

Exam Blueprint and Specialty Competencies

Introduction – Blueprint for the Gerontological Nursing for LPNs/RPNS Certification Exam

The primary function of the blueprint for the CNA Gerontological Nursing for LPNs/RPNS Certification Exam is to describe how the exam is to be developed. Specifically, this blueprint provides explicit instructions and guidelines on how the competencies are to be expressed within the exam in order for accurate decisions to be made on the candidates' competence in gerontological nursing for LPNs/RPNS.

The blueprint has two major components: (1) the content area to be measured and (2) the explicit guidelines on how this content is to be measured. The content area consists of the list of competencies (i.e., the competencies expected of fully competent practising gerontological practical nurses with at least two years of experience), and the guidelines are expressed as structural and contextual variables. The blueprint also includes a summary chart that summarizes the exam guidelines.

Description of Domain

The CNA Gerontological Nursing for LPNs/RPNS Certification Exam is a criterion-referenced exam.¹ A fundamental component of a criterion-referenced approach to testing is the comprehensive description of the content area being measured. In the case of the Gerontological Nursing for Gerontological Nursing for LPNs/RPNS Certification Exam, the content consists of the competencies of a fully competent practising gerontological practical nurse with at least two years of experience.

This section describes the competencies, how they have been grouped and how they are to be sampled for creating an exam.

Developing the List of Competencies

The final list of competencies was updated and approved by the Gerontological Nursing for LPNs/RPNS Certification Exam Committee.

¹ Criterion-referenced exam: An exam that measures a candidate's command of a specified content or skills domain or list of instructional objectives. Scores are interpreted in comparison to a predetermined performance standard or as a mastery of defined domain (e.g., percentage correct and mastery scores), independently of the results obtained by other candidates (Brown, 1983).

Assumptions

In developing the set of competencies for Licensed or Registered gerontological practical nurses, the following assumptions, based on current national standards for nursing practice, were made:

The Client

- The definition of older adult refers to any 60+ years old persons. (UN)
- The term “older adult” varies across individuals, societies, cultures and/or geographic regions.
- The client’s condition and care requirements are identifiable and predictable.
- The client may be an individual, a member of a family, a group, a community and/or a population.
- The older adult is viewed comprehensively within the physiological, psychological, functional, social, cultural, developmental, environmental and spiritual dimensions of a total life experience.
- The client and/or substitute decision-maker is not a passive receiver of care but is actively involved in determining goals of care and subsequent interventions by participating in shared decision-making to make informed decisions that are consistent with personal values and preferences to the extent that they desire.
- Indigenous clients refer to First Nation, Inuit, Metis and Self-identified and may include the family, community or “everyday family”
- The client who use substances may face significant barriers related to distrust of the health care and social services system that are rooted in past experiences of stigma and discrimination, and social structural conditions which mediate power relations in health care
- Clients may use substances for multiple reasons including, but not limited to: coping strategy used to manage health conditions (e.g., pain), increasing pleasure and to cope with stressful life circumstances (e.g., grief and loss)
- The client receiving MAID meets legal eligibility criteria.

The Environment

Licensed or Registered Gerontological Practical nursing:

- Takes place in a variety of settings across the continuum of care not limited to an institution and may include home, on-reservations, or other care setting;
- Occurs in an environment influenced by a number of factors (legal, legislative, current social and political trends);
- Is provided in the context of health-care teams that include clients, significant others, formal and informal caregivers, volunteers and interprofessional team members.

The Licensed or Registered Gerontological Practical Nurse

- Is a LPN/RPN (licenced/registered practical nurse) who works with older adults;
- Promotes safe, efficient, evidence-based and effective health-care programs/services for older adults;
- Works with and understands diverse communities (e.g., members of religious and/or cultural groups, immigrants, LGBTQ2);
- Understands that, in their place of privilege and power in the nurse-client relationship, they are to serve and advocate for the client's power and the client's identified needs
- Advocates for client-centred care and for the rights of older adults;
- Works in partnership with older adults to incorporate their individual preferences, expectations, needs and experiences into the goals of care and subsequent interventions;
- Works with and understands the Indigenous culture and people;
- Understands that when providing care to clients with unpredictable health outcomes, they should consult with an interprofessional team;
- Uses evidence-informed, reliable, validated and standardized measurement tools;
- Applies relevant theoretical frameworks and an evolving and specialized body of knowledge;
- Pursues lifelong learning to maintain competence in the provision of quality gerontological nursing care;
- Contributes to the development of new specialty knowledge and the evaluation of current knowledge through research and quality improvement activities;
- Practices accordingly to the codes of ethics, jurisdictional standards of practice and legal requirements;
- Provides guidance, support, education, leadership and supervision to formal and informal care providers;
- Uses a variety of approaches to enhance awareness about issues that impact the health of older adults;
- Participates in health promotion activities for older adults;
- Recognizes the impact of the determinants of health;
- Establishes therapeutic relationships with older adults, considering processes of care and their associated developmental tasks;
- Recognizes age-related changes, conditions and diseases, and atypical presentations;
- Engages in effective, respectful and compassionate communication;
- Recognizes the impact of values, beliefs and judgments on care; and
- Demonstrates the abilities for cultural competencies, to self-reflect on their own cultural values and how these impact the way we provide care. It includes each nurse's ability to assess and respect the values, attitudes, and beliefs of persons from other cultures and respond appropriately in planning, implementing, and evaluating a plan of care that incorporates health-related beliefs and cultural values, knowledge

of disease incidence and prevalence, and treatment efficacy (Lavizzo-Mourey & MacKenzie, 1996).

- Has the ability to provide cultural safety while recognizing cultural sensitivity;
- Is self-aware of their personal beliefs and values, and have a responsibility to reflect and address harmful biases, stereotypical views, and discriminatory behaviours (terms like “substance abuser” are stigmatizing and harmful to clients) related to substance use and treatment in society;
- Advocates for a person’s right to make informed health-care decisions about MiID in their preferred setting of choice.
- Recognizes that current and anticipated changes in health and quality of life may contribute to a request for information about MAiD.
- Understands the concept of conscientious objection and associated professional responsibilities.

Health and Wellness

- Health is a personal concept and is influenced by the older adult’s perspectives, beliefs, values and culture.
- As defined by World Health Organization (WHO), Health is a "state of complete physical, mental, and social well-being, and not merely the absence of disease or infirmity."
- Wellness involves a person’s whole being, including physiological, psychological, functional, social, cultural, developmental, environmental and spiritual components.
- Substance use disorders often co-occurs alongside a range of acute and chronic physical and mental health conditions
- Health-related quality of life is a state of physical, psychosocial and spiritual well-being, as-described by the person.

Competency Categories

The competencies are classified under a seven-category scheme commonly used to organize gerontological nursing for LPNs/RPNs.

Some of the competencies lend themselves to one or more of the categories; therefore, these seven categories should be viewed simply as an organizing framework. Also, it should be recognized that the competency statements vary in scope, with some representing global behaviours and others more discrete and specific nursing behaviours.

Competency Sampling

Using the grouping and the guideline that the Gerontological Nursing for LPNs/RPNs Certification Exam will consist of approximately 165 questions, the categories have been given the following weights in the total examination.

Table 1: Competency Sampling

Categories	Approximate weights in the total examination
Culture and Human Diversity	4-9%
Assessment	18-25%
Health Promotion and Risk Reduction	22-30%
Illness and Disease Management	22-30%
Ethical, Legal and Health System Issues	8-12%
Professional Practice	3-7%
Information and Health Technologies	3-7%

Technical Specifications

In addition to the specifications related to the competencies, other variables are considered during the development of the Gerontological Nursing for LPNs/RPNs Certification Exam. This section presents the guidelines for two types of variables: structural and contextual.

Structural Variables: Structural variables include those characteristics that determine the general appearance and design of the exam. They define the length of the exam, the format and presentation of the exam questions (e.g., multiple-choice format) and special functions of exam questions (e.g., case-based or independent questions).

Contextual Variables: Contextual variables specify the nursing contexts in which the exam questions will be set (e.g., client culture, client health situation and health-care environment).

Structural Variables

Exam Length: The exam consists of approximately 165 multiple-choice questions.

Question Presentation: The multiple-choice questions are presented in one of two formats: case-based or independent. Case-based questions are a set of approximately four questions associated with a brief health-care scenario (i.e., a description of the clients' health-care situation). Independent questions stand alone. In the Gerontological

Nursing for LPNs/RPNS Certification Exam, 55 to 70 per cent of the questions are presented as independent questions and 30 to 45 per cent are presented within cases.

Taxonomy for Questions: To ensure that competencies are measured at different levels of cognitive ability, each question on the Gerontological Nursing for LPNs/RPNS Certification Exam is aimed at one of three levels: knowledge/comprehension, application and critical thinking.²

1. Knowledge/Comprehension

This level combines the ability to recall previously learned material and to understand its meaning. It includes such mental abilities as knowing and understanding definitions, facts and principles and interpreting data (e.g., knowing the effects of certain drugs or interpreting data appearing on a client's record).

2. Application

This level refers to the ability to apply knowledge and learning to new or practical situations. It includes applying rules, methods, principles and theories in providing care to clients (e.g., applying nursing principles to the care of clients).

3. Critical Thinking

The third level of the taxonomy deals with higher-level thinking processes. It includes the abilities to judge the relevance of data, to deal with abstraction and to solve problems (e.g., identifying priorities of care or evaluating the effectiveness of interventions). The Licensed or Registered gerontological practical nurse with at least two years of experience should be able to identify cause-and-effect relationships, distinguish between relevant and irrelevant data, formulate valid conclusions and make judgments concerning the needs of clients.

The following table presents the distribution of questions for each level of cognitive ability.

Table 2: Distribution of Questions for Each Level of Cognitive Ability

Cognitive Ability Level	Percentage of questions on Gerontological Nursing for LPNs/RPNS Certification Exam
Knowledge/Comprehension	15-25%
Application	45-55%
Critical Thinking	25-35%

² These levels are adapted from the taxonomy of cognitive abilities developed in Bloom (1956).

Contextual Variables

Client Age: The age of the client will be 60 years and over and will be determined by the health situations presented in the questions. The questions will be inclusive of all genders and identities.

Client Health Situation: In the development of the Gerontological Nursing for LPNs/RPNs Certification Exam, the client is viewed comprehensively within the physiological, psychological, functional, social, cultural, developmental, environmental and spiritual dimensions of a total life experience up to and including death.

Health-Care Environment: It is recognized that gerontological practical nursing is practiced in a variety of settings. The health-care environment is specified only where it is required for clarity or in order to provide guidance to the examinee.

Conclusions

The blueprint for the Gerontological Nursing for LPNs/RPNs Certification Exam is the product of a collaborative effort between CNA, YAS and a number of Licensed or Registered gerontological practical nurses across Canada. Their work has resulted in a compilation of the competencies required of practising gerontological LPNs and has helped determine how those competencies will be measured on the Gerontological Nursing for LPNs/RPNs Certification Exam. A summary of these guidelines can be found in the summary chart Gerontological Nursing for LPNs/RPNs Certification Exam Development Guidelines.

Gerontological nursing for LPNs/RPNs practice will continue to evolve. As this occurs, the blueprint may require revision so that it accurately reflects current practices. CNA will ensure that such revision takes place in a timely manner and will communicate any changes in updated editions of this document.

Summary Chart

Gerontological Nursing for LPNs/RPNS Certification Exam Development Guidelines

STRUCTURAL VARIABLES		
Examination Length and Format	Approximately 160-165 multiple choice questions	
Question Presentation	55-70% independent questions 30-45% case-based questions	
The Cognitive Domain	Knowledge/Comprehension	15-25% of questions
	Application	45-55% of questions
	Critical Thinking	25-35% of questions
Competency Categories	Culture and Human Diversity	4-9% of questions
	Assessment	18-25% of questions
	Health Promotion and Risk Reduction	22-30% of questions
	Illness and Disease Management	22-30% of questions
	Ethical, Legal and Health System Issues	8-12% of questions
	Professional Practice	3-7% of questions
	Information and Health Technologies	3-7% of questions
CONTEXTUAL VARIABLES		
Client Age and Gender	The age of the client will be 60 years and over and will be determined by the health situations presented in the questions. The questions will be inclusive of all genders and identities.	
Client Health Situation	In the development of the Gerontological Nursing for LPNs/RPNS Certification Exam, the client is viewed comprehensively within the physiological, psychological, functional, social, cultural, developmental, environmental and spiritual dimensions of a total life experience up to and including death.	
Health-Care Environment	It is recognized that gerontological nursing is practiced in a variety of settings. The health-care environment is specified only where it is required for clarity or in order to provide guidance to the examinee.	

The Gerontological Nursing for LPNs/RPNs Certification Exam List of Competencies

Culture and Human Diversity

The Licensed or Registered gerontological practical nurse:

- 1-1 Ensures quality of care is individualized to the needs of older adults, including:
 - 1-1a family (e.g., family composition and dynamics, intergenerational relationships, older adult as primary caregiver, geographical dispersion, surrogate families, family expectations of care);
 - 1-1b diverse communities (e.g., veterans, Indigenous peoples, members of religious and/or cultural groups, immigrants, lesbian, gay, bisexual, transgender or queer (LGBTQ2) persons); and
 - 1-1c vulnerable populations (e.g., developmentally delayed clients, physically challenged clients, cognitively impaired, clients with mental illness, addictions, inmate populations, homeless, economically disadvantaged populations).
- 1-2 Demonstrates an understanding that unique histories, cultures, languages, and social circumstances are manifested in the diversity of Indigenous peoples.
- 1-3 Recognizes the intergenerational impact of historical trauma on current generations of Indigenous peoples.
- 1-4 Identifies and closes the gaps in health outcomes between Indigenous and non-Indigenous communities. (e.g., Such efforts would focus on indicators such as: suicide, mental health, addictions, life expectancy, chronic diseases, illness and injury incidence, and the availability of appropriate health services).
- 1-5 Recognizes the value of Indigenous healing practices and supports them in the treatment of Indigenous clients in collaboration with Indigenous healers and Elders when requested by Indigenous clients.

Assessment

The Licensed or Registered gerontological practical nurse:

- 2-1 Assesses older adults in the following areas:
 - 2-1a physiological (e.g., age-related changes and conditions, atypical presentations, diagnostics, infectious diseases, continence, sleep);
 - 2-1b functional (e.g., activities of daily living, instrumental activities of daily living, mobility, ability to communicate);
 - 2-1c cognitive (e.g., memory, attention, perceptual disturbances, orientation, age-associated memory impairment, decision-making);

- 2-1d psychological (e.g., previous coping patterns, mood and affect, history of mental illness, developmental stages, response to life events, depression scales, risk of self-harm, suicidal ideation, grief and loss);
 - 2-1e nutritional (e.g., food preferences, allergies, swallowing, nutritional status, weight, oral health, intake);
 - 2-1f social/cultural (e.g., roles, relationships, formal/informal supports, cultural beliefs, education, leisure, literacy, income, lifestyle, intimacy, life history);
 - 2-1g spiritual (e.g., religious affiliation, practices, spiritual values and beliefs, spiritual distress);
 - 2-1h sexual (e.g., sexual orientation, relationships, need for intimacy and privacy, gender identity, sexual dysfunction);
 - 2-1i environmental (e.g., living arrangements, living conditions, location, physical layout, accessibility, exposure to pollutants, home assessments, safety);
 - 2-1j abuse (e.g., indicators of neglect, emotional, physical, sexual, psychological and financial abuse, caregiver factors, past history);
 - 2-1k pain (e.g., manifestations, pain scales, pain types, impact on function and quality of life, response to non-pharmacological and pharmacological interventions); and
 - 2-1l risk factors (e.g., falls, altered nutrition, tobacco, alcohol and/or other substance use, immunization status, use of restraints, comorbidities, frailty, impaired skin integrity, polypharmacy, social isolation).
- 2-2 Assesses medication(s) (e.g., prescribed, over-the-counter, complimentary, supplements) in the following areas:
- 2-2a use (e.g., adherence, polypharmacy, history, client understanding, administration methods, medication review/reconciliation, age-related changes affecting medications);
 - 2-2b response to pharmacological intervention (e.g., effectiveness, interactions, adverse effects, contraindications); and
 - 2-2c diagnostic results and implications related to treatment (e.g., adjustments, dosing, titration, parameters, toxicity).

Health Promotion and Risk Reduction

The Licensed or Registered gerontological practical nurse:

- 3-1 Utilizes evidence-informed practice to promote health and prevent illness (e.g., immunizations, self-care management, teaching, healthy eating, health screening, lifestyle counselling, habits, exercise promotion).
- 3-2 Selects evidence-informed interventions regarding the following:
 - 3-2a functional abilities (e.g., exercise programs, referrals to formal and informal resources, diet modifications, adaptive clothing, strength and balance exercises);
 - 3-2b cognitive functioning (e.g., cueing, reminiscing, validation, behavioural response approaches, pharmacological, mental stimulation activities, program referrals);
 - 3-2c environment (e.g., structural modifications, home adaptations, exit alarms, lighting, thermoregulation, emergency preparedness planning, removal of hazards);

- 3-2d falls prevention (e.g., transfer aids, exercise program, lighting, education, medication, proper clothes and footwear, protectors, bed/seat alarms, lifelines);
- 3-2e spiritual and cultural well-being (e.g., basic understanding and/or facilitation of spiritual and cultural practices, referrals, attentive listening, instilling hope, life review);
- 3-2f sleep/rest (e.g., sleep routine, accommodating lifelong patterns, pharmacological);
- 3-2g emotional well-being and coping (e.g., counselling, support groups, stress reduction, conflict resolution, life changes, attentive listening, pharmacological, loss of independence);
- 3-2h addictions/substance use (e.g., referral to support groups/programs, treatment centres, counselling, smoking cessation programs, psychosocial support, community resources, harm reduction strategies);
- 3-2i urinary and bowel elimination (e.g., continence strategies, diet, hydration, mobility, hygiene, pharmacology);
- 3-2j sexual function (e.g., education, safety, acceptance, resources, advocacy);
- 3-2k abuse (e.g., safety plans, respite for caregiver, counselling, resources);
- 3-2l iatrogenesis (e.g., infection, deconditioning, adverse effects of therapeutic and diagnostic regimens, relocation stress syndrome, “age-friendly” environments, medication review);
- 3-2m integumentary (e.g., healthy skin practices, pressure reduction strategies, environmental modification to avoid trauma, referrals);
- 3-2n nutrition (e.g., affordable and nutritious food, supplements, dysphagia management, hydration, weight management, bariatrics, teaching, referrals);
- 3-2o pharmacological and non-pharmacological therapies (e.g., medication reconciliation, counselling regarding safe practices, polypharmacy, complementary therapies, referrals, collaboration with other team members);
- 3-2p least restraint use (e.g., physical, chemical, environmental, alternatives to restraints, regular review and monitoring, restraint reduction, teaching);
- 3-2q end-of-life transitions (e.g., advance directives, culturally sensitive care and communication, pain/symptom management, advance care wishes, palliative care); and
- 3-2r MAID (e.g., provide documentation, information, facilitate referral).
- 3-3 Supports client to engage in safer forms, patterns, quantity, environment and routes of substance use at their own pace and level of ability when delivering harm-reduction and safer-use education (e.g., overdose prevention strategies).
- 3-4 Describes the differences between the concepts substance use related harm and substance use disorder.
- 3-5 Advocates for appropriate pain control interventions for clients who use substances.

Illness and Disease Management

The Licensed or Registered gerontological practical nurse:

4-1 Selects evidence-based interventions in the following areas:

- 4-1a sensory (e.g., macular degeneration, diabetic retinopathy, cataracts, glaucoma, tinnitus, chronic sinusitis, retinal detachment, hearing impairment);
- 4-1b integumentary (e.g., lesions, wounds, cellulitis, psoriasis, fungal, rash, eczema);
- 4-1c gastrointestinal (e.g., diarrhea, nausea, vomiting, constipation, bleeds, ulcers, obstructions, reflux disease, hemorrhoids, inflammatory bowel disease, pernicious ostomy, anemia, cholecystitis, enteral feeds);
- 4-1d musculoskeletal (e.g., osteoporosis, osteoarthritis, rheumatoid arthritis, extremity deformities, degenerative disc disease, fractures, prosthesis, contractures);
- 4-1e cardiovascular (e.g., congestive heart failure, pulmonary edema, hypertension, blood disorders, myocardial infarction, coronary artery disease, peripheral vascular disease, deep vein thrombosis, oedema);
- 4-1f respiratory (e.g., chronic obstructive pulmonary disease (COPD), asthma, acute bronchitis, tuberculosis, pneumonia, sleep apnea, emphysema, pulmonary fibrosis, influenza);
- 4-1g genitourinary (e.g., incontinence, renal failure, vaginal prolapses, benign prostatic hypertrophy, vaginitis, sexually transmitted infections, sexual dysfunction)
- 4-1h endocrine/metabolic (e.g., thyroid dysfunction, diabetes mellitus, metabolic syndrome) ;
- 4-1i neurological (e.g., acquired brain injuries, cerebrovascular disorders, Parkinson's disease, multiple sclerosis, seizures, vertigo, neuropathy, infections, Amyotrophic lateral sclerosis [ALS]);
- 4-1j delirium (e.g., risk, prevention, hypo/hyperactive, causes, manifestations, consequences);
- 4-1k dementia (e.g., types, stages, behavioural manifestations);
- 4-1l mental illness (e.g., anxiety, depression, post-traumatic stress disorder, schizophrenia, personality disorders, bipolar disorder);
- 4-1m cancer (e.g., prostate, breast, lung, skin, colon, bladder, lymphoma, leukemia, brain, pancreas); and
- 4-1n infections control (e.g., prevention, hand-washing, isolation, surveillance, personal protective equipment (PPE), outbreaks/epidemics, mandatory reporting, antibiotic-resistant organisms, immunology).

4-2. Evaluates the outcomes of the intervention to determine effectiveness.

Ethical, Legal and Health System Issues

The Licensed or Registered gerontological practical nurse:

- 5-1 Demonstrates an understanding of the implications of ethical, legal and health system issues in the following areas:
 - 5-1a client decision-making (e.g., end-of-life issues, autonomy, capacity, informed consent, substitute decision-makers, advance directives, guardianship, allocation of resources, right to live at risk, negotiating goals of care, decisions regarding nutrition and hydration, resuscitation status, symptom management, complimentary medicine);
 - 5-1b substance uses (e.g., opioids, alcohol, tobacco, cannabis, fentanyl, recreational drugs)
 - 5-1c least restraints (e.g., chemical, physical, environmental);
 - 5-1d abuse (e.g., crime, fraud, neglect, exploitation, coercion, mandatory reporting)
 - 5-1e inclusive care (e.g., human rights, demographics of aging, geographical- and climate-related influences, biases/prejudices, ageism); and
 - 5-1f confidentiality (e.g., use of social media, breaches of privacy, privacy legislation).
- 5-2 Demonstrates an understanding of the implications of ethical, legal and health system issues in Medical Assistance in Dying (MAiD) (e.g., informed consent, facilitate access, conscious objector, legislation requirements, professional standard, non-disclosure).
- 5-3 Understands that nurses must not impose their own views and values about MAiD onto others nor use their position to influence, judge or discriminate against others whose values are different from their own.
- 5-4 Respects the privacy and confidentiality of sensitive information about MAiD as the cause of death and of all individuals who are involved in the process.

Professional Practice

The Licensed or Registered gerontological practical nurse:

- 6-1 Recognizes the implications of interprofessional practice:
 - 6-1a scope of practice (e.g., education, delegation, assignment, supervision, role clarity); and
 - 6-1b collaboration (e.g., effective and respectful communication, collaborative problem-solving, team-building, negotiating responsibilities, advocacy, stakeholder engagement).
- 6-2 Engages in professional growth (e.g., certification, membership in professional associations, reflective practice, continuing education, lifelong learning, mentorship, preceptorship, teaching).
- 6-3 Demonstrates cultural competency and cultural sensitivity in interaction with Indigenous clients.
- 6-4 Demonstrates authentic, supportive, and inclusive behaviour in all exchanges with Indigenous clients, health care workers, and communities.

- 6-5 Understands the correlation between individuals' substance use behaviors and larger social and structural conditions (e.g., poverty, gender inequity, post-colonization, racism, criminalization and prohibition) that contribute to the risk for substance use related harm and substance use disorder.
- 6-6 Advocates for the inclusion of people with lived experience of substance use and substance use disorders in the design, delivery and evaluation of services.
- 6-7 Identifies the nurse's role and professional responsibilities related to MAiD.
- 6-8 Understands MAiD may have a personal impact that may affect their practice, and takes steps to seek support as needed.
- 6-9 Provides support for the person and family during the process and the family following the death.

Information and Health Technologies

The Licensed or Registered gerontological practical nurse:

- 7-1 Uses relevant technologies such as:
 - 7-1a assistive/adaptive devices (e.g., communication devices, alerting devices, hearing aids, portable talking keyboards, ergonomic equipment);
 - 7-1b health informatics (e.g., tele-practice, information resources, electronic assessments, electronic health records, coding of data); and
 - 7-1c emergency and disaster preparedness (e.g., emergency response planning, fire prevention, evacuation, power outage, violence).