



Careers in Pediatric Hematology/Oncology

**Prepared by
The American Society of Pediatric Hematology/Oncology**

ASPHO 8735 W. Higgins Rd., Suite 300, Chicago, IL 60631 847.375.4716 aspho.org

ABOUT ASPHO

The American Society of Pediatric Hematology/Oncology (ASPHO) is dedicated to the professional development and interest of subspecialists advancing the care of children, adolescents, and young adults with blood disorders and cancer. ASPHO is a multidisciplinary organization that promotes research, education, treatment, and professional practice on behalf of member practitioners, fellows, faculty, investigators, advanced practice providers, administrators and other professionals in the pediatric hematology/oncology field.

ACKNOWLEDGEMENTS

This report was originally prepared by Emily Riehm Meier, MD MSHS, Maria C. Velez, MD, and Theodore Johnson, MD PhD. Edits (v. 2018) Kerice Pinkney, MD and Jacqueline Casillas, MD MSHS.

CONTACT INFORMATION

The American Society of Pediatric Hematology/Oncology
8735 W. Higgins Rd., Suite 300
Chicago, IL 60631
www.aspho.org
847.475.3716
info@aspho.org

Training Requirements

- 4 years of medical school
- 3 years of pediatric residency
- 3 years of hematology/oncology fellowship
 - 1st year is purely clinical (inpatient, outpatient, laboratory medicine)
 - 2nd and 3rd years are predominantly research based (basic science, clinical research, Masters in Public Health, Masters In Medical Education)
 - 4th year becoming more commonplace for further research exploration or sub-specialization (Bone Marrow Transplantation, Neuro-Oncology, Late Effects and Survivorship, Palliative Care)
 - Individuals are now considering complementary advanced degrees including but not limited to Masters in Public Health, Masters in Medical Education, Masters in Science.



First Year of Fellowship

Hematology	<ul style="list-style-type: none"> • Red cell disorders (Sickle cell anemia, thalassemia) • White cell disorders (Neutropenia) • Platelet disorders (ITP, inherited disorders) • Hemophilia and Thrombosis
Oncology	<ul style="list-style-type: none"> • Leukemia (ALL, AML, CML, JMML) • Solid Tumors (Neuroblastoma, Wilms Tumor, Osteosarcoma) • Neuro-oncology (Medulloblastoma, astrocytoma)
Bone Marrow Transplantation	<ul style="list-style-type: none"> • AML • Relapsed ALL • Immunodeficiencies • Sickle Cell Anemia • Aplastic Anemia • Bone Marrow Failure Syndromes
Transfusion and Laboratory Medicine	
Continuity Clinic	

Second and Third Years of Fellowship

Continuity Clinic weekly	<ul style="list-style-type: none"> • Continuity of care for primary Hematology, Oncology and BMT patients
Research Activity	<ul style="list-style-type: none"> • Basic Laboratory • Clinical research • Quality Improvement • Medical Education Scholarship • Translational Research • MPH or Master of Science in Clinical Investigation

Other Opportunities for Professional Growth

Teaching residents/medical students	<ul style="list-style-type: none"> • Formal lectures • Teaching on rounds or while doing consults • Conference attendance
Advocate for children with rare, chronic diseases	National Society Involvement: e.g. ASPHO, ASH, ASCO, PBMTTC

Fellow Testimonies

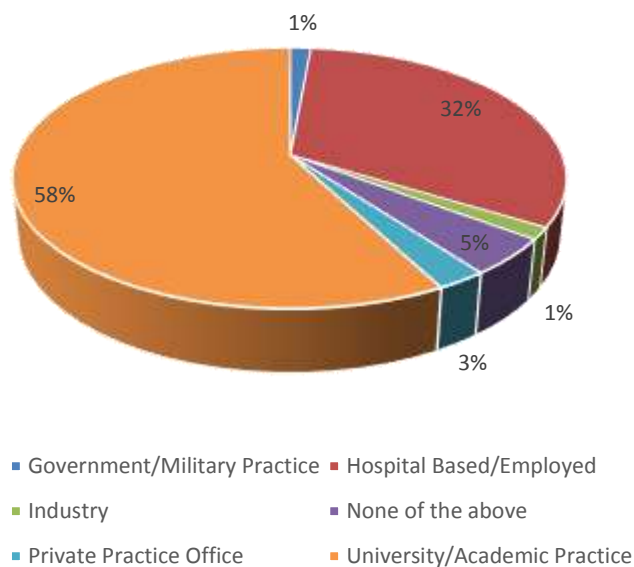
Second Year Peds Heme/ Onc fellow who did a General Pediatrics residency in the Bronx and planned to be a general pediatrician. She was inspired by Hem/Onc attendings at her residency program who were: “medically aggressive, evidence-based, smart, available and loyal to their patients.”

Senior Peds Hem/Onc fellow: “I was diagnosed with Non-Hodgkin Lymphoma at 13 years of age, underwent treatment and became interested in helping others as my Oncologist helped me.”

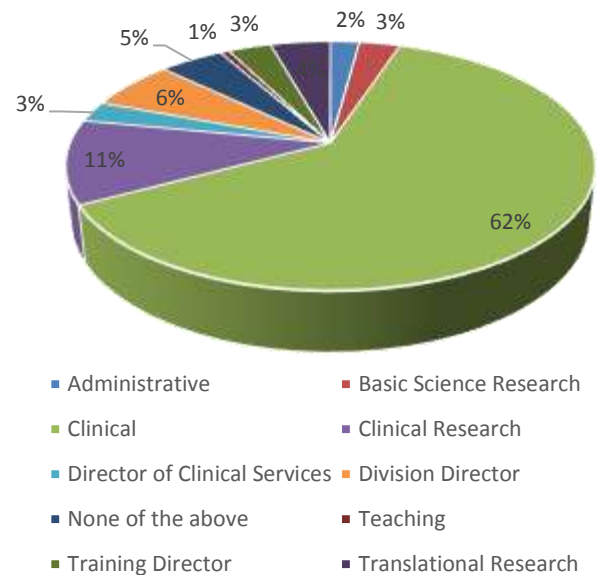
Second Year Peds Heme/ Onc fellow who went to medical school to be a small town pediatrician who only sees outpatients. However, during her 3rd year of medical school, she realized that she enjoyed the acuity of the hospital setting. She thought that Pediatric Hem/Onc gave her the “best of both worlds” - continuity of care as well as the opportunity to take care of hospitalized patients. She also states that “Pediatric Hematology/Oncology requires you to be a good general pediatrician because the diseases we treat and medications that we use affect all organ systems.”

ASPHO Community

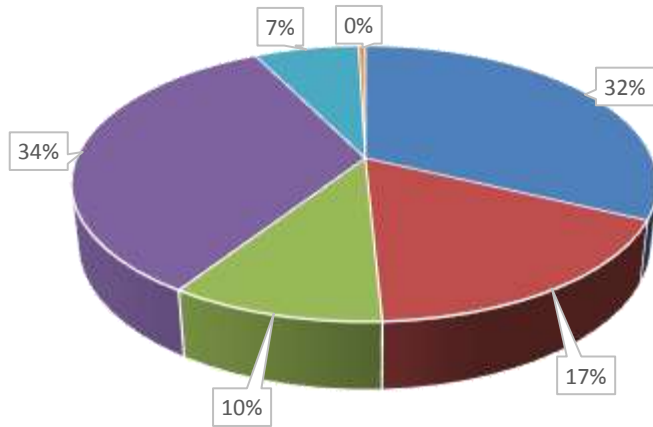
Work Setting



Primary Responsibility

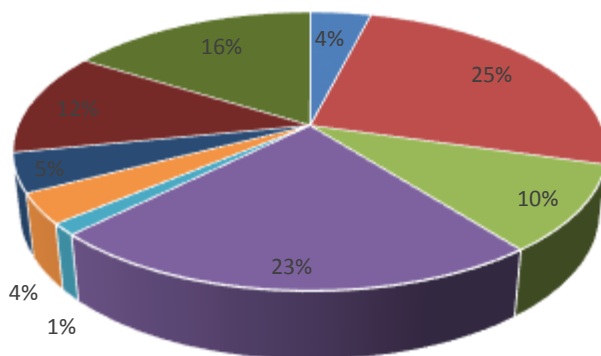


Primary Specialty



- General Hematology/Oncology
- Hematology
- None of the above
- Oncology
- Stem Cell Transplant/Cellular Therapy
- Transfusion Medicine

Primary Position



- Advanced Practice Provider
- Assistant Professor
- Associate Professor
- Fellow
- Hospitalist
- Instructor
- Non-Academic Affiliation
- None of the above
- Professor

Examples of “A Week in the Life” for Various Career Tracks*

**clinical service time requirements vary by program and type of grant funding*

Basic Science/Translational Research Junior Faculty

Monday	Basic science lab. Lab journal club, perform experiments, write papers.
Tuesday	Lab – weekly lab meeting, experiments, write
Wednesday	Hospital: recruit patients for research study, clinical team meetings, research meetings
Thursday	Lab – experiments, writing
Friday	Hematology outpatient clinic /Clinical meetings

Inpatient and Consult Hematology/Oncology attending ~5 weeks/year (includes overnight and weekend call)

Clinician Educator Junior Faculty

Monday	Hematology/Oncology outpatient clinic -> precept fellows, medical students, NPs, see primary patients.
Tuesday	Hematology/Oncology outpatient clinic
Wednesday	Clinical team meetings, medical student or fellow lectures, follow up on patient test results
Thursday	Clinical team meetings, clinical care meetings, outpatient clinic meetings
Friday	Hematology/Oncology outpatient clinic /Clinical meetings

Inpatient and Consult Hematology/Oncology attending ~10 weeks/year (includes overnight and weekend call)

More detailed information about Pediatric Hematology/Oncology career options can be found on the ASPHO website at:

<http://aspho.org/career-development/overview>

Q&A about Careers in Pediatric Hematology-Oncology

How many Pediatric Hematology/Oncology specialists work in the United States? What is the current market for these specialists? Will more Hematology/Oncology specialists be needed in the future?

More than 2,000 Pediatric Hematology/Oncology specialists have been certified by the American Board of Pediatrics since the first sub-board examination was administered in 1974. An estimated 2,079 Pediatric Hematology/Oncology specialists (compared to about 53,000 general pediatricians) currently practice in the United States, most on medical school faculties or based in hospitals.

The need for physicians trained to diagnose and treat children with cancer and hematologic disorders remains strong. Unfortunately, the incidence of virtually all of these diseases (sickle cell disease, hemophilia, childhood cancer) is not decreasing, and some are even becoming more common. Moreover, the diagnostic and treatment strategies, although more effective, are increasingly sophisticated, requiring specialized physicians to care for these children.

Is Hematology/Oncology depressing?

Cancer remains the leading cause of death from disease in children younger than 15 years old. Most of us have been touched by older loved ones who have succumbed to cancer. Dealing with death and dying can be depressing, but the field of Pediatric Hematology/Oncology is certainly intense, however very rewarding.

Survival rates for most childhood cancers have increased; almost all children are now treated with curative intent and in most cases treatments are successful. Cure rates for all childhood cancers are approximately 75%, and most centers have “off therapy” programs to follow these children. Death rates for other diseases that pediatric oncologists-hematologists treat (e.g., hemophilia, sickle cell disease, thalassemia) have declined dramatically, so many children with hematologic disorders are expected to have a nearly normal lifespan. Pediatric Hematology/Oncology specialists now practice as part of multidisciplinary teams, with many providing care and comfort to dying children and their families. Many find it rewarding to care for patients with complex diseases and to provide long-term care for patients during treatment and after therapy. The emerging field of palliative care provides extensive support and resources for dying patients, families, physicians, and the treatment team.

What is the lifestyle of a Pediatric Hematology/Oncology specialist?

Personal time and family life are important for every person. Despite the hard work, most Pediatric Hematology/Oncology specialists are able to design their career so that their professional life is well balanced with leisure and family time. However, virtually all work more than 40 hours a week, so those considering a Pediatric Hematology/Oncology career should be prepared to work hard during training and thereafter.

What about income?

Pediatric Hematology/Oncology specialists generally earn salaries similar to those of other pediatric subspecialists. Salaries in private practice are often somewhat higher than in the academic arena, although less so than in previous years. However, most employment opportunities for Pediatric Hematology/Oncology specialists offer a comfortable lifestyle and are successful at attaining work/ life balance.

What are some of the career choices for a Pediatric Hematology/Oncology specialist?

Though widely varied, the most common pathway after completing a fellowship is a position as an instructor or assistant professor of pediatrics in an academic Pediatric Hematology/Oncology division. Primary duties, which vary from day to day and are often unpredictable (one reason it is so interesting), are diagnosing and caring for children with blood diseases and cancer; teaching medical students, residents, fellows, and other healthcare professionals; and conducting clinical research through case studies and clinical trials. Most teaching activities are performed one-on-one in the clinic or at the bedside, rather than as didactic lectures in the classroom (although pediatric hematology-oncology specialists give many of those, so good public speaking skills are important). Most pediatric hematology-oncology specialists are part of a team of physicians, advanced practice providers (nurse practitioners and physician assistants), nurses, case managers, social workers, and other healthcare professionals in an academic group practice.

A small but important subset of pediatric hematology-oncology specialists, after completing their standard fellowship training, devote extra years to laboratory experience, which sometimes follows or includes obtaining a doctoral degree. This research is usually performed in basic science laboratories. These individuals usually spend the majority of their time conducting laboratory research in a basic or translational research area of pediatric hematology-oncology. A smaller but important percentage of their time is devoted to the clinical duties outlined above. Because determining the causes of these diseases and discovering improved treatments rest in better understanding of the fundamental biology of cancer and the blood, it is logical that some individuals in the specialty engage in laboratory research. Having protected time for research time almost always requires grant support to provide salary support.

Other researchers focus on clinical investigation. These individuals often receive extended training in epidemiology, biostatistics, and protocol design, and some obtain a Master of Public Health, Master of Science in Clinical Investigation, or research certificate training program. They conduct studies to better understand the cause and nature of disease and to develop improved treatment strategies through randomized clinical trials or health services research—an exciting pathway for many young Pediatric Hematology/Oncology specialists.

Also for consideration are a range of opportunities which may be appealing to some pediatric hematology/oncologists that often present at later stages in one's career. These are administrative leadership roles such as division chiefs, department chairs, and deans, while some become may wish to pursue medical education and become Fellowship Program Directors or other roles within the university. Depending on the location, others may pursue the private practice of Pediatric Hematology/Oncology or are employed by pharmaceutical and biotechnology firms and serve in a myriad of roles.

In addition, opportunities exist for the pediatric hematology-oncology specialist to travel and participate in exciting scientific meetings, to network, and become friends with colleagues from around the world. Community and volunteer activities with patient support groups, research associations, and disease foundations often provide additional reward. A common community experience is a summer medical disease focused camping experience, such as camps specifically designed to serve children with cancer.

Is it possible to further subspecialize in some aspect of hematology or oncology after receiving general training?

Many pediatric hematology-oncology specialists care for patients with diverse diseases- both hematologic and oncologic, and see patients from both arenas. However others, especially those on larger medical school faculties or for whom research constitutes a significant portion of their duties, focus on the field in which they develop special expertise. Many individuals emphasize clinical oncology, and some narrow their expertise specifically to solid tumors or to a specific type of tumor (e.g., neuroblastoma, bone tumors). Others primarily care for patients with acute leukemia, neuro-oncology (brain tumors), cancer pharmacology, or development of experimental agents. Some Pediatric Hematology/Oncology specialists devote most or all of their time to diagnosing and caring for the hematopoietic stem cell transplant patient and conducting clinical, translational, or laboratory research in transplantation. Some individuals primarily care for nonmalignant hematology patients and become experts in sickle cell disease, hemophilia, thrombotic disorders, or quantitative or qualitative disorders of neutrophils. Hematologists who do not deal with oncology generally practice at larger academic medical centers. It is becoming common to obtain formal training in clinical research. Many Pediatric Hematologist/Oncology specialists pursue Masters degrees in Biostatistics, Clinical Research, Epidemiology, Education, or Public Health.