

Cardio-oncology is a unique subspecialty within oncology nursing that focuses on the assessment, identification, and management of cardio-toxicity induced or exacerbated by cancer treatment. Nurses are pivotal to the delivery of evidence-based assessment of and care for individuals who have preexisting cardiac conditions, as well as those for whom cardiac complications are related to the known and emerging toxicities of cancer treatment.

#### AT A GLANCE

- Cardio-oncology is a continually evolving specialty in the field of oncology nursing.
- Cardio-oncology is focused on the unique cardiac toxicities that are caused by, as well as pre-existing cardiac conditions that can be exacerbated by, a cancer diagnosis and its treatment.
- As more patients receive care—both those with pre-existing cardiac conditions and those with known or newly discovered treatment-related cardiotoxicities—it is important for oncology nurses to understand the foundational principles of cardio-oncology care, as well as opportunities for subspecialty in this area.

#### KEYWORDS

cardio-oncology; cancer; heart disease; cardiotoxicities; specialty role; nursing

#### DIGITAL OBJECT

#### IDENTIFIER

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# Cardio-Oncology

A continually evolving subspecialty in oncology nursing

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**F**ebruary, which is American Heart Month, is the optimal time to consider the unique role of heart health in the context of cancer care. As the two leading causes of death in the United States (National Center for Health Statistics, 2020), cancer and cardiac disease share an ominous connection that is further exacerbated when they occur concurrently. Increased overall survival for patients with cancer coupled with chronic cardiac conditions or treatment-induced cardiotoxicities increasingly requires comanagement of cancer and heart disease (Gilchrist et al., 2019). The number of cancer survivors is expected to increase to more than 22 million by 2024, the majority of whom (64%) are aged 65 years or older (Miller et al., 2019). This is the same age at which the risk of heart disease, including heart failure, is more likely to occur. Individuals with cancer may present with a preexisting cardiac condition or may develop treatment-induced cardiotoxicities, both of which can affect treatment course, symptom burden, and overall survival (Johnson et al., 2016). Cardiotoxicity is well established for anthracyclines and novel targeted kinase inhibitors (Bellinger et al., 2015; Herrmann & Lerman, 2014) but has also been observed with radiation therapy (Niska et al., 2018) and immunotherapies (Lobenwein et al., 2020) (see Table 1). Given the potential for cardiac complications induced or exacerbated by treatment and the increasing population of individuals with potential for these comorbidities, it is important for oncology nurses to have insight

into the assessment, identification, and management of cardiac complications in the context of cancer care. In this article, the author presents the role of cardio-oncology as a subspecialty of oncology care, with insights into how nurses across practice settings can integrate evidence-based care for individuals with cancer and cardiac complications, as well as pursue educational and training opportunities to specialize in this increasingly important field of oncology nursing.

#### Defining Cardio-Oncology

Cardio-oncology is the intersection of two specialties (oncology and cardiology); the goal is the treatment of cardiovascular disease in patients with cancer (Cardinale et al., 2008; Herrmann & Lerman, 2014), with particular focus on the adverse effects of cancer therapy (Lenihan et al., 2016). Following cancer treatments in many patients, the risk of cardiovascular death may be higher than the actual risk of tumor recurrence (Yeh, 2006). Baseline risk factors and heart disease being equal, patients previously treated with chemotherapy (particularly those treated with anthracyclines) have been shown to have an increased risk of cardiomyopathy, heart failure, and myocardial infarction in the subsequent 20 years (Herrmann, 2020). With growing demand in cancer care, a number of cardio-oncology clinics (Fradley et al., 2017; Snipelisky et al., 2017) are emerging across the United States, not just in primary cancer institutions, but also in general hospitals and in community centers. As such, it is essential for nurses