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INSTRUCTIONAL DESIGN AND ASSESSMENT

A Spanish Language and Culture Initiative for a Doctor of Pharmacy Curriculum

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Objective. To implement a Spanish language and culture initiative in a doctor of pharmacy (PharmD) curriculum that would improve students' Spanish language skills and cultural competence so that graduates could provide competent pharmaceutical care to Spanish-speaking patients.

Design. Five elective courses were created and introduced to the curriculum including 2 medical Spanish courses; a medical Spanish service-learning course; a 2-week Spanish language and cultural immersion trip to Mexico; and an advanced practice pharmacy experience (APPE) at a medical care clinic serving a high percentage of Spanish-speaking patients. Advisors placed increased emphasis on encouraging pharmacy students to complete a major or minor in Spanish.

Assessment. Enrollment in the Spanish language courses and the cultural immersion trip has been strong. Twenty-three students have completed the APPE at a Spanish-speaking clinic. Eleven percent of 2010 Butler University pharmacy graduates completed a major or minor in Spanish compared to approximately 1% in 2004 when the initiative began.

Conclusion. A Spanish language and culture initiative started in 2004 has resulted in increased Spanish language and cultural competence among pharmacy students and recent graduates.

Keywords: Hispanic, Latino, Spanish, curriculum, cultural competence

INTRODUCTION

As of 2008, 15.4% of the approximately 300 million residents of the United States were Hispanic/Latino. From 2000 to 2008 the total US population increased 8% while the US Hispanic/Latino population increased 33%. States with large Hispanic/Latino populations include New Mexico (45.1%), California (36.6%), Texas, (36.2%), Arizona (30.2%), Nevada (25.9%), Florida (21.0%), Colorado (20.1%), New York (16.6%), New Jersey (16.4%), and Illinois (15.2%); and Hispanic/Latino migration patterns over the past decade have been from gateway areas such as the east and west coasts, south and southwest, into the Midwest.[1] In 2010, 15% of the graduates of Butler University College of Pharmacy and Health Science, located in Indianapolis, IN, secured employment in 1 of the 10 states with Hispanic/Latino populations exceeding 15%.

In 2008, 5.4% of Indiana's population was Hispanic/Latino, representing significant growth from 1.8% in 1990 and 3.5% in 2000.[2] Historically, the Lake County, Indiana, cities of Gary, East Chicago, and Hammond have had a large Hispanic/Latino presence, reflecting pioneer settlements of mostly Mexican workers who were recruited by the area's steel mills in the World War I era.[3] However, from 1990 to 2008, Marion County (Indianapolis), Elkhart County (Elkhart), and Allen County (Fort Wayne) experienced the largest growth of Hispanic/Latino residents in Indiana.[1] Representing 7.4% of the county's population, Hispanic/Latinos are the fastest growing population group in Marion County, home of Butler University.[4]

In their review of the quality of health outcomes that result from communication between pharmacists and Spanish-speaking patients, Dilworth et al concluded that the level of English language literacy of Spanish-speaking patients correlates with the quality of pharmaceutical care these patients receive, and that limited English proficiency among Spanish-speaking patients is associated with decreased patient access to pharmacy services and increased patient-perceived discrimination by pharmacy service providers.[5] They recommended that colleges and schools of pharmacy develop curricular strategies to improve pharmacists' abilities to provide quality care to Spanish-speaking patients.

In a survey of almost 2000 Atlanta, Georgia, pharmacists, nearly two-thirds of the survey respondents reported they had recently counseled a Spanish-speaking patient,

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but only about one-fourth felt their communication during the encounter had been effective.[6] A survey of 300 North Carolina community pharmacists found that the majority of responding pharmacists believed that English-speaking patients received better oral and written prescription medication information than Spanish-speaking patients. Forty-eight percent of these respondents felt that Spanish language skills were needed in their pharmacy practice, and 22% indicated they were extremely interested in improving their Spanish language proficiency.[7] In this same survey, 28% of respondents indicated they felt that Spanish should be part of the curriculum of pharmacy schools, and 75% believed that pharmacy students should be encouraged to take Spanish as a curricular elective. In an oral survey of 93 Latino patients who were interviewed in Spanish, 52% of respondents indicated they preferred to receive verbal information about their medication in Spanish without an interpreter, and 70% preferred written medication information in Spanish.[8] Focus group interviews of 36 elderly Hispanic/Latino patients in Massachusetts revealed that limited English proficiency was associated with feelings of being discriminated against in pharmacy settings, and that communicating directly with a health professional in a common language was associated with enhanced levels of trust and confidence in the health care provider.[9] Consequently, there is ample and convincing evidence that the quality of health care that pharmacists can provide to Spanish-speaking patients is related directly to the pharmacist's ability to communicate in Spanish with these patients.

The 2007 accreditation standards for colleges of pharmacy in the United States require that pharmacy graduates be able to "communicate and collaborate with patients, caregivers, physicians, nurses. . ." (Standard 12, Guideline 12.1).[10] Further, in its 2003 Minority Health Plan for the State of Indiana, the Indiana State Department of Health established as a priority objective to "promote a culturally and linguistically competent system of health care" and to "reduce provider-based barriers that impact health care encounters and provider-patient communication."[11]

Historically, graduates of the Butler University College of Pharmacy Health Sciences (COPHS) have provided pharmaceutical care services to residents of Indiana, especially central Indiana, including Indianapolis and surrounding counties, and to a lesser degree to the residents of the contiguous states of Illinois, Michigan, Ohio, and Kentucky. Butler University enrolls approximately 4000 undergraduate students, of which approximately 280 are enrolled in the 2-year prepharmacy curriculum, and 510 are enrolled in the 4-year professional pharmacy curriculum. Of those students in the professional pharmacy curriculum, 1.2% are Hispanic/Latino.

In 2003, the leadership of the college became aware of demographic trends that were significantly increasing the Hispanic/Latino population in Indiana and surrounding states. This awareness was coupled with concerns that pharmacists' inability to communicate with their patients in Spanish had the potential to affect adversely the quality of care pharmacists could provide to Spanish-speaking patients. To better equip its graduates with the requisite linguistic skills necessary for providing quality care to this growing Hispanic/Latino community, the college began its Spanish language and culture initiative in 2004.

DESIGN

The objective of the COPHS Spanish language and culture initiative was to create elective opportunities in the PharmD curriculum that would enhance the Spanish language and cultural competence of pharmacy graduates so that they would be better able to provide linguistically competent pharmaceutical care to Spanish-speaking patients. The initiative consisted of 5 elective curricular elements (3 medical Spanish courses, a Spanish language immersion trip to Mexico, and an APPE at a clinic site that serves predominantly Spanish-speaking patients) coupled with increased emphasis by academic advisors on encouraging pharmacy students to complete a major or minor in Spanish. The medical Spanish courses and Spanish language immersion trip could be counted toward the minimum required 11 hours of liberal education (non-math, non-science courses) or professional electives, but not toward the 32 required hours of core courses. However, the APPE could be taken as 1 of the 10 required experiential courses for completion of the PharmD curriculum.

Because all elements of the Spanish language and culture initiative were elective, formal faculty approval of curricular modification was not required, thus permitting expeditious implementation of the courses. Although Butler's modern foreign language department was contacted about teaching the medical Spanish courses, they did not have the requisite resources. Thus, COPHS hired an adjunct instructor in Spanish to teach the 3 planned courses within the college. Because all elements of the initiative were elective, students could choose to participate in any of the initiative options as long as they satisfied the language proficiency prerequisite for the specific option.

Medical Spanish Courses

Based on COPHS Spanish language placement data for 2001-2003 (Table 1), placing the Introduction to Medical Spanish and Advanced Medical Spanish courses at the 200 level (intermediate Spanish) was appropriate. Students from both the preprofessional and professional

Table 1. Spanish Language Placement Level for Entering Butler University College of Pharmacy and Health Sciences Freshmen by Year

Entering Class Year	Taking Placement Examination/Total Freshmen	Placement Level		
		SP102/103 (Beginning)	SP203/204 (Intermediate)	SP300 or Higher (Advanced)
2001	9/150	1	8	0
2002	50/202	18	32	6
2003	45/187	11	26	8
2004	68/186	9	35	12
2005	69/196	9	42	18
2006	67/190	10	37	20
2007	56/187	10	42	4
2008	41/157	0	35	6
2009	67/224	7	51	9
Mean (%)	-	8.3 (15.8)	34.2 (66.6)	9.2 (17.6)

programs routinely enrolled in these courses. Each course has an enrollment limit of 18 students. A proprietary course and instructor evaluation was conducted for each course during the final weeks of each semester.

The 3 principal learning goals for the didactic medical Spanish courses were: (1) to provide students the opportunity to learn health care vocabulary; (2) to advance their Spanish grammar skills; and (3) to improve their Spanish communication skills with patients and health care providers. The principal learning goals for the medical Spanish service-learning course were to increase medical fluency in Spanish and to facilitate interaction with and cultural awareness of the local Hispanic/Latino community.

Grammar skills were developed in the context of specific communication tasks. Examples of active-learning and assessment strategies used in the courses include: student-to-student and student-to-faculty classroom conversation; intensive vocabulary exercises followed by quizzes; student oral presentations to the class; a personal interview role-play with the instructor or native Spanish-speaking patient; creation of patient information materials on various medications; and videos of various health-related situational themes such as cold/influenza symptoms, taking a medication history, and patient counseling on nutrition and diet. The final oral course project involved the student role-playing a pharmacist interacting with a Spanish-speaking patient on a variety of health-related topics.

The advanced medical Spanish course was a continuation of the introductory course and focused on the development of Spanish communication skills around various health-related themes such as anatomy of the human body, emergency medicine, cardiovascular disease, respiratory disease, maternity, depression, drug abuse, and diagnostic procedures. In addition to the pedagogy and assessment strategies described for the introductory course, students in the advanced course were required to complete a research paper in Spanish on one of the course themes described above.

Service-Learning Course

In the medical Spanish service-learning course, students completed a minimum of 20 hours of supervised volunteer work in a local clinic that served predominantly Spanish-speaking patients. The students worked under the direction of licensed health care providers who were bilingual in Spanish and English. They developed and presented a comprehensive care plan for a patient, kept a portfolio of their clinic work, participated in developing and providing appropriate patient education, and presented a health care topic of interest to the clinic staff. In addition to the volunteer clinic work, students met 2 hours weekly on campus with the course instructor to discuss the clinic experiences and to develop advanced skills in Spanish medical vocabulary and grammar. Students had to have 200-level (intermediate) or higher Spanish proficiency as a prerequisite for course enrollment and be a fifth-year pharmacy student.

Spanish Language and Cultural Immersion Trip

In 2007, COPHS implemented its 2-week Spanish language and cultural immersion student trip to the Kukulcan School in Cuernavaca, Mexico (www.kukulcan.com.mx). The trip was available to all COPHS students regardless of level of Spanish language proficiency and has been offered each subsequent year except 2008. The COPHS Spanish language instructor accompanied the students on the trip, routinely circulated among the various student learning groups at the school to observe their instruction, and traveled with the students on all excursion

trips. However, direct language instruction was not provided to the students by the COPHS Spanish instructor while on the trip. Students paid the costs of roundtrip airfare, tuition charges to the Kukulcan School, home-stay accommodations, and all excursion trips; thus, the trip budget was revenue neutral for the college. While in Cuernavaca, the students stayed with local host families who provided accommodations and meals and additional language and cultural experiences for the students.

Prior to beginning their language instruction at the Kukulcan School, students completed both an online and face-to-face evaluation of their Spanish language skills and then were placed in the appropriate level of language instruction. Faculty at the Kukulcan School provide approximately 55-contact hours of Spanish language instruction in addition to leading the students on cultural and historical excursions. Each school day the students spent 2 hours in grammar instruction, 2 hours in conversation, an hour in medical vocabulary, and an hour learning more about the Spanish culture, including cooking, dance, art, and traditional medicine. All language instruction is performed in small groups of 4 to 6 students working with an instructor.

Student performance at the school was assessed based on attendance, class participation, homework, and examinations. Student learning was assessed each week by individual group instructors using both oral and written examinations. A standardized evaluation rubric was completed weekly for each student by his/her instructor, and included assessment of both grammar and conversation elements.

Students registered for a 3-credit hour COPHS course to receive academic credit for the trip experience, and the COPHS faculty member leading the trip determined the final course grade on the basis of language performance assessments by the Kukulcan School and also by the faculty member's interactions with each student in Spanish throughout the trip. At the end of the trip, the Kukulcan School reported the language proficiency level attained by each student, together with a recommended letter grade (A-F) for the experience. Students could use the academic credit to partially fulfill their PharmD degree elective requirements or 3 hours of 300-level Spanish credit toward a Spanish major or minor if they performed at an appropriate competency level while on the trip.

Emphasis on a Major or Minor in Spanish

During their first semester, all prepharmacy freshmen were required to participate in a 1-credit hour course, Health Science Seminar. One element of the course was an introduction to various curricular major and minor opportunities. During this discussion, emphasis was placed on the Spanish language and culture initiative and how students could satisfy requirements for a major or minor in Spanish while completing their required pharmacy courses.

A major in Spanish required the completion of a minimum of 33-credit hours in the language with at least 24 hours at the 300 level or higher. A minor required the completion of a minimum of 21-credit hours with at least 12 of those hours at the 300 level or higher. The desirability for Spanish fluency among health care providers was emphasized to entering freshmen and continually reinforced by their academic advisors as they progressed through the curriculum.

Advanced Pharmacy Practice Experience (APPE) at a Spanish-language Clinic Site

During the 2007-2008 academic year, COPHS met with the medical director of the Alivio Medical Center, a Spanish language medical clinic in Indianapolis, to discuss having selected pharmacy students complete an APPE at this site. As a result, a 1-month APPE elective was established at the clinic, and the medical director was identified as the preceptor of record. The student learning objectives for the clinic experience were as follows: (1) provide linguistically-competent pharmaceutical care to the Hispanic/Latino patient population through interaction with Hispanic/Latino patients and health care providers; (2) assist in the development of a formulary; (3) investigate patient-assistance programs that would enhance health care coverage for patients; (4) create appropriate patient education materials for specific patient population needs; (5) conduct medication update programs for health care practitioners at the site; (6) participate in outreach programs in the community as designated by the site; and (7) complete projects focused on improving patient care.

These general objectives were consistent with those described by other programs that have involved students in APPEs in similar clinic opportunities.[12,13] On several occasions, college representatives met with the medical director and other members of the clinic staff to discuss the preceptor development process and to help them become competent with the evaluation processes used for APPE students.

The Alivio Medical Center was established to provide culturally competent care to persons of diverse nationality and ethnicity. The clinic is staffed by 3 physicians, a nutritionist, 3 nurses, a physician assistant, and a physical therapist. The clinic serves approximately 400 patients each week (both adults and children) and approximately 90% are Hispanic/Latino. In addition to providing general medicine services, the clinic provides specialty care in the areas of neurology, cardiology, pulmonary medicine, sleep

disorders, sports and work-related injuries, and comprehensive diabetes management. Onsite diagnostic laboratory services are available including diagnostic imaging. Pharmacy students who had taken the medical Spanish course(s) or who had taken college-level Spanish courses were asked if they would be interested in completing an APPE at the Alivio Clinic. In addition, a recommendation was sought from the COPHS Spanish language instructor regarding which students were linguistically competent for the rotation.

EVALUATION AND ASSESSMENT

From 2004-2010, the Introduction to Medical Spanish course has been offered 9 times and has had an average enrollment of 14 students (range 12 – 19) (Table 2). From 2005-2010, the Advanced Medical Spanish course has been offered each spring semester, and has had an average enrollment of 6 students (range of 3 - 8 students).

The medical Spanish service-learning course was offered in fall 2008 with an enrollment of 5 students. Subsequent offerings of this course have not achieved their minimum enrollment targets and anecdotal information from students suggests this has been because of scheduling conflicts and the time commitment required of students for a service-learning course.

Spanish Language and Cultural Immersion Trip

Of the 67 students who have completed the Mexico trip, 14 (20.9%) were at the beginner level in Spanish, 26 (38.8%) were at the intermediate level, and 27 (40.3%) were at the advanced level. Students who participated in the trip were asked to complete a post-trip online evaluation and to rate each of 6 elements of the trip experience as either poor, fair, good, or excellent. The 3 elements of the trip rated as excellent by approximately 70% of the students were: quality of the home stay experience; quality of the language instruction; and the weekend trips to cultural sites (Mexico City, Teotihuacan, Xochicalco, and Taxco). The lowest rated element of the trip was cost relative to the total trip experience, and slightly fewer than half the students rated this attribute as excellent. For the 3 years of the trip offering, the direct trip cost to students has been slightly less than $2000 per student.

Written evaluation comments suggested that the students' time was too structured on the first 2 trips and that more free time should be given for students to explore on their own and to spend more time with their host families. This modification was made for the 2010 trip and was noted positively by many students in their evaluations. After offering several suggestions for trip improvement, a 2009 student added that "for those interested in pursuing a Spanish major or minor, this trip is much more effective toward developing fluency than a standard semester course."

Table 2. Butler University College of Pharmacy and Health Sciences Medical Spanish Course Enrollment by Year

Semester	Introduction to Medical Spanish	Advanced Medical Spanish,
Fall 2004	12	
Spring 2005		5
Fall 2005	19	
Spring 2006		8
Fall 2006	14	
Spring 2007	7	5
Fall 2007	17	
Spring 2008	7	6
Fall 2008	19	
Spring 2009		3
Fall 2009	16	
Spring 2010		6
Fall 2010	16	
Total Enrollment	127	33
Mean Enrollment	14	6

Spanish Language Major or Minor

The number of pharmacy graduates completing a major or minor in Spanish increased from an average of 1% in the period from 2002-2007, to 4% in 2008, 5% in 2009, and 11% in 2010 (Table 3). In 2010, 11% of continuing pharmacy students had declared a major or minor in Spanish.

APPE at Hispanic/Latino Clinic

Twenty-three students from May 2008 through April 2010 successfully completed a month-long APPE at the Alivio Medical Center. Student evaluations of the Alivio Clinic APPE were assessed through end-of-APPE discussions with the medical director and student performance was assessed on a pass/non-pass scale. All 23 students passed the APPE on their first attempt. Twenty-three (10%) of the 229 pharmacy graduates from 2008-2010 provided linguistically competent pharmaceutical care to a predominantly Hispanic/Latino patient population at the Alivo Clinic as evidenced by preceptor evaluations. One student commented: "I learned a lot more Spanish than I learned in the classroom. This is an experience that cannot be offered anywhere else. You get to practice speaking/understanding Spanish as well as (learn about) the culture."

Nine (39%) of the 23 Alivio clinic students had taken 1 or more of the medical Spanish courses, and 5 (22%) had taken 1 or more Spanish courses offered by the foreign language department. Eleven (49%) students had completed

Table 3. Pharmacy Graduates or PharmD Students with a Major or Minor in Spanish Before and After Implementation of a Spanish Language and Culture Initiative in 2004

	Pharmacy Graduates									PharmD Students
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2010-2011
Non-Spanish major or minor	1	3	2	0	5	7	8	5	7	26
Spanish major	0	0	1	0	0	0	1	1	2	9
Spanish minor	0	0	1	2	0	2	5	5	9	31
Total Spanish major or minor	0	0	2	2	0	2	6	6	11	40
Graduating or continuing students	68	74	81	83	98	123	157	126	103	360
Percent with Spanish major or minor	0	0	2	2	0	2	4	5	11	11

a major or minor in Spanish, and only 1 had participated in the Spanish language immersion trip to Mexico. Based on previously completed Spanish courses, all 23 Alivio Clinic students had at least intermediate level Spanish proficiency prior to beginning the clinic experience.

Preceptor comments from the clinic were positive regarding student interest in and contributions to patient care. Particularly positive comments dealt with assistance that students were able to provide related to patient education focusing on diabetes, asthma, hypertension, and hyperlipidemia. Students also were cited as being helpful in further developing patient assistance program options for the clinic population. The clinic medical director reported that the language-competency-based student selection process provided the clinic with students who were better able to provide consistent, high-quality pharmaceutical care services for the clinic population as a result of their enhanced Spanish language skills.

At the completion of each APPE, students submitted a preceptor and site evaluation that included both 5-point Likert response elements and narrative response options. In addition, each student received an evaluation from the preceptor covering 6 performance areas: professional work habits, communication skills, organization and time management, pharmacotherapy, drug information skills, and special project completion. As part of each 4-week APPE assessment, each student at the Alivio clinic was required to submit a written reflection on their experience. Although some of the students initially were apprehensive because of the need for proficiency in Spanish at the clinic, all students found they gained confidence in their ability to care for and communicate with Spanish-speaking patients.

Curricular Cost

The Spanish language and cultural immersion trip to Cuernavaca operated on a revenue-neutral budget for direct cost, with each student paying the university for the cost of round-trip airfare, tuition/room/board in Mexico, and excursion travel, and is coordinated by a fulltime faculty member. The Hispanic/Latino clinic in Indianapolis that is the site for the service-learning course and APPE is compensated on a per-student basis, and communication is maintained with the clinic by the COPHS APPE coordinator and the COPHS Spanish language instructor. The COPHS Spanish language instructor is compensated from the college budget as an adjunct faculty member.

DISCUSSION

Since program inception in 2004, 165 students have completed COPHS medical Spanish courses, and 67 students have participated in the Spanish language immersion trip to Mexico. Twenty-three students have successfully completed the APPE at the Alivio Medical Clinic, and 29 have graduated with a major or minor in Spanish. The number of students graduating with a major or minor in Spanish has increased from 1% to 11%, and 11% of current PharmD students indicate they are planning to graduate with either a major or minor in Spanish. Evaluations by both the clinic's medical director and students who have completed the Alivio Clinic APPE provide indirect evidence that the quality of care the students have been able to provide to this Hispanic/Latino community has improved as a result of their being able to communicate more effectively in Spanish with patients.

The current Accreditation Council for Pharmacy Education (ACPE) standards and guidelines require a commitment to cultural competency training in the PharmD curriculum (Standard 12).[10] In a 2007 survey of colleges and schools of pharmacy in the United States and Canada, 94% of responding colleges felt they needed to add cultural competency content to their curricula, and 43% indicated they desired to add a specific course on cultural competency.[14] Creating medical Spanish courses was cited as one example of a strategy for adding cultural competency content to a pharmacy curriculum.[14]

Few published descriptions of Spanish language or cultural competency content within pharmacy curricula exist.[14-17] One study reported the integration of focused-learning activities within a community pharmacy APPE

to enhance students' cultural competency skills as they interacted professionally with Hispanic/Latino patients.[18] However, to the authors' knowledge no other college or school of pharmacy has reported the successful implementation of a multifaceted, elective curricular strategy to enhance the Spanish language and cultural competency of its graduates. A longitudinal medical Spanish language program has been described in a US medical school with the goal of maintaining intermediate to advanced-level Spanish proficiency of medical students.[19] The program included various curricular elements such as medical Spanish courses, service-learning, immersion opportunities, and clinic experiences, and demonstrated improvement in listening comprehension but not in speaking proficiency.

Future considerations for developing and assessing the COPHS initiative must include the identification and use of standardized listening comprehension and speaking proficiency assessment tools. Appropriate use of these tools will permit the reliable measurement of language fluency change over time and will facilitate the comparison of various initiative outcomes. A critical unanswered question is what level of language fluency is required for pharmacists to provide linguistically competent patient care. The development and use of standardized fluency measures can help to answer this question for pharmacy graduates.

Other enhancements to the initiative should include the development and evaluation of additional APPE sites requiring Spanish language skills both in Indiana and outside the United States, incorporating additional cultural competency activities into the medical Spanish courses, the Mexico immersion trip, and APPEs, and investigating awarding a Spanish certificate or similar recognition for completion of all 4 initiative elements. As an example, a combined French/PharmD certificate program at the University of Rhode Island requires the completion of 18-credit hours of French and 2 hospital pharmacy APPEs in France.

In 2007, as part of this initiative's future efforts to develop additional language and cultural immersion opportunities for students, COPHS jointly sponsored with ProWorld-Peru (http://www.myproworld.org/locations/peru.htm), a medical service trip to Peru that was staffed by 4 COPHS professors (3 pharmacy, 1 physician assistant), 14 pharmacy students, and 16 physician assistant students. Mobile clinics were set up in underserved areas in southern Peru and each clinic had stations for triage, obstetrics and gynecology, internal medicine including pediatrics, a laboratory, dentistry, and pharmacy. In addition to there being ample opportunity to use their Spanish language skills in support of the various clinic activities, students were offered Spanish classes in the evening by ProWorld staff. A similar medical service trip to Ecuador is planned for 2011. The purpose of both trips is to evaluate the feasibility of developing experiential learning opportunities in Spanish-speaking countries.

CONCLUSION

A Spanish language and culture initiative started in 2004 has resulted in increased Spanish language and cultural competence among pharmacy students and recent graduates. Student participation in the various elective curricular elements has been consistently strong and students are able to provide linguistically competent care to patients at the APPE clinic site, which serves a large Spanish-speaking population. Since the initiative began, the percent of COPHS students graduating with a major or minor in Spanish has increased from 1% to 11%.

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