

# ALTERNATIVE VIEWPOINT

## Hematology/Oncology Pharmacy Association Entry-level Competencies Task Force Response Statement to the 2016 American College of Clinical Pharmacy Pharmacotherapy Didactic Curriculum Toolkit

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As more disease states have an increasing number of therapeutic options, pharmacy schools are continuously challenged to provide pharmacy students with a comprehensive education in a finite amount of time. It is particularly challenging to determine which diseases and associated therapeutic options should be included in the curriculum. The 2016 American College of Clinical Pharmacy (ACCP) Pharmacotherapy Didactic Curriculum Toolkit seeks to provide clarity and guidance to schools and colleges of pharmacy to assist with curricular development.<sup>1</sup> Oncologic disorders are a vital part of the pharmacy curricula and taught in most colleges of pharmacy in the United States in the didactic and experiential

setting.<sup>2</sup> A survey of colleges of pharmacy in the United States determined that an average of 42 hours of didactic oncology education was provided; the most common oncology physiology topics presented were focused on breast, colon, lung, and prostate cancers, as well as leukemia and non-Hodgkin lymphoma. The most common pharmacotherapy disease states covered were prostate, lung, and breast cancer as well as supportive care and symptom management.<sup>2</sup> It was also found that the education of supportive care in most schools and colleges of pharmacy emphasized the prevention and treatment of chemotherapy-induced nausea and vomiting, prevention and treatment of febrile neutropenia, and oncologic emergencies.<sup>2</sup>

The topics covered most frequently in U.S. colleges of pharmacy reflect the recent estimates of cancer diagnoses and deaths by the American Cancer Society (ACS). The ACS has estimated that in 2016 the leading sites of new solid tumor cases diagnosed in the United States involved the

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prostate, breast, colon and rectum, and lung and bronchus. In addition, the leading types of hematologic malignancies diagnosed were leukemia and non-Hodgkin lymphoma.<sup>3</sup> Because treatment of these oncologic disorders shifts from standard chemotherapy to immunotherapy and oral targeted chemotherapy, pharmacists must have sufficient knowledge of the supportive care and symptom management pharmacotherapy associated with standard chemotherapy, oral targeted chemotherapy, and immunotherapy to provide optimal patient care in nonspecialty settings. Furthermore, because the management of cancer patients has the potential to become more prevalent in nonspecialty settings, it is crucial to arm pharmacy students with a solid foundation of oncology knowledge.<sup>2</sup>

The Hematology/Oncology Pharmacy Association (HOPA) is composed of oncology pharmacists with ~49% of the organization involved in the education of pharmacy students in the didactic, laboratory, and clinical settings. The HOPA Entry-level Competencies Task Force has reviewed the ACCP Pharmacotherapy Didactic Curriculum Toolkit regarding the recommendations for diseases and content topics to be used as a curricular guide in schools of pharmacy.<sup>3</sup> Although the HOPA Entry-level Competencies Task Force appreciates the toolkit developed by the 2016 ACCP Educational Affairs Committee, we recommend a revision of the tier status of the disease and content topics within oncologic disorders.

The HOPA Entry-level Competencies Task Force proposes the following changes:

1. Oncologic disorders that should be classified as tier 1:
  - a. Breast cancer
  - b. Colon cancer
  - c. Lung cancer
  - d. Prostate cancer
  - e. Supportive care (e.g., myelosuppression, nausea/vomiting, pain management, mucositis)
  - f. Oncologic emergencies (e.g., tumor lysis syndrome, hypercalcemia of malignancy, cord compression, chemotherapy extravasations)
  - g. The following Oncologic Disorder–related topics should be considered for addition to tier 1:
    - i. Infections in the immunocompromised host (neutropenic fever)

- ii. Oncology dosing and calculations
2. Oncologic disorders that should remain in tier 2:
  - a. Acute and chronic leukemia
  - b. Lymphomas
  - c. Melanoma (other nonmelanoma skin cancers)
  - d. The following Oncologic Disorder–related topics should be considered for addition to tier 2:
    - i. Medication safety in oncology (e.g., safe handling of hazardous drugs, error prevention strategies)
    - ii. Pharmacogenetics and pharmacogenomics in cancer
3. Oncologic disorders that should be classified as tier 3:
  - a. Cervical cancer
  - b. Kidney cancer
  - c. Myelodysplastic syndromes
  - d. Ovarian cancer
  - e. Plasma cell disorders
  - f. Solid tumors, other
  - g. The following Oncologic Disorder–related topics should be considered for addition to tier 3:
    - i. Investigational drugs
    - ii. Pediatric oncology
    - iii. Hematopoietic stem cell transplantation

In summary, the HOPA Entry-level Competencies Task Force recommends that at a very minimum, supportive care, oncologic emergencies, and the most commonly diagnosed cancers in the United States—prostate, breast, lung, and colon cancer—be revised as tier 1 topics.

### Acknowledgment

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### References

1. Schwinghammer TL, Crannage AJ, Boyce EG, et al. The 2016 ACCP Pharmacotherapy Didactic Curriculum Toolkit. *Pharmacotherapy* 2016;36(11):e189–94.
2. Kwon J, Ledvina D, Newton M, Green MR, Ignoffo R. Oncology pharmacy education and training in the United States Schools of Pharmacy. *Curr Pharm Teach Learn* 2015;7:451–7.
3. American Cancer Society. *Cancer facts & figures 2016*. Atlanta, GA: American Cancer Society; 2016.