Rethinking the Internal Medicine Residency Application Process to Prioritize the Public Good: A Consensus Statement of the Alliance for Academic Internal Medicine

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INTRODUCTION

The US health care system exists to serve the public good. Medical schools and residency training programs have a responsibility to use the resources invested in them to create a physician workforce that promotes the health of the population. The residency match process is an essential component of physician development. Nearly all US medical students use the National Resident Matching Program (NRMP) or the “Match” to successfully secure residency training positions. Using the Match has 2 main benefits: it allows thousands of employment opportunities to be offered and accepted simultaneously; and the mathematical algorithm minimizes opportunities for gamesmanship that would result in an unfair advantage for some groups of applicants.

Residency application processes leading up to the Match are increasingly inefficient, stressful, and costly for both applicants and residency programs. The last decade has seen a marked increase in the number of applications submitted by students graduating from US allopathic and osteopathic medical schools, as well as international medical graduates (IMGs), a phenomenon

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referred to as “application inflation.” Despite having about 9000 more postgraduate year 1 spots in the Match than US students who apply, an unfounded scarcity mindset among US students is a core factor driving application inflation. Applicants must pay fees per program application, interview, and rank; costs that, although high, pale in comparison with increasing education debt. This reality makes application inflation, in the hope of making a match as likely as possible, a financially reasonable strategy for applicants.

Application inflation and its corollary, interview inflation, have increased since the postpandemic shift to virtual interviewing. In 2022, no US allopathic student who ranked more than 10 internal medicine residency programs failed to match, yet 74% of these students ranked more than 10 programs and 38% ranked 16 or more. Fear of going unmatched in a competitive field also leads applicants to apply to multiple specialties, exacerbating an already overburdened system. In 2022, 14% of US students applying to Internal Medicine ranked a field other than Internal Medicine as their first choice.

But at what cost? Higher application and interview acceptance rates make it challenging for residency programs to ascertain underlying applicant interest, leading programs to interview more applicants per residency position to maximize chances of filling all their positions. In 2022, Internal Medicine program directors reported reviewing an average of 799 applications to offer 275 interviews and fill 18 positions. This effort is considerable because holistic review of 1000 applications may require 3 months of full-time work, in addition to the hundreds of hours of faculty and staff time needed by each program to perform interviews. Much of this time is physician time that could otherwise be committed to education, patient care, medical research, and improving health outcomes. In addition, countless hours are spent by residency program staff and student affairs office staff preparing for interview season.

Recruitment is a main focus of residency programs for one-third of the academic year, diverting finite health system resources away from activities that benefit patients, including teaching current residents and students. If fewer resources were consumed by recruitment, medical schools and residency programs could instead allocate these resources to help future and current residents who perform below expectations, rather than prioritizing often futile attempts to identify harbingers of poor performance during application review. Education is also compromised when residents are pulled from patient care, educational activities, or study time to participate in recruitment because applicants expect to meet current trainees. For applicants, the majority of whom are current students, time spent interviewing is time away from medical education.

A well-educated and diverse physician workforce is good for society. In addition to its negative impacts on education, application inflation hinders a program’s ability to perform holistic application review and is detrimental to a pro-equity approach. In these ways, excessive applications and interviewing cause societal harm.

In an attempt to decrease the burden of the residency application process and application inflation, several innovations have been introduced. The Association of American Medical Colleges (AAMC) Residency Explorer and Texas STAR attempt to provide applicants information regarding their likelihood to match at individual programs. The American Association of Colleges of Osteopathic Medicine Post-Doc Guide provides an online database of programs that have traditionally welcomed osteopathic applicants or have obtained Osteopathic Recognition. The American Medical Association Alignment Check Index (ACI) seeks to help applicants find programs with priorities similar to their own. The AAMC Electronic Residency Application Service (ERAS; Washington, DC) introduced preference signaling by applicants as a tool to help programs ascertain strong interest. Ophthalmology imposed interview caps in SFMatch (San Francisco, Calif). This year has seen 2 unprecedented announcements: the integration of ERAS and Thalamus (Santa Clara, Calif), a popular online interview scheduling platform; and the decision by the American College of Obstetricians and Gynecologists that
Obstetrics-Gynecology (OBGYN) programs will cease using ERAS in the 2025 Match.

Proposition

The Alliance for Academic Internal Medicine (AAIM), a professional society made up of faculty and staff in Internal Medicine clerkship, residency, and fellowship programs, as well as department chairs and business and educational administrators, seeks to optimize the residency recruitment process and prioritize its commitment to training competent physicians across the undergraduate–graduate medical education continuum. The purpose of this consensus statement is to recommend changes to the Internal Medicine residency application process with the intent of honoring applicant preference, improving efficiency and resource stewardship, and reducing costs to both programs and applicants. AAIM proposes 1) increasing preference signals, 2) adding tiered signaling, and 3) setting an interview cap in the 2024-2025 recruitment season. The Alliance recognizes the need for iterative change informed by data and proposes data collection to measure impact and inform future iterations as well as identify potential harms.

Increasing Preference Signals and Adding Tiered Signaling

Recommendation #1 and #2

AAIM recommends tiered preference signaling in Internal Medicine using a total of 3 “gold” and 12 “silver” signals in the 2024-2025 recruitment season, and participation in signaling by all Internal Medicine programs. Internal Medicine programs should participate in the American Medical Association ACI to help applicants find programs with which they best align. Programs should transparently share information to help applicants understand how they will use signals in interview invitation and rank decisions.

In 2021, AAMC added optional geographic and program preference signaling in ERAS for most specialties as an alternative to application caps, with each specialty setting its own limit. Ideally, applicants signal programs that align with their skills, experiences, geographic preferences, and goals, potentially increasing their chances of an interview offer. Program directors who receive enough signals may use them to direct more detailed review of select applications for interview invitation decisions. According to a 2022 cross-specialty survey, 90% of participating programs used program signals to make interview invitation decisions.

The maximum number of signals in each specialty is highly variable; in the 2023 Match, these ranged from 2 in Internal Medicine—Psychiatry to 30 in Orthopedic Surgery. High numbers dilute signal weight, and program directors may disregard applicants who did not signal their programs; low numbers are too restrictive to feasibly and fairly drive interview invitation decisions. OBGYN utilizes a tiered signaling system in which applicants may send “gold” signals to 3 programs of highest interest and up to 15 “silver” signals to others. As expected, the majority of OBGYN program directors gave more weight to gold signals than silver. Tiered signaling offers more nuance than a binary system. The presence of either signal could be used by programs in selecting applicants for interview invitation decisions, whereas a gold signal cues stronger preference by the applicant.

Preference signaling has had high uptake in Internal Medicine. In 2022, 89% of applicants sent program preference signals; on average, applicants sent 6.89 signals of 7 permitted. While most program directors called signals “important or very important,” unequal distribution of signals may limit utility. In 2022, the number of signals received by internal medicine programs ranged from 5 to 1222. For those programs receiving an abundance of signals, having “gold” signals may help further prioritize applications. Increasing the total number of signals may result in more being sent to programs that previously received too few to aid interview decisions.

To promote efficiency and fairness, programs must provide information applicants need to appropriately target applications. Clear recommendations available to all OBGYN applicants advise they “should signal ... programs that they have both a strong interest in and where they have a reasonable ability to receive an interview.” Similarly clear Internal Medicine recommendations should be provided; applicants should signal programs that align with their career and educational objectives and for which they are reasonable candidates, not simply those with national reputations. To this end, AAIM recommends participation in ACI, in which program directors provide a relative ranking of values or characteristics for their programs. Applicants who wish to utilize ACI do the same and are provided with a list of programs that align with their priorities. The Alliance recommends that programs also share information about how they will use signals as well as other application screening methods they utilize on their websites. Helping applicants learn which programs align with their priorities and understand where their applications will not likely result in interview invitations should benefit both applicants and programs and, hopefully, decrease application rates. Transparent information from programs is a necessary component of successful signaling, especially for IMGs and osteopathic students, who may have limited access to advisors with residency program experience.

AAIM proposes these starting values for signals (3 gold +12 silver) in the interest of minimizing harm to any group of applicants or programs. NRMP data show that nearly all US medical student Internal Medicine
applicants who rank 10 programs successfully match, and nearly all IMG Internal Medicine applicants who rank 15 programs match. Unfortunately, interview data are not centrally collected and variability in interview yield per application is highly likely. Applicants will likely signal some programs at which they are not competitive, resulting in lower interview yield. Programs may also choose to offer interviews to applicants who applied but did not “signal” them.

One group particularly impacted by changes to application practices are applicants in the couples match. Although couples have had a match rate over 90% every year since 1984, they are likely disadvantaged even by the current system since their choices are inherently restricted by their partners’ choices. It is difficult to model the impact of changes to signals on couples, and impact likely varies depending on partner specialty. Preference signaling may also have different effects on community-based or smaller programs. These effects are likely to be highly variable from program to program.

AAIM calls for further research to adjust the number of signals as appropriate in future iterations and recognize the recently announced collaboration between AAMC and Thalamus, which will unite a large portion of application and interview data centrally, as a potential resource. The Alliance anticipates the ability to adjust silver signals in future years in response to data. If signals are used for interview decisions, applicants may realize that applications to programs beyond the ones they signal may have lower interview yield, causing application rates to decrease. AAIM anticipates that such impact would take time for learned adjustments on the part of programs, advisors, and applicants, as well as a shared understanding of the impact of signals on interview offers.

Implementing an Interview Cap

Recommendation #3

AAIM recommends instituting a cap of no more than 15 interviews per Internal Medicine applicant in the 2024-2025 recruitment season and an accompanying first interview date no sooner than November 1.

In 2020, Ophthalmology instituted a 20-interview maximum per applicant. In subsequent years, this cap decreased to 18 and then, in 2022, to 15 interviews. Applicants attempting to schedule over the limit must first cancel a previously scheduled interview. The earliest date for any Ophthalmology interview is November 1, which allows program directors time to review applications and extend invitations, applicants to weigh interview options, and subsequent adjustments as applicants cancel and accept interview offers to stay below the cap.

Interview caps have not curbed applications submitted per applicant, but address application inflation’s parallels: interview inflation and interview hoarding.

Interview inflation has worsened since shifting to all-virtual interview days because barriers of cost and time decreased markedly. In a 2021 survey, 74% of internal medicine residents believed applicants accepted more interviews in response to virtual recruitment. Excessive interviewing expands faculty and program time and money, and detracts from resident education because most interview days feature at least some direct contact with residents.

Interview caps have not significantly affected match rates; in 2021, 74% of all Ophthalmology applicants (and 91% of US medical student applicants) who submitted rank lists matched, consistent with data for the decade prior (range 72%-78% and 89%-93%, respectively). Interview caps show promise outside of Ophthalmology. In a survey of OB/GYN stakeholders, all groups perceived interview caps to be more equitable than the current state, and on average, recommended caps of 12 (clerkship directors) or 15 (program directors, applicants, and student affairs deans). Interviews are a finite resource; when applicants hoard interviews, fewer slots are available for others. Interview caps more fairly distribute opportunities.

Implementing an interview cap has multiple benefits. For students who may otherwise have booked excessive interviews, capping them increases time for rotations and learning. If the future brings a return to in-person interview days, a cap also limits costs and environmental impact of travel. For programs, interview caps improve efficiency by increasing likelihood that students accepting interview offers are highly considering a program.

Although the exact number of interviews that is right for any one applicant may vary, NRMP data cited previously suggest that more than 15 interviews in Internal Medicine is likely excessive. Advisors would require education that the cap is not a recommended number of interviews; NRMP data support that the vast majority of Internal Medicine applicants with fewer interviews have a successful match, as 73.4% of US MD students and 74.5% of US DO students match in one of their top 3 ranked Internal Medicine programs. In making this recommendation, AAIM considered a slightly higher interview cap for couples match applicants; however, applicants do not commit to couples matching until the point of rank list submission. Increasing the cap in this circumstance would therefore introduce potential gamesmanship, making this undesirable.

Logistically, interview caps would require all programs to use a single interview scheduling platform or for different platforms to cross-communicate. A single platform would greatly simplify scheduling for applicants but would increase burden on program administrators, who may have to learn new technology. The new AAMC–Thalamus integration holds promise for potential investment in infrastructure needed to institute caps and handle increased traffic by all Internal
Medicine applicants. Like Ophthalmology, an Internal Medicine interview cap would require a standardized earliest interview date to allow programs time to review applications and send invitations, applicants to weigh offers, and the resultant adjustments to occur as applicants decline invitations, allowing them to be sent to other applicants for consideration so as not to exceed their maximum of 15 interviews. AAIM proposes November 1, which should provide adequate time because, anecdotally, few Internal Medicine programs interview before this date.

AAIM calls for research to inform iterative changes to the interview cap in the future, with special attention to the groups mentioned for possible disparate impact. Although it may not initially decrease applications, an interview cap should result in improved interview efficiency and may decrease applications in the future.

CONCLUSION

The priority of the US health care system should be to provide the right care for the right patient in the right setting. Resources, including the time of physician-educators and residency program administrators, are finite and must be prioritized in ways that align with patient and societal needs. The current residency application process, troubled by application inflation and excessive interviewing, results in unsustainable physician and program time dedicated to recruitment, which, in turn, harms patients by pulling scarce resources from patient care and the training of current residents. The Alliance calls for urgent change to the Internal Medicine residency application process to decrease this burden.

AAIM proposes increasing Internal Medicine program preference signals to 15, using tiered signaling with 3 “gold” and 12 “silver” signals, and setting an interview cap of 15 in the 2024-2025 recruitment season, with participation by all internal medicine programs. The Alliance recommends that all Internal Medicine programs participate in ACI. AAIM recommends that programs transparently share information about their use of preference signals and other application screening methods and calls for real-time data analysis to explore impact, inform future iterations, and identify potential harms.

The Alliance calls upon ERAS and NRMP, as well as Thalamus and other interview scheduling platforms, to transparently share data, to embrace change, and to perform analyses needed to inform this process. For example, recent modeling with 8 years of retrospective NRMP data in OBGYN demonstrated that an early match round may increase the number of “mutually dissatisfied applicant—program pairs” and that a multiple-round match process could introduce potential rewards for gamesmanship, a prime factor addressed by the current process. AAIM applauds this analysis and hopes that the new collaboration between ERAS and Thalamus may provide useful interview data to inform this proposal and further interventions.

The Alliance hopes that the proposed interventions will decrease recruitment burden. Some important outcomes that should be studied include impact on match rate, number of interviews accepted by applicants and performed by programs, length of applicant and program rank lists, resource expenditure (including administrator and faculty time spent recruiting applicants not matched to a program, as well as time spent educating current residents and financial outlays for recruitment). All data analyses must give special attention to IMGs, couples, and other groups that could be disproportionately impacted by innovation. There will be a learning curve for applicants, advisors, and programs. The full impact of changes may not be seen for a few years, but an iterative process will avoid harm from overly rapid change. Should data on the interventions demonstrate limited impact on program recruitment burden in future years, more restrictive recommendations may be considered, such as implementing application caps or other approaches that may be supported by the data to rebalance expenditure of program resources to better meet societal needs.

References
