Current State of the Intern Preparatory Course: Findings from a National Survey of Pediatric Clerkship Directors

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Abstract

Objective: To identify the current state of intern preparatory courses (IPCs) at medical institutions through a national survey of pediatric educators. Specifically to learn more about the structure, curricular content and assessment of IPCs for fourth year medical students.

Methods: An eight-question peer-reviewed survey, embedded in a larger survey, was distributed in 2016 to all members of the Council on Medical Student Education in Pediatrics (COMSEP). Responses were de-identified, distributed to investigators, and analyzed. Descriptive statistics were calculated for close-ended items, and free-text responses were reviewed for common concepts.

Results: During the 45-day study period, 165 (40.1%) COMSEP members from 96 (63.2%) medical schools responded to at least one survey question. Seventy-nine (47.9%) respondents were pediatric clerkship directors that represented a discrete medical school and comprised the study sample. Forty-two (53.2%) clerkship directors in the sample reported that their medical school had at least one IPC. Of the clerkship directors who responded “yes” to their medical school having an IPC, 11 (26.2%) reported that their school had a pediatric-specific IPC and 17 (40.5%) reported an elective or required pediatric pathway within an IPC. The IPCs described by the clerkship directors varied widely in structure, curricular content, and learner assessment.

Conclusion: Less than one-half (44%) of the responding U.S. medical schools have an IPC. Standardization of an IPC curriculum across schools could help ensure that medical students are similarly prepared for internship.

ABBREVIATIONS

IPC: Intern Preparatory Course; COMSEP: Council on Medical Student Education in Pediatrics

INTRODUCTION

The transition from medical student to intern is a challenging process due in large part to increased responsibility and independence [1,2]. Despite the cognitive, emotional, and psychomotor stresses experienced by many new interns [2-4], the fourth year of medical school typically is not designed to build comfort, skill, or autonomy in students’ chosen field. The fourth-year curriculum varies widely across medical schools, has been noted to lack clarity, organization and quality control [5], and typically provides an opportunity for clinical and scholarly electives driven more by students’ interests than by graduation requirements or preparation for internship [5,6]. Curricular time and clinical exposure dedicated to pediatrics is also variable, leading to different levels of preparedness when starting an internship caring for pediatric patients.

The advent of core entrustable professional activities for entering residency requires that medical students graduate with a tool box of cognitive, emotional, and psychomotor clinical skills that will facilitate their performance and ease their transition into residency [7]. Intern preparatory courses (IPCs), often referred to as boot camps or capstone courses, are designed to prepare students for the transition from medical school to internship [1,8]. Despite limited evidence of their effectiveness; clerkship directors have endorsed intern preparatory courses [1,7]. A meta-analysis on the effectiveness of boot camps for transitions into residency concluded that IPC completion was associated with improved clinical skills, knowledge acquisition, and perceived confidence [1].
A recent study of a five-day elective boot camp for students entering into pediatric and family medicine residencies reported self-perceived improvements in the performance of specific skills such as lumbar puncture and providing sign-out [9]. A literature search using Pubmed, Web of Science, Scopus, and Eric produced curriculum details of 5 preparatory courses for pediatric fellowship [10-14] but only one pediatric IPC [9].

The purpose of this paper is to describe the current state of IPCs, focusing on pediatric-specific IPCs, as reported by a national survey of pediatric clerkship directors.

MATERIALS AND METHODS

The Council on Medical Student Education in Pediatrics (COMSEP) consists of educators with diverse roles related to medical student education. COMSEP surveys its membership annually for general demographic information and specific research questions posed by COMSEP members. We submitted eight questions about IPCs to the COMSEP Survey Committee; questions were pilot-tested, revised, and included in the 2016 COMSEP Membership Survey. COMSEP members received an email with a personalized link to the survey in April 2016. Non-responders received up to three subsequent reminder emails during the 45-day survey period. Responses were saved in a confidential database, identified by COMSEP, and made available to the investigators for analysis. The Institutional Review Board of The Children’s Hospital of Philadelphia deemed the study exempt from the Health and Human Services Policy for the Protection of Human Research Subjects.

Survey Content

Our survey consisted of eight multiple-choice, short-answer, and open-ended questions about IPCs at the medical school for which the respondent served as pediatric clerkship director (Appendix 1). The introduction to the survey defined an IPC as an intensive course to prepare graduating medical students for internship. Questions asked about IPC structure including the presence of a pediatric-specific IPC, general IPC, and pediatric pathway within a general IPC and financing, as well as the content and assessment.

RESULTS AND DISCUSSION

COMSEP distributed its 2016 survey to 411 members representing 152 medical schools in the United States and Canada. Of the 165 (40.1%) members from 96 (63.2%) medical schools who responded to at least one question, 98 (59%) members identified themselves as clerkship directors. To avoid over-representation of medical schools with multiple clerkship directors, the study sample was limited to the most senior pediatric clerkship director at each institution who responded to the survey. Seniority was defined according to years as clerkship director at the given institution. These 79 (47.9%) clerkship directors comprised the study sample. We can consider a clerkship director a proxy for a medical school and therefore extrapolate that over half (52%) of the potential medical schools who have a representative member in COMSEP were represented in the survey (Figure 1).

Structure

Over half (42/79) of the responding medical schools have an IPC; a quarter of IPCs (11/42) were pediatric specific and over half (26/42) were a general IPC. Of the general IPCs, over half (17/26) had an elective or required pediatric pathway. The IPC median number of days was 10 with a range of 0.5 to 20 days. Of the 38 clerkship directors that provided information about duration, 16 (42.1%) reported ten days, 10 (26.3%) reported five or fewer days, and 12 (31.6%) reported more than ten days. Of the 33 clerkship directors that provided information about IPC funding, all reported that the department and/or school supported the IPC.

Curricular content

Of the 33 institutional clerkship directors that provided information about the IPC curriculum, 21 (63.4%) reported use of core competencies established by the Accreditation Council for Graduate Medical Education (ACGME), and 9 (27.3%) reported use of the COMSEP curriculum for pediatric sub-internships [15,16]. Other resources included colleagues with experience in IPC development; gaps in the third and fourth year curricula as perceived by educators; and needs assessments of medical students, interns, residents, and program directors. Table 1 shows curricular topics that were reported by two or more institutional clerkship directors as part of the IPC.

Learner Assessment

Of the 30 institutional clerkship directors who responded to the question about IPC assessment, 9 (30%) reported no learner assessment, 16 (53.3%) measured students’ perceived confidence, 12 (40%) measured students’ perceived competence, and 2 (6.7%) measured level of entrustment.

The 2016 COMSEP survey data of pediatric medical educators indicates that some medical schools in the U.S. offer graduating students a pediatric-specific IPC or a general IPC with a pediatric pathway. Structure, content, and learner assessment of IPC varies considerably. While our survey is limited by the 40% response rate, the cross sectional description of IPC development indicates that medical schools and educators seem in tune to the discomfort of new interns and to limitations in the traditional fourth year of medical school, and are looking to IPCs as a potential, albeit untested, solution.

As with many educational interventions, determining the effectiveness of the intervention is lagging behind implementation. Nearly one third of the clerkship directors reported no learner assessment of their respective IPC. Those who did report on learner assessment described self-reported measures of comfort or competence rather than more objective measures such as family satisfaction with care, assessment of an intern’s competence by an attending physician or other team members, or ideally, patient outcomes.

Guidance from leading pediatric and family medicine organizations might promote the development of a common IPC curriculum that will help new interns meet the needs and expectations of their institutions and training programs. However, a more fundamental issue might lie with the goals of an IPC, not its variable structure and content. Kilminster et al. [17], and Teunissen and Westerman [18] offer big-picture perspectives on transitions in medical education. Rather than
Table 1: Examples of commonly reported intern preparatory course sessions in the following domains:

| Clinical simulations | - Responding to emergencies, including sepsis  
|                     | - Identification of a critically ill patient  
|                     | - Pediatric Advanced Life Support (PALS) and Neonatal Advanced Life Support (NALS)  
|                     | - Participating in airway management  
| Communication skills | - Disclosure of bad news  
|                     | - Practicing handoffs  
|                     | - Giving and receiving feedback  
|                     | - Practicing informed consent  
| Medical knowledge | - Diagnostic interpretation skills (for example, reading EKGs)  
|                    | - Common on call topics (for example, DKA, anaphylaxis, fluids and electrolytes)  
|                    | - General pediatrics knowledge (for example, rashes, asthma, development, bugs and drugs)  
| Procedural skills | - Lumbar punctures  
|                    | - Sutures  
|                    | - Splints  
|                    | - Access (PIV, IO, UAC, UVC)  

Abbreviations: EKG: Electrocardiogram; DKA: Diabetic Ketoacidosis; PIV: Peripheral Intravenous; IO: Intraosseous; UAC: Umbilical Artery Catheter; UVC: Umbilical Venous Catheter

focusing on internship, they argue that medical educators should help trainees develop the skills to navigate transitions throughout their careers. This approach shifts the question from “What does the residency program need of its incoming interns?” to “What do interns need to ease this and future transitions?”

CONCLUSION

Despite the limitations of our survey, namely a 40% response rate and self-reported data of just some important elements of curricular content, our findings from a national survey of pediatric clerkship directors provide an initial glance into the state of IPCs. Standardization of the IPC curriculum and improved methods of assessment across schools are needed to ensure that medical students are similarly prepared for internship.

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