

Fellows in Training Wellness in Allergy and Immunology: AAAAI Workgroup Report



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Physician health and wellness can be negatively affected by burnout, which in turn can lead to multiple potential professional and personal issues. Burnout issues can start in medical school and progress during residency and fellowship, and throughout a physician's career. A previous survey of allergists and immunologists reported a burnout rate of 35%. However, there are currently few data regarding health and wellness specifically for fellows-in-training (FIT) in allergy and immunology. This workgroup report was developed to assess health and wellness among FIT in our specialty. The American Academy of Allergy, Asthma & Immunology electronically distributed an anonymous questionnaire using the validated mini-Z survey to a total of 388 allergy and immunology FIT. In addition to the mini-Z items, the survey queried personal and professional demographic characteristics and included open-ended wellness questions. A total of 82 FIT completed the survey, yielding a 24% response rate. The burnout rate was 39%,

which is lower than the national average among US physicians. Overall job satisfaction was 82%, and 72% reported satisfactory or better control over workload. Our results identify FIT-specific concerns in our specialty that can be used to develop tailored interventions to improve wellness and minimize burnout among this group. However, future surveys are needed to continue to address allergy and immunology FIT-specific wellness challenges. © 2022 American Academy of Allergy, Asthma & Immunology (J Allergy Clin Immunol Pract 2022;10:2868-74)

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INTRODUCTION

Physician health and well-being can be negatively affected by factors such as clinician stress, burnout, and depression, which can

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TABLE 1. AAAAI Fellows-in-Training Wellness Survey Questions (Q)

Q1. In what year of fellowship are you?
Q2. Are you married?
Q3. Do you have children or dependents aged less than age 18 y?
Q4. How many hours do you work per week?
Q5. On average, how many patients (inpatients and outpatients) do you treat per week?
Q6. On average, how many consults do you see when you are on service?
Q7. What percentage of the time do you see inpatient consults?
Q8. Are you a research fellow doing basic or translational research?
Q9. How many hours per week are you in the laboratory?
Q10. Do you come in on weekends?
Q11. Do you regularly (>2 times/wk) engage in any of the following activities: exercise, yoga, meditation, personal hobby?
Q12. How would you describe the strength of your personal support system?
Q13. How would you describe the strength of your professional support system?
Q14. Would you consider your faculty to be good role models for physician wellness?
Q15. Do you feel like your program or faculty are supportive of your needs? Please expand on your answer.
Q16. Do you agree or disagree with the following statements? I feel I have a faculty member who cares and to whom I can talk when faced with a personal stressor or major decision (eg, postfellowship career choices, maternity or paternity leave Faculty are understanding when I need to take a personal day (eg, family funeral, caring for a sick child)
Q17. What changes in fellowship training would be helpful in promoting wellness or preventing burnout?
Q18. Overall, I am satisfied with my current job: agree strongly, agree, neither agree nor disagree, or strongly disagree?
Q19. I feel a great deal of stress because of my job: agree strongly, agree, neither agree nor disagree, or strongly disagree?
Q20. Using your own definition of "burnout," please choose one of the answers: a. I enjoy my work. I have no symptoms of burnout. b. I am under stress and do not always have as much energy as I did, but I do not feel burned-out. c. I am definitely burning out and have one or more symptoms of burnout (eg, emotional exhaustion). d. The symptoms of burnout that I am experiencing will not go away. I think about work frustrations a lot. e. I feel completely burned-out. I am at the point where I may need to seek help.
Q21. My control over my workload is: poor, marginal, satisfactory, good, or optimal.
Q22. Sufficiency of time for documentation is: poor, marginal, satisfactory, good, or optimal.
Q23. The degree to which my care team works efficiently together is: poor, marginal, satisfactory, good, or optimal.
Q24. My proficiency with electronic medical record use is: poor, marginal, satisfactory, good, or optimal.
Q25. Which number best describes the atmosphere in your primary work area? 1 (calm), 2-3 (busy but reasonable), 4-5 (hectic and chaotic).
Q26. My professional values are well-aligned with those of my department leaders: agree strongly, agree, neither agree nor disagree, or strongly disagree.
Q27. The amount of time I spend on the electronic medical record at home is: excessive, moderately high, satisfactory, modest, or minimal to none
Q28. Tell us more about your stresses and what we can do to minimize them.

lead to medical errors, early retirement, addiction, divorce, and suicide.¹ It has been shown that burnout issues may start in medical school and progress during residency and fellowship, and throughout a physician's career.² Medical schools, residency programs, and allergy/immunology fellowship programs may not devote sufficient time to this topic during training. Given the current and future health care climate, physician and clinician health and wellness is going to become an increasingly challenging issue. Earlier studies reported burnout rates of approximately 45% among physicians in the United States, and burnout rates have been increasing over the past few years to approximately 54%.^{2,3} Many physician surveys on burnout have used the Maslach Burnout Inventory (MBI), which includes questions on exhaustion, depersonalization (eg, feeling detached from patients), and a lack of personal accomplishment (eg, no real sense of accomplishing anything during a workday).^{1,4} There are recent data regarding health and wellness specifically in the field of allergy and immunology.^{1,5-7} A 2017 Medscape Physician Lifestyle survey revealed a 43% burnout rate among allergists and immunologists (50% female burnout rate and 39% male burnout rate).⁵ The 2018 Medscape Physician Burnout and Depression Report,⁶ a follow-up survey, revealed that across all specialties, 48% of women and 38% of men described themselves as burned-out. Forty-four percent of allergists and immunologists included in that survey reported experiencing burnout.⁶ A wellness survey among American Academy of Allergy, Asthma, & Immunology (AAAAI) members in 2018 revealed a burnout rate of 35%.⁷ A total of 138 AAAAI members completed the survey and specific wellness issues facing allergists and immunologists were elucidated, including burdensome electronic medical record (EMR) administrative tasks.⁷

Burnout has been shown to start in medical school and persist throughout medical training, with a reported 49.6% burnout in medical school and 76% burnout in internal medicine residency.^{8,9} In a survey examining residents and fellows across different specialties, burnout was identified in 50% of respondents.¹⁰ Regarding allergy and immunology fellows-in-training (FIT), an MBI Human Services Survey in 2017 showed similar scores for personal accomplishment and depersonalization but a slightly higher rate of emotional exhaustion for allergy and immunology FIT compared with the general health services population.⁴ (As an example, scores are levels of frequency regarding exhaustion, from 0, or never, to 6, or daily).⁴ This was similar to results for the practicing allergists and immunologists surveyed, and there were no differences by sex.⁴

The COVID-19 pandemic has further increased stressors for all physicians, including allergy and immunology FIT.¹¹ Patient care service changes in the inpatient and outpatient settings, economic uncertainties including future employment issues, and the transition of children's school to online home schooling with retransition to in-person school likely have and will continue to affect FIT.¹² A recent survey on FIT during the COVID-19 pandemic revealed concern by some about completing fellowship without adequate clinical experience, the reassignment of some to COVID-19 patient responsibilities, and an increase in telehealth patient care.¹²

As a follow-up to the AAAAI member wellness survey, an Allergy and Immunology FIT survey was performed in 2019. This work group report was developed as a mentorship project under the AAAAI Leadership Institute Mentorship Program. This report describes the results of a wellness survey of AAAAI FIT to understand prevalence and drivers of professional burnout

TABLE II. Allergy and immunology fellows-in-training respondent characteristics (n = 82)

Demographics	Percentage
Sex: female	77%
Marital status: married	72%
Basic/translational research	24%
Children aged <18 y	45%
Work hours/wk	
<40	22%
40-50	50%
>50	28%

in this group. Ultimately, we hope to use these results to develop and implement evidence-based wellness strategies and interventions for allergy and immunology FIT.

METHODS

An electronic anonymous questionnaire using the validated mini-Z survey to assess wellness and burnout among AAAAI FIT was administered in 2019 by the AAAAI Practice, Diagnostics, and Therapeutics Committee. The mini-Z survey is a wellness survey originating from the Z (Zero Burnout Program) Clinician Questionnaire and was selected owing to external validation and internal consistency across multiple surveys.¹³⁻¹⁵ The mini-Z survey was also chosen over other wellness and burnout surveys because it allows respondents to use their own individual definition(s) of burnout. Surveys were sent to all FIT members of the AAAAI in the United States at four times in 2019.

The survey included the questions listed in Table I. In addition to the mini-Z items, personal and professional demographic characteristics were assessed. Most general wellness questions were from the mini-Z items and some fellowship/training specific questions were added. A few questions were open-ended (questions 15, 17, and 28) to assess burnout, stress, and solutions qualitatively for professional well-being (Table I). Results were tabulated and evaluated by the Information Services team of the AAAAI and the authors of this work group report. We defined burnout, the primary outcome of interest, as per mini-Z criteria (a response of *c*, *d*, or *e* to question 20). Regarding statistical analysis, cross-tabulation and χ^2 tests were used to examine relationships between binary demographic characteristics and burnout. We used Wilcoxon rank sum test to measure associations between continuous demographic characteristics and burnout. Analysis was performed with Stata SE software (version 9.0; StataCorp, College Station, TX).

RESULTS

Respondent characteristics and clinical activities

A total of 82 surveys were completed out of 388 FIT, yielding a 24% response rate, which is higher than many other recently completed AAAAI surveys (Table II).^{7,16-18} Approximately 77% of respondents were women, which corresponds to approximately 66% of FIT being women at allergy and immunology training programs in the United States (unpublished data, AAAAI Membership Information Technology Division, 2022). Forty-five percent had children or dependents aged less than 18 years.

A total of 78% of respondents worked more than 40 hours per week. Approximately 50% spent 20% or more of their time seeing inpatient consults. Moreover, 72% came to work on weekends. Regarding the strength of a general professional

TABLE III. Career and job satisfaction of allergy and immunology fellows-in-training

Career/Job Component	Percentage
Overall current job satisfaction	82%
Satisfactory or better control over workload	72%
Job stress	50%
Sufficient time for documentation	71%
Moderate to excessive time spent on electronic medical records at home	40%

support system, 56% reported good or optimal support systems whereas 23% reported poor or marginal support systems. Eighty-three percent related satisfactory or better health care team efficiency. In addition, 42% reported a good personal support system, and 36% had an optimal support system.

Wellness activities

Fifty percent of respondents exercised regularly and 51% had a personal hobby; 8% performed meditation and 9% did yoga. In the survey, yoga was considered a distinct entity from exercise or hobbies.

Career and job satisfaction

Overall career and job satisfaction was positive for FIT (Table III).

Prevalence and predictors of burnout

A total of 39% of respondents reported burnout symptoms (Figures 1 and 2). A higher rate of burnout in the first year of fellowship (57%) appeared to be driven by a higher number of work hours. There were no significance differences between male and female sex and burnout. As expected, dissatisfaction with the current job, elevated job-related stress, poor control over workload, a chaotic work atmosphere, insufficient time for documentation, and an increased number of work hours were highly significant predictors of burnout (Table IV). There was no significant difference in the rates of burnout between individuals who did or did not participate in yoga, hobbies, or meditation. There was a lower rate of burnout among participants who engaged in exercise (22%) compared with those who did not (52%).

Fellowship training—specific issues

Forty-five percent of respondents did not consider their faculty to be good role models for physician wellness (questions 14, 15, and 16). Moreover, 70% considered their fellowship training program and faculty to be supportive of their needs. Another 83% stated that they had a faculty member who cared about them and with whom they could talk when faced with a personal stressor; the same percentage felt that the faculty was understanding when they took a personal day. Greater perceived strength of both personal ($P = .04$) and professional ($P = .001$) support was associated with lower rates of burnout. Several faculty-specific characteristics were found to be significant drivers of burnout among FIT. Fellows-in-training experiencing burnout were significantly more likely to report having faculty who did not understand the need for a personal day and were not good role models themselves for physician wellness. Also, not having a faculty member who cared and to whom the fellow could talk when faced with a personal stressor or major decision

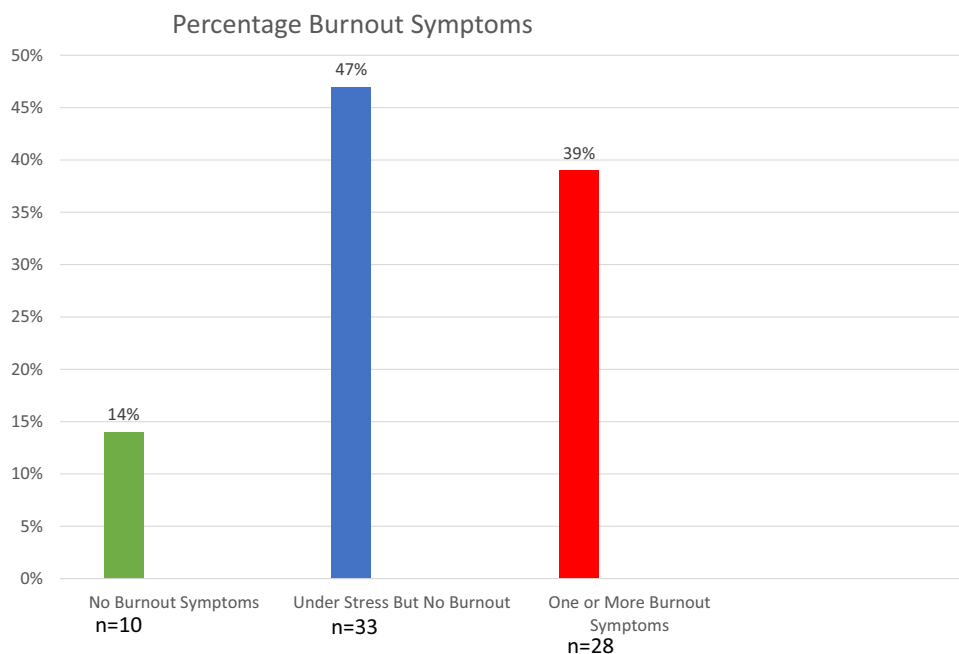


FIGURE 1. Frequency of burnout in allergy and immunology fellows-in-training.

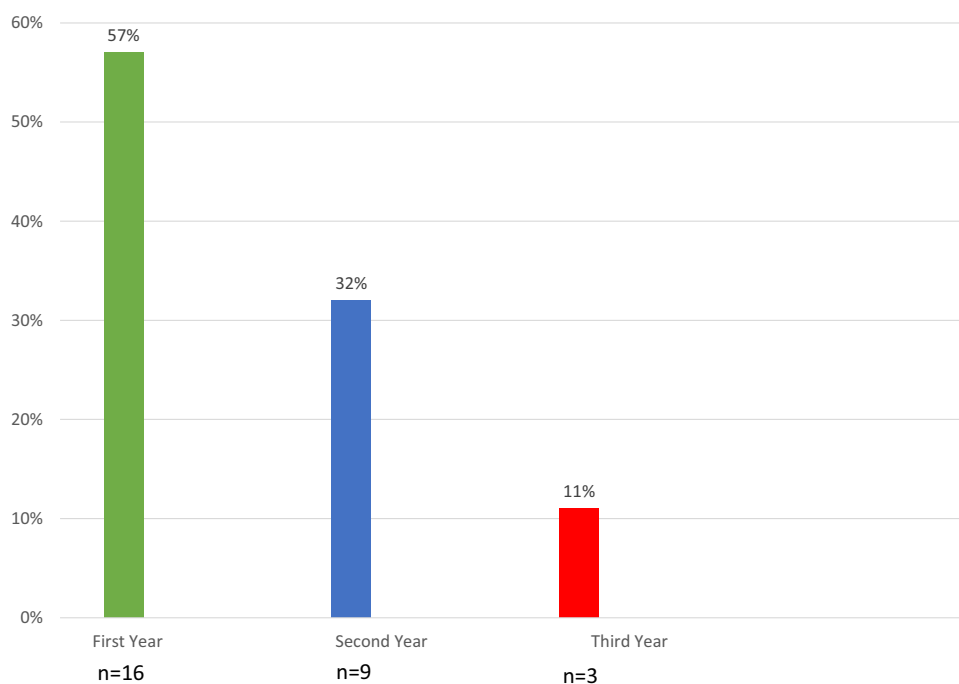


FIGURE 2. Frequency of burnout in allergy and immunology fellows-in-training by year.

was a significant predictor of burnout, as was a lack of value alignment with physician leaders.

Open-ended answers to wellness and burnout issues

Regarding qualitative responses to question 15 (“Do you feel like your program/faculty are supportive of your needs? Please expand on your answer”), multiple respondents mentioned the importance of

monthly meetings between faculty and fellows to discuss both academic and personal issues. It was valuable to respondents for a faculty member to ask periodically how an FIT was doing. They discussed the need for faculty to be more receptive to feedback and to be willing actually to implement changes recommended by FIT. The most common stressor cited among respondents was inflexible scheduling, particularly with regard to family time and child care.

TABLE IV. Respondent characteristics and associations with burnout for fellows-in-training

Characteristic	All respondents (n = 82)	Burnout (n = 28)	No burnout (n = 43)	P
Sex				
Female	77%	34%	66%	.20
Male	23%	54%	46%	
Patients seen per week (mean)	22.2	21.6	22.4	.82
Current job satisfaction				
Satisfied	81.7%	29.3%	70.7%	<.0001
Not satisfied	18.3%	84.6%	15.4%	
Job-related stress				
Not elevated	50.7%	13.9%	86.1%	<.0001
Elevated	49.3%	65.7%	34.3%	
Control over workload				
Adequate	71.8%	27.5%	72.5%	.001
Poor	28.2%	70.0%	30.0%	
Work atmosphere				
Nonchaotic	62.9%	20.5%	79.5%	<.0001
Chaotic	37.1%	69.2%	30.8%	
Time for documentation				
Sufficient	71.8%	27.5%	72.5%	.001
Insufficient	28.2%	70.0%	30.0%	
Too much time spent on electronic medical records at home				
Not excessive	60.0%	26.2%	73.8%	.009
Excessive	40.0%	57.1%	42.9%	
Value alignment with physician leaders				
Aligned	50.0%	25.7%	74.3%	.03
Not aligned	50.0%	51.4%	48.6%	
Hours worked per week				
<40	22.5%	12.5%	87.5%	.001
40-50	52.1%	37.8%	62.2%	
>50	25.4%	66.7%	33.3%	
Faculty understanding regarding personal day				
Yes	84.5%	30.0%	70.0%	<.0001
No	15.5%	90.9%	9.1%	
Faculty member who cares and to whom fellow can talk				
Yes	83.1%	33.9%	66.1%	.03
No	16.9%	66.7%	33.3%	
Faculty role model for wellness				
Yes	53.5%	21.1%	78.9%	.001
No	46.5%	60.6%	39.4%	

n = 71 for the burnout survey. Bold values indicate significant *P* values.

Question 17 (“What changes in fellowship training would be helpful in promoting wellness/preventing burnout?”) also yielded a range of responses. Multiple respondents mentioned protected wellness, or personal time, as essential. Increased clerical duties, such as multiple hours dealing with the EMR, patient phone calls, and e-mails, as well as patient laboratory reviews, were specifically mentioned as causing frustration and taking time from more valuable clinical education. Regarding additional ideas for minimizing stresses (question 28), multiple respondents recommended the need for additional board review didactics and protected time to prepare for this examination. Many respondents also discussed the necessity for real-world training during fellowship, including how to search, interview, and negotiate for employment opportunities. The importance of being treated as a colleague and person and not simply a trainee or labor was also mentioned.

DISCUSSION

Overall, the results of this survey are encouraging. Eighty-two percent of respondents reported overall current job satisfaction.

Moreover, 72% reported a good or optimal personal support system. Most FIT felt that they had a faculty member to whom they could talk when faced with a personal stressor and that the faculty was understanding when a personal day had to be taken. The burnout rate among allergy and immunology FIT is approximately 39%, which is similar to that of AAAAI members (35%).⁷ As noted previously, 77% of respondents were women, which corresponds to approximately 66% of FIT in US allergy and immunology training programs being women (unpublished data, AAAAI Membership Information Technology Division, 2022). As with the previous AAAAI membership survey, there was no difference in burnout rates between men and women, unlike in previous physician wellness surveys.⁵⁻⁷ We do not know the reason(s) for this lack of difference but will continue to monitor burnout between sexes in future surveys. In contrast, 55% of neurology fellows reported burnout in at least one domain when assessed by the MBI Human Services Survey; similarly, greater than 50% of oncology fellows were identified as burned-out in at least one domain of the MBI in another

TABLE V. Recommended potential approaches to improve FIT wellness

Hold periodic meetings between faculty and FIT, including outside the medical setting.
Have FIT discuss issue(s) with faculty and program director as an entire group rather than from one individual. Suggest possible solutions.
Make sincere effort by faculty to implement recommended changes.
Address clerical and nonclinical tasks by FIT.
Simply ask periodically how an FIT is doing
Have at least one faculty wellness representative model wellness.

FIT, fellows-in-training.

study.^{19,20} An e-mailed survey among surgical fellows revealed a surprisingly low rate of burnout (13%) despite finding a 35% rate of burnout among residents and 27% among attendings.²¹ A survey of musculoskeletal radiology fellows using the abbreviated MBI showed a rate of 88% reporting some manifestations of burnout.²² This can be compared with a rate of 25% among radiology faculty members who responded to the question “Are you burned out?” in the 2019 Medscape survey.²³

The rate of and risk for burnout should be reassessed at regular intervals among allergy and immunology FIT. It is essential to minimize the burnout rate among FIT in our specialty, especially as the practical stressors of today’s health care climate and the ongoing pandemic continue to increase.¹² The promising results of the survey can also be used a tool to attract medical students and residents to pursue a career in allergy and immunology, helping to ensure an appropriate and adequate specialty workforce.

Although the rate of burnout among allergy/immunology FIT is lower than the national average among all physicians (national surveys reported an overall burnout rate of approximately 45% to 54% among US physicians),^{2,3} there are opportunities for improvement. Several key drivers were found to be highly significant predictors of burnout, including several factors related to practice efficiency, such as the chaos of the work environment, lack of control over the workload, and EMR documentation burden.¹ These factors are well-established drivers of burnout among physicians at large, and developing skills to manage these stressors during training may help FIT cope with them after fellowship completion. However, targeted efforts are needed to improve clinical inefficiency through team-based care, shared documentation, and EMR enhancement. It is also concerning that 45% of the FIT responded that their faculty members were not good role models for physician wellness. In the future, we need to understand why the FIT expressed this point of view. Ideally, faculty members should address their own wellness and serve as a leadership role model for the rest of the division. This survey’s findings also suggest that investment in faculty wellness may have downstream benefits for FIT. Fellows were less likely to report burnout if they had faculty role models for wellness and faculty whom they felt comfortable approaching for personal matters.

With regard to specific ideas for promoting wellness during fellowship, several respondents recommended periodic meetings between faculty and FIT (Table V). Some mentioned holding these meetings outside the hospital or clinic, to foster camaraderie. Exercise yielded a lower rate of burnout among FIT; finding ways to promote exercise among FIT is also a reasonable goal. Fellows-in-training should be encouraged to recommend

changes in the fellowship program. However, many allergy/immunology programs are relatively small, usually with one to four fellows per year of training. Thus, it may be difficult to protect anonymity in specific recommendations, and the individual FIT may be reluctant to voice changes. A potential solution is to have recommendations for changes made by the FIT at a specific program as one group. There should also be a sincere effort by faculty to attempt to implement these recommended changes. As in the Program Evaluation Committee of the Accreditation Council for Graduate Medical Education, this type of committee should incorporate feedback from FIT as part of the annual program evaluation all fellowships are required to perform and strive to implement appropriate changes.²⁴ Similar to information from practicing allergists and immunologists, clerical and nonclinical tasks were sources of frustration and potential causes of burnout for FIT. Addressing these issues at the fellowship level, including EMR, may produce substantial benefits.⁷ Another recommendation and practical tip for improving wellness is to have the faculty simply ask periodically how an FIT is doing, both academically and personally. Gaining knowledge about each other as unique individuals can improve morale and foster a culture of wellness in an allergy/immunology training program. Recognizing the significance of wellness and promoting this at institutional top levels likely will have a positive effect on FIT. Additional mentorship from local, state, and national allergy and immunology organizations, such as the AAAAI and American College of Allergy, Asthma, and Immunology, can also be helpful.

Periodically monitoring and appreciating the wellness needs of FIT members is imperative, especially during the COVID-19 pandemic. This survey was completed before the onset of the pandemic, which is a limitation. These survey findings could serve as baseline data to identify the wellness effects of the pandemic. Other limitations of the survey included the lack of ethnic demographic categories and the low absolute response rate of 24%. However, this response rate is above the usual survey response rate for AAAAI surveys.^{7,16-18} Future surveys, including additional demographics categories (ie, racial and ethnic), are needed to understand how burnout may affect underrepresented physicians and obtain a larger sample size and a stronger data set on wellness issues.²⁵ Then, specific interventions designed to improve wellness among FIT members can be initiated.

Burnout in the allergy and immunology community leads to early retirement, switching careers (including joining industry), a reduction in work hours, clinical mistakes, and an exacerbation of personal issues, including family stresses. Wellness and burnout topics are being addressed at local, state, and national allergy meetings, including the AAAAI. We (authors and other AAAAI members) have proposed programming and will continue to do so at the annual AAAAI meeting and annual AAAAI Practice Management Workshop, and we are in the process of developing Internet and Web-based educational platforms for local and state meetings. The specific programming will include seminars, workshops, and symposia on wellness, burnout, and work–life integration issues. A wellness tool kit is available as part of the AAAAI Web site,²⁶ addressing wellness topics, including personal resilience and work–life balance, as well as combating burnout with technology, all of which are pertinent to allergy and immunology FIT. In the future, we also propose tailoring solutions to the specific needs of FIT. The goal of this work group is to identify, quantify, and understand burnout

issues facing allergy and immunology FIT and ultimately to provide them with wellness tools necessary to thrive during fellowship and throughout their careers.

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