ABSTRACT

Objective: This innovative, required laboratory course introduces the concepts and processes associated with Point-of-Care Testing (POCT), and empowers students to use effective technology to aid their decision making at the “point-of-care” to improve patient care.

Methods: This required POCT laboratory course is taken by the first year PharmD students. The lab is structured into three major sections. An initial basic laboratory section introduces the student to key foundational concepts of physical assessment, and provides hands-on experience. The second section includes biologic sample collections, such as blood (Hepatitis C), oral swab (HIV), throat swab (Group A strep) and nasal swab (influenza). A final section includes practical considerations such as risk management, development of POCT testing services, and testing limitations.

Results: Assessment results and student evaluations from the Fall 2016 semester guided refinements to the course for the Fall of 2017. The mean score on the cumulative exam in 2016 was 81.3%. The pedagogy of the class was changed in 2017 to a “flipped classroom” style with Kahoots quizzes used each week to assess understanding. The mean score on the cumulative POCT exam in 2017 was 86.2%, indicating improved understanding, and student satisfaction scores improved as well.

Implications: This course helps to prepare students for both the basic science and clinical portions of the curriculum, making this an invaluable tool to help the students see the connection between the two, and how each can help them make a positive impact on future patients.

METHODS

UC-IRB Approval Number: 17-0005

Before conducting this research, the project was approved as exempt by the University of Charleston’s Institutional Review Board.

Course Methods

• The POCT program developed by the National Association of Chain Drug Stores (NACDS) was offered as a course to first year PharmD students during the 2016 and 2017 fall semesters as a way to promote the importance of obtaining this skill set early in pharmacy education.

• The course is taught by several faculty members of the school of pharmacy using a PowerPoint presentation, videos, and in-class patient case examples for a hands-on experience. The topics covered in this course are displayed in Table 1. Below, at the end of the course, students’ competency of the material presented is assessed through hands-on activities as well as a standardized NACDS final examination.

• A total of 58 students participated in the certificate course in 2016, and 48 in 2017. The course was evaluated via a survey that assessed the course materials, each student’s hands-on experience, and their level of confidence in knowledge and ability to perform the various POCT methods. The survey results and comments were collected and made available to the faculty, to encourage course improvement.

• Following the 2016 course, student comments and survey results suggested a desire for more time to be spent on the physical assessment and sample collection process. In response, the faculty altered the course pedagogy in 2017 to a “flipped classroom” style. In 2017, students were expected to review PowerPoint slides and assigned documents prior to arriving in class. At the start of each class, a Kahoot quiz was utilized to assess student understanding of the assigned topics. Once any points of confusion were addressed, the remainder of the class time was spent on physical assessment and sample collection practice. In this way, students were able to practice hands-on skills more often to increase their comfort level.

RESULTS

• Using a Likert scale assessment with “Strongly Agree” valued at 5 and “Strongly Disagree” valued at 1, the average score for course assessment increased from 4.2 in 2016 to 4.7 in 2017 (see Figures 1 and 2).

• Specifically, greater than 50% of the students chose “Strongly Agree” on questions with regards to their perception of the importance and relevance of the course to pharmacy practice and its impact on their knowledge and understanding (see Figures 1 and 2).

• Students rating the overall course as “Excellent” increased from 52% in 2016 to 67% in 2017 (see Figures 3 and 4).

• Cumulative examination scores increased from 81.3% in 2016 to 86.2% in 2017.

REFERENCE


CONCLUSION

• Further research is necessary in order to determine the impact this certificate course will have on students when they actually get to perform Point-of-Care Testing in the community as pharmacists.

• What is apparent from the results is that the students do appear to appreciate that Point-of-Care Testing is important and relevant to their future practice as pharmacists.

• In addition, the “flipped classroom” pedagogy appears to increase student retention of material, and increase overall satisfaction of the course.

• Pharmacists are continually playing a greater role in healthcare, and it is important to prepare student pharmacists early in their education, so that they can feel comfortable and hone the necessary skills to provide the numerous services that pharmacists are able to offer.