

Henry Ford Health

## Henry Ford Health Scholarly Commons

---

Emergency Medicine Articles

Emergency Medicine

---

12-3-2021

### Advanced practice providers in academic emergency medicine: A national survey of chairs and program directors

Christopher R. Carpenter

Stacy Abrams

D. Mark Courtney

Stephen C. Dorner

Pamela Dyne

*See next page for additional authors*

Follow this and additional works at: [https://scholarlycommons.henryford.com/emergencymedicine\\_articles](https://scholarlycommons.henryford.com/emergencymedicine_articles)

---

#### Recommended Citation

Carpenter CR, Abrams S, Courtney DM, Dorner SC, Dyne P, Elia T, Jourdan DN, Kaji AH, Martin IBK, Mills AM, Nagasawa K, Pillow M, Reznek M, Starnes A, Temin E, Wolfe R, and Chekijian S. Advanced practice providers in academic emergency medicine: A national survey of chairs and program directors. Acad Emerg Med 2021.

This Article is brought to you for free and open access by the Emergency Medicine at Henry Ford Health Scholarly Commons. It has been accepted for inclusion in Emergency Medicine Articles by an authorized administrator of Henry Ford Health Scholarly Commons.

---

**Authors**

Christopher R. Carpenter, Stacy Abrams, D. Mark Courtney, Stephen C. Dorner, Pamela Dyne, Tala Elia, Daniel N. Jourdan, Amy H. Kaji, Ian B. K. Martin, Angela M. Mills, Kat Nagasawa, Malford Pillow, Martin Reznek, Andrew Starnes, Elizabeth Temin, Richard Wolfe, and Sharon Chekijian

## ORIGINAL CONTRIBUTION

# Advanced practice providers in academic emergency medicine: A national survey of chairs and program directors

Christopher R. Carpenter MD, MSc<sup>1</sup>  | Stacy Abrams MSHS, PA-C<sup>2</sup> |  
 D. Mark Courtney MD, MSc<sup>3</sup>  | Stephen C. Dorner MD, MPH, MSc<sup>4</sup> | Pamela Dyne MD<sup>5</sup> |  
 Tala Elia MD<sup>6</sup> | Daniel N. Jourdan MD<sup>7</sup> | Amy H. Kaji MD, PhD<sup>8</sup> | Ian B. K. Martin MD, MBA<sup>9</sup> |  
 Angela M. Mills MD<sup>10</sup>  | Kat Nagasawa MBA<sup>11</sup> | Malford Pillow MD, MEd<sup>12</sup> |  
 Martin Reznick MD, MBA<sup>13</sup> | Andrew Starnes MD, MPH<sup>14</sup> | Elizabeth Temin MD, MPH<sup>15</sup> |  
 Richard Wolfe MD<sup>16</sup> | Sharon Chekijian MD, MPH<sup>17</sup> 

<sup>1</sup>Department of Emergency Medicine, Washington University in St. Louis School of Medicine, Emergency Care Research Core, St. Louis, Missouri, USA

<sup>2</sup>Department of Emergency Medicine, Columbia University College of Physicians and Surgeons, New York, New York, USA

<sup>3</sup>Department of Emergency Medicine, UT Southwestern Medical Center Dallas, Dallas, Texas, USA

<sup>4</sup>Department of Emergency Medicine, Massachusetts General Hospital, Harvard Medical School, Boston, Massachusetts, USA

<sup>5</sup>Department of Emergency Medicine, UCLA David Geffen School of Medicine, Olive View-UCLA Medical Center, Sylmar, California, USA

<sup>6</sup>Department of Emergency Medicine, University of Massachusetts Medical School-Baystate, Springfield, Massachusetts, USA

<sup>7</sup>Department of Emergency Medicine, Henry Ford Hospital-Detroit, Detroit, Michigan, USA

<sup>8</sup>Department of Emergency Medicine, Harbor-UCLA Medical Center, David Geffen School of Medicine at UCLA, Torrance, California, USA

<sup>9</sup>Department of Emergency Medicine, Department of Medicine, Medical College of Wisconsin Medical School, Milwaukee, Wisconsin, USA

<sup>10</sup>Department of Emergency Medicine, Columbia University College of Physicians and Surgeons, New York, New York, USA

<sup>11</sup>Society for Academic Emergency Medicine, Des Plaines, Illinois, USA

<sup>12</sup>Department of Emergency Medicine, Faculty, Department of Education, Innovation & Technology, Baylor College of Medicine, Houston, Texas, USA

<sup>13</sup>Department of Emergency Medicine, University of Massachusetts Medical School, Worcester, Massachusetts, USA

<sup>14</sup>Wake Forest University School of Medicine, Winston-Salem, North Carolina, USA

<sup>15</sup>Department of Emergency Medicine, Massachusetts General Hospital, Harvard Medical School, Boston, Massachusetts, USA

<sup>16</sup>Department of Emergency Medicine, Beth Israel Deaconess Medical Center, Harvard Medical School, Boston, Massachusetts, USA

<sup>17</sup>Department of Emergency Medicine, Yale School of Medicine, New Haven, Connecticut, USA

## Correspondence

Christopher Carpenter, MD, MSc, Campus Box 8072, 660 S. Euclid Avenue, St. Louis, MO 63110, USA.

E-mail: carpenterc@wustl.edu

**Supervising Editor:** Damon Kuehl, MD.

## Abstract

**Background:** The Society for Academic Emergency Medicine Board of Directors convened a task force to elucidate the current state of workforce, operational, and educational issues being faced by academic medical centers related to advanced practice providers (APPs). The task force surveyed academic emergency department (ED) chairs and residency program directors (PDs).

**Methods:** The survey was distributed to the Association of Academic Chairs of Emergency Medicine (AACEM)-member chairs and their respective residency PDs in 2021. We surveyed 125 chairs with their self-identified PDs. The survey sampled hiring, state-independent practice laws, scope of practice, teaching and supervision,

training opportunities, delegation of procedures between physician learners and APPs, and perceptions of the impact on resident and medical student education.

**Results:** Of the AACEM-member chairs identified, 73% responded and 47% of PDs responded. Most (98%) employ either physician assistants or nurse practitioners. Among responding departments, 86% report APPs working in fast-track settings, 80% work in the main ED, and 54% work in the waiting room. In 44% of departments, APPs and residents evaluate patients concurrently, and 2% of respondents reported that APPs manage high-acuity patients without attending involvement. Two-thirds of chairs believe that APPs contribute positively to the quality of patient care, while 44% believe that APPs contribute to the academic environment. One-third of PDs believe that the presence of APPs interferes with resident education. Although 75% of PDs believe that residents require training to work effectively with APPs in the ED, almost half (49%) report zero hours of training around APP supervision or collaborative skills.

**Conclusions:** APPs are ubiquitous across academic EDs. Future research is required for academic ED leaders to balance physician and APP deployment across the academic ED within the context of patient care, resident education, institutional resources, professional development opportunities for APP staff, and standardization of APP EM training.

## BACKGROUND

Emergency medicine (EM) workforce projections in the United States (U.S.) over the past two decades have varied significantly. A multiorganizational report in 2010 projected a shortage of emergency physicians and an urgent need for advanced practice providers (APPs), including nurse practitioners (NPs) and physician assistants (PAs).<sup>1</sup> As the number of EM residencies rapidly increased over the ensuing years, so did the number of board-certified physicians. More recently, two separate workforce projections (one a multiorganizational task force administratively led by the American College of Emergency Physicians [ACEP] published in 2021 and another by the American Academy of Emergency Medicine [AAEM]) published in 2020) anticipated a surplus of physicians.<sup>2-4</sup> The Association of American Medical Colleges (AAMC) projects a shortfall of primary care physicians but a surplus of EM physicians by 2034.<sup>5</sup> A 2018 snapshot of the national EM workforce across hospitals of every type and size indicated that 61% are physicians and 24.5% are APPs.<sup>6</sup> A snapshot quantifying the proportion of APPs compared with physicians may be overly simplistic because it does not acknowledge the issue of whether APP encounters are billed separately or under the physician National Provider Identifier number. Moreover, the distribution by care areas, roles, and training of PAs and NPs in academic medical centers at which future EM specialists and medical students are trained remains understudied and poorly described.

When examining the landscape of academic EM, large gaps in knowledge exist. Prior workforce studies have not addressed the potential impact of APPs in the emergency department (ED) on medical student and resident education and their potential contributions to academic departments, nor have the academic departments been

studied to assess their contributions and commitment to nonphysician training and education. EM physician training programs' use of APPs to provide portions of resident training or educate residents on the supervision of APPs also is unknown.<sup>7</sup> In response to EM workforce uncertainties and interest in the potential educational impact of APPs in academic centers with physician training programs, the Society for Academic Emergency Medicine (SAEM) Board of Directors organized an APP Task Force in 2020 to more clearly understand the scope of practice for APPs within academic EDs, structures and support for APP education, academic department chair interest in the EM-specific career development of APPs, the existence of concurrent EM APP training programs, and how the presence of APPs might positively or negatively impact residency training for EM trainees.

The APP Task Force subsequently created a two-part survey to distribute to the academic EM chairs and program directors (PDs). The objective of the survey was to describe the current landscape and impact of APPs on the clinical and educational missions in U.S. academic EDs. The survey did not focus on market issues. Improved understanding of this impact could inform decisions that are likely to directly influence the academic practice environment and learning opportunities of future EM specialists.

## METHODS

### Population and survey description

The two-part survey was designed by the SAEM APP Task Force with attention to current EM survey design methods.<sup>8</sup> The survey addresses hiring practices, knowledge of state laws governing

independent practice, and use of APPs in academic EDs as described by acuity of patients seen, scope of practice, teaching and supervision of APPs, training opportunities provided or required for APPs, delegation of procedures between physician learners and APPs, and perceptions of the impact of APPs on resident and medical student training and education (Appendix S1). Prior to distribution, the survey was beta-tested by members of the SAEM APP Task Force and members of the SAEM Board of Directors.

Academic EM department chairs were identified by virtue of their full membership in the Association of Academic Chairs in Emergency Medicine (AACEM). We surveyed full AACEM members because these EDs exist in academic departments of affiliated medical schools that have each demonstrated AACEM criteria and these members have been used for prior SAEM benchmarking research.<sup>9</sup> AACEM has full and associate membership as outlined by the following criteria<sup>10</sup>:

### Full membership

Candidates for active membership shall be full, acting, or interim chairs of departments of emergency medicine in LCME- or AOA-COCA-accredited medical schools in the United States or Canada

### Associate membership

Candidates for associate membership shall be one of the following:

1. Director/chief of a division/section of emergency medicine in a LCME or AOA-COCA-accredited medical school in the United States or Canada, where the division or section is freestanding or part of another non-emergency medicine department.
2. Director/chief of emergency medicine at an AAMC member teaching hospital that serves as the principal designated institution of an ACGME or AOA-accredited residency program in emergency medicine.
3. An associate member may petition the membership committee (see Article VII) to be recognized as an active member. A simple majority vote by the membership committee shall result in an affirmative recommendation to the executive committee for its consideration. The membership and the executive committees shall consider, at a minimum, whether or not:
  - a. The associate member's responsibilities and authorities, including those related to human resources and fiscal matters, are such that their position is virtually indistinguishable from that of chair;
  - b. The track record of the associate member, and the academic unit for which they are responsible, in terms of scholarly productivity is consistent with that of an academic department of emergency medicine; and
  - c. The associate member and their unit have substantial programmatic responsibility for education of both medical students and resident physicians.

A total of 125 full-member AACEM department chairs were identified and surveyed. Each chair was asked to identify their residency PD for distribution of Part 2 of the two-part survey.

### Survey distribution and analysis

The survey was distributed via email link sent from the SAEM main office in Des Plaines, IL, using Survey Monkey for data collection during early 2021. Up to three reminders were sent over 2 months for nonrespondents. Survey responses were deidentified from site or respondent. Microsoft Excel was used to provide a descriptive summary of chair and PD responses, using simple proportions of the respondents and creating pie charts and bar graphs. No statistical hypothesis testing was performed to compare the chair and PD cohorts because there is a lack of evidence to provide effect estimates and perform a sample size calculation. The Washington University in St. Louis School of Medicine Institutional Review Board approved this study.

## RESULTS

The survey response rate for AACEM-member chairs was 73% (91/125). The responding chairs provided contact information for 75 PDs, and there was a 47% response rate (59/125) for PDs. The survey was anonymized; thus, geographical region distributions and respondent demographics are unavailable.

### Chair survey responses

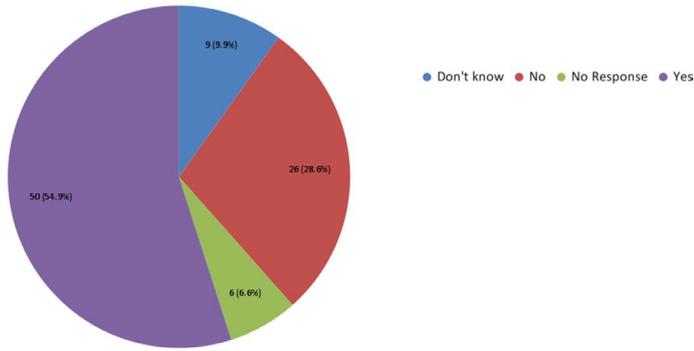
#### Hiring

Of those surveyed, 78% of AACEM-member departments employ both PAs and NPs, and 2% employed neither. If given a preference, 25% of responding chairs favored hiring PAs, 4% favored NPs, and 72% had no preference. The number of PAs employed by AACEM-member departments ranged from 0 to 120 (mean = 16) and NPs ranged from 0 to 90 (mean = 9). Six sites had no PAs, and nine sites had no NPs (Figures S1A and S1B). Most sites employ five or fewer PAs but report a far wider range of NPs (range = 0–90; Figures S2A and S2B).

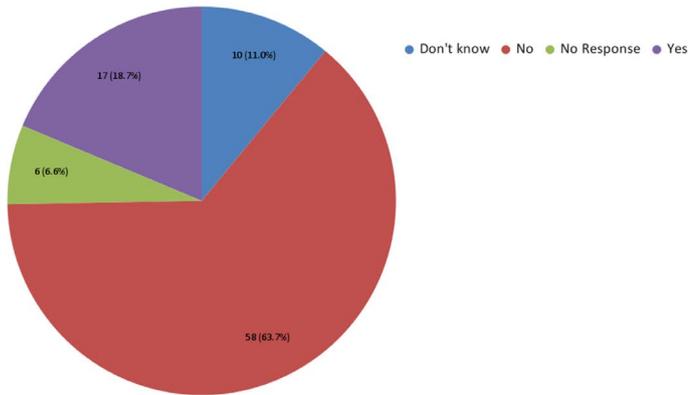
#### Scope and care location of APP practice

Some responding AACEM-member chairs were uncertain about independent practice laws governing NPs (10%) or PAs (12%) in their respective states. Differing independent practice was reported between APPs with 37% of NPs practicing independently compared with 2% of PAs (Figures 1A–1D). APPs evaluate patients with Emergency Severity Index (ESI) acuity levels 1 and 2 at rates of 20% and 52%, respectively. In their clinical work, APPs fill a range

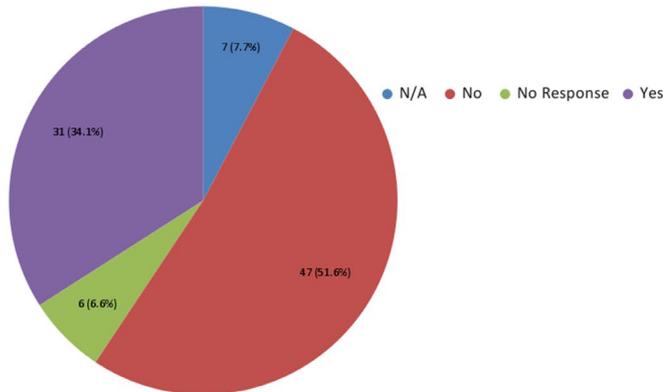
(a) Independent Practice Laws for NPs



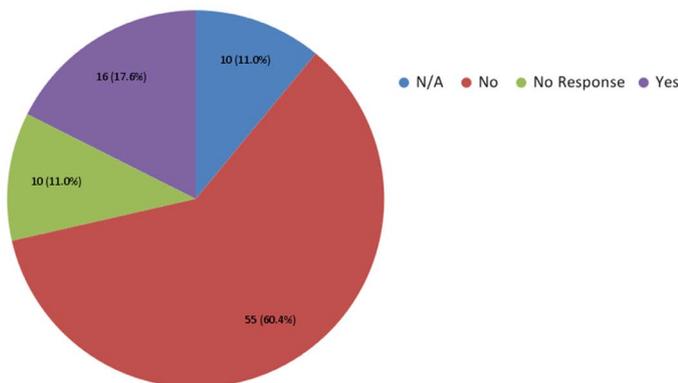
(b) Independent Practice Laws for PAs



(c) Do NPs Practice Independently Without Physician Oversight?



(d) Do PAs Practice Independently Without Physician Oversight?



**FIGURE 1** (A) Independent practice laws for NPs. (B) Independent practice laws for PAs. NPs, nurse practitioners; PA, physician assistants

of clinical roles in the responding AACEM-member EDs: fast track/urgent care (86%), main ED (80%), triage/waiting room (54%), observation (49%), behavioral health (29%), and telemedicine (2%).

In high-acuity areas of the AACEM-member EDs, APPs and residents evaluate patients at the same time at 44% of respondents' hospitals. APPs evaluate high-acuity patients less frequently than low-acuity patients (38% vs. 97%). Attending supervision of APPs is variable, with 96% of high-acuity patients at responding departments seen in real time by an attending versus 67% of low-acuity patients. Finally, 2% manage high-acuity patients without any attending involvement, and 41% manage low-acuity patients without engaging the attending (Figure 2).

### Opportunities for APP education and training and academic advancement

About one-third (31%) of responding AACEM-member chairs report that their institution currently has an EM-specific postgraduate APP training program, and 9% are planning to launch a program in the future (with 37% providing no response). Among those without a current APP EM-specific training program, 4% (2/49) report that they previously had a training program that has since closed. In addition, 44% of responding Chairs report a graduated increase in individual APP's scope of practice based on experience and/or additional training. Most responding AACEM-member chairs agree or strongly agree that APPs contribute to the quality of patient care (65%), while 44% agree or strongly agree that APPs contribute to the overall academic environment in their departments (Figure 3). Although 79% agreed or strongly agreed that investing in the professional advancement and well-being of their APPs is important, only 13% currently offer an APP pathway toward academic promotion.

### PD survey responses

A minority (24%) of responding EM PDs perceived that the presence of APPs in the ED negatively affected medical student education

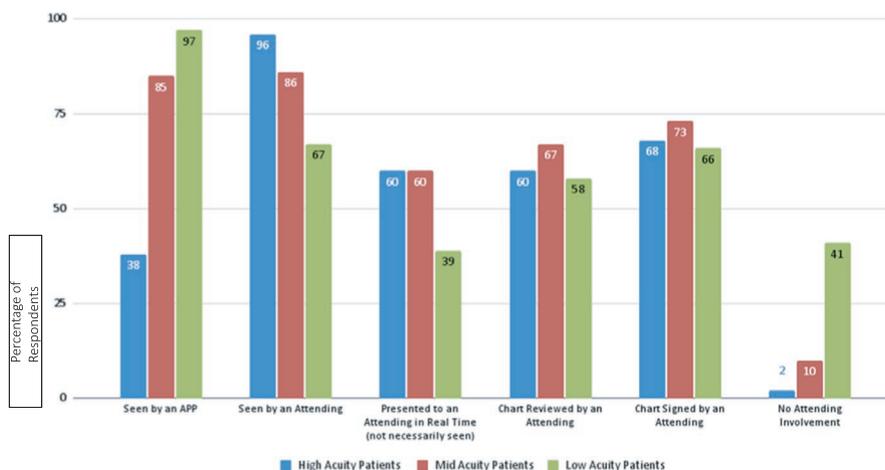
while slightly more (30%) believed that EM resident education is negatively affected by the presence of APPs in the clinical environment. While 75% of responding PDs agreed or strongly agreed that it is important for EM residents to learn how to be part of an interdisciplinary team, only 15% of residents were given the opportunity to supervise APPs as part of their training. Of note, 3% of residents are supervised by APPs in some instances. Approximately half (49%) of responding PDs reported zero hours in the resident curriculum dedicated to APP supervision skills. Of the nine respondents reporting that residents supervise APPs, five reported zero hours of resident curriculum focusing on APP oversight, while two reported 1–4 h, and two reported over 10 h of specific curricula. Of those programs that do provide such training, 88% committed fewer than 4 h during residency. The most common curricular topics explored appropriate levels of supervision and liability issues (Figure 4).

## DISCUSSION

This study is, to our knowledge, the first to characterize the use of APPs in the U.S. academic ED clinical environment, specifically among AACEM-member sites. Our results appear consistent with descriptive studies over the past decade that have noted an increase in APP presence in general across all EDs.<sup>6,11</sup> However, none of these prior studies specifically addressed the perceived impact of APPs in AACEM-member hospitals where future physicians are being trained. The current survey provides the first description of the perceived impact of APPs on the clinical and educational missions from the perspective of AACEM-member department chairs and their PDs.

### Deployment of APPs in AACEM-member EDs

The growth of APPs in EDs across the country is well documented.<sup>11</sup> Their presence in AACEM-member EDs is less well understood. From our results we can see that most responding AACEM-member EDs are employing APPs. While most responding chairs employ



**FIGURE 2** Patient evaluation and attending staffing by APP. APP, advanced practice provider

APPs Contribute to the Overall Academic Environment in an Academic Department?

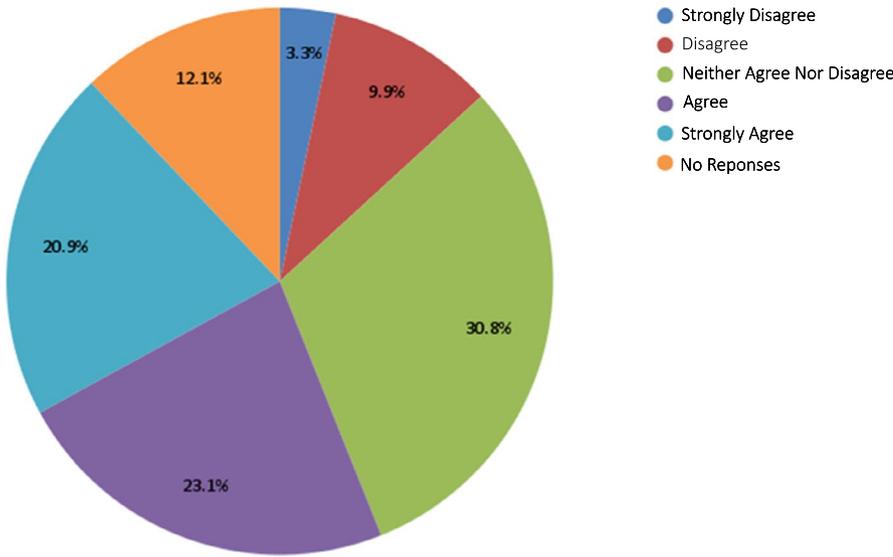


FIGURE 3 APP contributions to department. APP, advanced practice provider

APPs Contribute to the Quality of Patient Care in an Academic Department?

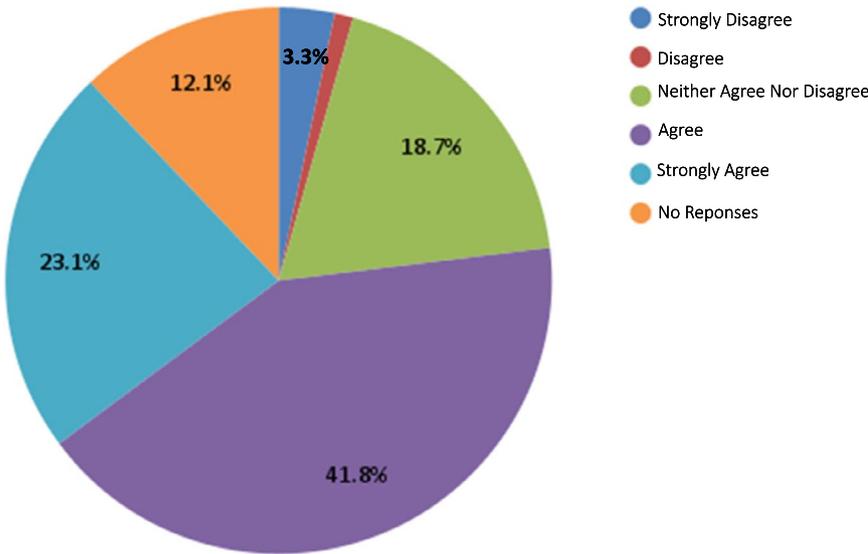
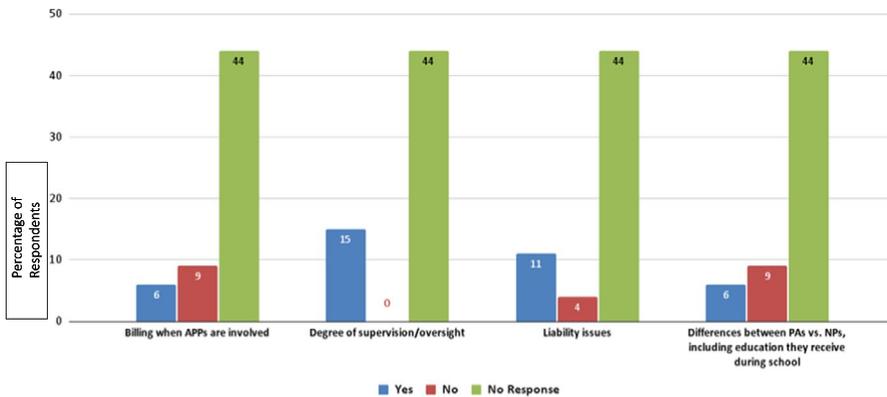


FIGURE 4 EM residency curriculum around APP clinical practice. APP, advanced practice provider



APPs in their EDs, the majority are agnostic in terms of whether they prefer to hire PAs or NPs. One-quarter of EM chairs do prefer PAs over NPs for their departments; however, our survey did not

evaluate reasons behind this preference. Most responding AACEM-member EDs (73%) incorporate APPs into the milieu of the main ED. Responding AACEM-member EDs have APPs and residents working

in the same clinical area caring for high-acuity patients at nearly half of the training sites. However, APPs at responding AACEM-member EDs are also staffing lower-acuity, behavioral health, and observation areas. It remains unclear from our survey responses whether the APPs work in the main ED concurrently with EM residents potentially seeing cases that could have been learning opportunities for residents or if they work in the main ED while the EM residents are not present, such as during resident didactics, thereby enhancing the residents' learning by covering the ED.<sup>12</sup> Thus, the true effect on residency training associated with the presence of APPs working in the main ED as well as in lower-acuity areas is unclear.

This report highlights a general and multidimensional lack of standardized practice among respondents for utilizing APPs including the level of supervision and acuity level of patients seen by APPs. Some of this variation may be in part a function of regional differences, because laws governing supervision vary from state to state and from hospital to hospital.<sup>13</sup> Interestingly, 10% of responding chairs were not sure about independent practice laws governing NPs in their states, and 12% did not know about state laws governing PAs. Further investigation is needed to see if the responses were accurate by state because this determines the supervision actually necessary and subsequent implications on hiring, billing, and finances.

## Differential coverage of care areas and supervision

Responding AACEM members note that APPs practice in all areas of the ED, including behavioral health, fast track, the main ED, observation units, and triage. Respondents also note that very few high-acuity patients are seen solely by an APP and that a physician is involved in 98% of those cases. This is contrary to statements that can be seen on social media and general assumptions that APPs are conducting a high or even significant portion of unsupervised high-acuity care.<sup>14</sup> It is possible that our findings reflect a difference in supervisory practices or expectations in general among academic departments versus nonacademic departments; however, more research is needed to explore this hypothesis.

Respondents note that attending physicians are providing direct supervision of APPs in real time for 60% of higher-acuity patients with only 2% reporting APPs providing care to high-acuity patients without supervision. Respondents also value the contributions of APPs to the overall quality of care, though less so to the academic mission. This is not surprising given APPs were also reported to work in all areas of the ED amidst the near-ever-present challenges of full waiting rooms and throughput obstacles.<sup>15</sup>

## APP professional development

While many AACEM-member EDs reported not having APP professional development programs, most were interested in exploring this concept. This interest may reflect the continued growth of PA specialty-specific postgraduate training programs. There are

currently 91 postgraduate training programs for PAs of which 48 are specialized in acute care/emergency medicine.<sup>16-18</sup> These programs do provide advanced training for PAs who are interested in obtaining careers in EM and more formalized training before they seek employment.<sup>19</sup> Many of these programs have been successfully integrated with EM residency programs in academic medical centers.<sup>20</sup>

Professional development efforts geared toward APPs within AACEM-member EDs are uncommon. APP hiring partially reflects the demands of patient volume in the ED,<sup>21,22</sup> but these results highlight an opportunity to catalyze scholarly APP output. AACEM-member departments could design structured curriculum and feedback mechanisms specifically for APPs as well as pathways for academic promotion.

## Perceived impacts on and opportunities for resident education

This survey aimed to provide a clearer understanding of the role of APPs in the clinical and educational missions of AACEM-member EDs. With 73% of AACEM-member chairs and 47% of PDs responding, the survey is a representative sample of the current AACEM landscape, and certain conclusions are clear for those sites. Our results appear consistent with descriptive studies over the past decade that have noted an increase in APP presence across EDs.<sup>7</sup> Nearly all AACEM-member EDs are employing APPs (98%) and the vast majority of patients seen by APPs also involve attending physicians, ranging from 98% of high-acuity patients to 59% of low-acuity patients. APPs will clearly be an integral part of the EM workforce for current and future EM residents as they advance to attending physicians.

Despite their ubiquitous employment of APPs the majority of responding AACEM-member sites may not be adequately preparing residents for supervision and collaboration. While the majority of PDs (75%) agree or strongly agree that it is important for EM residents to learn how to be part of an interdisciplinary team, an alarming number (30%) are concerned that the presence of APPs has a negative impact on resident learning. The drivers of this perception are not clear. Few programs (15%) facilitate the opportunity for residents to supervise APPs as part of their training and, inversely, 3% of programs report that residents are supervised by APPs.

In keeping with the ACGME Common Program Requirements that outline supervision of trainees as being provided by physicians, be they attending physicians or more senior residents or fellows, no programs should have residents supervised by APPs.<sup>23</sup> Since nearly half (49%) of AACEM-member respondents report zero hours of the resident curriculum dedicated to APP supervision, development of didactic curricula would be opportune. We recommend that all training programs provide the opportunity for residents to supervise APPs clinically and reasonable didactic time dedicated to interprofessional team training as a component of the resident curriculum.

Responding academic EDs report that APPs are staffing lower-acuity (50%), behavioral health (46%), and observation areas where they also have less involvement from attending physicians. It is

possible that this may create an imbalance of clinical exposure for resident physicians, resulting in their disproportionately staffing high-acuity areas and receiving less exposure to lower-acuity, behavioral health, and observation areas. We recommend that EDs and training programs examine this issue carefully to ensure that residents have adequate exposure to the full breadth of EM.

The presence of APPs in the academic environment has many potential implications for PDs who largely carry the responsibility of ensuring the quality of training according to ACGME standards.<sup>24</sup> Residency review committee guidelines specifically outline the context of resident training while milestones outline competency-based benchmarks for progression and promotion.<sup>25</sup> These accreditation and training standards were written with other physician-trainees in mind, and it is unlikely that the presence and impact of APPs and APP trainees were fully incorporated into the standards. On the one hand, APP trainees compete for the same training resources as EM residents, similar to off-service residents rotating in the ED. On the other hand, APPs may provide coverage and protection for required resident training activities. While this study explores physician leaders' perceptions of APPs in the academic environment, our data are not sufficiently granular to quantify the impact of APPs on EM residents' training. Additional research could focus on quantifying the types and numbers of patients seen primarily by APPs in academic EDs who are working alongside residents as well as additional roles that APPs play in EM training programs, such as allowing for residents to have protected time to participate in didactics.

### Chairs' perspectives on APPs in academic EDs

Acknowledging contemporary duty-hour restrictions and limitations in graduate medical education residency program size, respondents recognized the value of APPs to the clinical mission of the AACEM-member ED. AACEM-member chairs need to understand that the use of APPs may be needed to balance the competing interests of educational and clinical needs. Because balancing the need to ensure high-quality patient care while preserving the educational environment is a prime role of AACEM-member chairs, a close partnership between clinical and education leaders is essential.<sup>26</sup>

More research is needed to understand AACEM-member chairs' awareness of supervision and billing details in operational decision making. Furthermore, there is a need for well-designed studies comparing APP-blended practices to physician-only staffing in terms of the differences in value to patients and the liability to the practices. Consideration and investigation of the impact of APPs on procedural exposure and competence for residents should be undertaken to minimize impacts on training. Operational concerns should take the need for resident exposure to all clinical care areas of the ED into account. Relatedly, EM-sponsored research is needed to help define the optimal EM workforce size and composition of residents and APPs to address growing concerns that increasing APP employment may impact future workforce needs. AACEM-member chairs

need to be important participants in this workforce delineation. The authors encourage EM organizations to sponsor such investigations focusing on quality of patient care, optimization of resident education, and professional development of APP staff.

### LIMITATIONS

The major limitation of the survey is that AACEM-member responding chairs may not be fully aware of day-to-day operational and educational dynamics. In an attempt to mitigate this limitation, select questions were directed to either the department chair or the PD—based on whomever would most likely best address the subject. Responding chairs were asked to deputize their PD to answer the questions in addition to or instead of themselves. Another major limitation of the survey was our decision to focus on AACEM members rather than the entire 260+ ACGME-approved EM training programs. As previously noted, our inclusion criteria were not based on the presence of an EM residency program but rather our focus was on academic departments and the AACEM membership provides the largest standardized representation of that target. Nonetheless, we did not attain a 100% response rate for chairs or PDs, so responses do not fully reflect the target AACEM members and may differ from non-AACEM sites that support an EM residency. It is possible that a program that would meet AACEM membership criteria was not a member and therefore not represented in our surveyed population, but we are unaware of any such programs and believe that very few EDs that would qualify for active AACEM membership are not AACEM full or associate members. Another limitation of the survey is that anonymous responses preclude any demographic assessment of responses, including differences based on geography, gender, age, or duration of time as chair or PD. Geography may impact answers given differing practice environments by state. Our study looked at quantitative results, but did not elucidate the varied qualitative reasons behind the responses.

### CONCLUSIONS

Almost every Association of Academic Chairs in Emergency Medicine-member respondent ED employs advanced practice providers. Most chairs have no preference for physician assistants or nurse practitioners. Advanced practice providers work in every area of the Association of Academic Chairs in Emergency Medicine-member ED, but most commonly in urgent care or the main department, and most high-acuity patients are also seen by an emergency medicine physician. While most Association of Academic Chairs in Emergency Medicine-member chairs believe that advanced practice providers contribute to the overall quality of patient care in the ED, fewer believe that advanced practice providers add to the academic environment. There are several missed opportunities highlighted by this study. First, medical educators should ensure exposure of residents to all ED care areas and

provide opportunities for advanced practice provider supervision and collaboration. Second, consideration should be given to enhancing educational opportunities for advanced practice provider staff to improve both patient care and professional engagement and progression. Academic centers are a natural home for professional development for all professions and for integration of postgraduate advanced practice provider training programs. Focusing on staffing issues alone is a missed opportunity for engagement, collaboration, and hopefully improved care for our patients. Significant research is required to quantify the health outcomes-based value of advanced practice provider and physician-level care in academic and nonacademic ED settings.

### CONFLICT OF INTEREST

CRC, AK, IBKM, AMM, and RW serve or served on the Society for Academic Emergency Medicine Board of Directors over the course of this Task Force. SC is recent past Chair and current Vice-Chair of the Advanced Practice Provider Medical Directors Interest Group at the Society for Academic Emergency Medicine. ET is Chair of the Advanced Practice Provider Medical Directors Interest Group at the Society for Academic Emergency Medicine.

### ORCID

Christopher R. Carpenter  <https://orcid.org/0000-0002-2603-7157>

D. Mark Courtney  <https://orcid.org/0000-0002-0905-465X>

Angela M. Mills  <https://orcid.org/0000-0003-0798-6848>

Sharon Chekijian  <https://orcid.org/0000-0001-5514-3349>

### REFERENCES

- Schneider SM, Gardner AF, Weiss LD, et al. The future of emergency medicine. *J Emerg Nurs*. 2010;36:330-335.
- Gettel CJ, Canavan ME, D'Onofrio GD, Carr BG, Venkatesh AJ. Who provides what care? An analysis of clinical focus among the national emergency care workforce. *Am J Emerg Med*. 2021;42:228-232.
- Reiter M, Allen BW. The emergency medicine workforce: shortage resolving, future surplus expected. *J Emerg Med*. 2020;58:198-202.
- Marco CA, Courtney DM, Ling LJ, et al. The emergency medicine physician workforce: projections for 2030. *Ann Emerg Med*. 2021;78(6):726-737.
- The Complexities of Physician Supply and Demand: Projections from 2019 to 2034*. Association of American Medical Colleges; 2021.
- Hall MK, Burns K, Carius M, Erickson M, Hall J, Venkatesh A. State of the National Emergency Department Workforce: who provides care where? *Ann Emerg Med*. 2018;72:302-307.
- Chekijian SA, Elia TR, Monti JE, Temin ES. Integration of advanced practice providers in academic emergency departments: best practices and considerations. *AEM Educ Train*. 2018;27:S48-S55.
- Mello MJ, Merchant RC, Clark MA. Surveying emergency medicine. *Acad Emerg Med*. 2013;20:409-412.
- Reznek MA, Scheulen JJ, Harbertson CA, Kotkowski KA, Kelen GD, Volturo GA. Contributions of academic emergency medicine programs to U.S. health care: summary of the AAAEM-AAEM benchmarking data. *Acad Emerg Med*. 2018;25:444-452.
- Join AACEM. Academy of Academic Chairs of Emergency Medicine, 2021. Accessed November 15, 2021. <https://www.saem.org/about-saem/academies-interest-groups-affiliates2/aacem/about-aacem/aacem-membership/join-aacem>

- Wiler JL, Rooks SP, Ginde AA. Update on midlevel provider utilization in U.S. emergency departments, 2006 to 2009. *Acad Emerg Med*. 2012;19(8):986-989.
- Chekijian SA, Elia TR, Horton JL, Baccari BM, Temin ES. A review of interprofessional variation in education: challenges and considerations in the growth of advanced practice providers in emergency medicine. *AEM Educ Train*. 2020;5:e10469.
- Clark A, Amanti C, Sheng AY. Supervision of advanced practice providers. *Emerg Med Clin North Am*. 2020;38:353-361.
- Evans DD, Hoyt KS, Wilbeck J, et al. Embracing the future for emergency nurse practitioners and specialty practice: implications for research, clinical practice, education, and health policy. *J Am Assoc Nurse Pract*. 2018;30:586-591.
- Widmer MA, Swanson RC, Zink BJ, Pines JM. Complex systems thinking in emergency medicine: a novel paradigm for a rapidly changing and interconnected health care landscape. *J Eval Clin Pract*. 2018;24:629-634.
- Postgraduate Programs Society of Emergency Medicine Physician Assistants. 2021. Accessed September 22, 2021. <https://www.sempa.org/education/postgraduate-programs/>
- Postgraduate PA/NP Programs Listing. The Association of Postgraduate PA Programs. 2021. Accessed September 22, 2021. <https://appap.org/programs/postgraduate-pa-np-programs-listings/>
- Pasquini S. Postgraduate PA School Residency and Fellowship Programs. *The Physician Assistant Life*; c2021.
- Entry Level Accreditation. *Accreditation Review Commission on Education for the Physician Assistant Inc*. 2021. Accessed September 22, 2021. <http://www.arc-pa.org/>
- Tsyrlunik A, Goldflam K, Coughlin R, et al. Implementation of a physician assistant emergency medicine residency within a physician residency. *West J Emerg Med*. 2020;22:45-48.
- Hooker RS, Klocko DJ, Larkin GL. Physician assistants in emergency medicine: the impact of their role. *Acad Emerg Med*. 2011;18:72-77.
- Tintinalli JE. Mid-level providers and emergency care: let's not lose the force. *Emerg Med Australas*. 2014;26:403-407.
- ACGME Common Program Requirements (Residency). Accreditation Council for Graduate Medical Education. 2019. Accessed September 16, 2021. <https://www.acgme.org/Portals/0/PFAssets/ProgramRequirements/CPRResidency2019-TCC.pdf>
- ACGME Program Requirements for Graduate Medical Education in Emergency Medicine. Accreditation Council of Graduate Medical Education, 2020. Accessed September 16, 2021. [https://www.acgme.org/Portals/0/PFAssets/ProgramRequirements/110\\_EmergencyMedicine\\_2021.pdf?ver=2021-06-22-142223-527](https://www.acgme.org/Portals/0/PFAssets/ProgramRequirements/110_EmergencyMedicine_2021.pdf?ver=2021-06-22-142223-527)
- Cooney RR, Murano T, Ring H, Starr R, Beeson MS, Edgar L. The Emergency Medicine Milestones 2.0: Setting the stage for 2025 and beyond. *AEM Educ Train*. 2021;5:e10640.
- Pines JM, Zocchi MS, Ritsema TS, Bedolla J, Venkat A. Emergency physician and advanced practice provider diagnostic testing and admission decisions in chest pain and abdominal pain. *Acad Emerg Med*. 2021;28:36-45.

### SUPPORTING INFORMATION

Additional supporting information may be found in the online version of the article at the publisher's website.

**How to cite this article:** Carpenter CR, Abrams S, Courtney DM, et al. Advanced practice providers in academic emergency medicine: A national survey of chairs and program directors. *Acad Emerg Med*. 2021;00:1-9. doi:[10.1111/acem.14424](https://doi.org/10.1111/acem.14424)