

Credentialing of Pediatric Pharmacists in Collaborative Drug Therapy Management

Van Tran, PharmD, MBA; Andrea McMunn, PharmD; Jennifer Sterner-Allison, PharmD; and Sylvia Stoffella, PharmD

Pediatric clinical pharmacists have evolved over the last 2 decades and have proven to be a key player in the multidisciplinary team. The American College of Clinical Pharmacy recently published (in 2015) a position statement on collaborative drug therapy management and comprehensive medication management. The Council on Credentialing in Pharmacy published a 2014 article on credentialing and privileging of pharmacists. Neither offered requirements for pediatric pharmacists in training and credentialing. This position statement provides a detailed outline defining adequate training for a pediatric clinical pharmacist in order to participate in collaborative drug therapy management for pediatric patients.

ABBREVIATIONS ASHP, American Society of Health-System Pharmacists; CDTM, collaborative drug therapy management; PGY, postgraduate year; PPAG, Pediatric Pharmacy Advocacy Group

KEYWORDS advocacy; collaborative drug therapy management; collaborative practice; pediatric pharmacist credentialing

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Background

The 2016 National Survey of Children's Health estimates that 37.5% of children in the United States have at least 1 chronic health condition, and 14.2% have required at least 1 prescription medication for 12 months or longer.¹ The rate of chronic health conditions in children may increase owing to multiple factors, including extended life expectancy resulting from newly available or improved drug therapy options for chronic diseases, some of which were previously untreatable. A rise in prevalence of chronic diseases in pediatrics is directly related to a rise in use and duration of medications, thereby increasing the risk of medication errors.² Research shows that the potential for adverse drug events is about 3 times higher in the pediatric inpatient population than for hospitalized adults.³ Both the American Academy of Pediatrics and The Joint Commission have agreed that clinical pharmacists with expertise in pediatric pharmacotherapy play a significant role in the clinical management of pediatric patients and promotion of drug safety initiatives, especially for high-risk populations such as neonatal/pediatric critical care and pediatric oncology. In a 2014 survey of children's hospitals, one-third of the 88 hospitals that completed the survey had some level of pharmacist-physician collaborative drug therapy management (CDTM) in place that allowed pharmacists to modify doses and monitor therapy, with almost 75% of hospitals allowing pharmacists to initiate the first dose.⁴ A joint opinion paper from the American College of Clinical Pharmacy and the Pediatric Pharmacy Advocacy Group (PPAG) outlined strategies and recommendations for expand-

ing the quality and capacity of pediatric clinical pharmacy practitioners, including elevating the minimum expectations for pharmacists entering pediatric practice, standardizing pediatric pharmacy education, and creating an infrastructure for development of pediatric clinical pharmacists.⁵

Defining Adequate Training

Neonatal and pediatric patients continue to be an important part of the population served by pharmacists, both inpatient and outpatient. The increasing complexity in medication management comes with the need for adequately trained pediatric clinical pharmacists. Additionally, pharmacists with advanced training are needed to educate pharmacy students and residents as well as to participate in research. In 2013, Bhatt-Mehta et al⁵ published recommendations for meeting the pediatric patient's need for a clinical pharmacist, which included a "requirement for completion of a postgraduate year (PGY) 2 pediatric residency or a PGY1 residency and a minimum of 3 to 4 years of pediatric medicine-focused clinical experience" to be considered as a pediatric clinical pharmacist as well as a pediatric residency preceptor. Per American Society of Health-System Pharmacists' (ASHP's) Outcomes, Goals, and Objectives for PGY2 residencies in pediatrics, "graduates will serve healthcare organizations successfully as the ultimate resource for information about medications used in the care of children and for decision-making affecting the care of these patients."⁶ ASHP-PPAG Guidelines for Providing Pediatric Pharmacy Services in Hospitals and Health-Systems strongly recommend completion

of a PGY2 residency for pediatric pharmacists.⁷ In the Standards of Practice for Clinical Pharmacists, the American College of Clinical Pharmacy outlined the qualifications of clinical pharmacists as follows: “Accredited residency training or equivalent post-licensure experience is required for entry into direct patient care practice. Board certification is also required once the clinical pharmacist meets the eligibility criteria specified by the Board of Pharmacy Specialties.”⁸ Starting in the fall of 2015, board certification in pediatric pharmacy became available as a standardized method to test core clinical competencies in pediatric pharmacotherapy.⁹ Ongoing competency assessment and completion of continuing education requirements are necessary to ensure maintenance of high standards of practice.

Value of Pediatric Clinical Pharmacists —

Pediatric pharmacists are integrated into multidisciplinary teams in both inpatient and outpatient settings to optimize medication use, participate in various committees and research, as well as participate in direct patient care activities. Focus should be directed to high-risk populations including critical care, neonatology, hematology/oncology, transplant, and emergency departments.⁷ Several studies have identified the documented value of pediatric clinical pharmacy services, including preventing potential drug-related problems, improving quality of services and promoting better outcomes such as reducing length of hospital stay, and improving medication adherence in complex, high-risk patient populations.^{10–12} In a randomized controlled trial, Zhang et al¹⁰ demonstrated a statistically significant decrease in length of hospital stay in patients with respiratory system disease who received clinical pharmacist intervention (6.45 days vs. 10.83 days, $p < 0.05$), compared with the control group. In studies by Okumura et al¹¹ and So et al,¹² clinical pharmacy services provided to pediatric critically ill patients in a multidisciplinary setting achieved a reduction in adverse drug events and improved the quality of services and patient outcomes at an outpatient nephrology clinic. Pediatric clinical pharmacy services provide a well-documented value to this vulnerable patient population and will continue to be advanced with the goal of improving health outcomes.

Future Steps —

The growing number of board-certified pharmacists should allow for the expansion of clinical pharmacy services in pediatric health care and further develop trusting relationships among pediatric pharmacists and the health care team. Optimally, this will lead to more CDTM agreements between pharmacists and health care providers and better medication management for pediatric patients. Some pharmacists already practice in a model that allows for initiation, modification,

or discontinuation of drug therapy, based on routine monitoring within a collaborative practice arrangement. Although national legislation regarding provider status for pharmacists has yet to be approved by Congress, some states (e.g., North Carolina, California) have established advanced practice certification to recognize certain highly trained pharmacists as Advanced Practice Pharmacists, Clinical Pharmacist Practitioners, or Pharmacist Clinicians.^{13–15} These pharmacists have an expanded scope as part of a collaborative practice defined by the legislation for the respective states. As state and federal legislation continue to evolve, the role and scope of pediatric clinical pharmacists may advance. However, the overarching goals to improve health outcomes, reduce medication-related adverse events, and improve continuity of care for pediatric patients will remain. Expanding services of pediatric credentialed pharmacists may include independent assessment for medication-related problems of pediatric patients in a hospital, long-term care facility, rehabilitation facility, outpatient clinic, outpatient pharmacy, or even at home, depending upon the needs of the patient and the care model being used.

Conclusion and Recommendation —

Pediatric patients represent one of the most vulnerable populations given unique issues pertaining to developmental pharmacokinetics, suboptimal dosage forms of certain medications, varying levels of communication ability and health literacy across the age spectrum, and several other pharmacotherapy-related concerns. This population requires pharmacists with specialized training and knowledge to develop competent pediatric pharmacotherapy plans to meet their unique needs. With the increasing availability of residency-trained pharmacists and the recent board-certification process, the PPAG recommends that clinical pharmacists practicing in a CDTM model have PGY2 pediatric residency training or equivalent experience and obtain board certification in pediatrics to demonstrate their competence and maintain a continued high standard of practice through continuing education and board-recertification credentialing.

ARTICLE INFORMATION

Affiliations Department of Pharmacy (VT), Inova Children's Hospital, Falls Church, Virginia; Department of Pharmacy (AM), Johns Hopkins Hospital, Baltimore, Maryland; Department of Pharmacy (JS-A), Children's Healthcare of Atlanta, Atlanta, Georgia; Department of Pharmacy (SS), UCSF Benioff Children's Hospital, San Francisco, California

Correspondence Pediatric Pharmacy Advocacy Group, jennifer.chow@ppag.org

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REFERENCES

1. Data Resource Center for Child & Adolescent Health: The Child & Adolescent Health Measurement Initiative. 2016. National Survey of Children's Health. <http://childhealth-data.org/browse/survey>. Accessed January 19, 2019
2. Benavides S, Madzhidova S, Hernandez A, et al. Establishment of pediatric medication therapy management: a proposed model. *Pharmacy (Basel)*. 2016;4(1):5. doi:10.3390/pharmacy4010005.
3. Kaushal R, Bates DW, Landrigan C. Medication errors and adverse drug events in pediatric inpatients. *JAMA*. 2001;285(16):2114–2120.
4. Welsh C, Miah R, Giroto J. Survey evaluating the practice of children's hospitals having pharmacist collaborative drug therapy management protocols. *J Pediatr Pharmacol Ther*. 2016;21(6):494–501.
5. Bhatt-Mehta V, Buck ML, Chung AM, et al. Recommendations for meeting the pediatric patient's need for a clinical pharmacist: a joint opinion of the pediatrics practice and research network of the American College of Clinical Pharmacy and the Pediatric Pharmacy Advocacy Group. *Pharmacotherapy*. 2013;33(2):243–251.
6. American Society of Health-System Pharmacists. Educational outcomes, goals, and objectives for postgraduate year two (PGY2) pharmacy residencies in pediatrics. <https://www.ashp.org/-/media/assets/professional-development/residencies/docs/pgy2-outcomes-goals-objectives-residencies-advanced-area.ashx?la=en&hash=46DE9F61D2C2FB8442B07ED75D136A8CA82778C8>. Accessed January 19, 2019.
7. Eiland LS, Benner K, Gumpfer KF, et al. ASHP-PPAG Guidelines for Providing Pediatric Pharmacy Services in Hospitals and Health Systems. *Am J Health Syst Pharm*. 2018;75(15):1151–1165.
8. American College of Clinical Pharmacy. Standards of practice for clinical pharmacists. *Pharmacotherapy*. 2014;34(8):794–797.
9. Board of Pharmacy Specialties. Exam results history. <https://www.bpsweb.org/specialty-exams/exam-results-history/>. Accessed January 19, 2019.
10. Zhang C, Zhang L, Huang L, et al. Clinical pharmacists on medical care of pediatric inpatients: a single-center randomized controlled trial. *PLoS One*. 2012;7(1):e30856. doi.org/10.1371/journal.pone.0030856.
11. Okumura LM, Matsubara da Silva D, Comarella L. Relation between safe use of medicines and Clinical Pharmacy Services at Pediatric Intensive Care Units. *Rev Paul Pediatr*. 2016;34(4):397–402.
12. So T, Layton JB, Bozik K, et al. Cognitive pharmacy services at pediatric nephrology and hypertension clinic. *Ren Fail*. 2011;33(1):19–25.
13. North Carolina Board of Pharmacy. Clinical pharmacist practitioners. http://www.ncbop.org/pharmacists_cpp.htm. Accessed January 19, 2019.
14. California Pharmacists Association. Expanding pharmacist services. <https://cpha.com/advocacy/provider-status/expanding-pharmacist-services/>. Accessed January 19, 2019.
15. New Mexico Board of Pharmacy, Regulation and Licensing Department. New Pharmacist Clinician Application. <http://www.rld.state.nm.us/uploads/files/pc%20app%20final%20protected.pdf>. Accessed January 19, 2019.