The Evolution of a Malignant Hematology Nurse Practitioner Service

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Nurse practitioners (NPs) have been suggested as one possible solution to the predicted oncologist shortage. Although NPs are in a unique position to positively affect the care of patients with hematologic malignancies who are hospitalized, little information exists regarding the inpatient role of the NP in hematology and oncology. The purpose of this article is to describe the successful implementation and evolution of a highly functioning inpatient malignant hematology NP service.

At a Glance
• Inpatient nurse practitioner (NP) specialty teams may help to alleviate the anticipated oncologist shortage.
• Formal and on-the-job training for hematologic malignancies allow NPs to deliver safe, high-quality care to patients with complex medical and psychosocial needs.
• NPs are in an ideal position to affect the management of side effects and complications related to cancer and its treatment.

According to a report from the Association of American Medical Colleges (AAMC) Center for Workforce Studies (2007), a shortage of 2,500–4,000 oncologists is predicted by 2020. More recent data demonstrate that the number of oncologists aged 64 years or older is increasing more quickly than the overall number of oncologists (Kirkwood, Kosty, Bajorin, Bruinooge, & Goldstein, 2013). Increased use of advanced practice providers (APPs) has been suggested as one possible way to increase efficiency and productivity in oncology practices (AAMC Center for Workforce Studies, 2007; Kirkwood et al., 2013). Nurse practitioners (NPs) and physician assistants (PAs) are often grouped together as APPs because of overlapping responsibilities and similarity of roles (McCorkle et al., 2012). Towle et al. (2011) found that patients were extremely satisfied with the care delivered by an APP. In addition, physicians and APPs have stated that they have had high levels of satisfaction and positive professional experiences with collaborative practice models (Towle et al., 2011). Oncology NPs may play a major role in alleviating the predicted oncologist shortfall, and they should practice to the fullest extent of their education and scope of practice within their individual states (Bishop, 2009).

Inpatient NP roles in hematology and oncology have been only briefly described in the literature. The purpose of this article is to detail the successful expansion and advanced training of a highly functioning inpatient malignant hematology nurse practitioner (HNP) service at a large, academic-based medical center, the Arthur G. James Cancer Hospital and Richard J. Solove Research Institute (The James) at Ohio State University in Columbus.

Background

The HNP service at The James opened in January 2007 to provide safe and high-quality care to patients without complex needs who had been admitted for scheduled chemotherapy. The role and scope of this service has evolved during the past eight years to include caring for patients with complex medical and psychosocial needs. Specialty teams of APPs are an important trend for the future.

The HNP service began with two advanced NPs, including one with previous oncology experience who staffed the service. The HNP service provided continuity of care with familiar faces to patients admitted for successive treatments. This stood in contrast to the more traditional teaching service, which had attending physicians who rotated every two weeks, and house staff (i.e., students, interns, and residents) who switched every month. Collaborating physician coverage consisted of an attending hematologist, shared with the teaching service, with after-hours coverage provided by a rotating cross-cover physician.

New hematology NPs received education about hematology and oncology, including a general nursing orientation, as well as courses in chemotherapy, the basics of oncology nursing, and more advanced oncology care, all of which
were specific to The James. On-the-job training was provided for procedures (e.g., administering intrathecal chemotherapy; performing lumbar punctures, as well as bone marrow aspirations and biopsies; accessing Ommaya reservoirs). To complete orientation and the hospital credentialing process, the focus was not on caring for a large patient population. Initially, the program focused on patients with Hodgkin and non-Hodgkin lymphoma who had scheduled hospital admissions for treatment with either standard-of-care or clinical trial chemotherapy. Patients with multiple myeloma and chronic lymphocytic leukemia were later added to the population, increasing the number of patients who used the service.

In fiscal year (FY) 2009 (July 2008 to July 2009), a third NP completed orientation, and service coverage increased to two NPs most weekdays, with continued weekend coverage. The primary outpatient hematologist for each patient continued to be responsible for completing the admission history and physical examination, as well as establishing the chemotherapy treatment plan. Collaborating physician coverage was now provided by a dedicated attending physician on weekdays and by the teaching service’s attending physician on weekends. During this time, the NPs also precepted the medical students, interns, residents, and fellows in procedures.

Significant growth was experienced during FY 2010 (July 2009 to July 2010). This included hiring additional NPs with diverse backgrounds and skill sets, bringing the total NPs to five. Orientation expanded to include telemetry, electrocardiogram interpretation, and advanced cardiac life support. NP service coverage broadened to include most holidays. The primary focus remained on patients with hematologic malignancies who were hospitalized for routine treatment, but expanded to include patients with acute leukemia who were admitted to consolidation chemotherapy. Patient numbers and acuity began to increase as patients were admitted to the HNP service for the management of more medically complex issues, including the workup of new or relapsed lymphoma and the management of disease or treatment complications (e.g., febrile neutropenia, transition to hospice or end-of-life care). Prior to this expansion of services, the teaching service cared for patients with more complex medical needs.

Function of the Nurse Practitioner Service

The HNP service continued to evolve during the next few years, becoming a more collaborative, multidisciplinary team with the addition of dedicated patient care resource managers to facilitate discharge planning and specialty pharmacists. Collaborating physician coverage widened to include weekend coverage. In addition, subspecialty consultants (including those specializing in the fields of nephrology, cardiology, endocrinology, neurology, and infectious disease) and allied medical practitioners (e.g., social workers; dietitians; mental health clinical nurse specialists; physical, occupational, and speech therapists) were used with increased frequency. The educational needs of the NP continued to grow, paralleling the increased complexity of the patients; these needs were addressed by personalized training and mentorship. Educational inservices were provided by multidisciplinary team members, and opportunities to attend oncology-specific trainings and conferences were available. During this time, the medical center transitioned to an electronic medical record system for the ordering of medications, diagnostic tests, laboratory work, and consultations, as well as for clinician documentation. Although this transition was a challenge throughout the institution, it ultimately improved the quality of patient care.

Each NP cares for 5–9 patients per day, but this number can range from 3–12 patients depending on the census. On weekends and holidays, one NP cares for all of the patients, along with the attending physician. Patient assignments vary depending on acuity and taking into account admissions and discharges. Patients are assigned to the same NP each time, if possible, to maintain continuity of care. The NPs are responsible for obtaining a problem-focused history and completing a physical examination. They enter chemotherapy orders for the attending hematologist to review and sign.

NPs recognize and manage oncologic emergencies, as well as complications and toxicities caused by the cancer or its treatment. This often involves ordering and interpreting diagnostic or laboratory tests or placing consultations for appropriate services. The NPs participate in discharge planning and in educating patients and families. Members of the HNP service formally meet for morning rounds, orally reviewing the clinical case and plan of care of each patient.

The James evaluates patient satisfaction; however, determining what portion of that is specific to the NPs is impossible. In 2008, a brief patient satisfaction survey was developed by members of the HNP and the acute leukemia NP services. The survey was distributed to a small number of patients by staff nurses for completion at discharge. Although the survey was informal, the patient feedback was overwhelmingly positive.

Conclusion

NPs are in a unique position to positively affect the care of hospitalized patients in hematology and oncology. Little has been published on how to establish a highly functioning and independent inpatient NP hematology service. The James has successfully implemented an HNP service that is detail oriented and relationship based. The NPs are easily accessible to other members of the healthcare team, and they provide direction for patient care to nursing staff. Effective collegial communication exists between members of the HNP service and the primary outpatient hematology and oncology teams, further improving patient satisfaction. The HNP service has developed into a successful service for patients who require complex treatment; the service allows these patients to have a consistent clinician base with extensive training in managing side effects and complications related to cancer and its treatment with targeted therapies and chemoimmunotherapy. NPs involved with the HNP service have reported enjoying a high level of job satisfaction because of their ability to improve the care of hospitalized patients in hematology and oncology, as well as offer a solution for meeting the projected shortage in oncology.
References


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