

NCLEX-PN®  
DETAILED  
TEST PLAN



# 2011 NCLEX-PN® Detailed Test Plan

Effective | April 2011

Candidate Version

### **Mission Statement**

The National Council of State Boards of Nursing (NCSBN®) provides education, service and research through collaborative leadership to promote regulatory excellence for patient safety and public protection.

### **Purpose and Functions**

The purpose of NCSBN is to provide an organization through which boards of nursing act and counsel together on matters of common interest and concern affecting the public health, safety and welfare, including the development of licensing examinations in nursing.

The major functions of NCSBN include developing the NCLEX-RN® and NCLEX-PN® Examinations, performing policy analysis and promoting uniformity in relationship to the regulation of nursing practice, disseminating data related to NCSBN's purpose and serving as a forum for information exchange for NCSBN members.

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# National Council of State Boards of Nursing

## *2011 NCLEX-PN® Detailed Test Plan*

Candidate Version

**Approved by**

National Council of State Boards of Nursing (NCSBN®)  
NCLEX® Examination Committee

**Effective Date**

April 2011



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## I. Background

The Candidate Detailed Test Plan for the National Council Licensure Examination for Practical/Vocational Nurses (NCLEX-PN®) was developed by the National Council of State Boards of Nursing, Inc. (NCSBN®). The purpose of this document is to provide more detailed information about the content areas tested in the NCLEX-PN Examination than is provided in the basic NCLEX-PN® Test Plan.

This booklet contains the:

- 2011 NCLEX-PN® Test Plan;
- Information on testing requirements and sample examination questions (items); and
- References.

### **About the 2011 NCLEX-PN® Test Plan (Section II)**

The test plan is reviewed and approved by the NCLEX® Examination Committee (NEC) every three years. Multiple resources are used, including the recent practice analysis of licensed practical/vocational nurses (LPN/VN), and expert opinions of the NEC, NCSBN content staff and boards of nursing (NCSBN's member boards) to ensure that the test plan is consistent with state nurse practice acts. Following the endorsement of proposed revisions by the NEC, the test plan document is presented for approval to the Delegate Assembly, which is the decision-making body of NCSBN.

### **About the 2011 NCLEX-PN® Detailed Test Plan (Section III)**

The detailed test plan serves a variety of purposes. It is used to guide candidates preparing for the examination, to direct item writers in the development of items and to facilitate the classification of examination items. Two versions of the detailed test plan have been created: Item Writer/Item Reviewer/Nurse Educator Version and Candidate Version. The Candidate Version that is provided in this document offers a more thorough and comprehensive listing of content for each client needs category and subcategory outlined in the test plan. Sample items are provided at the end of each category, which are specific to the client needs category being reviewed in that section. The Item Writer/Item Reviewer/Nurse Educator Version of the detailed test plan provides the same comprehensive listing of content and sample items for each client needs category and subcategory outlined in the test plan. In addition, the Item Writer/Item Reviewer/Nurse Educator Version also provides an item writing tutorial with sample case scenarios to provide nurse educators with hands-on experience writing NCLEX-style test questions.

For up-to-date information on the NCLEX-PN Examination, visit the NCSBN website at <http://www.ncsbn.org>.

## II. 2011 NCLEX-PN® Test Plan

### Introduction

Entry into the practice of nursing is regulated by the licensing authorities within each NCSBN member board jurisdictions (state, commonwealth and territorial boards of nursing). To ensure public protection, each jurisdiction requires candidates for licensure to meet set requirements that include passing an examination that measures the competencies needed to perform safely and effectively as a newly licensed, entry-level practical/vocational nurse. NCSBN develops a licensure examination, the National Council Licensure Examination for Practical/Vocational Nurses (NCLEX-PN® Examination), which is used by member board jurisdictions to assist in making licensure decisions.

Several steps occur in the development of the NCLEX-PN® Test Plan. The first step is conducting a practice analysis that is used to collect data on the current practice of entry-level practical/vocational nurses (*Report of Findings from the 2009 LPN/VN Practice Analysis: Linking the NCLEX-PN® Examination to Practice* [NCSBN, 2009]). Newly licensed practical/vocational nurses (LPN/VNs) are asked about the frequency and priority of performing 150 nursing care activities. Nursing care activities are then analyzed in relation to the frequency of performance, impact on maintaining client safety and client care settings where the activities are performed. This analysis guides the development of a framework for entry-level nursing practice that incorporates specific client needs as well as processes that are fundamental to the practice of nursing. The next step is the development of the NCLEX-PN® Test Plan, which guides the selection of content and behaviors to be tested. Variations in jurisdiction laws and regulations are considered in the development of the test plan.

The NCLEX-PN® Test Plan provides a concise summary of the content and scope of the licensing examination. It serves as a guide for examination development, as well as candidate preparation. Each examination assesses the knowledge, skills and abilities that are essential for the entry-level practical/vocational nurse to use in order to meet the needs of clients requiring the promotion, maintenance or restoration of health. The following sections describe beliefs about people and nursing that are integral to the examination, cognitive abilities that will be tested in the examination and specific components of the NCLEX-PN® Test Plan.

### Beliefs

Beliefs about people and nursing influence the NCLEX-PN® Test Plan. People are finite beings with varying capacities to function in society. They are unique individuals who have defined systems of daily living that reflect their values, cultures, motives and lifestyles. Additionally, people have the right to make decisions regarding their health care needs and to participate in meeting those needs. The profession of nursing makes a unique contribution in helping clients (individual, family or group) achieve an optimal level of health in a variety of settings.

Nursing is both an art and a science, founded on a professional body of knowledge that integrates concepts from the liberal arts, and the biological, physical, psychological and social sciences. It is a learned profession based on an understanding of the human condition across the life span and the relationships of an individual with others and within the environment. Nursing is a dynamic, continually evolving discipline that employs critical thinking to integrate increasingly complex knowledge, skills, technologies and client care activities into evidence-based nursing practice. The goal of nursing for client care is preventing illness; promoting comfort; protecting, promoting, and restoring health; and promoting dignity in dying.

The LPN/VN uses “specialized knowledge and skills which meet the health needs of people in a variety of settings under the direction of qualified health professionals” (NFLPN, 2003). The LPN/VN uses a clinical problem-solving process (the nursing process) to collect and organize relevant health care data, assist in the identification of the health needs/problems throughout the client’s life span and contribute to the interdisciplinary team in a variety of settings. The entry-level LPN/VN demonstrates the essential competencies needed to care for clients with commonly occurring health problems that have predictable outcomes. “Professional behaviors, within the scope of nursing practice for a practical/vocational nurse, are characterized by adherence to standards of care, accountability of one’s own actions and behaviors, and use of legal and ethical principles in nursing practice” (NAPNES, 2007).

## Classification of Cognitive Levels

Bloom’s taxonomy for the cognitive domain is used as a basis for writing and coding items for the examination (Bloom et al., 1956; Anderson & Krathwohl, 2001). The practice of practical/vocational nursing requires application of knowledge, skills and abilities; therefore, the majority of items are written at the application or higher levels of cognitive ability.

## Test Plan Structure

The framework of Client Needs was selected because it provides a universal structure for defining nursing actions and competencies for a variety of clients across all settings and is congruent with state laws/rules.

### Client Needs

The content of the 2011 NCLEX-PN® Test Plan is organized into four major Client Needs categories. Two of the four categories are divided into subcategories:

#### **Safe and Effective Care Environment**

- Coordinated Care
- Safety and Infection Control

#### **Health Promotion and Maintenance**

#### **Psychosocial Integrity**

#### **Physiological Integrity**

- Basic Care and Comfort
- Pharmacological Therapies
- Reduction of Risk Potential
- Physiological Adaptation

## Integrated Processes

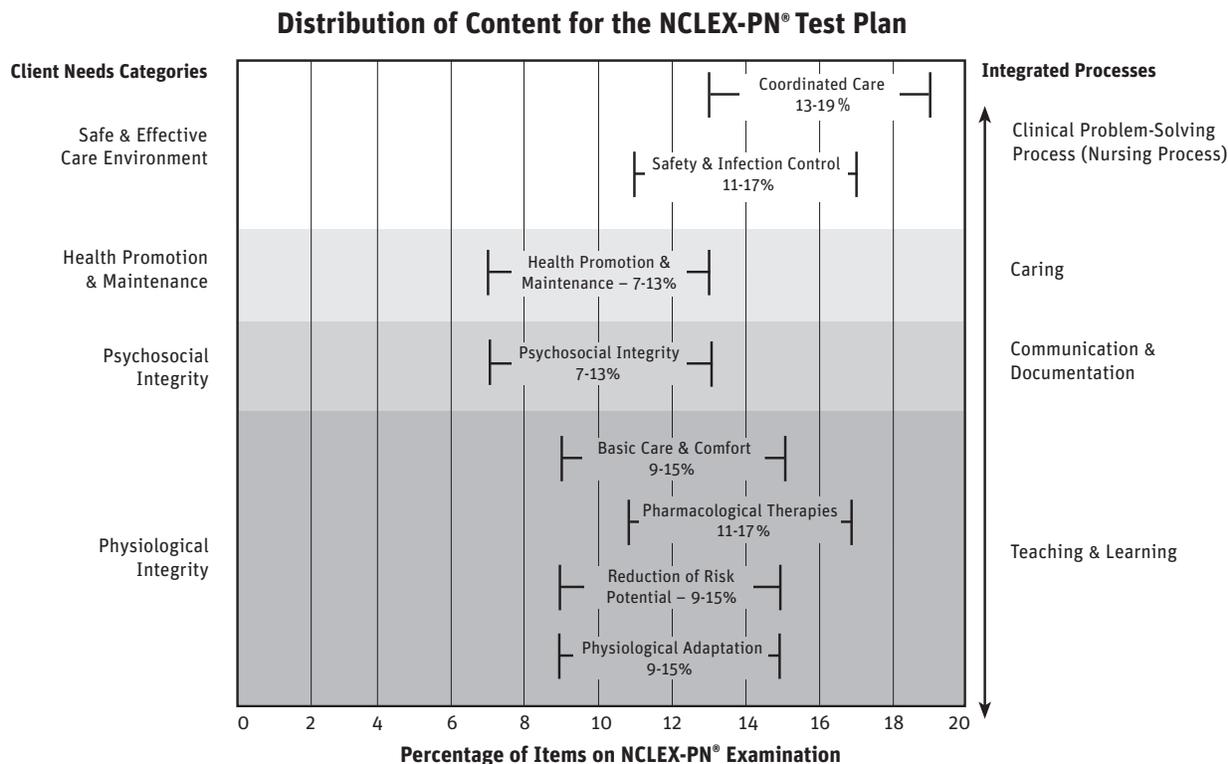
The following processes are fundamental to the practice of practical/vocational nursing and are integrated throughout the Client Needs categories and subcategories:

- **Clinical Problem-Solving Process (Nursing Process)** – a scientific approach to client care that includes data collection, planning, implementation and evaluation.
- **Caring** – interaction of the LPN/VN and client in an atmosphere of mutual respect and trust. In this collaborative environment, the LPN/VN provides support and compassion to help achieve desired therapeutic outcomes.
- **Communication and Documentation** – verbal and nonverbal interactions between the LPN/VN and the client, as well as other members of the health care team. Events and activities associated with client care are validated in written and/or electronic records that reflect standards of practice and accountability in the provision of care.
- **Teaching/Learning** – facilitation of the acquisition of knowledge, skills and attitudes to assist in promoting a change in behavior.

## Distribution of Content

The percentage of test items assigned to each Client Needs category and subcategory of the 2011 NCLEX-PN® Test Plan is based on the results of the study *Report of Findings from the 2009 LPN/VN Practice Analysis: Linking the NCLEX-PN® Examination to Practice* (NCSBN, 2009) and expert judgment provided by members of the NCLEX® Examination Committee.

Client Needs	Percentage of Items from Each Category/Subcategory
<b>Safe and Effective Care Environment</b>	
■ Coordinated Care	13-19%
■ Safety and Infection Control	11-17%
<b>Health Promotion and Maintenance</b>	7-13%
<b>Psychosocial Integrity</b>	7-13%
<b>Physiological Integrity</b>	
■ Basic Care and Comfort	9-15%
■ Pharmacological Therapies	11-17%
■ Reduction of Risk Potential	9-15%
■ Physiological Adaptation	9-15%



## Overview of Content

All content categories and subcategories reflect client needs across the life span in a variety of settings.

### Safe and Effective Care Environment

The LPN/VN provides nursing care that contributes to the enhancement of the health care delivery setting and protects clients and health care personnel.

- **Coordinated Care** – The LPN/VN collaborates with health care team members to facilitate effective client care.

Related content includes, but is **not limited** to:

- |   |   |
|---|---|
| ■ Advance Directives                        | ■ Ethical Practice                              |
| ■ Advocacy                                  | ■ Informed Consent                              |
| ■ Client Care Assignment                    | ■ Information Technology                        |
| ■ Client Rights                             | ■ Legal Responsibilities                        |
| ■ Collaboration with Interdisciplinary Team | ■ Performance Improvement (Quality Improvement) |
| ■ Concepts of Management and Supervision    | ■ Referral Process                              |
| ■ Confidentiality/Information Security      | ■ Resource Management                           |
| ■ Continuity of Care                        |   |
| ■ Establishing Priorities                   |   |

- **Safety and Infection Control** – The LPN/VN contributes to the protection of clients and health care personnel from health and environmental hazards.

Related content includes, but is **not limited** to:

- Accident/Error/Injury Prevention
- Emergency Response Plan
- Ergonomic Principles
- Handling Hazardous and Infectious Materials
- Home Safety
- Reporting of Incident/Event/Irregular Occurrence/Variance
- Restraints and Safety Devices
- Safe Use of Equipment
- Security Plan
- Standard Precautions/Transmission-Based Precautions/Surgical Asepsis

## Health Promotion and Maintenance

The LPN/VN provides nursing care for clients that incorporate knowledge of expected stages of growth and development and prevention and/or early detection of health problems.

Related content includes, but is **not limited** to:

- Aging Process
- Ante/Intra/Postpartum and Newborn Care
- Data Collection Techniques
- Developmental Stages and Transitions
- Health Promotion/Disease Prevention
- High Risk Behaviors
- Lifestyle Choices
- Self-Care

## Psychosocial Integrity

The LPN/VN provides care that assists with promotion and support of the emotional, mental and social well-being of clients.

Related content includes, but is **not limited** to:

- Abuse/Neglect
- Behavioral Management
- Chemical and Other Dependencies
- Coping Mechanisms
- Crisis Intervention
- Cultural Awareness
- End of Life Concepts
- Grief and Loss
- Mental Health Concepts
- Religious and Spiritual Influences on Health
- Sensory/Perceptual Alterations
- Stress Management
- Support Systems
- Therapeutic Communication
- Therapeutic Environment

## Physiological Integrity

The LPN/VN assists in the promotion of physical health and well-being by providing care and comfort, reducing risk potential for clients and assisting them with the management of health alterations.

- **Basic Care and Comfort** – The LPN/VN provides comfort to clients and assistance in the performance of their activities of daily living.

Related content includes, but is **not limited** to:

- Assistive Devices
- Elimination
- Mobility/Immobility
- Non-Pharmacological Comfort Interventions
- Nutrition and Oral Hydration
- Personal Hygiene
- Rest and Sleep

- **Pharmacological Therapies** – The LPN/VN provides care related to the administration of medications and monitors clients who are receiving parenteral therapies.

Related content includes, but is **not limited** to:

- Adverse Effects/Contraindications /Side Effects/Interactions
- Dosage Calculations
- Expected Actions/Outcomes
- Medication Administration
- Pharmacological Pain Management

- **Reduction of Risk Potential** – The LPN/VN reduces the potential for clients to develop complications or health problems related to treatments, procedures or existing conditions.

Related content includes, but is **not limited** to:

- Changes/Abnormalities in Vital Signs
- Diagnostic Tests
- Laboratory Values
- Potential for Alterations in Body Systems
- Potential for Complications of Diagnostic Tests/Treatments/Procedures
- Potential for Complications from Surgical Procedures and Health Alterations
- Therapeutic Procedures

- **Physiological Adaptation** – The LPN/VN participates in providing care for clients with acute, chronic or life-threatening physical health conditions.

Related content includes, but is **not limited** to:

- Alterations in Body Systems
- Basic Pathophysiology
- Fluid and Electrolyte Imbalances
- Medical Emergencies
- Radiation Therapy
- Unexpected Response to Therapies



### III. 2011 NCLEX-PN® Detailed Test Plan

The 2011 NCLEX-PN® Test Plan in the previous section provides a general outline of the categories and sub-categories of the examination. The 2011 NCLEX-PN® Detailed Test Plan (Candidate Version) is used to guide the direction of examination content, which is to be followed by NCLEX® candidates preparing to take the examination.

The activity statements used in the *Report of Findings from the 2009 LPN/VN Practice Analysis: Linking the NCLEX-PN® Examination to Practice* (NCSBN, 2009) preface each of the eight content categories and are identified throughout the detailed test plan by an asterisk (\*). NCSBN performs an analysis of those activities used frequently and identified as important by entry-level nurses to ensure client safety. This is called a practice analysis; it provides data to support the NCLEX examination as a reliable, valid measure of competent, entry-level LPN/VN practice. The practice analysis is conducted at least every three years.

All task statements in the 2011 NCLEX-PN® Detailed Test Plan require the nurse to apply the fundamental principles of clinical decision making and critical thinking to nursing practice. The detailed test plan also makes the assumption that the nurse integrates concepts from the following bodies of knowledge:

- Social Sciences (psychology and sociology)
- Biological Sciences (anatomy, physiology, biology and microbiology)

In addition, the following concepts are utilized throughout the four major client needs categories and subcategories of the test plan:

- Clinical Problem Solving (Nursing Process)
- Caring
- Communication and Documentation
- Teaching and Learning.

*Note: There are certain inconsistencies throughout this document related to word usage and punctuation. Sentences or phrases marked by an asterisk are activity statements taken directly from the Report of Findings from the 2009 LPN/VN Practice Analysis: Linking the NCLEX-PN® Examination to Practice (NCSBN, 2009). In order to provide proper attribution to the original survey these statements have not been altered to fit the overall grammatical style of this document. In addition, the term "client" refers to an individual, family or group. "Clients" are the same as "residents" or "patients."*

## Safe and Effective Care Environment

### Coordinated Care

- **Coordinated Care** – The LPN/VN collaborates with health care team members to facilitate effective client care.

COORDINATED CARE
<p><b>Related Activity Statements from the Report of Findings from the 2009 LPN/VN Practice Analysis: Linking the NCLEX-PN® Examination to Practice</b></p>
<ul style="list-style-type: none"> <li>■ Provide information about advance directives</li> <li>■ Advocate for client rights and needs</li> <li>■ Promote client self-advocacy</li> <li>■ Assign client care and/or related tasks (e.g., assistive personnel or LPN/VN)</li> <li>■ Involve client in care decision making</li> <li>■ Contribute to the development and/or update of the client plan of care</li> <li>■ Participate as a member of an interdisciplinary team</li> <li>■ Recognize and report staff conflict</li> <li>■ Participate in staff education</li> <li>■ Use data from various sources in making clinical decisions</li> <li>■ Supervise/evaluate activities of assistive personnel</li> <li>■ Maintain client confidentiality</li> <li>■ Provide for privacy needs</li> <li>■ Follow up with client after discharge</li> <li>■ Participate in client discharge or transfer</li> <li>■ Provide and receive report</li> <li>■ Organize and prioritize care for assigned group of clients</li> <li>■ Participate in client consent process</li> <li>■ Use information technology in client care</li> <li>■ Receive and process health care provider orders</li> <li>■ Recognize task/assignment you are not prepared to perform and seek assistance</li> <li>■ Respond to the unsafe practice of a health care provider (e.g., intervene or report)</li> <li>■ Follow regulation/policy for reporting specific issues (e.g., abuse, neglect, gunshot wound or communicable disease)</li> <li>■ Participate in quality improvement (QI) activity (e.g., collecting data or serving on QI committee)</li> <li>■ Apply evidence-based practice when providing care</li> <li>■ Participate in client data collection and referral</li> <li>■ Participate in providing cost effective care</li> </ul>

Related content includes, but is **not limited** to:

### **Advance Directives**

- Provide information about advance directives\*
- Review client understanding of advance directives (e.g., living will, health care proxy, Durable Power of Attorney for Health Care [DPAHC])
- Verify the client advance directives status

### **Advocacy**

- Advocate for client rights or needs\*
- Discuss identified treatment options with client and respect the decisions made
- Promote client self-advocacy\*
- Use interpreters to assist in achieving client understanding

### **Client Care Assignments**

- Assign client care and/or related tasks (e.g., assistive personnel or LPN/VN)\*
- Compare needs of client to knowledge, skills and abilities of assistive personnel prior to making client care assignments
- Organize information for client assignments
- Provide information to supervisor when client care assignments need to be changed (e.g., change in client status)

### **Client Rights**

- Inform client of individual rights (e.g., confidentiality, informed consent)
- Involve client in care decision making\*
- Intervene if client rights are violated
- Recognize client right to refuse treatment/procedure

### **Collaboration with Interdisciplinary Team**

- Identify roles/responsibilities of health care team members
- Identify need for nursing or interdisciplinary client care conference
- Contribute to the development and/or update of the client plan of care\*
- Contribute to planning interdisciplinary client care conferences
- Participate as a member of an interdisciplinary team\*

### **Concepts of Management and Supervision**

- Recognize and report staff conflict\*
- Verify abilities of staff members to perform assigned tasks (e.g., job description, scope of practice, training, experience)
- Provide input for performance evaluation of other staff
- Participate in staff education\*
- Use data from various sources in making clinical decisions\*
- Serve as resource person to other staff
- Supervise/evaluate activities of assistive personnel\*

**Confidentiality/Information Security**

- Identify staff actions that impact client confidentiality and intervene as needed (e.g., access to medical records, discussions at nurses' station, change-of-shift reports)
- Recognize staff member and client understanding of confidentiality requirements
- Apply knowledge of facility regulations when accessing client records
- Maintain client confidentiality\*
- Provide for privacy needs\*

**Continuity of Care**

- Follow-up with client after discharge\*
- Participate in client discharge or transfer\*
- Provide follow-up for unresolved client care issues
- Provide and receive report\*
- Record client information (e.g., medical record, referral/transfer form)
- Use agency guidelines to guide client care (e.g., clinical pathways, care maps, care plans)

**Establishing Priorities**

- Organize and prioritize care for assigned group of clients\*
- Participate in planning client care based upon client needs (e.g., diagnosis, abilities, prescribed treatment)
- Use effective time management skills

**Ethical Practice**

- Identify ethical issues affecting staff or client
- Inform client of ethical issues affecting client care
- Intervene to promote ethical practice
- Review client and staff member knowledge of ethical issues affecting client care

**Informed Consent**

- Identify appropriate person to provide informed consent for client (e.g., client, parent, legal guardian)
- Participate in client consent process\*
- Describe informed consent requirements (e.g., purpose for procedure, risks of procedure)
- Recognize that informed consent was obtained (e.g., completed consent form, client understanding of procedure)

**Information Technology**

- Use information technology in client care\*
- Access data for client or staff through online databases and journals
- Enter computer documentation accurately, completely and in a timely manner

**Legal Responsibilities**

- Identify legal issues affecting staff and client (e.g., refusing treatment)
- Receive and process health care provider orders\*
- Recognize task/assignment you are not prepared to perform and seek assistance\*
- Respond to the unsafe practice of a health care provider (e.g., intervene or report)\*
- Follow regulation/policy for reporting specific issues (e.g., abuse, neglect, gunshot wound, or communicable disease)\*
- Document client care

**Performance Improvement (Quality Improvement)**

- Identify impact of performance improvement/quality improvement activities on client care outcomes
- Participate in quality improvement (QI) activity (e.g., collecting data or serving on QI committee)\*
- Document performance improvement/quality improvement activities
- Report identified performance improvement/quality improvement concerns to appropriate personnel (e.g., nurse manager, risk manager)
- Apply evidence-based practice when providing care\*

**Referral Process**

- Identify community resources for client (e.g., respite care, social services, shelters)
- Recognize need for client referral for actual or potential problem (e.g., physical therapy, speech therapy)
- Use appropriate documents to contribute information needed for client referral (medical record, referral form)
- Participate in client data collection and referral\*

**Resource Management**

- Recognize client need for materials and equipment (e.g., oxygen, suction machine, wound care supplies)
- Review effective use of client care materials by assistive personnel (e.g., supplies)
- Participate in providing cost effective care\*

**Sample Item**

The nurse has contributed to a staff education program about client confidentiality. Which of the following statements by a staff member would indicate a correct understanding of the teaching?

- a. "The nurse can share client information with housekeeping staff who work on the unit."
- b. "Clients should be instructed to provide a unique password for family members to use to access medical information." **(key)**
- c. "Staff may provide updates to a client's family members on the client's condition if the family members are on hospital premises."
- d. "Family members are permitted to see the client's medical record if the client provides verbal consent."

**(Key)** is used throughout this document to denote the correct answer(s) for the exam item.

## Safety and Infection Control

- **Safety and Infection Control** – The LPN/VN contributes to the protection of clients and health care personnel from health and environmental hazards.

SAFETY AND INFECTION CONTROL
<p><b>Related Activity Statements from the Report of Findings from the 2009 LPN/VN Practice Analysis: Linking the NCLEX-PN® Examination to Practice</b></p>
<ul style="list-style-type: none"> <li>■ Identify client allergies and intervene as appropriate</li> <li>■ Verify the identity of client</li> <li>■ Assist in or reinforce education to client about safety precautions</li> <li>■ Evaluate the appropriateness of health care provider order for client</li> <li>■ Participate in preparation for internal and external disasters (e.g., fire or natural disaster)</li> <li>■ Use safe client handling (e.g. body mechanics)</li> <li>■ Identify and address hazardous conditions in health care environment (e.g., chemical, smoking or biohazard)</li> <li>■ Acknowledge and document practice error (e.g. incident report)</li> <li>■ Follow protocol for timed client monitoring (e.g., restraint, safety checks)</li> <li>■ Implement least restrictive restraints or seclusion</li> <li>■ Assure availability and safe functioning of client care equipment</li> <li>■ Initiate and participate in security alert (e.g., infant abduction or flight risk)</li> <li>■ Identify the need for and implement appropriate isolation techniques</li> <li>■ Use standard/universal precautions</li> <li>■ Use aseptic and sterile techniques</li> </ul>

Related content includes, but is **not limited** to:

### Accident/Error/Injury Prevention

- Identify client allergies and intervene as appropriate\*
- Identify and facilitate correct use of infant and child car seats by client
- Identify client factors that influence accident/error/injury prevention (e.g., age, developmental stage, lifestyle)
- Recognize what factors related to mental status may contribute to the client potential for accident or injury (e.g., confusion, altered thought processes, diagnosis)
- Determine client/staff member knowledge of safety procedures
- Verify the identity of client\*
- Utilize facility client identification procedures (e.g., client name band, allergy bands)
- Monitor client care environment for safety hazard and report problems to appropriate personnel

\*Activity Statements used in the 2009 PN Practice Analysis

- Assist in or reinforce education to client about safety precautions\*
- Remove fire hazards from client care areas
- Protect client from accident/error/injury (e.g., protect from another individual, falls, environmental hazards, burns)
- Provide client with appropriate method to signal staff members
- Evaluate the appropriateness of health care provider order for client\*

### **Emergency Response Plan**

- Identify nursing and assistive personnel roles during internal and external disasters
- Participate in preparation for internal and external disasters (e.g. fire or natural disaster)\*
- Contribute to selection of client to recommend for discharge in disaster situation

### **Ergonomic Principles**

- Use safe client handling (e.g. body mechanics)\*
- Provide instruction and information to client about body positions that prevent stress injuries

### **Handling Hazardous and Infectious Materials**

- Identify and employ methods to control the spread of infectious agents (e.g., cleaning with appropriate solutions)
- Identify and address hazardous conditions in health care environment (e.g., chemical, smoking or biohazard)\*
- Demonstrate knowledge of facility protocols for handling hazardous and infectious materials

### **Home Safety**

- Identify fire/environmental hazards (e.g., frayed electrical cords, small area rugs, inadequate footwear)
- Determine client understanding of home safety needs
- Provide client with information on home safety
- Reinforce client education on home safety precautions (e.g., home disposal of syringes, lighting, handrails, kitchen safety)

### **Reporting of Incident/Event/Irregular Occurrence/Variance**

- Identify situations requiring completion of incident/event/irregular occurrence/variance report (e.g., medication administration error, client fall)
- Acknowledge and document practice error (e.g., incident report)\*
- Monitor client response to error/event/occurrence

### **Restraints and Safety Devices**

- Demonstrate knowledge of appropriate application of restraints/safety devices
- Follow protocol for timed client monitoring (e.g., restraint, safety checks)\*
- Implement least restrictive restraints or seclusion\*
- Document use of restraints/safety devices and client response
- Check for proper functioning of restraints/safety devices

**Safe Use of Equipment**

- Assure availability and safe functioning of client care equipment\*
- Follow facility protocols/procedures for safe use of equipment
- Provide safe equipment use for client care (e.g., continuous passive motion [CPM] device, oxygen, mobility aids)

**Security Plan**

- Initiate and participate in security alert (e.g., infant abduction or flight risk)\*
- Use principles of triage and evacuation protocols/procedures
- Monitor effectiveness of security plan

**Standard Precautions/Transmission-Based Precautions/Surgical Asepsis**

- Identify communicable diseases and modes of transmission (e.g., airborne, droplet, contact)
- Identify client knowledge of infection control procedures
- Identify the need for and implement appropriate isolation techniques\*
- Use standard/universal precautions\*
- Use aseptic and sterile techniques\*
- Use appropriate supplies to maintain asepsis (e.g., gloves, mask, sterile supplies)
- Use correct techniques to apply and remove gloves, mask, gown and protective eye wear
- Use correct hand hygiene techniques
- Prevent environmental spread of infectious disease through correct use of equipment
- Protect immunocompromised client from exposure to infectious diseases/organisms
- Monitor client care area for sources of infection
- Set up a sterile field
- Reinforce appropriate infection control procedures with client and staff members

**Sample Item**

The nurse is assisting to plan a community bicycle safety program. Which of the following information should the nurse recommend including?

- a. Demonstrating the correct way to wear a bicycle helmet to parents of preschoolers. **(key)**
- b. Asking school-aged children who have been involved in bicycle accidents to speak to a group of peers.
- c. Informing parents that it is necessary for all children to have a complete physical examination prior to initiating bike riding.
- d. Telling parents that it is safest for children to ride bikes on the weekends.

## Health Promotion and Maintenance

- **Health Promotion and Maintenance** – The LPN/VN provides nursing care for clients that incorporate knowledge of expected stages of growth and development and prevention and/or early detection of health problems.

### HEALTH PROMOTION AND MAINTENANCE

#### Related Activity Statements from the *Report of Findings from the 2009 LPN/VN Practice Analysis: Linking the NCLEX-PN® Examination to Practice*

- Provide care that meets the special needs of the newborn - less than 1 month old
- Provide care that meets the special needs of infants or children aged 1 month to 12 years
- Provide care that meets the special needs of adolescents aged 13 to 18 years
- Provide care that meets the special needs of young adults aged 19 to 30 years
- Provide care that meets the special needs of adults aged 31 to 64 years
- Provide care that meets the special needs of adults aged 65 to 85 years of age
- Provide care that meets the special needs of adults aged greater than 85 years of age
- Assist with fetal heart monitoring for the antepartum client
- Assist with monitoring a client in labor
- Monitor recovery of stable postpartum client
- Collect data for health history
- Collect baseline physical data (e.g., skin integrity, or height and weight)
- Recognize barriers to communication or learning
- Compare client development to norms
- Assist client with expected life transition (e.g., attachment to newborn, parenting or retirement)
- Provide care and resources for beginning of life and/or end of life issues and choices
- Identify and educate clients in need of immunizations (required and voluntary)
- Participate in health screening or health promotion programs
- Provide information for prevention of high risk behaviors

Related content includes, but is **not limited** to:

### **Aging Process**

- Identify client knowledge on aging process and assist in reinforcing teaching on expected changes related to aging
- Provide care that meets the special needs of the newborn – less than 1 month old\*
- Provide care that meets the special needs of infants or children aged 1 month to 12 years\*
- Provide care that meets the special needs of adolescents aged 13 to 18 years\*
- Provide care that meets the special needs of young adults aged 19 to 30 years\*
- Provide care that meets the special needs of adults aged 31 to 64 years\*
- Provide care that meets the special needs of clients aged 65 to 85 years of age\*
- Provide care that meets the special needs of clients aged greater than 85 years of age\*

### **Ante/Intra/Postpartum and Newborn Care**

- Identify client emotional preparedness for pregnancy (e.g., support systems, perception of pregnancy)
- Assist in performing client non-stress test
- Assist with fetal heart monitoring for the antepartum client\*
- Assist with monitoring a client in labor\*
- Perform care of postpartum client (e.g., perineal care, assistance with infant feeding)
- Contribute to newborn plan of care
- Reinforce client teaching on infant care skills (e.g., feeding, bathing, positioning)
- Monitor recovery of stable postpartum client\*
- Monitor client ability to care for infant

### **Data Collection Techniques**

- Collect data for health history\*
- Collect baseline physical data (e.g., skin integrity, or height and weight)\*
- Prepare client for physical examination (e.g., reinforce explanation of procedure, provide privacy and comfort)
- Document findings according to agency/facility policies/procedures
- Report client physical examination results to health care provider

### **Developmental Stages and Transitions**

- Identify and report client deviations from expected growth and development
- Identify occurrence of expected body image changes
- Recognize barriers to communication or learning\*
- Compare client development to norms\*
- Assist client with expected life transition (e.g., attachment to newborn, parenting or retirement)\*
- Assist client to select age-appropriate activities
- Modify approaches to care in accordance with client development stage
- Provide care and resources for beginning of life and/or end of life issues and choices\*
- Determine client acceptance of expected body image change (e.g., aging, pregnancy, menopause)
- Determine impact of expected body image changes on client (e.g., temperament)

**Health Promotion/Disease Prevention**

- Identify risk factors for disease/illness (e.g., age, gender, ethnicity, lifestyle)
- Identify and educate clients in need of immunizations (required and voluntary)\*
- Identify precautions and contraindications to immunizations
- Identify client health seeking behaviors (e.g., breast and testicular self-examinations)
- Gather data on client health history and risk for disease (e.g., lifestyle, family and genetic history)
- Check results of client health screening tests (e.g., Papanicolaou [Pap] test or smear, stool occult blood test)
- Provide assistance for screening examinations (e.g., scoliosis, breast and testicular self-examinations, blood pressure check)
- Participate in a health screening or health promotion programs\*
- Assist client in disease prevention activities
- Monitor client actions to maintain health and prevent disease (e.g., smoking cessation, exercise, diet, stress management)
- Monitor incorporation of healthy behaviors into lifestyle by client (e.g., screening examinations, immunizations, limiting risk taking behaviors)
- Reinforce teaching with client about health risks and health promotion
- Recognize client unexpected response to immunizations

**High Risk Behaviors**

- Assist client to identify high risk behaviors
- Provide information for prevention of high risk behaviors\*
- Monitor client lifestyle practice risks that may impact health (e.g., excessive sun exposure, lack of regular exercise)
- Reinforce client teaching related to client high risk behavior (e.g., unprotected sexual relations, needle sharing)

**Lifestyle Choices**

- Identify client lifestyle practices that may have an impact on health
- Identify contraindications to chosen contraceptive method (e.g., smoking, compliance, medical conditions)
- Identify client attitudes/perceptions on sexuality
- Recognize client need/desire for contraception
- Recognize expected outcomes for client family planning methods
- Recognize client need to discuss sensitive issues related to sexuality
- Support client in family planning
- Respect client sexual identity and personal choices (e.g., sexual orientation)
- Respect client lifestyle choices (e.g., child-free, home schooling, rural or urban living)
- Reinforce teaching with client on healthy lifestyle choices (e.g., exercise regimen, smoking cessation)

**Self Care**

- Determine client ability and support for performing self-care (e.g., feeding, dressing, hygiene)
- Consider client self care needs before contributing to changes in plan of care
- Monitor client ability to perform instrumental activities of daily living (e.g., using telephone, shopping, preparing meals)

**Sample Item**

The nurse has reinforced teaching with a client about prevention of coronary artery disease (CAD). Which of the following statements by the client would indicate a correct understanding of the teaching?

- a. "I should enroll in a smoking cessation program." **(key)**
- b. "I will increase my daily intake of foods high in potassium."
- c. "I will avoid performing isometric exercises more than 3 times per week."
- d. "I can decrease my high density lipoprotein level (HDL) if I stop drinking alcohol."

## Psychosocial Integrity

- **Psychosocial Integrity** – The LPN/VN provides care that assists with promotion and support of the emotional, mental and social well-being of clients.

### PSYCHOSOCIAL INTEGRITY

#### Related Activity Statements from the *Report of Findings from the 2009 LPN/VN Practice Analysis: Linking the NCLEX-PN® Examination to Practice*

- Assist in or reinforce education to caregivers/family on ways to manage client with behavioral disorders
- Participate in behavior management program by recognizing environmental stressors and/or providing a therapeutic environment
- Participate in reminiscence therapy, validation therapy or reality orientation
- Participate in client group session
- Identify signs and symptoms of substance abuse/chemical dependency, withdrawal or toxicity
- Collect data regarding client psychosocial functioning
- Identify client use of effective and ineffective coping mechanisms
- Identify significant body or lifestyle changes and other stressors that may affect recovery/health maintenance
- Assist client to cope/adapt to stressful events and changes in health status (e.g., end of life, grief and loss, life changes or physical changes)
- Collect data on client potential for violence
- Assist in managing the care of angry/agitated client
- Make adjustment to care with consideration of client spiritual or cultural beliefs
- Explore why client is refusing or not following treatment plan
- Assist in the care of the cognitively impaired client
- Promote positive self-esteem of client
- Provide emotional support to client and family
- Use therapeutic communication techniques with client

Related content includes, but is **not limited** to:

### **Abuse/Neglect**

- Identify client risk factors for abusing or neglecting others
- Identify signs and symptoms of physical, psychological or financial abuse in client (e.g., family involvement, inadequate weight gain, poor hygiene)
- Recognize risk factors for domestic, child and/or elder abuse/neglect and sexual abuse
- Provide safe environment for abused/neglected client
- Provide emotional support to client who experienced abuse or neglect
- Reinforce client teaching on coping strategies to prevent abuse or neglect
- Evaluate client response to interventions

### **Behavioral Management**

- Monitor client appearance, mood and psychomotor behavior and observe for changes
- Explore cause of client behavior
- Assist client with achieving self-control of behavior (e.g., contract, behavior modification)
- Assist client in using behavioral strategies to decrease anxiety
- Assist in or reinforce education of caregivers/family on ways to manage client with behavioral disorders\*
- Participate in behavior management program by recognizing environmental stressors and/or providing therapeutic environment\*
- Participate in reminiscence therapy, validation therapy or reality orientation\*
- Participate in client group session\*
- Reinforce client participation in therapy
- Use behavioral management techniques when caring for a client (e.g., positive reinforcement, setting limits)
- Evaluate client response to behavioral management interventions

### **Chemical and Other Dependencies**

- Identify signs and symptoms of substance abuse/chemical dependency, withdrawal or toxicity\*
- Plan and provide care to client experiencing substance-related withdrawal or toxicity (e.g., nicotine, opioid, sedative)
- Provide care and support for client with impulse-control disorders (e.g., gambling, sexual addiction, pornography)
- Reinforce provided information on substance abuse diagnosis and treatment plan to client
- Encourage client participation in support groups (e.g., Alcoholics Anonymous, Narcotics Anonymous)
- Monitor client response to treatment plan and contribute to revision of plan as needed

### **Coping Mechanisms**

- Collect data regarding client psychosocial functioning\*
- Identify client support systems and available resources
- Identify client use of effective and ineffective coping mechanisms\*

- Identify significant body or lifestyle changes and other stressors that may affect recovery/health maintenance\*
- Recognize abilities of client to adapt to temporary/permanent role changes
- Recognize client response to illness (e.g., rationalization, hopelessness, anger)
- Provide support to the client with unexpected altered body image (e.g., alopecia)
- Use therapeutic techniques to assist client with coping ability
- Assist client to cope/adapt to stressful events and changes in health status (e.g., end of life, grief and loss, life changes or physical changes)\*
- Assist client in maintaining level of independence after unexpected body image changes (e.g., amputation, paralysis)
- Monitor client progress toward achieving improved body image (e.g., mastectomy, colostomy)

### **Crisis Intervention**

- Identify client in crisis
- Identify client risk for self injury and/or violence (e.g., suicide or violence precaution)
- Collect data on client potential for violence\*
- Assist in managing the care of angry/agitated client\*
- Use crisis intervention techniques to assist client in coping
- Provide opportunities for client to understand why the crisis occurred
- Guide client to resources for recovery from crisis (e.g., social supports)
- Reinforce client teaching on suicide/violence prevention
- Report changes in client behavior (indicating a developing crisis) to supervisor

### **Cultural Awareness**

- Identify importance of client culture/ethnicity when planning/providing/monitoring care
- Recognize client cultural practices that may affect interventions for procedures/surgery (e.g., direct eye contact)
- Recognize cultural issues that may impact client understanding/acceptance of psychiatric diagnosis
- Make adjustment to care with consideration of client spiritual or cultural beliefs\*
- Respect cultural background/practices of client (does not include dietary preferences)
- Document how client language needs are met

### **End of Life Concepts**

- Identify client end of life needs (e.g., financial concerns, fear, loss of control, role changes)
- Identify client ability to cope with end of life interventions
- Provide care or support for client/family at end of life
- Assist client in resolution of end of life issues

### **Grief and Loss**

- Identify client reaction to loss (e.g., denial, fear)
- Support the client in anticipatory grieving
- Reinforce client teaching on expected client reactions to grief and loss (e.g., denial, fear)
- Provide client with resources to adjust to loss/bereavement (e.g., individual counseling, support groups)

**Mental Health Concepts**

- Identify expected behaviors of client with independent or dependent personality
- Identify client symptoms of acute or chronic mental illness (e.g., schizophrenia, depression, bipolar disorder)
- Recognize client use of defense mechanisms
- Recognize change in client mental status
- Recognize client symptoms of relapse
- Explore why client is refusing or not following treatment plan\*
- Assist in the care of the cognitively impaired client\*
- Assist in promoting client independence
- Establish trusting nurse-client relationship
- Promote positive self-esteem of client\*

**Religious and Spiritual Influences on Health**

- Identify client emotional problems related to religious/spiritual beliefs (e.g., spiritual distress, conflict between recommended treatment and beliefs)
- Recognize effect of client religious/spiritual beliefs on plan of care
- Assist client to meet religious/spiritual needs (e.g., referral to pastoral care)
- Assist in evaluation of client religious/spiritual needs related to necessary nursing interventions
- Respect client religious/spiritual beliefs

**Sensory/Perceptual Alterations**

- Identify needs of client with altered sensory perception (e.g., hallucinations, delirium)
- Verify client ability to effectively communicate needs

**Stress Management**

- Identify actual/potential stressors for client (e.g., fear, lack of information)
- Implement measures to reduce environmental stressors (e.g., noise, temperature, pollution)
- Monitor client effective use of stress management techniques

**Support Systems**

- Determine client abilities to provide client support
- Identify client support systems/resources
- Identify family response to client illness (e.g., acute episodes, chronic disorder, terminal illness)

**Therapeutic Communication**

- Provide emotional support to client and family\*
- Assist client in communicating needs to health care staff
- Develop and maintain therapeutic relationships with client
- Respect client personal values and beliefs
- Establish a trusting nurse-client relationship
- Use therapeutic communication techniques with client\*
- Encourage client appropriate use of verbal and non-verbal communication
- Monitor effectiveness of communications with client

**Therapeutic Environment**

- Identify external factors that may interfere with client recovery (e.g., stressors, noise)
- Participate in community meetings
- Contribute to maintaining a safe and supportive environment for client
- Monitor client response to environmental factors

**Sample Item**

The nurse is contributing to a staff education program about anorexia nervosa (AN). Which of the following information should the nurse recommend including?

- a. Clients with AN often perform poorly in school.
- b. There are several underlying physiologic causes for AN.
- c. The average age of onset for AN is 22 years old.
- d. Amenorrhea is a common symptom associated with AN. **(key)**

## Physiological Integrity

### Basic Care and Comfort

- **Basic Care and Comfort** – The LPN/VN provides comfort to clients and assistance in the performance of their activities of daily living.

BASIC CARE AND COMFORT
<p><b>Related Activity Statements from the Report of Findings from the 2009 LPN/VN Practice Analysis: Linking the NCLEX-PN® Examination to Practice</b></p>
<ul style="list-style-type: none"> <li>■ Use transfer assistive devices (e.g., t-belt, slide board or mechanical lift)</li> <li>■ Institute bowel or bladder management</li> <li>■ Discontinue or remove peripheral intravenous (IV) line, nasogastric (NG) tube or urinary catheter</li> <li>■ Perform an irrigation of urinary catheter, bladder, wound, ear, nose or eye</li> <li>■ Provide for mobility needs (e.g., ambulation, range of motion, transfer to chair, repositioning or the use of adaptive equipment)</li> <li>■ Use measures to maintain or improve client skin integrity</li> <li>■ Provide care to client in traction</li> <li>■ Apply or remove immobilizing equipment (e.g., a splint or brace)</li> <li>■ Assist in the care and comfort for a client with a visual and/or hearing impairment</li> <li>■ Use alternative/complementary therapy (e.g., acupuncture, music therapy or herbal therapy) in providing client care</li> <li>■ Provide non-pharmacological measures for pain relief (e.g., imagery, massage or repositioning)</li> <li>■ Evaluate pain using a rating scale</li> <li>■ Provide feeding and/or care for client with enteral tubes</li> <li>■ Monitor and provide for nutritional needs of client (e.g., labs, calorie counts/percentages or daily weight)</li> <li>■ Monitor client intake/output</li> <li>■ Assist with activities of daily living</li> <li>■ Assist in providing postmortem care</li> <li>■ Provide measures to promote sleep/rest</li> </ul>

Related content includes, but is **not limited** to:

### **Assistive Devices**

- Identify appropriate use of assistive devices (e.g., cane, walker, crutches)
- Use transfer assistance device (e.g., t-belt, slide board, or mechanical lift)\*
- Contribute to care of client using assistive device (e.g., feeding devices, telecommunication devices, touch pad, communication board)
- Reinforce teaching for client using assistive device
- Review correct use of assistive devices of client and staff members

### **Elimination**

- Identify client at risk for impaired elimination (e.g., medication, hydration status)
- Institute bowel or bladder management\*
- Monitor client bowel sounds
- Discontinue or remove peripheral intravenous (IV) line, nasogastric (NG) tube or urinary catheter\*
- Perform an irrigation of urinary catheter, bladder, wound, ear, nose or eye\*
- Provide skin care to client who is incontinent (e.g., wash frequently, barrier creams/ointments)

### **Mobility/Immobility**

- Identify signs and symptoms of venous insufficiency and intervene to promote venous return (e.g., elastic stockings, sequential compression device)
- Check client for mobility, gait, strength, motor skills
- Provide for mobility needs (e.g., ambulation, range of motion, transfer to chair, repositioning, or the use of adaptive equipment)\*
- Reinforce client teaching on methods to maintain mobility (e.g., active/passive range of motion [ROM], strengthening, isometric exercises)
- Use measures to maintain or improve client skin integrity\*
- Maintain client correct body alignment
- Provide care to client in traction\*
- Apply or remove immobilizing equipment (e.g., splint or brace)\*

### **Non-Pharmacological Comfort Interventions**

- Identify client need for palliative/comfort care
- Assist in the care and comfort for a client with a visual and/or hearing impairment\*
- Assist in planning comfort interventions for client with impaired comfort
- Apply therapies for comfort and treatment of inflammation/swelling (e.g., apply heat and cold treatments, elevate limb)
- Use an alternative/complementary therapy (e.g., acupuncture, music therapy or herbal therapy) in providing client care\*
- Provide non-pharmacological measures for pain relief (e.g., imagery, massage or repositioning)\*
- Provide palliative/comfort care interventions to client
- Respect client palliative care choices
- Reinforce client teaching on stress management techniques (e.g., relaxation exercises, exercise, meditation)

- Reinforce client teaching on palliative/comfort care
- Monitor client non-verbal signs of pain/discomfort (e.g., grimacing, restlessness)
- Monitor client response to non-pharmacological interventions
- Monitor outcome of palliative care interventions
- Evaluate pain using rating scale\*

### Nutrition and Oral Hydration

- Identify client potential for aspiration (e.g., feeding tube, sedation, swallowing difficulties)
- Check client feeding tube placement and patency
- Provide feeding and/or care for client with enteral tubes\*
- Monitor and provide for nutritional needs of client (e.g., labs, calorie counts/percentages or daily weight)\*
- Monitor client ability to eat (e.g., chew, swallow)
- Monitor impact of disease/illness on client nutritional status
- Monitor client intake/output\*
- Reinforce client teaching on special diets based on client diagnosis/nutritional needs and cultural considerations (e.g., high protein, kosher diet, calorie restriction)
- Promote client independence in eating

### Personal Hygiene

- Determine client usual personal hygiene habits/routine
- Assist with activities of daily living\*
- Assist in providing postmortem care\*
- Reinforce teaching to client on required adaptations for performing activities of daily living (e.g., shower chair, hand rails)

### Rest and Sleep

- Identify client usual rest and sleep patterns (e.g., bedtime, sleep rituals)
- Provide measures to promote sleep/rest\*
- Schedule client care activities to promote adequate rest and sleep

#### Sample Item

The nurse is reinforcing teaching about mouth care for a client who has stomatitis. Which of the following statements by the client would indicate a correct understanding of the teaching? **Select all that apply.**

- a. "I should apply lubricant to my lips frequently to keep my lips moist." **(key)**
- b. "I will use a soft-bristle tooth brush to brush my teeth." **(key)**
- c. "I should use an alcohol-based mouth wash twice daily."
- d. "I will remove any white or yellow patches from my tongue."
- e. "I should drink warm liquids every two hours to decrease my discomfort."

## Pharmacological Therapies

- **Pharmacological Therapies** – The LPN/VN provides care related to the administration of medications and monitors clients who are receiving parenteral therapies.

### PHARMACOLOGICAL THERAPIES

#### Related Activity Statements from the *Report of Findings from the 2009 LPN/VN Practice Analysis: Linking the NCLEX-PN® Examination to Practice*

- Perform calculations needed for medication administration
- Reinforce education to client regarding medications
- Evaluate client response to medication
- Follow the rights of medication administration
- Maintain medication safety practices (e.g., storage, checking for expiration dates or compatibility)
- Reconcile and maintain medication list or medication administration record
- Administer medication by oral route
- Administer intravenous piggyback (secondary) medications
- Administer medication by gastrointestinal tube (e.g., g-tube, nasogastric (NG) tube, g-button or j-tube)
- Administer a subcutaneous (SQ), intradermal or intramuscular (IM) medication
- Administer medication by ear, eye, nose, rectum, vagina or skin route
- Count narcotics/controlled substances
- Regulate client intravenous (IV) rate
- Monitor transfusion of blood product
- Monitor and maintain client intravenous (IV) site and flow rate

Related content includes, but is **not limited** to:

### **Adverse Effects/Contraindications/Side Effects/Interactions**

- Identify potential and actual incompatibilities of client medications
- Identify a contraindication to the administration of a prescribed or over-the-counter medication to the client
- Identify symptoms of an allergic reaction (e.g., to medication)
- Implement procedures to counteract adverse effects of medications
- Withhold medication dose if client experiences adverse effect to medication
- Monitor and document client response to actions taken to counteract adverse effects of medications
- Monitor client for actual and potential adverse effects of medications (e.g., prescribed, over-the-counter and/or herbal supplements)
- Monitor anticipated interactions among client prescribed medications and fluids (e.g., oral, IV, subcutaneous, IM, topical)
- Monitor and document client side effects to medications
- Monitor and document client response to management of medication side effects including prescribed, over-the-counter and herbal supplements
- Reinforce client teaching on possible effects of medications (common side effects or adverse effects, when to notify primary health care provider)
- Notify primary health care provider of actual/potential adverse effects of client medications

### **Dosage Calculation**

- Perform calculations needed for medication administration\*
- Use clinical decision making when calculating doses

### **Expected Actions/Outcomes**

- Identify client expected response to medication
- Use resources to check on purposes and actions of pharmacological agents
- Apply knowledge of pathophysiology when addressing client pharmacological agents
- Monitor client use of medications over time (e.g., prescription, over-the-counter, home remedies)
- Reinforce education to client regarding medications\*
- Reinforce client teaching on actions and therapeutic effects of medications and pharmacological interactions
- Evaluate client response to medication\*

### **Medication Administration**

- Identify client need for PRN medications
- Mix client medication from two vials as necessary (e.g., insulin)
- Follow the rights of medication administration\*
- Maintain medication safety practices (e.g., storage, checking for expiration dates or compatibility)\*
- Reconcile and maintain medication list or medication administration record\*
- Review pertinent data prior to medication administration (e.g., vital signs, lab results, allergies)

- Assist in preparing client for insertion of central line
- Administer medication by oral route\*
- Administer intravenous piggyback (secondary) medications\*
- Administer medication by gastrointestinal tube (e.g., g-tube, nasogastric [NG] tube, g-button or j-tube)\*
- Administer a subcutaneous (SQ), intradermal, or intramuscular (IM) medication\*
- Administer a medication by ear, eye, nose, rectum, vagina or skin route\*
- Dispose of client unused medications according to facility/agency policy
- Count narcotics/controlled substances\*
- Regulate client intravenous (IV) rate\*
- Monitor transfusion of blood product\*
- Monitor client intravenous (IV) site and flow rate\*
- Reinforce client teaching on client self administration of medications (e.g., insulin, subcutaneous insulin pump)

#### **Pharmacological Pain Management**

- Identify client need for pain medication
- Monitor client non-verbal signs of pain/discomfort (e.g., grimacing, restlessness)
- Monitor and document client response to pharmacological interventions (e.g., pain rating scale, verbal reports)

#### **Sample Item**

The nurse is caring for a client who has a prescription for acetaminophen (Tylenol) 650mg, p.o., every 6 hours, p.r.n. for pain. The nurse has Tylenol 325mg tablets available. How many tablets should the nurse administer with each dose?

**Record your answer using a whole number.**

**2 (key)**

## Reduction of Risk Potential

- **Reduction of Risk Potential** – The LPN/VN reduces the potential for clients to develop complications or health problems related to treatments, procedures or existing conditions.

REDUCTION OF RISK POTENTIAL
<p><b>Related Activity Statements from the Report of Findings from the 2009 LPN/VN Practice Analysis: Linking the NCLEX-PN® Examination to Practice</b></p>
<ul style="list-style-type: none"> <li>■ Check and monitor client vital signs</li> <li>■ Perform an electrocardiogram (EKG/ECG)</li> <li>■ Perform venipuncture for blood draws</li> <li>■ Collect specimen (e.g., urine, stool, gastric contents or sputum for diagnostic testing)</li> <li>■ Monitor diagnostic or laboratory test results</li> <li>■ Identify signs or symptoms of potential prenatal complication</li> <li>■ Perform neurological checks</li> <li>■ Perform circulatory checks</li> <li>■ Check for urinary retention (e.g., bladder scan, palpation)</li> <li>■ Administer and check proper use of compression stockings/sequential compression devices (SCD)</li> <li>■ Perform risk monitoring and provide follow up</li> <li>■ Monitor continuous or intermittent suction of nasogastric (NG) tube</li> <li>■ Implement measures to prevent complication of client condition or procedure (e.g., circulatory complication, seizure, aspiration or potential neurological disorder)</li> <li>■ Evaluate client respiratory status by measuring oxygen (O<sub>2</sub>) saturation</li> <li>■ Provide care for client before surgical procedure including teaching</li> <li>■ Insert urinary catheter</li> <li>■ Insert nasogastric (NG) tube</li> <li>■ Assist with the performance of a diagnostic or invasive procedure</li> </ul>

Related content includes, but is **not limited** to:

### Changes/Abnormalities in Vital Signs

- Check and monitor client vital signs\*
- Compare vital signs to client baseline vital signs
- Reinforce client teaching about normal and abnormal vital signs (e.g., hypertension, tachypnea, bradycardia, fever)

\*Activity Statements used in the 2009 PN Practice Analysis

**Diagnostic Tests**

- Perform an electrocardiogram (EKG/ECG)\*
- Perform diagnostic testing (e.g., blood glucose, oxygen saturation, testing for occult blood)
- Reinforce client teaching about diagnostic test

**Laboratory Values**

- Identify laboratory values for ABGs (pH, PO<sub>2</sub>, PCO<sub>2</sub>, SaO<sub>2</sub>, HCO<sub>3</sub>), BUN, cholesterol (total), glucose, hematocrit, hemoglobin, glycosylated hemoglobin (HgbA1C), platelets, potassium, sodium, WBC, creatinine, PT, PTT & APTT,
- Compare client laboratory values to normal laboratory values
- Perform venipuncture for blood draws\*
- Collect specimen (e.g., urine, stool, gastric contents or sputum for diagnostic testing)\*
- Reinforce client teaching on purposes of laboratory tests
- Monitor diagnostic or laboratory test results\*
- Notify primary health care provider about client laboratory test results

**Potential for Alterations in Body Systems**

- Identify signs or symptoms of potential prenatal complication\*
- Identify client with increased risk for insufficient blood circulation (e.g., immobilized limb, diabetes)
- Recognize change in client neurological status (level of consciousness, orientation, muscle strength)
- Compare current client clinical data to baseline information
- Perform neurological checks\*
- Perform circulatory checks\*
- Check for urinary retention (e.g., bladder scan, palpation)\*
- Administer and check proper use of compression stockings/sequential compression devices (SCD)\*
- Monitor client output for changes from baseline (e.g., nasogastric emesis, stool, urine)
- Reinforce client teaching on methods to prevent complications associated with activity level/diagnosed illness/disease (e.g., foot care for client with diabetes mellitus)

**Potential for Complications of Diagnostic Tests/Treatments/Procedures**

- Identify client response to diagnostic tests/treatments/procedures
- Maintain client tube patency (chest tube, tracheostomy tube)
- Provide care for client receiving electroconvulsive therapy (ECT)
- Provide appropriate follow-up after incident (e.g., fall, client elopement, or medication error)
- Perform risk monitoring and provide follow up\*
- Monitor continuous or intermittent suction of nasogastric (NG) tube\*
- Implement measures to prevent complication of client condition or procedure (e.g., circulatory complication, seizure, aspiration or potential neurological disorder)\*
- Reinforce teaching to prevent complications due to client diagnostic tests/treatments/procedures
- Notify primary health care provider if client has signs of potential complications (e.g., fever, hypotension, limb pain, thrombus formation)
- Evaluate client respiratory status by measuring oxygen (O<sub>2</sub>) saturation\*
- Suggest change in interventions based on client response to diagnostic tests/treatments/procedures

**Potential for Complications from Surgical Procedures and Health Alterations**

- Identify client response to surgery or health alterations
- Provide care for client before surgical procedure including teaching\*
- Provide intra-operative care (e.g., positioning client for surgery, maintaining sterile field, or providing operative observation)
- Reinforce teaching to prevent complications due to surgery or health alterations (e.g., cough and deep breathing, elastic stockings)
- Suggest change in interventions based on client response to surgery or health alterations

**Therapeutic Procedures**

- Insert urinary catheter\*
- Insert nasogastric (NG) tube\*
- Assist with the performance of a diagnostic or invasive procedure \*
- Reinforce client teaching on treatments and procedures

**Sample Item**

The nurse is contributing to the plan of care for a client with heart failure. Which of the following interventions should the nurse recommend including in the client's plan of care? **Select all that apply.**

- a. obtaining the client's weight daily **(key)**
- b. encouraging the client to increase the daily fluid intake
- c. monitoring the client's serum potassium level **(key)**
- d. limiting the client's intake of fresh fruits and vegetables
- e. checking the client for peripheral edema **(key)**

## Physiological Adaptation

- **Physiological Adaptations** – The LPN/VN participates in providing care for clients with acute, chronic or life-threatening physical health conditions.

### PHYSIOLOGICAL ADAPTATION

#### Related Activity Statements from the Report of Findings from the 2009 LPN/VN Practice Analysis: Linking the NCLEX-PN® Examination to Practice

- Identify/intervene to control signs of hypoglycemia or hyperglycemia
- Recognize and report basic abnormalities on a client cardiac monitor strip
- Provide care for client drainage device (e.g., wound drain or chest tube)
- Provide cooling/warming measures to restore normal temperature
- Provide care for a client with a tracheostomy
- Provide care to client with an ostomy (e.g., colostomy, ileostomy or urostomy)
- Provide care to client on ventilator
- Perform wound care and/or dressing change
- Perform check of client pacemaker
- Perform care for client after surgical procedure
- Remove wound sutures or staples
- Remove client wound drainage device
- Intervene to improve client respiratory status (e.g., breathing treatment, suctioning or repositioning)
- Reinforce education to client regarding care and condition
- Identify signs and symptoms related to an acute or chronic illness
- Respond to a client life-threatening situation (e.g., cardiopulmonary resuscitation )
- Recognize complications of acute or chronic illness and intervene

Related content includes, but is **not limited** to:

### **Alterations in Body Systems**

- Identify signs and symptoms of an infection (e.g., temperature changes, swelling, redness, mental confusion or foul smelling urine)
- Identify/intervene to control signs of hypoglycemia or hyperglycemia\*
- Recognize and report basic abnormalities on a client cardiac monitor strip\*
- Provide care for client drainage device (e.g., wound drain or chest tube)\*
- Provide cooling/warming measures to restore normal temperature\*
- Provide care for a client with a tracheostomy\*
- Provide care to a client with an ostomy (e.g., colostomy, ileostomy or urostomy)\*
- Provide care to client on ventilator\*
- Provide care to correct client alteration in body system
- Provide care to client undergoing peritoneal dialysis
- Provide care for client experiencing increased intracranial pressure
- Provide care to client who has experienced a seizure
- Provide care for client experiencing complications of pregnancy/labor and/or delivery (e.g., eclampsia, precipitous labor, hemorrhage)
- Perform wound care and/or dressing change\*
- Perform check of client pacemaker\*
- Perform care for client after surgical procedure\*
- Remove wound sutures or staples\*
- Remove client wound drainage device\*
- Intervene to improve client respiratory status (e.g., breathing treatment, suctioning or repositioning)\*
- Reinforce client teaching on ostomy care
- Reinforce education to client regarding care and condition\*
- Notify primary health care provider of a change in client status
- Document client response to interventions for alteration in body systems (e.g., pacemaker, chest tube)

### **Basic Pathophysiology**

- Identify signs and symptoms related to an acute or chronic illness\*
- Consider general principles of client disease process when providing care (e.g., injury and repair, immunity, cellular structure)
- Apply knowledge of pathophysiology to monitoring client for alterations in body systems

### **Fluid and Electrolyte Imbalances**

- Identify signs and symptoms of client fluid and/or electrolyte imbalances
- Provide interventions to restore client fluid and/or electrolyte balance
- Monitor client response to interventions to correct fluid and/or electrolyte imbalance

**Medical Emergencies**

- Respond to a client life-threatening situation (e.g., cardiopulmonary resuscitation)\*
- Provide emergency care for wound disruption (e.g., evisceration, dehiscence)
- Notify primary health care provider about client unexpected response/emergency situation
- Recommend change in emergency treatment based upon client response to interventions
- Reinforce teaching of emergency intervention explanations to client
- Review and document client response to emergency interventions (e.g., restoration of breathing, pulse)

**Radiation Therapy**

- Provide interventions for client side effects to radiation therapy
- Monitor client for signs and symptoms of adverse effects of radiation therapy
- Reinforce client teaching for management of side/adverse effects of radiation therapy
- Document client response to radiation therapy (e.g., skin condition)

**Unexpected Response to Therapies**

- Identify and treat a client intravenous (IV) line infiltration
- Recognize complications of acute or chronic illness and intervene\*
- Intervene in response to client unexpected negative response to therapy (e.g., unexpected bleeding)
- Document client unexpected response to therapy
- Promote recovery from client unexpected negative response to therapy (e.g., urinary tract infection)

**Sample Item**

The nurse is collecting data from a client who is reporting diarrhea for the past 72 hours. Which of the following findings would indicate the client is experiencing a fluid volume deficit? **Select all that apply.**

- a. orthostatic hypotension **(key)**
- b. excessive thirst **(key)**
- c. dry tongue **(key)**
- d. bradycardia
- e. increased urine output

## IV. Administration of the NCLEX-PN® Examination

### Examination Length

The NCLEX-PN® examination is a variable length adaptive test. It is not offered in paper and pencil or oral examination formats. The exam can range from 85 to 205 items and of these items, 25 are pretest items that are not scored. The time limit for the exam is specified in the candidate bulletin. It is important to note that the time allotted for the examination **includes** the tutorial, sample items, all breaks (restroom, stretching, etc.) and the examination. All breaks are optional.

The length of the examination is determined by the candidate's responses to the items. Once the minimum number of items are answered, testing stops when the candidate's ability is determined to be either above or below the passing standard with 95 percent certainty. Depending upon the particular pattern of correct and incorrect responses, different candidates will take different numbers of items and therefore use varying amounts of time. The examination will stop when the maximum number of items has been taken or when the time limit has been reached. Remember, it is in the candidate's best interest to maintain a reasonable pace of spending only one or two minutes on each item. The candidates should select a pace that will permit them to complete the examination within the allotted time should the maximum number of items be administered.

It is important to understand that the length of an examination is not an indication of a pass or fail result. A candidate with a relatively short examination may pass or fail just as a candidate with a long examination may pass or fail. Regardless of the length of the examination, each candidate is given an examination that conforms to the NCLEX-PN® Test Plan and offers ample opportunity to demonstrate his or her ability.

### The Passing Standard

The NCSBN Board of Directors (BOD) reevaluates the passing standard once every three years. The criterion that the BOD uses to set the standard is the minimum level of ability required for safe and effective entry-level nursing practice.

To assist the BOD in making this decision, they are provided with information on:

1. The results of a standard setting exercise performed by a panel of experts with the assistance of professional psychometricians;
2. The historical record of the passing standard with summaries of the candidate performance associated with those standards;
3. The results of a standard-setting survey sent to educators and employers; and
4. Information describing the educational readiness of high school graduates who express an interest in nursing.

Once the passing standard is set, it is imposed uniformly on every test record according to the procedures laid out in the Scoring the NCLEX® Examination section of this document. To pass an NCLEX examination, a candidate must **perform above** the passing standard. There is no fixed percentage of candidates that pass or fail each examination.

## Similar Items

Occasionally, a candidate may receive an item that seems to be very similar to an item received earlier in the examination. This could happen for a variety of reasons. For example, several items could be about similar symptoms, diseases or disorders, yet address different phases of the nursing process. Alternatively, a pretest (unscored) item could be about content similar to an operational (scored) item. It is incorrect to assume that a second item, which is similar in content to a previously administered item, is administered because the candidate answered the first item incorrectly. The candidate is instructed to always select the answer believed to be correct for each item administered. All examinations conform to their respective test plan.

## Reviewing Answers and Guessing

The items are presented to the candidate one at a time on a computer screen. Each item can be viewed as long as the candidate likes, but it is not possible to go back to a previous item once the answer is selected and confirmed by pressing the <NEXT> button. Every item must be answered even if the candidate is not sure of the right answer. The computer will not allow the candidate to go on to the next item without answering the one on the screen. If the candidate is unsure of the correct answer, the best guess is made and the candidate moves on to the next item. After an answer to an item is selected, the candidate has an opportunity to think about the answer and change it if necessary. However, once the candidate confirms the answer and goes on to the next item, the candidate will not be allowed to go back to any previous item on the examination.

Please note that rapid guessing can drastically lower the score. Some test preparation companies have realized that on certain paper and pencil tests, unanswered items are marked as wrong. To improve the candidate's score when they are running out of time, these companies sometimes advocate rapid guessing (perhaps without even reading the item) in the hope that the candidate will get at least a few items correct. On any adaptive test, this can be disastrous. It has the effect of giving the candidate easier items which he or she will likely also get wrong. The best advice is to maintain a reasonable pace, perhaps one item every minute or two and carefully read and consider each item before answering. It is better to run out of time than to engage in rapid guessing.

## Scoring the NCLEX® Examination

### Computerized Adaptive Testing (CAT)

The NCLEX® examination is different than a traditional paper and pencil examination. Typically, paper and pencil examinations administer the same items to every candidate, thus ensuring that the difficulty of the examination is the same across the board. Because the difficulty of the examination is constant, the percentage correct is the indicator of the candidate's ability. One disadvantage of this approach is that it is inefficient. It requires the high ability candidates to answer all the easy items on the examination. Obviously asking high ability candidates easy items provides very little information about his or her ability. Another disadvantage is that guessing can artificially inflate the scores of low ability candidates. This happens because low ability candidates will be given some difficult items. In the case of multiple-choice items, candidates can answer these items correctly 25 percent of the time for reasons that have nothing to do with their ability because there are only four choices.

Instead, the NCLEX examination uses computerized adaptive testing (CAT) to administer items. CAT is able to produce test results that are more stable using fewer items by targeting items to the candidate's ability. Although everyone's first item is relatively easy, subsequent items are better targeted. This is accomplished by re-estimating the candidate's ability every time an item is answered. Using the candidate's most current ability estimate, the computer searches the item bank for an item that has a degree of difficulty that is approximately equal to that ability estimate. As a result, the candidate should have a 50/50 chance of answering this item correctly. After the candidate answers this item, the computer reestimates the candidate's ability and selects the next item using the same procedures. This process continues until it is clear (with 95 percent certainty) that the candidate's ability is above or below the passing standard. Be aware that both those who pass and those who fail tend to answer approximately 50 percent of the items correctly. This is because the computer presents all candidates with items that are matched to his or her ability.

The candidate's ability estimate is based upon both the percentage that was answered correctly (approximately 50 percent in most cases) and the difficulty of the items that were administered. Imagine the items lined up, from easiest to most difficult. If we asked candidates the easiest items, they would answer most of them correctly. If we asked them the most difficult items, they would probably answer most of them incorrectly. Somewhere between those two extremes is a point at which each candidate goes from getting more answers right than wrong. This is the point at which each candidate answers 50 percent correctly. Items harder than that would probably be answered incorrectly; items easier than that would probably be answered correctly. CAT procedures permit that point to be found for each candidate without having to ask all the items in the extremes.

## Pretest Items

For CAT to work, the difficulty of each item must be known in advance. The degree of difficulty is determined by administering the items as pretest items to a large sample of NCLEX candidates. Because the difficulty of these pretest items is not known in advance, these items are not included when estimating the candidate's ability or making pass-fail decisions. When enough responses are collected, the pretest items are statistically analyzed and calibrated. If they meet the NCLEX statistical standards, they can be administered in future examinations as scored items. There are 25 pretest items on every NCLEX-PN Examination. It is impossible to distinguish operational items from pretest items, so candidates are asked to do their best on every item.

## Additional Constraints

In addition to targeting items to the candidate's ability, the computer implements two additional constraints. First, it prevents a candidate from receiving for a second time any item that he or she has seen within the last year (on a previous attempt). Second, it ensures that the items administered to the candidate meet the test plan specifications with regard to the proportion of items that must be drawn from the different test plan categories. Every test must meet the test plan specifications.

## Passing and Failing

As mentioned earlier, to pass the NCLEX, the candidate's performance on the examination must be above the passing standard. Ideally, NCSBN wants to be at least 95 percent certain of pass-fail decisions. Therefore after the minimum number of items has been answered, the computer will stop when it is 95 percent certain that the

candidate's ability is above or below the passing standard. If the ability is below the standard, the candidate fails. Candidates with very high or very low abilities tend to receive minimum length tests.

However, some candidates will have a true ability that is so close to the passing standard that even 1,000 items would not be enough to arrive at a decision with 95 percent confidence. It would also be impractical to administer 1,000 items. Therefore, a maximum number of items has been established for each type of examination. When these candidates answer the maximum of items, their ability estimates are rather precise, but not enough to make a decision with 95 percent certainty. Because in these cases the precision is quite good, the 95 percent certainty requirement is waived. If a candidate's ability estimate is above the passing standard, he or she passes; if it is at or below the passing standard, the candidate fails.

If the examination ends because time runs out, it means that the candidate has not demonstrated with 95 percent certainty that he or she is clearly above or below the passing standard, nor has the candidate answered the maximum number of items. Because the primary mission of boards of nursing is to protect the public, it can be argued that candidates should not pass when they have not demonstrated that they are competent. However, the response patterns for some of these people have indicated that there are candidates who appeared to have a true ability that is above passing and who have been performing consistently above the passing standard. A mechanism is provided for these candidates to pass. The key word here is "consistently." If a candidate's performance has been consistently above the passing standard, then he or she will pass, despite having run out of time.

## Scoring Items

The majority of items in the NCLEX examination are multiple-choice, but there are other formats as well. Items are scored as either right or wrong; there is no partial credit. Updated information on the administration of the examination is accessible on the NCLEX® Examinations section of NCSBN's website.

## Types of Items

During the administration of the NCLEX-PN Examination candidates will be required to respond to items in a variety of formats. These formats may include, but are not limited to multiple choice, multiple response, fill-in-the-blank calculation, drag and drop/ordered response, and/or hot spots. All item types may include multimedia, such as charts, tables, graphics, sound and video.

For more information, please visit [www.ncsbn.org](http://www.ncsbn.org) to review information about alternate item formats.

## NCLEX® Examination Terminology

On the NCLEX examination, a prescription is defined as orders, interventions, remedies or treatments ordered or directed by an authorized health care provider. In addition, the term "client" refers to an individual, family or group. "Clients" are the same as "residents" or "patients."

## Confidentiality

Candidates should be aware and understand that the disclosure of any examination materials, including the nature or content of examination items, before, during or after the examination, is a violation of law. Violations of confidentiality and/or candidates' rules can result in criminal prosecution of civil liability and/or disciplinary actions by the licensing agency, including the denial of licensure.

## Tutorial

Each NCLEX-PN candidate is provided information on how to answer examination items. A tutorial is given at the beginning of the examination explaining the various formats that candidates may see on the examination. More information on alternate item formats is available on the NCSBN website at [www.ncsbn.org](http://www.ncsbn.org). The following are examples of how screens in the tutorial may appear. Examples of possible item formats include:

### Multiple-Choice (one answer):

**Calculator**

Practice Item Type #1: Multiple-Choice Item

In this item type, you will be presented with a question and asked to select the best answer from four options. The options are preceded by circles. You can select only one option as your answer. You may use either the mouse or the number keypad to select your answer. To use the number keypad on your computer, press the appropriate number on your keyboard, either 1, 2, 3, or 4.

For the practice item below, the correct answer is option 3. Select option 3 now. If you selected a different answer, change it by selecting option 3. Note that your previous choice is deselected and that you can select only one option.

Click **Next** to confirm your answer and move to the next practice item.

What color is an orange?

- 1. Blue
- 2. Brown
- 3. Orange
- 4. Pink

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## Multiple-Response:

 **Calculator**

Practice Item Type #2: Multiple-Response Item

In this item type, you will be presented with a question and a list of options and asked to select all the options that apply. Note that there may be two or more correct answers. You must select all options that apply.

Note how this item type differs from the single-response multiple-choice item you saw earlier. In this item type, the options are preceded by square boxes and you can check more than one box. In the previous item type, the options are circles and you can only select one option.

For the practice item below, the correct options are *Apple* and *Banana* (options 1 and 2). Please use your mouse to check *Apple* and *Banana* now. The check mark indicates that you have selected that response option. To deselect the response, click on the box again. The check mark will disappear, indicating that you have deselected that response.

Click **Next** to confirm your answer and move to the next practice item.

Which of the following are fruits? **Select all that apply.**

- 1. Apple
- 2. Banana
- 3. Cow
- 4. Dog
- 5. Elephant

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**Fill-in-the-Blank:****Calculator****Practice Item Type #3: Fill-in-the-Blank Item**

In this item type, you will be presented with a question and asked to calculate and type in your answer. Type only a number as your answer, including a decimal point if appropriate. To change your answer, use the backspace key to delete the number and type another number. **You will only be able to type in numbers as your answer. If you try to type any other characters, you will be presented with a message box asking you to try again.**

To use the calculator, click on the calculator button  on the upper left-hand corner of the screen. To enter numbers in the calculator, you can use the mouse to click on the calculator's buttons or use the number keypad on your keyboard. When you are finished with the calculator, you can close the calculator by clicking on the X in the top right corner of the calculator.

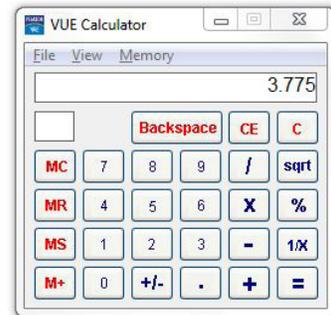
For the practice item below, first open the calculator. Second, compute a total weight by adding the weight of four pumpkins. Third, compute the average by dividing the total weight by the number of pumpkins (4). The division symbol is  $\div$ . Your calculator should now read 3.775.

You do not have to type in the unit of measurement, "kilograms" in this example. **If rounding is necessary, perform the rounding at the end of the calculation.** Please type 3.8 as your answer.

Click **Next** to confirm your answer and move to the next practice item.

The weights of four pumpkins in kilograms are: 4.22, 4.15, 3.40, 3.33. What is the average (mean) of the pumpkins' weight? Record your answer using one decimal place.

Answer:  kilograms



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## Hot Spot:

**Calculator**

Practice Item Type #4: Hot Spot Item

In this item type, you will be presented with a problem and a figure. You will be asked to use the mouse to select an area of the figure. To select an area, place the cursor on the area you want to select, then click on the left mouse button. An X will appear to show your answer. To deselect your answer, place the cursor on the X and click again. Your answer will be deselected. To change your answer, point the cursor to another area and click.

For the practice item below, the correct answer is Box 1. Use the mouse to select Box 1.

Click **Next** to confirm your answer and move to the next practice item.

The following figure contains four boxes. Which box is in the upper left-hand corner?

Box 1 	Box 2
Box 3	Box 4

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**Exhibit:**

Calculator

**Practice Item Type #5: Exhibit Item**

In this item type, you will be presented with a problem and an exhibit. To view the exhibit, click on the exhibit button. Each exhibit contains information behind three tabs. Click on each tab to read the information presented.

For the practice item below, the exhibit should contain the three tabs. Each tab contains the monthly receipts for purchasing bakery supplies:

- Storage/Packaging Materials
- Baking Ingredients
- Miscellaneous Supplies

The question asks you to find the most expensive item that is listed in the exhibit. The most expensive item is the storage bin, which is on the storage/packaging materials list. Therefore, option 2 below is the correct answer.

Click **Next** to confirm your answer and move to the next practice item.

Exhibit

The owner of a bakery would like to know which of the supplies is most expensive. Based upon receipts from the past month, which item was the most expensive? Click the exhibit button for additional information.

- 1. baking trays
- 2. storage bin
- 3. flour
- 4. pastry bags

Exhibit
Close

Baking Ingredients
Storage/Packaging Materials
Miscellaneous Supplies

Storage/Packaging

Item	Charge
10" cake boxes	\$55.00
Paper bags - large	\$20.85
Bread bags	\$25.50
Package labels	\$10.99
Storage bin	\$175.00
<b>TOTAL</b>	<b>\$287.34</b>

Close

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### Drag and Drop/Ordered Response:

**Calculator**

Practice Item Type #6: Drag and Drop/Ordered Response Item

In this item type, you will be presented with a problem and a list of options. You will be asked to place the options in a specified order, such as numerical, alphabetical or chronological.

The unordered options will appear in a box on the left side of your screen. To place the options in a new order, click on an option and drag it to the box on the right side of your screen. You may also highlight the option in the left-hand box and then click the right arrow key → to move the option. To rearrange the order of options once they have been placed in the right-hand box, click on the up ↑ or down ↓ arrow keys. You may also click an option and drag it to a new position within the right-hand box. To complete the item, you must move all options from the left-hand box to the right-hand box.

For the practice item below, you should move the list of months (by dragging or using the arrow button) to the right so that the list is in alphabetical order: April, February, January, June, March, May. That is, April should be at the top, and May should be at the bottom. If you do not have the months in this order, please re-arrange them now.

Click **Next** to confirm your answer and proceed.

The first six months of the year appear in a list below. Please arrange these months in alphabetical order. All options must be used.

<p>Unordered Options</p> <div style="border: 1px solid black; padding: 5px;"><input type="text" value="March"/> <input type="text" value="May"/>   </div>	<p>← →</p>	<p>Ordered Response</p> <div style="border: 1px solid black; padding: 5px;"><input type="text" value="April"/> <input type="text" value="February"/> <input type="text" value="January"/> <input type="text" value="June"/>  </div> <p style="text-align: right;">↑ ↓</p>
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**Audio:**

**Calculator**

Practice Item Type #7: Audio item

In this item type, you will be presented with an audio clip. You will need to listen to the audio clip and select the option(s) that apply.

Place your headset on now.

Click the play button **below** to listen to the audio clip.

You can adjust the volume by clicking and moving the slider.

Click the play button again to repeat the audio clip.

For the practice item below, the correct option is *Corn* (option 2). Please use your mouse to select *Corn* now.

Click **Next** to confirm your answer and move to the next practice item.



Listen to the audio clip. The price is rising for which type of grain?

- 1. Wheat
- 2. Corn
- 3. Oats
- 4. Beans

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### Graphic:

**Calculator**

Practice Item Type #8: Graphic Item

In this item type, you will be presented with a question and options that are graphics instead of text. The options are preceded by circles so you can select only one option as your answer.

For the practice item below, the correct option is 1. Please use your mouse to select 1 now.

Click **Next** to confirm your answer and move to the next practice item.

Which road sign indicates a place where gas may be purchased?

- 1. 
- 2. 
- 3. 
- 4. 

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