

Recruiting and retaining blood and marrow transplantation (BMT) nurses remains challenging. In accordance with the Institute of Medicine recommendation to establish programs to prepare nurses for transition to specialty practice areas, a BMT fellowship program was designed and implemented at a large academic medical center. The yearlong fellowship program consists of monthly class sessions, observation experiences, case study presentations, and evidence-based project development. Outcomes related to retention, certification, and scholarship are presented.

AT A GLANCE

- The BMT RN fellowship addresses a gap in training nurses from diverse levels of clinical experience in a specialty area.
- The fellowship supports retention of participants and certification.
- With leadership support, staff nurses are empowered to develop evidence-based and nursing research projects.

KEYWORDS

blood and marrow transplantation; nurse fellowship; stem cell transplantation

DIGITAL OBJECT IDENTIFIER

10.1188/18.CJON.673-675

Blood and Marrow Transplantation RN Fellowship

Design, outcomes, and facilitating transition to practice

Brenda Diaz, MSN, RN-BC, APN, AOCN®, Anne Corbett, MS, BSN, RN, and April Camiling-Burke, MSN, RN, AOCNS®, BMTCN®

Recruitment and retention of qualified blood and marrow transplantation (BMT) RNs still has its challenges. To fully understand the complexity and infrastructure of BMT, the National Marrow Donor Program (NMDP) has begun to address these many challenges by convening a diverse group of stakeholders to address opportunities and future growth of BMT programs (Majhail et al., 2012).

Roughly 20,000 BMTs are performed annually across 199 transplantation centers in the United States (D'Souza & Zhu, 2016). The Institute of Medicine ([IOM], 2011) highlighted the projected nursing shortage, which propelled the BMT nursing community to actively plan for cultivating a workforce to care for the growing population of transplantation recipients. The NMDP Nursing Workforce Working Group promotes increased awareness of BMT as a career option for students (Majhail et al., 2012). However, specialty training can be limited by the scope and size of BMT programs across the country, requiring unique approaches to the training of nurses in this field.

The American Nurses Credentialing Center (ANCC) describes nursing fellowships as planned comprehensive programs designed to assist in the transition of experienced nurses into a new specialty by providing them with knowledge, skills,

and professional behaviors to meet standards of practice of the specialty (ANCC, 2016). At the completion of orientation, many nurses new to a specialty need continued guidance and support. According to Benner (1984), any nurse entering a clinical setting in which he or she has no experience is considered a novice. To achieve success in the transition to a new specialty, knowledge, skills, and expectations have to be developed (Benner, 1984).

At Hackensack Meridian Health Hackensack University Medical Center in Hackensack, New Jersey, at which 400 transplantations are performed annually, an opportunity was identified to develop a specialty BMT nursing fellowship with the aims of increasing RN retention and BMT certification and encouraging staff to develop evidence-based projects and nursing research specific to this population.

Designing the Fellowship

The BMT nurse manager recognized the importance of a structured transition program for nurses with limited or no experience in BMT. Together, the nurse manager, clinical nurse specialist, and education specialist developed objectives and program content consistent with evidence-based practice. Goals of the BMT RN fellowship are as follows:

- Enable participants to provide comprehensive and evidence-based care

FIGURE 1.
COMPONENTS OF THE BMT
RN FELLOWSHIP

LECTURES (17 HOURS)^a

- Explanation of routine BMT orders
- Sepsis
- Infection control practices
- Integrative nursing
- Chimeric antigen receptor T cells
- Donor selection for haploidentical transplantation recipients
- Organ toxicities
 - Infectious disease
 - Renal
 - Pulmonary
 - Cardiac
- Chronic graft-versus-host disease
- Ethics
- Quality improvement
- Foundation for the Accreditation of Cellular Therapy accreditation
- Professional practice
- Survivorship

PATIENT EXPERIENCE THROUGHOUT THE CONTINUUM (16 HOURS)

- Observation of bone marrow harvest in the operating room
- Meeting with pretransplantation case managers to learn eligibility, testing, educational preparation, consenting process, and caregiver preparation
- Rounds with the inpatient advanced practice nurse
- Meeting with the BMT oncology navigator to learn discharge medications, discharge education, and caregiver preparation

CASE STUDY PREPARATION AND PRESENTATIONS (TOTAL PRESENTATION TIME: 6 HOURS, TOTAL PREPARATION TIME: 7.5 HOURS)

- 3 case studies per fellow

EVIDENCE-BASED PROJECT PREPARATION AND PRESENTATIONS (25 HOURS)

- Projects presented at graduation

^a These lectures are in addition to three 8-hour adult oncology and two 8-hour stem cell transplantation classes completed during orientation.
BMT—blood and marrow transplantation

and skills relative to the management of patients undergoing BMT.

- Recruit and retain RNs on the BMT units.
- Encourage development of evidence-based projects and nursing research related to the care of patients undergoing BMT.
- Encourage BMT certification.

Evidence-based course content was developed with input from an interprofessional team consisting of the chief nursing officer, administrative nursing director, human resources, the BMT medical director, and advanced practice nurses. The fellowship proposal was reviewed and approved by the chief nursing officer and administrative director of nursing to ensure stakeholder support.

A transition to practice program for nurses entering a new clinical practice

months of nursing experience prior to the start of a new cohort. Using guidelines from ANCC, the program is designed for one year and maintains an evidence-based curriculum.

Nurses in the fellowship attend an eight-hour educational program monthly. The monthly sessions may include classroom lectures, case study presentation by the fellows, clinical experiences, and independent studies in preparation for the development of their evidence-based or research projects (see Figure 1). Goals, structure, and competencies from the American Society for Blood and Marrow Transplantation (Khan, Juckett, Komanduri, Krishnan, & Burns, 2012) and from the Oncology Nursing Society (2016) served as the foundation for the development of the program. Consistent with literature demonstrating the benefit of videotaped vignettes and case

"Specialty training can be limited by the scope and size of BMT programs, requiring unique approaches to the training of nurses in this field."

area is recommended by IOM (2011). To achieve this goal, the BMT fellowship program facilitates the nurses' transition into their specialty area of practice. At this institution, nurses with more than six months of nursing experience hired in the BMT units are offered an opportunity to participate in the BMT RN fellowship. In reviewing the literature, a limited number of oncology fellowships target staff nurses (Flynn, 2015). Often, new graduates are referred to residency programs. The BMT RN fellowship includes recent graduate and experienced nurses new to BMT and starts after the completion of orientation to the BMT unit. Newly licensed nurses may be eligible once they have completed orientation in the dedicated orientation unit for 12 weeks and have gained six

studies to support critical thinking and its application to practice (Hooper, 2014), case studies were used to cultivate and reinforce critical thinking skills essential for practice.

To accelerate and help develop higher critical-thinking skills of inexperienced nurses, it is important to expose them consistently to the decision-making skills of experts (Flanders, Gunn, Wheeler, Newsome, & Altman Klein, 2017). Therefore, during the fellowship, participants are partnered with clinical experts in the field of stem cell transplantation, such as physicians, pretransplantation case managers, advanced practice nurses, oncology nurse navigators, social workers, wound care specialists, pharmacists, ethicists, and quality coordinators. These experts provide the fellows with exposure

to the complex needs of patients throughout the stem cell transplantation continuum. Participants receive continuing education hours for sessions attended.

Results

The first cohort of nurse fellows (N = 4) completed their one-year fellowship program, with 100% retention at one year. The second cohort of nurse fellows (N = 5) completed the one-year program with 100% retention at six months.

All four nurse fellows from the first cohort successfully passed the BMT certification examination within one year of graduation. Two nurse fellows from cohort 1 have advanced to clinical level III RN in the clinical ladder program. The nurse fellows from cohort 2, who graduated in December 2017, are preparing to take the examination by the end of 2018. BMT certification increased by 36% since 2015.

Evidence-based projects were presented to the interprofessional and leadership team at each end-of-year graduation ceremony. A total of four projects have been developed by the nurse fellows in the two graduated cohorts. The fellows presented their projects to their peers prior to implementation on the units. Two nurse fellows developed an evidence-based guideline on the nursing management of graft-versus-host disease, which has been approved by the professional practice council. It is currently an active guideline published in the nursing policies manual on the institution's intranet. Two nurses are performing a research study exploring the effect of aromatherapy on nausea, vomiting, and anxiety on patients undergoing stem cell transplantation. This research study has been approved by the institutional review board and is currently an active nursing study on the BMT units. Two nurse fellows developed an oral self-care guide for patients undergoing BMT to further promote partnership in care. Another three nurse fellows developed a wellness program entitled Wellness in Motion to encourage patients undergoing BMT to participate in the various inpatient offerings, such as

Reiki, chair yoga, music therapy, and art therapy.

Implications for Practice

In oncology, there are several different subspecialties, and this model could be applied across these diverse practice areas to support specialty training. Future considerations include further dissemination of the research and evidence-based projects completed by the fellows, as well as evaluating the impact of the fellowship on patient outcomes. Enhanced preparation of staff is important to develop knowledge, skills, and professional growth, and, through retention, to address potential nursing shortages to ensure consistent, knowledgeable care for this patient population.

Conclusion

The BMT RN fellowship program is innovative in that it promotes interprofessional collaboration among disciplines, develops communication skills, and improves RNs' understanding of the clinical skills in managing patients undergoing BMT for new graduate as well as experienced nurses new to transplantation. A planned and comprehensive transition to practice is important to develop a workforce that is prepared to care for specialized patients. The program also encourages novel nurse-driven evidence-based practice and research projects relevant to BMT nursing practice and the patient population.

Brenda Diaz, MSN, RN-BC, APN, AOCN[®], is an education specialist, **Anne Corbett, MS, BSN, RN**, is a blood and marrow transplant nurse manager, and **April Camiling-Burke, MSN, RN, AOCNS[®], BMTCN[®]**, is an oncology nurse specialist, all at the Hackensack University Medical Center in New Jersey. Diaz can be reached at brenda.diaz@hackensackmeridian.org, with copy to CJONEditor@ons.org.

The authors take full responsibility for this content and did not receive honoraria or disclose any relevant financial relationships.

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