2015 Professional Affairs Committee Report

The Report of the 2014-2015 Professional Affairs Standing Committee: Producing Practice-Ready Pharmacy Graduates in an Era of Value-Based Healthcare

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Background and Charges

According to the Bylaws of the American Association of Colleges of Pharmacy (AACP), the Professional Affairs Committee is to study issues associated with the professional practice of pharmacy as they relate to pharmaceutical education, and to establish and improve working relationships with other organizations in the field of health affairs. The Committee is encouraged to address related agenda items relevant to its Bylaws charge and to identify issues for consideration by subsequent committees, task forces, commissions, or other groups.

President Patricia Chase established the themes of Access, Affordability and Accountability for the 2014-2015 standing committees.[1] The 2014-2015 Professional Affairs Committee (PAC) was charged with examining the contributions of experiential education to the development of "practice-ready" pharmacy school graduates who are educated and trained for current and future practice. Experiential education, comprised of Introductory Pharmacy Practice Experiences (IPPEs) and Advanced Pharmacy Practice Experiences (APPEs) and represents up to 30% of the pharmacy school curricula, are the entry points for student pharmacists into pharmacy and patient care practice. Specifically, the 2014-2015 Professional Affairs Committee is charged to:

(1) Describe the elements that should be present for *access* to exemplary experiential sites;
(2) Identify how student pharmacist readiness for and contributions to experiential education should be considered to illustrate the *value* to experiential practice sites; and
(3) Recommend strategies to the academy to demonstrate its *accountability* that graduates are "practice-ready."

Members of the 2015 PAC include individuals representing multiple disciplines across various colleges and schools of pharmacy, as well as professional staff representation from the American Pharmacists Association (APhA), the American Society of Health-Systems Pharmacy (ASHP) and the National Association of Chain Drug Stores (NACDS). The committee began its work by reviewing pertinent background information and resource materials and participating in a conference call to develop an

initial strategy for addressing committee charges. The committee members met for a day and a half in Crystal City, Virginia on October 27-28, 2014 to discuss the various facets related to the committee charges, as well as to develop a process and strategies for addressing the charges. Following the process development and delegation of assignments related to the committee charges, the PAC communicated via electronic communications as well as through personal exchanges via telephone and email.

In developing the strategy to address their charges, the PAC considered numerous factors that contribute to the current needs, future needs and contributions of "practice-ready" pharmacists. Examination of pertinent issues relevant to both experiential education and pharmacy practice were explored from the perspectives of access, value (the PAC examined the value of experiential education as an applicable aspect of affordability) and accountability. The continued evolution of the healthcare environment, including implications for pharmacists and team-based care from the Patient Protection and Affordable Care Act (PPACA),[2] the expanding role of pharmacists in a dynamically-changing health care system,[3, 4, 5, 6] and emerging interprofessional, collaborative practice models, such as Patient Centered Medical Homes[4, 7, 8] and Affordable Care Organizations,[9] were discussed. The Accreditation Council for Pharmacy Education (ACPE) release of *Draft Standards 2016* [10] and the Guidance Document to *Draft Standards 2016*,[11] which was finalized February 2015,[12, 13] are other important aspects that should forecast the content and impact of experiential education. The recently revised Joint Commission of Pharmacy Practitioners (JCPP) Vision for Pharmacists' Practice[14] and the recently approved Pharmacist Patient Care Model,[15] which describes a consistent process of care in the delivery of patient care services by pharmacists, are additional avenues that must be included in all aspects of pharmacy education.

The PAC recognizes the interdependence between colleges/schools of pharmacy and their clinical partners, and the local community. The aforementioned factors contribute significantly to having exemplary experiential education sites while also influencing the delivery of affordable, quality patient care. Stimulating the maturity of existing experiential education sites or the emergence of new experiential education sites for the next generation of learners is critical for the academy. Likewise, external influences to local, state, and federal funding of higher education serve as a threat in fully realizing the JCCP vision of pharmacy practice within this new health care paradigm.

The result is the following report, which explores access, value, and accountability primarily from the lens of academic pharmacy. It provides a call to action for the academy to communicate a unified, clear, and compelling value statement regarding pharmacy education. The report suggests the academy implement innovative educational paradigms that aligns with and reinforces the value of student pharmacists and pharmacy faculty within a value-based health care system. Furthermore, the report recommends the academy strengthen its partnerships between colleges/schools of pharmacy and local health care organizations to ensure local communities benefit from valuable services provided by pharmacists. The PAC believes that it is the responsibility of pharmacy academia to be actively engaged as leaders to advance models of pharmacy practice and the report identified the following four cross-cutting themes related to their charge. These themes provide the framework of the report as well as the generation of proposed policy statements, recommendations to AACP and suggestions to colleges/schools of pharmacy:

- The Value Proposition of Pharmacy Education Past, Present, and Future
- Strategic Partnerships that Accelerate Access to Value-Based Experiential Education Models
- Academic Pharmacy Commitment to Local Health Needs and Social Determinants of Health
- Practice Readiness of Pharmacy Graduates

Table 1 provides information on current AACP policies that contribute to or inform each of these cross-cutting discussion areas.

The Value Proposition of Pharmacy Education Past, Present, and Future

The last several decades within the United States have been marked by examples of tremendous innovation and transformation across many sectors of the United States economy. Examples include regulatory changes within the banking industry following the Great Recession, technological advancements producing wearable devices to monitor health parameters, and health care reform resulting in accountable care organizations and new payment strategies to produce higher quality and affordability.

Higher Education is facing a similar transformation. For example, President Obama has outlined specific governmental initiatives to make college more affordable, drive student costs down, and improve transparency and accountability.[16] Likewise, there are examples across the country of Governors initiating various initiatives to evaluate the affordability and efficiencies within higher education sometimes resulting in catastrophic recommendations for cuts, consolidation, or elimination of programs and services. According to the Center on Budget and Policy Priorities, these external pressures seriously jeopardize the education of students and economic viability within our local communities.[17] Therefore, it is imperative the academy critically evaluates the access, affordability, and accountability across pharmacy education and uniformly shape a compelling justification for our future.

Articulate the Value Proposition of Pharmacy Education & Colleges/Schools of Pharmacy

Colleges/Schools of Pharmacy are perceived to significantly contribute to society. It may be from "team science" of pharmacy researchers seeking new treatment discoveries or improving formulations that improve delivery of medications and thus patient outcomes. It may be from collaborative teams integrating pharmacy faculty to ensure the responsible use of medications to improve health outcomes. More can be done by the academy to globally research the value and contributions of colleges/schools of pharmacy within the United States so to convey a compelling story during this period of transformation in higher education. It is critical that the academy articulate a clear value proposition around pharmacy education. It is important to note that this report does not provide this comprehensive view, but focuses primarily on the intersections of patient care, experiential education, and pharmacy practice.

A Value Proposition is actualized when a customer receives something of value from a provider who has promised value in the form of a product or service. The Value Proposition for higher education is actualized when a customer (i.e., student, experiential education site, patient, employer) receives something of value from a provider (i.e., college/school of pharmacy, pharmacy experiential education program) who has promised something of value.[18] A Value Proposition for pharmacy education and pharmacy practice has been discussed in the past but not coherently operationalized.[19, 20] This report seeks to emphasize the value of student pharmacists within the existing education paradigm while revealing opportunities to further enhance the value proposition.

The value proposition for pharmacy education is multi-dimensional and perceived differently from the lens of students, colleges/schools of pharmacy, health organizations, or local communities. Ultimately, each desires a similar goal--to improve health and well-being. In order to achieve this overall goal, these entities should work collaboratively to identify the needs of the community and patients as well as develop and enhance processes and services to address the identified needs. Colleges/Schools of pharmacy can work with experiential education sites to identify the needs of patient care groups and

the community, which in turn can be used as teaching elements in all aspects of the curricula. Student pharmacists could also be engaged in community issues and participate in ways that strengthen the healthiness of the community, which is the premise of many student pharmacist community engagement service awards and programs.[21, 22] This would provide student pharmacists not only with the opportunity to learn but also to explore potential avenues to improve patient outcomes and available services. This is a paradigm shift but one that could provide the necessary catalysts in practice settings to improve quality and outcomes. When properly aligned, coordinated and guided, the college/school of pharmacy (as a provider of education, research and service), the student pharmacist (as a learner) and the experiential education site (as the healthcare provider) will contribute to improved patient care services and patient outcomes (as a healthier community).

Research the Value of Pharmacy Education & Contributions of Colleges/Schools of Pharmacy

The academy would benefit from a robust research agenda focused on framing the value of students, faculty, researchers, and pharmacists to various stakeholders, including elected officials. This would provide beneficial data to support national and local advocacy while also providing leaders with data to catalyze new collaborations. This concept is met with multiple challenges such as consistency of research approaches and methods, standardized endpoints, and financial implications. In short, the major challenge might be trying to decide upon a methodology to research this macro-view of pharmacy education.

The Association of American Medical Colleges (AAMC), produced a report titled, "The Economic Impact of Publicly Funded Research Conducted by AAMC-Member Medical Schools and Teaching Hospitals" which seeks to frame the value of medical colleges across a particular mission-centric theme.[23] Other organizations have sought to identify the economic impact of Colleges of Medicine within their local communities. The PAC was not aware of any similar initiatives to globally evaluate the comprehensive value of colleges/schools of pharmacy.[24]

Medical education has discussed the value of medical students providing patient record/chart documentation,[25] providing health education to diabetic patients,[26] and documenting the features of their clinical encounters.[27] However, no data was available at the time of this review that demonstrates how other professionals from colleges of medicine, nursing, and other healthcare specialties document the value of their students while performing advanced pharmacy practice experience responsibilities.

There is limited data that promotes the value of student pharmacists to experiential education sites. A recent study by Walker, et al., provides insight as to the impact of an admission medication reconciliation process conducted by student pharmacists during an IPPE where medication discrepancies were found in 43.8% of patients.[28] In this study, prescribers responded to notification about potential discrepancies by correcting or clarifying 74.9% of all potential discrepancies and 77.2% of discrepancies with the potential to cause severe patient discomfort or clinical deterioration.[28] Recent literature has been attempting to tie specific intervention types that determine a monetary savings to the healthcare system, specific cost avoidance or cost savings provided by student pharmacists. One study concluded that one year of APPE student pharmacists produced an estimated cost avoidance of $908,800 during the student pharmacists' required ambulatory care, community practice, general medication, and health system pharmacy practice experiences.[29] A second study that evaluated student pharmacist interventions in a psychiatric hospital discovered that APPE student pharmacists documented 312 interventions in one year that provided a cost avoidance of approximately $23,000.[30] A third study assessed all interventions made by their APPE student pharmacists over the course of one academic

year and provided a cost-savings of $8,583,681 with 59,613 recommendations.[31] These studies found that student pharmacists were providing recommendations in all aspects of pharmaceutical care from medication allergy prevention, medication adjustments, and education to name a few.

The aforementioned studies had limitations that make generalizability more complicated. One may point to the utilization of cost-avoidance or cost-savings programs that assign values based on intervention types. These values may vary widely along with their associated cost margins. For example, the specific value of the "addition of a medication" of one program was $7.66 with the average value from literature being $81.19. The actual overall cost avoidance calculated by the study for the "addition of a medication" intervention was averaged to $62.81.[28] The addition of a bowel regimen, as an example, compared to an oncologic agent is challenging to evaluate in these types of software systems.

Another systematic limitation of these studies involves the definition of how value generated actually benefits the experiential site or the preceptors offering the experience. If a cost-savings intervention is completed by a student pharmacist, does that provide measurable value to the site, is it attributable to that particular preceptor, and does it result in actual value to the site, a PBM, an insurance company, or to society generally? Given the lack of universally accepted organizational value of interventions to a practice site, many student pharmacist activities could have great societal or external value without direct attributable value to the site's organization. Additionally, it is difficult to determine from the available literature what contributions are uniquely from the student pharmacist. As the student pharmacist is usually working in concert with a pharmacist preceptor, were the interventions something the preceptor would have done if a student pharmacist was not present? Would there have not been an intervention in the practice site without it being completed by the student pharmacist? Did the student pharmacist increase the total number of interventions and outcomes at the site, and to what extent? These issues further cloud the ability to define the value of the student pharmacist to the rotation practice site from the current literature.

The PAC suggests that the academy facilitate collaboration to strengthen the methodologies of research related to these global perspectives of pharmacy education. AACP is embarking on a research project with Advanced Informatics, where they will be reviewing PxDx with the E-Value™ system to evaluate additional impact of student pharmacist interventions.[32] However, this project is not expected to finish before fall 2016. The PAC recommends promoting more research projects to discover additional endpoints to demonstrate the value of student pharmacists on IPPEs and APPEs.

Proposed Policy Statement, Recommendations, and Suggestions:

Policy Statement 1: AACP supports the creation of a national global vision emphasizing the value of pharmacy education and colleges and schools of pharmacy to various stakeholders including patients and communities.

Recommendation 1: AACP should convene a task force of stakeholders to design a national value proposition for pharmacy education.

Recommendation 2: AACP should work with stakeholders to increase awareness of the value of colleges and schools of pharmacy, particularly related to experiential programs and direct patient care.

Recommendation 3: AACP should collaborate with stakeholders to create and define metrics to measure the value of student pharmacists, faculty and pharmacists.

Recommendation 4: AACP should pursue research with healthcare organizations and other interested stakeholders to measure the value provided by student pharmacists as part of their pharmacy curriculum.

Suggestion 1: Colleges and schools of pharmacy should work to actively communicate the value proposition, to include innovation and/or expansion of pharmacy services, of experiential education for experiential sites and student pharmacists.

Suggestion 2: Colleges and schools of pharmacy should collaborate with researchers, preceptors and other institutions to research the value of student pharmacists to experiential education sites.

Strategic Partnerships that Accelerate Access to Value-Based Experiential Education Models

An underlying premise behind partnerships and the creation of value is the notion that goals are shared and valuable to both parties. In pharmacy education, this requires a level of engagement and communication with stakeholders within organizations to clearly articulate how, for example, the experiential program of a college/school of pharmacy can deliver value to a hospital, a community pharmacy, a health department, or a nursing home. Each of these partners will likely have a different perspective on value requiring a level of customization of the experiential program that can be challenging, yet have the potential to return a significant value back to the college/school of pharmacy.

The type of relationship building required to produce these strategic partnerships also assumes a basic understanding of the levers, drivers, or motivations that influence decision-making within the partner organization so that value can be realized. It assumes that collegiate leaders are cultivating relationships with executives in organizations to facilitate these partnerships. For example, health systems are now penalized for high 30-day readmission rates for certain conditions. How can this information be used to propose collaborative strategies to drive up the partner institution's quality metrics while creating a quality learning experience for student pharmacists? More importantly, how does a collegiate leader navigate the organizational structure of these institutions effectively to connect to the right individuals together to create these opportunities and influence change? The PAC recommends that Deans of Colleges/Schools of pharmacy play a more proactive role in facilitating these strategic partnerships locally within their communities as a means to connect the evolving health care industry with a transforming higher education enterprise seeking to produce the next generation of health care workforce. An experiential program that has limited access to these evolving practice models (e.g., accountable care organizations, patient centered medical home) will be challenged to produce practice ready pharmacists.

Strengthening the Value Proposition of Experiential Education

Catizone, Maine and Menighan note that the lack of mature pharmacy practices in which student pharmacists can observe, learn, and deliver team-based patient centered care is the most vulnerable component of the curricular education model.[33] Besides a college/school of pharmacy assisting an organization to integrate pharmacists into emerging models of care delivery, colleges/schools can assist with cultivating quality design and instruction within existing practices. This partnership can take the form of a formal or informal consulting relationships whereby faculty can assist with preceptor

development, coordination of student activities within the practice site, and streamlining all student activities to minimize duplication and workload of preceptors. Colleges/Schools of pharmacy can also assist with advice on integrating students more effectively into areas that are needed by the organization and will directly provide value. This integration allows students to be immersed in authentic practices that can allow pharmacy staff to meet both higher-level practice needs while also precepting experiential students. Current pharmacy staff or potential new hires at experiential sites may have practice knowledge and skills but lack teaching skills. Formal or informal education coordinated by colleges/schools of pharmacy may further address this need.

Colleges/Schools of pharmacy can be a catalyst for innovation. The PAC suggests colleges/schools seek opportunities to cultivate and support the creation of value-based experiential sites located in practice settings where pharmacists could practice in the future. Atul Gawande,[34] a surgeon and public-health researcher, suggests that lowering healthcare costs by focusing on the most expensive patients (the "superutilizers") may be beneficial, as half of all healthcare spending goes to 5% of patients in the U.S. Healthcare system. The creation of "hot spots" of practice for pharmacists to contribute to reducing healthcare spending is an area that colleges/schools of pharmacy can work with other sectors of healthcare to establish experiential education sites. Potential "hot spots" for exploration include:

- Pharmacist preceptors (or other healthcare preceptors) practicing in primary care offices and in collaboration with primary care providers[35]
- Transitions of patient care to contribute to optimal outcomes (i.e., medication reconciliation)[36, 37]
- Drug formulary management or employee wellness management for smaller self-insured employers[38]
- Public health and big data mining to decrease costs for drug utilization and ensure medication compliance[39]
- Interprofessional education and practice expansion (i.e., walk-in clinics found at CVS Health,[40] Walgreens,[41] etc.)
- Point of care testing laboratory services[42] (i.e., Walgreens/Theranos,[43] Piccolo[44])
- Walk-in pharmacy/bookstore, similar to the legal model with LegalForce[45]
- Pharmacies with third spaces/hangouts can offer less or more formal education to patients[46]
- Employee wellness program sites (i.e., Healthy Horizons at Butler University)[47]
- Wellness co-ops[48]
- Development of smart-tech tools to improve wellness and medication adherence, such as rings, phones, watches, and wristbands[49]
- Coaching/wellness programs: which would require student pharmacist didactic and small group training on motivational interviewing processes[50]
    - The International Coaching Federation[51] is the umbrella organization for <u>all</u> coaching (not just wellness coaching)
- Mobile health solutions: Take healthcare to where the patients are located (i.e., community centers, senior citizen homes, churches)
- Niche or specialty areas (i.e., Well Babies with Walgreens[52]).

Other emerging practice areas include the role of pharmacists and student pharmacists in transitions of care, accountable care organizations, and medication reconciliation. As changes to reimbursement to healthcare institutions continue to evolve, development of new services to improve patient care through preventative services to reduce hospital readmission rates as well as decreases in medication related errors are at the forefront of our academic and clinical partners. There are numerous studies

highlighting the value added through pharmacist performed medication reconciliation.[53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64] This is one area where development of new APPEs can directly link with institutional needs to improve patient care metrics.

There are several other practice areas that student pharmacists could have exposure during their pharmacy school experience. Specialty pharmacy practice is another area where further collaboration and innovation is rich with opportunities. Student pharmacists engaged with specialty pharmacy have the unique opportunity to be exposed to the regulatory issues, distribution channels, adherence and patient care of the complex therapies. Veterinary pharmacy services are increasing in the United States across all practice settings, and the knowledge and skills necessary to treat our animal patients may be another opportunity for academic and clinical partnerships.[65, 66] It is incumbent on colleges/schools of pharmacy to continue to investigate emerging practice areas, as well as new opportunities within existing areas to better align and integrate with our clinical partners to lead the profession forward. Wellness and coaching are yet another group of areas that pharmacists may certify and earn credentials in; we must challenge student pharmacists in experiential settings to develop their prevention- and wellness-based education with patients as well.

Many of these opportunities already exist and could be developed as expanded services with current experiential education sites. Some of these opportunities may require state pharmacy practice law revisions. There are several areas in pharmacy scope of practice laws where colleges/schools of pharmacy and the practice community could and should collaborate to ensure that pharmacy practitioners are providing the highest level of service and care to their patients.

The Layered Learning Model: A Case Example of Value-Based Experiential Education

Layered learning practice models are an example of aligning practice needs and educational needs to create value. These value-based experiential models have been implemented by institutions such as the Cleveland Clinic Florida[67] and through the Partnership in Patient Care initiative formed by the University of North Carolina (UNC) Eshelman School of Pharmacy and UNC Hospitals.[68]

In these layered learning practice models, all facets of pharmacy professionals have a role in providing patient care services aligned to organizational projects or initiatives. A layered learner model produces value by seeking to improve quality of existing clinical services, provide support to implement or expand existing clinical services, and expand access of these opportunities to more pharmacy students.

This model may utilize three levels of team members: practitioner (clinical pharmacist, clinical specialist or faculty or a combination of roles), pharmacy resident and APPE rotation student pharmacist. The team members may align with the medical team, hospitalist, service or unit. The medical team may also have staff, resident and medical student members. The interprofessional, patient care team may have physicians, nurses, dietitians, and other professions contributing to patient healthcare. The pharmacy services provided in this model may include managing the drug therapy plan, monitoring for patient response or adverse drug events, educating the patient on drug therapy and managing drug therapy through the continuum of care and other appropriate services. The level of independence and responsibility may be aligned with the knowledge and skill level of the team members. For example, a new resident (or APPE student pharmacist) will be given closer supervision and guidance than a more experienced resident/APPE student pharmacist. Delgado, et. al., provides a description of a layered learner model that provides a higher level of pharmacy patient care services, greater involvement of student pharmacists in providing patient care and provides a look at some initial evidence of improved

patient care outcomes.[69] At the UNC Hospitals, pharmacy residents and student pharmacists act as a "pharmacist extender" providing care under the guidance of an attending pharmacist who takes overall responsibility.[70]

Generally, a majority of student pharmacists gain their first full-time positions with employers they previously worked for as student pharmacists. This also could be an advantage to supporting the layered learning model—by keeping student pharmacists within the same institution for IPPEs and APPEs, the student pharmacists gain technical and institutional knowledge. On the other hand, student pharmacists within a layered learning model and only rotating within one institution will not see as wide a variety of practice settings as student pharmacists rotating through various institutional settings. Therefore, there are both advantages and disadvantages to the layered learning model. If layered learning is successfully applied in specific practices sites, it may provide greater access to high quality experiential education for student pharmacists.

Post Graduate Education: A Case Example of Value-Based Experiential Education

Pharmacy residents play a pivotal role in advancing pharmacy services within the organizations they are employed. An example of this is the Layered Learner Model previously described whereby pharmacy residents are instrumental in allowing for the effective deployment and scalability of this innovative model. Colleges/Schools of pharmacy must play a leadership role in growing residency programs aligned to the ever changing health care landscape while facilitating their effective integration into the pharmacy education enterprise.

The demand for pharmacy residencies continues to increase. Even though there has been significant growth it has not kept pace with the increased demand. A press release by ASHP in March 2014 indicates that there were more than 4,700 graduating student pharmacists and new practitioners competing for residency positions, where 2,640 Post-Graduate Year 1 (PGY1) and 706 Post-Graduate year 2 (PGY2) positions matched.[71] This represented a 5% increase in candidates seeking PGY1 positions and an 18% increase in candidates seeking PGY2 positions. The result was 1,502 individuals seeking PGY1 positions that did not match and 211 individuals seeking PGY2 positions that did not match.

ASHP's Pharmacy Practice Model Initiative (PPMI) recommendations include the need for an increased number of residency-trained pharmacists.[72] The Hospital Self Assessment Tool has an Action Plan tool[73] and as of November 2014, 680 hospitals had completed an Action Plan. Eighty-nine percent of hospitals said all of their pharmacists were not residency trained and 75% put this item on their Action Plan (the highest ranked item out of 106 questions).

Colleges/Schools of pharmacy must work synergistically with national professional organizations to facilitate new strategies for funding residents. Historically, colleges/schools assisted with the growth of programs by providing site payments for their involvement in pharmacy education activities such as experiential rotations. This model of funding is challenging to execute. ASHP has developed a Resource Center to support residency programs and this is a valuable resource for pharmacists and practice settings desiring to develop a residency program or add residency positions.[74] Colleges/Schools of pharmacy can contribute to developing residencies either by informally consulting with practitioners in their area with resources to support a residency or by formally offering that service. This may involve coaching the residency program director on developing the program, obtaining administrative approval or setting up the program to meet accreditation standards.

Community pharmacy residencies programs (CPRPs), while growing, still lag far behind the total number of residency positions seen in other healthcare settings.[75] Studies have shown that community pharmacy residents help develop and implement new clinical services, and these residency graduates generally devote more time to direct patient care services throughout their careers than pharmacists who did not pursue a residency.[76, 77] Community residencies can thus serve as a catalyst to create robust experiential education sites in community settings, and schools are encouraged to explore the more expeditious development of new CPRPs.

Another aspect of postgraduate education is that of fellowships. Colleges/Schools of pharmacy should reach out and partner with other non-profit and for-profit entities to create more fellowship opportunities for student pharmacists upon graduation from pharmacy school. Innovative fellowships may generate ideas and potential business cases for new areas of practice, in managed care, the pharmaceutical/drug device/biosimilars/pharmacogenomics testing industries, transitions of care, policy, law, global healthcare, and underserved populations/public health. FellowMatch, a new program started by the Industry Pharmacists Organization, assists potential fellowship candidates with readily "matching" with fellowship opportunities.[78] The majority of U.S. pharmacists do not practice in an institutional setting and therefore it is important for colleges/schools of pharmacy to support a wider array of postgraduate opportunities for new pharmacists beyond residencies while aligning them to value-based experiential opportunities.

Addressing Barriers to Value-Based Experiential Partnerships

While there are many opportunities and facets which can be explored to address the value of experiential education in pharmacy, there are also challenges that need to be addressed by the profession. Many of the challenges discussed not only impact experiential education, but other areas pertinent to the pharmacy profession.

<u>Contemporary Regulatory Practices and Laws</u>

A healthcare professional's "scope of practice" consists of the defined activities that the individual is authorized to practice in his or her state, according to state laws and regulations.[79] The state laws governing the scope of practice for physicians vary significantly from the laws governing other healthcare providers. The practice of medicine, for example, has traditionally been defined in broad and undifferentiated terms, and anything not specifically prohibited is generally interpreted to be permitted for physicians.[79] The scope of practice for pharmacists, by contrast, often resembles an itemized checklist, whereby anything not specifically permitted is interpreted to be prohibited.[80] Because of this, state scope of practice laws for pharmacists often lag behind advances in education, training, and technology. This creates a situation in which graduating pharmacists are educated or trained to provide new clinical services, but are prevented from offering such services so by state law.

A well-known example of scope restrictions is pharmacist-provided immunizations.[81] It took more than fifteen years for all states to allow pharmacy-based immunizations, despite the emergence of postgraduate certificate training programs, and incorporation of immunization training into the Doctor of Pharmacy curriculum. States still differ substantially in the types of immunizations pharmacists may provide, the conditions under which they may be provided, and the patient populations that may be served by pharmacists for this service.[86] State-level variation has implications for experiential education, as most states allow rotation students to provide any authorized service under the supervision of a pharmacist. Thus, states with more expansive immunization authority provide a more robust

experiential education opportunity for students than states with significant restrictions on immunizations. Further, some states prohibit pharmacy interns from providing immunizations altogether, preventing students in these states from gaining clinical repetitions with immunizations while on rotation. Previously, NACDS, the National Community Pharmacists Association (NCPA) and ACPE have called on state boards of pharmacy to promote uniform immunization guidelines for pharmacy interns in order to enable earlier practice experience.[82]

While immunizations provide just one example of a state-level restriction, many other restrictions exist, each with a potential to impact experiential education. Some states allow broad, population-based Collaborative Practice Agreements (CPAs) that can enable services such as treatment of influenza and Group A Streptococcus in the pharmacy under a physician-led protocol; other states either do not allow CPAs, or restrict them to certain settings (e.g., health-system) or to certain disease states.[42, 83] A small but growing number of states allow state-wide protocols, under which a pharmacist can furnish medications for travel health, smoking cessation, hormonal contraception, or opioid reversal.[84, 85] Most states permit pharmacists to provide simple, CLIA-waived tests, while some do not.[86]

State laws related to each of the aforementioned services can either enable or impede robust experiential education. It stands to reason that states with the broadest scope of practice laws also enable the greatest opportunity for robust experiential education. Student pharmacists gaining experience at advanced practice sites in innovative states will have the greatest opportunity to accrue clinical repetitions and gain direct patient care experience. As a result, students on rotations in more restrictive states may be at a disadvantage, both from an education perspective, and in the context of the tightened pharmacy job market. Thus, AACP and colleges/schools of pharmacy should continue its efforts to promote an expanded scope of practice for pharmacists at the state level. AACP and colleges/schools of pharmacy should also push for a pharmacy intern scope of practice that mirrors pharmacists, under a pharmacist's supervision; no additional restrictions should be imposed on pharmacy interns.

In addition to scope of practice restrictions, state laws may create additional burdens to experiential education capacity. For example, according to the 2015 National Association of Boards of Pharmacy (NABP) Survey of Pharmacy Law, twenty-four states require some type of licensure/registration for pharmacists to be preceptors.[87] These restrictions may limit individual pharmacists, or pharmacy employers, from pursuing enrollment as an experiential education site, and AACP should pursue efforts to remove these restrictions. In addition, NABP notes thirty-one states that have a maximum ratio of technicians to pharmacists that a pharmacy may have on duty at any given time. Some states count pharmacy interns as part of this ratio. This is problematic because these ratios can create capacity constraints. Experiential coordinators, in conjunction with individual practice sites, are best positioned to determine the appropriateness of the number of interns for a given site, and thus AACP should work to remove these restrictions.

Preceptor Readiness and Continuous Professional Development

Identifying a sufficient quantity of preceptors and then providing ongoing preceptor enrichment opportunities is challenging and often based on factors such as history of the institution, the number of graduates converted into preceptors, geography, competition, and maintaining and enhancing longer-term relationships with preceptors over time. Education of the preceptor on the differences between precepting an IPPE and APPE student pharmacist must be established in order to identify and qualify preceptors with existing colleges/schools of pharmacy, as preceptors with a long history with the school

may not understand the IPPE rotations as well as the APPE rotation expectations. In addition to the knowledge and skill requirements to be technically sound, development of mentoring, role-modeling and teaching behaviors are important to develop for the student pharmacist to perceive the preceptor as excellent.[88]

There are multiple complexities to providing interprofessional education opportunities within the health care environment. Colleges/Schools of pharmacy must provide a leadership role in supporting the growth and development if patient-centered, collaborative models of care delivery. As such, accreditors also should be flexible regarding the professional backgrounds of those who precept student pharmacists. Student pharmacists may learn from a variety of professionals—inside and outside of healthcare. Physicians, physician assistants, nurses, physical and occupational therapists, respiratory therapists, health lawyers, non-pharmacy faculty, even healthcare or school administrators have several valuable skill sets that student pharmacists can learn from and ultimately improve their own knowledge bases about healthcare. Also, student pharmacists can learn from legislators and lawmakers, and in turn can also teach legislators and law makers while on rotation with their offices about how the profession of pharmacy fits into the overall healthcare picture.

Several challenges exist to deliver ongoing professional development for preceptors. First, there are varying degrees of preceptor "readiness," and thus, it is difficult to develop one program that meets the needs of hundreds, if not thousands of preceptors. Second, there is the challenge of geographic boundaries—preceptors may not be able to attend live preceptor development programming on a campus and require distance education options.[89] Third, most states do not recognize precepting itself as a continuing education (CE)-credit-worthy endeavor. While other professions, such as law, nursing, and physician assistant preceptors may earn continuing education credit for precepting students, pharmacists are generally are not allowed to earn CE credit for precepting. The North Carolina board of pharmacy has begun to provide credit for certain categories of non-ACPE continuing education, such as precepting.[90] The PAC supports endeavors to advocate for continuing education credit strategies for precepting student pharmacists. Fourth, earning and maintaining accreditation of ACPE-accreditation for CE programs is expensive for colleges/schools of pharmacy. Strategies should be explored to collaborate across colleges/schools to support CE while being mindful of budgetary expenses. Last, the profession of pharmacy should do its best to honor innovative preceptor development. While most colleges/schools of pharmacy and national pharmacy organizations[91, 92, 93, 94] recognize exemplary preceptors, innovation is often not a factor for preceptor recognition. The national pharmacy organizations, including AACP, should consider rewarding and awarding preceptors and colleges/schools of pharmacy that create innovations in preceptorship.

Measurement of Student Pharmacist Contributions

As mentioned previously, more research must be conducted to measure the value that student pharmacists bring to clinical sites—both at the IPPE and APPE levels. Baseline metrics on what sites value by having student pharmacists rotate through are absolutely critical area to scholarly activity for colleges/schools of pharmacy moving forward. Until colleges/schools of pharmacy understand what value organizations perceive in precepting student pharmacists, the concept of adding more preceptors will continue to be a challenge to the profession of pharmacy.

Determining metrics to measure the student pharmacist's contribution and subsequently the value he or she brings to patient care is challenging.[95] For example, student pharmacists may participate in the education of patients on their medication(s). This improved understanding may contribute to improved

adherence with their medication regimen. However, the medical staff, nursing staff and other pharmacy staff may all be part of the patient's education on their medication regimen. Which component results in improved medication use and decreased noncompliance or decreased readmissions or emergency room visits? A planned approach is required looking at patient care before and after the integration of student pharmacists involvement to assess the change in defined metrics.

Another area to explore in providing greater value to experiential education is to develop a process to better align the preferences and desired outcomes of the experiential site and student pharmacist. In most instances, experiential education departments have a process to match student pharmacists with experiential sites based upon the availability of both parties. Efforts to match sites with student pharmacists based upon additional aspects, such as desired learning outcomes, patient care focus and services and patient care outcomes may add to the value proposition for both sites and student pharmacists. Furthermore, course syllabi for specific rotations could be customized to include learning activities and goals that meant to provide value to the rotation site. For example, a syllabus for a health-system rotation could include activities meant to improve quality metrics in a particular area deemed important by the health care organization, or a community rotation syllabi could include development of new services for its population. It delivers value to the organization while also providing student pharmacists opportunities to participate actively in quality improvement initiatives. This concept has challenges such as the additional level of coordination with partners, importance of ensuring a sustained stream of student pharmacists to integrate into the clinical services, as well as the increasing challenge of providing proper orientation to the sites, just to name a few.

Pharmacy Practice Advancement & Innovation

Colleges/Schools of pharmacy can play an important role in catalyzing innovation and the scalability of pilot innovations throughout an organization. A model process for developing new practices that meet the needs for experiential education would be based on a "Gap" analysis and carrying that process through the completion of a plan for a sustainable practice.

Similar to the gap analysis required for accredited ACPE CE providers,[96] an annual needs assessment of preceptors should take place by experiential education offices. After the data is collected, training/development programs for preceptors and sites should be created to help evolve and give back to the sites and preceptors that provide education for pharmacy students. This could include CE and education, but also site project management or idea development for sites, possible brainstorming and development of co-funded or site-based faculty, future residencies or fellowships, or any combination thereof.[97] Colleges/Schools of pharmacy see many different best practice settings that could be re-applied at different sites, through coaching and brainstorming together to co-develop new learning opportunities, and even more important, provide more services to help patients improve their health through a needs assessment/gap analysis process within experiential education departments. Such models can be identified through evaluation of metrics with quality and financial implications that currently exist for practice partners, and better alignment through utilization of such metrics will drive innovations in practice and healthcare. Regardless of practice setting, student pharmacists must understand the wide range of financial and regulatory factors that impact site performance and patient care outcomes. One example may include a model centered on the Electronic Quality Improvement Platform for Plans & Pharmacies (EQUIPP)[98] and star ratings, in which colleges/schools of pharmacy may work with practice partners to develop APPEs that emphasize improving these metrics/outcomes that drive reimbursement and patient care. A symbiotic relationship would likely develop with strategy modifications performed cyclically based on improvements in outcomes to shift to emerging areas for

improvement. This could be an effective way to engage stakeholders and clinical sites and promote the value of student pharmacists at institutions, but must be balanced with student pharmacist learning outcomes and the educational experience.

Experiential Education Business Models

Colleges/Schools of pharmacy should work with partners to identify new financial paradigms for leveraging the value that they bring to health care organizations. Historically, payments (stipends) provided to experiential education sites and preceptors have served as one of the primary models for sustaining an experiential program. Results from a 2009 AACP Council of Deans Costs of Experiential Education Task Force study reported that preceptor stipends ranked as the second highest cost affecting APPE by experiential site and non-salary resources by preceptor.[99] Informal reporting indicates payments to sites for IPPEs and APPEs can vary significantly. This is not likely a sustainable model, particularly with the growth in the number of pharmacy schools, and the increasing emphasis placed on affordability of student education.

The concept of co-funded or site-based faculty is not new. However, it can be an effective way to ensure a number of quality educational experiences for student pharmacists at colleges/schools of pharmacy, especially if those individuals are assigned to coordinate other value-added activities such as coordination of student integration within the health care organization. Conway and Burton describe how the co-funded model for faculty works to the benefit of the schools, the sites, and the student pharmacists on rotations.[100] While this model has been successful in the institutional settings, it would be advantageous for colleges/schools of pharmacy to think about co-funded or site-based faculty models in sites beyond hospitals or institutional settings. With faculty at community practice pharmacies, health/physician/provider clinics, associations,[101] in legislative offices, healthcare coaching facilities, large self-insured employer sites, managed care settings, etc., the school of pharmacy wins by providing student pharmacists a wider bandwidth of opportunities, the sites themselves benefit from having teacher-preceptor-employees, and no additional remuneration occurs with this model.

While co-funded models may offer advantages, this model has limitations especially as budgets across health-systems and colleges/schools of pharmacy are reduced. New models of funding should be examined such as billing opportunities. Under the proper situation, pharmacists may bill in select situations. Pharmacy faculty and residents could be leveraged as a means to increase revenue into those health care organizations in return for support for value-based experiential education. If properly aligned to value to the organization, revenue streams could be created to support positions that allow for scalability of innovative models.

Proposed Policy Statement, Recommendations, and Suggestions:

Policy Statement 2: AACP encourages the development of strategic partnerships to accelerate access to value-based experiential education, especially within emerging health care settings.

Recommendation 5: AACP should create a mechanism to communicate information on current, evolving and innovative pharmacy practice models to schools and colleges of pharmacy.

Recommendation 6: AACP should collaborate with NABP on issues related to constraints on the licensing/registration of and patient care services provided by pharmacist, pharmacy interns and student pharmacists.

Suggestion 3: Colleges and schools of pharmacy should work with boards of pharmacy to influence expectations for recognition of student pharmacists' education and training to reduce undue barriers for pharmacy graduates.

Suggestion 4: Colleges and schools of pharmacy should communicate their best practices for implementing and evaluating innovations in experiential education.

Academic Pharmacy Commitment to Local Health Needs and Social Determinants of Health

The PAC recommends the academy focus on the value proposition to local communities in which colleges/schools of pharmacy reside. Furthermore, colleges/schools of pharmacy should design mission statements and mission evaluation plans to further advance local health needs. PAC suggests this is an important element of accountability each institution should strive for with society. This value proposition to local communities should include a comprehensive evaluation of the local health care needs of the community, integration of strategies to solve those needs within the curriculum, and strategic communication with community leaders to increase awareness about the value pharmacists bring into the community. For example, multiple organizations have emphasized the importance of addressing social determinants of health.[102, 103, 104, 105] Healthy People 2020 emphasizes the concept that health begins within communities, workplaces, and the homes of families.[106] Colleges/Schools of pharmacy should incorporate this holistic approach in its strategy for creating value-based experiential education. It's important for the academy to emphasize that colleges/schools should better understand their local communities and partner with organizations to support methods to promote healthy communities. This might include strategies such as emphasizing proper nutrition and eating well and staying active, not smoking, getting the recommended immunizations and screening tests, and seeing a primary physician when one feels ill. It could be fostered by better advocating and increasing awareness of access to social and economic opportunities often linked to public health initiatives such as the following: quality of schooling; the safety of workplaces; the cleanliness of water, food, and air; and the nature of social interactions and relationships. These broader conditions in which patients live play an increasingly vital role in explaining health disparities and solutions to implementing better medication plans customized to their unique situations.

Colleges/Schools of pharmacy can further demonstrate its commitment to the betterment of local community health through strategies mentioned previously. The more the academy does to assist health care organizations in driving up quality of care while improving affordability will directly benefit the community health and wellness. For example, in past decades hospitals and community pharmacies operated in silos driven, in part by different business environments. With the emergence of the Affordable Care Act, these silos have begun to fade as organizations are influenced by financial incentives to reduce readmission rates and thus the emergence of transitions of care models have come forward. In short, patient care is being influenced by profitability, ratings, performance targets, and market share/volume that are shaping decision making while creating new opportunities for innovation. This is an opportunity for colleges/schools to bring innovation into the market that assists with scalability of services that benefit the local health needs.

National organizations such as National Alliance for State Pharmacy Associations (NASPA) have produced toolkits and strategies to assist pharmacists with delivering services such as medication management.[107] Private companies such as OutcomesMTM™ have emerged to assist pharmacists with receiving payment for medication management services while linking them together in a national

network.[108] Colleges/Schools of pharmacy such as the University of Minnesota have created state-wide networks of pharmacists providing medication management and leveraged the network to obtain corporate and state contracts for providing these services to patients in need of care.[109] Likewise, the National Medication Management Collaborative, composed of five geographically diverse university colleges/schools of pharmacy, are working together to expand its reach to facilitate national coverage for provision of medication management.[110] Emphasis should be placed in supporting these types of innovations, facilitating the widespread placement of student pharmacists into these care models, and matching other services to community needs in a similar fashion to improve care locally.

The PAC discussed the need for colleges/schools of pharmacy to work with organizations to determine how the institution, particularly students and faculty can be an asset strategically deployed with mutually beneficial outcomes. This approach can produce new opportunities for partnering and a robust menu of experiential experiences aligned to the needs of health care enterprise and the local community.[111] This concept of value-based experiential education can also reduce resistance from potential sites and create "win-win" situations that promote long-lasting relationships.

The PAC recognizes the significant challenge that colleges/schools of pharmacy face in developing multiple partnerships customized to their individual needs and opportunities, while at the same time assuring quality and scalability across experiential rotations. Research has indicated that partnerships and collaborations between colleges/schools of pharmacy and pharmacy practice sites can transform both education and practice.[112, 113] The Iowa Center for Pharmaceutical Care partnered college faculty and resources with a state professional organization to advance patient care service provision in a variety of practice settings with the stipulation the sites would later agree to become experiential sites for the involved colleges.[114] Other examples of experiential education partnerships have had provided a positive influence on developing IPPE perceptions[115] and initiatives[116, 117, 118, 119, 120] as well as public health and patient outcomes.[121] When exploring partnerships for alignment with practice partners and the community, it is imperative that colleges/schools of pharmacy work on programs and initiatives that will benefit everyone involved---it is often best to approach a potential partner with questions such as "What do you need?" or "What issue can we assist you with?" versus a statement such as "We have this program that we want to implement at your site/in your community setting." The elements for an authentic partnership which include having guiding principles of partnership, quality processes, meaningful outcomes and transformative experience(s) provide a baseline for aligning pharmacy education with practice partners and community/local healthcare entities.[122]

Colleges/Schools will be challenged to assure adequate resources are available for personnel and programs to assist current and potential preceptors in this manner. It will also be difficult to assure all student pharmacists will be placed in practice environments that facilitate learning and functioning at the highest level. Likewise there will be challenges to communicate rotation site uniqueness to student pharmacists and to allow for proper matching of expectations when selecting rotations schedules. Experiential personnel capable of providing high levels of support to experiential partners will need to be sought out or developed. Furthermore, collegiate leaders will be required to be more externally focused to cultivate relationship-building and develop new, non-traditional partnerships. The increasing portion and importance of experiential education in the curriculum must be addressed by all colleges/schools of pharmacy with appropriate priority in budgeting and focus if there is to be success.

Proposed Recommendation and Suggestion:

Recommendation 7: AACP should develop programming and tools to assist schools and colleges of pharmacy to incorporate community based needs into curricula to create value-based experiential education.

Suggestion 5: Colleges and schools of pharmacy should evaluate their experiential education courses to investigate potential customization to meet the needs of their local communities.

Practice Readiness of Pharmacy Graduates

A critical assumption to the success of a value-based approach to experiential education, is that pharmacy graduates are ready to enter the workforce sufficiently prepared to deliver care at the top of their scopes of practice. The ACPE Standards[12] and the Center for the Advancement of Pharmacy Education (CAPE) educational outcomes[123] provide guidance for producing "practice-ready" graduates. In the preamble of ACPE Standards 2016, "practice-ready" is defined as student pharmacists being able to provide direct patient care in a variety of healthcare settings.[12] While there is a need for continuous development of quality assessment tools/procedures, ACPE standards are the current benchmark as a set a minimal standards for the quality of pharmacy education.

Curricular Elements to Consider to Produce Practice-Ready Graduates

<u>Modeling Leadership, Advocacy, and Innovation</u>
Colleges/Schools of pharmacy should model the attributes of leadership, advocacy, and innovation as examples for incorporation into the curriculum. This may also foster curriculum that adapts more flexibly and timely to the changing landscape and needs within health care. A robust quality improvement process that proactively incorporates the needs of strategic partners and local communities into the didactic and experiential curriculum requires:

- A commitment by leadership to focus on this need.
- Resource commitment to this goal and a clear definition of the spectrum of this commitment.
- Collegiate partnerships aligning clinical services to prerequisites obtained within didactic and experiential curriculum.
- Engagement and advocacy with local, state, and national professional organizations to support advancement of pharmacy practice.

There are several examples of this level of commitment in the academy:

- University of Kentucky College of Pharmacy's Center for the Advancement of Pharmacy Practice (CAPP):[124] describes the efforts of public and private partners to advance pharmacy practice in the state and nation.
- Drake University Entrepreneurial Tools for Advancement (Delta) Rx Institute website:[125] documents examples of the school's involvement in practice advancement and other efforts to advance practice from an entrepreneurial perspective.
- NACDS Foundation project to improve collaboration in healthcare models:[126] a two-year project operating in Iowa, Nebraska and North Dakota to integrate community pharmacy and advanced medication management strategies provided in common pharmacies within a statewide patient-centered medical home network, a Pioneer ACO, and a stand-along PCMH.

- University of Iowa College of Pharmacy's collaboration with IPA on the ASHP Pharmacy Practice Model Initiative(PPMI)[127]

Sharing the work of these institutions, as well as other colleges/schools of pharmacy is paramount to demonstrate the value of pharmacist in the healthcare arena as well as to increase and expand the scope of innovation in these areas of practice.

Bridging the Chasm Between the Academy and Health Care Communities

Some may perceive the presence of a disconnect between the Academy and the health care communities. Colleges/Schools of pharmacy must design curricular quality improvement strategies to stay abreast of emerging issues and incorporate content areas in a timely manner within the curriculum. Specific examples include areas pertaining to patient safety and quality, informatics, pharmacogenomics, enhanced communication skills, and interprofessional practice were recommended by Catizone et al.[33] Standards 2016[12] should be utilized to aid in improving these areas as the standards strengthen components around interprofessional education, social determinants of health, and other key content areas.

The professional experience and preparation for post-graduate practice provided by the pharmacy school curriculum, including experiential education, contributes to the practice readiness of pharmacy graduates. Many of the certificate training programs, such as immunization training, provided to pharmacist graduates are also a part of the curricula of colleges/schools of pharmacy. The question of whether student pharmacists should have to provide documentation of the specific training received during pharmacy school has been raised due to instances of boards of pharmacy requiring such documentation (i.e., immunization training certificate). Just as pharmacy practice needs to be informed about how student pharmacists are educated and trained in school, so do other stakeholders such as the regulatory boards. Similarly, regulatory boards need to be educated and informed about the difference between certificate training programs and certification[128] so as to not put undue constraints on pharmacy school graduates.

Relative to experiential education, a few members of the PAC informally surveyed several pharmacy programs (small and large, public and private as well as newer and well-established pharmacy programs) for an analysis of the major issues surrounding access to quality IPPE and APPE rotations. Table 2 summarizes some of the issues, based upon the type of experiential education (Overall, IPPE, and APPE) and audience (pharmacy school versus pharmacy experiential site). Kairuz, et al., described the results from a questionnaire sent to preceptors and former student pharmacists in New Zealand to determine their attitudes regarding the preparedness of pharmacy graduates as they enter the pharmacy profession.[129] In the areas of professional behavior, competence, and interpersonal communication skills, pharmacy graduates believed they were more prepared for practice compared to the beliefs of preceptors.

Various facets of the pharmacy profession have inquired as to whether student pharmacists are truly "practice-ready" and many organizations have identified specific skills needed to fulfill pharmacist position requirements. Ambulatory care practice,[130] community pharmacy practice,[82] and hospitals and health-systems[131] have described the entry-level competencies for pharmacy practice. The American College of Clinical Pharmacy (ACCP) recently released a white paper regarding specific outcomes that student pharmacists need to achieve prior to entering residency training.[132] The white paper states that the pharmacy professional degree program must provide opportunities to practice communication skills

with patients; to provide direct patient care in a variety of settings, especially patient-centered, team-based care; to act professionally as modeled by faculty and other preceptors; to apply research principles to value appreciation of research and scholarship; to apply practice management skills, specifically documentation of patient care activities which may affect patient outcomes.[132] Pre-APPE Core Performance Domains and Abilities have been published,[133] assessments for experiential education based on ability-based outcomes such as the Performance Evaluation Recognizing Function, Organization, Readiness and Motivation (PERFORM)[134] have been developed and the call for national (benchmarkable) experiential education domains and competencies has been a topic for several years.

Medical Education recently published a Core Entrustable Professional Activities for Entering Residency.[135] These activities, developed through a consensus model over a period of a year and a half, were developed in response to medical residency program directors concern that some medical graduates are not prepared when entering residency. The result is a list of thirteen integrated activities that should be expected of all medical school graduates, without any direct supervision, when making the transition from medical school to residency.

Fostering Accountability through Robust, Usable Assessment Tools

There is a need for continuous development of quality assessment tools/procedures relevant to pharmacy education.[33] Assessment tools such as PERFORM and the development of Core Entrustable Professional Activities for Entering Pharmacy Practice would provide pharmacy education and practice with benchmarks for student pharmacist progression throughout experiential education. Tools are being developed to assess student interprofessional team readiness.[136] As the Board of Pharmacy Specialties Certification Structure[137] and Pharmacy Residency Training Accreditation[138] continues to evolve as healthcare practice evolves, the practice readiness of pharmacy school graduates should remain an issue that is constantly addressed amongst pharmacy stakeholder groups.

Colleges/Schools of pharmacy should perform continuous quality improvement to improve current IPPEs and APPEs as well as to identify new and innovative APPEs that embrace the emergence of non-traditional pharmacy practice roles in government agencies, pharmaceutical companies, and various health businesses and new roles in community pharmacies and hospitals. DiPiro discussed how pharmacy school curricula should reflect the different career paths available for student pharmacists, and how this will aid in maintaining and developing new definitions of practice readiness that employers and practice partners expect.[139] ACPE and academia need to actively engage representatives from all aspects of the practice community to ensure that academic expectations can be truly accomplished in the targeted setting (based on labor models, practice and regulatory requirements, etc.), and are designed to challenge APPE sites to develop new practice concepts. Focus groups should be held with practitioners on a regular basis (not just when ACPE Standards are being revised) to ensure that all academic and practice expectations are in alignment.

Ultimately placing student pharmacists in practice sites which allow them to practice with an engaged preceptor while delivering care to patients should be a desirable endpoint. When the student pharmacist gains this real experience, functioning as a professional with supervision, they are practicing at a practice ready level. Inability to have universal engagement of APPE student pharmacists in practice sites that allow them to function at this level with quality preceptors is a significant deficiency in pharmacy experiential education to which the academy should place focus and priority.

Incorporating the Pharmacists' Patient Care Process Systematically within Curricula

The Pharmacists' Patient Care Process,[15] developed via consensus by eleven national pharmacy organizations including AACP, provides an opportunity for research and advocacy for experiential education and pharmacy practice. This process, approved by JCPP in May 2014 and endorsed by the AACP Board of Directors in July 2014, describes the steps utilized by a pharmacist to provide patient care services, regardless of pharmacy practice setting or patient care service. This process was developed due to the growing recognition of the need for a consistent process for the delivery of patient care services as the profession of pharmacy continues to evolve. It provides a contemporary and comprehensive approach to patient-centered care that is delivered in collaboration with other members of the healthcare team.

As this process is introduced and awareness grows within the pharmacy profession and amongst other segments of healthcare, the applicability, assessment and advocacy of the process in the multiple areas of pharmacy practice where experiential education occurs is needed. Pharmacy academia has an obligation to ensure that all student pharmacists are educated on the Pharmacists' Patient Care Process from their first day of orientation, through their didactic, small group, laboratory and experiential experiences. The Pharmacists' Patient Care Process provides an opportunity to evaluate the value that student pharmacists provides with their interventions, including patient counseling and other clinical interventions. The pharmacy practice community can contribute to all segments of this effort throughout the student pharmacist experience and certainly experiential education provides the opportunity for "real-world" evaluation and feedback on the process to colleges/schools of pharmacy. Figure 1 provides a visual depiction of the Pharmacists' Patient Care Process.

The Pharmacists' Patient Care Process provides a unilaterally identifiable stepwise approach to pharmaceutical care across all spectrums of pharmacy practice. As mentioned previously, once a task force creates the appropriate endpoints to measure the value of student pharmacists to pharmacy practice sites, then a systematic process may be distributed to evaluate the outcomes. This needs to be done with additional stakeholders representing pharmacy practice, pharmacy employers, as well as health insurance companies to ensure that colleges/schools of pharmacy are appropriate focused both in didactic and experiential education to teach student pharmacists appropriate skill sets. It is time for all affected parties to discuss the future of pharmacy practice in order to determine the pharmaceutical needs that stakeholders will be requiring from graduating student pharmacists in the future. By creating a systematic process, the endpoints that are discussed among the larger group can identify the exact needs that a student pharmacist can remedy. These endpoints will need continuous monitoring to ensure that they are still appropriate for future healthcare trends and needs.

Aligning NAPLEX and MPJE Blueprints and Curricula to Practice-Readiness

The North American Pharmacist Licensure Examination (NAPLEX) blueprint should be reflective of the practice-readiness expectations for graduates, necessitating an integrated approach to blueprint revisions based on effective conversations between colleges/schools of pharmacy and current practitioners as well as state boards of pharmacy. Currently, revisions to the NAPLEX competency statements are based on NABP national pharmacy practice analysis surveys, with periodic reviews by a committee of subject matter experts.[140, 141] However, it is unclear if current processes include a breadth of practice settings to adequately discuss contemporary pharmacy practice in order to revise practice ready knowledge and skills. A system for continuous assessment and revision of competency statements by all stakeholders should be completed with changes applied based on the continued evolution of

pharmacy practice and practice readiness. Similarly, the Multistate Pharmacy Jurisprudence Examination (MPJE), also administered by NABP, should stay current of collaborative practice laws, immunization delivery, and other laws in order for pharmacists entering the profession to ensure they are cognizant of practice at the top of their professional licenses.

Preparing Graduates to Research the Value they Deliver

Over the past 50 years, pharmacy practice has morphed and expanded to include additional pharmacy services. Pharmacists are now providing vaccinations, providing clinic visits, and many more care services. Pharmacy will continue to morph as stakeholders identify additional services that pharmacists and student pharmacists can manage for patients. Pharmacy practice thrives on innovation, intrapreneurship and entrepreneurship; it also helps to identify where pharmacy practice should evolve to address future health care needs.

One recent study evaluated the development of a student pharmacist-led Medicare Part D clinic, where student pharmacists evaluations of Medicare Part D plans to assist older adults choose the appropriate plan to meet their needs results in a potential annual savings of greater than $28,000.[142] A second study evaluated medication therapy management services provided by student pharmacists that had over seven hundred drug related problems after evaluating 509 patients.[143] The recommendations from the student pharmacists were relayed to the patients' primary care physicians, where approximately 75% of physicians accepted the recommendations.[143] These two studies are examples of innovation and provides a challenge to the colleges/schools of pharmacy that do not provide enough business-related didactic material to challenge student pharmacists to start these new ideas and create new career possibilities. Pharmacists need to receive encouragement for exploring new practice models as these will be utilized to help train student pharmacists. If student pharmacists continue to see their preceptors excel in innovation, they will likely be more forward thinking to create new practice opportunities as well.

Proposed Policy Statements and Recommendations:

Policy Statement 3: Administrators, faculty members, preceptors and student pharmacists at all colleges and schools of pharmacy share responsibility for stimulating change in pharmacy practice consistent with the JCPP Vision for Pharmacy Practice and the Pharmacists' Patient Care Process. *(This is an update to the following policy to reflect the Pharmacist Patient Care Process and the JCPP Vision for Pharmacy Practice: Administrators, faculty members and student pharmacists at all colleges and schools of pharmacy share responsibility for stimulating change in pharmacy practice consistent with the Vision for Pharmacy in 2015 developed by the Joint Commission of Pharmacy Practitioners (Argus Commission, 2009)).*

Policy Statement 4: AACP supports ongoing mechanisms and collaborations that define and inform the "Practice Readiness" of pharmacy school graduates.

Recommendation 8: AACP should collaborate with pharmacy practice associations, pharmacy practice entities and boards of pharmacy to define student pharmacist "practice readiness."

Recommendation 9: AACP should work with NABP and boards of pharmacy to communicate the differences between certificate training programs and certification to reduce constraints on pharmacy school graduates.

Proposed Policy Statements, Recommendations and Suggestions

Policy Statements

Policy Statement 1: AACP supports the creation of a national global vision emphasizing the value of pharmacy education and colleges and schools of pharmacy to various stakeholders including patients and communities.

Policy Statement 2: AACP encourages the development of strategic partnerships to accelerate access to value-based experiential education, especially within emerging health care settings.

Policy Statement 3: Administrators, faculty members, preceptors and student pharmacists at all colleges and schools of pharmacy share responsibility for stimulating change in pharmacy practice consistent with the JCPP Vision for Pharmacy Practice and the Pharmacists' Patient Care Process. *(This is an update to the following policy to reflect the Pharmacist Patient Care Process and the JCPP Vision for Pharmacy Practice: Administrators, faculty members and student pharmacists at all colleges and schools of pharmacy share responsibility for stimulating change in pharmacy practice consistent with the Vision for Pharmacy in 2015 developed by the Joint Commission of Pharmacy Practitioners (Argus Commission, 2009))*.

Policy Statement 4: AACP supports ongoing mechanisms and collaborations that define and inform the "Practice Readiness" of pharmacy school graduates.

Recommendations

Recommendation 1: AACP should convene a task force of stakeholders to design a national value proposition for pharmacy education.

Recommendation 2: AACP should work with stakeholders to increase awareness of the value of colleges and schools of pharmacy, particularly related to experiential programs and direct patient care.

Recommendation 3: AACP should collaborate with stakeholders to create and define metrics to measure the value of student pharmacists, faculty and pharmacists.

Recommendation 4: AACP should pursue research with healthcare organizations and other interested stakeholders to measure the value provided by student pharmacists as part of their pharmacy curriculum.

Recommendation 5: AACP should create a mechanism to communicate information on current, evolving and innovative pharmacy practice models to schools and colleges of pharmacy.

Recommendation 6: AACP should collaborate with NABP on issues related to constraints on the licensing/registration of and patient care services provided by pharmacist, pharmacy interns and student pharmacists.

Recommendation 7: AACP should develop programming and tools to assist schools and colleges of pharmacy to incorporate community based needs into curricula to create value-based experiential education.

Recommendation 8: AACP should collaborate with pharmacy practice associations, pharmacy practice entities and boards of pharmacy to define student pharmacist "practice readiness."

Recommendation 9: AACP should work with NABP and boards of pharmacy to communicate the differences between certificate training programs and certification to reduce constraints on pharmacy school graduates.

Suggestions

Suggestion 1: Colleges and schools of pharmacy should work to actively communicate the value proposition, to include innovation and/or expansion of pharmacy services, of experiential education for experiential sites and student pharmacists.

Suggestion 2: Colleges and schools of pharmacy should collaborate with researchers, preceptors and other institutions to research the value of student pharmacists to experiential education sites.

Suggestion 3: Colleges and schools of pharmacy should work with boards of pharmacy to influence expectations for recognition of student pharmacists' education and training to reduce undue barriers for pharmacy graduates.

Suggestion 4: Colleges and schools of pharmacy should communicate their best practices for implementing and evaluating innovations in experiential education.

Suggestion 5: Colleges and schools of pharmacy should evaluate their experiential education courses to investigate potential customization to meet the needs of their local communities.

The Call to Action for Pharmacy Academia

President Chase addressed the AACP annual meeting attendees by saying, "we are in the midst of an exciting and yet challenging time- a period of momentous change in higher education and healthcare. The changes are so great, and they are happening so quickly, that it can be difficult to process them and to respond to appropriately and swiftly. In fact, responding swiftly is often seen as an oxymoron in our profession. I believe we can do better."

This report provides a call to action for the academy to communicate a unified, clear, and compelling value statement regarding pharmacy education. It is time the academy advance innovative educational paradigms more extensively which align with and reinforces the value of student pharmacists and colleges/schools of pharmacy within a value-based health care environment. Colleges/Schools will continue to external pressures as higher education is transformed to be more accessible, affordable, and accountable. It is essential the academy acts now with precision, unity, and assertiveness to strengthen partnerships between colleges/schools of pharmacy and local health care organizations to ensure local communities benefit from valuable services provided by pharmacists. Success will be achieved as the

pharmacy academia assumes greater leadership to actively advance innovative models of pharmacy practice across the United States to ensure the practice readiness of the future pharmacy workforce.

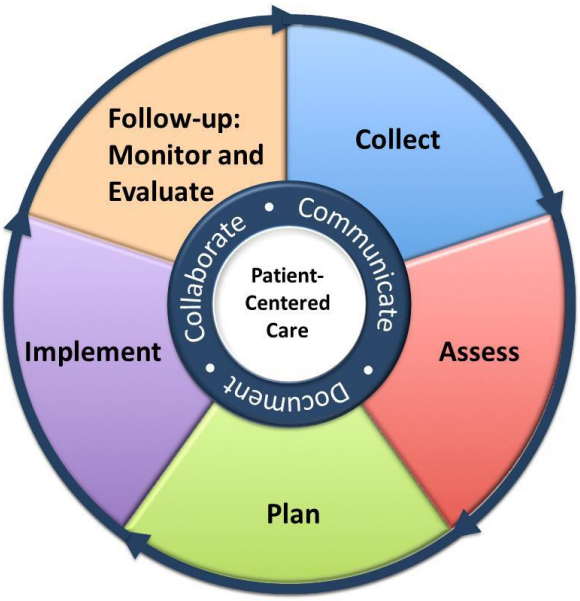
Table 1: Alignment of Professional Affairs Committee (PAC) Cross-Cutting Discussion Area with Current AACP Policy Statements[144]	
PAC Cross-Cutting Area	Current AACP Policy Statement
The Value Proposition of Pharmacy Education Past, Present, and Future	AACP should encourage member institutions, in concert with practitioners, to expand clinical pharmacy in the community so that clerkships in community settings will be more meaningful to students, and even inspirational, so that such practices will be emulated when they enter the profession (Policy Development Committee, 1982)
	AACP supports the teaching and clinical application of core competencies in primary care health services delivery which are community-based and fully interprofessional (Argus Commission, 2010, as revision to policy proposed by the PAC, 1994)
	AACP supports acceptance by pharmacy licensing board of college-based experiential programs toward total fulfillment of internship requirements (PAC, 1988)
	AACP supports interdisciplinary and interprofessional education for health professions education (PAC, 2002)
	AACP members should educate the public about the expanded scope of pharmacy practice and advocate for payment of services rendered (Council of Deans, 2003)
	AACP endorses the competencies of the Institute of Medicine for health professions education and advocates that all colleges and schools of pharmacy provide faculty and student meaningful opportunities to engage in interprofessional education, practice and research to better meet health needs of society (PAC, 2007)
	AACP supports the teaching and clinical application of core competencies in primary care health services delivery which are community-based and fully interprofessional (Argus Commission, 2010)
	AACP supports the efforts of schools and colleges of pharmacy working with healthcare entities to promote and advocate for the inclusion, reimbursement and sustainability of pharmacist services as a required element of patient-centered care in all settings (PAC, 2011)
	AACP supports efforts to develop and maintain strong, mutually beneficial community-campus partnerships that demonstrate and recognize the value of education and science scholarship and innovative practice models that improve the quality of individual and community health outcomes (Standing Committee on Advocacy, 2012)
Strategic Partnerships that Accelerate Access to Value-Based Experiential Education Models	AACP should encourage member institutions, in concert with practitioners, to expand clinical pharmacy in the community so that clerkships in community settings will be more meaningful to students, and even inspirational, so that such practices will be emulated when they enter the profession (Policy Development Committee, 1982)
	Pharmacy education has the major responsibility to assist the profession to accomplish its mission for society. In keeping with the transition of healthcare from the acute care to the ambulatory care environment, pharmacy education must continue its efforts to encourage and assist the profession to provide clinical pharmacy services in the ambulatory environment (PAC, 1990)

	AACP will support member schools and colleges in their efforts to develop pharmacy professionals committed to their communities and all populations they serve, by facilitating opportunities for the development and maintenance of strong community-campus partnerships (PAC, 2001)
	AACP members should educate the public about the expanded scope of pharmacy practice and advocate for payment of services rendered (Council of Deans, 2003)
	AACP endorses the competencies of the Institute of Medicine for health professions education and advocates that all colleges and schools of pharmacy provide faculty and student meaningful opportunities to engage in interprofessional education, practice and research to better meet health needs of society (PAC, 2007)
	AACP supports the teaching and clinical application of core competencies in primary care health services delivery which are community-based and fully interprofessional (Argus Commission, 2010)
	AACP supports the efforts of schools and colleges of pharmacy working with healthcare entities to promote and advocate for the inclusion, reimbursement and sustainability of pharmacist services as a required element of patient-centered care in all settings (PAC, 2011)
	AACP supports efforts to develop and maintain strong, mutually beneficial community-campus partnerships that demonstrate and recognize the value of education and science scholarship and innovative practice models that improve the quality of individual and community health outcomes (Standing Committee on Advocacy, 2012)
Academic Pharmacy Commitment to Local Health Needs and Social Determinants of Health	AACP supports the teaching and clinical application of core competencies in primary care health services delivery which are community-based and fully interprofessional (Argus Commission, 2010, as revision to policy proposed by the PAC, 1994)
	AACP supports efforts to develop and maintain strong, mutually beneficial community-campus partnerships that demonstrate and recognize the value of education and science scholarship and innovative practice models that improve the quality of individual and community health outcomes (Standing Committee on Advocacy, 2012)

Table 2: Contemporary Issues in Experiential Education Access		
Academic Pharmacy – Overall Experiential Concerns • A growing number of schools of pharmacy – not enough sites, and too much competition for quality sites and preceptors • Barriers to site entry with legal paperwork (MOUs, affiliation agreements, site legal requirements) • Barriers to student pharmacist entry, particularly with institutional sites for titers, immunizations, drug screens, etc. • Student pharmacists unable to earn experiential hours at places where they intern • Time and place – challenge of identifying preceptors near student pharmacists' homes and squeezing them in during holiday breaks or summer. Cold calling sites is a challenge based upon geographic needs. • Institutional exclusivity trend – larger institutions only working with one pharmacy school, and barring other schools from student pharmacists on rotation at their institutions. • Insurance/indemnification costs and coverage thresholds are increasing, budgets for experiential decreasing • Preceptor development, particularly for remote preceptors • Preceptor training and development for APPE student pharmacists before they graduate, to spark a new generation of preceptors Lack of interest in some pharmacists "giving back" by precepting • Paying preceptors to take student pharmacists – are the preceptors taking student pharmacists from schools that pay the most?	**Academic Pharmacy – IPPE Experiential** • Managing perception that IPPE students pharmacists are "more work" at sites • Preceptor development around IPPE • Lack of budget to support preceptors with IPPE • Lack of institutional and acute care IPPE experiences • Consistency in quality of IPPE experiences • Evaluation of site is only by student pharmacists – which sites are truly "quality" educational opportunities?	**Academic Pharmacy – APPE Experiential** • Quality vs. quantity of preceptors at established schools of pharmacy • Educating preceptors on the differences between IPPE vs. APPE rotational experiences (particularly in schools where IPPE was retrofitted into curriculum) • Ensuring student pharmacists are receiving a challenging experience rather than just being "glorified technicians" at sites • Not enough leadership and national opportunities for APPE – significant competition for national organization rotations (Washington, D.C. in particular) • Inconsistencies across state lines for licensing of student pharmacists for rotations. Some states are cost prohibitive for a smaller number of rotations • Paucity of IPE and MTM sites or experiences • Some jurisdictions cannot offer CE for precepting • Decreasing budgets to support APPE rotations • Lack of institutional and acute care sites
Pharmacy Practice – Overall Experiential Concerns • Variability of student pharmacist readiness among pharmacy schools • Time and space constraints,	**Pharmacy Practice – IPPE Concerns** • Prefer APPE student pharmacists over IPPE student pharmacists	**Pharmacy Practice – APPE Concerns** • In larger chains and systems, increasing challenge to offer avant-

particularly at institutional settings for all types of student pharmacists on rotations • Inconsistencies across schools and states with rotations (can vary from 4 to 8 weeks in one block) • More student pharmacists only during academic year. Other sites struggle with the opposite – too many student pharmacists wanting rotations during the summer or holiday periods • Schools that pay for rotations vs. do not pay; variability of site payments • The preceptor as "coach" – encouraging student pharmacists but providing effective feedback to student pharmacists • System consolidation • No measurement of volume of student pharmacist education at sites vs. meeting productivity goals with productivity measurement systems (i.e., Action OI) • Forced reduced costs by systems due to reimbursement models changing • Shift of patient care from inpatient -> outpatient models, "transitions of care" models may decrease number of rotational sites • Specialty pharmacy taking increased share of market with limited distribution models – less rotation sites • Lack of an easily implemented process to most effectively utilize student pharmacists at different education levels in the daily practice at the site (preceptors that have learned how to take advantage of the abilities of student pharmacists depend on them at their sites) • Variability across states in what pharmacy interns can legally perform	• Preceptors struggle with how much information should be assessed and given at IPPE level • Unclear expectations from schools for IPPE experiences with sites, particularly with IPPE curriculum • Struggle to find proper balance between basic pharmacy knowledge vs. clinical knowledge at IPPE level by preceptors	garde experiences for student pharmacists due to barriers to experimentation and innovation • Lack of student pharmacist readiness, particularly with clinical guidelines, communication skills • Training student pharmacists quickly on policies and procedures to get them up to speed as quickly as possible (activities, EMR, etc.) • Ensuring good quality rotational experiences, even when preceptor of record is not at site with the student pharmacist (particularly for IPE)

Figure 1: Pharmacists' Patient Care Process



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