AAIM Perspectives

AAIM is the largest academically focused specialty organization representing departments of internal medicine at medical schools and teaching hospitals in the United States and Canada. As a consortium of five organizations, AAIM represents department chairs and chiefs; clerkship, residency, and fellowship program directors; division chiefs; and academic and business administrators as well as other faculty and staff in departments of internal medicine and their divisions.

Identifying Solutions to Ambulatory Faculty Recruitment, Retention, and Remuneration in Graduate Medical Education: An AAIM Position Paper

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KEYWORDS: Ambulatory faculty incentives; Ambulatory faculty recruitment; Ambulatory faculty retention; Graduate ambulatory medical education

BACKGROUND

With implementation of the Affordable Care Act and core requirements from the Accreditation Council for Graduate Medical Education, directors of graduate medical education (GME) programs must create robust ambulatory teaching environments for residents. Success requires effective recruitment, remuneration, and retention of high-quality ambulatory faculty. The recent AAIM Perspectives article1 and the 2017 Alliance for Academic Internal Medicine (AAIM)/ Society of General Internal Medicine (SGIM) position paper2 provided several recommendations to support and engage ambulatory faculty. Yet literature identifies multiple challenges in recruiting and retaining ambulatory clinician educators,3-7 with 40% of program directors8 and 54% of department chairs1 acknowledging difficulty. The myriad barriers and pressures in ambulatory GME teaching has elevated this issue to a high priority for the AAIM community. In this cross-sectional study, AAIM investigates current barriers for ambulatory educators to teach residents and identify pragmatic, high-value strategies to incentivize faculty participation in resident ambulatory teaching. The intent of this AAIM position paper is to increase communication and establish groundwork for best practices to recruit, retain, and reward high-quality ambulatory faculty.

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METHODS

Survey Instrument
From January 2016 to May 2017, a subcommittee convened monthly to discuss GME faculty needs and develop a needs-assessment survey on faculty teaching in GME ambulatory education. After extensive literature review and several Delphi processes, the final survey consisted of 14 questions in a mix of multiple-choice, 5-point Likert scale, and open-text questions on the following topics: types of existing ambulatory medicine rotations, barriers to ambulatory GME teaching, and institutional strategies for ambulatory faculty teaching of residents (Appendix, available online). The survey platform was the web-based QuestionPro 20.9 (Survey Analytics LLC, San Francisco, Calif), which was programmed and maintained by AAIM staff. Five subcommittee members pilot-tested the survey online to ensure validity. The survey underwent a final review for functionality, content, and validity.

From August to November 2017, requests for survey participation were posted every 2 weeks on the discussion forums of SGIM, the Association of Program Directors in Internal Medicine (APDIM), the Association of Professors of Medicine (APM), and AAIM ambulatory faculty retention, recruitment, and remuneration (RR&R) online communities. Survey participation was anonymous and voluntary through an embedded URL, with no incentives provided. The University of Oklahoma Institutional Review Board granted exemption from human subjects research (IRB #669439).

Data Analysis
Prior to removing respondent metadata from the survey dataset, IP address and geographic region of respondents were compared with individual survey responses to ensure no duplicate responses. Respondents reporting “no” as core ambulatory resident educators exited the survey. Data cleaning and summary descriptive statistical analysis were conducted in Stata 14.2 SE. Data from university-based respondents were compared with community-based respondents for variables regarding barriers and strategies. Group-based tests for statistical significance were conducted using Pearson’s chi-squared or Fisher’s exact test (for anticipated cell sizes below 5). Because the survey was anonymous and survey population was an approximation, data were not statistically weighted to adjust for nonresponse. Three authors thematically analyzed open-text responses on existing ambulatory rotations, institutional barriers, and strategies.

RESULTS
The total number of possible respondents was 7630 based on membership of the 4 solicited academic groups (APDIM-4261, APM-258, RR&R Focus Group-111, SGIM-3471). Overlap existed between memberships in AAIM, SGIM, and the RR&R focus group; thus, the total number of respondents is less than the potential total. Only one survey response was allowed per participant.

Demographics of Respondents and Institutional Ambulatory Education
A total of 217 individuals responded to the survey; 65.4% were from university-based institutions, 15.7% community-based, 11.5% equally at community-based and inpatient settings, and 7.4% others (eg, Veterans Affairs ambulatory care and community federally qualified health centers). Respondents were primarily core ambulatory resident educators in assistant professorships and served as assistant/associate program directors in administration (Table 1). Geographic representation was mostly from the Northeast (40.1%), followed by Midwest (22.6%), Southeast (20.7%), West (11.5%), and Southwest (5.1%).

The predominant rotation to teach general medicine ambulatory education for university-based residency programs (n = 128) was a longitudinal primary care track/program (57.8%, P = .001), while for community-based residency programs (n = 72) it was primary care electives (43.7%, P = .142). Rotation distributions for primary care electives, longitudinal subspecialty clinics, and specialized community-based clinics were not statistically significant between university-based and community-based programs (Table 2).

Barriers to Ambulatory Resident Teaching
Of the 217 participants, 93.5% completed the section on barriers to ambulatory training (68.0% university-related barriers, 43.7% community-based barriers) and 91.8% completed the section on strategies for faculty recruitment, retention, and remuneration (29.6% university-related strategies, 57.8% community-based strategies). The percentage of respondents citing each barrier or strategy is detailed in Table 2.
based, 32.0% community-based). The most common barriers shared by university-based and community-based ambulatory faculty (percent agreeing and strongly agreeing) were inadequate financial support (67.5%), lack of clinic space (63.3%), restraints in clinic time (47.9%), and reduction in clinical productivity (43.2%) (Figure 1).

In subgroup analyses, 4 specific barriers were significantly higher among community-based institutions than university-based institutions: lack of skilled community-based faculty educators ($P = .002$), lack of faculty interest ($P < .001$) and increase in clinic time ($P = .004$), and clinical work ($P = .032$) with teaching residents. The barrier on housing learners at distant educational sites was unique to community-based programs. Other barriers were not significantly different across program types (Figure 1).

**Table 1** Respondent Demographics per Institutional Type

<table>
<thead>
<tr>
<th>Respondent Demographics</th>
<th>University-Based (%)</th>
<th>All Others (%)</th>
<th>$P$ Value*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Program Administrator</td>
<td>2.8</td>
<td>6.7</td>
<td>.281</td>
</tr>
<tr>
<td>Instructor</td>
<td>4.9</td>
<td>2.7</td>
<td>.722</td>
</tr>
<tr>
<td>Assistant Professor</td>
<td>46.5</td>
<td>24.0</td>
<td>.001</td>
</tr>
<tr>
<td>Associate Professor</td>
<td>30.3</td>
<td>37.3</td>
<td>.292</td>
</tr>
<tr>
<td>Professor</td>
<td>13.4</td>
<td>21.3</td>
<td>.130</td>
</tr>
<tr>
<td>Other†</td>
<td>2.1</td>
<td>8.0</td>
<td>.067</td>
</tr>
</tbody>
</table>

Respondents who were educational administrators serve as:

- Medical Director: 9.4, 2.8, .396
- Residency Clinic Director: 28.9, 15.3, .182
- Residency Program Director: 14.1, 36.1, .003
- Chief of General Medicine: 6.3, 4.2, 1.000
- Assistant/Associate Program Director: 35.9, 31.9, 1.000
- Designated Institutional Officer: —, 4.2, .140
- Core faculty: 29.7, 27.8, .775
- Dean/Associate Dean: 3.9, 1.4, 1.000
- Other Educational Leadership Role‡: 21.1, 8.3, .157

*Pearson chi-squared test used; Fisher’s exact test used when anticipated cell sizes are 5 or less.
†Other respondent demographics, ie, Core Faculty, Attending Physician, Associate/Assistant Program Director.
‡Other educational leadership roles i.e. concurrent clerkship director, course director, director of ambulatory education, director of primary care track, director of clinical education, director of quality improvement, vice chair of education.

**Table 2** Distribution of Educational Rotations for Primary Care/General Internal Medicine per Institution Type

<table>
<thead>
<tr>
<th>% Distribution of Primary Care/General Medicine Rotations</th>
<th>University-Based (n = 128)</th>
<th>Community-Based (n = 72)</th>
<th>$P$ Value*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Longitudinal outpatient subspecialty clinics</td>
<td>56.3</td>
<td>56.0</td>
<td>.962</td>
</tr>
<tr>
<td>Specialized outpatient community-based clinics</td>
<td>38.0</td>
<td>34.7</td>
<td>1.000</td>
</tr>
<tr>
<td>Primary care elective</td>
<td>43.7</td>
<td>58.7</td>
<td>.142</td>
</tr>
<tr>
<td>Formal primary care track or program</td>
<td>57.8</td>
<td>30.7</td>
<td>.001</td>
</tr>
<tr>
<td>Other†</td>
<td>24.7</td>
<td>22.7</td>
<td>1.000</td>
</tr>
</tbody>
</table>

AHEC = Area Health Education Center.

*Pearson chi-squared test used; Fisher’s exact test used when anticipated cell sizes are 5 or less.
†Other, ie, ambulatory block rotations of subspecialty clinics, longitudinal continuity clinics, longitudinal ambulatory weeks in x+y model, 1-year ambulatory long blocks, acute care clinics, women’s health elective, geriatrics clinics, home-based primary care rotation. Note: Multiple responses allowed; percentage will exceed 100%.

**Strategies to Incentivize Ambulatory Faculty Teaching**

Of the 217 participants, 97.7% completed the section on strategies to incentivize ambulatory training (66% university-based, 34% community-based). The top incentives employed by both institution types were teaching awards/recognition (63.2%), faculty development in ambulatory teaching (54.3%), established ambulatory curricula (52.4%), dedicated space for learners (51.4%), and access to institutional resources/facilities (46.7%) (Figure 2). About 41% required mandates from chairs/division chiefs for faculty teaching of residents in the ambulatory setting. Financial incentives were less frequently employed as a strategy in university-based institutions (10%-28%) compared with community-based institutions (12.5%-43%). Heterogeneity existed in how...
salary support, relative value units (RVUs), and productivity were applied to faculty incentives. One-third of respondents reported a salary support system for outpatient teaching (eg, salary adjustment or lump sum payment per learner or session). Educational RVUs (eRVUs) were used by 10.9% of institutions, although respondents in open text commented that clinical RVUs from staffing resident clinic patients served as an incentive separate from eRVUs. Others noted that their eRVUs applied only to work with students, not residents. Infrequently utilized strategies included Continuing Medical Education (CME) credit for teaching activities, discounted/free parking, and discounted conference registration.

Subgroup analyses revealed 2 specific strategies utilized significantly more among community-based institutions than university-based institutions: use of salary support for teaching \( (P = .026) \) and close partnership with community physicians \( (P = .005) \). Other employed...
strategies were not significantly different across program types (Figure 2).

Regarding perceived value, respondents across all programs ranked the most valuable incentives for ambulatory faculty recruitment and retention to be adequate number of teaching clinicians (77.7%), qualified teaching clinicians (72.4%), salary support for teaching (69.3%), dedicated clinic space for learners (65.7%), faculty development in ambulatory teaching skills (57.6%), established ambulatory core curricula (50.2%), schedule adjustment to lower patient volume (45.6%), and eRVU system (44.8%). Least valuable strategies involved ambulatory teaching mandates from chairs/division chiefs (18%), access to institutional resources/facilities (17%), CME credit for teaching activities (17%), discounted/free parking (17%), and free/discounted CME tuition (16%) (Figure 3).

In subgroup analyses, salary support for teaching was the most valuable incentive for both university-based faculty (86.9%) and community-based faculty (91.7%) ($P = .362$). Community-based educators perceived discounted/free parking ($P = .015$), discounted conference registration ($P = .024$), and free/discounted tuition to institutional CME ($P = .052$) significantly less valuable than university-affiliated educators (Figure 3).

**DISCUSSION**

This position paper adds supporting evidence to the recommendations of the 2015 AAIM white paper,$^{10}$ the 2017 AAIM-SGIM position paper,$^{7}$ and the 2019 AAIM Perspectives on ambulatory faculty recruitment and engagement,$^{1}$ particularly on financial compensation, protected time, and faculty development. The strengths of this study include its large-scale national dissemination to key ambulatory academic groups and generalizability to various ambulatory faculty stakeholders. By stratifying barriers and incentives to different faculty types, our study helps to tailor strategies for GME directors to engage their ambulatory clinicians to teach.

A clear difference exists in the struggles of community-based ambulatory educators to teach residents, compared with university-based faculty. With the lack of skilled faculty to teach, GME directors of community-based programs must focus efforts on faculty development and mentorship programs to attract practicing clinicians to teach ambulatory medicine. Our survey respondents support faculty development as one of the highest valued strategies for ambulatory teaching. The significant faculty inertia to teach and the increased clinical workload make salary support/payment and close partnership with community physicians important incentives to recruit community-based ambulatory faculty to teach residents. These same challenges may explain the differential distribution of ambulatory medicine rotations by institution type. Community-based institutions favor primary care electives, while university-based institutions can significantly provide longitudinal primary care tracks/programs. Nonetheless, both institution types rely heavily on longitudinal subspecialty clinics to teach residents ambulatory medicine.

Unsurprisingly, the most commonly shared barrier from the survey was inadequate financial support for
teaching in the ambulatory setting. This clarifies the findings of salary support/payment for teaching as the most valuable strategy to recruit ambulatory faculty. Financial support likely factors into other common barriers, including inadequate space and time for teaching and reduction in faculty productivity. Solving the challenges of funding for ambulatory teaching requires considerable advocacy for GME funding reform because the majority of GME funding is concentrated in the inpatient environment.\textsuperscript{11} This imbalance has galvanized SGIM and the Society of Teachers of Family Medicine to propose major reforms to the educational payment policy with increased accountability and transparency to ambulatory education. Specific federal programs, such as the Title VII Health Professions Primary Care Training and Enhancement Grants and the Veterans Access, Choice, and Accountability Act, are critical for building the educational infrastructure of primary care by providing financial support of new primary care training programs, resources for ambulatory faculty recruitment, and expansion into new faculty development programs for ambulatory teaching clinicians.\textsuperscript{12-14} Congress under the Affordable Care Act 2010 created the Teaching Health Center (THC) GME program to increase community-based primary care residencies and address the primary care workforce shortage. GME programs from Title VII and THCs represent potential solutions for the recruitment and retention of ambulatory faculty at both university-based and community-based institutions by addressing issues with financial support, clinic space, time for teaching, and creating incentives for the dual mission of ambulatory care and resident primary care education.\textsuperscript{15-17} The outreach of THCs and expansion of Title VII could include partnerships between community-based and academic health centers.\textsuperscript{18} The survey findings suggest that such partnerships remain an untapped resource for GME ambulatory education. Both university-based and community-based respondents report longitudinal community-based Area Health Education Center clinics as the least utilized rotation to teach residents ambulatory medicine.

The literature on specific salary support structures is limited, and monetary structures such as eRVUs and salary lump payments are infrequently utilized incentives in GME ambulatory teaching. Medical schools have adopted mission-based funding as a means to compensate the time faculty dedicated to medical education. Certain departments use eRVUs as a framework to compensate for educational work to residents and medical students.\textsuperscript{19-21} Department chairs have utilized eRVUs to incentivize both clinical and nonclinical teaching.\textsuperscript{19,20,22-24} Implementation of eRVUs, however, remains mixed due to limited funds for medical education. University of Queensland Ochsner Clinical School had to restructure its tuition funds and faculty compensation plan to allocate monies to faculty ambulatory teaching.\textsuperscript{7} University of Kansas successfully overhauled its eRVUs to align with clinical productivity.\textsuperscript{25} A meta-analysis\textsuperscript{26} of compensation strategies found that most compensation schemes, including eRVUs for teaching sessions, improve research and clinical productivity. GME programs generate revenue for the clinical work of residents and from Medicare subsidies. Because faculty produce income from their clinical and teaching efforts with residents, an eRVU structure provides an equitable method to reward GME teaching faculty. Yet, discordance still exists between educational directors and department chairs on the value of eRVUs in ambulatory faculty recruitment, with 62% of clerkship directors vs 35% of chairs in favor per the recent AAIM paper.\textsuperscript{1} Determining the right compensation model to incentivize ambulatory teaching and provide appropriate oversight of residents remains elusive and an area in need of collaborative research among academic leaders. The survey suggests a significant ability of community-based institutions to provide financial support for ambulatory clinicians to teach residents, compared with university-based institutions. This disparity may reflect the need of traditionally nonteaching institutions to provide financial incentives to entice traditionally nonteaching physicians to teach residents; sustainability remains a concern. Physicians in university-based institutions have a contractual obligation to teach learners as part of a department’s tripartite mission. Teaching is an essential role and expectation of any academic-based faculty.

Survey respondents of both institution types reported the need to use nonfinancial strategies to incentivize resident ambulatory educators due to limited institutional financial resources for medical education. Providing faculty development, teaching awards, structured ambulatory curricula, and dedicated clinic space for teaching are commonly used strategies and provide highly valued intangible incentives. These findings support the cost-neutral incentives recommended by the 2017 SGIM-AAIM position paper\textsuperscript{2} and the 2019 AAIM paper.\textsuperscript{3} High-value strategies from our survey further substantiate the proposals by AAIM-SGIM\textsuperscript{2,10} and the American College of Physicians\textsuperscript{5} for a core faculty model of master educators with salary support and institutional resources to teach in the ambulatory setting, lead medical educational programs, and mentor junior clinical faculty in ambulatory teaching. Interestingly, GME directors may wish to limit such intangible incentives as discounts in CME activities, conference registration, and parking because they hold less value for ambulatory faculty to teach, especially community-based clinicians.

The literature remains sparse on specific incentives and rewards employed for and valued by ambulatory clinicians to teach residents. Existing studies mostly target clerkship directors for ambulatory teaching of medical students. Table 3 details the employed strategies for GME ambulatory teaching from the literature.
<table>
<thead>
<tr>
<th>Barrier</th>
<th>Institutional Type</th>
<th>Employed Strategies (from Literature)</th>
<th>Potential Solutions and Incentives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inadequate financial support</td>
<td>Shared</td>
<td>Educational RVU[^22][^24], Title VII programs[^12][^13], Teaching Health Centers[^15][^16][^18][^27][^28], Salary incentives for teaching[^22][^29]</td>
<td>Major GME reform, Title VII programs, Teaching Health Centers, Educational RVU[^1], Routinely scheduled communication between program directors and department chairs[^1], Contract-hour payments[^7], Clinic schedule adjustments, ie, clinic block-outs for teaching[^7], Medical scribes while teaching[^31][^34], Offsets to clinical billing losses, eg, use of extenders, departmental teaching incentive pool</td>
</tr>
<tr>
<td>Inadequate space</td>
<td>Shared</td>
<td>Teaching Health Centers, Increase primary care residency positions[^26]</td>
<td>Use of extenders for urgent/overflow visits[^7], Medical scribes while teaching, Clinic schedule adjustments, ie, clinic block-outs for teaching, Educational RVU, Contract-hour payment methods, Medical scribes while teaching</td>
</tr>
<tr>
<td>Inadequate time for teaching</td>
<td>Shared</td>
<td>Educational RVU, Faculty development[^22][^30]</td>
<td></td>
</tr>
<tr>
<td>Reduction in faculty productivity</td>
<td>Shared</td>
<td>Educational RVU, Salary incentives for teaching, Teaching mission in promotion criteria[^22][^30]</td>
<td></td>
</tr>
<tr>
<td>Learners reduce clinic access for</td>
<td>Shared</td>
<td>Teaching mission in promotion criteria</td>
<td></td>
</tr>
<tr>
<td>patients</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Learners adding too much time to the</td>
<td>Community-based</td>
<td>Educational RVU, Teaching mission in promotion criteria</td>
<td></td>
</tr>
<tr>
<td>clinic</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Learners add too much work to the</td>
<td>Community-based</td>
<td>Educational RVU, Salary support for teaching, Teaching mission in promotion criteria, Teaching awards[^22][^30]</td>
<td></td>
</tr>
<tr>
<td>clinic</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lack of skill in ambulatory teaching</td>
<td>Community-based</td>
<td>Academic faculty mentorship of community physicians[^22][^25][^36], Faculty development</td>
<td>Ambulatory Clinician Educator tracks/programs during residency training, Workplace faculty development programs[^2], Recruitment outreach of alumni[^1][^22][^37][^38], Core faculty model of master educators[^5][^10][^24], Educational RVU, Contract-hour payment methods, Recruitment outreach to alumni, Core faculty model of master educators, Specialized teaching clinics catered to faculty’s niche, Institutional support and resources for faculty scholarly activities[^1], Ambulatory Clinician Educator tracks/programs during residency training</td>
</tr>
<tr>
<td>Clinicians not interested in</td>
<td>Community-based</td>
<td>Educational RVU, Recruitment outreach of alumni, Academic faculty mentorship of community physicians, Faculty development, Clinical faculty appointment[^22], Salary support for teaching, Teaching awards</td>
<td></td>
</tr>
</tbody>
</table>
review while proposing other potential incentives for each barrier per the study.

Certain limitations exist in this study. First, the survey had an over-representation of university-affiliated faculty and respondents from the Northeast region, which introduces the possibility of selection bias. Second, despite wide dissemination of the survey, many institutions failed to participate. Respondents may not be representative of the entire population of ambulatory faculty. Third, the survey instrument is not externally validated. However, experienced educators vetted each survey item prior to dissemination. The 2016 Clerkship Directors in Internal Medicine Annual Survey also employed variations of these survey questions to investigate medical student ambulatory teaching. Finally, this study did not explore the factors behind the barriers or the outcomes of the utilized strategies. The authors are unable to determine which strategies translated to success in engaging ambulatory faculty to teach. For example, survey respondents valued faculty development programs highly for incentivizing ambulatory clinicians; further studies need to determine the specific faculty development elements to effectively recruit ambulatory clinicians to teach.

CONCLUSION
This position paper serves as a blueprint of viable and valuable strategies for institutional and GME directors to guide their recruitment and remuneration of different ambulatory teaching faculty. Future studies must investigate the effectiveness of such strategies in incentivizing ambulatory faculty to teach our residents. Efforts by academic organizations must work on establishing guidelines for best practices to recruit, retain, and reward ambulatory faculty to teach learners in the outpatient setting. This paper lays the groundwork for such efforts.

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References


**SUPPLEMENTARY MATERIALS**

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