A workforce study of emergency medicine medical education fellowship directors: Describing roles, responsibilities, support, and priorities

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Abstract

Introduction: Despite emergency medicine (EM) medical education fellowships increasing in number, the position of the medical education fellowship director (FD) remains incompletely defined. The goal of this study was to characterize the roles, responsibilities, support, and priorities for medical education FDs.

Methods: We adapted and piloted an anonymous electronic survey consisting of 31 single-answer, multiple-answer, and free-response items. The survey was distributed to FDs via listserv and individual emails from a directory compiled from multiple online resources. We used descriptive statistics to analyze data from items with discrete answer choices. Using a constructivist paradigm, we performed a thematic analysis of free-response data.

Results: Thirty-four medical education FDs completed the survey, resulting in a response rate of 77%. Thirty-eight percent of respondents were female. Fifty-three percent earned master’s degrees in education and 35% completed a medical education fellowship. Most respondents held other education leadership roles including program director (28%), associate/assistant program director (28%), and vice chair (25%). Sixty-three percent received support in their role, including clinical buy-down (90%), administrative assistants (55%), and salary (5%). There was no difference (χ² [2, n = 32] = 1.77, p = 0.41) between availability of support and type of hospital (community, university, or public hospital). Medical education FDs dedicated a median of 12 h per month to fellowship responsibilities, include education (median 35% of time), program administration (25%), research mentorship (15%), and recruitment (10%). Medical education FDs describe priorities that can be categorized into three themes related to fellows, fellowship, and institution.
INTRODUCTION

Formal training in medical education has become increasingly popular within emergency medicine (EM) since the introduction of medical education fellowships in 1997 (W. Coates, personal communication, July 20, 2022). This trend accelerated after the 2012 Society for Academic Emergency Medicine consensus conference “Education Research in Emergency Medicine: Opportunities, Challenges, and Strategies for Success” and the resultant publications about medical education fellowship programs. In 2012, there were 11 medical education fellowships. This number rose to 32 in 2019. Currently, there are over 40 medical education fellowship programs.

There is significant variability among medical education fellowships based on the interests and priorities of individual fellowship directors (FDs). Given the pivotal role FDs have in developing future medical educators within EM, it is crucial to characterize the current workforce of medical education FDs. Previous research qualitatively analyzed the experiences and perspectives of a limited number of medical education FDs within EM. However, to our knowledge, there have been no large workforce-based studies identifying the defining features of this role.

The purpose of this study was to gain insight into the role of the EM medical education FD. Specifically, we hoped to identify the characteristics, career trajectories, responsibilities, and institutional support of current medical education FDs in EM.

METHODS

Study design

We performed an observational, cross-sectional study of EM medical education FDs utilizing an electronic, anonymous survey. For the purpose of this study, we defined medical education fellowships as formal 1- or 2-year postresidency training programs with dedicated experience in program administration, education scholarship, education theory, and instructional methods. The institutional review board at the University of Chicago approved this study.

Survey instrument

We adapted a survey used for a national workforce study characterizing the role of the EM vice chair of education to optimize content validity. Using this survey instrument as a guide, we performed critical revisions by group consensus of expert educators and medical education fellowship faculty to integrate new pertinent questions, revise previously used questions, and remove questions not related to our study objectives to provide further content validity. We created the survey using REDCap, a secure, web-based data collection and management platform utilized at the University of Chicago. To maximize response process validity, we piloted the survey instrument with EM non–medical education FDs at multiple institutions. We made minor revisions to the survey for clarity and accuracy of content. We performed an additional round of review within the study group to create a final electronic survey instrument that was utilized for the study. The final survey instrument contained 31 primary items (Appendix S1). To maximize response rate and minimize guessing, items could be left unanswered. Participants were able to complete the survey in multiple sittings and alter responses to previously answered questions.

Study participants

We distributed the survey in April 2021 via the Council of Residency Directors (CORD) Medical Education Fellowship Community of Practice listserv, a group of self-identified fellowship faculty with 54 members that included both medical education FDs and associate/assistant FDs. Recruitment was targeted to medical education FDs in EM. Responses by associate/assistant FDs were excluded from analysis. Members of the study team (D.D., J.R., J.J., M.G., and J.A.) also emailed individual FDs from a web-curated list of 44 FDs compiled through multiple online resources as previously described by Jordan et al. to invite participation in the study in September 2021. We sent reminders twice and the survey remained open until November 2021.

Data analysis

We extracted data from REDCap into Microsoft Excel for analysis. We included all surveys completed by FDs in the final data analysis, including those with incomplete data. We report descriptive statistics for items with discrete answer options, taking into account missing data from incomplete surveys. For data with continuous variables, we report median and interquartile range (IQR) rather than mean given the skewness of responses. We report proportions of respondents as percentages. We used chi-square tests to report significance of categorical data. We considered a p-value less than 0.05 statistically significant.

Two researchers experienced in qualitative methods (A.G. and J.A.) performed a thematic analysis of free-response data using a constructivist approach. Consistent with the methodology described by Braun and Clarke, we individually read survey responses to familiarize ourselves with the data. Initial codes were generated

Conclusion: This study provides insight into the current position and experience of medical education FDs. The results can clarify the role and responsibilities of FDs as the demand for medical education FDs increases.

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- We created the survey using REDCap, a secure, web-based data collection and management platform utilized at the University of Chicago.
- To maximize response process validity, we piloted the survey instrument with EM non–medical education FDs at multiple institutions.
- We made minor revisions to the survey for clarity and accuracy of content. We performed an additional round of review within the study group to create a final electronic survey instrument that was utilized for the study. The final survey instrument contained 31 primary items (Appendix S1).
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and applied to the entirety of the qualitative data. Initial codes were collated to create themes and subthemes, which were subsequently defined and named. The themes and subthemes were discussed among the study team to ensure agreement with interpretation. Disagreements were resolved through group discussion.

RESULTS

Respondent demographics and training

Thirty-four surveys were completed by medical education FDs. Using the number of potential participants based on the list developed by Jordan et al., the response rate was 77% (34/44). There was one response from an assistant/associate FD that was excluded, as this was not a part of our intended study group. The demographics of the participants can be found in Table 1. All participants held MD or DO degrees. Thirty-three participants (97.1%) completed EM residency training. Twelve participants (35.2%) completed medical education fellowships. No participants had PhD-level degrees, but 18 (52.9%) had masters-level degrees in education related fields. Of all participants, 28 (82.3%) completed additional professional development programs in education, such as the American College of Emergency Physicians Teaching Fellowship, Association of American Medical Colleges Medical Education Research Certificate at the Council of Residency Directors in Emergency Medicine (MERC at CORD) program, or the Harvard Macy Institute programs. Two participants (5.8%) had not completed a medical education fellowship, an advanced education degree, or additional professional development programs.

| TABLE 1 Demographics of study participants |
|-------------------------------------------|
| Gender (n = 34)                           |
| Female                                    | 21 (61.8) |
| Male                                      | 13 (38.2) |
| Race (n = 34)                             |
| Asian                                     | 3 (8.8)   |
| Multiracial                               | 2 (5.9)   |
| Hispanic/Latino and White                 | 29 (85.3) |
| Practice region (n = 29)                  |
| Midwest                                   | 6 (20.7)  |
| Northeast                                 | 7 (24.1)  |
| Southeast                                 | 3 (10.3)  |
| Southwest                                 | 4 (13.8)  |
| West                                      | 9 (31.0)  |
| Practice setting (n = 32)                 |
| Community hospital                        | 1 (3.1)   |
| Public hospital                           | 5 (15.6)  |
| University hospital                       | 26 (81.3) |

Note: Results are reported as number (percentage) of respondents. Each item had variable response rates; total number of responses are listed next to each item. Percentages are based on the number of respondents per item.

FD characteristics

The current and prior education roles of participants can be seen in Table 2. A majority of FDs were associate professors (65.6%). Participants had been at their academic institutions a median of 8 years (IQR 5–11 years) and served as medical education FD a median of 4 years (IQR 2–5 years). Most participants held other education leadership roles beyond medical education FD (Table 2). The roles most commonly held concurrently by participants were residency program director (28.1%), associate/assistant residency program director (28.1%), and vice chair of education (25%). Participants previously held many other education leadership positions, most frequently associate/assistant program director (50%), followed by program director (12.5%) and clerkship director (12.5%). Time spent in these current and prior roles was variable, ranging from 0 to 12 years (Table 2). When asked about career plans for the next 5 years, half of the participants (50%) planned to remain in the FD role and seven (21.9%) planned to leave this position. Other common 5-year career plans included becoming chair or vice chair (28.1%), obtaining a new role in graduate medical education such as associate/assistant program director (18.8%), and obtaining a position in the dean’s office, specifically within educational programing or advising (18.8%).

FD responsibilities and support

Four participants (12.5%) were recruited to their institution for the role of medical education FD. Of all respondents, three (9.4%) received job descriptions to guide their work as medical education FD and 13 (40.6%) were expected to generate an annual report detailing the activities of the medical education fellowship. More participants (17, 53.1%) reported to their chair than vice chair (13, 40.6%). Six participants (18.8%) had clearly defined metrics measuring success as FD, which included fellow scholarly productivity, recruitment, and educational instruction. The leadership structure for the medical education fellowship was variable, with 16 (50%) solo FDs, eight (25%) co-FDs, and eight (25%) with a traditional hierarchical structure consisting of a FD and one or multiple associate/assistant FDs.

Twenty-three FDs (71.9%) reported having no budget with which to operate the medical education fellowship. Of those who had a budget, there was a mix of FDs with total budgetary control (controlling the proposed amount and distribution of funds) and those who controlled only the distribution of funds. Two programs indicated an annual budget of $25,000 allocated to medical education fellow advanced degree tuition and FD continuing medical education.

Twenty FDs (62.5%) received administrative, salary, or clinical buy-down support. Clinical buy-down for the role of medical education FD was most common, with 18 (56.3%) participants indicating
TABLE 2 Current and previous roles of FDs

| Academic rank (n = 32)          | No. (%) | Years in position, median (IQR) |
|--------------------------------|---------|---------------------------------|
| Professor                      | 2 (6.3) |                                  |
| Associate professor            | 21 (65.6) |                                |
| Assistant professor            | 9 (28.1) |                                |

| Current education leadership positions (n = 32)             | No. (%) | Years in position, median (IQR) |
|------------------------------------------------------------|---------|---------------------------------|
| Undergraduate medical education                             |         |                                 |
| Clerkship director                                          | 3 (9.4) | 3 (1.25–4)                      |
| Associate/assistant clerkship director                     | 0 (0)   |                                 |
| Course director                                             | 3 (9.4) | 3 (1.25–4)                      |
| Position in the dean’s office                               | 3 (9.4) | 1.5 (*)                         |

| Graduate medical education                                  |         |                                 |
| Residency program director                                  | 9 (28.1)| 4 (1.3–5)                       |
| Assistant/associate residency program director              | 9 (28.1)| 5 (4–6)                         |
| Other FD                                                    | 0 (0)   |                                 |
| Designated institutional official                            | 1 (3.1) | 0 (*)                           |

| Departmental leadership                                     |         |                                 |
| Chair or vice chair                                         | 8 (25.0)| 2.5 (1.3–3.8)                  |
| Other                                                       | 7 (21.9)|                                 |

| Previous education leadership positions (n = 32)             |         |                                 |
|-------------------------------------------------------------|---------|---------------------------------|
| Undergraduate medical education                             |         |                                 |
| Clerkship director                                          | 4 (12.5)| 2.5 (2–6)                      |
| Associate/assistant clerkship director                     | 2 (6.3) | 2 (*)                          |
| Course director                                             | 2 (6.3) | *                              |
| Position in the dean’s office                               | 2 (6.3) | *                              |

| Graduate medical education                                  |         |                                 |
| Residency program director                                  | 4 (12.5)| 6 (4–8)                        |
| Assistant/associate residency program director              | 16 (50.0)| 6 (3.8–8)                    |
| Other FD                                                    | 1 (3.1) | 2 (*)                          |
| Designated institutional official                            | 0 (0)   |                                 |

| Departmental leadership                                     |         |                                 |
| Chair or vice chair                                         | 0 (0)   |                                 |
| Other                                                       | 1 (3.1) |                                 |

Note: Results are reported as number (percentage) of respondents. Respondents may have any number of current or prior education leadership positions, resulting in percentages greater than 100%. Other roles included director of simulation, director of education research, and institutional graduate medical education committee chair. *Indicates data unable to be calculated based on availability of data or low number of responses.

Abbreviations: FDs, fellowship directors; IQR, interquartile range.

they received this support. The median reduction of clinical shifts for medical education FDs who receive clinical buy-down was one (IQR 0.7–1) per month. Eleven participants (34.4%) received administrative support, typically with the assistance of an administrative professional who coordinated other fellowships and/or residency program activities concurrently. One FD received additional salary support for their role, amounting to $6250 annually. Chi-square testing revealed no difference between type of program (community hospital, university, or public hospital based) and availability of any support ($\chi^2 (2, N = 32) = 1.77, p = 0.41)$.

The breakdown of FD responsibilities can be seen in Table 3. These most commonly included medical education fellow mentorship (93.8% of respondents), fellow recruitment (90.6%), and resident mentorship (59.4%). FDs spent a median of 12 h per month (IQR 8–17.5 h) on activities related to the fellowship. This time was divided into four categories. Educational responsibilities, such as instruction, mentorship, and faculty development, accounted for the largest percentage of time (median of 35% [IQR 25%–50%]). Administrative responsibilities, such as meetings, evaluation, and assessment, represented a median of 25% (IQR 20%–50%) of FD time. Research mentorship and recruitment accounted for a median of 15% (IQR 10%–25%) and 10% (IQR 5%–20%) of time, respectively.

Priorities as FD

We identified common themes and subthemes from the qualitative data related to the priorities of FDs (Table 4). Their priorities coalesced around three major themes: fellows (their development, success, and support), fellowship programs (recruitment, curriculum, and support), and institution or department (faculty scholarship and growth).

DISCUSSION

This workforce-based study is the first to characterize the background, roles and responsibilities, and support for medical education...
TABLE 4 Priorities of medical educational fellowship directors

| Fellows                                    |                                           |
|-------------------------------------------|-------------------------------------------|
| Promote development as educator           | “Providing a robust educational/training program for our fellows so that they gain a foundational understanding of medical education” (P8) |
| Promote development as scholar            | “Mentor fellow in scholarly educational pursuits, helping them develop a scholarly record of achievement” (P2) |
| Promote development as leader             | “Mentoring the fellow to become an excellent education leader” (P32) |
| Advocate for fellow’s salary, CME, wellness | “Ensure the quality of the fellowship curriculum in order to continue producing high quality graduates, e.g., ensuring professional development opportunities are funded, a competitive salary, support for mentorship/research for fellows” (P1) |
| Facilitate job opportunities/success      | “Successful Alumni - ensuring our fellowship alumni are getting jobs/experiences that they seek and are compatible with their training” (P3) |
| Individualized education based on fellow’s interests | “Allowing the fellows to experience a chosen role within academic medicine with mentorship and oversight” (P6) |

| Fellowship                                |                                           |
|-------------------------------------------|-------------------------------------------|
| Recruit high-quality fellows              | “Get a fellow. Get a fellow. See #1 (get a fellow)” (P27) |
| Ensure high-quality, innovative curriculum | “Continue to improve and innovate on new curricula for fellows” (P34) |
| Obtain financial support                  | “Secure financial and administrative support” (P14) |

| Institution                               |                                           |
|-------------------------------------------|-------------------------------------------|
| Increase education scholarship within department | “Disseminating high quality scholarship from our group” (P25) |
| Growth of department’s education faculty  | “Growth of the program faculty, e.g., dedicated medical education faculty and researchers/RAs to help facilitate the educational research mission” (P1) |

Note: Priorities were characterized into three themes: fellows, fellowship, and institution. Subthemes are included in the left column of the table with exemplar quotes in the right column, identified by participant number in parentheses. Abbreviations: CME, continuing medical education; RAs, research assistants.

FDs in EM. Importantly, most FDs have held this role for 5 years or less, reflecting the relative youth of many medical education fellowship programs in EM. Many have prior training through medical education fellowships or faculty development training programs. Support for the role is variable, with more than one-third of respondents not receiving administrative, salary, or clinical buy-down support despite FDs spending a median of 12 h per month on activities related to the medical education fellowship.

Our study also describes common priorities of FDs for their trainees, fellowship, and institution. Interestingly, participants indicated their priorities extended into promoting education scholarship and the growth of education faculty within their department. This added institutional responsibility may arguably be outside of the scope of a FD given the goals and objectives of fellowship programs are often focused at the level of the fellow.5 Further research should address if and how this finding is integrated into the work of FDs. When framed by the fact that the minority of FDs have job descriptions or clear metrics of success, these findings further suggest a need for role clarity. Additionally, participants noted departmental support, through protected time and resources, is a priority within their position. Encouragingly, the majority of FDs do enjoy these types of support.

The results of our study are consistent with prior small, qualitative studies evaluating important characteristics of EM medical education FDs and fellowship programs. Jordan and colleagues7 reported similar rates of clinical buy-down for about half of FDs. Additionally, they identified factors contributing to the success of fellowship programs congruent with the priorities of FDs in our study, such as support from institutional leadership and funding.7 Clarke and colleagues12 report department chairs in EM believe they provide appropriate funding and protected time for faculty to pursue education scholarship. Further studies may evaluate perceptions of support by EM department chairs for all of the functions of medical education FDs as identified in our study, not solely education scholarship.

The results of our study also demonstrate a lack of racial diversity of medical education FDs compared to the EM workforce. According to the 2019 Diversity in Medicine report by the Association of American Medical Colleges, approximately 10% of EM physicians identify as belonging to a racial group underrepresented in medicine.13 In our study, 6% of participants identified as Hispanic, and no other minority groups were represented. As the number of medical education fellowships rises, consideration of individuals underrepresented in medicine should be a high priority to ensure the national group of FDs is representative of the EM workforce.

As the scope of specialization within EM has grown over the past few decades, workforce-based studies of education leadership positions have contributed to understanding the importance of these roles within academic EM. Most recently, Papanagnou and colleagues8 characterized the vice chair of education in EM, advocating
for clear job descriptions and metrics of assessment. Similar work has been published for the role of EM residency program director.\textsuperscript{14} Multiple workforce studies of EM clerkship directors resulted in a “Statement of Purpose” by Wald and colleagues, defining the important role clerkship directors have within EM education programs.\textsuperscript{15–18} Our study adds to this growing body of literature advocating for appropriate resource allocation to leaders of EM education programs. Despite the availability of studies within EM, there are, to our knowledge, no studies characterizing the FD role of other EM-based subspecialties or medical education FDs outside of EM.

There are a number of outcomes we hope will result from this study. First, few FDs are given clear job descriptions or metrics by which to assess job performance. These should be developed at the departmental level, but can be informed by the responsibilities and current performance metrics described in this national study. Additionally, we hope this study will provide justification for necessary time, funding, and resources for new medical education FDs or current FDs without significant departmental support. These data emphasize the importance of allocating appropriate resources to facilitate the work and responsibilities of medical education FDs described in this study. Third, this study can be illuminating for aspiring medical education FDs, as these results can aid in selecting opportunities in line with the experiences of FDs described in our study. Finally, we hope this study can inform EM departmental leaders, such as chairs and vice chairs of education, to identify impactful ways to support the work of medical education FDs in achieving priorities for their program.

The results of our study suggest a number of future opportunities for research. Our study collected data via survey in an attempt to increase the representation of FDs and provide greater generalizability of our findings. Focus groups or interviews could be completed to increase the richness of the data captured; this was not pursued for this study due to concerns related to feasibility. Additionally, document analysis with curricula vitae could provide further insight into other considerations not captured in our survey, including a more detailed timeline over which the professional trajectory of FDs took place. Finally, understanding how the role of FD is impacted by the growth of medical education fellowships in EM will be critical over the coming years.

LIMITATIONS

Our study has several limitations. Our survey relies on the accuracy of self-reported data; it is possible FDs may be inaccurately reporting the responsibilities and time requirements of their position. We initially utilized the CORD Medical Education Fellowship Community of Practice listserv to distribute our survey. It is not clear if a representative from all medical education fellowship programs is included in this listserv; further, both FDs and associate/assistant FDs are active on this listserv. Given this concern, we also individually asked FDs, based on the directory utilized by Jordan et al.,\textsuperscript{1} to participate in the study. It is possible we failed to identify all FDs despite these efforts. We believe, however, that the list created by Jordan et al. contains the most updated source of FDs across the country and adequately represents the majority of potential respondents.\textsuperscript{1} Finally, as most medical education FDs have other education leadership roles, it may have been challenging to isolate the specific responsibilities and support mechanisms in place solely for the role of FD. For example, clinical buy-down support may be hard to distinguish compared to additive buy-down for a different education leadership position, such as residency program director.

CONCLUSIONS

The directors of emergency medicine education fellowship programs generally have formal training in medical education yet are relatively new to their role. Many have secondary academic appointments in addition to the role of fellowship director. They commonly receive shift and administrative support for their work. They encounter challenges such as a lack of formal job descriptions.

AUTHOR CONTRIBUTIONS

Andrew Golden: study concept and design, data acquisition, data analysis and interpretation, drafting manuscript, critical revision of the manuscript. David Diller: study concept and design, data acquisition, data analysis and interpretation, critical revision of the manuscript. Jeffrey Riddell: study concept and design, data acquisition, data analysis and interpretation, critical revision of the manuscript. Jaime Jordan: study concept and design, data acquisition, data analysis and interpretation, critical revision of the manuscript. Michael Gisondi: study concept and design, data acquisition, data analysis and interpretation, critical revision of the manuscript. James Ahn: study concept and design, data acquisition, data analysis and interpretation, critical revision of the manuscript, study supervision.

CONFLICT OF INTEREST

The authors declare no potential conflict of interest.

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**SUPPORTING INFORMATION**

Additional supporting information can be found online in the Supporting Information section at the end of this article.