Role of Oncology Clinical Pharmacists in Light of the Oncology Workforce Study

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Much effort and research have been presented over the past 3 years about the future of the practice of oncology. It is estimated that a significant shortage of qualified oncology and hematology health care professionals will be seen by 2020.^{1,2} To date, the information published regarding workforce implications has focused on physicians, nurse practitioners, and physician assistants.³ However, another clinical resource has been overlooked in available research and publications. There are a growing number of oncology clinical pharmacists who can assist with direct patient care and patient education activities. In fact, in certain states, clinical pharmacists are providing direct patient care. Nationally speaking, although it is not uncommon for a clinical pharmacist to practice at this level, there is a paucity of literature documenting this practice.^{4,5} This article serves to introduce these concepts and logistics.

In North Carolina, a pharmacist may become credentialed as a clinical pharmacist practitioner (CPP). This legislation came into effect in July 2000, outlining the need for CPPs and the importance of forming collaborative practices. CPPs are approved by both the board of medicine and board of pharmacy. A CPP is defined as a "licensed pharmacist in good standing who is approved to provide drug therapy management under the direction of, or under the supervision of, a licensed physician who has provided written instructions for a patient and disease-specific drug therapy which may include ordering, changing, substituting therapies or ordering tests."⁶ Similarly, within the Veterans Affairs (VA) system, a clinical pharmacist acts under a scope of practice with a supervising physician. Pharmacists who practice at this level generally have completed a 4-year pharmacy program (which now includes classes in physical assessment), 1 year of general residency, and 1 year of oncology/hematology specialty residency, producing highly qualified providers. Many oncology clinical pharmacists in the United States are also board-certified oncology pharmacists (BCOPs).

We would like to summarize four examples in North Carolina, which include the University of North Carolina, Moses H. Cone Health System, Duke University, and Charles George VA Medical Center. In November 2008, a board-certified oncology CPP was integrated into the University of North Carolina Lineberger Comprehensive Cancer Center–North Carolina Cancer Hospital (UNC Lineberger/NC Cancer Hospital; Chapel Hill, NC), the only public comprehensive cancer center in the state. The hospital serves as home to 110 faculty physicians. UNC Lineberger/NC Cancer Hospital physicians treat patients from every county in North Carolina, with more than

100,000 patient visits each year. The CPP has led the initiation of several programs focusing on improving the care of patients with cancer. The pharmacist played an integral part in the initiation of an outpatient supportive care service focusing on the management of symptoms resulting from cancer and cancer treatment. In the first year, 89 patients were seen, which included nearly 300 visits. With both provider privileges and prescriptive authority, the CPP was able to serve as provider during many of these visits, with only 42% of visits attended by a physician. This service provides focused attention on symptoms while allowing oncologists to spend more time on treatment of the primary disease. The CPP also initiated a first-cycle chemotherapy counseling service aimed at counseling all new patients on their chemotherapy and potential adverse effects. The pharmacist went on to establish a cancer-associated thrombosis clinic, which provides care for patients receiving anticoagulants so oncologists are not required to schedule these patients in their own clinics for routine monitoring of anticoagulation. All clinical activities of the CPP in the supportive care service, chemotherapy teaching service, and thrombosis clinic are billed through the development of pharmacy-specific billing codes with subsequent facility charges. The pharmacist also targeted improvement in infusion-clinic efficiency through the implementation of a rapid-infusion rituximab protocol. In the first year, it was estimated that nearly 600 hours of infusion time were saved, when compared with standard infusion. Finally, the CPP led an effort to develop chemotherapy order templates. Currently, more than 200 templates exist, which has greatly decreased the time oncologists spend writing chemotherapy orders and reduced the likelihood of prescription errors. In a short period of time, the UNC Lineberger/NC Cancer Hospital has proven the value of adding a CPP to ambulatory clinics; clinical outcomes have been affected, financial sustainability through billing of services has been established, and efficiency and safety in the chemotherapy infusion clinic have been improved. On the basis of the success of this pilot, the hospital has added a 0.5 CPP full-time equivalent dedicated to the infusion clinic as well as another full-time CPP dedicated to the stem-cell transplantation clinic.

The Moses H. Cone Oncology Clinic (Greensboro, NC) is an outpatient hospital-based clinic operating from Monday to Friday. Twelve hematology-oncology physicians practice in three separate locations: 10 physicians at the main location in Greensboro and one at each of the two satellite clinics approximately 15 miles to the east and west. The patient population is

primarily made up of those with solid tumors, with some instances of malignant and nonmalignant hematology. The main infusion center accommodates approximately 50 patients and approximately five anticoagulation patients per day. Within this health system, the CPP agreement was written to encompass a broad range of activities. Although there is one primary collaborative physician, other physicians in the practice are associates, which allows the CPP to participate in the care of associates' patients as well. Although the CPP has pharmacy management and admixture requirements, his clinical role encompasses seeing and assessing patients in a high-risk anticoagulation clinic (aplastic anemia, factor V Leiden, and other inherited thrombophilias) and using prescriptive authority (including a Drug Enforcement Administration number and National Provider Identifier). The CPP consults on supportive care measures, symptom management, toxicity management, and patient education for patients at the outpatient clinic and collaborates on consultations at the inpatient unit per request. He participates in code situations in the infusion area. With prescriptive authority, he can clarify discrepancies in chemotherapy and other regimens, order laboratory tests, and cover incidental situations when physicians are out of the office to ensure continuity of care for patients.

The adult outpatient hematology and oncology clinics of the Duke Comprehensive Cancer Center (Durham, NC) are part of the Duke University Health System and are open Monday to Friday. Patients are seen by approximately 35 medical oncologists in seven clinics, with approximately 100 chemotherapy patients treated daily in the treatment rooms. At the Duke Comprehensive Cancer Center, the CPP agreement has also been written to encompass a broad range of activities. One primary physician manages the activities of the CPP, who is able to see any patient seen by a Duke physician at the cancer center. Although the pharmacist does have responsibilities in the investigational oncology pharmacy, her clinical role involves seeing and assessing patients in the ambulatory clinic setting. Consultations provided by the CPP focus on supportive care issues such as pain management, nausea and vomiting, myelosuppression, toxicity management, drug interactions, and patient education for both standard of care as well as clinical trials in the outpatient setting. The CPP also established a standard template and service for chemotherapy education for other pharmacists in the infusion area and is responsible for creating standard chemotherapy order templates for both standard of care regimens as well as investigational protocols in the outpatient setting. She led the initiative to develop supportive care guidelines for the management of chemotherapy-induced nausea and vomiting, myelosuppression, infusion and hypersensitivity reactions, epidermal growth factor receptor-inhibitor skin toxicities, and vascular endothelial growth factor-inhibitor hypertension. She also serves as an investigator on numerous clinical trials involving care of patients with cancer.

The Charles George VA Medical Center (Asheville, NC) serves approximately 31,000 veterans in the western North Carolina, northern South Carolina, northern Georgia, and eastern Tennessee regions. The oncology team includes two on-

cologists, three nurses, a nurse practitioner, and a clinical pharmacist. The clinic handles approximately 6,700 oncology and hematology patient visits each year and 200 treatments each month. At this VA center, the oncology pharmacist acts under a scope of practice, which is signed by a supervising oncologist. This scope allows the pharmacist to assess patients actively receiving therapy, order and reorder anticancer therapy (including chemotherapy) and supportive care medication, perform limited physical examinations and thorough reviews of systems, and order necessary laboratory and radiographic examinations. Like other providers, the pharmacist helps maintain the clinic; writes progress notes for each patient encounter; documents interventions, plans, and complexities of patient encounters; and documents time spent with each patient. Additionally, the pharmacist meets with patients who are starting new anticancer therapies to counsel them on administration and toxicities, completes thorough medication reconciliations, assesses potential drug interactions, and frequently obtains consent for prescribed therapies. The pharmacist can write and sign for chemotherapy, but the first cycle must be cosigned by an oncologist. Between August 2009 and February 2010, more than 200 patients were seen in this 3-day-per-week half-day clinic. Two afternoons per week, the pharmacist also runs an erythropoiesis-stimulating agent anemia clinic, which primarily serves patients with chronic kidney disease who are not receiving dialysis.

Oncology CPPs bring a thorough understanding of drug therapies, toxicities, monitoring, and pharmacoeconomics to the multidisciplinary team unique to our profession. Frequently underutilized, pharmacy professionals are attempting to gain provider status through legislative reform, which—it is hoped—will be realized with this wave of health care reform. Oncology CPPs play a real role in providing direct patient care and are a vital part of the solution to caring for the increasing volume of oncology patients. We plan to explore the role of oncology CPPs in a future publication.

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References

1. Association of American Medical Colleges Center for Workforce Studies: Forecasting the Supply of and Demand for Oncologists: A Report to the American Society of Clinical Oncology (ASCO) From the AAMC Center for Workforce Studies. <http://www.asco.org/ASCO/Downloads/Cancer%20Research/Onocology%20Workforce%20Report%20FINAL.pdf>
2. Erikson C, Salsberg E, Forte G, et al: Future supply and demand for oncologists: Challenges to assuring access to oncology services. *J Oncol Pract* 3:79-86, 2007
3. Polansky M, Ross AC, Coniglio D: Physician assistant perspective on the ASCO workforce study regarding the use of physician assistants and nurse practitioners. *J Oncol Pract* 6:31-33, 2010
4. Shah S, Dowell J, Greene S: Evaluation of clinical pharmacy services in a hematology/oncology outpatient setting. *Ann Pharmacother* 40:1527-1533, 2006
5. Bernard SA, Valgus J, Jarr S, et al: Use of a pharmacist/nurse model for the delivery of supportive care in adult oncology clinics at the University of North Carolina Hospital. *J Clin Oncol* 28:751, 2010 (suppl; abstr 9166)
6. Dennis BH: An overview of the clinical pharmacist practitioner in NC. <http://www.ncpharmacists.org/displaycommon.cfm?an=13>

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