the patient navigate through the emotional adjustments of a new diagnosis. Providing written instructions and pamphlets can help the patient and family refer to information after being discharged from the hospital. I will also provide resources that the patient and family can utilize when they get home, such as support groups, hotlines, referral to a diabetic educator and dietician. I will try to ensure a smooth transition from care provided within the hospital to disease management and treatment adherence at home.