

## BRIEF REPORT

## Use of Preference Signals in Family Medicine Residency Recruitment

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## ABSTRACT

**Background and Objectives:** Increases in graduate medical education application volume led to the introduction of preference signaling—a tool within the Electronic Residency Application Service that allows applicants to signal their sincere interest to a limited number of programs. This study aims to evaluate how family medicine program directors used preference signals during the 2023–2024 recruitment season, the first year this tool was available to family medicine programs. Understanding program director perspectives on preference signal utility is crucial for determining the tool’s impact on the residency selection process.

**Methods:** Data were collected through the Council of Academic Family Medicine Educational Research Alliance survey, which was distributed to Accreditation Council for Graduate Medical Education–accredited US family medicine residency program directors and included questions on preference signaling. We performed statistical analysis using  $\chi^2$  testing and multivariable logistic regression to assess the association between preference signal use and aspects of resident recruitment.

**Results:** The overall response rate to the question set was 308/767 (40.2%). Program directors generally used preference signals as a component of holistic review, which did not supersede factors such as applicant rotation experiences and geographic location preferences as influential to application review. Overall, preference signals did not significantly influence interview offers or applicant ranking.

**Conclusions:** Preference signals have been incorporated into the family medicine residency application review process but did not become a primary determinant in applicant selection during family medicine’s first year of utilization. Traditional factors such as rotation performance and geographic preference remain highly influential. Further research is needed to optimize the use of preference signals in family medicine residency recruitment.

## INTRODUCTION

An increase in graduate medical education applications,<sup>1,2</sup> secondary to the widespread introduction of virtual interviewing during the COVID-19 pandemic, led to the genesis of preference signaling, a tool where an applicant can communicate a more sincere interest to a limited number of select programs within the Electronic Residency Application Service (ERAS) system. First piloted by otolaryngology during the 2021–2022 interview season,<sup>3</sup> early analysis showed program directors’ assigning value to preference signals

in their recruitment efforts<sup>4</sup>; however, that analysis also found that most signals followed a geographic pattern with applicants’ home or medical school, providing some question regarding their added value to the recruitment process beyond generally accepted patterns of application regionality.<sup>5–77</sup>

Preference signaling initially was available to family medicine residency programs during the 2023–2024 interview season. Their arrival was met with mixed opinions, including with regard to how programs intended to use them.<sup>7,8</sup>

After the completion of the initial recruitment cycle where family medicine residency programs and applicants had access to preference signals, our research team sought to better understand how one group of stakeholders within family medicine residency recruitment—program directors—used this new tool. Comparing how preference signals were used as sway factors during the review of residency applicants at all stages of the recruitment process—including application review, interview offer, candidate comparison, and ranking—is an important step in understanding the value of preference signals and whether they are providing the benefits for which they were initially designed.

## METHODS

### Survey Development and Sample

The methodology employed by the Council of Academic Family Medicine Educational Research Alliance (CERA) survey has been thoroughly documented in earlier work.<sup>9</sup> Our study was approved by the American Academy of Family Physicians Institutional Review Board. Data collection for the spring 2024 program director survey took place between April 30 and June 7, 2024. Alongside demographic questions, the survey included 10 items developed by our research team to evaluate family medicine residency program directors' opinions on interview format and preference signaling (Appendix). The CERA Steering Committee reviewed these 10 questions to ensure that they aligned with the subproject's goals and were clear, reliable, and valid based on existing evidence. Family medicine educators outside the target population tested the survey prior to distribution, informing adjustments to improve clarity, timing, and flow.

The Association of Family Medicine Residency Directors provided the contact list of Accreditation Council for Graduate Medical Education (ACGME)–accredited US family medicine residency program directors. CERA distributed an initial email invitation through SurveyMonkey (SurveyMonkey Inc), followed by three weekly reminder emails and one final reminder sent the day before the survey concluded. At the time of distribution, 767 program directors, excluding those

with undeliverable email addresses, were on the list. To ensure that directors have comprehensive program knowledge, the CERA methodology does not include directors whose programs have not graduated a class of residents or had fewer than three cohorts who experienced all training components.

### Statistical Analysis

We conducted  $\chi^2$  tests to evaluate the association between the use of preference signaling and its potential role as a deciding factor in candidate selection. Our analysis considered variations across residency program types and demographic characteristics of family medicine residency program directors. A significance threshold of  $P < 0.05$  was applied. All statistical analyses were performed using Stata (StataCorp) software.

## RESULTS

Survey data were collected from 382 respondents; 308 of the 382 responded fully to our survey questions for an overall response rate of 40.2% (308 valid surveys received from a possible 767 programs).

Signals were seen as positive components within a holistic review, but did not yield automatic interviews for applicants, nor did they independently influence the ranking process in a significant fashion (Table 1). In comparison with other classic sway factors, such as residency location or experience with a residency (eg, visiting rotations), preference signaling was reported to be a lesser factor (Table 2). Additionally, we found that 19 program directors in communities of less than 75,000 population reported that they did not use signals at all (Table 3).

## DISCUSSION

Our study shows that while preference signals were used by most program directors in the immediate recruitment season after their debut to family medicine, they did not supersede the importance of other factors in all stages of decision-making regarding residency applicants. Preference signals have become another tool in the overall applicant

**TABLE 1. Preference Signal Usage Types in Family Medicine Residency Programs**

Variable	n (%)
<i>Select the one response below that best matches how you used signals in your 2023–2024 residency interview process.</i>	
Deciding which applicants to review in depth	33 (11)
Deciding which applicants to invite to interview	164 (55)
Deciding which applicants to rank or where to rank applicants	36 (12)
I did not use signals in my decision-making.	66 (22)
<i>When an applicant signaled your program, what did you do? Check one.</i>	
Automatically offered the applicant an interview regardless of other factors	3 (1)
Automatically offered the applicant an interview if they met the other established criteria for the program	44 (15)
Considered a signal as a positive factor in a holistic review of the applicant to determine whether they were offered an interview	215 (72)
Ignored the signal as part of the determination of which applicants were offered interviews	37 (12)

N=299 program director survey respondents

**TABLE 2. Interview Decision Sway Factors Between Otherwise Equal Applicants**

Factor	Most likely to sway interview decision	Second most likely to sway interview decision
	n (%)	n (%)
The applicant signaled interest through ERAS.	25 (8.30)	37 (12.30)
The applicant completed a rotation with my program.	143 (47.40)	42 (13.90)
The applicant is from the medical school affiliated with my program.	14 (4.60)	38 (12.60)
The applicant is from/likely to practice in my state.	57 (18.90)	66 (21.90)
The applicant indicated they would like to stay in my program's geographic location.	21 (7.00)	43 (14.20)
The applicant's experiences (eg, research, community service)	26 (8.60)	46 (15.20)
The applicant's quantitative data (eg, class rank, test scores, retakes)	16 (5.30)	30 (9.90)
<b>Total</b>	<b>302 (100)</b>	<b>302 (100)</b>

Abbreviation: ERAS, Electronic Residency Application Service

**TABLE 3. Usage Type by Residency Program Community Size in Family Medicine Residency Programs (N = 308)**

Community size	Usage type				
	Review in depth	Invites to interview	Rank applicants	Did not use	Missing
	n (%) <sup>a</sup>	n (%) <sup>a</sup>	n (%) <sup>a</sup>	n (%) <sup>a</sup>	n (%) <sup>a</sup>
Less than 30,000	2 (5)	25 (64)	5 (13)	7 (18)	0
30,000 to 74,999	7 (13)	26 (46)	10 (18)	12 (21)	1 (2)
75,000 to 149,000	8 (13)	32 (52)	9 (15)	12 (20)	0
150,000 to 499,999	8 (11)	37 (51)	8 (11)	20 (27)	0
500,000 to 1 million	3 (10)	17 (53)	0	10 (31)	2 (6)
More than 1 million	5 (11)	27 (58)	4 (9)	10 (22)	0
Missing	0	0	0	1 (100)	0

<sup>a</sup>Percentages are row percentages. Person  $\chi^2(24)$ : 27.1589; *P* value: .297

review process, yet their usage has been inconsistent among program directors. While overall application volumes per applicant have decreased in many specialties, including a modest decrease in family medicine,<sup>10</sup> the decrease in volume has not transformed the way residency recruitment seasons have operated.

Rotation experiences remain the top factor for influencing a program's opinion on an applicant. Long seen as equivalent to an extended interview or audition to the program,<sup>11</sup> rotation experience continued to be reported as a top factor by family medicine program directors during our study.

Secondary to rotation experiences was residency geographic location with regard to its proximity to either the applicant's identified home or the applicant's medical school. The strength of the geography factor continued to be illustrated during the 2025 Match data review.<sup>12,13</sup> When primary and secondary sway factors were combined, an increased importance of residency location was seen; however, location did not exceed rotation experience as a determining factor.

An area for future exploration would be a deeper look at the perspectives of program directors in rural communities regarding preference signal utilization. Within our data set, 19 program directors from residencies within communities with less than a population of 75,000 indicated that they did not

use signals. While these numbers did not rise to statistical significance in the data set, the data do pose the question of why these program directors would not use this new tool to enhance the recruitment process for programs that have historically struggled to recruit trainees to their locales.<sup>14</sup>

Our study had limitations, including some perceived confusion among respondents regarding interpretation of survey questions. For example, 66 program directors selected "Did not use" as their primary usage type, yet 35 of these respondents indicated in other questions that they incorporated preference signals into some aspect of their recruitment process. This inconsistency represents approximately 11.7% of the analytic sample and suggests that a subset of respondents misunderstood the question. Such misclassification may have influenced the distribution of responses in Table 1 and should be considered when interpreting these findings. Additionally, a possibility of response bias existed, and the survey questions were limited to only 10.

## CONCLUSIONS

Given that signals are expected to remain part of the family medicine residency match process, this study demonstrates a need for future qualitative studies on the best use of signals for residency applicants.

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