

# Chapter 7

## Oncology Nursing Care



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Cancer is a leading cause of death worldwide, accounting for nearly 10 million deaths in 2020 [1]. This is due to many risk factors such as aging society, alcohol abuse, smoking, obesity, and lack of physical activity [2]. It is essential to deliver high-quality nursing care, from prevention and screening to end-of-life care. As research and scientific discoveries are incorporated into cancer treatment, nurses working in the oncology field should be well educated and be prepared to play an integral role in delivering complex treatment regimens and targeted cellular therapies. Therefore, focusing on specialized oncology nursing practice through advanced education will ensure successful care delivery.

By utilizing established standards and competencies to provide oncology nursing care, nurses will improve their knowledge and skill set. Nurses new to oncology, as well as experienced nurses from other specialties, should receive the required competencies to provide high-quality care to cancer patients. According to the Institute of Medicine [3], these include leadership, health policy, system improvement, research and evidence-based practice, teamwork and collaboration, community and public health, geriatrics, and oncology. Documentation supporting the development and validation of nursing competency is frequently required of accreditation agencies, including the American College of Surgeons and The Joint Commission, as part of the accreditation and reaccreditation process [4].

Any oncology setting should have policies to document any additional qualifications of specialized staff providing care to the cancer patient, especially regarding chemotherapy administration and documentation. The 2016 updated American

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Society of Clinical Oncology/Oncology Nursing Society (ONS) chemotherapy administration safety standards recommend a minimum expectation for ordering, preparing, and administering chemotherapy [5]. There should be a comprehensive program for initial and ongoing oncology education requirements for all staff and a dedicated time frame for onboarding all new hires within the institution.

Oncology nursing continues to progress and can differ significantly across cultures. Currently, oncology nurses work in diverse settings such as hospitals, private physician clinics, outpatient infusions, radiation centers, home health agencies, and community settings, supporting many oncology disciplines. The oncology nurse's roles vary from a community focus of screening, detection, and prevention to a more intensive care focus such as blood and marrow transplantation. Regardless of the setting, nurses working in cancer care are responsible for focusing on patient assessment, management of symptoms, education, coordination, and supportive care.

According to the World Health Organization (WHO), there is a shortage of 7.2 million healthcare workers concerning health needs, whereas the report by the "Third Global Forum on Human Resources for Health" estimates that by 2035, the nursing deficit will reach 12.9 million [6]. With the growing shortages of health care professionals skilled in providing cancer care, the focus should be on providing oncology-specific training and competencies. Nursing staff shortages affect the quality or quantity of healthcare and decrease nurses' motivation regarding comprehensive care provision or care based on scientific principles [7]. This may lead to work overload, burnout, and increased nursing turnover. It is imperative to assess each clinical area's nursing unit structure and staffing needs and develop a nursing care model focused on evidence-based patient-centered care.

## **Oncology Inpatient Clinical Service Unit**

Oncology nurses play a vital role in delivering high-quality care to patients hospitalized with a cancer diagnosis. The oncology care nurse needs to develop a collaborative relationship with the physician to deliver exceptional comprehensive patient care. Depending on the type of clinical service unit (CSU) being established or maintained, the nurse-patient ratio must be assessed initially and again over time. By benchmarking with other institutions, identifying an appropriate ratio and skill mix can be validated for the individual unit type. Because of the increased acuity and workload on an oncology inpatient unit, registered nurses (RN) are a critical component of the healthcare delivery model. However, due to the limited number of RNs in many countries around the world, it is suggested each institution assesses the individual characteristics of their nurses, their work environments, and their patient population [8] to ensure the appropriate skill mix has been identified. For example, the inpatient blood and marrow transplant unit would use a primary model with

highly trained nurses and a lower nurse–patient ratio due to the complexity of care being delivered. In contrast, a medical oncology unit may have a higher nurse–patient ratio but utilize non-licensed personnel to assist with care. Based on the clinical unit’s care and scope, one must consider what their staff may require to meet patient needs.

With the administration of antineoplastic agents occurring mostly on inpatient units, a global standard is recommended to ensure safe handling and administration for the care nurses by following the Oncology Nursing Society (ONS) guidelines. Nurses working in cancer care are responsible for education before start of treatment, safe drug handling; two-person independent verification of chemotherapy with the calculation of drug dosage based on body surface area, insertion of intravenous lines or accessing central venous devices; and continuous intense monitoring to identify early recognition of oncologic emergencies. Nurses specifically working in radiation oncology require an additional skill set. During basic nurse training, many nurses do not have the opportunity to participate in any radiation-related courses. To prevent nurses from exposure, it is necessary to provide the healthcare nurse with the appropriate knowledge of radioactive contamination. The nurse will also be responsible for symptom management assessment of skin rashes and communication of any toxicities identified.

## **Ambulatory Setting**

Although an inpatient care delivery model can be transitioned to an ambulatory model easily, an assessment is imperative to understand the model’s cost-effectiveness and efficiency while supporting high-quality care and positive patient outcomes. With the increased number of complex oncology patients transitioning to ambulatory care, highly skilled nurses’ requirements are as crucial as in the inpatient setting. Choosing the correct nursing care delivery model will need to include patient-centered care while considering the increased complexity of nursing care requirements, monitoring quality metrics and patient outcomes, and implementing cost-containment measures such as drug costs. No standard staffing model or nurse-to-patient ratio exists for ambulatory infusion or chemotherapy treatment and radiation centers [9].

With this fast-paced setting, including the rapid turnover of patients, experienced nurses may be preferred. Ambulatory settings should consider many variables when creating a staffing model, for example, the physical location assessment: freestanding clinic versus attached to the hospital, types of service provided, hours of operation, patient population mix, and care needs. Acuity-based models should not be based solely on the patient’s time in the treatment center and consider the complex care being administered. Implementing supportive protocols such as electrolytes, blood supplementation, and fever workups allow nurses’ autonomy and immediate care delivery with minimal delay.

## **Oncology Role Outside of the Clinical Setting**

With cancer care transitioning to the ambulatory setting, patients and caregivers have to manage symptoms and side effects of treatment in their home. Many of these patients travel from afar to receive cancer therapy. The nurse should serve as the first line of communication. From the referral process to end-of-life care, the patient and or/family should be able to contact an oncology nurse by phone during their entire continuum of care. By developing a triage support system, the patient will have consistent communication with their health care team, allow for emotional support, and identify any emergencies. A nursing care triage model can support various settings, including ambulatory clinics and outpatient infusion areas, supporting increased patient satisfaction and positive patient outcomes. For example, for a patient calling with a fever, an evidence-based protocol with a physician order set embedded would reduce the time to receive antibiotics and potentially decrease a patient's length of stay in the hospital. It is also essential to assess hours of operation and a need for 24-hour access.

With global technology increasing and patients traveling from afar, is there an opportunity, when able, to leverage telehealth for remote symptom management. For some remote geographic areas, telecommunication technology may allow nurses a vehicle to provide nursing care to patients in alternative care sites such as patient homes, shelters, and nursing homes. Nurses can provide numerous services in these areas, such as patient education, coordination of care, arranging appointments, and symptom management with physician resource support. Utilizing telehealth and other types of remote technology, nursing can help eliminate barriers, time, and distance a patient may experience living in remote areas and assess as part of the care delivery model.

## **Survivorship/Palliative Care and Hospice**

As cancer survivors grow, nurses often play a pivotal role during the survivorship plan of care. Once a patient's treatment regimen is completed, patients are often at a loss of managing their long-term side effects, emotional distress, and economic burden lacking the knowledge they can reach out to address these concerns. By providing specialized training for long-term oncology care, nurses can deliver guidance, education, and appropriate referrals to address various issues. These real-life situations can help the cancer care community develop optimal care algorithms and identify the interprofessional team members for survivorship care delivery [10]. Depending on how far the patient may travel for cancer survivorship care, a telehealth platform may benefit a particular institution.

Palliative care is necessary to support comprehensive cancer care. As the trend in healthcare moves from a fee-for-service model to a patient-centered, value-based model, the expectation is that an increase will occur in the integration of palliative

care into comprehensive oncology care [11]. Nurses have learned to incorporate caregiver goals into the plan of care. A cancer diagnosis often results in distress in the physical, psychosocial, spiritual, and emotional domains of care. Today, palliative care nursing focuses on care delivery to individual patients and families, within specific disease populations, and palliative care issues within health care and society as a whole entity. Proper training is essential to have the knowledge and skillset to address the numerous facets of cancer. The Hospice and Palliative Nursing Certification (CHPN) was developed in 1994 to support additional education and guidance in this field of nursing. Once the care nurse has a few years of experience, certification is recommended to support continued education in this field.

With the increased aging population in developed countries worldwide, patients may choose to have end-of-life care in various settings such as a hospital, outpatient facilities, or at home. Both new and seasoned oncology nurses need to be comfortable providing end-of-life nursing care. Training programs exist, End-of-Life Nursing Education Consortium (ELNEC), focusing on nursing education to deliver optimal end-of-life care to patients and their families [12]. Burnout is a significant concern for the oncology nurse delivering end-of-life care. To support resilience and sustain the workforce, oncology nurses need strategies on how to support these complex patients, their families, and themselves to be successful in delivering high-quality end-of-life care.

In conclusion, the care nurse plays a vital role in delivering oncology care, including administering multiple and complex treatment regimens. The coordination encompasses direct patient care, documentation in the medical record, participation in therapy, symptom management, organization of referrals to other healthcare providers, family and patient education, and diagnosis, therapy, and follow-up. Providing continuous education and competencies to the care nurse, implementing evidence-based practice, and identifying the appropriate nursing care delivery model will support quality care delivery in these complex environments.

## References

1. Ferlay J, Ervik M, Lam F, Colombet M, Mery L, Piñeros M, et al. Global Cancer Observatory: Cancer Today. Lyon: International Agency for Research on Cancer; 2020 (<https://gco.iarc.fr/today>).
2. Torre LA, Bray F, Siegel RL, Ferlay J, Lortet-Tieulent J, Jemal A. Global cancer statistics, 2012. *CA Cancer J Clin*. 2015;65(2):87–108.
3. Institute of Medicine. The future of nursing: leading change, advancing health. Washington, DC: National Academies Press; 2011. <https://doi.org/10.17226/12956>.
4. Gaguski ME, George K, Bruce SD, Brucker E, Leija C, LeFebvre KB, Mackey H. Oncology nurse generalist competencies: oncology nursing society's initiative to establish best practice. *Clin J Oncol Nurs*. 2017;21(6):679–87. <https://doi.org/10.1188/17.CJON.679-687>
5. Oncology Nursing Society. Oncology nurse generalist competencies. 2016. Retrieved from <http://bit.ly/2fisCmx>.
6. Marć M, Bartosiewicz A, Burzyńska J, Chmiel Z, Januszewicz P. A nursing shortage—a prospect of global and local policies. *Int Nurs Rev*. 2019;66(1):9–16.

7. Dehghan-Nayeri N, Shali M, Navabi N, Ghaffari F. Perspectives of oncology unit nurse managers on missed nursing care: a qualitative study. *Asia-Pacific J Oncol Nurs*. 2018;5(3):327–36. [https://doi.org/10.4103/apjon.apjon\\_6\\_18](https://doi.org/10.4103/apjon.apjon_6_18).
8. Kouatly IA, Nassar N, Nizam M, Badr LK. Evidence on nurse staffing ratios and patient outcomes in a low-income country: implications for future research and practice. *Worldviews Evid-Based Nurs*. 2018;15(5):353–60. <https://doi.org/10.1111/wvn.12316>
9. Society, O. ONS staffing position statement: ambulatory treatment centers. *Oncol Nurs Forum*. 2020;47(1):15.
10. Rosenzweig MQ, Kota K, van Londen G. Interprofessional management of cancer survivorship: new models of care. *Semin Oncol Nurs*. 2017;33(4):449–58. WB Saunders
11. Dailey E. The evidence behind integrating palliative care into oncology practice. *Clin J Oncol Nurs*. 2016;20(4):368.
12. Glover TL, Garvan C, Nealis RM, Citty SW, Derrico DJ. Improving end-of- life care knowledge among senior baccalaureate nursing students. *Am J Hospice Palliat Med*. 2017;34(10):938–45.

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