THE PEDIATRIC CHEMOTHERAPY AND BIOOTHERAPY CURRICULUM

Fourth Edition

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Association of Pediatric Hematology/Oncology Nurses
For Nancy E. Kline

This fourth edition of *The Pediatric Chemotherapy and Biotherapy Curriculum* is dedicated to you.

You were our source of inspiration and motivation as we took on this project. We hope we have made you proud, as we continue the work you began in educating the nurses who care for our pediatric hematology/oncology patients. Your legacy and mentorship continue with each nurse who participates in the curriculum. You will always be at the heart of this program.
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Preface and Acknowledgments

The world of pediatric hematology and oncology has changed so much in the 8 years since the third edition of APHON’s *Pediatric Chemotherapy and Biotherapy Curriculum* was published:

- We have seen an explosion of immunotherapy and targeted therapies.
- Our understanding of how tumors interact with the immune system has greatly improved.
- We are able to identify genetic mutations and polymorphisms that have an impact on treatment choices.
- The U.S. Pharmacopeia (USP General Chapter <800> *Hazardous Drugs—Handling in Healthcare Settings*) has mandated important changes in how we administer chemotherapy.
- The National Cancer Institute released version 5.0 of its *Common Terminology Criteria for Adverse Events*.
- The federal government has established new requirements for what must be included in informed consent.
- The Children’s Oncology Group has set forth recommendations that will standardize the education of newly diagnosed patients and their families.
- We use new concepts and terminology to define treatment and disease response, including risk-based therapy, minimal residual disease, and Deauville scores for positron emission tomography (PET) scans.
- Survival rates for our patients with childhood cancer have never been higher.

These exciting advances motivated the significant updating of virtually every chapter and lecture in APHON’s *Pediatric Chemotherapy and Biotherapy Curriculum*, as the editors and authors sought to provide nurses with the most current resources and information available, so that they can safely and knowledgeably administer chemotherapy and biotherapy to children, adolescents, and young adults with cancer. Built on the foundation of the previous editions, the fourth edition of *The Pediatric Chemotherapy and Biotherapy Curriculum* offers a wealth of updated information for the nurse who administers chemotherapy and biotherapy. Changes include enhanced explanations of foundational concepts, expanded information about biotherapy and biotherapy agents, updated guidelines for the safe handling of hazardous drugs, additions to information on toxicities, more tables and figures, and the addition of algorithms and tools that you can use in your workplace.

The editors of the fourth edition and all the contributors have conscientiously worked to incorporate all these changes into a practical and useful nursing resource that is evidence based and user friendly.

This project has truly been the work of an amazing “village” of people, and many, many thanks are due to those who have worked to bring this curriculum to you:

- the editors who ensured that we carried the vision of Nancy Kline, lead editor of the first three editions of this curriculum, into this edition
- the contributors who shared their time and expertise so that we are better prepared to administer these agents to our patients
- the APHON leadership team for their ongoing support of this project
- our colleagues in the Children’s Oncology Group for their expertise and collaboration
- the APHON staff, who coordinated countless conference calls; organized the myriad of files, figures, and charts in our online workspace; and otherwise kept up with the thousands of details involved in this project
- the APHON publishing team, who faced the daunting tasks of meeting deadlines, tracking down elusive sources, and melding nurse-speak with American Psychological Association style and format
- the more than 500 Pediatric Chemotherapy and Biotherapy Provider Program instructors who give their time and resources to teach this curriculum so diligently again and again
- and finally, the more than 12,000 APHON members and other nurses who have taken APHON’s provider course and achieved Pediatric Chemotherapy and Biotherapy Provider status in order to provide the very best care for the children, adolescents, and families whom we serve.

It is, after all, all about our patients.
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Chapter 1

Introduction and Standards

Introduction

The Association of Pediatric Hematology/Oncology Nurses (APHON) is dedicated to promoting excellence in the care of children, adolescents, and young adults with cancer and other hematologic disorders and their families. APHON activities aimed at improving the quality of nursing care for this population include defining practice standards, developing premier publications, and offering state-of-the-art conferences.

Safe and consistent administration of chemotherapy and biotherapy is a fundamental component of the care provided by pediatric oncology nurses. To promote consistency in the practice of chemotherapy and biotherapy administration, APHON developed the Pediatric Chemotherapy and Biotherapy Provider Program. This program has been created to provide nurses with the theoretical knowledge base and key principles needed to safely and competently administer chemotherapy and biotherapy to children, adolescents, and young adults.

The objectives of the Pediatric Chemotherapy and Biotherapy Provider Program are

1. to establish education and practice standards for the administration of chemotherapy and biotherapy to children, adolescents, and young adults
2. to promote consistent practices in the administration, safe handling, and monitoring of side effects of chemotherapy and biotherapy to pediatric and adolescent and young adult (AYA) oncology patients.

The Pediatric Chemotherapy and Biotherapy Provider Program has three components: a curriculum, a provider course, and an instructor course.

The Pediatric Chemotherapy and Biotherapy Provider Course

The Pediatric Chemotherapy and Biotherapy Provider Course is a didactic course designed to provide pediatric hematology, oncology, and stem cell transplant nurses with a standardized, evidence-based framework of essential information and resources to help them increase their knowledge, confidence, and competence to safely and ethically care for children, adolescents, and young adults who are receiving chemotherapy and biotherapy. After course attendance and successful completion of an online exam, participants will be issued a pediatric and AYA chemotherapy and biotherapy provider card. The provider card is issued by APHON and is initially valid for 2 years. Subsequent renewals are valid for 3 years. The provider card indicates that the nurse has the knowledge required to administer chemotherapy and biotherapy. A provider card is not a certification. Possession of a provider card does not ensure clinical competence. APHON recommends that clinical competence be validated at the institutional level annually. See Appendix A for examples of chemotherapy administration competency checklists.

The Pediatric Chemotherapy and Biotherapy Instructor Course

The Pediatric Chemotherapy and Biotherapy Instructor Course is a 1-day course focusing on the review of adult education principles, demonstration of effective teaching strategies, discussion of course administrative requirements, and in-depth review of the provider course teaching materials. The instructor candidate who successfully completes the instructor course will receive an instructor card issued by APHON, stipulating that he or she has met the requirements to teach the Pediatric Chemotherapy and Biotherapy Provider Course. Instructor qualifications are reviewed annually.
Standards for Practice and Education

In conjunction with the Chemotherapy and Biotherapy Provider Program, APHON has established practice and education standards for the administration of chemotherapy and biotherapy to children, adolescents, and young adults with cancer.

STANDARD FOR PRACTICE
Chemotherapy and biotherapy for children, adolescents, and young adults should be administered by registered nurses who have completed the APHON Pediatric Chemotherapy and Biotherapy Provider Course and a clinical practicum.

STANDARD FOR EDUCATION
Safe and consistent administration of chemotherapy and biotherapy to children, adolescents, and young adults requires specific knowledge and specialized skills.

The Pediatric Chemotherapy and Biotherapy Provider Course covers the specific knowledge required through a didactic course and an online exam. A pediatric chemotherapy and biotherapy provider is a registered nurse who has successfully completed the APHON Pediatric Chemotherapy and Biotherapy Provider Course and has passed the exam with a score of 80% or higher. In addition to the didactic course, APHON recommends a clinical practicum by the nurse's employer to validate the clinical skills used in the administration of chemotherapy and biotherapy.

Pediatric chemotherapy and biotherapy provider status must initially be renewed after 2 years. Subsequent renewals are required at 3-year intervals. Renewal is obtained by successfully completing a review module and an online exam. Annual education specific to the administration of chemotherapy and biotherapy and skill validation by employers are recommended.

A pediatric chemotherapy and biotherapy instructor is a registered nurse and APHON member who has successfully completed both the Pediatric Chemotherapy and Biotherapy Provider Course and the Pediatric Chemotherapy and Biotherapy Instructor Course.

Requirements for a pediatric chemotherapy and biotherapy instructor include

- 2 years of clinical experience
- current national APHON membership
- current certification as a certified pediatric oncology nurse (CPON®) or certified pediatric hematology/oncology nurse (CPHON®)
- bachelor's or graduate degree (preferred)

To maintain instructor status, the instructor must

- conduct a minimum of one provider course per year
- maintain an average score of 2.5 or higher on course evaluations
- comply with APHON Pediatric Chemotherapy and Biotherapy Provider Program policies and procedures
- maintain national APHON membership
- maintain current APHON Pediatric Chemotherapy and Biotherapy Provider and Instructor cards
- maintain CPON® or CPHON® certification.