

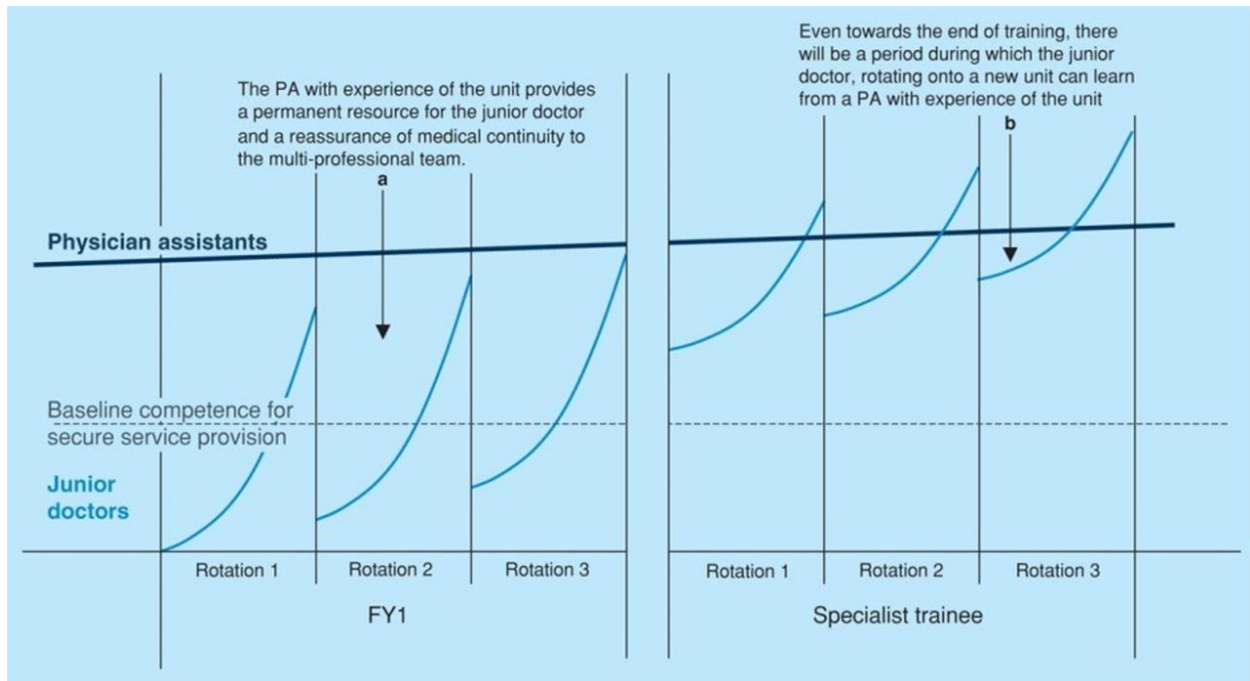
How do Advanced Practice Providers fit into IPE at academic medical centers?

Does your service have one or more Advanced Practice Providers (APPs)? Chances are you do, or you will! Originally conceived in the 1960s to assist with the primary care shortage, APPs can be found in almost every specialty and subspecialty of medicine and surgery. In addition, APPs now support a large part of the workforce at academic centers due to resident work hour restrictions, as well as the stable clinical competence a well-trained APP maintains.

APPs complete rigorous graduate programs prior to entering practice. To be successful, the new APP requires additional postgraduate training as they are transitioning to practice. A small percentage of APPs may complete a postgraduate residency/fellowship program in areas such as Emergency Medicine (EM), Critical Care Medicine, Cardiothoracic Surgery, Trauma Surgery or Hospital Medicine, just to name a few. However, these postgraduate programs are not mandatory and 80% of applicants are new graduates (Maine Medical Center). How do we leverage the current academic opportunities in your institution to incorporate and educate APPs, either through formal or informal postgraduate training, leading to improved safety, lower cost and improved retention through professional development?

Investing in the training of APPs leads to a high level of consistent competency (Figure 1) (1).

Figure 1



Clin Med 12(3):200-206 (2012)

The well-trained APP provides a consistent level of competence and beyond. Here the graph on the left represents the PGY1-PGY3 resident while the graph on the right represents the fellow. The solid line labeled "Physician Assistants" is the well-trained APP that has been practicing for at least 2 years on service.

Chekijian et al. aimed to describe best practices and considerations regarding the integration of APPs at four separate academic institutions in Emergency Medicine. Yale has a postgraduate APP residency in

EM that is 18 months in duration and directly parallels the medical residency for MDs with complete integration from the start date of the internship year through the 18 month program. Expectations of review of board material also parallel the MD residency program. At Brown, Physician Extender Development Program (PEDP) was developed for new graduate APPs for a 1 year period. This includes 5 hours of lecture time each week with the EM residency program. This program is overseen by the chief education APP as well as two other educational assistant APPs. UMMS-Baystate program accepts up to two PAs a year into a 12 month residency program who are partially integrated into the physician residency program (2).

You may be curious of the impact of additional learners integrated with the residents and fellows. Kahn et al. sent a survey to 1178 surgical residents to which 354 (30%) responded. A large majority of the respondents were part of residencies where the APPs had been integrated into the ICU for 5 or more years (3).

Figure 2

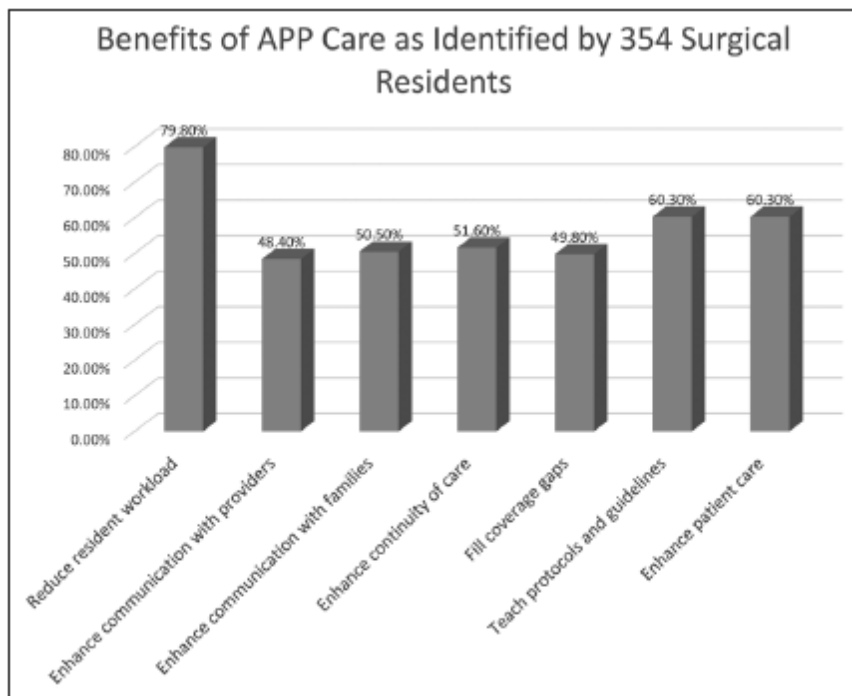


Figure 1. Surgical residents perceptions of benefits of working with advanced practice providers (APPs).

If you do not have a formal postgraduate training program to train your APPs, not to worry. Here are some quick tips you can incorporate now:

<ul style="list-style-type: none">• Incorporate your APP(s) into bedside teaching rounds
<ul style="list-style-type: none">• Invite new APPs to resident and medical school didactics
<ul style="list-style-type: none">• Train new APPs simultaneously with residents and medical students in simulation
<ul style="list-style-type: none">• Provide access to shared education sites or drives for APPs (i.e. asynchronous learning)
<ul style="list-style-type: none">• Provide time for your APPs to attend Grand Rounds
<ul style="list-style-type: none">• Provide formal feedback and support for APP education in your department
<ul style="list-style-type: none">• Provide highly functioning APPs the opportunity to educate other learners on the healthcare team as well as participate ongoing professional development activities in the department
<ul style="list-style-type: none">• Put APPs in charge of the education of onboarding new APPs, have them collaborate with the department chief for incorporation of the new APPs with the medical student and resident learning activities

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Integration of Advanced Practice Providers in Academic Emergency Departments: Best Practices and Considerations

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ABSTRACT

As emergency department (ED) visits continue to increase nationwide, the utilization of advanced practice providers (APPs) has been steadily increasing. Academic centers face unique challenges in the inclusion of APP staff into the educational and teaching environment. Effort should be made to both take advantage of and support the educational mission of academic centers while bolstering clinical care provided by APP staff. This paper highlights some of the considerations and challenges in incorporating APPs into academic EDs as discussed at the Society for Academic Emergency Medicine Annual Meeting in Indianapolis, Indiana, in May 2018. The panel included representation from Massachusetts General Hospital, Yale New Haven Hospital, Warren Alpert Medical School of Brown University, and University of Massachusetts Medical School–Baystate. Distillation of our common experience shows that best practices in supervision favor uniformity between resident and APP staff except with low-acuity patients. Likewise, professional development takes advantage of the educational environment to provide feedback and identify areas for improvement as well as development of formal clinical and educational curricula for APPs working in academic institutions. Already established medical doctor residencies can be leveraged to provide postgraduate education for APPs in either formal or informal training programs.

Changes in residency hour requirements and increased patient volume have changed the staffing of emergency departments (EDs) and busy academic centers.¹ The physician assistant (PA) and nurse practitioner (NP) role, together referred to as advanced practice providers (APPs), has existed since the 1960s and 1970s,² but in the past two decades the presence of APPs has greatly increased throughout the medical landscape. Utilization of PAs specifically has expanded significantly in emergency medicine (EM), with only 2.9% of ED patients seen by PAs in 1993 but 9.9% in 2009.³ The number of hospitals employing APPs has similarly increased, with 28.3% of EDs employing APPs in 1997 and 77.2% in 2006.⁴

Engaging APPs in academic EDs can address our expanding clinical needs but has also presented challenges regarding the integration of a largely clinical workforce with the mission of our academic centers. APPs undergo focused training in general medicine prior to entering practice but have no standardized postgraduate training specific to their area of specialty practice. Postgraduate training options include a handful of nonstandardized residency programs and National Commission on Certification of Physician Assistants (NCCPA) Certification of Added Qualifications (CAQ) in a subset of specialties, as well as nonstandardized site-specific on-the-job training. As of 2017 only 11% of PAs working in the emergency department (ED) have

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had residency training in EM.⁵ As of 2013 only 181 PAs were recipients of CAQs and, to date, the NCCPA has not published further data.⁶ Requiring specialty certification to practice is a current controversy for APPs as it is thought to limit the horizontal mobility of clinical practice that is intrinsic to the specialty. This necessitates a need for the creation of a supportive and educational postscholastic environment to ensure that APPs are integrated and productive within the framework on any ED, specifically academic EDs.

This paper seeks to illustrate the experiences in four academic centers in the northeast: Massachusetts General Hospital (MGH), Yale New Haven Hospital, Warren Alpert Medical School of Brown University, and University of Massachusetts Medical School–Baystate (UMMS-Baystate) while comparing and contrasting our solutions to common thematic issues that have arisen.

METHODS

This paper is based on the panel discussion presented at the annual Society for Academic Emergency Medicine Annual Conference (SAEM) meeting in Indianapolis, Indiana, in May 2018, that grew out of the SAEM Advanced Practice Provider Medical Director Interest Group. The following institutions participated in this presentation: MGH, Yale New Haven Hospital, Warren Alpert Medical School of Brown University, and UMMS-Baystate with the medical directors of MGH and UMMS-Baystate being the current chair and vice chair, respectively, of the APP Medical Director Interest Group. The goal of the panel was to compare and contrast the following parameters of APP training: scheduling, credentialing and financial reimbursement, oversight and professional reviews, leadership structure, training and orientation, professional development and continuing education, and residency programs.

DISCUSSION

The four programs highlighted in this paper have annual volumes of 111,000 to 216,000 patients and have 19 to 64 APPs working in single or multiple sites within each institution (see Table 1). Two programs hire new graduates, while the three that have APP residencies also recruit from their own residencies. Work hours vary from 9- to 12-hour shifts with full time varying from 36 to 40 hours/week, three require night shifts, and three use APPs to staff an observation unit in addition to ED coverage. All programs have APPs staffing all areas of their ED. Integration with the medical residency is helpful to have consistent coverage while allowing for didactic time for both groups. Continuing medical education (CME) money varies from no allowance to \$3,000 and protected CME time varies from 1 to 2 weeks (see Table 2).

APP Program Development and Infrastructure

Based on our experience, academic centers planning to establish a new program should access two major resources: existing EM APP programs and APP programs in other departments within their hospital. It is important to research hospital, state, and federal regulations on the use of PAs and NPs. This includes consultation with the hospital's corporate compliance and finance and billing departments and investigating details including the selection and use of supervising physicians and the prescription review process. For example, in the Commonwealth of Massachusetts, all narcotic prescriptions by APPs must be reviewed by a physician within 96 hours. This requirement varies by state. Questions that arose during the process included whether PAs could discharge patients without a medical doctor (MD) signing the chart (yes) and the differences in PA/NP versus MD billing and requirements

Table 1
Four Site Comparison Key Characteristics

	MGH	Yale	Brown	UMMS-Baystate
ED yearly volume	111,000	212,000	216,000 (all sites)	128,000
Years employing APPs	9	30+	18	31
APP group employer	Hospital employee	Hospital employee	Private group	Hospital employee
Single site vs. multiple site	Single	Multi (3)	Multi (3)	Single
MD residents per year and length of residency	15/4	15/4	13/4	14/3
APP residency	No	Yes	Yes	Yes

APPs = advanced practice providers; MGH = Massachusetts General Hospital; UMMS-Baystate = University of Massachusetts Medical School–Baystate.

Table 2
Four Site Comparison APP Characteristics

	MGH	Yale	Brown	UMMS-Baystate
No. of APPs in ED	40 PAs/24 NPs	48/7	29 PAs/15 NPs	16 PAs/3 APRNs
Full-time APP clinical hours	40	40	36	36
Shift length	10 hours	12 hours	9/12 hours	9 hours
Night shifts	Yes	Yes	No	Yes
% ED patients seen by APPs	64%	44%	44% RIH/36% All sites	25.8%
APPs working areas	All	All	All	All
Hires new grads	Yes	Yes	No	No
APPs staff an observation unit	Yes	Yes	Yes	No
Yearly CME allowances	1 week/\$2,000	\$1,500	1 week	1 week/\$2,000

APPs = advanced practice providers; APRNs = advanced practice registered nurses; MGH = Massachusetts General Hospital; NPs = nurse practitioners; PAs = physician assistants; RIH = Rhode Island Hospital; UMMS-Baystate = University of Massachusetts Medical School-Baystate.

for hospital certification. Determination of whether PAs should be salaried, exempt, or hourly employees is governed by hospital human resources departments and must be carefully considered by each hospital. Multiple compensation models exist, including the use of incentives, such as number of patients seen per shift. Regardless of the model chosen, selected metrics should be tracked closely.

Credentialing can be an area of timing mismatch as once hired an APP will need to become fully licensed, including state license, Drug Enforcement Agency, and controlled substance licensing if they are a new graduate or moving states, and credentialed by the hospital. These steps must be performed in sequence, not in parallel, generally taking 4 to 6 months. As human resources require staff to give a varied amount of notification for job termination (2 weeks to 90 days at the hospitals represented by this panel), this discrepancy can create times of inadequate staffing before replacement hires are ready.

The reimbursement for patients seen only by an APP can be significantly less than when seen as a shared visit, although there is significant variability in reimbursement by region, hospital, and payer. The payment is divided into the professional fee (for the cognitive effort by the clinician) and the facility fee (the hospital). For all patients seen in the same ED the facility fee is the same, but the professional fee can be widely variable. For example, Medicare/Medicaid pays 85% of the state professional fee. Blue Cross/Blue Shield pays 85% of the state rate, but hospitals may negotiate an enhanced rate for physicians for which APPs are not eligible. Careful attention and work with coders is needed to ensure that billing is reflective of care provided and not solely supervision needs.

Supervision

Supervision requirements vary by state statutes that in turn vary by practitioner type, PA versus advanced practice registered nurse (APRN). Higher levels of supervision outside of mandates are frequently seen in academic as opposed to community sites. In most cases, once the PA or APRN has demonstrated adequate expertise, low-acuity patients can be evaluated and treated independently without direct attending supervision. In our academic centers, we have favored consistency of workflow between residents and APPs. Although state regulations differ in supervision between PAs and APRNs all our institutions have settled on consistent levels of supervision between both practitioner types to allow for ease of workflow. Of note, there are minimal data on the clinical care given by APPs when working independently, especially in the care of high-acuity patients.⁷⁻⁹

The MGH model requires that all patients cared for by APPs are also seen in person by attending physicians. The MGH model requires that an attending physician see and write a note on every patient cared for by APPs. The resulted from the desire of the MGH team to expand the APP role beyond fast track throughout the entire ED. It was felt that additional supervision was warranted to safely see a mix of patients. A universal workflow for attendings was adopted to allow APPs work in collaboration with medical residents, signing out patients to each other, working in the same areas of the ED, and picking up the same patients. Finally, there is very little outcome data on independent use of APPs.^{7,8,10}

Yale uses a modified resident model, with each patient seen by an APP and also an attending physician with the exception of triage level 4 and 5

patients. Patients that are graded 4 or 5 can be seen with the attending if additional input is needed or if the APP is a new graduate and considered “in training.” At one of the satellite sites, all level 3 patients are discussed with the attending and are frequently comanaged with attending input if deemed necessary. APPs work in close proximity to the supervising MDs and currently no autonomous clinical care areas exist within the system.

At Brown the APP group is a mixture of both PAs and NPs. ESI level 1, 2, and 3 patients seen by an APP are required to be seen with an attending physician. The APPs are able to see ESI level 4 and 5 patients independently without direct attending supervision. These records, however, need to be reviewed and cosigned by attending physician.

At UMMS–Baystate APPs work as part of a care team consisting of a supervising attending physician and a combination of one or more APPs and residents and the supervising physician is readily available in all areas of the ED where APPs work. After the onboarding period, which typically lasts 6 to 12 months, APPs are allowed to see and treat independently a subset of patients with low-acuity complaints. Charts are then forwarded to the attending physician for review. These presentations are outlined in APP treat-and-release guidelines. All other patients are discussed with the attending physician in real time.

APP Feedback and Professional Development

The process of reviewing the clinical care of APPs is often mandated by human resource departments. However, in many cases, collecting feedback in can serve to identify gaps in knowledge and education.

Each of the four institutions has a process for collecting frequent feedback from attending physicians and holding regularly scheduled meetings to share that feedback with the individual APPs. Reviews are typically scheduled for 90 days after an APP is hired and then annually (MGH, Brown, UMMS–Baystate) or every 6 months (Yale), with additional meetings scheduled on an as needed basis. This ensures that APPs are given the opportunity to improve and grow as providers, allows issues to be identified early, and allows for excellent performance to be recognized. In addition to experiential feedback, it is important to track metrics to ensure that an APP is not falling behind their peers in clinical abilities, including but not limited to the number of patients seen per shift, number of each

type of procedure performed, and the number of narcotic prescriptions written.

Leadership

Program leadership structure benefits from inclusion of a medical director, a department administrative director, and ideally an APP representative. This team is useful in the initiation of the program to ensure that both regulatory requirements and the clinical needs of the department are met. Depending on the size of the program, further internal APP leadership is very helpful, including an APP chief, APPs responsible for scheduling, observation, and education. In larger programs it may be beneficial to include APPs in department committees and leadership roles, for example, in quality and safety and ED operations. At MGH, for example, APPs are part of all department committees and part of the divisions of ultrasound, disaster medicine, wilderness medicine, simulation, and quality and safety. At Brown and UMMS–Baystate, APPs are in charge of APP education. At Yale, PAs train and perform quality improvement (QI) for paramedics in their division of emergency medical services (EMS) and a PA is the current director for the helicopter ambulance service. APPs are also represented on the QI committee.

Orientation

Orientation is key for a successful program. As stated above, APPs undergo approximately 2 years of a general medical education without required postgraduate specialty training. A very limited number of APPs undergo residency or CAQs; therefore, it is critical that our EDs adequately train APPs in the essential skills of EM, including clinical skills to assess undifferentiated patients and potentially life-threatening pathologies. Institutions may consider formal orientation training such as boot camps, procedure labs, or longitudinal didactics. They may mandate postgraduate training before new hires are allowed to join the staff in a more permanent role. A third option is formal APP residency training. All initial orientation and training must be accompanied by ongoing supervision and precepting, especially for new hires.

Massachusetts General Hospital has created a 6-week orientation process. Week 1 is composed of hospital orientation, department orientation, and didactic education. The department orientation includes meeting individually with the program director, the director of quality and safety, and representatives from psychiatry, addiction services and social work to become

familiar with the resources available for the department. Additionally, APPs meet with ED coders to learn documentation requirements and the ED training coordinator to review the computer system and order entry program. Every APP then has a session with the ultrasound group, to learn the basics of ultrasound and procedures such as ultrasound guided IVs. A day of simulation cases is also included, emphasizing cases commonly seen in the ED. These sessions were initially managed by the ED divisions of ultrasound and simulation. Over time, responsibility for these sessions has been transitioned to the APP II staff (see below for APP II role). The remaining 5 weeks of orientation are scheduled as training shifts during which the new APP serves as an extra clinician so patient flow is not negatively affected. The goal is to increase their skill level, so they are capable of managing a full patient load by the end of their orientation. After 2 years APPs are eligible to work in the highest-acuity area. Orientation to this area includes a day of didactics, simulation of cases, central venous access insertion, and a month of training shifts where they are paired with a senior APP and work as extra staffing. In collaboration with the residency leadership it was determined that the APPs would not perform endotracheal intubation or place chest tubes since these procedures do not occur frequently enough to ensure APP activity would not infringe on the number of skills required for residency review committee accreditation. Allocation of procedures should be determined by each individual program.

At Yale, the APP manager works several mentoring shifts with the new hires and works one on one with them to see and evaluate patients, place orders, go through systems issues, and address any deficiencies. After that time, they are paired with a colleague and function as an “extra” staff member for the first month of their employment. This period can be extended on a case-by-case basis. Faculty are made aware of new hires and devote intensive supervision to them during shifts. Yale has also recently started bootcamp for new hires.

At Brown, training and orientation is completed during a 1-year postgraduate residency training program. New hires with at least 1 to 2 years of ED experience have typically 2 to 4 weeks of shadow shifts to learn ED operations and workflow. This allows the provider to become acclimated to new work environment.

University of Massachusetts Medical School–Bays-tate has implemented a scaled orientation approach

with graduated responsibilities and expectations. There are expected timelines for each stage but ultimately advancement to the next stage is competency based and determined by feedback from supervising faculty. The on-boarding period begins with two designated mentoring shifts in which the new APP is paired with an experienced APP for hands-on mentoring and orienting. The mentoring AP does not have any additional clinical responsibilities during those shifts. The orientation period then continues with the new-hire APP scheduled as an extra provider on shifts, predominantly in the moderate-acuity area but also with some shifts in the high-acuity areas. During this time all their patients are seen by and discussed with the attending physician. This period typically lasts about 6 weeks but is adjusted depending on performance and knowledge base feedback from attending physicians. Following their orientation shifts, the APP is scheduled in the moderate-acuity area as part of regular staffing. Feedback continues to be solicited from supervision attending physicians to determine when the APP is ready to work shifts as part of regular staffing in the high-acuity areas. A typical time frame for a new APP to begin to work-high acuity shifts is about 3 to 6 months. However, all patients will continue to be precepted with the attending physician for 6 to 12 months.

Continuing Education

Continuing education is as important for APPs as it is for physicians and the culture of constant teaching and learning at academic medical centers should include APPs. During shifts, the bedside teaching normally imparted to residents and medical students can naturally be expanded to include APPs. All four programs include monthly didactics specific to APPs but also invite APPs to the medical residency didactics. All four groups provide APPs with CME time and/or money.

Each institution reviewed has a few unique features. At MGH these include an APP II role, ultrasound credentialing, and a longitudinal simulation program. Because APPs have become an integral part of the ED, seeing over 50% of all patients that come through the ED, MGH felt it was important they have a forum to provide feedback and influence department operations through the PA II role. This also creates an opportunity for professional growth. APPs who have worked in the ED for 3 years are eligible for an APP II position. This includes a salary increase and one

shift per month of protected time in which to perform nonclinical duties that can benefit the group and the department as a whole. Each APP develops a formal proposal for their PA II role for approval by APP leadership. Their roles include (but are not limited to) creating and leading a simulation education program for the APPs; creating and leading an ultrasound education program for the APPs; sitting on department committees charged with patient quality, safety, and patient experience; coordinating a shadow program for prospective PA students; and becoming credentialed in the sexual assault training to train our department APPs and residents. This program has been one of the most significant instruments for retention and engagement of APP staff. There is a formal ultrasound credentialing process for APPs in place that utilizes the same criteria used for residents. Our APP IIs in the ultrasound division review APP scans, with oversight from the ultrasound division and formal certification through the department will be provided. Finally, MGH has created a library of simulation cases that every APP working in the ED should be familiar with, along with critical assessment and treatment actions. Each APP will have four 5-hour simulation sessions with our simulation APP IIs over a 2-year period to review these cases. Attendance is required, and APPs are compensated by the department for their time.

Yale has created an annual retreat is organized by the APPs to address any identified areas of clinical interest or deficiencies. Past subjects have included critical care, pediatric trauma, and procedural simulation. Coverage of clinical shifts is by the residents and per diem staff, so that all staff can attend. A critical care curriculum is being developed so that the promotion along the clinical ladder is standardized. The curriculum includes procedural simulation as well as didactic materials. Time has been set aside for ultrasound training for those interested in developing their skills but is not currently mandated.

At Brown, there is an APP meeting every other month where 1 hour is dedicated to a visiting expert educator from different fields of medicine, such as ophthalmology; podiatry; ear, nose, and throat; or orthopedics. The APPs are also encouraged to attend weekly residency lectures, and there is a yearly day-long APP retreat.

At UMSS-Baystate, an annual educational day is organized, allowing for a focused day of educational lectures, workshops, and simulation as well as team-building activities. All APPs are also encouraged to

participate in a year-long ultrasound curriculum. The curriculum begins with a 2-day ultrasound course hosted by ultrasound faculty and fellows. There are then weekly hands-on scanning sessions with emergency ultrasound fellows that are open for APP participation. Ultrasounds performed by APPs are submitted for review and feedback is provided. A financial incentive is offered at the end of 1 year commensurate with the number of ultrasound applications for which the APP has met credentialing standards.

APP Residencies

As a way of training careful and thoughtful practitioners to care for our patients, the field of EM has taken on the challenge of postgraduate training for APPs wishing to commit themselves to the practice of EM long term. However, postgraduate training has been somewhat controversial in the PA sector. Many value the flexibility that being an APP allows, such as the ability to change specialties throughout one's careers and not having required postgraduate training. Many fear that optional postgraduate programs will eventually lead to mandatory postgraduate training. Many physicians see the benefit of a residency and feel strongly that some level of specialty training should be that it should be a requirement of employment. This may be in the form of on the job training or a formal residency.

At Yale there was a desire to provide the highest level of education for PAs and APRNs who are committed to the practice of EM. The initial mandate was to avoid hiring new graduates; however, market forces dictated hiring with only on-the-job training. This was taxing for the department as many great APPs joined the department after their graduation but left after several years as the time demands and intensity of the work took its toll. Approximately 5 years ago Yale set out to outline a plan for development of a residency program to offer dedicated education to offer the tools necessary for the specialty without an exhausting clinical schedule. The details of residency program development will be addressed under a separate publication; however, it is important to note at this time that the residency is 18 months in duration and directly parallels the medical residency for MDs with a complete integration from the start date of internship year through the 18-month program. Required procedures by are prorated based on the time within the program. Expectations of review of board material also parallel the MD residency program.

Full support by the faculty was given for development of this program. The PA residents discuss all patients

directly with the attending physician for the duration of the residency, and faculty are required to see these patients to provide teaching. This program is intentionally not designed as a “feeder program” but rather as an enhancement to those who are dedicated to EM. It is the hope that this program will expand and will lead to a decrease in the phenomenon of the ED becoming a training ground for the remainder of the hospital including other acute services such as the intensive care unit and interventional radiology. Development of this program has been recognized at a university and hospital level, and plans are under way for at least five other similar programs in various departments.

At Brown an educational program to educate and orientate new graduate APPs to EM was started in 2011. The Emergency Medicine Physician Extender Development Program (EMPED) allows Brown to train new graduate APP ED providers over a 1-year period. The program includes 5 hours of lecture time each week with the EM residency as well as training in ATLS, ACLS, ultrasound training, observational medicine, and EMS. APPs begin their clinical shifts shadowing other APPs. As time progresses they then become an extra individual on shift and eventually after 6 months work solo shifts starting in the observational unit. The program is overseen by the chief education APP as well as two other educational assistant APPs. They are evaluated every 3 months. Twenty-four of our 36 graduates are currently working or have worked for Brown for significant time after completion of the program. The APPs in the EMPED program work 40 hours per week. If they decide to stay for a second year, they work 38 hours per week. After 2 years of ED experience, they work 36 hours per week (equal to other APPs). The EMPED program has significantly enhanced the overall quality of the APP group. The year-long program not only allows individuals to learn and become acclimated with EM but also provides an opportunity for the department and the individual APPs to determine if future employment with our group is appropriate. The program also caters to each APP's individual needs. Some have graduated in 10 or 11 months and others have required 18 months to complete the program. Brown works with each individual to make sure that he or she is a capable provider.

The UMMS-Baystate program accepts up to two PAs a year into a 12-month PA residency program. The PA residency is partially integrated into the physician residency program, taking advantage of as the existing educational infrastructure. The PA residents

participate in a month-long orientation in July with the incoming physician intern class that encompasses didactics, workshops, small-group teaching sessions, and simulation. Throughout the course of the year, the PA residents spend much of their time in the ED but also have rotations in anesthesia, emergency ultrasound, and orthopedics as well as two blocks of selective time. During their ED time, PA residents spend two-thirds of their time in the higher-acuity areas of the ED and are considered extra clinical staff for scheduling purposes to ensure that they have the time and exposure to develop a solid foundation for EM. The PA residents discuss all their patients directly with the attending physician during the entirety of their residency, and physicians are required to see these patients to allow for ample teaching opportunities.

CONCLUSION/IMPLICATIONS

In the review of four successful advanced practice provider programs within academic EDs several significant trends emerge for consideration. First, academic EDs are uniquely situated to educate advanced practice providers due to the existing educational structure for residents and medical students. Second, academic EDs can take the lead in the education of all clinicians within the ED. Third, a structured orientation and training program, through an advanced practice provider residency or independently, an ongoing educational program, and a professional development program with ongoing feedback, are key to creating a sustainable, integrated, and successful advanced practice provider program. Advocacy for specialty training in emergency medicine implies that advanced practice provider staff must be held to high standards. Integration of our advanced practice provider staff allows us to leverage the educational powerhouse within our own departments for the professional development of our advanced practice provider staff and the benefit of our patients.

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