



KENTUCKY BOARD OF NURSING
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ADVISORY OPINION STATEMENT

**RECOMMENDED COURSE CONTENT INTRAVENOUS (IV) THERAPY
FOR REGISTERED NURSES AND LICENSED PRACTICAL NURSES**

The Kentucky Board of Nursing is authorized by Kentucky Revised Statutes (KRS) Chapter 314 to regulate nurses, nursing education and practice, promulgate regulations and to issue advisory opinions on nursing practice in order to assure that safe and effective nursing care is provided by nurses to the citizens of the Commonwealth.

The Kentucky Board of Nursing issues advisory opinions as to what constitutes safe nursing practice. As such, an opinion is not a regulation of the Board and does not have the force and effect of law. It is issued as a guideline to licensees who wish to engage in safe nursing practice, and to facilitate the delivery of safe, effective nursing care to the public.

Opinion: Recommended Course Content
Intravenous (IV) Therapy for Registered
Nurses and Licensed Practical Nurses

Approved Date: 8/89

Revised Date: 10/89; 12/89; 12/92; 10/93,
6/99; 6/05; 2/10, 3/15

Accountability and Responsibility of Nurses

In accordance with KRS 314.021(2) nurses are responsible and accountable for making decisions that are based upon the individuals' educational preparation and current clinical competence in nursing, and requires licensees to practice nursing with reasonable skill and safety. Nursing practice should be consistent with the *Kentucky Nursing Laws*, established standards of practice, and be evidence-based.

PURPOSE

The Kentucky Board of Nursing (KBN) has developed recommended course content to be included in a basic intravenous (IV) therapy prelicensure or continuing education course for licensed practical nurses and registered nurses who wish to perform specified IV therapy procedures as defined in 201 KAR 20:490.

COURSE DESCRIPTION

An intravenous therapy course should be designed to provide fundamental knowledge, skills and abilities needed by Registered Nurses (RNs) and Licensed Practical Nurses (LPNs) to perform specified IV therapy procedures. Course content should include but not be limited to 1) legal scope of nursing practice for RNs and LPNs in IV Therapy; 2) needs of clients receiving IV therapy; 3) related anatomy and physiology including fluid and electrolytes balance; 4) principles and procedures for venipuncture and site maintenance; 5) principles of pharmacology as related to IV therapy; 6) principles and procedures for administration of specified solutions and medications via intravenous route; 7) principles of blood and blood products administration; 8) assessment of and appropriate interventions for complications related to IV therapy; and 9) demonstration and practice of specified IV therapy procedures. Course content should be consistent with current evidence-based guidelines from nationally accepted nursing organizations including, but not limited to, the Infusion Nurses Society Infusion Nursing Standard of Practice <http://www.ins1.org/i4a/pages/index.cfm?pageid=3310>.

COURSE OBJECTIVES

Upon completion of all instructional components of an IV Therapy course the RN or LPN participant should demonstrate the ability to:

1. Discuss the legal implications of RN or LPN practice as related to the performance of IV therapy procedures.
 - A. Identify a minimum of two (2) legal considerations in each of the following regarding IV therapy and the scope of practice for the RN and LPN:
 1. Kentucky Nursing Laws
 2. Related Kentucky administrative regulations
 3. Related KBN advisory opinion statements
 4. National nursing standards of practice
 5. Health care facility policies, and
 6. Health care facility job descriptions
 - B. Discuss the accountability and responsibility of the RN and LPN in the performance of specified IV therapy procedures.
 - C. State the limitations of practice for the LPN who has successfully completed an IV therapy course consistent the requirements of 201 KAR 20:490.
 - D. State the role of the RN in the supervision and direction of the LPN performing IV therapy.
 - E. Identify the principles of quality control/assurance and risk management related to IV therapy practice.
2. Identify normal anatomy and physiology applicable to IV therapy practice.
 - A. Describe the structure and function of the vascular system.
 - B. Describe the interrelatedness of the vascular system and other body systems in maintaining fluid equilibrium.
 - C. Discuss the distribution and physiologic balance of fluids and electrolytes in the body.

- D. Identify the basic physiological principles applicable to the safe performance of IV therapy procedures.
 - E. Identify two (2) veins on the dorsal aspect of the hand and two (2) veins in the arm commonly used to administer IV fluids.
 - F. Differentiate between arteries and veins in each of the following: tissue layers, color of blood, pulsation, valves, location, tissues supplied, spasm of vessels, and blood flow.
3. Assist in the implementation of the nursing process in caring for clients receiving IV therapy.
- A. Discuss the role of the LPN and the RN in the management of care for a patient receiving IV therapy.
 - B. Discuss the nursing responsibilities in assisting the patient to maintain fluid and electrolyte balance.
 - C. Discuss nursing measures for patient's receiving IV therapy which contribute to the nursing care plan.
 - D. Identify how each of the following affects vital sign measurement, i.e., heart rate/rhythm, respiratory rate, and blood pressure:
 - 1. Fluid retention/deficit
 - 2. Increased/decreased blood volume
 - 3. Vasodilatation/vasoconstriction
 - 4. Increased/decreased cardiac output
 - E. Describe the observable effects of isotonic, hypertonic, and hypotonic IV fluids on the body.
 - F. Observe and report adverse reactions related to IV therapy and initiate appropriate nursing intervention.
4. Initiate, maintain, monitor, and/or discontinue IV therapy as defined by 201 KAR 20:490.
- A. Accurately interpret medical orders for IV therapy.
 - B. Select appropriate sites and infusion devices for IV infusion administration.
 - C. Demonstrate assembling and setting up IV solutions with tubing and needles.
 - D. Correctly and aseptically start a peripheral IV infusion.
 - E. Given a prescribed quantity of fluid to be infused, calculate a flow rate correctly.
 - F. Demonstrate appropriate use of selected IV equipment including: infusion pumps, mechanical controllers, and patient controlled administration systems.
 - G. Demonstrate both continuous and intermittent administration of IV fluids and/or medications.
 - H. Demonstrate accurate documentation of IV therapy.
 - I. Demonstrate IV therapy maintenance procedures, i.e., site care, dressing and tubing changes, flushing, conversion of primary line to intermittent access device, hanging replacement solutions and pre-mixed medications.
 - J. Discontinue IV infusion safely.
 - K. Identify local and systemic complications common to IV therapy and discuss appropriate nursing interventions.

5. Identify the drugs and solutions commonly used in IV therapy and discuss their action, therapeutic dosage, and adverse effects.
 - A. Identify the principles of medication administration as related to premixed medication additives for IV therapy.
 - B. Identify the incompatibilities of selected drugs and fluids including blood and blood products.
 - C. Address the classifications of intravenous medications, including but not limited to, indications for use, pharmacological properties, contraindications, dosing, clinical mathematics, anticipated side effects, potential complications/antidotal therapy, compatibilities, stabilities, and any other specific special considerations.
 - D. Discuss the dosage, action, and adverse effects of the commonly used emergency IV medications.
 - E. Identify medications approved for IV push or bolus by the LPN and demonstrate proper technique for administration of these IV “push or bolus” medications.
 - F. Identify the principles related to the safe administration of blood and blood products.
 - G. Describe potential reaction to blood/blood products and related nursing interventions.
 - H. Identify the principles related to the safe administration of parenteral nutrition and fat emulsion.
 - I. Describe potential reaction to parenteral nutrition and fat emulsion.
6. Maintain aseptic techniques and established infection control practices.
 - A. Discuss universal infection control principles and practices as related to IV therapy.
 - B. Identify principles of quality control/assurance.
 - C. Demonstrate appropriate practice of medical asepsis when performing IV therapy procedures.

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