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Career Development Support in Pediatric Critical Care Medicine: A National Survey of Fellows and Junior Faculty

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Abstract

Objective—To determine the perceptions of current pediatric critical care medicine (PCCM) fellows and junior faculty regarding the extent and quality of career development support received during fellowship training.

Design—Web-based cross-sectional survey open from September to November 2015.

Setting—Accreditation Council for Graduate Medical Education (ACGME)-accredited PCCM fellowship programs.

Participants—PCCM fellows (2nd year or higher) and junior faculty (within 5 years of completing a PCCM fellowship program).

Interventions—None.

Measurements and Main Results—There were 129 respondents to the survey, representing 63% of ACGME-accredited PCCM fellowship programs. Respondents were evenly divided between fellows and junior faculty. Nearly half (49%) of respondents reported that their PCCM fellowship program provided a formal career development curriculum. Ideal career tracks chosen included academic clinician educator (64%), physician-scientist (27%), community-based (non-academic) clinician (11%), and administrator (11%). There was a disparity in focused career

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development support provided by programs, with a minority providing good support for those pursuing a community-based clinician track (32%) or administrator track (16%). Only 43% of fellows perceived that they have a good chance of obtaining their ideal PCCM position, with the most common perceived barrier being increased competition for limited job opportunities. Most respondents expressed interest in a program specific to PCCM career development that is sponsored by a national professional organization.

Conclusions—Most PCCM fellows and junior faculty reported good to excellent career development support during fellowship. However, important gaps remain, particularly for those pursuing community-based (non-academic) and administrative tracks. Fellows were uncertain regarding future PCCM employment and their ability to pursue ideal career tracks. There may be a role for professional organizations to provide additional resources for career development in PCCM.

Keywords

pediatrics; critical care; career choice; mentorship; graduate medical education

INTRODUCTION

The transition from graduate medical training to a career in pediatric critical care medicine can be daunting. Career development support for trainees can ease this transition and is integral for launching new graduates into successful careers as pediatric intensivists. Recent evidence shows that a separate structured career development curriculum can facilitate a smooth transition to academic faculty positions for pediatric fellowship graduates in general (1). Strong career development support is also associated with career satisfaction and professional productivity for both research (2, 3) and clinical careers (4–6).

Career development is defined as the ongoing acquisition or refinement of skills and knowledge, including job mastery and professional development, coupled with career planning activities (7). A few studies on career development support in adult critical care medicine training programs have shown large variability among programs, with a significant proportion of trainees perceiving limited support to help them achieve their career goals (3). Expectations of trainees were also shown to be misaligned with that of academic departments, and important gaps in support in the areas of research, education, and administration were identified. Moreover, trainees anticipated difficulties in obtaining successful employment (6). There is little research on this topic conducted in pediatrics, including pediatric critical care medicine (PCCM). Being a relatively small subspecialty and graduating only ~120 trainees a year, career development support is especially important to optimize the workforce for continued development and advancement of all areas of PCCM.

We hypothesized that significant gaps exist in career development support received by PCCM trainees from their fellowship programs. We therefore sought to determine the perceptions of current PCCM fellows and junior faculty regarding the extent and quality of career development support they received during fellowship training. Additionally, we also sought to explore the possibility of filling identified gaps in support through the use of other

resources, including provision of career development activities through professional organizations.

MATERIALS AND METHODS

We conducted an electronic cross-sectional survey of PCCM fellows (2nd year or higher) and junior PCCM faculty (within 5 years of completing a PCCM fellowship program). Training sites for all respondents are Accreditation Council for Graduate Medical Education (ACGME)-accredited fellowship programs. The University of Iowa Institutional Review Board approved this study.

The survey instrument was developed to determine perceived presence of formal career development curricula, effectiveness of mentorship received from fellowship program directors and other faculty, and quality of job search support provided by programs. We focused on ascertaining the perceived quality of formal and informal career development support directed towards ideal career tracks, and the presence and type of career development support received outside of the fellowship program/institution. Additionally, we assessed interest in various proposed career development offerings by the American Academy of Pediatrics (AAP) Section on Critical Care (SOCC). The survey instrument was developed, piloted, and revised in an iterative fashion by a variety of experts in PCCM, graduate medical education, and the medical workforce.

PCCM fellows in training (as of September 2015) were contacted through their fellowship program directors. Email contact information of program directors were obtained from publicly-available data published by the ACGME (8). Each program director was asked to forward the survey link to their current fellows. Email contact information of junior PCCM faculty was obtained from a list of November 2014 American Board of Pediatrics PCCM board certification test-takers available via the AAP SOCC. The survey was administered electronically through Research Electronic Data Capture (REDCap), hosted at the University of Iowa. REDCap is a secure web-based platform for managing online surveys and databases (9). The survey was open for 10 weeks, from September to November 2015. Three email invitations to complete the survey were sent (initial and two follow-up emails) over this time period.

After the survey was closed, analysis of quantitative data was performed using STATA 12.1 (StataCorp, College Station, TX, 2011). Descriptive statistics at the respondent level, including frequency distributions, were used to summarize responses. Though not designed as a rigorous qualitative study, the survey included opportunities for respondents to provide free-text comments, and numerous respondents elected to provide comments. We grouped these comments into themes, and we reported a few comments per theme that illustrated the quantitative findings of the study.

RESULTS

Survey Respondents and Response Rates

The survey was originally sent to 429 potential respondents consisting of 187 PCCM fellows (all levels of training, as reported by fellowship program directors) and 242 junior PCCM faculty (within 5 years of completing a PCCM fellowship program), of which 151 (35%) responded. For the analysis, we excluded all 1st year PCCM fellows since at the time of the survey, they would not have had adequate experience of their program's career development support. Among PCCM fellows 2nd year or higher and junior PCCM faculty, 129 responded. We are unable to calculate a response rate for this cohort. Though we know how many total fellows the survey was forwarded to, we do not have data on the number of PCCM fellows 2nd year or higher to which the survey was sent. However, of the 129 survey respondents, 91 disclosed their training institution. As of November 2015, 42 out of 67 (63%) ACGME-accredited PCCM fellowship programs were represented in this survey.

Respondents were evenly divided between fellows (50%) and junior faculty (50%). At the time of the survey, only 7% of fellows had already accepted job offers after fellowship. More than 90% of all respondents planned to or were currently practicing PCCM most of the time (Table 1).

Career Development Support During Fellowship Training

Nearly half (49%) of current and graduated fellows reported that their PCCM fellowship program provided a formal career development curriculum. Sixteen percent reported such curricula at both the program and departmental/institutional levels. Forty-three percent of respondents perceived their fellowship program director as an effective mentor for their career development, while 13% disagreed. Aside from their fellowship program director, however, 75% were able to identify a mentor who helped guide their career development during fellowship. Of those who had an identified mentor, 75% indicated that their mentors provided good to excellent guidance in this area (Table 2).

Overall, 55% of respondents indicated that they received good to excellent career development support during their fellowship training (Table 2). There is, however, a wide range of available support. One respondent noted positively, "The program has a dedicated 3-year leadership curriculum that helps individuals identify their strengths and weaknesses and... then frame them in the context of a job search and career." This experience contrasts with that of another respondent, who was particularly dissatisfied about guidance on the job search process, "I was given no support in interview tips, job search help, or what to look for in a job, [and] no guidance in contract negotiation. Ultimately, my program treated me as if I weren't even graduating."

Ideal Career Track and Focused Career Development Support

The majority of respondents indicated that they would ideally prefer to build their career as an academic clinician educator (63%). Other ideal career tracks included physician-scientist (27%), community-based (non-academic) clinician (11%), and administrator/manager (11%). Most programs were reported to provide good to excellent directed career

development support for those aspiring to be physician-scientists (78%) and academic clinician educators (57%). In contrast, a minority of programs provided focused guidance for their trainees who preferred to pursue a community-based clinician position (32%) or careers in administration/management (16%) (Table 3).

This disparity in focused career development support provided by programs was echoed in respondent comments such as, “There is very little focus on the development of clinical non-academic opportunities and administrative opportunities.” One respondent alluded to active discouragement of certain tracks: “My program did not provide any information regarding community programs. When my co-fellows directly asked, we were told there was ‘no place for community PICU’.”

Perceived Ability to Pursue Ideal Career Track

A higher percentage of fellows (34%) expressed uncertainty regarding their future PCCM position and the extent to which such a position would allow them to pursue their chosen career track compared to junior faculty (10%). Less than half of fellows (43%) perceived that they have a good to excellent chance of obtaining their ideal PCCM position (Table 4). The top three barriers (in order of frequency) noted by fellows were: 1) increased competition for limited job opportunities, 2) lack of informal career development and job search support during fellowship, and 3) lack of a structured career development curriculum in their program/institution.

There was particular uncertainty expressed over obtaining and succeeding in academic positions. One respondent noted, “It seems there was a boom a few years ago in academic PICU jobs, as attending [physicians] were in-house overnight across the board and that has fizzled out. I’m not sure [that] I’ll be able to find an academic PICU job in 18 months.” Another respondent reflected, “Obtaining funding to run a laboratory appears harder now than ever before. There is more competition for fewer grants, so connections seem to be as impactful as scientific merit. I also have a lack of role models [who] succeeded in starting an independently-funded laboratory in the current grant climate.”

Additional Career Development Guidance

More than one-third of respondents (39%) obtained career development guidance outside of their fellowship institution. Most obtained support from previous mentors from other institutions (47%) and previous co-fellows who had graduated from their program (49%) (Table 5). Most respondents expressed interest in a career development program specific to PCCM sponsored by the AAP SOCC. Specifically, respondents were interested in programs providing guidance on job search (84%) and structured guidance from PCCM physicians matched to trainees’ career interests (80%) (Table 6).

DISCUSSION

Summary of Results

More than half of the PCCM fellows and junior faculty who responded to the survey indicated that they received good to excellent career development and job search support

during fellowship. They did, however, also report a distinct lack of focused career guidance for those wanting to pursue careers in community-based (non-academic) PCCM and administration, with the majority of program support skewed towards the development of physician-scientists or clinician educators. Current fellows expressed uncertainty regarding future PCCM employment and their ability to pursue ideal career tracks. Many respondents sought additional career development guidance outside of their fellowship institutions, and are interested in career development programs sponsored by professional organizations.

Reported Gaps Similar to Prior Research

Most of our findings are consistent with the sparse literature on career development support for fellowship trainees. Perceived gaps in guidance are similar to the findings in a study of US adult pulmonary and critical care medicine fellows, where the authors noted that trainees' academic careers may be better aided by providing more information on various career pathways, job expectations, and success rates (3). In another study outlining the general career development needs of pediatric subspecialty fellows, most indicated a need for better understanding of job search topics such as medical employment contracts and interviewing/negotiating skills to increase their chances of success in the job search (1).

In a Canadian study of adult and pediatric critical care medicine fellows, a majority noted that they had limited support to help them achieve their career goals (6). Our study found a similar disparity in guidance specifically for different career tracks, with a disproportionate amount of support given to future physician-scientists and clinician-educators as compared to future community-based (non-academic) clinicians and administrators. These findings are not surprising, since all fellowship programs are found within academic medical environments (8). This is a significant gap, however, as a recent survey of pediatric intensivists found that 32% are employed in non-academic settings (10), with 19% practicing in community hospitals (11). This illustrates a problematic misalignment of trainee needs and fellowship program expectations. Of course, heterogeneity of programs should be considered, as not all programs can be expected to provide equally strong support for all career tracks. Programs, however, need to be aware of these gaps, as they should be able to provide their trainees with career development support outside of their own institutions as appropriate.

Professional Societies and Additional Career Development Support

Given these identified gaps in career development support within PCCM fellowship programs, we found that many respondents sought additional career development guidance outside of their institutions. Programs sponsored by professional organizations such as the AAP or the Society of Critical Care Medicine (SCCM) may have a role in enhancing career development by providing resources directly to PCCM trainees. Examples of resources that can help fellowship programs provide better support to their trainees include career development programs aimed at graduate medical education program leadership such as the Association of Pediatric Program Directors (APPD) Leadership in Educational Academic Development (LEAD) (12) and the Association of Medical School Pediatric Department Chairs (AMSPDC) Pediatric Leadership Development Program (PLDP) (13). Professional

societies have long been involved in augmenting career development of their members through education, research, and networking opportunities (14, 15).

Limitations

Our study has some limitations. Overall survey response rate was less than 50%, although 35-40% is considered average for an online survey (16). Moreover, 63% of ACGME-accredited PCCM fellowship programs were represented. Given our methodology, we did not reach junior faculty who have not taken the PCCM board certification exam at the time the survey was open (mostly 2015 graduates); nonetheless, we were able to include at least 4 years of graduated fellows since then. Recall and outcome bias may also be possible for junior faculty who have been out of fellowship longer, however, the majority of faculty respondents were not more than 2 years out of training. Respondents may have also given socially acceptable answers, instead of entirely truthful ones, though this is mitigated by the confidential nature of participation. Because the study was not designed to collect qualitative data in a systematic or purposeful manner, respondent comments reported may be biased towards respondents who have strong opinions about the survey topic. Lastly, though it is important to determine the viewpoint of fellowship program leadership as well, our study was limited to trainees' perspectives.

Despite these limitations, overall our study has provided new knowledge on the current landscape of career development support in pediatric critical care training. The observed mismatch between trainees' career interests and the program support they receive is not unique to pediatric critical care but nevertheless is an important issue that needs to be further elucidated and addressed.

CONCLUSIONS

Most PCCM fellows and junior faculty received good to excellent career development support during fellowship. However, important gaps remain, particularly for those pursuing community-based (non-academic) and administrative tracks. Fellows are uncertain regarding future PCCM employment and their ability to pursue ideal career tracks. There may be a role for professional organizations to provide additional resources for career development in PCCM, either directly to trainees or indirectly to fellowship program leadership. Determining perspectives of program leadership and testing the impact of professional society programs on PCCM training and career outcomes are future avenues of action and research.

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Table 1

Respondent Demographics

Respondent Characteristics	<i>n</i>	%
All Respondents (<i>n</i>=129) ^a		
Gender, female	73	66.4
Citizenship status		
US citizen or permanent resident	98	88.3
Non-US citizen, non-permanent resident	13	11.7
Professional status		
Fellow	65	50.4
Junior faculty ^b	64	49.6
Fellows (<i>n</i>=65) ^a		
Level of training		
2nd year	29	46
3rd year	31	49.2
4th or more year	3	4.8
With plans to practice PCCM at least 50% of the time after graduation	59	95.2
Has already accepted a job offer ^c	4	6.5
New Graduates (<i>n</i>=64) ^a		
Years since graduation		
< 1 year	2	3.2
1-2 years	44	71
>2 to 3 years	12	19.4
> 3 years	4	6.4
Currently practicing PCCM at least 50% of the time	57	93.4

PCCM, pediatric critical care medicine

^aTotals do not always add up to *n* because of variation in response rate per item^bGraduated from pediatric critical care fellowship within the last 5 years^cAs of September-November 2015

Table 2General Career Development Support Received During Fellowship Training ($n=129$)^a

Career Development Support Received	<i>n</i>	%
Do you feel that your fellowship program director has been an effective mentor to help guide your career development during fellowship?		
Yes	53	43.4
Sometimes	53	43.4
No	16	13.1
Aside from your fellowship program director, have you been able to identify a mentor to help guide your career development during fellowship?		
Yes	92	75.4
No	30	24.6
How would you evaluate the guidance that your mentor has provided in terms of your career development and job search?		
Poor-Fair	23	25.3
Good-Excellent	68	74.7
Does your institution / program provide a formal career development curriculum for PCCM fellows?		
Yes - at the fellowship program level	17	13.9
Yes - at the departmental / institutional level	24	19.7
Yes - at both levels	19	15.6
No	45	36.9
Unsure	17	13.9
How would you evaluate the support you received from your institution / program regarding your job search?		
Poor-Fair	58	50.9
Good-Excellent	56	49.1
OVERALL, how would you evaluate the career development support, mentoring, and job search support you received from your training program?		
Poor-Fair	52	44.8
Good-Excellent	64	55.2

PCCM, pediatric critical care medicine

^aTotals do not always add up to *n* because of variation in response rate per item

Table 3

Ideal Career Track and Directed Career Development Support

Ideal Career Track	Which one of the following career tracks would you ideally like to build your career around? ^a n=134 n (%)	Support you received to help you develop a career in your chosen track ^b n (%)		
		None	Poor-Fair	Good-Excellent
Community-based (Non-academic) Clinician	14 (10.5)	7 (36.8)	6 (31.6)	6 (31.6)
Academic Clinician Educator	85 (63.4)	3 (3.5)	34 (40)	48 (56.5)
Physician Scientist	36 (26.9)	1 (2.5)	8 (20)	31 (77.5)
Administration or Management	15 (11.2)	3 (15.8)	13 (68.4)	3 (15.8)
Undecided	8 (6)	-	-	-
Other	2 (1.5)	-	-	-

^a Respondents allowed to choose >1 track^b Undecided & Other counted in other four categories in terms of support received

Table 4

Perceived Ability to Pursue Ideal Career Track

Perceived Ability to Pursue Ideal Career Track	<i>n</i>	%
Fellows: Do you think that your future pediatric critical care position will allow you to pursue your chosen career track? (<i>n</i>=62)		
Yes	41	66.1
No	0	0
Unsure	21	33.9
New Graduates: Do you think that your current pediatric critical care position will allow you to pursue your chosen career track? (<i>n</i>=61)		
Yes	55	90.2
No	3	4.9
Unsure	3	4.9
Fellows: How would you evaluate your chances of - (<i>n</i>=58) ^a		
	Poor-Fair	Good-Excellent
	<i>n</i> (%)	
Obtaining ANY position as a PCCM physician?	5 (8.6)	53 (91.4)
Obtaining your IDEAL position as a PCCM physician?	33 (56.9)	25 (43.1)

PCCM, pediatric critical care medicine

^aOnly asked of those who have not yet accepted positions

Table 5

Additional Career Development Guidance Sought

Additional Career Development Guidance Sought	<i>n</i>	%
Obtained additional career development guidance outside of fellowship institution / program (<i>n</i>=115) ^a	45	39.1
Previous mentor/s from other institutions	21	46.7
Previous co-fellows who have since graduated	22	48.9
Current mentor/s from other institutions	13	28.9
Professional society career development offerings	8	17.8
Workshops/seminars given at regional/national meetings	11	24.4
Other	12	26.7
Physicians at other institutions, friends, family members, magazines		

^a Respondents allowed to choose >1

Table 6**Interest in a Professional Society Mentorship Program**

If the American Academy of Pediatrics Section on Critical Care created a formal mentorship program aiming to support PCCM fellows' and new graduates' career development, which of the following activities would you be interested in?	Interested to Very Interested	
	<i>n</i>	%
Career development workshops/seminars	72	63.7
Structured mentorship from PCCM physicians matched to your specific career interests	90	80.4
Job search support	96	84.2
Grant applications / writing support to guide fellow research & presentations at conferences	75	67
Programs promoting national & international electives, education, & research opportunities	78	69
Programs promoting national & international project opportunities (networking, conferences, quality improvement initiatives, etc.)	77	68.8
Networking via listservs, social media, etc.	58	51.8

PCCM, pediatric critical care medicine