


A survey of dermatology residents and program directors assessing the transition to dermatology residency

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ABSTRACT

The transition from internship to residency is a critical period for trainees. This study investigated factors that influence the transition of residents from postgraduate year 1 (PGY-1) to dermatology residency. In June 2019, a program director–specific survey and a resident-oriented survey were administered via Survey Monkey. An email containing survey hyperlinks was sent via the Association of Professors of Dermatology Listserv to program directors, who were asked to forward the email to their current trainees. A total of 44 dermatology residents and 33 program directors responded. More than 58% of program directors identified a preliminary year in internal medicine as most beneficial. Both residents and program directors indicated rheumatology, infectious disease, and allergy and immunology as the most relevant PGY-1 electives. Eighty-two percent of program directors expected <1 h/week or no independent preparation for dermatology residency during PGY-1. The stress of incoming residents as perceived by program directors was significantly less than the self-reported stress of residents during their transition to dermatology residency (Mann-Whitney U, two-sided, $P = 0.011$).

KEYWORDS Elective; program directors; residency; stress; survey; transition

The transition from internship to residency is a critical period for trainees.^{1–3} Dermatology is one of several specialties that requires a preliminary training year during postgraduate year (PGY) 1.⁴ It is well documented that the passage from medical school to residency is a stressful period for trainees.² Completing a preliminary year may further increase stress, entailing relocation and adjustment to a new program for the preliminary year and again for residency.¹ Further, new trainees face a steep learning curve, as the study of dermatology is limited in scope during medical school and preliminary year programs.^{5,6} To our knowledge, this critical period for dermatology residents has not been previously examined. This study investigated factors that influence the transition of residents from internship to dermatology residency. Understanding current dermatology residents' experiences and program directors' expectations for incoming dermatology residents may optimize the transition for future trainees.

METHODS

The Baylor College of Medicine institutional review board approved a program director–specific survey and a resident-oriented survey, administered via Survey Monkey. Review of relevant literature from other specialty fields on the PGY-1 to residency transition identified three major themes: (1) PGY-1 program type including elective offerings, (2) independent preparation for residency, and (3) transitional stress.^{1–3,7,8} Questions were formulated to address these topics.

In June 2019, an email containing survey hyperlinks was sent to residency program directors via the Association of Professors of Dermatology (APD) Listserv and was resent 2 weeks later. Program directors were asked to complete the program director–specific survey and to forward the email containing the resident-specific survey hyperlink to all of their current trainees. Completion of the surveys was

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 Supplemental material for this article can be accessed at <https://doi.org/10.1080/10.1080/08998280.2020.1799289>.

The authors report no conflict of interest.

Received June 22, 2020; Revised July 12, 2020; Accepted July 13, 2020.

Table 1. Program director views on the PGY-1 program most beneficial for preparing for dermatology residency (n = 33)

Program	N (%)
Preliminary internal medicine	19 (58%)
All programs* are equally beneficial	7 (21%)
All programs* except for preliminary surgery	4 (12%)
Preliminary internal medicine or a transitional year	2 (6%)
Transitional year	1 (3%)

*Preliminary internal medicine, preliminary pediatrics, preliminary surgery, and transitional year programs.

completely anonymous and voluntary. Full surveys are available in the [Supplementary Material](#).

Data were analyzed using descriptive and comparative statistics, including nonparametric tests. Fisher's exact test was used for categorical responses, and the Mann-Whitney U test was used for questions with a single ordinal answer selection. The Kruskal-Wallis test was used to compare responses by PGY-2, PGY-3, and PGY-4 residents to questions with a single ordinal answer selection. A P value <0.05 was considered statistically significant. Free response data were analyzed both manually and with an open source online text analysis tool to identify prominent themes.⁹

RESULTS

A total of 33 program directors and 44 dermatology residents participated. To preserve anonymity, respondents did not share their name, the location of their home training program, or any other identifying information. Seventeen (40%) residents were in PGY-2, 13 (31%) in PGY-3, and 12 (29%) in PGY-4. Two residents indicated completion of additional years of training after medical school but prior to starting dermatology residency and were excluded from all further analyses. The program director respondents had served as leaders at one or more institutions for an average of 8 years (range <1 to 25 years). The 2019-2020 residency application cycle included 133 dermatology programs. Given 33 program director survey respondents, the estimated response rate is 25%. This is a conservative estimate, as not all program directors may be members of the APD.

Twenty-one resident respondents (50%) completed PGY-1 training in internal medicine; 20 (48%) completed a transitional year internship. One PGY-2 resident reported enrollment in a traditional rotating internship, a general training year approved by the American Osteopathic Association with a structure similar to a transitional year program. No respondents had completed a preliminary year in pediatrics or surgery. Program directors' responses regarding the ideal preliminary year program type varied ([Table 1](#)). Preliminary internal medicine was indicated as most beneficial by 19 (58%) program directors. Some program directors favored a rigorous PGY-1 year to gain a strong foundation in medicine. Others urged

consideration of which PGY-1 program afforded the best back-up plan for the unmatched applicant.

The following PGY-1 electives were reported as helpful by at least 20% of resident respondents: dermatology, 30 (71%); rheumatology, 25 (60%); infectious disease, 20 (48%); oncology, 15 (36%); hematology, 12 (29%); and allergy and immunology, 10 (24%). More than 50% of program director respondents identified these same electives, in addition to genetics, as helpful for future dermatology residents ([Table 2](#)). Program directors and residents listed the three electives they found most beneficial, even if the resident had not taken the elective during intern year. Rheumatology, infectious disease, and allergy and immunology were most often listed by both program directors and residents ([Table 2](#)). Several program directors recommended a plastic surgery elective for the surgically oriented candidate.

Thirty-five (83%) residents indicated no preparation or <1 h/week of independent preparation for dermatology residency during PGY-1. Five (12%) residents spent 2 to 5 h/week, and two residents (5%) indicated >10 h/week. Meanwhile, 27 (82%) program directors expected <1 h/week or no independent preparation, and 6 (18%) expected 2 to 5 h/week. No program director reported expectations of >5 h/week. The difference between expected preparation by program directors and resident-reported preparation was not significant (Fisher's, $P = 0.45$).

Residents and program directors listed the two resources most helpful for independent preparation during PGY-1. [Table 3](#) includes resources identified by at least two residents or program directors, regardless of ranking order. When asked what they would have done differently, 13 (31%) residents would have done more dermatology-related preparation. No residents indicated they would have done less dermatology-related preparation.

On a scale of 1 to 5, with 1 being "not stressed at all" and 5 being "extremely stressed," the average stress level reported by residents during their transition to PGY-1 was 3.7. The average self-reported stress level on starting dermatology residency was 3.4. The average perceived stress by program directors for residents starting dermatology residency was significantly lower at 2.8 (Mann-Whitney U, two-sided, $P = 0.011$). Stratifying by post-graduate year, the average stress was 3.7 for PGY-2 residents, 3.07 for PGY-3 residents, and 3.33 for PGY-4 residents; differences were not significantly different (Kruskal-Wallis, two-sided, $P = 0.25$). The median stress reported by residents was 3 for those who completed a preliminary year in internal medicine and 4 for those who completed a transitional year; this difference was not statistically significant (Mann-Whitney U, two-sided, $P = 0.13$).

Stressors during the transition to dermatology residency identified by $>50\%$ of residents were studying (83%), clinical duties (60%), and adjusting to new coworkers and supervisors (57%). During their dermatology program orientation, residents found the following sessions helpful: didactic lectures (67%), hands-on skill sessions (62%), and electronic medical record navigation instructions (64%). Less than half of residents indicated that team-building exercises/dedicated time to meet colleagues (40%) and tours of hospital and clinic facilities (19%) were helpful. When commenting on factors that helped ease

Table 2. PGY-1 electives identified by program directors and residents as most beneficial

Question	Options	Program directors (n = 33)	Residents (n = 42)
Most beneficial PGY-1 electives. (Residents must have taken elective during PGY-1 to comment.)	Rheumatology	32 (97%)	25 (60%)
	Infectious disease	32 (97%)	20 (48%)
	Allergy & immunology	31 (94%)	10 (24%)
	Dermatology	29 (88%)	30 (71%)
	Oncology	29 (88%)	15 (36%)
	Hematology	26 (79%)	12 (29%)
Top three most beneficial PGY-1 electives (regardless of whether the resident had taken it). Shown are the total number of times an elective was listed, regardless of ranking order.	Rheumatology	28	39
	Infectious disease	23	25
	Allergy & immunology	14	20
	Hematology-oncology	10	12
	Dermatology	8	17

Table 3. Recommended dermatology learning resources by program directors and residents*

Resource	Program directors (n = 31)	Residents (n = 16)
<i>Andrews' Diseases of the Skin: Clinical Dermatology</i>	9	4
<i>Dermatology</i> (Bologna)	7	3
VisualDX (online diagnostic clinical decision support system)	4	2
<i>Fitzpatrick's Color Atlas and Synopsis of Clinical Dermatology</i>	3	3
<i>Fitzpatrick's Dermatology</i> textbook	3	0
AAD online basic dermatology curriculum	3	0
<i>JAMA Dermatology</i> or <i>JAAD</i> review articles/case reports	3	0
<i>UpToDate</i>	2	1
<i>Lookingbill and Marks' Principles of Dermatology</i>	2	3
<i>Habif's Clinical Dermatology: A Color Guide to Diagnosis and Therapy</i>	2	2
<i>Hurwitz Clinical Pediatric Dermatology</i>	2	0
<i>Derm In-Review</i> board prep review course	0	2
<i>Dermatology Essentials</i> (Bologna)	0	2

*Respondents were asked to list the two most beneficial resources for preparing for a dermatology residency. Table shows the total number of times a resource was listed.

AAD indicates American Academy of Dermatology; JAAD, *Journal of the American Academy of Dermatology*.

their transition to residency, residents most often noted friendly and supportive senior and fellow residents. Finally, most program directors responded that their orientation sessions included didactic lectures (88%), team-building exercises (88%), hands-on skills sessions (94%), electronic medical record navigation lessons (97%), and tours of work facilities (91%).

Full survey results are available in the [Supplementary Material](#).

DISCUSSION

This study investigated factors that influence the transition of trainees from internship to dermatology residency. Over half of program director respondents indicated that a preliminary year in internal medicine was most beneficial in preparation for dermatology residency. Our survey suggests that program directors value a year in preliminary medicine, given the desire for a strong foundation in the practice of medicine during PGY-1. Others felt that preliminary programs (vs. transitional-year programs) provide a stronger back-up avenue for the unmatched applicant. Some placed emphasis on a rigorous preliminary year and taking advantage of relevant elective offerings. Program directors and residents agreed that the five most relevant internal medicine electives for future dermatology residents were rheumatology, infectious disease, allergy and immunology, hematology-oncology, and dermatology. Other proposed relevant electives included dermatopathology, plastic surgery, and wound care. When interviewing for preliminary programs, medical students should inquire about the availability of these relevant electives.

Most residents (83%) reported <1 h/week or no independent preparation for dermatology residency during PGY-1, which paralleled the expectations of 82% of program directors. Knowledge of program directors' expectations can inform future trainees in appropriately focusing their efforts

during internship. When advising on what the primary focus of PGY-1 for future dermatology residents should be, 31 program directors (94%) listed focusing on intern year duties, including learning as much general medicine as possible, developing excellent patient care skills, and being the best intern on the team. Also suggested were following any dermatology-related hospital patients, performing full-body skin exams on clinic patients, and choosing one dermatology textbook to utilize during downtime throughout intern year.

Finally, the stress of incoming PGY-2 residents as perceived by program directors was significantly lower than that reported by current dermatology residents (Mann-Whitney U, two-sided, $P = 0.011$). The greatest work-related stressors identified by residents were studying, clinical duties, and adjusting to new co-workers and supervisors. The steep learning curve faced by dermatology residents can be daunting and includes not only knowledge of the principles of dermatologic disease, but also experience with the electronic medical record, clinic workflow processes, supervisor preferences, and navigating difficult patient encounters. In addition, many non-work-related stressors can exist, including family, finances, limited disposable hours, relocation issues, and other psychosocial concerns.² These personal stressors may not be apparent to the program director, but they impact the overall well-being of trainees. Knowledge of these potential stressors can aid program directors in creating strong support systems for residents. Implementation of a “big-sibling/little-sibling program” was suggested, in addition to scheduled meetings between program directors and incoming residents to monitor resident wellness. Resident respondents also emphasized the importance of strong relationships with senior residents.

This study did not examine the relationship between stress levels, resident performance on board exams, and patient outcomes. It is well documented that resident stress can lead to burnout, anxiety, depression, and substance abuse.² Despite this, many physicians have successfully navigated the stressors of residency. Further, they attribute their skillful practice of medicine to experience gained in meeting the strenuous demands of residency.¹⁰ Future studies can further elucidate these stressors and generate solutions to minimize them while preserving the integrity of the resident education-work experience.

Limitations include a low response rate, possible nonresponse bias, and heterogeneity of the resident population. Efforts to preserve anonymity as directed by the institutional review board and lack of funding were barriers to incentivization. In adhering with APD Listserv guidelines, reminder emails were limited. Further, the survey was sent out near the end of the resident work-year, and survey fatigue may have also contributed to the low resident response rate, which should be addressed in future studies. PGY-2, PGY-3, and PGY-4 residents differ in years of

clinical experience and time since their transition to dermatology residency. Finally, given the anonymity of responses, we could not analyze whether resident respondents were spread equally among residency programs. Future investigations on this topic may benefit from targeted methods, including random selection of residency programs and verification of the programs’ commitment to encourage resident participation.

These findings can aid future dermatology trainees in identifying the ideal approach to the PGY-1 year, including selection of the PGY-1 program type, relevant electives, and an independent study plan that will optimize their transition to dermatology residency. Program directors may utilize these results to further elucidate stressors affecting incoming residents and to maximize the orientation experience and resident support system.

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