Development of a Workshop for Malignant Hematology Nursing Education

Karelin Martina, RN, BScN, MN, CON(c), Lucia Ghadimi, RN, BScN, MN, CON(c), and Diana Incekol, RN, BScN, MScN, CON(c)

As part of a comprehensive orientation for nurses caring for patients with hematologic malignancies, nurses are expected to attend general corporate orientation immediately followed by hospital site-specific nursing orientation. The orientation is comprised of lectures, e-learning, and clinical observership, as well as clinical practice under supervision of a preceptor. Nurses also are expected to attend foundational courses. The goal of these courses is to consolidate practical and theoretical knowledge in a specific oncology nursing specialty. A workshop was developed that offers a unique vision by interweaving theory, practice, and patient voice.

At a Glance
• Patients with malignant hematology often require complex care and management.
• Malignant hematology nurses require in-depth disease knowledge.
• Interactive workshops facilitate knowledge uptake.

Malgnant hematology (MH), a field of oncology, involves diseases such as leukemia, lymphoma, and multiple myeloma (Leukemia and Lymphoma Society of Canada [LLSC], 2013). In Canada, one person is diagnosed with a blood cancer every 28 minutes (LLSC, 2013). In addition, hematology cancer rates are expected to rise because of the aging population (Cancer Care Ontario [CCO], 2011). An estimated 18,600 people were diagnosed with lymphoma, leukemia, or multiple myeloma in 2013 in Canada, with a projected mortality of 8,650 (LLSC, 2013).

Patients undergoing treatment for a hematologic cancer are prescribed an intensive treatment regimen that requires complex supportive care to manage prolonged side effects and life-threatening complications (Buckley et al., 2014). Meenanagh, Dowling, and Kelly (2012) recommend that MH nurses focus on minimizing side effects and staying vigilant to potential adverse effects of treatment and disease, in addition to providing supportive and psychosocial care. Therefore, care for these patients must be provided by highly skilled oncology nurses. Prior to becoming experts in the field, nurses must possess a strong foundational knowledge in oncology nursing. Forsetlund et al. (2009) conducted a systematic review of educational workshops and concluded that educational sessions can improve practice and patient outcomes. Drawing from Forsetlund et al. (2009), the authors developed an educational MH 101 workshop, in which the primary outcome is to assist novice hematology nurses in creating a solid theoretical foundation to enhance the critical knowledge they require to provide high-quality nursing care.

Background

Princess Margaret Cancer Centre is a large comprehensive cancer treatment facility located in downtown Toronto, Ontario, Canada. Nurses are expected to attend general orientation that is followed immediately by nursing orientation. The general orientation is comprised of information relevant to the University Health Network (2014), and Princess Margaret nursing orientation presents information specific to oncology nursing practice within the Princess Margaret Cancer Centre. The orientation components take about 12 weeks to complete and include lectures, e-learning, clinical observership, and clinical practice under supervision of a preceptor. In addition to the previously mentioned orientation, Princess Margaret nurses also are expected to attend foundational courses. These courses focus on gathering knowledge and building clinical skills in the specialty area of oncology nursing. MH, hematopoietic stem cell transplantation, and management of deteriorating patients are examples of foundational courses that hematology nurses are to attend within 24 months of hire. The content is presented by expert advanced practice nurses in the field and includes pathophysiology of MH diseases, clinical presentation, assessment, diagnosis, and symptom management. Participants of previous
foundational courses have expressed that the content may be too advanced for nurses new to hematology. To meet the needs of novice oncology nurses, the MH 101 workshop was developed to review the basic concepts of the most common malignant blood disorders. Hematology nurses are expected to attend this course within 12 weeks of their hire as part of their nursing orientation.

Adult learning theory principles are a set of tools to help educators facilitate adult learning by making it relevant, practical, and attainable (Knowles, Holton, & Swanson, 2014). Knowles et al. (2014) identified adult learners to be internally motivated, self-directed, and goal-oriented. Although the focus is on how adults learn, it also is centered on how educators can promote knowledge translation to transpire in a nonauthoritative manner (Knowles et al., 2014). To facilitate understanding of basic MH concepts, adult learning principles guided the design and delivery of MH 101.

### Design and Process

Drawing from adult learning principles, the workshop consisted of patient interviews, lecture, interactive activities, and formal knowledge evaluations. According to Forsetlund et al. (2009), mixed interactive and didactic educational sessions have greater effect on learners’ professional practice and healthcare outcomes than either style alone. In addition, using a mixed teaching and learning modality ensures that diverse adult learning styles are being captured.

In 2014, MH 101 was piloted three times in three months during the Princess Margaret nursing orientation. The day consisted of eight modules introducing the key concepts associated with myelodysplastic syndrome, acute and chronic myeloid and lymphocytic leukemia, lymphoma, and multiple myeloma. Examples of key themes presented include neutropenia, hyperleukocytosis, pancytopenia, and oral chemotherapy adherence. The individual modules were outlined in the following manner: pathophysiology, etiology and risk factors, prevalence, classification, prognostic indicators, treatment modalities, and nursing considerations. The presentations were facilitated by three educators who were advanced practice nurses.

After completing every two modules, learners participated in knowledge consolidation activities. To enhance engagement, the participants worked in groups and had the opportunity to earn points with each activity. One of the activities consisted of asking the individual groups to complete a comparison table of four diseases (see Table 1). The groups who completed the activity first and presented a correct answer were rewarded with bonus points. The points were tallied, and the winners were announced at the end of the day. Introducing competitiveness brought forth the potential for learners to be internally motivated by

### TABLE 1. Comparison of Four Malignant Hematologic Diseases

<table>
<thead>
<tr>
<th>Variable</th>
<th>AML</th>
<th>ALL</th>
<th>CML</th>
<th>CLL</th>
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<tr>
<td><strong>Cyto genetics</strong></td>
<td>Various chromosomal abnormalsities: t(8, 21) (q22, q22)</td>
<td>Philadelphia chromosome</td>
<td>Philadelphia chromosome</td>
<td>Chromosome deletions are most common in parts of chromosomes 11, 13, or 17.</td>
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<tr>
<td><strong>Risk factors</strong></td>
<td>Genetic disorders (e.g., trisomy 21); high-dose radiation</td>
<td>High-dose radiation; human T-cell leukemia/lymphoma virus type 1 infection</td>
<td>High-dose radiation; exposure to formaldehyde</td>
<td>Family history of CLL; potentially exposure to herbicides or pesticides</td>
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<td><strong>Predominant signs and symptoms</strong></td>
<td>Fatigue, malaise, loss of appetite, weight loss, fever</td>
<td>Anemia, malaise, sore throat, weight loss, night sweats</td>
<td>Fatigue, malaise, loss of appetite, fever, weight loss</td>
<td>Fatigue, malaise, loss of appetite, bone or joint pain, enlarged lymph nodes</td>
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<td><strong>Staging</strong></td>
<td>No staging system; described as untreated, in remission, relapsed, or refractory; WHO classification system: 17 subtypes</td>
<td>No staging system; described as untreated, in remission, relapsed, or refractory</td>
<td>Described as chronic, accelerated, blast phase, or relapsed</td>
<td>Rai staging system, Binet staging system</td>
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<td><strong>Treatment</strong></td>
<td>Cytarabine (Depocyt®) and daunorubicin (Cerubidine®) or idarubicin (Idamycin®)</td>
<td>Vincristine (Marqibo®), daunorubicin or doxorubicin (Adriamycin®), prednisone (Deltasone®), methotrexate (Trexall®)</td>
<td>Imatinib (Gleevec®), hydroxyurea (Hydrea®), busulfan (Bu-sulfex®), cytarabine (Depocyt®)</td>
<td>Fludarabine (Fludara®), cladribine (Leustatin®), chlorambucil (Leukeran®), cyclophosphamide (Cytoxan®), prednisone, alemtuzumab (Campath®), rituximab (Rituxan®)</td>
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<td><strong>Prognosis</strong></td>
<td>About 35%–40% of people aged younger than 60 years will survive longer than five years and are considered to be cured.</td>
<td>Estimated long-term disease-free survival for adults is 35%–50%, and about 20%–30% of people are considered to be cured.</td>
<td>The five-year observed survival is greater than 90% when treated with imatinib.</td>
<td>Low risk, based on Rai staging, has a 14.5-year survival</td>
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</tbody>
</table>

**ALL**—acute lymphoblastic leukemia; AML—acute myeloid leukemia; CLL—chronic lymphocytic leukemia; CML—chronic myelogenous leukemia; WHO—World Health Organization

*Note.* Based on information from Canadian Cancer Society, 2013a, 2013b, 2013c, 2013d.

*Note.* Prognostic data are based on Ontario standards.
three factors: higher self-esteem, achievement, and satisfaction of accomplishment (Knowles et al., 2014). In addition, in a systematic review of educational games and healthcare professionals, Akl et al. (2013) concluded that the competitive nature of educational games may motivate learners.

Prior to attending the workshop, each participant was asked to complete an independent worksheet by interviewing a patient from his or her unit with a specific malignancy. During MH 101, the learners shared information gained during patient interviews and the relation to practice was explored to facilitate insight into the patient’s journey from diagnosis to treatment. Relating the interviews to practice brings forth relevance to the adult learner and readily demonstrates applicability of the knowledge-sharing transaction (Knowles et al., 2014). Part of the independent worksheet included finding answers to specific questions of prognosis and symptom management. Participants were encouraged to connect with any member of the interprofessional team for solutions, but using other resources, such as the Internet, also was acceptable. Instead of providing all of the information during the workshop, the aforementioned provided participants the opportunity to be more self-directed, leading them toward more inquiry (Knowles et al., 2014). To formally evaluate knowledge uptake, multiple-choice tests were administered prior to the workshop and immediately following the last activity.

Results and Evaluation

During the three-month pilot, 28 nurses completed this workshop. The pre- and post-test marks for all three sessions are presented in Figure 1. In addition, participants were asked to provide quantitative and qualitative feedback to evaluate the presentations, activities, and the entire workshop. Twenty-four participants strongly agreed that their knowledge of MH improved because of this workshop, and four agreed with this statement. When asked to rate the overall quality of the education session as excellent, good, satisfactory, or poor, 26 participants rated it as excellent and 2 participants rated it as good quality. Thematic analysis of the qualitative data revealed that the sessions were very informative and engaging because of various learning activities. Finally, participants commented that they would have liked to have presentation slides distributed to them in advance, fact sheets summarizing the diseases, and additional activities.

To fully evaluate the benefit of participating in the MH 101 workshop, a second evaluation was distributed two months following the last pilot session. These evaluations revealed that MH 101 provided a good knowledge base in preparation for related foundational courses. Participants expressed that the sessions should continue to be offered to all nurses new to hematology (see Table 2).

Future Directions

Based on the feedback from the pilot workshops, the authors have implemented changes to enhance the learning experience for future participants, such as distribution of the slides prior to the workshop, more learning activities throughout the day, expansion of the workshop delivery time from a six-hour to an eight-hour day, and fact sheets summarizing the diseases. To strengthen patient safety and continuity of care, nurses employed at community hospitals located in the same Local Health Integration Network will be invited to participate in this workshop. Although the majority of systemic therapy often is administered at Princess Margaret Cancer Centre, other hospitals provide intensive supportive therapy to hematology patients and, therefore, nurses working in these hospitals must have an excellent foundational knowledge of MH diseases.

Conclusion

A workshop introducing the basics of MH was created with a focus on leukemia, multiple myeloma, and lymphoma. The post-workshop test results and evaluations indicated that the workshop provided novice hematology nurses with increased knowledge regarding the basics of MH disorders and associated nursing care. The interwoven experience of

<table>
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<th>TABLE 2. Post-Foundational Course Evaluation Results (N = 18)</th>
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<td>Statement</td>
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<tr>
<td>I use the information from the MH 101 workshop in my practice.</td>
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<tr>
<td>The MH 101 workshop overall provided a good base for the MH foundational course.</td>
</tr>
<tr>
<td>The MH 101 workshop should be continued to be offered for nurses new to MH.</td>
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<td>MH—malignant hematology</td>
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theory, practice, and patient voice has provided a unique and interesting style of learning for the independent practitioner. As a result, nurses new to MH have a better understanding of the disease processes and major complications of the presented malignancies. In addition, the education team continues to support the participants as they apply learning acquired during the workshop to their daily nursing practice.

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References

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