Providing comprehensive care for patients with cancer is complex with regard to severe treatment-related side effects. Hundreds of thousands of patients with cancer visit the emergency department (ED) each year, and more than half report multiple visits. In the United States, few of the National Cancer Institute–designated cancer centers have an ED specifically for patients with cancer. EDs often are an overcrowded and expensive way in which to care for the urgent needs of patients with cancer. In addition, a looming shortage exists for both primary care providers and oncologists who can address symptom issues. As the Affordable Care Act is implemented, more patients will enter the healthcare system, placing a demand on providers that the current supply cannot meet. A report from the Institute of Medicine advocates that nurse practitioners (NPs) are more than competent to provide for the unique urgent care needs of patients with cancer. The aim of this article is to describe an NP-led urgent care center for patients with cancer and how that care center provides access to vital, expeditious, and cost-effective care.

Newly diagnosed cases of cancer in the United States are estimated to reach 1,660,290 in 2013, with 580,350 deaths expected (American Cancer Society [ACS], 2013). This projected total does not include carcinoma in situ and squamous and basal skin cancers. In many cases, cancer has become a treatable chronic disease with an average five-year survival rate of 67% for all cancers in 2007, an increase from 49% in 1977. One concerning element is that the total cost of cancer care is more than $226.8 billion per year (ACS, 2013). This projected total does not include carcinoma in situ and squamous and basal skin cancers. In many cases, cancer has become a treatable chronic disease with an average five-year survival rate of 67% for all cancers in 2007, an increase from 49% in 1977. One concerning element is that the total cost of cancer care is more than $226.8 billion per year (ACS, 2013).

About 90% of patients diagnosed with cancer are treated in the ambulatory care setting (Rubenstein, 1998). Health insurance carriers no longer allow fees for service payment, thus forcing providers and institutions to provide holistic cancer care in the ambulatory setting (Mistry & Litaker, 2000). Discoveries of molecular-targeted oral agents also have contributed to a more customized approach to cancer treatment, increasing the number of patients treated in the outpatient setting (Aisner, 2007).

Although the ambulatory setting is a cost-effective, safe, and comfortable environment in which to deliver cancer treatment, it places direct responsibility of complex therapy-related symptom management on the patient. Despite efforts by the oncology team to educate patients and families on management of treatment-related side effects, patients often continue to use the hospital emergency department (ED) for urgent care (Mayer, Travers, Wyss, Leak, & Waller, 2011). Patients with lung cancer make up the majority of patients admitted to the hospital from the ED. About 8% of patients diagnosed with cancer are admitted to the hospital from the ED, suggesting that those treated and released from the ED could have received care in the oncology ambulatory setting (Mayer et al., 2011). In addition, 71% of patients were admitted to the hospital from the ED within the final two weeks of life, suggesting a need for comprehensive and coordinated palliative care programs for all patients with cancer (Barbera, Taylor, & Dudgeon, 2010).

Some of the chief motivations for a visit to the ED were related to nausea and vomiting, pain, and fever within six months after receiving chemotherapy treatment (McKenzie et al., 2011). McKenzie et al. (2011) reported that 316 patients made 469 unplanned ED visits, demonstrating a need for improved continuity of care in the ambulatory setting. Bozdemir et al.
TABLE 1. Patients With Cancer Seeking Care in the ED

<table>
<thead>
<tr>
<th>Study</th>
<th>Sample</th>
<th>Top Reasons for Presentation to the ED</th>
<th>Most Common Cancer Diagnosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barbera et al., 2010</td>
<td>194,017 visits; 76,759 patients</td>
<td>Abdominal pain, dyspnea, pneumonia, and malaise or fatigue</td>
<td>Lung cancer (no percentage reported)</td>
</tr>
<tr>
<td>Bozdemir et al., 2009</td>
<td>324 visits; 245 patients</td>
<td>Pain, dyspnea, nausea and vomiting, and fever</td>
<td>Non colorectal GI cancers (23%) and lung cancer (22%)</td>
</tr>
<tr>
<td>Mayer et al., 2011</td>
<td>37,760 visits; 27,644 patients</td>
<td>Pain, respiratory distress, GI-related issues, and malaise</td>
<td>Lung cancer (no percentage reported)</td>
</tr>
<tr>
<td>McKenzie et al., 2011</td>
<td>469 visits; 316 patients</td>
<td>Nausea and vomiting, pain, fever, and dyspnea</td>
<td>Breast cancer (21%) and lung cancer (20%)</td>
</tr>
</tbody>
</table>

ED—emergency department; GI—gastrointestinal

(2009) suggested that improved outpatient management of nausea and vomiting and pain can decrease visits to the ED by patients with cancer. Table 1 describes the most prevalent reasons cited in previous research why patients with cancer seek care in the ED.

Uramoto, Iwashige, Kagami, and Tsukada (2007) conducted research to establish criteria that would predict the need for emergency hospitalization in patients with cancer receiving chemotherapy. Of the 158 patients studied, the main reason for admission to the ED was infection. Patients with an Eastern Cooperative Oncology Group performance status score of 2 had a higher rate of admission. Patients with a score of 2 are those who cannot perform activities of daily living without assistance. The outcome of the study suggested that, by combining selected clinical information for outpatients, the need for emergency hospitalization could be predicted. However, Uramoto et al. (2007) did have difficulty predicting an oncologic emergency related to increased patient comorbidities.

Urgent Care Versus Emergency Care

Urgent care is defined as health care provided on a walk-in basis for the treatment of acute illness or injury that is not life or limb threatening (Urgent Care Association of America [UCAOA], 2011). Emergency care involves the treatment of patients with life-threatening conditions and traumatic events to nonurgent conditions in which patients believe they have no alternative point of care (Zilm, 1999).

Most of the 51 million uninsured Americans seek care in the ED for minor issues that are nonurgent (Simonet, 2009; Zilm, 1999). ED visits increase by an average of 17 million visits per year (Press Ganey, 2010). Mayer et al. (2011) found that 499,000 ED visits by patients with cancer occurred in 2007, at a total cost of $777.24 million. The average cost per ED visit averaged $1,038 (Mayer et al., 2011).

As part of a solution in alleviating overcrowded EDs for patients with nonurgent needs, urgent care centers serve as a viable alternative (UCAOA, 2011). Merritt, Naamon, and Morris reported that a designated urgent care center for pediatric patients provided timely and safe care and lessened the use of the ED for non-life-threatening acute conditions. Urgent care centers serve as a viable alternative for care in comparison to often overcrowded EDs in which patients can wait for hours to be seen, thus prolonging their pain and suffering (UCAOA, 2011). Nurse practitioners (NPs) are used in urgent care centers as well as “fast track” areas of the ED to provide treatment for minor conditions (Weinick, Burns, & Mehrotra, 2010; Zilm, 1999).

Nurse Practitioners as Independent Urgent Care Providers

NPs are advanced practice registered nurses (APRNs) with advanced degrees; the position has been in existence since the late 1960s as a result of a physician shortage and was used initially in adult and pediatric primary care settings (Murphy-Ende, 2002). The NP role has seen its largest growth since the 1990s; growing faster than the supply of physicians in response to use restrictions of the medical physician resident training imposed by the Accreditation Council for Graduate Medical Education in 2003 (Moote, Krsek, Kleinpell, & Todd, 2011). NPs have expanded from working in primary care settings to specialty and subspecialty roles. The oncology NP has evolved since the early 1990s from functioning in palliative care to managing patients with cancer in multiple settings (Murphy-Ende, 2002). More than 155,000 NPs are practicing nationwide, with a projected total of 224,000 by 2015 (Auerbach, 2012). A report from the Institute of Medicine ([IOM], 2011) on the future of nursing suggests that APRNs should be able to practice to the full extent of their education and training and be full partners with physicians and other professionals in providing health care for all people in the United States. The NP in the oncology urgent care setting is in a perfect position to provide comprehensive symptom management to patients and potentially help those patients avoid an ED visit or even a hospital admission.
Another physician provider deficit is looming, with a predicted shortage of about 159,000 physicians by the year 2025 (American Association of Medical Colleges, 2012). Within the medical discipline, oncologists will suffer a significant shortage by the year 2020 (American Society of Clinical Oncology [ASCO], 2007). ASCO (2007) predicted that the roughly 4,000 oncologist deficit is related to an increase in patients diagnosed with cancer. One of ASCO’s proposed solutions in alleviating the shortage and keeping up with the patient demand is to increase the use of NPs and physician assistants (PAs) via a collaborative approach to cancer care (ASCO, 2007).

Moote et al. (2011) studied the use of PAs and NPs in academic medical centers around the United States and found that NPs and PAs were used the most (92%) within the oncology setting. These nonphysician providers were viewed in academic medical centers as being key to improving length of stay and decreasing adverse events and mortality. More importantly, NPs and PAs were viewed as vital to continuity of care and increasing adherence to best practice guidelines as well as enhancing communication among all members of the healthcare team (Moote et al., 2011).

Although the NP role has existed since the 1960s, NP clinical practice has been studied more extensively in recent decades and is considered by patients to be comprehensive, safe, satisfying, cost effective, and, in most cases, equal to that of a physician in the same practice environment (Chang et al., 1999; Graham & Dellinger, 2001; O’Hara, O’Keefe, Mason, Coster, & Hutchinson, 2012; Robles et al., 2011; Ryan & Rahman, 2012). Specific to the urgent care setting, Ryan and Rahman (2012) evaluated patient satisfaction with NP services in a rural urgent care center and found that patient needs were met across the healthcare spectrum. Sakr et al. (2003) studied clinical effectiveness and costs of minor injury services provided by NPs versus traditional care in the ED by physicians. Results showed that the care delivered by the NP within a minor injury service unit was equal or better than the care provided by the physician in the traditional ED unit. NPs had shorter wait times, referred patients for follow-up care more often, spent more time with patients, and had fewer errors in care than the physicians (Sakr et al., 2003).

Establishing an Urgent Care Center

The immediate care center (ICC) is a model example of what the IOM (2011) report advocates related to patient care given by an APRN. The Ohio State University Comprehensive Cancer Center—Arthur G. James Cancer Hospital and Richard J. Solove Research Institute is a large university medical center. The ICC unit is an NP-run walk-in environment that functions as a vital place in which patients with cancer receive urgent care services associated with comprehensive symptom management within the continuum of cancer care. Development of the ICC occurred after physician providers and hospital administrators noted a significant population of patients with cancer used the ED for needs that could be addressed more efficiently and expeditiously in an urgent care setting. In addition, physician clinics were too full to accommodate same-day scheduling of patient visits. The mission of the ICC is to reduce unnecessary ED visits and to manage symptoms that could result in hospitalization. At the inception of the ICC, the NP was identified as the qualified provider of care. Because patient volume within an urgent care setting cannot be predicted, the unit also was initially designed to handle NP-performed procedures such as bone marrow biopsies and paracentesis that patients with cancer would need for diagnosis or alleviation of symptoms. The ICC acquired independent unit space within the hospital so that they could share supportive care services with inpatient units such as radiology, laboratory, and pharmacy, as well have the ability to transfer patients to the ED or intensive care unit should a cardiac arrest or other emergency arise. Staffing design included a nurse manager, staff nurses, and a clerical person. The hospital would bill insurance carriers for physician-performed services, and the NP would bill for provider services separately. Since 2004, the ICC has expanded from an 8-hour unit with one NP to a 16-hour unit with three NPs.

For quality assurance purposes, data were collected in 2004 and again in 2010 to track the reasons patients with cancer sought urgent medical attention in the ICC. In 2004, 3,634 visits were conducted in the ICC. The top five reasons for patient visits were dehydration as the predominant diagnosis (35%) in 2004, followed by acute pain (17%), anemia (12%), nausea and vomiting (11%), dyspnea (10%), and fever (6%). In 2010, 3,009
A nurse practitioner-led urgent care center provides immediate supportive care vital to patients with cancer, ultimately leading to decreased morbidity and mortality rates.

Early research has shown that specialized urgent care units can decompress overcrowded emergency departments while decreasing healthcare costs.

Additional research should focus on collecting admission and cost analysis data for patients with cancer as well as data on the expanded use of the nurse practitioner in roles traditionally held by physicians.

The ICC serves as a critical unit in which patients can be seen the same day without an appointment. The primary oncology team initially triages patient calls, followed by phone communication by the NP for additional assessment. The ICC does not use an acuity system because all referrals are treated as urgent. Complaints from patients with cancer often are more complex than the telephone triage process can delineate. NPs educated in oncology are specifically equipped to manage cancer-related issues before they become so severe that they necessitate hospitalization. Patients often are seen within minutes of arrival to the ICC, which leads to a faster relief of the symptoms versus an average four-hour visit in the ED (Press Ganey, 2010). Patients with neutropenic fever can receive antibiotic treatment within a few minutes in the ICC versus 1.7 hours in the ED, which can lead to an automatic admission to the hospital when expeditious care could warrant closely monitored outpatient treatment (Weinick et al., 2016). A patient with a mild complaint of pleuritic chest pain can get a computed tomography pulmonary embolism study, receive a dose of low-molecular weight heparin complete with self-injection teaching, and be discharged within two to three hours in the ICC.

The ICC is an invaluable facility that provides excellent urgent care services to patients with cancer; however, it has its limitations. The ICC lacks space to provide for the actual need of the population it serves, partly because the unit shares the floor with another area designated for patients undergoing transplantation. Another limitation is that the ICC does not provide cardiac monitoring, which forces the ED to be used for chest pain or treatments that require such monitoring, including aggressive electrolyte replacement infusions if indicated. Unit improvements that could occur should focus around increasing space in which to see more patients, increasing processing priority of diagnostic tests equal to that of the ED, and increasing accessibility to a specialist within the same day.

**Unit Limitations**

**Benefits of a Nurse Practitioner-Led Urgent Care**

Many benefits exist to having an urgent care center specifically for patients with cancer. The most significant is the reduction of ED visits for oncology-related symptom management. Providers in the ED may be ill equipped to quickly address common cancer-related symptoms such as pain, vomiting, or bowel issues in immune-compromised patients with cancer. The ICC serves as a critical unit in which patients can be seen the same day without an appointment. The primary oncology team initially triages patient calls, followed by phone communication by the NP for additional assessment. The ICC does not use an acuity system because all referrals are treated as urgent. Complaints from patients with cancer often are more complex than the telephone triage process can delineate. NPs educated in oncology are specifically equipped to manage cancer-related issues before they become so severe that they necessitate hospitalization. Patients often are seen within minutes of arrival to the ICC, which leads to a faster relief of the symptoms versus an average four-hour visit in the ED (Press Ganey, 2010). Patients with neutropenic fever can receive antibiotic treatment within a few minutes in the ICC versus 1.7 hours in the ED, which can lead to an automatic admission to the hospital when expeditious care could warrant closely monitored outpatient treatment (Weinick et al., 2016). A patient with a mild complaint of pleuritic chest pain can get a computed tomography pulmonary embolism study, receive a dose of low-molecular weight heparin complete with self-injection teaching, and be discharged within two to three hours in the ICC.

The NPs in the ICC are able to get results of diagnostic tests faster than in other ambulatory care settings and perform the necessary procedures for patient symptom relief instead of referring the patient to another specialist. For example, a patient with a symptomatic pleural effusion can receive a therapeutic thoracentesis by a NP in the ICC and be discharged home within hours. The ICC also serves as a place in which patients can receive other outpatient procedures such as bone marrow biopsies, lumbar punctures, paracentesis, skin punch biopsies, and intrathecal chemotherapy, all performed by the NP. Patient satisfaction scores from the Press Ganey (2010) ambulatory patient satisfaction data system are monitored quarterly in the ICC and have been consistently above 80%, indicating that patients receive quality care by the NP. The ICC also uses a primary nurse model that allows for recurring patients to be seen by a familiar nurse. An established rapport is beneficial when evaluating an acute illness or symptom because the patient tends to be less anxious, and the nurse has insight on the patient’s overall well-being.

**Conclusion**

An NP-led oncology urgent care clinic can serve as a vital alternative for meeting the immediate complex needs of patients with cancer. Studies show that NPs provide competent, cost-effective, quality care and can alleviate overcrowded EDs. As the Affordable Care Act is implemented, millions of Americans will be placed into the healthcare system; that coupled with the looming physician shortage increased the need for NPs. Cancer centers must recognize the need for more comprehensive urgent care facilities tailored to the unique needs of patients with cancer, thus avoiding expensive ED visits and potential hospitalizations for patients.

The author gratefully acknowledges Tammy Lamb, MS, CNP, AOCN®, for the input and data that she provided about the urgent care unit.

**References**

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