COMMENTARY

Evaluating A Skills Lab Curriculum: Determining Essential Skills for Pharmacists

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The profession of pharmacy is complex and diverse, encompassing a wide range of skills necessary in practice. Skills laboratory course faculty must determine which skills are essential for students and how these skills should be taught and assessed. This commentary aims to further the discussion on how the essential skills taught and assessed in skills laboratory curricula are identified, with the intention of preparing student pharmacists for both current and future pharmacy practice. Guidance on essential skills is provided by various organizations and documents, but ultimately each institution has the autonomy to decide what to teach. The importance of frequent curriculum evaluation is discussed in order to train the pharmacists of the future who practice at the top of their license rather than simply meeting competency with historical skills.

Keywords: curricular assessment, skills-based course, essential skills, laboratory instruction, patient care

INTRODUCTION

The topic of essential workers has been discussed frequently during the coronavirus disease 2019 (COVID-19) pandemic and pharmacists certainly fit into that category. When determining what makes an individual's occupation or role essential, one must evaluate the job responsibilities and skills those individuals perform as well as their impact and importance. During the pandemic, the Centers for Disease Control and Prevention (CDC) defined essential workers "as those who conduct a range of operations and services in industries that are essential to ensure the continuity of critical function in the United States."¹

The question for pharmacy education is not whether pharmacists are essential, but instead what skills are essential to being a pharmacist? Skills laboratory course faculty must determine which skills are essential for student pharmacists and how these skills should be taught and assessed. The Accreditation Council for Pharmacy Education Standards 2016 (Standards 2016), specifically Appendix 1, outline a broad category of Clinical Sciences as one of the required elements of the didactic Doctor of Pharmacy curriculum.² This category includes health information retrieval and evaluation; medication dispensing, distribution and administration; patient assessment; and public health. The clear expectation embedded in Appendix 1 is that students will develop comprehensive knowledge required to be "practice ready," and students will be able to retain, recall, build upon, and apply that knowledge to deliver quality patient care in a variety of practice settings. Moreover, Standards 2016 also allows for creativity and flexibility. Specifically, Key Element 10.4, states, "the curriculum is rigorous, contemporary, and intentionally sequenced to promote integration and reinforcement of content and the demonstration of competency skills required to achieve the Educational Outcomes articulated in Section 1" of the Standards.³

Skill development occurs in many courses throughout the curriculum but is the primary focus of pharmacy practice skills laboratories (skills labs). Skills labs have varying titles and organizational structures depending on the institution, either combined with didactic courses, a standalone course, or with ties to experiential coursework. Interestingly, skills labs are not specifically mentioned in the Standards with a set definition. However, the Guidance 2016 document cites "practice laboratories" as an approach to achieve learning of and documenting student performance of the Pre-APPE Core Domains listed in Appendix A.³ Students should demonstrate achievement with the domains and associated abilities prior to entry to advanced pharmacy practice experiences (APPEs). However, the question remains which skills are essential and should be taught and assessed in these courses?

This commentary aims to further the discussion on how essential skills that are taught and assessed in skills lab curricula are identified, with the intention of preparing student pharmacists for both current and future pharmacy practice.

Institutions should examine skills lab curricula frequently and choose skills with purpose. We aim to encourage institutions to refrain from being complacent with their skills lab content, but rather be nimble and anticipate continuous adjustments to prepare students to advance pharmacy practice.

What does the literature say about essential skills?

Skills labs are courses designed with the intent to provide students an opportunity to strengthen their skill development and apply knowledge learned through their coursework.⁴ Moreover, skills labs provide a curricular structure for embedded performance-based assessments to demonstrate student achievement of educational outcomes, as well as propagate data for programmatic assessment.⁵

In 2015, a group of skills lab faculty surveyed APPE preceptors from the United States regarding essential skills for pharmacy graduates.⁶ This study found that preceptors ranked verbal and written communication as the most essential skill and created a list of other important skills. A more recent study by Frenzel and colleagues focused on developing a list of laboratory-focused items that could be taught and assessed in the skills lab to ensure graduates were practice ready in the areas of community pharmacy, health-system pharmacy, ambulatory care pharmacy, and managed care pharmacy.⁴ The authors mapped the identified items to Entrustable Professional Activities (EPAs) domains.⁷ Furthermore, Bellottie and colleagues in 2018 reviewed published literature, activities, and assessment methods that could be adapted and implemented in practice laboratory courses to achieve the abilities outlined within the Pre-APPE Core Domains, as well as serve as a resource for skills lab faculty who want to create or make improvements to their skills lab coursework.⁸

Who decides what essential skills are taught?

There are many different sources providing guidance regarding what is taught in a skills lab curriculum. As discussed previously, Standards 2016 provide guidance for APPE-ready and practice ready graduates.² Additional documents include the pre-APPE domains from the 2007 version 2 (2011) accreditation standards, the EPAs, Center for the Advancement of Pharmacy Education Educational Outcomes, and the Joint Commission of Pharmacy Practitioners Pharmacists' Patient Care Process (PPCP) which inform the knowledge, skills, and attitudes that are taught in a skills lab curriculum.⁹⁻¹²

Furthermore, stakeholders' input should be considered when determining which skills should be included in a Doctor of Pharmacy degree program.¹³ Internal stakeholders could include faculty, staff, students, administrators, and others on campus. External stakeholders which can inform current and future pharmacy practice include preceptors, alumni, pharmacists, employers, other health care professionals, and patients. Additional information and guidance could be gathered from advisory councils and state or national organizations.

The COVID-19 pandemic has led to changes in pharmacy practice.¹⁴ Pharmacists have a critical role in providing vaccinations for COVID-19 and routine immunizations. The Public Readiness and Emergency Preparedness (PREP) Act had several declarations in 2020 which authorized pharmacists to prescribe vaccines, pharmacy interns and qualified pharmacy technicians to administer vaccines in specific circumstances, and pharmacists to order and administer COVID-19 tests.¹⁵ Additionally, states have passed pharmacy practice act changes allowing pharmacists to do more than previously allowed. There have also been increases in telehealth and telepharmacy throughout the pandemic and predictions that telehealth will likely continue post-pandemic.¹⁴

With these changes in practice, pharmacists continue utilizing the same PPCP skills but may be using their skills in different ways.¹² For example, point-of-care testing is not a new skill for pharmacists. However, COVID-19 testing became a new service provided by pharmacists. Additional recent changes outside of the pandemic include naloxone and oral contraceptive prescribing. While prescribing may be new for some pharmacists, the underlying components of collecting information, assessing the patient's profile and medical history for drug-related problems, determining a plan, monitoring, and follow-up, as well as communicating that information to the patient and other health care providers remain consistent with what has been done previously.

Furthermore, modifications to skills may be occurring in pharmacy practice. For example, manual blood pressure and heart rate measurement have been historically taught to student pharmacists. However, anecdotally, pharmacists in many settings do not perform these skills on a regular basis and rather use an automated cuff, if they perform the skill at all. Therefore, the question arises, should manual blood pressure and heart rate measurement be taught and assessed? One could argue that programs should be teaching more about automatic blood pressure monitoring, educating patients about self-monitoring, and hypertension management as these skills and topics may be encountered more frequently in practice than taking blood pressure manually.

How do we prepare student pharmacists for the future of pharmacy practice?

When determining which skills to prioritize for skills lab curricula, consideration must be given to expected advancements in pharmacy practice. As the role of the pharmacist evolves, education must advance to maintain or surpass current practice to adequately prepare future practitioners. In a 2020 article, DiPiro proposes that the next generation of pharmacists be both health care providers and change agents.¹⁶ As the science of medicine and biomedical technology advance, schools must re-examine curricula to ensure future pharmacists will be trusted leaders and interprofessional collaborators with excellent communication and critical thinking skills. Skills labs are often the courses that are charged with teaching and assessing these integral “soft skills.”

Pestka and Hager propose that philosophy of practice is the foundation for patient care and examined student pharmacist conceptualization of their philosophy regarding their future pharmacy practice.¹⁷ Skills lab courses can include a variety of interactive activities that provide students practice engaging with mock patients and members of an interprofessional care team.

A separate approach for determining the direction of the future of pharmacy was proposed by Shcherbakova and Desselle, who suggest examining the past to look for historical and emerging trends.¹⁸ Previous predictions for the future of practice were often found to be accurate, although the results were not always achieved in the expected way.¹⁸ Similarly to DiPiro, Shcherbakova and Desselle suggested technology as a driving force for future practice. Digital health care tools, increasing user interest in pharmacogenomics, and the automation of pharmacy operations shape the day-to-day work performed by pharmacists.¹⁸ Skills labs offer student pharmacists the opportunity to utilize new digital health care tools and practice performing pharmacist roles in a safe environment where no patient will be harmed during the learning process. For student pharmacists to be successful during experiential learning experiences, skills lab faculty must ensure students have the skills to navigate new technology they will encounter in experiential practice.

CONCLUSION AND CALL TO ACTION

We are not suggesting creating prescriptive standards or a detailed list of specific essential skills. Standards and guidance documents are currently written at a higher level to allow faculty the autonomy to decide what and how to teach. Pharmacy practice is ever-changing, and a list of specific essential skills could quickly become outdated. However, we propose that each school or college of pharmacy create a routine, proactive process to review the skills curriculum at their institution and undertake a thoughtful approach in deciding which skills to teach. Typically, this process would include skills lab faculty and instructors meeting periodically throughout the academic year to review the curriculum, discuss recent practice advancements, and determine what curricular changes are needed. When developing a process, it may be helpful for the skills lab team to ask and answer key questions (Table 1).

While the structure and purpose of regional and national collaborations may not be arranged for success and accountability, they can be helpful with building connections throughout the Academy and discussing topics and issues. As different states have differing practice levels, it is important to be connected to state societies and advocacy efforts to stay current.

This process is unlikely to be a simple one. Determining an essential skills curriculum is a complex task with many considerations, challenges, and opportunities. First, examining what is being taught, why it is being taught, and whether it makes sense is important while considering curricular shift or curricular drift. As individuals, we like to teach what is familiar and what we’re excited about teaching, which could introduce bias into course content decisions. Like many other courses, curricular hoarding is an issue.¹⁹ Skills-based courses have limited time and resources and not every skill can be taught. It is impossible to keep adding to the skills-based curriculum without removing something. Deciding what to take out is just as important as deciding what to keep in, focusing on what is most important. Collaboration and coordination with experiential education faculty can also assist in this process.

There are other considerations to discuss throughout this process. Threshold concepts should be assessed, where students test-out or achieve competency for a skill, and thus it no longer needs to be covered in the curriculum.²⁰ Additionally, faculty who do not routinely practice may not be as up to date with skills needed in practice. Limitations on time and resources also may impact which skills are taught in the classroom (ie, time for faculty to assess students, cost for standardized patients). Different beliefs amongst faculty regarding the importance of topics and skills as well as the depth of training needed for a pharmacy graduate could impact these decisions.

Additionally, consideration should be given to teaching students to be life-long learners. For example, rather than teaching students how to use every type of inhaler currently available, teaching students how to read and understand package inserts and general inhaler technique concepts may create lifelong learners who can flexibly adapt and evolve along with pharmacy practice. Lastly, we’re all human and change can be difficult; however, it is important to fully acknowledge when change may be best.

Routinely analyzing what is being taught and thoughtfully evaluating what should be included in skills-based courses is critical for pharmacy programs. Due to changes in pharmacy practice, frequent curriculum assessments and modifications are needed to train the pharmacists of the future who will practice at the top of their license rather than simply meeting competency with historical skills.

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Table 1: Key Questions to Consider When Evaluating Essential Skills Teaching and Assessment

Who

- Who should be a part of the conversation?
- Which stakeholders are contacted for feedback (ie, preceptors)?
- What input is obtained from your stakeholders?
- What are the opinions of other faculty members involved in experiential education or clinical content experts?
- What collaborations do you have with others who teach in skills labs on a national level (ie, AACP Laboratory Instructors SIG)?
- What collaborations exist on a regional level (ie, consortium, academic alliance, etc.)?

What

- Which courses are going to be evaluated?
- What process should be used to determine a list of essential skills?
- What is the current process to determine what is taught in the skills labs (and what should no longer be taught)?
- What standards and guidance documents are available and should be reviewed?
- What are the hot topics in pharmacy practice and interprofessional practice?
- Do you have faculty who are experts in the areas where you need them?
- Is faculty development needed regarding new or updated topics and skills?

When

- How often should course series be evaluated for revision?
- How often should new and emerging skills be considered for addition to skills labs?
- How often should entire courses be evaluated for revision?
- Should these discussions take place during the summer, during the school year, or both?

AACP = American Association of Colleges of Pharmacy, SIG = Special Interest Group