



CANO/ACIO

# Radiation Oncology Nursing Practice Standards and Competencies



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Canadian Association of Nurses in Oncology  
Association canadienne des infirmières en oncologie

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## CANO/ACIO Vision for Radiation Oncology Nursing Practice

"Every patient across Canada, regardless of geography, receives radiation oncology nursing care from oncology nurses who meet a predetermined standard of practice through a comprehensive education program to ensure competency".

## Introduction

Radiation Therapy (RT) refers to a treatment modality using electromagnetic high-energy X-rays or other radiation particles (e.g., radionuclides, radioisotopes) to treat cancer or benign conditions (1). Rising cancer rates and an aging population coupled with improved imaging, diagnosis, computer and information technology, molecular and clinical radiobiology, multi-disciplinary decision-making, treatment planning and delivery, combined modality treatment and supportive and palliative care (2) has broadened the indications and uses for RT from prevention to palliative care (3). Increases in the number of survivors has necessitated long-term follow-up, which has further extended the use of RT throughout the cancer continuum. At the same time, the involvement of nurses in diverse clinical roles and settings in the care of patients receiving RT has increased (3).

# PURPOSE AND SCOPE

This document has been written to provide Standards and Competencies (S & C) for Radiation Oncology Nursing Practice (RONP) in Canada. This document applies to nurses involved in RONP for adult and pediatric patients. This may include diverse settings throughout Canada where English and French languages are spoken, as well as urban and rural, acute and community settings and inpatient and ambulatory clinics.

These S & C have been written to provide direction to RNs caring for patients with cancer receiving RT. They can also be used by managers/supervisors/educators to ensure organizational support in meeting the standards. The standards can be used to:

1. Determine nursing roles relevant to the S & C.
2. Develop measures to assess the implementation of the standards.
3. Establish criteria for development of Radiation Oncology Nursing (RON) education programs.
4. Establish criteria for continuing competence programs in RONP.
5. Provide a foundation for recommendations to the interprofessional team for the quality practice environments required for optimal RONP.

## Terms

- The use of the term **patients** will represent both **patients living with cancer and their families**, unless otherwise specified.
- **Radiation Therapy (RT)** refers to a treatment modality using electromagnetic high-energy X-rays or other radiation particles (e.g., radionuclides, radioisotopes) to treat cancer or benign conditions (1).
- **Radiation Oncology Nursing Practice (RONP)** refers to the nursing care required by patients during cancer (RT) to maintain health, to monitor their experience of RT and to manage problems that arise. This may include but is not limited to assessment, therapeutic communication, coordination of care, education and information, access to resources, psychosocial support, and referral to specialized services and professionals to manage identified problems.
- **Radiation Oncology Nursing (RON)** refers to the sub-specialty of oncology nursing involving the care of patients receiving RT.

# DEVELOPMENT PROCESS

The development of CANO/ACIO RONP S & C is a special initiative of CANO/ACIO. The impetus for this work came from CANO/ACIO members who work with patients receiving RT and the recognition of RON as a subspecialty of oncology nursing (4). An environmental scan survey, interviews with key informants and a think tank provided the foundational objectives and values and identified CANO/ACIO member needs and concerns regarding RONP (4). A review of the literature further revealed the context and a growing evidence base for RONP (4). The search methods used and the findings from the literature review and the environmental scan are detailed in the Report for CANO/ACIO: Review of Evidence to Inform the Development of CANO/ACIO Radiation Oncology Nursing Practice Standards and Competencies (4).

S & C were drafted to reflect best practice in RONP and were based on a template provided by CANO/ACIO's Chemotherapy S & C with input from RON experts. An expert volunteer group was convened, with representation from multiple provinces in Canada, to refine and revise the initial draft standards. Surveys and voting strategies were implemented to enable feedback on the S & C. Member and stakeholder consensus was considered 80 percent agreement. Member and stakeholder feedback were incorporated in the final S & C document. The next phase will be the implementation and evaluation of the S & C.

# VOLUNTEERS INVOLVED IN THE DEVELOPMENT OF THE STANDARDS AND COMPETENCIES

CANO/ACIO gratefully acknowledges the efforts of the following members who contributed to the envisioning and the development of the CANO/ACIO RONP S & C.

1. CANO/ACIO RT Special Interest Group
2. Members and stakeholders involved in completing the environmental scan
3. CANO/ACIO Radiation Oncology Nursing Practice Think Tank (October 2014)

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# BACKGROUND: THE CANADIAN CONTEXT FOR RONP

The following summary highlights key factors that impact the nursing care of patients receiving RT in Canada.

## COMPLEXITY AND RISKS OF CANCER RADIATION THERAPY

The complexity of RT creates risks for the patient, the public and health care providers. RT cannot be provided in all health care settings. Legislative and organizational safety requirements for RT planning and delivery involves building facilities and interprofessional team members that meet international radiation safety criteria. Advancements in technology have led to rapid changes in the clinical environment, stimulated by new knowledge about cancer biology, innovative methods for delivering RT and the increased use of chemotherapy and targeted molecules concurrently with radiation treatment (2,3).

A patient's unique characteristics may influence treatment options and protocols, as well as response to RT. RT has an impact across a patient's cancer trajectory; it causes acute and late effects requiring long term follow-up of patients and specialized symptom assessment and management. Patients who receive RT may receive care in multiple settings, inpatient or outpatient. The majority of patients who receive RT are seen as outpatients and must self-manage. Family members help to provide support to the patient and require knowledge and skill to carry out that role. Effective education and preparation is essential. Frequently the period for greatest acute side effects from RT occurs in the early post treatment phase. Additionally, patients must be aware of potential late effects specific to their treatment. A patient's ability to self-manage may be impacted by personal factors such as aging, health literacy, etc. or system factors, such as the growing disparities in the Canadian health care system or the ability to access resources, etc.

Concurrent RT and chemotherapy potentially carries additional risks in terms of side effects and toxicity. Continuity of care is essential for safety. Transfer of care between settings requires communication and collaboration, shared understanding of clinical management and access to resources. CANO/ACIO members and Accreditation Canada report that in some cases transfer of care protocols (communication, documentation, care, accountabilities) may not be clearly established (4,5).

## SHIFTING MODELS OF CARE

Delivery of RT traditionally requires at a minimum, a team composed of radiation oncologists, medical physicists and registered technologist radiation therapy (RTT)/ medical radiation technologist (therapist) (MRT) (2). However, shifts in the field of RT have led to the diversification of professionals potentially involved in the care of patients with cancer receiving RT. Both nurses and RTTs/ MRTs have sought to increase their involvement in activities traditionally carried out by physicians, such as work-up prior to starting RT, education about the treatment experience, symptom management and support of coping (6,7). There is overlap in many health care functions and it is predicted that formal discussions about interprofessional roles and responsibilities in RT will increasingly occur in Canada (3).

A survey of Canadian nurses working in RT departments carried out by CANO/ACIO described interprofessional challenges including lack of knowledge and understanding of each other's professions and difficulty gaining support for nursing involvement in care (4). Some Canadian RT departments employ registered nurses (RN) only in clinical, education, advanced practice, research and leadership roles, while others rely on nursing assistants, licensed practical nurses (LPN) or registered practical nurses (RPN) in clinical roles. In some settings, patients lack access to nurses; nurses may be on call or are only available by telephone (4). Some nurses report working with patients who are having RT only in the context of other aspects of care, such as telehealth, community care, inpatient care and systemic therapy (4).

## DIVERSE ROLES OF CANADIAN NURSES BEFORE, DURING AND AFTER RT

The goal of RONP is to influence the patient and family's overall health, well-being and quality of life across the care continuum by providing assessment, interventions and monitoring of needs (8). Oncology professional associations view nursing as integral members of the interprofessional team involved in the overall support of the patient before, during and after receiving RT (3,4,9,10). In descriptive studies, RO nurses in North America held organizational/ systems roles, clinical roles and professional roles with a particular emphasis on advocacy, care and education (11,12). Nursing's evidence-informed approach and willingness to collaborate facilitates incorporation of new technology and increasingly complex concurrent treatments into RT settings (8,12).

RNs in different organizations and clinical settings have diverse roles in ensuring safe and competent RONP, including, but not limited to, RNs who:

- Assess capacity for self-management.
- Provide education about the experience of receiving RT and side effect management.
- Identify, organize and ensure provision of resources and supports for management of self-care, in home, hospital or other settings.

- Support the patient and family receiving RT.
- Provide telephone support for the management of symptoms and safety concerns related to RT and other cancer treatments.
- Advocate for the supports required to ensure a quality practice environment and ongoing competence.
- Research aspects of RONS including but not limited to symptom management and models of care delivery and uptake of evidence-based knowledge into clinical practice.
- Adapt and interpret standards for the practice environment and care providers.

In Canada, RO nurses are involved in diverse generalist, specialized and advanced practice clinical roles as well as in operational, leadership, education and research roles. CANO/ACIO members report that their primary role focuses on screening, assessment, triage, management of cancer symptoms and treatment side effects, teaching and counselling, supporting decision-making and monitoring response to treatment, advocacy, communicating with community providers, coordinating care and arranging referrals. These roles encompass caring for patients who are receiving external beam radiation treatment, sealed sources and/or brachytherapy, unsealed sources / isotopes. In addition, some nurses are directly involved in brachytherapy procedures including preparation, procedures and follow-up care (4).

## VARIABLE ACCESS TO RONS RESOURCES AND EXPERTISE

RNs throughout Canada have variable access to the guidelines, standards, education and continuing competence programs and RT expertise required for optimal practice. RO Nurses require access to education to fulfill the S & C and develop knowledge and skill in RON (4). At the same time, nurses working in cancer centres report that they are challenged to cross-train in other areas of oncology care and research (4).

# CANO/ACIO RONS & C

Standards for RONS have been written to reflect the CANO/ACIO Practice Standards and Competencies for the Specialized Oncology Nurse (13) and best practice. The standards articulate what RNs are expected to do to demonstrate RONS competence and are underpinned by the CANO/ACIO Position Statement for RONS (2015).

## **Three domains for Canadian RONS standard development were established:**

- A.** Accountability for RONS.
- B.** Quality Practice Environment / Safety for Optimal RONS.
- C.** Developing and Maintaining Competence in RONS.

The first standard, Accountability for RONS by RNs, describes the overarching expectations for RONS. RN competencies are detailed within this standard and reflect evidence-informed RONS. The CANO/ACIO Practice Standards and Competencies for the Specialized Oncology Nurse provided the conceptual framework for the articulated competencies (13). The articulated competencies provide generalist, specialist and advanced nurses, educators and administrators with descriptors of competent RONS. In addition, these competencies can form the basis for the development of measurement tools for assessing and monitoring cancer RONS.

The remaining two standards in the document are foundational for optimal RONS. Standard B, Quality Practice Environment / Safety for Optimal RONS, details the organizational systems, policies and procedures and continuity of care that nurses require for optimal RONS. Standard C, Developing and Maintaining Competence in RONS, identifies the educational program and continuing competency requirements for RONS.

# STANDARD A.

## ACCOUNTABILITY FOR RONP

**RNs are accountable for high quality cancer care at various phases across the care trajectory (new patient clinics, treatment delivery / review clinics, post treatment and long term follow-up care). RNs provide care in different settings including cancer centres, general inpatient and outpatient environments and community settings for those patients receiving RT as part of their treatment plan and while living with the acute, chronic and late effects of RT.**

### COMPETENCIES

#### 1. COMPREHENSIVE HEALTH ASSESSMENT:

RNs caring for patients who receive RT shall perform and document comprehensive health assessments at the onset of treatments and continuing throughout the cancer care continuum.

- A.** RNs perform an initial health assessment that identifies any factors that will impact the patient's RT experience. This may include:
  - I.** Pre-existing health conditions including allergies, medications and any previous exposure to RT.
  - II.** Age and stage of development.
  - III.** Psychosocial factors.
  - IV.** Other factors that impact RT including autoimmune disorders, genetic syndromes, concomitant use of chemotherapy or targeted agents (15).
  - V.** Goals, objectives, values and preferences related to health care.
- B.** RNs perform ongoing health assessments. This includes:
  - I.** Before RT regimes begin.
  - II.** During RT regimes.
  - III.** After RT is complete.
  - IV.** In response to patient's concerns.
  - VI.** When health status changes (e.g. physical, emotional, mental, spiritual, cognitive, developmental, environmental changes).
  - VII.** When side effects (acute, chronic and late effects) occur.
  - VIII.** When there is evidence of adverse events and/or toxicity.
- C.** RNs construct a plan of care in collaboration with patient/ family and interprofessional staff to address issues identified during assessments and comprehensively document the assessment, interventions and outcomes.

## 2. SUPPORTIVE AND THERAPEUTIC RELATIONSHIPS:

RNs will establish, monitor, and maintain supportive and therapeutic relationships while providing care to patients receiving RT for cancer.

- A. RNs consider the emotional, cultural, and spiritual context of patients during initial and ongoing care such as:
  - I. Fears and misconceptions
  - II. Need for language assistance
  - III. Ability to cope
  - IV. Other concerns specific to the patient
- B. RNs work with patients to identify support services needed to manage their RT treatment plan and initiate referrals as appropriate.
- C. RNs monitor the therapeutic relationship over time as outcomes of interventions are evaluated and other needs may evolve.

## 3. MANAGEMENT OF CANCER SYMPTOMS AND TREATMENT SIDE EFFECTS:

RNs providing care for patients receiving RT (prior to, during and after treatment) will anticipate and manage cancer symptoms and treatment side effects in collaboration with the interprofessional health care team utilizing an evidence based approach and standardized screening, assessment and documentation tools.

- A. RNs maintain and apply current knowledge and understanding of the management of general and site-specific side effects of RT specific to the populations in which they practice.
- B. RNs document assessments, interventions and outcomes in the patient's health record using reliable and valid tools, when available (e.g., RTOG, VAS for pain or other symptoms, ESAS, falls risk assessment, geriatric assessment tools, etc.).

## 4. TEACHING AND COACHING:

RNs teach, coach and provide psychoeducational interventions specific to the assessed learning needs of patients receiving RT.

- A. RNs assess readiness to learn by evaluating:
  - I. Age and developmental level.
  - II. Preferred style of learning
  - III. Existing knowledge level.
  - IV. Expectations about disease and treatment.
  - V. Response to new knowledge.

- B.** RNs pace teaching based on the patient’s readiness to learn and ability to understand.
- C.** RNs provide patients with knowledge specific to their cancer treatment related to the following:
  - I.** Purpose, mechanism of action, type and schedule of the RT treatment plan and any related supportive care required, such as medications for symptom management or radiation modifiers, chemotherapy or radiopharmaceuticals.
  - II.** Immediate, early, late and delayed side effects of cancer RT and their management differentiating between expected, non-urgent side effects and those requiring immediate medical intervention.
  - III.** Maintenance of radiation safety standards and safe handling of contaminated equipment and body fluids.
  - IV.** Implementation of safe practices when related to radiopharmaceuticals or radioisotopes.
  - V.** Rationale for the required monitoring parameters.
    - 1.** Frequency of blood tests and other diagnostic investigations.
    - 2.** Self-report of symptoms and wellbeing.
- D.** RNs develop and use teaching methods and information resources based on best practice guidelines, protocols and standards.
- E.** RNs provide opportunities for reinforcement of education and validation of the patient’s understanding.
- F.** RNs evaluate outcomes, share relevant findings and concerns with the interdisciplinary team and document teaching provided.

## **5. FACILITATING CONTINUITY OF CARE/NAVIGATING THE SYSTEM:**

RNs facilitate navigation of the health care system, working to promote patient and family continuity of care by anticipating needs, seeking out resources, establishing relationships, mechanisms and pathways for seamless transfer of care.

- A.** RNs facilitate RT treatment and care along the cancer continuum, with consideration given to patient specific needs.
- B.** RNs facilitate communication with appropriate health care professionals to support access to resources based on the patient’s needs.
- C.** RNs communicate and collaborate with appropriate health care providers during transitions in care (e.g. within an organization or across settings) to address system barriers, promote continuity of care and promote safety.
- D.** RNs assist patients in accessing comprehensive supportive care (e.g. psychosocial oncology, spiritual care, home care).

## 6. DECISION-MAKING AND ADVOCACY:

RNs promote autonomous decision-making and advocate for the well-being/ quality of life/ quality outcomes for patients receiving RT.

- A. RNs provide the information, education and/or support to facilitate the patient's decision-making and autonomy in the informed consent processes.
- B. RNs advocate for the patient's wishes and decisions and consider their values, preferences and beliefs in relation to their cancer care.

## 7. LEADERSHIP:

RNs providing care for patients receiving RT demonstrate professional practice and leadership.

- A. RNs work with the interprofessional team to find evidence-informed answers in providing care to patients receiving RT. This may include:
  - I. Using research findings in practice.
  - II. Critically evaluating research articles.
  - III. Supporting patient access to clinical trials.
  - IV. Identifying researchable problems or questions.
  - V. Identifying potential and actual gaps in RONP.
  - VI. Supporting, participating in or initiating research related to RONP.
  - VII. Participating in professional oncology associations to further the practice of RONP.
- B. RNs recognize the limits of their competence and shall not provide care for which they lack competency or an ability to manage the possible outcomes of the skill.
  - I. RNs collaborate with health professionals to make decisions about the agency's capacity to provide safe services based on the level of competence of involved staff and the clinical facilities available.
  - II. When access to RT expertise is limited, RNs seek out mentors in other agencies or through professional associations such as CANO/ACIO or CNA/AIIC.
  - III. RNs with RONP competency act as mentors and resources to nursing colleagues and students.
- C. RNs utilize a self-assessment tool (e.g. CANO/ACIO SON Practice Standards Self-Assessment Tool) to identify knowledge and educational needs and identify resources to address gaps.
- D. RNs maintain continuing competency related to their role in RT.
- E. RNs work towards completion of the national oncology certification exam offered by the Canadian Nurses Association, if feasible, and maintain the certification credential CON(C).
- F. RNs recognize and critically analyze situations for potential ethical and legal issues and apply ethical frameworks to support patient's decision-making, accessing resources to assist as required.
- G. RO nurses represent RONP at decision-making forums and interprofessional policy tables.

# STANDARD B.

## QUALITY PRACTICE ENVIRONMENT / SAFETY REQUIRED FOR OPTIMAL RONP

**RNs promote and advocate for quality RONP environments with systems, structures and resources that facilitate safety for all in that setting. This is a shared responsibility between the organizations that provide RT care, the RN, the health care team and additional essential stakeholders.**

### COMPETENCIES

#### 1. QUALITY PRACTICE ENVIRONMENT:

RNs advocate for and promote adequate systems to ensure a quality practice environment for the care of patients receiving RT within their organizations. This includes:

- A.** Systems for the collection of data for continuous quality improvement using measurable quality indicators that improve patient outcomes.
- B.** Systems and procedures for radiation safety. This includes:
  - I.** Access to a Radiation Safety Officer (RSO).
  - II.** Access to monitoring devices, if required.
  - III.** Application of principles of ALARA (As Low as Reasonably Achievable) and principles of protection (time, distance and shielding) (17)
  - IV.** Practices that support safe exposure limits in routine care as well as emergency responses and cardiopulmonary resuscitation.
  - V.** Labeling and signage.
  - VI.** Processes in place to ensure safe handling and disposal of body fluids and any contaminated equipment related to patients receiving brachytherapy or unsealed radioactive sources and with intraoperative radiation therapy (IORT).
- C.** Access to the care and treatment plan including treatment field location and size, dose, fractionation, etc.
- D.** Access to the patient's health information to confirm that elements fall within care and treatment plan parameters, including:
  - I.** Relevant information on the patient's health conditions, including: diagnosis, health history, current medications and allergies, current height and weight, factors that impact the patient's experience and side effects from RT (e.g., previous radiation treatment, co-morbidities).
  - II.** Recent laboratory values and investigations.
- E.** A process for addressing health information, laboratory investigations and assessment results that fall outside of the treatment plan parameters.
- F.** Informed consent process.
- G.** Medication administration records to record administration of any medications for patients receiving RT.
- H.** Documentation processes to record assessment, planning, interventions and evaluation of care related to RT.
- I.** Emergency access to health care for the management of adverse events 24 hours a day, seven days a week. This may include care/supervision by telephone with emergency instructions, clinicians at the treatment center or an emergency department versed in the care of patients receiving RT.
- J.** Access to reference information including RT treatment protocols, side effects and their management.

## 2. ORGANIZATIONAL POLICIES AND PROCEDURES:

RNs shall advocate and promote appropriate policies, procedures and processes related to RONP within their organization that address the following:

- A. Roles and responsibilities for RONP.
- B. Access to educational programs for RNs to develop competence to care for patients receiving RT.
- C. An organizational strategy for continuing RONP competency.
- D. Standards for care of patient receiving RT including:
  - I Treatment protocols
  - II Pretreatment assessment with a framework and valid tools.
  - III Monitoring, education and discharge requirements for patients receiving RT.
  - IV Systems for documentation within the organization and for transfer of care to/from another organization
- E. Education, support, management and reporting of side effects, toxicities and adverse events is provided to patients living with cancer for the self-management of reactions to RT. This includes:
  - I. Acute, chronic and late effects of RT.
  - II. Physical and functional sequelae of treatment.
  - III. Safe handling of body fluids after brachytherapy and administration of radioisotopes.
  - IV. Lifestyle adjustments.
  - V. Ongoing care and follow-up required.

## 3. CONTINUITY OF CARE:

RNs advocate for an integrated approach across the continuum of care among health care providers to deliver seamless care across all settings. Advocacy may include effective communication, policies and procedures that foster effective transitions, etc.

# STANDARD C

## DEVELOPING AND MAINTAINING COMPETENCE IN RONP

**RNs working with patients who receive RT develop and maintain post-basic radiation oncology nursing knowledge, skill and judgment appropriate to the patient population/clinical setting.**

### COMPETENCIES

1. The RN completes a self-assessment (e.g., CANO/ACIO Specialized Oncology Nursing Self-Assessment Tool) to identify gaps in knowledge or skill, leading to areas of focus for continuing professional development in RON.
2. The RN completes an RON education program that includes a theoretical and clinical evaluation component, including clinical practice supervised by a person who has the competency to assess. The breadth and depth of program content may vary based on the practice setting (cancer centre, community, etc.), patient population, complexities of treatment and patient care as well as the diversity in the generalist or specialized RON roles. Education programs may be available within an organization or through other venues (continuing education, online programs, professional organizations, etc.).
  - A. The organization develops a valid evaluation process where participants, at a minimum, meet the prerequisites outlined by CANO/ACIO RONP S & C (Standard A) within this document.
  - B. Organizations with limited/no resources to assess competence shall develop an alternate collaborative approach.
3. Nurses working directly/primarily with patients receiving RT for cancer shall complete a RON education program that includes, at a minimum, the following topics (8,9):
  - A. Type of RT regimens commonly used to treat various malignancies.
  - B. Clinical skills identified for their practice environment, which may include care of patients receiving brachytherapy, radiosensitizers, radioprotectants, etc.
  - C. The RN's role in the care of patients receiving RT in their setting, such as an inpatient unit, outpatient ambulatory clinic, community, telephone triage or RT department.
  - D. Principles of RT, including radiobiology, types of modalities, rationale for and goals of treatment, treatment planning, normal tissue tolerance, factors that impact the patient's response to RT, radiation modifiers, supportive care, management of expected and adverse radiation reactions and standard treatment and research protocols.
  - E. Assessment of the patient receiving RT and their family.
  - F. Principles of Radiation Safety.
  - G. Toxicities, side effects, and adverse events associated with RT, including early identification, ongoing monitoring and principles of prevention and management.
  - H. Psychosocial oncology care and options and guidelines for interprofessional referrals.
  - I. Ethical and legal issues associated with the administration of RT.
  - J. Organizational processes and available patient education and resources.
  - K. Communication with the radiation treatment team as needed.
  - L. Documentation.

4. An objective evaluation of learning shall be conducted after completion of the theoretical education. CANO/ACIO recommends that this assessment be based on the CANO/ACIO RNP Competencies in Standard A. The method of evaluation (e.g. oral, written) shall depend on the organization and its resources. The evaluation should elicit the RN's ability to:
  - A. Identify relevant components of a history, physical, and psychosocial assessment.
  - B. Interpret data and develop a plan for care and teaching.
  - C. Describe how to safely and effectively care for the patient receiving RT according to organizational policy, if applicable.
  - D. Describe potential complications, adverse events, side effects and toxicities and appropriate interventions.
  - E. Identify appropriate education and support for the patient receiving treatment.
  - F. Demonstrate knowledge of RT and combined modality protocols and guidelines.
5. The clinical practice component follows the completion of the theoretical component and shall include supervised clinical experience with an RN who has specialized knowledge, skill, critical thinking, and clinical judgment in RNP. The clinical component shall include, at a minimum, the following:
  - A. Demonstration of assessment and clinical skills, the interpretation of data and the approach used by the RN with patients living with cancer.
  - B. Demonstration of the CANO/ACIO RNP competencies relevant to their practice setting.
  - C. Access to collegial clinical support and preceptorship.
  - D. An objective and subjective evaluation of the clinical experience. CANO/ACIO recommends that this assessment be based on the CANO/ACIO RNP S & C and organization-specific goals and standards (see Standard A).
6. A RNP continuing competence program shall support RNs to:
  - A. Assess their learning needs related to care of the patient receiving cancer RT in their designated role and setting, using identified tools and agreed upon subjective and objective measures. These tools may be derived from the CANO/ACIO RNP S & C and provincial requirements.
    - I. Methods for identification of learning needs shall include self-assessment and one or more of the following:
      1. Peer/colleague feedback on performance.
      2. Practice interview.
      3. Review of professional portfolio.
    - II. Develop individualized learning plans to support RNs to achieve their specified goals. Strategies to achieve the goals may include:

1. Preceptorship.
  2. Mentorship.
  3. Education sessions.
  4. Review of relevant literature.
  5. Completion of certification programs and maintenance of certification (e.g. CNA Oncology Certification).
  6. Completion of self-learning programs.
  7. Participation in development of new education programs and materials or other creative learning strategies.
- III. Report evidence of continuing competence. Tools and methods for providing evidence of continuing competence in RT may include:
1. Peer/colleague feedback.
  2. Professional portfolio.
  3. Continuing education hours.
  4. Documentation of results from continuing education programs and certification programs.
  5. Hours of practice.
  6. Written examination.
  7. Structured clinical examination.

## CONCLUSION

RONP S & C were identified by CANO/ACIO membership as a top priority. A committee of CANO/ACIO members worked with radiation oncology nursing experts to develop evidence-informed national RONP S & C. These standards aim to ensure high quality radiation oncology nursing services for patients with cancer living across Canada.

# Appendix A: GLOSSARY

## Adverse Event

"Any unfavorable or unintended symptom, sign, or disease (including abnormal lab value) temporarily associated with the use of a medical treatment or procedure that may or may not be considered relevant to the medical treatment or procedure. Such effects can be intervention related, dose related, route related, patient related, caused by an interaction with another drug." (21)

## Coaching

"A patient education method that guides and prompts patients to be active participants in behavior change. Coaching directs patients through an activity in an effort to improve outcomes. This direction might include education, goal setting, encouragement, and support of activities to reach personal objectives." (22)

## Continuing Competence

"The ongoing ability of an RN to integrate and apply the knowledge, skills and judgment and personal attributes required to practice safely and ethically in a designated role and setting." (23)

## Leadership

"Essential element for quality professional practice environments where RNs can provide quality nursing care. Key attributes of a RN leader include being an: advocate for quality care, a collaborator, an articulate communicator, a mentor, a risk taker, a role model and a visionary". (24)

## Professional practice

"Each RN is accountable for safe, compassionate, competent and ethical nursing practice.

Professional practice occurs within the context of the Code of Ethics for RNs (18), provincial/territorial standards of practice and scope of practice, legislation and common law. RNs are expected to demonstrate professional conduct as reflected by the attitudes, beliefs and values espoused in the Code of Ethics for RNs. Professional nursing practice is self-regulating. Nursing practice requires professional judgment, interprofessional collaboration, leadership, management skills, cultural safety, advocacy, political awareness and social responsibility. Professional practice includes awareness of the need for, and the ability to ensure, continued professional development. This ability involves the capacity to perform self-assessments, seek feedback and plan self-directed learning activities that ensure professional growth. RNs are expected to use knowledge and research to build an evidence-informed practice." (25)

## Post-basic

Refers to activities such as education that occur after completion of undergraduate education.

## Quality Practice Environment

A quality practice environment maximizes outcomes for clients, RNs and systems. Quality practice environments demonstrate the following characteristics: communication and collaboration, responsibility and accountability, realistic workload, leadership, support for information and knowledge management, professional development and a workplace culture that values the well-being of clients and employees. (16)

## Radiation Oncology Nursing (RON)

The sub-specialty of oncology nursing involving the care of patients receiving RT.

## Radiation Oncology Nursing Practice (RONP)

The nursing care required by patients during RT to maintain health, to monitor their experience of RT and to manage problems that arise. This may include but is not limited to assessment, therapeutic communication, coordination of care, education and information, access to resources, psychosocial support, and referral to specialized services and professionals to manage identified problems.

## Radiation Therapy (RT)

Radiation Therapy refers to a treatment modality using electromagnetic high energy x-rays or other radiation particles (radionuclides / radioisotopes) to treat cancer or benign conditions. (1)

## Safe handling

“The use of engineering controls, administrative controls, work practice controls and personal protective equipment to minimize occupational exposure to hazardous agents.” (26)

## Side effects

“Any result of a drug or therapy that occurs in addition to the intended effect, regardless of whether it is beneficial or undesirable.” (27)

## Specialized Oncology Nurse

“An RN who has a combination of expanded education focused on cancer care and experience, such as two years in a setting where the primary focus is cancer care delivery. The Specialized Oncology Nurse might acquire specialty education through a variety of ways; for example, enrolment in an undergraduate nursing program, completion of an Oncology Certificate Program, distance specialty education or registration in and completion of the certification exam offered by the Canadian Nurses Association and attainment of the distinction CON(C). The Specialized Oncology Nurse is one who works in a specialized inpatient setting, such as an oncology unit, or bone marrow transplant unit, or in an ambulatory setting where focused on the delivery of cancer care, or in a screening program or in a supportive care setting or community setting offering palliative care.” (19)

## Toxicity

Toxicity is not clearly defined by regulatory organizations. The National Cancer Institute (NCI defines) toxicity ... as an adverse event that has a possible, probable, or definite attribution”. (28)

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