

Exam Blueprint and Specialty Competencies

Introduction – Blueprint for the Pediatric Nursing Certification Exam

The primary function of the blueprint for the CNA Pediatric Nursing 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 pediatric nursing.

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 pediatric 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 Pediatric Nursing 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 Pediatric Nursing Certification Exam, the content consists of the competencies of a fully competent practising pediatric 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 Pediatric Nursing 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 pediatric nurses, the following assumptions, based on current national standards for nursing practice, were made:

Child and Family

- Unless otherwise specified, the term child is inclusive of the newborn, infant, child, youth and young adult
- Unless otherwise specified pediatric patient or client refer to the child who is obtaining services in the health care system
- In child- and family-centered care, the definition of family, as well as the degree of the family's involvement in health care is determined by the child, provided that he or she is developmentally mature and competent to do so.
- Caring for the child in the context of family is critically important and may extend to community.
- The child's ability to participate in decision making in care, is influenced by age, developmental level, health situation and/or intervention
- The child has the right to age appropriate information about their illness, potential treatments and outcomes
- Family, who is the constant in the child's life, is recognized as having expertise in their child's care and is encouraged to participate in creating and carrying out the plan of care.
- The child and family have the right to be informed and be involved in decision making regarding all aspects of care.

Health and Wellbeing

- Health is a state of physical, mental, social and spiritual well-being and not merely the absence of disease or illness.
- Health exists along a continuum influenced by many factors such as illness, disability, maturation, culture, socio-economic status and the environment.
- Social determinants of health can have a vital role and significant impact of child's well-being and health outcomes.
- The distal determinants of health (colonialism, racism, self-determination and social exclusion) account for the oppressive historical and contemporary context in Canada and have resulted in direct impacts on the health of Indigenous peoples.
- Health optimization is directed towards promotion, prevention, maintenance, protection and rehabilitation/restoration.

- Health and quality of life, throughout the lifespan, are a state of physical, psychosocial and spiritual well-being, as-described by the child and family.
- Social justice is the underpinning value of cultural safety and cultural competence.

The Pediatric Nurse

- Is defined as any nurse who provide care for children as either their entire practice or part of their practice.
- Applies a strength-based approach to the protection, promotion, and optimization of health and abilities of children.
- Requires knowledge of physical, psychological, developmental, social, spiritual, cultural factors, as well as the health problems and needs specific to people in this age group to provide child and family-centered care.
- Practices in accordance to the *Canadian Paediatric Nursing Standards*
- Practices as guided by the specific institutional policies and provincial or territorial regulatory body.
- Identifies and consider situational, ethical and legal complexities within the context of pediatric practice.
- Maintains professional competence through continuous education and learning, and the promotion of research and quality improvement initiatives.
- Shares information relevant to plan of care and collaborates with and amongst interprofessional providers.
- Anticipates and plays an active role to support transitions in care and along the health continuum.
- Makes a difference through leadership and advocacy in the care of the child and the overall state of children's health.
- Leverages evolving technology to support best practices in care.
- Nurses are self-aware of their personal beliefs and values, and have a responsibility to challenge harmful biases, stereotypical views, and discriminatory and racist behaviours and promote social inclusion.
- Humbly acknowledges oneself as a learner when attempting to understand another's experience and is helpful when interacting with clients.

The Practice Environment

- Pediatric nursing is provided in a variety of practice environments, including but not limited to home, schools, hospitals, community health centres, nursing

stations, hospices, rehabilitation centers, social service settings, virtual settings.

- Those setting can be located in urban and rural/remote, including on- and off-reserve.
- There are many factors that determine where the care is provided, including but not limited to, capacity of the family and community, availability of the resources, preferences of the child and family, acuity of the child.
- The nurse provides care that is gender-responsive, inclusive of all identities and differences, trauma-informed and culturally safe - and should be applied to the health organization.

The Pediatric Nursing Process

- Includes developmentally appropriate assessment which is continuous and comprehensive using available, relevant resources and evidence-based practice.
- Is a holistic plan of care which includes identified actual and potential needs and prioritized interventions that are developed in collaboration with the child, family and interprofessional team.
- Outcomes of care are evaluated, and the plan of care is continuously revised in response to changes in the child and family's needs, informed by evidence-based practice and research.

Competency Categories

The competencies are classified under a thirteen-category scheme commonly used to organize pediatric nursing.

Some of the competencies lend themselves to one or more of the categories; therefore, these thirteen 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 Pediatric Nursing 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
Professional Practice, Leadership and Advocacy	5-7%
Child and Family Centered Care	5-7%
Growth and Development	5-7%
Pediatric Nursing Process	10-15%
Promotion of Well-Being and Prevention of Illness/Injury	5-7%
Common Pediatric Illnesses and Conditions	20-25%
Common Pediatric Emergencies	5-7%
Children and Medical Complexity	5-7%
Genetic and Congenital Conditions	1-3%
Palliative Care	5-7%
Mental Health and Substance Use	5-10%
Pain	5-7%
Transitions in Care	5-7%

Technical Specifications

In addition to the specifications related to the competencies, other variables are considered during the development of the Pediatric Nursing 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., patient culture, patient 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 patients' health-care situation). Independent questions stand alone. In the Pediatric Nursing Certification Exam, 30 to 50 per cent of the questions are presented as independent questions and 50 to 70 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 Pediatric Nursing 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 patient'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 patients (e.g., applying nursing principles to the care of patients).

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

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 pediatric 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 patients.

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 Pediatric Nursing Exam
Knowledge/Comprehension	15-25%
Application	35-45%
Critical Thinking	35-45%

Contextual Variables

Client Age: The contextual variable specified for the Pediatric Nursing Certification Exam is the age of the client. Providing specifications for the use of the variable ensures that the client described in the exam represent the demographic characteristics of the population encountered by the pediatric nurse.

Client Culture: Questions are included that measure awareness, sensitivity, and respect for different cultural values, beliefs, and practices, without introducing stereotypes.

Client Health Situation: In the development of the Pediatric Nursing Certification Exam, the Child is viewed holistically. The health situations presented also reflect a cross-section of health situations encountered by pediatric nurses.

Health-Care Environment: Pediatric nursing is practiced in a variety of settings. Therefore, for the purposes of the Pediatric Nursing Certification Exam, the health-care environment is only specified where it is required for clarity or in order to provide guidance to the examinee.

Conclusions

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

Pediatric nursing 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

Pediatric Nursing Exam Development Guidelines

Structural Variables		
Exam Length and Format	Approximately 165 multiple-choice questions	
Question Presentation	30-50% independent questions 50-70% case-based questions	
Cognitive Ability Levels	Knowledge/Comprehension	15-25% of questions
	Application	35-45% of questions
	Critical Thinking	35-45% of questions
Competency Categories	Professional Practice, Leadership and Advocacy	5-7% of questions
	Child and Family Centered Care	5-7% of questions
	Growth and Development	5-7% of questions
	Pediatric Nursing Process	10-15% of questions
	Promotion of Well-Being and Prevention of Illness/Injury	5-7% of questions
	Common Pediatric Illnesses and Conditions	20-25% of questions
	Common Pediatric Emergencies	5-7% of questions
	Children with Medical Complexity	5-7% of questions
	Genetic and Congenital Conditions	1-3% of questions
	Palliative Care	5-7% of questions
	Mental Health and Substance Use	5-10% of questions
	Pain	5-7% of questions
	Transitions in Care	5-7% of questions
Contextual Variables		
Child Age	Birth -12 months	25 – 35%
	13 months-4 years	25 – 35%
	5-12 years	15 – 25%
	13-18 years	15 – 25%
Child Culture	Questions are included that measure awareness, sensitivity, and respect for different cultural values, beliefs, and practices, without introducing stereotypes.	
Child Health Situation	In the development of the Pediatric Nursing Certification Exam, the Child is viewed holistically. The health situations presented also reflect a cross-section of health situations encountered by pediatric nurses.	
Health-Care Environment	Pediatric nursing is practiced in a variety of settings. Therefore, for the purposes of the Pediatric Nursing Certification Exam, the health-care environment is only specified where it is required for clarity or in order to provide guidance to the examinee.	

The Pediatric Nursing Exam

List of Competencies

1. Professional practice, Leadership and Advocacy

The pediatric nurse:

- 1.1. practises in accordance with *Canadian Paediatric Nursing Standards*, CNA code of ethics and ethical principles as they apply to children (e.g., consent to treatment, decision making, refusal of treatment);
- 1.2. identifies relevant legislation, social and organizational policies that affect child and family health and well-being (e.g., Jordan's principle, UN Conventions on the Rights of the Child, Indigenous healing practices, Truth and reconciliation commission of Canada, Medical assistance in dying (MAID), medical cannabis);
- 1.3. reflects on personal values, beliefs and biases;
- 1.4. advocates for the unique needs of children and family as well as the broader pediatric population in the system (e.g., health, education, social);
- 1.5. uses strengths-based approach to build capacity in the child and their family to be able to self-advocate and navigate systems (e.g., empowering and respecting expertise of the family)
- 1.6. provides culturally-safe care;
- 1.7. demonstrates awareness that specific populations may have unique needs (e.g., new immigrants and refugee, indigenous population, LGBTQ2, children with disabilities, street youth);
- 1.8. promotes a safe, healthy and inclusive workplace environment (e.g., speaking up against violence and bullying, discrimination, harassment);
- 1.9. demonstrates interprofessional collaboration;
- 1.10. contributes to quality improvement initiatives (e.g., identifying areas for improvements, participating in quality improvement projects, integrating families' feedback); and
- 1.11. participates in continuing education.

2. Child and Family Centered Care

The pediatric nurse:

- 2.1. establishes a therapeutic relationship with the child and family;
- 2.2. partners with child and family in care decisions and plan of care in a respectful, non-judgmental and culturally safe manner;
- 2.3. collects information from the child and family to inform care while maintaining privacy and confidentiality;

- 2.4 demonstrates an understanding of the structure, developmental stage and functionality of the family (e.g., roles, responsibilities, gender, relationships);
- 2.5 incorporates child and family strengths and resources to support their care (e.g., resilience, problem solving, coping, past experience with health system, extended family, community, spirituality, finances);
- 2.6 identifies specific populations that will likely require the support of trained interpreters; and demonstrate the ability to utilize these services when providing care to the child and family;
- 2.7 recognizes actual or potential alterations in child and family well-being that affect ability to participate in their care (e.g., emotional responses, inability to make decisions, and other stressors);
- 2.8 advocates for optimal use of appropriate resources to support the child and family; and
- 2.9 provides honest, factual, timely information and support throughout health care encounter.

3. Growth and Development

The pediatric nurse:

- 3.1 demonstrates knowledge of typical development and variations from typical in childhood;
- 3.2 demonstrates knowledge of safety risks associated with developmental level;
- 3.3 utilizes appropriate strategies to address developmental responses to illness and healthcare encounters; and
- 3.4 provides anticipatory guidance and coaching related to developmental stages and levels (e.g., nutrition, immunizations and safety concerns).

4. Pediatric Nursing Process

The pediatric nurse:

- 4.1 conducts a comprehensive child and family health history (e.g., alternative and complementary therapies, allergies, immunization status, medication reconciliation).
- 4.2 perform a comprehensive physical and psychosocial/mental health assessment. (e.g. gender identity, sexuality, cultural and spiritual assessment) by:
 - 4.2.1 demonstrating knowledge of the variations in assessments dependent on developmental stage and pediatric anatomy and physiology
 - 4.2.2 identifying the normal and abnormal findings in physical assessment, lab and investigative reports (e.g. CBC, blood gases, electrolytes, urinalysis, glucose, vital signs)
 - 4.2.3 recognizing actual or potential alterations in assessment findings and their significances (e.g., crying, fever, medication, anxiety)

- 4.2.4 understanding that symptoms have culture-specific meanings and child and family from diverse backgrounds will describe their symptoms differently, have different ideas of what might have caused it, will have different acceptance of it, and what kind of treatment they would seek for it
- 4.3 implements interventions and care as per assessment findings;
- 4.4 demonstrates an understanding of safe pediatric medications administration principles (e.g., side effects, weight-based dosing, over the counter medications, interactions, route of administration); and
- 4.5 evaluates the effectiveness of nursing interventions.

5. Promotion of Well-being and Prevention of Illness/Injury

The pediatric nurse:

- 5.1 identifies social determinants of health and their impact on child health in all aspect of care (e.g., income and social status, education and literacy, physical environments, gender, culture, access to health services);
- 5.2 performs an assessment of safety and risk in the practice environment (e.g., environmental assessment, infection prevention and control processes);
- 5.3 applies relevant screening tools for identified and potential risk for the individual child and family (e.g., falls, pressure injury prevention, oral health, substance use disorder); and
- 5.4 actively engages in the promotion of health and well-being at an individual, family and/or community level (e.g., injury prevention, health lifestyle, sexuality, relationships, contraception, smoking cessation, exercise, nutrition, breastfeeding, screen time).

6. Common Pediatric Illnesses and Conditions

The pediatric nurse:

- 6.1 demonstrates basic knowledge of common pediatric illnesses and conditions (e.g. pathophysiology and manifestation, interventions and management inclusive of pharmacologic and non-pharmacologic, responses to treatment, family education and documentation) of:
 - 6.1.1 asthma and upper/ lower respiratory infections (e.g., influenza, pneumonia, RSV)
 - 6.1.2 Autism spectrum disorder and ADHD
 - 6.1.3 child maltreatment and domestic violence
 - 6.1.4 diaper dermatitis, pressure injuries, minor burns, rashes
 - 6.1.5 failure to thrive, malnutrition
 - 6.1.6 fluid and electrolyte imbalances
 - 6.1.7 gastroesophageal reflux disease, constipation and infectious gastroenteritis
 - 6.1.8 juvenile idiopathic arthritis, inflammatory bowel disease,
 - 6.1.9 newborn jaundice

- 6.1.10 obesity
- 6.1.11 seizures
- 6.1.12 sexually Transmitted infection
- 6.1.13 trauma (e.g., concussions, fractures)
- 6.1.14 type 1 and 2 diabetes
- 6.1.15 urinary Tract Infection

7. Common Pediatric Emergencies

The pediatric nurse:

- 7.1 demonstrates basic knowledge of pediatric emergencies (e.g. pathophysiology and manifestation, interventions and management inclusive of pharmacologic and non-pharmacologic, responses to treatment, family education and documentation) of:
 - 7.1.1 airway obstruction
 - 7.1.2 altered level of consciousness
 - 7.1.3 cardio-pulmonary arrest
 - 7.1.4 diabetic Ketoacidosis
 - 7.1.5 meningitis
 - 7.1.6 mental health Crisis (e.g., suicidal, homicidal)
 - 7.1.7 shock (e.g., cardiogenic, hypovolemic, distributive, obstructive)
 - 7.1.8 toxic ingestion (e.g., overdose)
 - 7.1.9 trauma (e.g., burns, near drowning)

8. Children with Medical Complexity

The pediatric nurse:

- 8.1 demonstrates an understanding of the definition of Children with Medical complexity (chronic condition/fragility, functional limitation/technology dependant, frequent health care use, high care giver needs);
- 8.2 demonstrates a basic understanding of pathophysiology of identified medically complex condition such as cancer, transplant recipients, technology dependence (e.g., ventilator dependent);
- 8.3 Understand the unique and ongoing needs of the family of children with medical complexity (e.g., financial, resources, respite, education);
- 8.4 Demonstrates an understanding that Children with Medical complexity may have a potential variation from the typical pediatric baseline parameters;
- 8.5 manages intervention based on identified and potential risks for children with medical complexity;
- 8.6 contributes to care plan development and maintenance as guided by family as partners in their child's care;
- 8.7 supports the competency of the family to care for children with Medical complexity (e.g., assessment of the competency and readiness, provide education on technology/psychomotor skills); and

8.8 applies clinical judgement while recognizing the family expertise.

9. Genetic and Congenital Conditions

The pediatric nurse:

9.1 demonstrates a basic understanding of the pathophysiology of common genetic and congenital conditions (e.g., trisomy 21, DiGeorge syndrome, cystic fibrosis, tracheoesophageal fistula, congenital heart conditions);

9.2 selects the appropriate evidence-informed nursing interventions in the care of children with genetic and congenital conditions; and

9.3 provides support for the family of a child with a genetic and congenital condition (e.g., collaboration, support group, advocacy, referral).

10. Palliative Care

The pediatric nurse:

10.1 recognizes that palliative care may be the only focus of care, or maybe combined with other therapies designed to reduce or cure illness;

10.2 identifies child and family needs, hopes, beliefs, fears, expectations and strengths

10.3 employs practices that are sensitive to child and family's personal, cultural and spiritual values, beliefs and practices, their developmental stage and their preparedness to deal with the dying process;

10.4 employs discussion about goals of care and advanced care planning with child and/or family (e.g., quality of life, symptom management, end of life care);

10.5 identifies resources that address needs such as symptom management, respite, end of life and grief support; and

10.6 engages the child and/or family in dialogue to better understand the nature and meaning of a request for MAID.

11. Mental Health and Substance Use

The pediatric nurse...

11.1 routinely completes a mental health assessment for all pediatric patients (e.g., mental status exam, screening tools, suicide risk assessment, substance use, risk of violence);

11.2 implements strategies that supports safety for self and others (e.g., environmental, emotional, social, cultural, physical);

11.3 partners with child, family, interprofessional team and community to create a safety plan;

11.4 utilizes trauma-informed care and harm reduction strategies;

11.5 demonstrates a basic understanding of the common pediatric mental health conditions and their presentations (e.g., eating disorder, anxiety, depression, self-harm, psychosis);

- 11.6 routinely screens for substance use to identify problematic use and opportunities to provide intervention (e.g., harm reduction, education, treatment); and
- 11.7 facilitates referral to evidence-informed treatment(s) and resources for individualized care (e.g., psychosocial intervention, harm-reduction services, withdrawal management services, primary care, pharmacological approaches, peer support).

12. Pain

The pediatric nurse:

- 12.1. interprets data related to pain including:
 - 12.1.1 child's health history (e.g., culture, previous experiences, communication patterns, coping strategies, mechanism of injury, use of alternative/complementary therapies);
 - 12.1.2 developmentally appropriate assessment tools; and
 - 12.1.3 physical assessment (e.g., vital signs, precipitating factors, intensity, quality and duration).
- 12.2 recognizes types of pain (e.g., acute, chronic, neuropathic, procedural) and responses to pain (e.g., behavioural, cognitive and physiological).
- 12.3 recognizes the consequences of ineffective pain management (e.g., delayed recovery, sleep alterations, chronic pain syndromes).
- 12.4 implements nursing interventions related to the prevention and alleviation of pain, including:
 - 12.4.1 using non-pharmacological strategies (e.g., family presence, mobilization, therapeutic play, hot/cold compresses, distraction, positioning, environmental management, non-nutritive sucking, oral sucrose administration, relaxation techniques);
 - 12.4.2 safe administration of appropriate pharmacological agents according to assessment findings of pain (e.g., high alert medication protocol);
 - 12.4.3 measuring effectiveness of pharmacological and non-pharmacologic agents and potential sequelae;
 - 12.4.4 employ appropriate teaching to child and family about misconceptions, side effects, safe storage, disposal, diversion, etc.

13. Transitions in Care

The pediatric nurse:

- 13.1 uses effective communication strategies at all transitions in care;
- 13.2 assesses child and family readiness in order to support a safe transition in a variety of settings;
- 13.3 discusses transition and/or discharge needs in partnership with the child and family;
- 13.4 provides health education and information to optimize transition of the child and family;

- 13.5 coordinates resources to support transitions in care (e.g., referrals, home care, social supports, pediatrics to adult care);
- 13.6 shares information with relevant team members to support effective coordination of care across transitions; and
- 13.7 performs processes related to a safe and effective transition and discharge (e.g., standardized handover tools/ strategies, medication reconciliation, discharge plan, care plan).