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Currents in Pharmacy Teaching and Learning 6 (2014) 340–347

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Research

## Physical examination instruction in US pharmacy curricula

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### Abstract

**Objective:** Compare physical examination instruction and competency expectations between US pharmacy schools.

**Methods:** Pharmacy Practice Department Chairs or their equivalents at all US pharmacy schools were surveyed regarding physical exam instruction and evaluation within their respective curricula. Opinions were also gathered regarding physical exam competency expectations and the need to formally evaluate this skill prior to graduation and for purposes of US licensure and federal healthcare provider recognition. The survey instrument was pretested prior to dissemination.

**Results:** The survey response rate was 56%. Instructional and assessment methods used in teaching and evaluating physical exam skills were similar among responding US pharmacy programs. However, there is variability in the extent of physical exam instruction and evaluation as well as opinions related to physical exam competency expectations prior to graduation and for purposes of US pharmacy licensure and federal healthcare provider credentialing. Overall, 83% of programs require students to demonstrate correct exam techniques via a competency exam; however, only 52% of schools require students to apply physical findings to therapeutic decision-making. Respondents from new schools were more likely to support formal competency evaluation of physical exam skills via objective structured clinical exam for purposes of US licensure and healthcare provider credentialing compared to established schools ( $p < 0.05$ ).

**Conclusion:** Differences in competency expectations and the extent of physical exam instruction and evaluation in US pharmacy schools illustrate the need for a minimum national standard for this pharmacy practice skill.

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**Keywords:** Physical examination; Pharmacy; Healthcare provider; Pharmacy curricula

### Introduction

Given the current climate of healthcare reform in the US and corollary predictions for physician shortages,<sup>1</sup> advocacy for federal recognition of pharmacists as healthcare providers (HCPs) continues to be a critical topic. A recent report to the US Surgeon General from the Office of the Chief Pharmacist provides compelling evidence and support for such

recognition.<sup>2</sup> This report details examples of pharmacists already functioning as HCPs by collaboratively managing disease. In these roles, pharmacists provide direct patient care by performing patient assessments and physical examination.<sup>2</sup> In some cases, pharmacists have prescriptive authority and the ability to order, interpret, and monitor laboratory tests.<sup>2</sup> Pharmacists also provide clinical assessments, develop therapeutic plans, and provide care coordination and ongoing follow-up care.<sup>2</sup> The report also provides evidence from numerous studies, systematic reviews, and meta-analyses that demonstrate favorable outcomes when pharmacists are integrated into direct patient care. These outcomes include improvements in patient care, patient and provider

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satisfaction, patient safety, cost-effectiveness, and healthcare delivery. When pharmacists provide direct patient care, physicians can focus on more critically ill patients in need of physician-based care. This increases access to care for the medically underserved and vulnerable populations.<sup>2</sup>

Pharmacy's advocacy for federal HCP legislation has been met with considerable opposition. Despite evidence provided within the US Surgeon General Report, pharmacists are often criticized for lacking training warranting recognition as a HCP.<sup>3,4</sup> For example, the American Medical Association (AMA) has stated that the didactic component of pharmacy education does not prepare the student to develop clinical judgment needed with regard to the assessment of disease/illness or formulation of a treatment plan.<sup>3</sup> The clinical judgment needed for these abilities requires extensive training in a number of areas, one of which is patient assessment. Engaging in patient assessment involves the use of several skills, such as obtaining a comprehensive patient history, performing physical examination, and evaluating laboratory and diagnostic tests.

The American Association of Colleges of Pharmacy (AACCP) and the Accreditation Council for Pharmacy Education (ACPE) provide parameters that inform and guide pharmacy education for all accredited US pharmacy schools. Guidelines 2.0 for ACPE Standards 2007 (S2007)<sup>5</sup> contain current curricular standards for the Doctor of Pharmacy degree. While patient assessment skills have been included as a core component of pharmacy curricula for several years, an important addition to the curricular standards issued in 2007 was the inclusion of physical exam (PE) skills as a core component of patient assessment.<sup>5</sup> However, S2007 lack clearly articulated PE competency expectations and a stated purpose for these skills in pharmacy practice. The extent to which PE skills should be taught in US pharmacy schools is also not defined.

In 2007 Spray and Parnapy<sup>6</sup> examined patient assessment courses in their report, "Teaching Patient Assessment Skills to Doctor of Pharmacy Students (TOPAS)." Study objectives were to determine the content and extent, design, and importance of patient assessment courses in US pharmacy curricula. TOPAS results, in terms of describing topic content and extent of patient assessment courses, focused primarily on PE. These results updated information previously published on this topic by ClOSSon<sup>7</sup> in the 1980s and da Camara et al.<sup>8</sup> in 1996. While the number of schools in existence increased from 77 in the da Camara study to 97 in the TOPAS study, the results were very similar. TOPAS found variability in PE instruction throughout US pharmacy curricula, specifically related to topic content and instructional and evaluative strategies and noted that a minimum standard for competency in this skill was needed.<sup>6</sup>

At the time TOPAS was conducted, new ACPE curricular standards including PE had not yet been implemented. Additionally, there has been a significant increase in US pharmacy schools since the publication of TOPAS. It is important to determine if there continues to be significant

variability in the breadth and extent to which PE skills are taught and assessed in US pharmacy curricula. Differences may identify potential curricular gaps that may be preventing pharmacists from utilizing these skills in practice and may be a contributing factor to the perception that pharmacists lack training in this area.

Pharmacy educators must adequately equip students with the knowledge, skills, and attitudes required for expanded scopes of practice, including recognition as HCPs. The primary objectives of this study are to describe the current methods and extent of PE instruction and evaluation in US pharmacy schools. Comparisons will be made between new and established schools and public and private schools in order to determine if there are differences in PE curricula by school type. Secondary objectives of this study are to describe opinions regarding PE competency expectations prior to graduation from an accredited pharmacy school and for purposes of US pharmacist licensure as well as HCP credentialing.

## Methods

### *Study population*

Pharmacy Practice Department Chairs at all US pharmacy schools with ACPE pre-candidate, candidate, or full accreditation status were surveyed. Names, addresses, and e-mails of department chairs were identified through the AACCP Roster of Faculty and Professional Staff website<sup>9</sup> and by review of respective college's websites.

### *Questionnaire*

A 45-item questionnaire was developed to gather information pertaining to PE instruction and evaluation within US pharmacy curricula ([Appendix A](#)). The questionnaire was anonymous and contained both multiple-choice and short-answer questions addressing items related to college demographics, PE course design, organ systems covered, instructional and assessment methods used, instructor credentials, and interprofessional collaboration. Questions also addressed opinions and perceptions regarding expected utilization of PE skills in various pharmacy practice settings and importance of demonstrating PE competence for graduation, US licensure, and for federal HCP recognition. With permission, questions were adapted and modified from the survey instrument used by the authors of the TOPAS study (JW Spray, e-mail, July 28, 2010). The questionnaire was pretested, and questions were modified based on respondents' feedback.

Survey dissemination followed a modified Dillman<sup>10</sup> approach. A pre-notice letter was sent electronically to all Pharmacy Practice Department Chairs informing them that a survey would be arriving and of the overall purpose of the survey. Approximately, one to two weeks later an internet link was sent via e-mail directing them to an electronic

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