Air Force Academic Medicine: A Climate Survey

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ABSTRACT Air Force (AF) Medical Service leadership considers education, training, and research as key priorities. However, AF academic physicians' perceptions about the academic environment and challenges to success are not well described. AF faculty physicians were surveyed in autumn 2009. One hundred seventy-two responded and rated the academic environment as needing improvement (median Likert-like score 2 [interquartile range 1] on 1–5 scale). The impact of stepping away from an academically oriented career path for other executive positions was rated negatively (median Likert-like score 2, interquartile range 1). Concerns included loss of clinical skills, career disruption, and the challenge of returning to and/or competing for positions within the academic pathway. New policies limiting deployment of Program Directors and/or key teaching faculty were viewed favorably. Most physicians (59%) completing this survey expressed concerns about the AF academic environment and identified numerous challenges. Information from this survey can guide future initiatives to enhance leadership's goals.

INTRODUCTION

Military Graduate Medical Education (GME) and research play an important role in the recruitment and retention of military medical officers. Military internal medicine residents, subspecialists, and graduates listed the academic reputation of military GME programs as one of the most significant reasons to join the military, second only to matters of financial compensation.[1] In the same study, teaching residents was the second most cited reason (53.4%) to stay in the military. High turnover rates (15–30% annually) negatively impact the Military Health System's ability to optimize care delivery.[2] An expert panel, hosted by the U.S. Medicine Institute for Health Studies in May 2006 assembled to address the future of military GME, recognized the value of cultivating a strong academic career path to retain "a stable, high-quality cadre of physicians in training positions."[3] The panel concluded that the presence of experienced and highly proficient academic faculty can provide a competitive advantage, attracting a greater percentage of high-caliber medical students into military medicine; something of increasing importance to all Services, given an increasingly competitive market with looming physician shortages. The Air Force Surgeon General (AF/SG) identified in 2010 a strategic focus aimed toward recruiting, training, and retaining highly qualified providers; strengthening GME and officer training; rebuilding hospitals; and setting clear research requirements.[4] Similarly, the *Academic Medicine*: Grand Challenge Initiative highlights the need to improve efforts to "recruit, train and retain outstanding faculty."[5] Other than limited data from exit surveys of Air Force (AF) physicians at the time of separation, there is little known of AF (or other military services) academic physicians' perceptions of the current academic environment to guide leadership initiatives. The purpose of this survey was to better delineate these perceptions.

METHODS

In September 2009, a nine-question survey developed in conjunction with the AF/SG Medical Force Development Directorate was sent out to the Directors of Medical Education (DMEs) at each AF Military Treatment Facility participating in GME. We requested the DMEs to forward an email to their faculty containing a link to an anonymous online survey in "SurveyMonkey." The respondents provided demographic information and answered questions regarding their perspectives of the current academic climate, feedback on current academic career pathway, response to recent deployment policy changes (Tables I and II), and ideas for future faculty development. The Air Force Medical Corps (AF MC) added Special Experience Identifiers (SEI) to better identify and recognize physicians in academic medicine, similar to the Army "A" designator. A Level II SEI (ME designation) identifies one as a "Clinical or Academic Grand Master" and is awarded to individuals who have accrued 15 or more years of professional service, who have achieved national and/or international recognition, and who have attained an academic ranking of Associate Professor or higher. A Level I SEI (MF designation) connotes "Excellence in Clinical or Academic Medicine" and is awarded to physicians with at least 5 years specialization, postresidency, and who have demonstrated a pattern of excellence in the teaching of clinical or academic medicine. Given the demographic nature of the information requested (rank, specialty, academic positions), we did not ask for duty location to enhance anonymity, optimally

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TABLE I. Personal and Professional Survey Questions and Results (Survey Questions 1–4)

Respondents' Demographics	Results
1. Which best describes your medical discipline?	$n = 172^a$
a. Operational Medicine (Flight Medicine, Occupational Medicine, etc.)	8 (4.7%)
b. Mental Health	5 (2.9%)
c. Primary Care (IM, Peds, PF, etc.)	54 (31.6%)
d. Medical Subspecialist (Fellowship Trained)	56 (37.2%)
e. Hospital-Based Specialties (Radiology, Pathology, EM, Anesthesia, etc.)	15 (8.7%)
f. Obstetrics/Gynecology	8 (4.7%)
g. Surgical (No Fellowship Training)	2 (1.2%)
h. Surgical Subspecialties (Fellowship Trained)	22 (12.8%)
i. Other	6 (3.4%)
2. What is your current rank?	$n = 170^b$
a. Captain	22 (12.9%)
b. Major	58 (34.1%)
c. Lieutenant Colonel	60 (35.3%)
d. Colonel	30 (17.7%)
e. Retired	0 (0%)
f. Other (excluded)[c]	
3. Please choose ALL of the positions listed below you have occupied in your career. (more than one answer allowed)	$n = 170$
a. Key GME Teaching Faculty	123 (72.5%)
b. Research Director	19 (11.1%)
c. Associate Program Director	47 (28.1%)
d. Program Director	26 (15.8%)
e. Chairman/Associate Chairman	32 (18.7%)
f. DME	7 (3.5%)
g. None of the Above	31 (17.5%)
4. What is your current SEI status?	$n = 171$
a. SEI ME "Clinical/Academic Grand Master"	14 (8.2%)
b. SEI MF "Excellence in Clinical/Academic Medicine"	45 (26.3%)
c. No SEI	112 (65.5%)

[a]Represents total respondents but four respondents identified two specialties and therefore the total number of specialties identified is 176. [b]Two did not answer question of rank but listed specialty and comments throughout implied active duty. [c]One listed "other" for rank and specialty, therefore was excluded.

increasing the candor of responses. The results of the survey were made available to the subcommittees that convened during the October 2009 Air Force Medical Services (AFMS) Leadership Conference in Leesburg. During the conference, a cross section of academic leaders from around the AFMS gathered to develop strategies to strengthen GME, research, and faculty development. Following review and approval by the Wilford Hall Medical Center Institutional Review Board in February 2010, quantitative and qualitative analyses were applied to the data and comments in the survey. The qualitative technique included the following: first author read statements and assigned general thematic categories. The second author, after an initial independent review of the comments, reviewed the comments concurrently with the first author coming to a consensus on the thematic categories. Two additional categories recommended by the second author were added as a result of the second review. A single respondent's comments could fit into more than one category. After independently categorizing the comments, the authors met once again to compare their categorization and reconcile any differences. Descriptive data including percentages and frequencies were calculated using standard methods. Nonparametric data were compared by means of χ^2 tests, Kruskall Wallis testing, and Mann Whitney U testing where applicable. All p values were two-tailed, and statistical significance was indicated by a p value of <0.05.

RESULTS

One hundred eighty individuals completed the anonymous survey. One hundred seventy-two individuals were analyzed after eight were excluded because they were not medical corps ($n = 2$), were still in training (a resident $n = 1$), or had failed to select a medical specialty and rank ($n = 5$). The exact response rate is unknown due to lack of a definitive denominator. However, there are approximately 530 active duty teaching faculty members at seven AF GME centers. If all received the survey, the response rate would be 32%. Demographic information including specialty, rank, and role in academic medicine were varied (Table I). It is estimated that 24% of the 52 nonretired holders of a ME SEI and approximately 29% of the 153 holders of a MF SEI responded, based upon February 2009 numbers of AF MC officers with an SEI. Table II shows the responses to the key questions, both overall and by specialty, rank, GME role, and SEI status. The majority (51% "Needs Improvement" and 8% "Unacceptable") of physicians reported room for improvement in the current AF academic environment with approximately a quarter of respondents

TABLE II. Analysis of Academic Climate Responses (Survey Questions 5–8)

	Question 5 "Please rate the current environment for academic medicine (i.e., GME, Research) in the Air Force." (n = 172)		Question 6 "What is the impact of "stepping out"[a] of the Academic Pathway to improve competitiveness for promotion to colonel?" (n = 166)		Question 7 "Please rate your impression of how much the current decision makers[b] in the assignment process value a career in Academic Medicine." (n = 171)		Question 8 "What impact do you anticipate the new AEF deployment policy will have on GME and Academic Medicine?" (n = 166)	
Likert score description and overall distribution of responses	1 = Unacceptable (8%) 2 = Needs Improvement (51%) 3 = Neutral (16%) 4 = Acceptable (20%) 5 = Outstanding (5%)		1 = Very Negative (27%) 2 = Negative (33%) 3 = Neutral (26%) 4 = Positive (8%) 5 = Very Positive (5%)		1 = Unrecognized and Unvalued (16%) 2 = Recognized and Unvalued (37%) 3 = Neutral (26%) 4 = Recognized and Valued (19%) 5 = Significantly Recognized and Valued (2%)		1 = Significant Negative Impact (5%) 2 = Negative Impact (10%) 3 = Neutral (22%) 4 = Diminishes Deployment Impact (49%) 5 = Significantly Diminishes Deployment Impact (15%)	
	Median (IQR)	p value	Median (IQR)	p value	Median (IQR)	p value	Median (IQR)	p value
Specialty		0.61		<0.01		0.63		0.65
Operational Medicine	2 (1)		4 (1)		2 (2)		4 (2)	
Psychiatry	2 (1)		1.5 (2)		2 (2)		3.5 (3)	
Primary Care	2 (2)		3 (1)		3 (1)		4 (1)	
Medicine/Pediatric Subspecialties	2 (2)		2 (2)		2 (2)		4 (1)	
Hospital-Based Subspecialties	2.5 (1)		2 (2)		2 (2)		4 (1)	
Obstetrics and Gynecology	2.5 (2)		2 (1)		2 (2)		4 (2)	
Surgical, not Fellowship Trained	2.5		N/A		3.5		3.5	
Surgical, Fellowship Trained	2 (0)		2 (1)		2 (0)		4 (1)	
Other/No response	2 (0)		1.5 (1)		2 (2)		4 (2)	
Rank		0.9		0.01		0.26		0.24
Captain	3 (2)		3 (1)		3 (1)		4 (1)	
Major	2 (1)		2 (2)		2 (1)		4 (1)	
Lieutenant Colonel	2 (2)		2 (2)		2 (1)		4 (1)	
Colonel	2 (1)		2 (2)		2 (2)		4 (1)	
Role in GME		0.19		<0.01		0.31		<0.01
Key Clinical Faculty	2 (2)		2 (2)		2 (1)		4 (1)	
Research Director	2 (1)		1 (1)		2 (1)		4 (1)	
Associate Program Director	2 (1)		2 (1)		2 (1)		4 (1)	
Program Director	2 (1)		2 (3)		2 (2)		4 (2)	
Chairman/Associate Chair	2 (1)		2 (1)		2 (1)		4 (1)	
DME	2 (1)		3 (2)		2 (2)		3.5 (2)	
None of the above	3 (1)		3 (2)		3 (1)		3 (2)	
SEI		0.32		<0.01		0.16		0.37
"MF: Excellence in Academic Medicine"	2 (1)		2 (1)		2 (1)		4 (1)	
"ME: Clinical/Academic Grand Master"	3 (2)		2 (2)		2 (2)		4 (0)	
No SEI	2 (1)		2 (1)		3 (1)		4 (1)	

IQR, interquartile range. [a]Defined as: "to serve a 2-year tour as SGH (clinical leadership) or squadron commander (command position)." [b]Defined as: "consultant, officer, commanders, Colonels' game plan, etc."

indicating that they were satisfied (25%; Table II, Question 5). Specialty, rank, current/past career roles, and SEI status were not significantly associated with rating of academic environment. Qualitative analysis of comments associated with the rating of the academic environment revealed the following themes with decreasing frequency: no comment/uncategorized comment (n = 67, 39%), lack of recognition/value (n = 55, 32%), negative impact of deployments (n = 30, 17%), lack of peers/mentor (n = 22, 13%), lack of ancillary support (n = 19, 11%), clinical care demands (n = 18, 10%),

administrative barriers (n = 18, 10%), lack of financial support or pay (n = 15, 9%), and lack of volume or complexity of patients for academics (n = 12, 7%). Positive comments were recorded by 9% (n = 16), with the most common positive theme (n = 4) being increased research funding and support. Sixty-eight percent (11 of 16) of those with positive comments also recorded concerns.

The impact of leaving the academic pathway for positions aligned with the command or clinical pathway was rated by 166 respondents (Table II, Question 6). Specialty and rank were associated with perceived impact of accepting a position that was outside the traditional, academic trajectory (highest Likert scores reported by those in Operational Medicine and by captains). Lower Likert scores were associated with having either a traditional title in GME, such as program director or chairman, and with having an SEI. Qualitative analysis of the comments revealed the following themes regarding impact of stepping outside the academic community for one or more tours (i.e., a period of 2 or more years): no comment or not categorized (n = 79, 46%), clinical skills lost (n = 31, 18%), too disruptive to an academic career (n = 31, 17%), challenge of returning to academic pathway (n = 24, 14%), pushes to leave military or not seek promotion (n = 9, 5%), and academic medicine should be seen as leadership (n = 6, 3%). Eight percent (n = 14) reported some positive aspects to stepping out of the academic pathway; 80% (n = 11) of these were related to broadening the perspective of the teacher or mentor. One-half (n = 7) of those with positive comments also relayed concerns or conditions for successfully moving outside academic pathway captured within the negative themes listed above.

The majority (53%) of respondents indicated perceiving that academically oriented careers were not fully valued by decision makers typically viewed as influential in the assignments process (Table II, Question 7). The qualitative analysis of the comments revealed that the AF/SG's specialty consultants were among those who most consistently recognized/valued academic achievement/careers (n = 16 value, n = 2 unvalued). Specialty consultants are Medical Corps officers who represent a medical specialty and who provide broad oversight to their career field, to include advising assignments officers. The AF Senior Leader Management Office, aka "the Colonel's Group," was identified with not recognizing/valuing academic careers (n = 0 recognized/valued, n = 19 did not recognize/value). The Colonel's Group determines assignments for colonels and colonel selects. Comments were split regarding AF MC commanders (n = 5 value, n = 6 unvalued). New deployment policies limiting tour lengths of some academic faculty tours were perceived to mitigate (64% of respondents) the potentially adverse impact of an extended deployment on the management of GME programs (Table II, Question 8). Interestingly, 15% (n = 25) felt the new policy would have a negative impact. One-half of the 25 respondents wrote comments, with only two of comments actually relaying a negative impact from the new policy; primarily citing an increased number of deployments and potentially more disruption with more overlaps of faculty coming and going to theater. All other comments were related to the policy being too restrictive or simply noted negative impacts of deployments on training. Survey question 9 was "The AFMC Career Path includes recommendations for specific career enhancing educational opportunities (SDE) at different levels of the pathway (i.e. American College of Physician Executive Program for LtCol/Col); does the Academic Pathway need more specific educational/training recommendations? If yes, what would you recommend and at what grade?" The results were not included in Table II as the responses were predominantly "undecided" (57%), followed by "yes" (29%) and "no" (14%). The qualitative analysis of the comments yielded references to faculty development with the greatest frequency (n = 15, 9%), but the responses were mixed as to whether this would best be accomplished with academic and faculty development fellowships, opportunities to get masters degrees, attend a Uniformed Services Program Director and Executive Skills course, specialty-specific program director development courses or other programs.

DISCUSSION

This 2009 survey of AF academic physicians found that the majority of respondents felt that the academic environment within the AF was unsatisfactory or needed improvement. The majority also felt that academic medicine was not fully valued by key decision makers and that leaving academic medicine for command or clinical leadership would adversely impact one's ability to effectively return to and progress along an academic trajectory. New policies shortening deployment lengths for key GME faculty were perceived as positive initiatives although there seems to be overall ambiguity regarding the development and direction of future academic development opportunities. The results to subsequent questions and the qualitative analysis of comments provide further insight into specific concerns.

Overall Perception of Academic Environment

Although no published reports specifically address military physicians' perceptions of academic medicine, in one study, 40% of 1,392 military physicians were very or somewhat dissatisfied with their overall professional practice.[6] Surveys of physician in civilian academic medical centers have revealed concerns from faculty about the academic environment, with 10 to 42% leaving or considering leaving academic medicine.[7–11] Thirty-five percent of academic faculty in one civilian center met the criteria for "burnout."[8] Thus, our data are consistent with those from civilian academic centers reporting challenges to faculty satisfaction. However, even the Veteran's Health Administration turnover of 9% in 2008 does not approach the 15 to 30% reported annually in the military.[2] With as many as 25% of the AF MC participating in military-sponsored GME at any one time, lack of consistency and relative junior level of faculty educators is concerning. Therefore,

the AF MC leadership needs to continue initiatives that target improved retention. Emphasis on retaining and promoting those who have dedicated themselves to careers within the academic pathway may yield an exponential return.

Subtext of Dissatisfaction With the Academic Environment

Survey results from 56 separating AF physicians, conducted by the AF/SG's Medical Force Management Division in 2008, revealed some common themes with our qualitative analysis; concerns over administrative requirements, adequacy of staffing, and deployments were most commonly reported. Academic civilian physicians have also expressed dissatisfaction with "manpower resources."[9] Several civilian and military studies have associated higher rank with greater satisfaction and retention; this was not demonstrated in our survey of military academic physicians.[6,11–13] These findings could indirectly reflect perceptions of value of an academic career by the AF, compared to following a command or clinical career pathway.

The importance of peer/mentor support has been demonstrated in multiple civilian and military studies and retention initiatives.[1,5,7,9,14] The comments associated with this study indicated this is a common concern among AF academic physicians. The current AF MC emphasis on development of mentoring programs is an important step. The challenge will be finding, equipping, and retaining the right mentors for academically oriented faculty. In the civilian community, the departmental chairman is often responsible for overseeing this influential role. The AF Medical Treatment Facilities utilize the concept of the Objective Medical Group which tends to diminish the traditional roles, responsibilities, and/or impact associated with a Departmental Chairperson, particularly within academic medical centers. Mentoring young, academically oriented physicians can be especially challenging in situations in which key hospital leaders have themselves pursued careers more closely aligned along the command or clinical leadership pathways. Initiatives to re-emphasize the role of Chairmen in AF training hospitals would be well targeted. Those seeking mentors may choose to begin by referencing the list of SEI "Grand Masters," initially focusing on those within their specialty.

The Impact of Stepping Away From Academic Medicine

A medical system that needs a significant proportion of its clinicians to step away from full-time academic or clinical medicine to take leadership positions in command or hospital administration is unique. There are several possible explanations for our findings that specialty and rank are associated with the perceived impact of "stepping out" of the academic pathway. Clinical leadership and command path opportunities may be a more integral part of an operational provider's (i.e., Flight Medicine, Occupational Health) career, leading to greater value for stepping out of the academic pathway. Junior clinicians' greater ambivalence toward leaving the academic career path may represent the fact they are not yet established themselves as academic clinicians to the degree to fully understand the impact changing career paths for even a few years may have. A lack of an established return pathway as highlighted in 14% of the comments probably adds to the angst of leaving academic medicine. Added to this is that concern that if academic leaders demonstrate competence in clinical or command leadership, these individuals may be more vulnerable to being matched to future nonacademic assignments by the Colonel's Group. The loss of clinical skills can be a significant deterrent to recruitment of commanders and hospital administrators. Physicians who spend at least a day a week doing what they enjoy the most are much less prone to burnout.[8] A command and clinical culture that promoted continued clinical activity from physicians, perhaps by tying this to continued clinical privileges and specialty pay, may result in a more favorable view of temporarily changing career paths. Thus, greater clinical expectations of physicians in the command and clinical pathways may improve their job satisfaction, enhance mentoring opportunities, and when coupled with well-defined methods of returning to academic medicine could more successfully sway current neutral perspectives of junior, academically-oriented physicians toward command and clinical pathway job opportunities.

Is the Academic Pathway Recognized and Valued?

Over one-half of the respondents to our survey expressed concerns that key decision makers do not recognize and/or value a career in academic medicine. "Trust-communication with chief/division head" has been highly associated with higher job satisfaction, and only one of the two independent variables found that when lacking was associated with leaving one civilian academic institution.[14] As noted earlier, AF Squadron Commanders may be a surrogate for a Departmental Chairman, and as a result, often play a key role in how academic AF military physicians feel academic medicine is valued. Those who commented on the squadron commanders were split regarding their perspective on how they valued academic medicine. Increasing Department Chair's influence as mentioned earlier or selection of academic pathway officers for Squadron Command in academic centers may improve this perception.

Limiting Deployment Length

The limitation of deployment length for some key GME faculty was welcomed by most respondents. AF exit surveys in 2008 reinforce dissatisfaction with current deployment tempo. Readiness is the "sine qua non" of military medicine and complete reprieve from participation is not consistent with a core mission. Instructors are better prepared to grow the next generation of operational ready physicians when they have experience in the area of operations. Balancing the need to deploy with shortening the deployment cycles appears well received.

The policy acknowledges that frequent, long deployments of instructors whose key role is to produce the next generation is counterproductive.

Specific Educational Opportunities for the Military Academic Physician

A lack of an effective program for developing civilian academic faculty has been shown to be highly associated with a serious intent to leave academic medicine.[7] However, in our survey, most respondents were undecided on the need for more specific, career-enhancing educational opportunities. Among those not undecided, twice as many felt more specific opportunities would be beneficial than those who did not. A review of the comments of those desiring educational experiences revealed considerable variability. With the growing Accreditation Council for Graduate Medical Education requirements for faculty well versed in educational methodologies and skills, the AFMS would benefit from courses available to academic clinicians, but a "one size fits all" approach for all specialties may not be preferred. The Uniformed Services University's plan to launch a Faculty Development Certificate training program may significantly enhance the opportunity for military training centers faculty to meet these growing requirements.[15]

This study provides valuable insight into the attitudes toward the academic environment, barriers to retention, and career concerns of military academic physicians. The similarities of challenges articulated by both military and civilian academic physicians provide one source of external validation of the findings. However, the study had several significant limitations. The study was a retrospective review of results gathered from a survey created to provide information to a meeting of AF leaders. Therefore, a more rigorous preassessment of the survey tool used and robust follow-up to improve response rates did not occur as perhaps would have occurred in a prospectively designed study with specified cohort of participants. Therefore, it is challenging to know how well the survey represents attitudes of a significant proportion of AF physicians who consider themselves as academic physicians. Although the word anchors and examples used in some of the questions reduce the ambiguity of the quantitative responses, they also influence the comments submitted and therefore may unduly impact the qualitative analysis. Because of differences in the structures and functions of the Army and Navy medical services, these results cannot be extrapolated. In January 2010, the AF MC Officer Career Timeline was updated recognizing within the Academic Path the roles and timelines for progression in rank for faculty serving as Clerkship Directors, GME Associate and Program Directors, Research assignments, Chair of Large Department, DME, and Associate Deans.[16] Many of these should now be considered commensurate with that of a Chief of the Medical Staff (SGH) or Squadron Commander with competitiveness for promotion to colonel and potential colonel's jobs. A follow-up assessment would be helpful to determine implementation and impact of these changes. Future surveys should focus on all three services in a prospective manner with a clearly defined survey population, carefully designed to accurately discern perceptions of strengths and weaknesses of a career in academics in the military as well as more questions regarding interventions to improve retention.

CONCLUSION

In conclusion, most AF academic physicians answering the survey felt the AF academic environment needed improvement. Most felt that the current decision makers either do not recognize and/or value an academic career in the AF. Further, a perceived need to step out of an academic pathway to be promoted to colonel was viewed negatively; perhaps further fortifying the perception that an academic career is not valued. The recent policy shortening deployment lengths for some key academic faculty was viewed as a step in the right direction. Although there are differences between military and civilian academic physicians, a need to perceive leadership support demonstrated by good communication, mentoring, and the ability to progress while doing what brings the most satisfaction may be common threads. Given the AF's commitment to recruiting, training, and retaining highly qualified physicians, continued effort and research are warranted to determine the next best steps to improve perceptions of an academic career in the AF.

ACKNOWLEDGMENTS

We express our gratitude to Col (Dr.) Arnyce Pock, former Director of the Air Force Medical Corps and Chief, Medical Force Management, and Col (Dr.) Thomas Grau, Chief of Air Force Physician Education Branch, for their valuable contributions in developing the survey questions, data about the Air Force Medical Corps and thoughtful review of this manuscript.

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