

## **2005 CCPH Summer Service-Learning Institute: Case Study**

The profession of pharmacy is undergoing a significant change from a focus on drugs (dispensing drugs into bottles and vials, compounding creams or solutions and typing instructions on prescription labels) to a focus on patients. From some perspectives, pharmacists have been viewed by the public and other health care professionals as human vending machines; they simply process a prescription order and put pills into a bottle. The profession of pharmacy is committed to changing this view into a paradigm where the pharmacist is a patient advocate, the most accessible health care professional and an educator with respect to health, drugs and drug management of disease states. To support this change in practice, all schools of pharmacy (about 90 in the United States) are switching from a three year professional degree program (RPh, or registered pharmacist) to a four year professional degree program (PharmD, or Doctor of Pharmacy). The four professional years are in addition to the minimum two years of pre-pharmacy college coursework that must be completed prior to admission to pharmacy school.

The University of Colorado Health Sciences Center (UCHSC) School of Pharmacy (SOP) began its transition to the PharmD degree a few years ago. The faculty completely discarded the old curriculum and designed an entirely new curriculum; the first class of about 90 students was accepted into the new curriculum in the fall of 1999. The faculty explored many exciting teaching innovations while planning for the new curriculum and chose service-learning as an educational methodology. An experiential course was designed into each semester of the four-year curriculum. During the first three years, most of the curriculum consists of didactic, school based instruction and learning. However, one afternoon per week was devoted to an experiential course that required students leave the school to participate in structured learning in community settings. Four of the six experiential courses were based in pharmacy or other healthcare settings. The first year (2 semesters) was devoted to the service-learning program. The final year of the pharmacy curriculum was devoted entirely to clerkship rotations in a variety of healthcare sites.

Some faculty felt that there were enormous benefits to service-learning experiences within health professions education. Service-learning experiences would allow the pharmacy students to contribute to communities, interact with individuals of different ages, cultural and ethnic backgrounds and socioeconomic status outside of typical classroom environments. In contrast to traditional educational methods, it would put the pharmacy students into communities in situations where they would get to know potential future patients in their environment and see what community and family factors influence their abilities to participate in healthy behaviors and healthcare. They reasoned that a well-designed service-learning program would provide pharmacy students with experiences that will prepare them to be better health care practitioners in the future while giving to the community in the present. Moreover, the principles of

service-learning were embodied in many of the nationally established outcomes for pharmacy education (Center for the Advancement of Pharmacy Education or CAPE outcomes). Most faculty members were unfamiliar with the concept of service-learning and were entrenched in traditional teaching and learning methods such as lecturing in large classrooms. While there was no strong opposition to implementing service-learning, there was some hesitancy and skepticism about its value with respect to the amount of time it required from faculty and students.

The individuals charged with implementing service-learning in the new pharmacy curriculum chose to design a nutrition and physical activity service-learning program that would partner pharmacy students with Denver area low-income elementary school students. They chose to make it a one semester required course for all first-year pharmacy students. The program was chosen for the following reasons. Most children in the US make poor eating choices that put them at risk for health problems. The consequences of unhealthy eating include hungry children who are more likely to have behavioral, emotional and academic problems at school or obesity that can have lasting effects on self-esteem and contribute to health problems later in life. Unhealthy eating habits and low levels of physical activity are contributing to epidemic rates of obesity and the diseases that accompany obesity: high blood pressure, high cholesterol and diabetes. Current data from the US Centers for Disease Control and Prevention reveal that greater than 60% of the US population is overweight or obese. The trends are frighteningly similar in the adult and pediatric populations. The percentage of children and adolescents who are overweight has more than doubled in the past 30 years and most of the increase has occurred since the late 1970's. Of children aged 6 – 17 years, about 5.3 million or 12.5% are seriously overweight. The trends are even more prominent in the Hispanic, African American and low socioeconomic populations. For example, over a 12-year period ending in 1994, the percentage of African-American boys defined as obese jumped from 2% to 13.4%; the change in girls was 5.3% to 16.2%. Basic beliefs regarding nutrition and physical activity are formed early in life and healthy principles are more likely to become daily habits if they're introduced and reinforced at young, elementary school ages. Therefore, nutrition education delivered at a young age is the preferred method for establishing healthy eating habits because it is difficult to change poor eating patterns in adulthood.

Research has shown that children influence the types of food that their family purchases and consumes, so healthy beliefs and practices among children have the potential to impact entire families. Further research has documented that the average elementary school teacher does not feel comfortable teaching nutrition topics due to an insufficient knowledge base in the subject. Moreover, because the pharmacy student body is made up of very diverse, highly successful individuals, the pharmacy students serve as good role models for the elementary school children, many of whom lack positive adult nurturing and guidance.

Given the magnitude of problems with nutrition in the US, it is appropriate to include a general nutrition curriculum in all health professions training. Obesity and poor nutritional habits contribute to many of the major diseases that are managed by pharmacists (hypertension, hyperlipidemia and diabetes). From a pharmacy student perspective, the service-learning curriculum would give the students an opportunity to learn general principles of healthy nutrition and physical activity while also meeting service-learning objectives.

Other schools and programs from UCHSC had formed relationships with some inner city Denver high schools and middle schools and faculty members involved in these partnerships suggested that the SOP faculty approach the elementary schools that were feeder schools for these institutions. About five elementary schools were invited to participate and, in the end, two decided they would like to join the partnership. The population in the two elementary schools was about 75% Hispanic and 25% African American. Twenty-five percent of the elementary students spoke Spanish with English as a second language and 9% spoke Spanish only. The population in both schools was socioeconomically deprived; greater than 97% of the students qualified for reduced or free lunch programs.

The faculty members designed a curriculum where the pharmacy and elementary students participated in fifteen one-hour modules over an academic year. The curriculum was primarily designed from a public schools nutrition curriculum developed in Kansas and was adapted to the service-learning project with the assistance of a consultant who had 20 years of experience in school based nutrition programs.\* The SOP faculty members and the nutrition consultant hosted a breakfast at each of the elementary schools to meet with the teachers and school administrators, describe the program and answer questions prior to the start of the program. The faculty designed a four-hour workshop at the beginning of the semester to orient the pharmacy students to the concepts of service-learning, the nutrition curriculum, the schools and the elementary student population. Each pharmacy student was matched with a group of 3 to 4 elementary students and the group stayed together for the entirety of the program. The first session at the elementary school was devoted entirely to allowing the groups to get acquainted- group members made nametags and the group chose a name for themselves. The elementary students oriented the pharmacy students to their classroom and the rules of the classroom and the school. Each on the remaining fourteen nutrition modules included the pharmacy students teaching a nutrition concept, reinforcement of the concept through active learning exercises, some physical activity and tasting of foods associated with the module. The modules had the following themes: orientation to the food guide pyramid, breakfast, snacks, fats and sweets, dairy products and protein and fruits and vegetables. The activities were also designed to reinforce concepts of other objectives within the elementary school curriculum. For example, the nutrition modules were purposefully designed to include spelling,

math, reading and science so the nutrition activities were not detracting from other elements of the curriculum.

The pharmacy students participated in one-hour sessions at the pharmacy school interspersed between the visits at the elementary school. During these sessions, the pharmacy students learned about the nutrition principles they were expected to convey to the elementary students. This time also allowed for problem-solving and discussion about any issues that may have arisen during sessions at the elementary school. The pharmacy students participated in three structured reflection assignments during the semester. The first was a pre-reflection where students were asked to think and write about what life was like for them when they were the age of the children, what role nutrition played in their life at that time and what they anticipated from the kids, school and neighborhood. The second was a reflection on active learning where pharmacy students were asked to write about what they thought the children were learning from the experience and what they thought they were learning from the experience as applied to their future role as a health care professional. The third was a reflection on the controversy of major soft drink companies offering large sums of money to school districts in exchange for placing soda vending machines in schools.

A survey was administered to the pharmacy students at the end of the program to measure their perceived learning and value from the service-learning activities. The students were asked to rate improvements in their competence with respect to teamwork, leadership, communication, problem-solving and citizenship as a result of the program. The pharmacy students also took a quiz that measures their competency in basic principles of nutrition and physical activity.

Each year, a thank-you/follow-up session is held at the elementary schools after the service-learning activities are complete. The teachers that participated in the program are invited to a catered breakfast and asked for feedback and ideas to improve future years.

After the first year of the program, the faculty course directors for the service-learning program invited all SOP faculty members who were (positively or negatively) interested in the program to a workshop to review the course outcomes. The goals of the course were reviewed, the results of the pharmacy student surveys were distributed and the programs strengths and weaknesses were discussed. Although some faculty continued to express concern over the value of the course, all faculty members agreed to maintain the program and continue to monitor its contribution to the development of UCHSC pharmacy students.

\*This is a classic example of the “We’re from the university and we’re here to save you” phenomenon that plagues many academicians and illustrates how NOT to begin a partnership. The far majority of the work done to identify the type of service and to develop the curriculum was done within the university setting without inviting the collaborative participation of the community partner. Fortunately, the community welcomed the service and viewed it as a community need. The relationship with both schools evolved quickly and positively because the students were committed to and prepared for the program and because the program was well designed and organized. However, one school dropped out of the program after the first year because the administrators decided to discontinue all extra programs in an effort to meet state testing standards.

### **REVIEW QUESTIONS:**

- What challenges did you see in this case study that are similar to your own situation? Challenges that are different than your own situation?
- What possible solutions do you see that could help to overcome some of the challenges in this case study? What methods/actions have you employed to overcome some of these similar challenges in your own situation?
- This case study will be woven through the plenary sessions at this institute – so while you read it, please look for questions or thoughts specifically around the themes of: Building and Sustaining Meaningful Community-Campus Partnerships, Curriculum/Program Development and Revision, Reflection, and Evaluation and Continuous Assessment.