



A Role Delineation Study of the Blood and Bone Marrow Stem Cell Transplant Nurse

Conducted for the Oncology Nursing Certification Corporation (ONCC)

EXECUTIVE SUMMARY

A role delineation study was initiated in 2011 at the request of the Oncology Nurses Certification Corporation (ONCC), with psychometric facilitation being provided by Applied Measurement Professionals, Inc. (AMP). The purpose of the study, also known as a job analysis or practice analysis, was to provide a detailed analysis of the job-related competencies of the Blood and Bone Marrow Stem Cell Transplant (BMSCT) Nurse for the ONCC to consider using in future possible efforts related to the development of a certification program.

The ONCC staff provided background materials to AMP, including several textbooks and articles pertaining to BMSCT practice. Using these materials, AMP prepared draft task and knowledge lists, and these were distributed to the BMSCT Role Delineation Advisory Committee (RDAC) prior to a meeting on May 25 and 26, 2011. During that meeting, the RDAC adopted the following target practitioner definition of a BMSCT nurse:

- A registered nurse who cares for pediatric and/or adult patients and their caregivers throughout the blood and bone marrow stem cell transplant (BMSCT) continuum, in any setting.

During the meeting, the components of a draft survey were reviewed and modified by the RDAC, including demographic questions along with the knowledge and task lists. Following the meeting, the survey was subjected to a pilot test, which led to changes that were made through an iterative process of reviews and modifications. The final survey was then approved in preparation for distribution on June 29, 2011 to 8,253 BMSCT Nurses. ONCC provided e-mail addresses which were used to disseminate an invitation with an embedded link. The published response deadline was July 31, 2011.

The Committee met on September 1-2, 2011 to review the results of the survey responses. During this meeting, all data collected from the surveys were reviewed, including the demographic information and the significance ratings for each knowledge and task statement. After removal of duplicative and other clearly inappropriate responses, a total of 1,211 usable surveys were available for analyses.

The RDAC determined that the characteristics of the respondent group were generally as expected and the total number of responses was large enough and representative enough of BMSCT nursing practice to provide a sound basis for further analyses. Some of the demographic findings included:

- 47% held the OCN credential,
- 57% had "Clinical Staff Nurse" as their job title,
- 56% held a baccalaureate as their highest degree in nursing,
- On average, 81% of their patients were adults and 19% were pediatric, and
- On average, respondents had 15.4 years as an RN and 10.3 years as a BMSCT nurse.

Within the demographic questions, respondents were asked whether they would take a BMSCT nursing certification if ONCC were to move forward with its development. Responses were overwhelmingly positive, with 93 percent (n= 1,125) of those responding indicating they would do so. The ONCC Board may use this as one piece of information to inform a decision regarding possible future actions related to BMSCT certification, however, the Board should realize that all 1,125 nurses indicating they would participate will not necessarily do so.

The rating scale for knowledge statements and tasks allowed the survey respondents to indicate that the statement or task was “Not part of my practice” and these responses were recoded to zero. Other scale points included not very significant, significant, and very significant, which were recoded to 1, 2, and 3 respectively. Overall the knowledge statements and tasks received very high ratings. When those who did not view the statement or task as a part of their practice were removed, the overall mean for both the knowledge ratings and the tasks was approximately 2.5, that is, between significant and very significant. Therefore, it is clear that the tasks and the knowledge statements generally defined the role well.

To create examination specifications, the RDAC needed to identify any areas of knowledge that were not clearly within the BMSCT nurse role, and to do so, the RDAC established a series of decision rules and criteria to retain tasks and knowledge statements. To ensure relevance to practice, the RDAC decided that at least 80% of the respondents had to indicate the task or knowledge was a part of their practice (i.e., a non-zero rating). The second rule adopted by the RDAC was related to the overall mean significance, and a mean at least 2.0 was required for each task or knowledge statement. Rules were also established for mean significance by region of practice within the United States, years as a BMSCT nurse, educational preparation, job title, and percentage of inpatients vs. outpatients and adult vs. pediatric patients. The RDAC reviewed comments made by survey respondents, and as a result of applying the criteria related to the decision rules and in consideration of the comments, a few tasks and knowledge statements were removed or reworded. What remained to create the detailed content outline and examination specifications were 62 knowledge statements, grouped in eight major domains of practice, as well as 42 tasks that should be considered to be eligible for assessment. During the meeting the RDAC also confirmed the linkage of knowledge statements and tasks.

The RDAC used an iterative process to determine the relative weight of examination specifications for a possible certification offering, and several factors were considered. First, the judgments expressed by the survey respondents about allocation of items to the eight domains were considered. In addition, the RDAC considered the number of knowledge statements, the breadth of each knowledge statement, and the mean significance of the knowledge statement, as well as the mean significance of the aggregate of the knowledge in each of the eight domains. Members of the RDAC independently expressed judgments regarding the percentage that should be allocated to each domain. The mean of the judgments was used as a starting point, and following discussion, the RDAC approved the distribution of items shown in the final examination specifications shown on the following pages, recommending that 125 scored items would be appropriate to assess knowledge related to the eight domains. The RDAC discussed whether a second dimension should be used to create a matrix, for example, using the cognitive process expected of candidates or the task statements as a second dimension. The RDAC decided that a second dimension would not be necessary, but item developers should indicate one of the 42 approved tasks and the cognitive level expectation for every item, and that an effort should be made to include items that go beyond testing of simple recall.

Respectfully submitted:

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Blood and Marrow Stem Cell Transplant (BMSCT) Examination Specifications

of
Items

I. Basic Concepts and Indications for Transplantation		12
A. Basic Concepts of Transplantation		
1. Hematopoiesis		
2. Immunology		
3. Role of the caregiver		
4. Goals of therapy (e.g., graft vs. disease effect, hematologic/immune reconstitution after high dose chemotherapy/radiotherapy, marrow ablation)		
B. Indications of Transplantation		
1. Malignant disease		
2. Non-malignant disease (e.g., autoimmune, genetic, metabolic, hematologic)		
II. Types of Transplants and Sources of Stem Cells		10
A. Types of Transplants		
1. Autologous		
2. Allogeneic		
3. Other cellular therapies (e.g., donor lymphocyte infusion, dendritic cells)		
B. Sources of Stem Cells		
1. Peripheral blood		
2. Bone marrow		
3. Umbilical cord		
III. Pre-Transplant Care		12
A. Recipient Eligibility and Management		
1. Eligibility criteria		
2. Recipient evaluation and management		
3. Recipient and caregiver education		
B. Donor Selection and Care		
C. Stem Cell Procurement		
1. Stem cell mobilization		
2. Stem cell collection and storage		
IV. Preparative Regimens and Stem Cell Infusion		19
A. Preparative Regimens		
1. Intensity of therapy (e.g., myeloablative, reduced intensity, and non-myeloablative)		
2. Chemotherapy		
3. Radiation therapy		
4. Biotherapy		
5. Immunotherapy		
6. Targeted therapies		
B. Stem Cell Infusion		
1. Fresh vs. cryopreserved		
2. Infusion management		
3. Hematologic compatibilities		



Blood and Marrow Stem Cell Transplant (BMSCT) Examination Specifications

of
Items

	# of Items
V. Graft-Versus-Host Disease Prevention and Management	19
A. Acute GVHD	
B. Chronic GVHD	
VI. Post-Transplant Issues	32
A. Infection Prevention and Management	
B. Hematologic Complications (e.g., engraftment, pancytopenia)	
C. Hydration and Electrolyte Complications	
D. Gastrointestinal Complications	
E. Nutritional Complications	
F. Hepatorenal Complications	
G. Neurologic Complications	
H. Genitourinary Complications	
I. Endocrine Complications	
J. Cardiopulmonary Complications	
K. Dermatologic Complications	
L. Dental Complications	
M. Ocular Complications	
N. Musculoskeletal Complications	
O. Psychosocial Complications	
P. Graft Rejection or Failure	
Q. Disease Relapse	
R. End of Life	
VII. Survivorship Issues	11
A. Secondary Malignancy	
B. Psychosocial	
C. Fertility	
D. Sexuality	
E. Quality of Life	
F. Follow-up Care	
VIII. Professional Practice	10
A. Ethical and Legal Issues (e.g., informed consent, advance directives, confidentiality)	
B. Clinical Trials	
C. Scope and Standards of Practice	
D. Accreditation Standards (e.g., Foundation for Accreditation of Cellular Therapies (FACT) accreditation)	
E. Continuous Quality Improvement	
F. Professional Boundaries	
G. Compassion Fatigue and Moral Distress	
H. Chemotherapy and Biotherapy Competence	
I. Sources of Data for Evidence Based Practice	
Total	125

Tasks Eligible for Assessment

1	Perform individualized comprehensive multisystem assessment of the patient
2	Interpret laboratory values
3	Understand and describe underlying disease entities
4	Participate in developing a plan of care
5	Manage pharmacologic therapies as prescribed
6	Assess and monitor integrative (non-pharmacologic) therapies
7	Use developmentally appropriate teaching methods
8	Evaluate patient care interventions
9	Monitor patient and caregiver adherence
10	Advocate on behalf of the patient
11	Manage pain
12	Manage complications related to the transplant process
13	Apply ethical principles
14	Identify issues related to altered body image
15	Incorporate cultural competence in practice
16	Address spiritual issues
17	Facilitate access to community resources
18	Promote family-centered care
19	Follow evidence-based practice guidelines
20	Maintain infection prevention and control procedures
21	Manage venous access devices
22	Communicate effectively maintaining confidentiality
23	Promote health, wellness, and patient safety
24	Incorporate palliative care concepts
25	Incorporate end-of-life care concepts
26	Participate in and promote interprofessional collaboration
27	Coordinate care across the BMSCT continuum
28	Identify issues related to loss of control and role change
29	Assess oral and dental health
30	Perform mouth care
31	Assess skin
32	Provide skin care
33	Perform activities of daily living (ADL) and hygiene
34	Promote exercise and ambulation
35	Assess conditioning related toxicities
36	Monitor fluid and electrolytes
37	Monitor nutritional status
38	Educate caregiver regarding home monitoring (e.g., side effects, signs and symptoms)
39	Manage long-term side effects (e.g., GVHD)
40	Administer and handle chemotherapy and biotherapy safely
41	Recognize early symptoms of deteriorating status
42	Participate in research to advance practice