CHILDREN’S HOSPITAL BOSTON

life-changing care world changing research

Department of Pharmacy

ASHP Accredited PGY2 Pharmacy Residency in Pediatrics

Residency Handbook

Residency Program Director:
Crystal Tom, PharmD, BCPS

Last revised 11/2010
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THE HOSPITAL

Children's Hospital Boston, a 392-bed tertiary care center, is located in the Longwood Medical and Academic Area of Boston. Serving as a comprehensive care center for pediatric health care, it records approximately 22,600 inpatient admissions and greater than 572,500 visits to the outpatient clinics annually. In addition to providing care to general medicine patients, the hospital also contains a neonatal ICU, multidisciplinary ICU, cardiac ICU, and a bone marrow transplant unit. The hospital is the primary pediatric teaching hospital of Harvard Medical School as well as a major pediatric center for NIH AIDS Clinical Trials Group. Furthermore, the world's largest pediatric research facility is located at Children's Hospital Boston within the John F. Enders Pediatric Research Laboratories.
VISION
Be the worldwide leader in improving children’s health

MISSION
Provide the highest quality health care
Be the leading source of research and discovery
Educate the next generation of leaders in child health
Enhance the health and well-being of the children and families in our local community

VALUES

Excellence: We are committed to achieving and maintaining a standard of excellence in all we do. First and foremost, we consistently strive to make the patient experience a model of quality care through advanced treatment, compassionate support and full family participation and communication.

Sensitivity: We believe that sensitivity means a compassionate awareness of the stress experienced by families with ill and injured children, and an understanding of the impact it can have on the emotions and behavior of the children and families in our care. We strive both to anticipate and respond to issues arising from complex personal and family situations, and to provide the support that can contribute to the best possible outcome for the child and family. We also believe that sensitivity means a recognition of and respect for the diverse backgrounds of both the patients and families we serve and of our coworkers throughout the hospital.

Leadership: As an academic medical center devoted to the practice of pediatrics, Children's fosters an environment of innovation and discovery, and of individual and team contributions to advancing pediatrics in all areas of our mission.

Community: We are dedicated to fostering community, both within the hospital and in the neighborhoods around us. Toward that end, we welcome and treat many children whose families can't afford health care. The Children's community also includes thousands of dedicated supporters who give generously to the hospital in many different ways.

Last revised 11/2010
PHARMACY DEPARTMENT

The department of pharmacy consists of the central pharmacy, sterile products preparation area, and seven satellite pharmacies. The department has fifty full-time pharmacists who provide services 24 hours a day. Annually, more than 350,000 medication orders are processed and more than 3.3 million doses are dispensed. Clinical services are provided in the areas of general pediatrics, neonatology, cardiology, oncology, hematopoietic stem cell transplantation, parenteral nutrition, infectious diseases, solid organ transplant, surgical programs, pulmonary/cystic fibrosis and emergency services. Pharmacists actively participate on interdisciplinary committees that impact drug use policies within the hospital. The pharmacy also provides drug information to hospital staff through an integrated web-based drug information service via the hospital's intranet. The pharmacy department precepts students from both the Massachusetts College of Pharmacy and Northeastern University School of Pharmacy and these relationships afford the resident opportunities to develop teaching skills through the provision of experiential education and didactic instruction.

The Department of Pharmacy provides comprehensive pharmaceutical care services to all patients at Children's Hospital, Boston. The role of the Pharmacy is to promote safe and effective medication therapy for all patients through the work of our clinical and distributive teams.

A little more about us …

- 7 satellite pharmacies
- 50 full-time pharmacists
- 70% of Pharmacists have PharmD degree
- 30% of Pharmacists are residency trained
- 8 Clinical Teams
- Services 24 hours a day
- Over 350,000 medication orders processed annually
- Over 3.3 million doses dispensed annually
- Web-based drug information service
- ASHP Accredited Pediatric Specialty Residency Program
- Students from Mass College of Pharmacy and NEU

MISSION

Pharmacy practice at Children's Hospital is dedicated to the provision of excellence in pharmaceutical care. We are dedicated to the continuous improvement of our cognitive and distributive services that make up the framework of our care delivery processes. This is accomplished through our dedicated teams of well-trained professional and technical staffs utilizing state-of-the-art systems that consistently and accurately provide optimum patient outcomes and safety within the medication use cycle.
SCOPE OF SERVICE

The pharmacy is structured to provide the scope of service required of all patients being treated at Children's Hospital, Boston.

Pharmacists are involved in all aspects of medication therapy management including house wide medication order review and through participation in all medication distribution activities. Pharmacists also participate in patient care team rounds and help determine appropriate pharmaceutical products for each patient based on patient needs. Pharmacists also provide drug information, pharmacokinetic services, renal dose adjustment and drug-drug interaction review.

Both technicians and pharmacists are involved in our complete IV admixture and unit dose system that provides medications in ready-to-use form. The program is supplemented by decentralized automated dispensing devices (Pyxis) providing controlled ready access to medications. These systems and resources equip the pharmacy to meet the complex treatment and support required of patients in an academic medical center.

Clinical staff practice in areas with complex and high-risk medication therapy including critical care, emergency services, infectious disease, cardiology, transplantation, medicine, ambulatory care, oncology, surgery, and trauma. The staff is aided by hospital and pharmacy information systems to provide the best possible up-to-date patient information and decision support.
PRACTICE MODEL

Pharmaceutical Care Services are provided via groups of teams deployed throughout the hospital. Pharmacists are involved in all aspects of medication therapy management including active participation in patient care team rounds, house wide medication order review and through participation in all medication distribution activities. Pharmacists determine the appropriate pharmaceutical product needed for each patient based on patient needs. Pharmacists also provide drug information, pharmacokinetic services, renal dose adjustment, drug-drug interaction review, code response, and antimicrobial stewardship to assist in improved outcomes for patients at Children's Hospital, Boston.

PHARMACIST CORE RESPONSIBILITIES

- Patient care team participation
- Clinical services
- Therapeutic drug monitoring
- Patient education
- Medication utilization evaluations
- Parenteral nutrition monitoring
- Investigational drug studies
- Drug preparation (sterile and non-sterile)
- Drug distribution

EDUCATION

Pharmacists are involved in many facets of pharmaceutical education. Pharmacists not only help educate the patients and families, but also give lectures to nurses, other pharmacists and pharmacy students about medicines and their appropriate use. The Pharmacy Department also participates in Pharmacy internship programs with the schools of Pharmacy in Massachusetts.

Last revised 11/2010
PGY2 PHARMACY RESIDENCY IN PEDIATRICS

The PGY2 Pharmacy Residency in Pediatrics at Children’s Hospital Boston is a postgraduate educational and training experience designed to develop pharmacists with expertise in pediatric pharmacotherapy.

**Philosophy** * A pediatric pharmacy practice residency embraces the concept that pediatric pharmacy practitioners share in the responsibility and accountability for optimal outcomes in pediatric patients. Therefore, the residency must provide the resident with opportunities to function independently as a practitioner through conceptualizing, integrating, and transforming accumulated experience into improved drug therapy for pediatric patients.

**Overall Goal** * To provide a structured and advanced education and training experience for pharmacists whose abilities, motivations, and career aspirations suggest potential for creative and innovative leadership in pediatric pharmacy practice.

**Program Goals**

- Engage and prepare the resident for significant responsibilities in clinical, educational, and operational aspects of pharmacy practice
- Provide a mechanism whereby the resident contributes to the development of pharmacy services within an institution
- Develop the resident’s teaching abilities
APPLICATION INFORMATION

Eligibility: Applicants must possess a Doctor of Pharmacy degree from a school or college accredited by the American Council on Pharmaceutical Education, and must hold or be eligible for pharmacy licensure in Massachusetts. Completion of a PGY1 Residency in Pharmacy Practice and participation in the ASHP residency match are required.

Application materials: A completed application consists of a letter of intent, curriculum vitae, and official transcripts of all college work completed. Additionally, three letters of recommendation (at least one of which must be from an employer or supervisor) are required. Screening interviews will be conducted at the ASHP Midyear Clinical Meeting and formal interviews will be conducted on-site for qualified candidates.

RESIDENT SELECTION CRITERIA

Applicants will be reviewed, considered and ranked based on the following criteria:

- Competence – based upon the applicant’s performance in therapeutics and clinical clerkships
- Scholastic achievement – based upon candidate's college record
- Verbal communication skills – assessed during the interview process.
- Written communication skills – assessed based on the applicant’s individual assessment for residency training and during the interview process
- Extracurricular activities – based upon leadership in organizations, school functions, and community activities
- Letters of reference
- Enthusiasm, self-motivation, and self-confidence – based on the interview, letters of reference, and the candidate's individual assessment for residency training
- Perceived compatibility with the residency program's goals and philosophy

It is the responsibility of the RPD and members of the residency selection committee to recruit, interview, and evaluate residency candidates.
EMPLOYMENT INFORMATION

Stipend: The resident will be paid a stipend of $46,000 with two weeks paid vacation. Enrollment in the residency program qualifies the resident for deferment of most student loan payments during the term of the program.

Benefits: The resident will be covered under a comprehensive benefits plan in accordance with Children's Hospital Boston policies.

Policy on Leave of Absence: Children’s Hospital Boston recognizes that employees may need to take a leave of absence from work for their own needs or that of their families. The hospital offers a variety of leaves to address a range of circumstances. Please refer to the LOA policy which describes each type of leave offered, as well as information about Leaves of Absence in general. If you are not certain which Leave of Absence applies to you, or if you have other Leaves of Absence questions, Human Resources should be contacted.

All leave requests and subsequent arrangements to make up missed time, must be discussed and agreed upon with the residency program director.

Residency Travel:

- Required meetings include:
  - ASHP Midyear Clinical Meeting
    - The resident is expected to attend the ASHP Midyear Clinical Meeting in December of each year. The resident’s responsibilities at Midyear include, but are not limited to recruiting future residency candidates, staffing at the residency showcase and interviewing candidates. Presenting a poster
  - Eastern States Residency Conference
    - The resident is expected to attend and present his/her residency project at the Eastern States Residency Conference, usually held at the beginning of May.
  - Attendance at other conferences will be at the discretion of the Director of Pharmacy and the Residency Director.

Policy on Dismissal: A pharmacy practice resident may be placed on probation, immediately dismissed, or voluntarily withdraw from the program should there be evidence of their inability to function effectively or placing patients at risk. Examples of behavior which would require this action are listed, but are not limited to, the following:

- Failure to obtain NAPLEX and MJPE licensure by September 1st in the resident year
- More than one unsatisfactory performance evaluation
- Fails to report to work without proper notice for 3 consecutive work days
- Behavioral misconduct occurring on site premises
- Disclosing confidential information concerning patient or the business practices of Children's Hospital Boston
- Any felony or other offense which results in either probation by the Board of Pharmacy or temporary or permanent loss of the pharmacy license

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GENERAL RESIDENT RESPONSIBILITIES

♦ Participate in pharmacy operations and provide clinical pharmacy services to patients and Children’s Hospital employees
♦ Contribute to quality improvement programs where appropriate
♦ Participate in the provision of drug information services and provide educational in-services to medical staff
♦ Meet with the residency program administrators on a regular basis to monitor progress, identify problems and potential resolutions, provide feedback, and fine-tune goals and objectives throughout the program
♦ Meet regularly with preceptors to ensure that activities are focused on resident’s goals
♦ Resident may serve as a preceptor to pharmacy students assigned to Children’s Hospital for clinical clerkship rotations
♦ Maintain a Resident’s Portfolio of all completed projects and presentations, as well as any other information the resident or preceptor deems relevant. This information should also be forwarded electronically to the RPD to upload in ResiTrak, where all evaluations will be stored.
♦ Service commitment
  o The resident is required to staff the pharmacy department satellite and/or sterile product areas for the equivalent of one eight hour shift per week, the schedule to be determined based on the availability of the resident and the needs of the Department of Pharmacy.

RESIDENCY EXPERIENCES

The program will emphasize development of the practical skills needed by today’s pediatric pharmacist. The residency director will provide written learning objectives at the beginning of the program.

Required Learning Experiences

General Pediatrics

*Overview:* The resident gains experience in working with pediatric patients receiving drug therapy for the management of specific diseases. This one-month rotation will focus on infants, school-age children, and adolescents. Interpersonal skills are developed through communications with patients, parents and clinicians.

Neonatology

*Overview:* During this one-month rotation the resident will interact with neonatologists, nurse practitioners, nurses, and other health care providers in the ICU setting. Diseases, therapeutics, and developmental issues in newborns will be examined. Identification of problematic drug delivery and alternative administration techniques will be explored.
Required Learning Experiences (continued)

Critical Care
*Overview:* The goal of this one-month rotation is to provide the resident with an understanding of the pathophysiologic problems of the critically ill child. The resident will gain knowledge in ventilatory support, physiological monitors with emphasis on pharmacologic treatment and therapeutic endpoints.

Nutrition
*Overview:* During this one-month rotation the resident will work closely with the Nutrition team to learn concepts of nutrition support as they relate to various disease states. The resident will gain experience in initiating and monitoring patients on parenteral nutrition. Both inpatient and outpatient parenteral nutrition will be examined.

Infectious Diseases
*Overview:* Throughout this one month rotation the resident will round with the Infectious Diseases consultation service. The emphasis will be on management of complicated infectious disease cases in children of all ages. During this rotation the resident will learn about various methods of controlling and optimizing antimicrobial utilization in the hospital setting. The resident will attend and participate in ID case conferences, ID journal club, and bacteriology rounds.

Hematology/Oncology
*Overview:* During this one month rotation the resident will round with the Oncology team. The resident will learn about the common types of pediatric cancer and the appropriate treatment based on Pediatric Oncology Group protocols. The resident will also learn about the management of adverse events associated with chemotherapeutic agents in pediatric patients.

Cardiology
*Overview:* During this one month rotation the resident will round with the Cardiology team. The resident will learn about the common types of congenital heart disease and the appropriate medical and surgical treatment.

Elective Learning Experiences

- Complex Care Service
- Emergency Medicine
- Endocrine
- Intermediate Care Program
- Neurology
- Pain Service
- Pulmonary
- Psychiatry
- Renal
- Stem Cell Transplantation
Longitudinal Learning Experiences

**Administrative Practice Management**
Through periodic meetings and participation in planning groups with the Director of Pharmacy, the resident will develop an appreciation of administrative issues including, but not limited to: staffing and resource allocation, strategic planning, budget development, productivity indicators, human resource issues, Child Health Corporation of America (CHCA), group purchasing, contracts, and managed care.

**Ambulatory**
The resident will participate in a clinic of their choice. Choices include gastroenterology/nutrition, solid organ transplant, travel clinic, The Center for Ambulatory Transfusion and Clinical Research, Dialysis or Waltham site. The resident will work as part of a multidisciplinary team and gain knowledge in disease management and patient education.

**Residency Project**
The resident will be expected to complete a residency project to be presented at the Eastern States Residency Conference. The project will be tailored around the interests of the resident as well as benefit Children's Hospital Boston. Each resident must have a residency preceptor to act as a mentor for the project. The residency program director must approve the project prior to commencing. The residency project must follow a timeline agreed upon by both the resident and the mentor. Sufficient data must be collected at the time the project is presented at Eastern States Residency Conference. In addition, the resident must write a manuscript describing the project and submit it for publication if applicable.
Educational Opportunities

Continuing Education
The resident is expected to become a member of the Massachusetts Society of Health-System Pharmacists. The resident will fulfill his or her CE requirements for licensure. Additionally, the resident is required to prepare two continuing education approved programs for pharmacists.

Clinical Clerkship
The resident will work with clinical clerkship students two times during the course of the residency year. There are many students assigned to Children’s Hospital Boston for completion of their clinical clerkships from several different schools of Pharmacy including Northeastern University and the Massachusetts College of Pharmacy and Allied Health Sciences.

Resident Teaching Seminar
The resident will have an opportunity to participate in a year-long seminar course held at Tufts-New England Medical Center. The purpose of the seminar is to teach residents how to be an effective educator. Participants will include PGY1 and PGY2 residents/fellows from numerous programs in the Massachusetts area.

Seminar Facilitator – Northeastern University
The resident will have an opportunity to facilitate a Therapeutics Seminar course at Northeastern University. The seminar is 3 hours once a week and topics generally include Pediatrics and Infectious Diseases. Responsibilities include reviewing cases with a group of about 10-15 fifth year pharmacy students.
CUSTOMIZED TRAINING PLANS

Individual Assessment for Residency Training

In an attempt to determine the resident's strengths and weaknesses, an assessment of the resident shall be conducted at the beginning of the program. Based on this evaluation, a plan for the resident shall be developed and documented.

Plan for Residency Training

The plan shall relate to the practice skills required in pharmacy practice and shall describe the competencies to be attained in the residency program. The RPD, in consultation with the resident, will develop the training plan and a schedule of LE and activities based on this plan. The plan should be completed by the end of the first month of residency training.

The relative emphasis in specific areas of training may vary according to each resident's individualized plan. The training plan will be modified on a continual basis in order to meet the changing needs of the resident, and to reflect progress made during the residency and areas in need of continued improvement. The plan will be reviewed at least quarterly as a basis for emphasis in training activities. The plan shall be modified as needed to strengthen the resident's competencies in pharmacy practice.

EVALUATIONS (via ResiTrak)

During each rotation, the resident will receive a midpoint and final summative evaluation by the preceptor. The summative evaluation at the end of the rotation will assess the resident’s progress in meeting the residency goals and objectives. The resident will also complete two evaluations at the end of each rotation, a self-evaluation and an evaluation of the preceptor and the rotation. All evaluations are to be completed and reviewed by the resident, preceptor and residency program director within a week of completing a rotation.

The residency program director will also conduct quarterly evaluations. The purpose of the quarterly evaluation is to keep the resident on track with their residency goals and objectives and assigned/required projects. The evaluation will also consist of a review of progress of all the residency goals and objectives to date. The residency training plan may be adjusted at each quarterly evaluation as needed. Any goal/objective that has been evaluated as “achieved” twice in a row, may be considered for elimination from evaluation in future rotations.
RESIDENCY CERTIFICATION

The resident is awarded a residency certificate upon the successful completion of all *residency requirements*.

*Residency Requirements:*

- **Licensure**
  - Since residency training is predicated upon accepting full responsibility and accountability for the care of patients, the resident must obtain licensure to practice as a pharmacist in the Commonwealth of Massachusetts. Therefore, licensure must be obtained either prior to the beginning of the residency program or by September 1st at the latest. The resident must provide the RPD and Human Resources with a photocopy of the Massachusetts pharmacist registration card. Failure to obtain licensure by this date will result in the incompletion of the residency requirements of this program.

- Follow hospital and departmental policies and procedures

- Successful completion of all required and elective rotations

- All of the six core competencies must be evaluated and be graded as *Achieved*.

- If the resident has 30% of their goals and objectives that remain graded as a “Needs improvement” throughout the year, a decision can be made by the RPD in conjunction with the preceptors to not award a residency certificate.

- Presenting a minimum of 2 continuing education approved lectures per residency year

- A research project must be completed with the results presented at the Eastern States Conference for Residents and Preceptors and a manuscript prepared describing the project and submitted it for publication if applicable
### RESIDENCY PROGRAM ADMINISTRATION

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<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Email</th>
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<tbody>
<tr>
<td>Crystal Tom, PharmD, BCPS</td>
<td>Residency Program Director</td>
<td><a href="mailto:crystal.tom@childrens.harvard.edu">crystal.tom@childrens.harvard.edu</a></td>
</tr>
<tr>
<td>Al Patterson, PharmD</td>
<td>Director of Pharmacy</td>
<td><a href="mailto:al.patterson@childrens.harvard.edu">al.patterson@childrens.harvard.edu</a></td>
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### RESIDENCY PROGRAM PRECEPTORS

<table>
<thead>
<tr>
<th>Contact</th>
<th>Position</th>
<th>Area/Service</th>
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<tbody>
<tr>
<td>Alana Arnold, PharmD</td>
<td>Clinical Coordinator</td>
<td>Infectious Disease</td>
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<tr>
<td>Jim Bennett, PharmD</td>
<td>Team Leader: Oncology</td>
<td>Stem Cell Transplantation</td>
</tr>
<tr>
<td>Tatyana Cohen, PharmD</td>
<td>Team Leader: Ambulatory</td>
<td>Ambulatory Services</td>
</tr>
<tr>
<td>Roger Dionne, PharmD</td>
<td>Team Leader: Critical Care</td>
<td>Cardiovascular Medicine</td>
</tr>
<tr>
<td>Jessica Galer, PharmD</td>
<td>Pharmacist</td>
<td>Intensive Care Unit</td>
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<tr>
<td>Jennifer Gilarde, PharmD</td>
<td>Pharmacist</td>
<td>Solid Organ Transplant</td>
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<tr>
<td>Kathy Gura, PharmD, BCNSP</td>
<td>Team Leader: Surgical Programs</td>
<td>Clinical Nutrition Service</td>
</tr>
<tr>
<td>Amy Hellinger, PharmD</td>
<td>Pharmacist</td>
<td>Cardiology</td>
</tr>
<tr>
<td>Anna Helon, PharmD</td>
<td>Pharmacist</td>
<td>Neonatal Intensive Care</td>
</tr>
<tr>
<td>Joel Jerome, PharmD</td>
<td>Pharmacist</td>
<td>Surgical Programs</td>
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<tr>
<td>Sarah Jones, PharmD, BCPS</td>
<td>Pharmacist</td>
<td>Infectious Disease</td>
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<tr>
<td>Brian Kerr, RPh</td>
<td>Pharmacist</td>
<td>Finances</td>
</tr>
<tr>
<td>Tsing-Yi Koh-Pharm, PharmD</td>
<td>Pharmacist</td>
<td>Solid Organ Transplant</td>
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<tr>
<td>Nathan Lamb, PharmD</td>
<td>Pharmacist</td>
<td>Neurology/Psychiatry</td>
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<tr>
<td>Joanne Lee, PharmD, BCPS</td>
<td>Pharmacist</td>
<td>Cardiology</td>
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<tr>
<td>Joyce Lee, PharmD</td>
<td>Pharmacist</td>
<td>Intermediate Care Program/MICU</td>
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<tr>
<td>Liza Li, PharmD, BCPS</td>
<td>Pharmacist</td>
<td>Multidisciplinary ICU</td>
</tr>
<tr>
<td>Peter Lutz, PharmD</td>
<td>Operations Manager</td>
<td>Administration/Staffing</td>
</tr>
<tr>
<td>Shannon Manzi, PharmD</td>
<td>Team Leader: ED Services</td>
<td>Emergency Department</td>
</tr>
<tr>
<td>Margaret Murphy, PharmD</td>
<td>Pharmacist</td>
<td>Complex Care Service</td>
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<tr>
<td>Al Patterson, PharmD</td>
<td>Director of Pharmacy</td>
<td>Administration</td>
</tr>
<tr>
<td>Rich Simon, PharmD</td>
<td>Pharmacist</td>
<td>Surgery, Pain Service</td>
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<tr>
<td>Shannon Song, PharmD</td>
<td>Pharmacist</td>
<td>Hematology/Oncology</td>
</tr>
<tr>
<td>Sarah Sparks, PharmD</td>
<td>Pharmacist</td>
<td>General Pediatrics</td>
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<tr>
<td>Crystal Tom, PharmD, BCPS</td>
<td>Team Leader: General Pediatrics</td>
<td>General Pediatrics</td>
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</tbody>
</table>
Past Residents

2009-2010  Nathan Lamb, Pharm.D.
Clinical Pharmacist, Neurology/Psychiatry
Children's Hospital Boston
Boston, MA
nathan.lamb@childrens.harvard.edu

2008 – 2009  Amy Hellinger, Pharm.D.
Clinical Pharmacist, Cardiology
Children's Hospital Boston
Boston, MA
amy.hellinger@childrens.harvard.edu

2007 – 2008  Joyce Lee, Pharm.D.
Clinical Pharmacist, ICP/ICU
Children's Hospital Boston
Boston, MA
joyce.lee@childrens.harvard.edu

2006 – 2007  Liza Li, Pharm.D., BCPS
Clinical Pharmacist, Intensive Care Unit
Children's Hospital Boston
Boston, MA
liza.li@childrens.harvard.edu

2005 – 2006  Sarah Arnold, Pharm.D.
Clinical Pharmacist, Pediatrics
Yale – New Haven
New Haven, CT
sarah.arnold@yynh.org

2004 – 2005  Sarah Jones, Pharm.D., BCPS
Clinical Pharmacist, Infectious Diseases
Children's Hospital Boston
Boston, MA
sarah.jones@childrens.harvard.edu

2003 – 2004  Kristopher Young, Pharm.D.
Director of Pharmacy Services
South Shore Medical Center
Weymouth, MA
kristopher_young@sshosp.org
Past Residents (continued)

2002 – 2003
Jennifer Ellis, Pharm.D.
Clinical Assistant Professor, Pediatrics
University of Connecticut School of Pharmacy
Connecticut Children’s Medical Center
Hartford, CT
(860) 545-9232

Sean O’Neill, Pharm.D.
Clinical Pharmacist
Children’s Hospital of Philadelphia
Philadelphia, PA
oneills@email.chop.edu

2000 – 2001
Shawna Nowels, Pharm.D.
Clinical Pharmacist, Pediatric Intensive Care Unit
Children’s Hospital of the King’s Daughters
Norfolk, VA
(757) 668-7163

1999 – 2000
Catherine Tom, Pharm.D.
Assistant Professor of Pharmacy Practice
Arnold & Marie Schwartz College of Pharmacy and Health Sciences
Long Island University
Brooklyn, NY
catherine.tom@lie.edu
(718) 488-3543
AND
Clinical Pharmacy Manager/Pediatrics
The Children’s Hospital at Montefiore
Bronx, NY
(718) 741-2626
catom@montefiore.org

1998 – 1999
Brenda Dodson, Pharm.D.
Children’s Hospital Boston
Boston, MA
brenda.dodson@childrens.harvard.edu

1997 – 1998
Kristina Kloos, Pharm.D.
Clinical Pharmacist, Neonatal Intensive Care Unit
St. Louis Children’s Hospital
St. Louis, MO
Knk8341@bjcmail.carenet.org
Outcome R1: Demonstrate leadership and practice management skills in the pediatric patient care setting.

Goal R1.1  Exhibit the ongoing development of essential personal skills of a pediatric pharmacy practice leader.

OBJ R1.1.1  (Characterization) Practice self-managed continuing professional development with the goal of improving the quality of one’s own performance through self-assessment and change.

OBJ R1.1.2  (Characterization) Demonstrate commitment to the professional practice of pediatric pharmacy through active participation in the activities of local, state, and/or national pediatric and pharmacy professional organizations.

OBJ R1.1.3  (Synthesis) Devise an effective plan for balancing professional and personal life.

OBJ R1.1.4  (Characterization) Display integrity in professional relationships and actions.

OBJ R1.1.5  (Application) Comply with the requirements of the organization’s policy in all interactions with the pharmaceutical industry.

OBJ R1.1.6  (Synthesis) Initiate and maintain a systematic approach to documenting professional activities and accomplishments.

Goal R1.2  Contribute to the leadership and management activities within the pediatric pharmacy practice area.

OBJ R1.2.1  (Application) Use effective negotiation skills to resolve conflicts.

OBJ R1.2.2  (Synthesis) Use group participation skills when leading or working as a member of a formal or informal work group.

Goal R1.3  Exercise pediatric pharmacy practice leadership.

OBJ R1.3.1  (Characterization) Demonstrate a commitment to advocacy for the optimal care of pediatric patients through the assertive and persuasive presentation of patient care issues to members of the health care team, the patient, and/or the patient’s representative(s).

OBJ R1.3.2  (Characterization) Display initiative in preventing, identifying, and resolving pharmacy-related pediatric patient care problems.

OBJ R1.3.3  (Comprehension) Explain the nature of mentoring in pharmacy, its potential connection with achievement, and the importance of being willing to serve as a mentor to appropriate individuals.

OBJ R1.3.4  (Comprehension) Explain the general processes of establishing and maintaining a pediatric pharmacy residency program.

OBJ R1.3.5  (Comprehension) Explain the benefits, to the practitioner and the profession, of contributing to the pediatric pharmacy literature.
Goal R1.4 Communicate effectively.

OBJ R1.4.1 (Analysis) Use an understanding of effectiveness, efficiency, customary practice and the recipient's preferences to determine the appropriate type of, and medium and organization for, communication.

OBJ R1.4.2 (Complex Overt Response) Speak clearly, distinctly, and with correct grammar in the primary language of the practice site.

OBJ R1.4.3 (Application) Use listening skills effectively in performing job functions.

OBJ R1.4.4 (Application) Use correct grammar, punctuation, spelling, style, and formatting conventions in preparing all written communications.

Outcome R2: Optimize the care of inpatient and outpatient pediatric patients by providing evidence-based*, patient-centered medication therapy as an integral part of an interdisciplinary team.

Establish collaborative professional relationships with health care team members
↓
Prioritize delivery care to pediatric patients
↓
Establish collaborative pharmacist-patient and pharmacist-caregiver relationships
↓
Collect and analyze patient information
↓
When necessary make and follow up on patient referrals/consults
↓
Design evidence-based therapeutic regimen
↓
Design evidence-based monitoring plan
↓
Recommend or communicate regimen and monitoring plan
↓
Implement regimen and monitoring plan
↓
Evaluate patient progress and redesign as necessary
↓
Communicate ongoing patient information
↓
Document direct patient care activity
Goal R2.1  Establish collaborative professional relationships with members of the inpatient and outpatient pediatric interdisciplinary teams.
   OBJ R2.1.1 (Synthesis) Implement a strategy that effectively establishes cooperative, collaborative, and communicative working relationships with members of the pediatric interdisciplinary team.

Goal R2.2  For a caseload of pediatric patients, prioritize the delivery of pharmaceutical care.
   OBJ R2.2.1 (Evaluation) Devise a plan for determining the priority for care of pediatric patients if given limited time and multiple patient care responsibilities.

Goal R2.3  Establish collaborative pharmacist-patient and pharmacist-caregiver relationships.
   OBJ R2.3.1 (Synthesis) Formulate a strategy that effectively establishes a patient-centered pharmacist-patient and a pharmacist-caregiver relationship.

Goal R2.4  Collect and analyze patient information.
   OBJ R2.4.1 (Analysis) Collect and organize all patient-specific information needed by the pediatric pharmacist to make appropriate evidence-based, patient-centered medication therapy recommendations as part of the pediatric interdisciplinary team. (See Appendix)
   OBJ R2.4.2 (Analysis) Determine the presence of any of the following medication therapy problems in the current medication therapy of a pediatric patient:
   1. Medication used with no medical indication
   2. Patient has medical conditions for which there is no medication prescribed
   3. Medication prescribed inappropriately for a particular medical condition
   4. Immunization regimen is incomplete
   5. Current medication therapy regimen contains something inappropriate (dose, dosage form, duration, schedule, route of administration, method of administration)
   6. There is therapeutic duplication
   7. Medication to which the patient is allergic or sensitive to has been prescribed
   8. There are adverse drug- or device-related events or potential for such events
   9. There are clinically significant drug-drug, drug-disease, drug-food, or drug-laboratory test interactions or potential for such interactions
   10. Medical therapy has been interfered with by social, recreational, nonprescription, complementary, or alternative drug use by the patient or others
   11. Patient not receiving full benefit of prescribed medication therapy
   12. There are problems arising from the financial impact of medication therapy on the patient or caregiver
   13. Patient or caregiver lacks understanding of medication therapy
   14. Patient or caregiver not adhering to medication regimen
   OBJ R2.4.3 (Analysis) Using an organized collection of patient-specific information, summarize the health care needs of a pediatric patient.
Goal R2.5 When necessary, make and follow up on referrals/consults for pediatric patients.

OBJ R2.5.1 (Evaluation) When presented with a pediatric patient with health care needs that cannot be met by the pharmacist, make a referral/consult to the appropriate health care provider based on the patient’s acuity and the presenting problem.

OBJ R2.5.2 (Synthesis) Devise a plan for follow-up for a referral/consult for a pediatric patient.

Goal R2.6 Design evidence-based therapeutic regimens for pediatric patients.

OBJ R2.6.1 (Synthesis) Specify therapeutic goals for a pediatric patient, incorporating the principles of evidence-based medicine that integrate patient-specific data, disease and medication-specific information, ethics, and quality-of-life considerations.

OBJ R2.6.2 (Synthesis) Design a patient-centered regimen that meets the evidence-based therapeutic goals established for a pediatric patient; integrates patient-specific information, disease and drug information, ethical issues and quality-of-life issues; and considers pharmacoeconomic principles.

Goal R2.7 Design evidence-based monitoring plans for pediatric patients.

OBJ R2.7.1 (Synthesis) Design a patient-centered, evidence-based monitoring plan for a therapeutic regimen that effectively evaluates achievement of the therapeutic goals set for a pediatric patient.

Goal R2.8 Recommend or communicate regimens and monitoring plans for pediatric patients.

OBJ R2.8.1 (Application) Recommend or communicate a patient-centered, evidence-based therapeutic regimen and corresponding monitoring plan to other members of the interdisciplinary team, caregivers, and, when appropriate, the pediatric patient, in a way that is age-appropriate, systematic, logical, accurate, timely, and sensitive.

Goal R2.9 Implement regimens and monitoring plans for pediatric patients.

OBJ R2.9.1 (Application) When appropriate, initiate the patient-centered, evidence-based therapeutic regimen and monitoring plan for a pediatric patient according to the organization's policies and procedures.

OBJ R2.9.2 (Complex Overt Response) When appropriate, exercise skill in the administration or supervision of the administration of a pediatric patient’s therapeutic regimen.

OBJ R2.9.3 (Application) When necessary, contribute to the work of the team that secures reimbursement for medications used in a regimen for a pediatric patient.

OBJ R2.9.4 (Synthesis) Use effective patient education techniques to provide medication-related counseling to a pediatric patient and the patient’s caregiver(s).
Goal R2.10  Evaluate the progress of pediatric patients and redesign regimens and monitoring plans.
OBJ R2.10.1 (Evaluation) Accurately assess progress toward the therapeutic goal(s) of a pediatric patient.
OBJ R2.10.2 (Application) Ensure that accurate and timely medication-specific information regarding a specific pediatric patient reaches those who need it at the appropriate time.
OBJ R2.10.3 (Synthesis) Redesign the regimen and monitoring plan of a pediatric patient as necessary based on evaluation of monitoring data and therapeutic outcomes.

Goal R2.11  Communicate ongoing patient information to facilitate continuity of care.
OBJ R2.11.1 (Synthesis) Formulate a strategy for continuity of pharmaceutical care across all applicable treatment settings.
OBJ R2.11.2 (Application) When given a pediatric patient who is transitioning from one health care setting to another, communicate pertinent pharmacotherapeutic information to the receiving health care professionals.

Goal R2.12  Document direct patient care activities appropriately.
OBJ R2.12.1 (Analysis) Appropriately select direct patient care activities for pediatric patients for documentation.
OBJ R2.12.2 (Application) Use effective communication practices when documenting a direct patient-care activity for a pediatric patient.

**Outcome R3: Serve as an authoritative resource on the optimal use of medications used to treat pediatric patients.**

Goal R3.1  Establish oneself as an organizational expert for pediatric pharmacy-related information and resources.
OBJ R3.1.1 (Synthesis) Implement a successful strategy for earning credibility within the organization to be an authoritative resource on the pharmaceutical care of pediatric patients.

Goal R3.2  Contribute the pediatric pharmacist’s perspective to technology and automation systems decisions.
OBJ R3.2.1 (Synthesis) When appropriate, contribute to the organization’s design of its technology and automation systems.
OBJ R3.2.2 (Synthesis) When appropriate, contribute to the organization’s implementation of its technology and automation systems.
OBJ R3.2.3 (Synthesis) When appropriate, contribute to the organization’s maintenance of its technology and automation systems.

Goal R3.3  Select core biomedical literature resources appropriate for pediatric pharmacy practice.
OBJ R3.3.1 (Application) Use knowledge of standard resources to select core primary, secondary, and tertiary biomedical literature resources appropriate for pediatric pharmacy practice.

Goal R3.4  Provide concise, applicable, comprehensive, and timely responses to requests for drug information pertaining to the care of pediatric patients.
OBJ R3.4.1 (Analysis) Discriminate between the requester’s stated drug information question and the appropriate drug information need(s) by investigating the clinical situation and obtaining appropriate additional information.
OBJ R3.4.2  (Synthesis) Formulate a systematic, efficient, and thorough procedure for retrieving pediatric drug information.

OBJ R3.4.3  (Analysis) Determine from all retrieved biomedical literature the appropriate information to evaluate.

OBJ R3.4.4  (Evaluation) Evaluate the usefulness of biomedical literature gathered.

I/O  Explain scarcity of studies and subjects as causes for the frequent necessity to consider the clinical usefulness of less comprehensive studies when evaluating literature for pediatric patients.

OBJ R3.4.5  (Evaluation) Determine whether a study's conclusions are supported by the study results.

OBJ R3.4.6  (Synthesis) Formulate responses to a drug information request based on analysis of the literature.

OBJ R3.4.7  (Synthesis) Provide appropriate responses to drug information questions that require the pediatric pharmacist to draw upon his or her knowledge base.

OBJ R3.4.8  (Evaluation) Assess the effectiveness of drug information recommendations.

Goal R3.5  Contribute to publishing periodic newsletters or bulletins for health care providers on timely medication-related matters and medication policies.

OBJ R3.5.1  (Synthesis) Write an article for a newsletter or bulletin addressing either a medication or a medication policy affecting pediatric patients.

Goal R3.6  Assist the organization in achieving compliance with accreditation, legal, regulatory, and safety requirements related to the use of medications used in the care of pediatric patients (e.g., The Joint Commission requirements; ASHP standards, statements, and guidelines; state and federal laws regulating pharmacy practice; OSHA regulations).

OBJ R3.6.1  (Evaluation) Determine appropriate activities and documentation to meet accreditation, legal, regulatory, and safety requirements in the area of pediatric pharmacy.

Goal R3.7  Contribute to the management of pediatric medical emergencies.

OBJ R3.7.1  (Synthesis) Exercise skill as a team member in the management of a pediatric medical emergency according to the organization’s policies and procedures.

OBJ R3.7.2  (Complex Overt Response) When administration is allowed by the organization, exercise skill in the administration of emergency medications for a pediatric patient.

Goal R3.8  Understand the role of the pediatric pharmacist in public health initiatives affecting children.

OBJ R3.8.1  (Comprehension) Explain the pediatric pharmacist’s role in the development of emergency protocols for public health disasters (e.g., natural disaster, bioterrorism, epidemic).

OBJ R3.8.2  (Comprehension) Explain the role of the pediatric pharmacist in advocacy for vaccination.
Outcome R4: Evaluate, manage, and improve the medication-use process in pediatric patient care areas.

Goal R4.1 Prepare and dispense medications for pediatric patients following existing standards of practice and the organization’s policies and procedures.

OBJ R4.1.1 (Evaluation) Interpret the appropriateness of a pediatric patient’s medication order before preparing or permitting the distribution of the first dose.

OBJ R4.1.2 (Application) Follow the organization's policies and procedures to maintain the accuracy of the patient’s medication profile.

OBJ R4.1.3 (Application) Prepare a pediatric patient’s medications following appropriate standards of practice and the organization's policies and procedures.

OBJ R4.1.4 (Application) Dispense medications for a pediatric patient following the organization's policies and procedures.

Goal R4.2 Contribute to the maintenance of the organization’s formulary for medications used in the care of pediatric patients.

OBJ R4.2.1 (Evaluation) Make a recommendation for an addition or deletion to the organization’s formulary for medications used in the care of pediatric patients based on literature and/or comparative reviews.

OBJ R4.2.2 (Synthesis) Formulate effective strategies for communicating formulary restrictions to providers.

OBJ R4.2.3 (Evaluation) When presented with a real or hypothetical drug shortage, identify appropriate alternative medications.

OBJ R4.2.4 (Evaluation) When the needs of a particular patient warrant, determine if a non-formulary medication should be considered for therapy.

Goal R4.3 Contribute to the review of existing, development of new, and implementation of the organization’s policies and procedures affecting the care of pediatric patients.

OBJ R4.3.1 (Synthesis) Contribute to the work of an organizational committee or work group concerned with the improvement of medication-use policies and procedures that affect the care of pediatric patients.

Goal R4.4 Contribute to the review of existing, development of new, and implementation of the organization’s evidence-based medication-related guidelines for the care of pediatric patients.

OBJ R4.4.1 (Analysis) Identify the need for an evidence-based medication-related guideline for the care of pediatric patients by comparing the applicability of existing organizational or published guidelines to the needs of your own organization.

OBJ R4.4.2 (Synthesis) Contribute to the development of a medication-related guideline for the care of pediatric patients based on best available evidence and the characteristics of the local environment and patients.

OBJ R4.4.3 (Synthesis) Contribute to the formulation of a strategy that will successfully implement a medication-related guideline for the care of pediatric patients.

OBJ R4.4.4 (Evaluation) Assess the results of implementing a medication-related guideline for the care of pediatric patients.
Goal R4.5 Identify opportunities for improvement of the safety of aspects of the organization’s medication-use system affecting pediatric patients.
OBJ R4.5.1 (Analysis) When applicable, contribute to a root cause analysis (RCA) of a medication error occurring in a pediatric patient.
OBJ R4.5.2 (Analysis) When applicable, contribute to a failure mode and effect analysis (FMEA) of a proposed new medication-use process affecting the care of pediatric patients.
OBJ R4.5.3 (Application) Participate in the organization’s system for reporting medication errors and adverse drug reactions.

Outcome R5: Demonstrate excellence in the provision of training or educational activities for pediatric health care professionals, health care professionals in training, and the public.
Goal R5.1 Provide effective education and/or training to health care professionals and health care professionals in training.
OBJ R5.1.1 (Synthesis) Use effective educational techniques in the design of an educational/training activity.
OBJ R5.1.2 (Synthesis) Design an assessment strategy that appropriately measures the specified objectives for education or training and fits the learning situation.
OBJ R5.1.3 (Application) Use skill in the four preceptor roles employed in practice-based teaching (direct instruction, modeling, coaching, and facilitation).
OBJ R5.1.4 (Application) Use skill in case-based teaching.
OBJ R5.1.5 (Application) Use public speaking skills to speak effectively to a large group.
OBJ R5.1.6 (Application) Use public speaking skills to speak effectively in a small group.

Goal R5.2 Design and deliver education programs to the public that center on pediatric health improvement, wellness, and disease prevention.
OBJ R5.2.1 (Synthesis) Contribute to the design of an educational program for the public that centers on pediatric health improvement, wellness, or disease prevention.
OBJ R5.2.2 (Synthesis) Use appropriate educational techniques to deliver an educational program to the public that centers on pediatric health improvement, wellness, or disease prevention.

Outcome R6: Conduct pediatric pharmacy research.
Goal R6.1 Conduct a pediatric pharmacy research project using effective research and project management skills.
OBJ R6.1.1 (Synthesis) Identify a topic of significance for a pediatric pharmacy research project.
OBJ R6.1.2 (Synthesis) Formulate a feasible design for a pediatric pharmacy research project.
OBJ R6.1.3 (Synthesis) Secure any necessary approvals, including IRB, for a pediatric pharmacy research project.
OBJ R6.1.4 (Synthesis) Implement a pediatric pharmacy research project as specified in its design.
OBJ R6.1.5 (Synthesis) Effectively present the results of a pediatric pharmacy research project.
OBJ R6.1.6 (Synthesis) Use correct grammar, punctuation, spelling, style, and formatting conventions to prepare a written manuscript describing a pediatric pharmacy research project.

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<th>Elective Educational Outcomes, Goals, and Objectives for Postgraduate Year Two (PGY2) Pharmacy Residencies in Pediatrics</th>
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**Outcome E1: Demonstrate added skills for functioning effectively in the pediatric pharmacy practice environment.**

Goal E1.1 Develop a proposal for a new pediatric pharmacy-related service.

OBJ E1.1.1 (Synthesis) Write a proposal for a pediatric pharmacy-related service that meets a perceived need of the health system and its patients.

Goal E1.2 Contribute to the maintenance of the organization’s formulary for medications used in the care of pediatric patients.

OBJ E1.2.1 (Evaluation) Make recommendations for drug class decisions affecting the care of pediatric patients based on comparative reviews.

Goal E1.3 Demonstrate additional skills in the management of pediatric medical emergencies.

OBJ E1.3.1 (Synthesis) Acquire pediatric advanced life support (PALS) certification.

Goal E1.4 Contribute to the presentation and publication of pediatric pharmacy research.

OBJ E1.4.1 (Synthesis) Design an effective poster for the presentation of a specific topic.

OBJ E1.4.2 (Synthesis) Exercise skill in responding to questions occurring during the presentation of a poster.

OBJ E1.4.3 (Application) Follow the submission requirements of an appropriate peer-reviewed publication to submit the completed project for publication.

OBJ E1.4.4 (Evaluation) Contribute to the peer review of a pediatric pharmacy professional’s article submitted for publication or presentation.

**Outcome E2: Conduct outcomes research.**

Goal E2.1 Contribute to pediatric clinical, humanistic and economic outcomes analyses.

OBJ E2.1.1 (Evaluation) Contribute to a pediatric prospective clinical, humanistic and/or economic outcomes analysis.

OBJ E2.1.2 (Evaluation) Contribute to a pediatric retrospective clinical, humanistic, and/or economic outcomes analysis.

**Outcome E3: Demonstrate skills required to function in an academic setting.**

Goal E3.1 Understand faculty roles and responsibilities.

OBJ E3.1.1 (Comprehension) Explain variations in the expectations of different colleges/schools of pharmacy for teaching, practice, research, and service.

OBJ E3.1.2 (Analysis) Explain the role and influence of faculty in the academic environment.

OBJ E3.1.3 (Comprehension) Describe the academic environment.

OBJ E3.1.4 (Comprehension) Describe the types and ranks of faculty appointments.

OBJ E3.1.5 (Comprehension) Discuss the promotion and/or tenure process for each type of appointment.

OBJ E3.1.6 (Application) Identify resources available to help develop academic skills.
OBJ E3.1.7  (Comprehension) Explain the characteristics of a typical affiliation agreement between a college of pharmacy and a practice site (e.g., health system, hospital, clinic, retail pharmacy).

Goal E3.2  Exercise teaching skills essential to pharmacy faculty.

OBJ E3.2.1  (Synthesis) Develop an instructional design for a class session, module, or course.

OBJ E3.2.2  (Synthesis) Prepare and deliver didactic instruction on a topic relevant to the specialized area of pharmacy residency training.

OBJ E3.2.3  (Application) Develop and deliver cases for workshops and/or exercises for laboratory experiences.

OBJ E3.2.4  (Application) Serve as a preceptor or co-preceptor utilizing the four roles employed in practice-based teaching (direct instruction, modeling, coaching and facilitation).

OBJ E3.2.5  (Analysis) Develop a teaching experience for a practice setting (e.g., introductory or advanced pharmacy experience).

OBJ E3.2.6  (Synthesis) Design an assessment strategy that appropriately measures the specified educational objectives for the class session, module, course, or rotation.

OBJ E3.2.7  (Evaluation) Create a teaching portfolio.

OBJ E3.2.8  (Evaluation) Compare and contrast methods to prevent and respond to academic and profession dishonesty.

OBJ E3.2.9  (Comprehension) Explain the relevance of copyright laws to developing teaching materials.