WILKES-BARRE AREA VOCATIONAL-TECHNICAL SCHOOL
PRACTICAL NURSING PROGRAM

IV THERAPY

12/07

Instructor: Mrs. Julie Ross, B.S.N, R.N.

WILKES-BARRE AREA VOCATIONAL-TECHNICAL SCHOOL
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Course Objectives:

Upon completion of this course, the student will:

1. Describe the indications for intravenous therapy.
2. Identify common types of intravenous therapy.
3. Describe equipment necessary to administer intravenous therapy.
4. Demonstrate the venipuncture procedure for peripheral intravenous therapy.
5. Describe methods for monitoring and maintaining accurate intravenous flow rate.
6. Demonstrate procedures for discontinuing IV therapy.
7. Demonstrate proper procedure for flushing and care of peripherally inserted central catheter (PICC)
8. Utilize the nursing process in caring for a patient receiving IV therapy.
9. Identify the signs and symptoms of complications associated with IV therapy.

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Course Title: IV Therapy

Time Allotment: 22 Hours

Placement: Level III

Course Overview: This course covers the scientific principles of intravenous therapy including care of central lines, administration of medication, phlebotomy, site care and complications.

Teaching Methods:
Lectures and discussions
Demonstrations
Audio-Visual aids
Handouts
Worksheets
Reading assignments
Computer programs

Evaluation Methods:
Examination
Quizzes
Lab practicum

Grading: All students are required to pass a lab practicum initiating and discontinuing IV therapy.
A failure on the practicum will result in a failure for the course.

Quizzes	60% (average of scores)
Unit exam	40%
	100%

Students will have (1) point deducted from their final grade for each day missed, or for each (2) days tardy.

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BIBLIOGRAPHY

Herlihy, B. (2007). *The Human Body In Health and Illness.* (3nd ed). Philadelphia: Saunders.

Perry, A. G., & Potter, P. A. (2004). *Clinical Nursing Skills and Techniques* (5th ed.). St. Louis: Mosby.

Rosdahl, C. B., & Kowalski, M. T. (2008). *Textbook of Basic Nursing* (9th ed.). Philadelphia: Lippincott.

Williams, L. & Hopper, P. (2007). *Understanding Medical-Surgical Nursing.* (3nd ed.) Philadelphia: F. A. Davis

SOFTWARE

Josephson, D. L. (2004). *IV Therapy Skills.* (Version 1.0). New York: Delmar Learning

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COURSE OUTLINE

HOURS	OBJECTIVES	MAJOR TOPICS	MAJOR LEARNING ACTIVITIES
1-2	The student will: Achieve all course objectives. Fulfill all course requirements. Explain cardiopulmonary blood flow. Differentiate between an artery and a vein. Identify the fluid compartments. Differentiate between intracellular and extracellular electrolytes.	I. Introduction To IV Therapy A. Course Overview B. Course Objective C. Course Requirements II. Review Of Anatomy & Physiology A. Circulatory System 1. Cardio-pulmonary blood flow 2. Arteries 3. Veins B. Skin C. Fluids & Electrolytes 1. Fluid compartments 2. Electrolytes D. Acid-Base Balance	The student will read: Appropriate chapter in Rosdahl Text. The student will read: Appropriate chapter in Herlihy and Maebius for the following areas: 1) Blood Vessels & Circulation 2) Skin 3) Fluid & Electrolytes 4) Acid-Base Balance In class, the student will: Identify the principle veins of the upper extremities on anatomical charts.

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COURSE OUTLINE

HOURS	OBJECTIVES	MAJOR TOPICS	MAJOR LEARNING ACTIVITIES
2-3	Identify rationale for IV therapy.	III. Rationale For Intravenous Therapy A. Fluid and Electrolytes B. Nutrients C. Medications D. Blood Products	Read Chapter 6 in Williams & Hopper. Lecture and discussion. In the clinical area, the student will: Care for and identify rationale for IV therapy on an assigned client. Critical Thinking Exercise: *Rationale For IV Therapy.*
	The student will achieve an 80% or greater in quiz.		Quiz #1 – *Anatomy & Physiology*
	Differentiate between peripheral and central vein access.	IV. Intravenous Access A. Peripheral B. Central	The student will: Read Chapter 19, Perry & Potter Text The instructor will lead the class in lecture and discussion.
4	Identify the difference between isotonic, hypertonic, and hypotonic solutions.	V. Types Of Fluids A. Dextrose Solutions B. Sodium Chloride Solutions C. Tonicity D. Electrolyte Solutions	The student will: Participate in a discussion of use of various IV solutions. View video: *IV Therapy Problems*
	The student will achieve an 80% or greater in quiz.		Quiz #2 – *IV Solutions*

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5-6		VI. Administering Peripheral IV Therapy A. Starting The Infusion 1. Physician's order	In the learning lab, the student will: Identify correct solution according to physician's order.
	Identify equipment necessary for initiating an infusion.	2. Equipment	Set up equipment for initiating IV infusion.
7-8	Identify preferred sites for initiation of IV therapy.	3. Site selection	In the learning lab, the student will: Discuss choosing the appropriate site and cannula.
	Discuss criteria utilized in choosing a cannula.	4. Choosing the cannula	
9-10	Utilize a tourniquet properly.		
	Demonstrate proper technique for insertion of IV cannula.	5. Inserting the cannula a. Dilating the vein b. Using a tourniquet c. Cleansing the site d. Stabilizing the cannula	The student will practice locating veins and inserting IV catheter/needles into IV practice arms.
		6. Applying dressing	The student will: Complete computer program: *IV Therapy Skills – Peripheral Infusion Therapy.* In computer lab: Access through Microsoft Explorer at root/iv therapy
		7. Labeling & documentation	

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HOURS	OBJECTIVES	MAJOR TOPICS	MAJOR LEARNING ACTIVITIES
11	Demonstrate skills for changing and discontinuing IV therapy.	B. Discontinuing The IV	The student will: Practice removing an IV.
12-13	Demonstrate set-up, start, and discontinuing IV with 100% competence.		**LAB PRACTICUM: set-up, initiating, discontinuing IV therapy.**
14	Differentiate between continuous, push, and intermittent infusions.	VII. Types Of Infusions A. Continuous B. Intermittent C. Push medications	Lecture and discussion.

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15	Calculate a drip rate for a client receiving a parenteral solution.	VIII. Methods Of Infusion A. Gravity Drip 1. Macro vs. micro drip tubing 2. Calculating drip rates 3. Factors affecting flow rates B. Electronic Control Devices	Lecture. The student will: View computer program: *IV Therapy Skills - Infusion Regulations System.* The student will: Complete calculations work sheets. In lab, the student will: Practice setting up an infusion via an electronic device.
16	The student will achieve an 80% or greater in quiz.	IX. Calculations Quiz	Quiz #3 *Calculations*
17	The student will: Discuss nursing process in caring for a client receiving IV therapy.	IX. Nursing Process For The Client Receiving IV Therapy A. Assessment B. Diagnosis C. Planning & Implementation D. Evaluation	Lecture. The student will: Create potential nursing care plan for client receiving IV therapy. Discuss cultural considerations affecting care of the client receiving IV therapy.

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18 **19**	Discuss alternative IV access routes. Discuss responsibility of LPN in care of client with central venous catheter.	XI. Alternative Access Routes A. Central Venous Catheters 1. Central lines 2. Ports 3. Peripherally-inserted central catheters 4. Dressing changes	Lecture. View computer program *IV Therapy Skill – Peripherally Inserted Central Catheters: PICC dressing change and site care, PICC injection cap changes, Flushing the PICC.* Read: Perry & Potter, p. 579, p. 586-587 In lab, the student will: Observe central line dressing demonstration. Practice independently. Demonstrate correct flushing procedure for PICC line.
20	Discuss legal aspects of IV therapy. Identify complications of IV therapy.	X. Complications A. Legal Issues B. Systemic 1. Circulatory Overload 2. Infection 3. Pulmonary Embolism 4. Air Embolism 5. Speed Shock 6. Incompatibility	Lecture. The student will: View computer program *IV Therapy Skill - Complications Associated With Infusion Therapy.*
21	Describe nursing assessment and interventions for complications of IV therapy.	C. Local 1. Phlebitis 2. Infiltration 3. Infection 4. Extravasation	Group Exercise: Critical Thinking: Complications Of IV Therapy.
22	The student will achieve an 80% or greater in examination.	XIII. Final Course Examination	Write final examination. Attend review of examination.