GEORGIA | PEACH STATE PATHWAYS

Career, Technical, & Agricultural Education

HEALTHCARE SCIENCE

COURSE: 25.525 General Medicine

UNIT: 7.1 Medical-Surgical Services: Nutrition, Digestive, and Urinary Care

INTRODUCTION

Annotation:

This unit will provide the students with advanced knowledge and skills related to management of patients receiving enteral and parenteral nutrition. Additionally, skills related to bowel and urinary elimination along with specimen collection will be taught. The role of the multiskilled worker such as the Patient Care Technician in providing care to patients with nutritional or elimination needs is the main focuses of this unit. Skills associated with this unit include advanced nursing skills that may be performed by the multiskilled worker/Patient Care Technician or unlicensed assistive personnel such as urinary catheterization, ostomy care, bladder irrigation, nasogastric tube care, enema administration, etc.

Grade(s):

	9th
	10th
X	11th
X	12th

Time: Ten 50 Minute Periods

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Additional Author(s):

Students with Disabilities:

For students with disabilities, the instructor should refer to the student's IEP to be sure that the accommodations specified are being provided. Instructors should also familiarize themselves with the provisions of Behavior Intervention Plans that may be part of a student's IEP. Frequent consultation with a student's special education instructor will be beneficial in providing appropriate differentiation.

FOCUS STANDARDS

GPS Focus Standards: Please list the standard and elements covered.

HS-TGM-14: Students will demonstrate understanding of advanced technical skills in nutrition and fluid intake, elimination, and ostomy care –Medical Laboratory, Gastroenterology, and Urology.

a. Demonstrate measurement of fluid intake and output including documentation.

b. Assist in management of patients receiving tube feedings according to facility protocol and scope of practice.

c. Obtain blood glucose samples correctly and record and report findings to the nurse.

d. Observe IV site for signs/symptoms of infiltration and report findings to the nurse.

e. Demonstrate techniques for peripheral IV removal.

f. Demonstrate techniques for urinary catheterization including documentation.

g. Demonstrate techniques for catheter removal.

h. Demonstrate techniques for enema administration including documentation.

i. Demonstrate techniques for collecting urine and stool specimens including documentation.

j. Demonstrate techniques for bladder and catheter irrigation and catheter care including documentation.

k. Demonstrate ostomy care procedures.

HS-TGM-9: Students will acquire skills according to career interest and apply those skills in a clinical setting for a minimum of 40 hours.

a. Demonstrate understanding of knowledge and skills for career focus.

b. Perform objectives and complete assigned tasks in assigned clinical area according to facility standards according to their scope of practice**.**

HS-TGM-5: Students will understand the importance of and demonstrate data collection as it relates to the goals, objectives, and implementation of the treatment plan according to their scope of practice.

a. Observe, record, and report client behavior.

b. Assist treatment team in observing, reporting, and recording client healthcare needs, strengths, and d problems.

c. Follow policies and protocols of the facility.

d. Understand and demonstrate all necessary interventions of the patient treatment plan as it relates to their scope of practice.

e. Examine and demonstrate the importance of client collaboration and acceptance in identifying and implementing appropriate interventions in the treatment plan.

f. Assist in identifying potential educational needs.

HS-TGM-8: Students will understand and utilize terminology related to the human anatomy.

e. Utilize diagnostic, surgical, and procedural terms and abbreviations related to the endocrine system.

h. Utilize diagnostic, surgical, and procedural terms and abbreviations related to the gastrointestinal system.

i. Utilize diagnostic, surgical, and procedural terms and abbreviations related to the urinary tract.

GPS Academic Standards:

SCSh3: Students will identify and investigate problems scientifically.

SCHSh4: Students use tools and instruments for observing, measuring, and manipulating scientific equipment and materials.

MM4P3: Students will communicate mathematically.

MM4P4: Students will make connections among mathematical ideas and to other disciplines.

MM4P5: Students will represent mathematics in multiple ways.

SAP4: Students will analyze the physical, chemical and biological properties of process systems as they relate to transportation, absorption and excretion including the cardiovascular, respiratory, digestive, excretory systems.

National / Local Standards / Industry / ISTE:

UNDERSTANDINGS & GOALS

Enduring Understandings:

- Nutrition and elimination are important life processes for body functions, growth, and healing.
- It is important for healthcare workers involved in caring for patients in an acute care/hospital setting to understand how to meet the care needs of patients with alterations in how they are nourished and bowel and urinary elimination alterations.

Essential Questions:

- How is care provided for patients receiving enteral nutrition and IV therapy?

- How are patients' bowel and urinary elimination needs met?
- How are blood, urine and stool samples collected safely?

Knowledge from this Unit:

Prior Knowledge:

Students should:

- Recall the interdependence of the digestive, circulatory, respiratory, endocrine and urinary systems in chemical and physical mechanisms of digestion, elimination, transportation, and absorption within the body to change food and derive energy.
- Recall factors that affect eating and nutrition
- Recall how to measure basic intake and output
- Recall nutrients needed for health

New Knowledge:

Student should know:

- Fluid requirements and the causes of dehydration in patients
- How to assist patients with food and fluid needs
- The purpose, methods, and comfort measures for patients receiving enteral nutrition and IV therapy
- What to observe and report about nasogastric, gastric, and jejunostomy tubes
- What to observe and report about IV sites
- Safety precautions to observe in caring for patients with enteral, IV, urinary drainage tubes
- How to obtain blood glucose samples
- How to safely discontinue a peripheral IV.
- How to insert and remove a urinary catheter including documentation
- How to administer various types of enemas including documentation
- How to care for a patient with an ostomy
- How to collect urine and stool samples including documentation

Skills from this Unit:

- Demonstrate measurement of fluid intake and output including documentation
- Assist in management of patients receiving tube feedings according to facility protocol and scope of practice
- Obtain blood glucose samples correctly and record and report findings to the nurse.
- Observe IV site for signs/symptoms of infiltration and report findings to the nurse.
- Demonstrate techniques for peripheral IV removal.

- Demonstrate techniques for urinary catheterization including documentation.
- Demonstrate techniques for catheter removal.
- Demonstrate techniques for enema administration including documentation.
- Demonstrate techniques for collecting urine and stool specimens including documentation.
- j. Demonstrate techniques for bladder and catheter irrigation and catheter care including documentation.
- k. Demonstrate ostomy care procedures

ASSESSMENT(S)

Assessment Method Type: Select one or more of the following. Please consider the type(s) of differentiated instruction you will be using in the classroom.

____ Pre-test
X Objective assessment - multiple-choice, true- false, etc.
_X_ Quizzes/Tests
__ Unit test
____ Group project
____ Individual project
X Self-assessment - May include practice quizzes, games, simulations, checklists, etc.
_X_ Self-check rubrics
__ Self-check during writing/planning process
__ Journal reflections on concepts, personal experiences and impact on one's life
__ Reflect on evaluations of work from teachers, business partners, and competition judges
__ Academic prompts
__ Practice quizzes/tests
X Subjective assessment/Informal observations
__ Essay tests
__ Observe students working with partners
__ Observe students role playing
____ Peer-assessment
__ Peer editing & commentary of products/projects/presentations using rubrics
__ Peer editing and/or critiquing
____ Dialogue and Discussion
__ Student/teacher conferences
__ Partner and small group discussions
__ Whole group discussions
__ Interaction with/feedback from community members/speakers and business partners
____ Constructed Responses
__ Chart good reading/writing/listening/speaking habits
__ Application of skills to real-life situations/scenarios
____ Post-test

Assessment(s) Title:

- Living Digestion Role Play
- Nutrition-Elimination Rubric

- Skills Assessment

Assessment(s) Description/Directions:

Evaluate students' accurate depiction of their part of the digestive system using role play rubric. Use Nutrition-Elimination Rubric to check students off on the skills for this unit.

Attachments for Assessment(s):

- Role Play Rubric
- Nutrition-Elimination Rubric

LEARNING EXPERIENCES

Instructional planning: Include lessons, activities and other learning experiences in this section with a brief description of the activities to ensure student acquisition of the knowledge and skills addressed in the standards. Complete the sequence of instruction for each lesson/task in the unit.

Sequence of Instruction

1. Identify the Standards. Standards should be posted in the classroom for each lesson.

HS-GM-14: Students will demonstrate understanding of advanced technical skills in nutrition and fluid intake, elimination, and ostomy care –Medical Laboratory, Gastroenterology, and Urology.

HS-TGM-9: Students will acquire skills according to career interest and apply those skills in a clinical setting for a minimum of 40 hours.

HS-TGM-5: Students will understand the importance of and demonstrate data collection as it relates to the goals, objectives, and implementation of the treatment plan according to their scope of practice.

HS-TGM-8: Students will understand and utilize terminology related to the human anatomy.

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MM4P3: Students will communicate mathematically.

MM4P4: Students will make connections among mathematical ideas and to other disciplines.

MM4P5: Students will represent mathematics in multiple ways.

SAP4: Students will analyze the physical, chemical and biological properties of process systems as they relate to transportation, absorption and excretion including the cardiovascular, respiratory, digestive, excretory systems.

2. Review Essential Questions.

- How is care provided for patients receiving enteral nutrition and IV therapy?
- How are patients' bowel and urinary elimination needs met?
- How are blood, urine and stool samples collected safely?

3. Identify and review the unit vocabulary. Nutrition-see vocabulary attachment

4. Assessment Activity. Introduce lesson by asking students how they would feel if they could not eat food or drink any liquids? How long do you think you could go without food? How long do you think you could go without drinking liquids? How do you think you would feel after a few days? What do you think would be going on in your body?

Ask if they know of any one who could not have anything to eat or drink by mouth for a long period of time? Ask if they know what the problem was and did the person get better?

Sometimes people are admitted to the hospital because they are having problems with eating or drinking, sometimes they are admitted because they have a problem that requires surgery on the digestive system and are not able to eat for several days. In this unit we will examine how care is provided for patients who are not able to eat or drink by mouth.

Lesson1:

a. Ask students to recall parts of the digestive system and the process of digestion by "Living Digestion" in which the students become part of the digestive system and the ham sandwich.

b. Divide students into small groups, at least 7 groups, depending on the size of the class.

c. Give each student a copy of the graphic organizer from applications course and have students complete the organizer as a group. Assign each group a portion of the digestive system to digest a ham sandwich. Parts of the digestive system can be expanded or reduced depending on group size. Include accessory organs in the process. Allow students to refer to textbook. See Assignment sheet (Refer to multimedia presentation for review of structures and functions).

d. Wrap up by having students journal on what they learned from this activity. Prepare Index cards for next lesson

Lesson 2:

a. Review GPS and essential questions.

b. Ask students what nutrition means?

c. Use multimedia presentation to review importance of nutrition.

d. Develop a basic nutrition handout and discuss with students as a review. Information for handout can be found at http://www.mypyramid.gov/index.html. This site contains specific nutritional information. You may also use Louise Simmers' *Diversified Health Occupations* textbook as a resource for creating handout.

e. Use multimedia presentation to review fluid balance.

f. Using I&O activity have students calculate the patients Intake and output a sample is in the Nursing essentials nutrition unit. Many I& O activities are found in the Diversified Health Occupations workbook also. After students have completed the calculations for a 24 hour period, ask students to:

1. Evaluate whether the patient has fluid balance based on what was just discussed

2. What would happen if the patient had eliminated an additional 900 ml? Would anything happen to the skin of this patient? Would anything happen to the weight?

3. What would happen if the patient had taken in an additional 500ml? Would anything happen to the tissue?

4. What might happen if the patient put out or took in an additional 700ml and you forgot to record it? Can you think of a disorder where this could be a big problem? Intake-CHF, Renal Failure, auto accident with severe head injuries, diabetes insipidus, Out-severe vomiting, diarrhea, diabetes insipidus

5. Prepare index cards in advance. Prepare 14 with intake and 14 with output. Have some outputs set close to the intake and some that are very low and very high. Give each student a card with either an intake or an output to calculate use different color cards for intake and output and laminate so they can be reused. Students can use an overhead pen to write on the cards, which can be erased with water. For intake include oral and IV intake with some amounts listed in ounces so they will have to convert and calculate before getting the total. For output include emesis or other output. Once students have calculated the total, have them pair up with a person with an output. Some should be abnormal. Ask each pair to evaluate whether they are in fluid balance and what they would do with the information. For a grade ask each pair to write their answer on a sheet of paper and paper clip their cards with calculations to their response and turn in.

6. Close lesson with emphasis on the importance of accurately documenting and calculating the patient's intake and output.

Lesson 3

a. Have student review GPS and essential questions.

b. Ask students if they know of anyone who could not eat or drink for a long time and discuss?

c. Begin lesson on enteral feeding using multimedia slides.

d. Show students pictures of or actual tubes and talk about how they are inserted and important observations. Emphasize how they are secured in place.

e. Demonstrate insertion of NG tube and how you would check for placement. Talk about importance of monitoring placement and how to tell if a tube may be dislodged.

f. Discuss aspiration prevention, observations that need to be made and what needs to be reported.

g. Use the list of observations in the slide show to create to create scenarios of patients with different tubes and two of the observations.

h. Give the situations to students and have them demonstrate reporting to the nurse, such as: a patient with a PEG tube and c/o discomfort during feeding and coughing.

i. Discuss and end with a review of monitoring patients receiving tube feedings.

Lesson 4-5

a. Open with a scenario of walking into a room and finding a patient who is receiving an IV with the IV disconnected and blood oozing from the patient's needle. What would you do? Discussion should include infection control issue.

b. Use Multimedia presentation to discuss IV therapy.

c. Show students an IV with tubing and discuss IV drip rate. Describe parts of IV tubing including drip chamber. Give students scenarios to calculate IV flow rate: 15 drops /ml, patient is to receive 100 ml/.h, calculate the IV rate. How long will it take to receive 1000ml Change the drops /ml and have them recalculate Discuss that many times when patients are on TPN their blood glucose needs to be monitored. This is done through fingerstick test done as ordered by the doctor. In many facilities, PCTs perform this test.

d. Refer to procedure in Diversified Health Occupations text and glucometer manual.

e. Demonstrate how to perform this test and allow students to practice in small groups according to school system policy or use simulations.

f. Discuss that PCTs may be allowed to discontinue peripheral IVs. Demonstrate how to discontinue an IV and allow students to practice in small groups by creating simulations.

g. Discuss their role in helping to monitor patients receiving IV therapy.

Lesson 6-7 Urinary Elimination

a. Review GPS and essential questions

b. Review Urinary vocabulary

c. Show large diagram of urinary system and ask students to recall major parts of the urinary system and function

d. Discuss conditions that may warrant urinary catheterization. Ask students to recall

e. Discuss types of catheters used in catheterization-straight versus indwelling catheter

f. Discuss the infection control aspect of catheterization-sterile technique, setting up a sterile field

g. Show video on urinary catheterization if available

h. Demonstrate insertion of an indwelling catheter emphasizing maintenance of the sterile field

i. Demonstrate removal of indwelling catheter

j. Place students in small groups and allow them to practice catheterization and irrigation procedures

k. Have students complete catheterization check off.

Lesson 8-9 Bowel Elimination

a. Review bowel elimination vocabulary

b. Review anatomy of small and large intestines

c. Discuss normal elimination

d. Discuss alterations in elimination that warrant surgical intervention

e. Discuss types of ostomies

f. If manikin available with ostomy sites demonstrate how to assist with ostomy care

g. If manikin is not available, simulate ostomy care on manikin

h. divide students into small groups for practice and skills check off

Lesson 10-Specimen Collection

a. Review principles of collecting specimens.

b. Review procedure for routine urine collection

c. Review procedure of collecting a midstream urine specimen

d. Review procedure of how to collect 24 hour urine

e. Review procedure for collecting stool specimen for occult blood

f. Set up specimen collection stations place students in small groups each member in the group should practice have a peer check then rotate to the next station

Attachments for Learning Experiences:

- Digestive System Graphic Organizer
- Basic Information Sheet about Nutrition
- Elimination Information Sheet
- Multimedia presentation that begins with review of digestive system

Notes & Reflections:

This unit has multiple skills some of which may be simulated depending on school system policy. More time may be required to complete skills check-offs. The skills for students who are CNAs and want to complete the skills performed by PCTs will need to be mastered. Performance of these skills should be evaluated again in the clinical setting.

CULMINATING PERFORMANCE TASK (Optional)

Culminating Unit Performance Task Title:

Culminating Unit Performance Task Description/Directions/Differentiated Instruction:

Attachments for Culminating Performance Task: Please list.

UNIT RESOURCES

Web Resources:

http://www.mypyramid.gov/index.html

Attachment(s):

Materials & Equipment:

- Indwelling catheter with drainage bag
- Catheter leg bag
- Irrigation Saline
- Bulb Syringe
- Catheter Tip Syringes
- Catheter Plug
- Nasogastric Feeding Tube with Stylet
- Gastrostomy tube
- Manikin with openings for NG Tube, gastric, and ostomy openings
- Bag irrigation Saline
- IV Pole
- Blood Glucose Monitor
- Y connection tubing for irrigation
- 3-way indwelling catheter
- Ostomy pouches
- Ostomy wafer

- Ostomy pouch clamp
- IV/Venipuncture Arm/hand
- Portable Suction or simulation
- Tube Feeding Pump with tubing or simulation
- Tube feeding setup
- Salem sump tube size 14, 16
- IV catheter
- IV Tubing
- IV Fluids
- Enema administration set
- Prepared enema
- Stool specimen cup
- Sterile urine sample cup
- Clean catch urine kit
- Specimen labels
- Occult blood slides
- Urine strainers
- Urimeter
- Beneath the commode seat pan
- 24 hour urine and stool collection containers
- Glucometer and test strips
- Tape

What 21st Century Technology was used in this unit:

	Slide Show Software		Graphing Software		Audio File(s)
	Interactive Whiteboard		Calculator		Graphic Organizer
x	Student Response System		Desktop Publishing		Image File(s)
	Web Design Software		Blog	x	Video
	Animation Software		Wiki		Electronic Game or Puzzle Maker
	Email	x	Website		