

Experience and Implementation of a Diabetes Pharmacotherapy Certificate Program

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The purpose of this article is to describe certificate program criteria development and the implementation of a diabetes certificate program for pharmacists in North Carolina. Discussion of the difference between a certificate program and certification is reviewed along with program participation levels of a diabetes certificate program. Specific components including didactic, skills, and patient care experiences are discussed with regard to program requirements, time course, costs, certificate update and outcome measures. The primary findings of this experience are that a certificate program in diabetes was requested, developed, implemented, and attended by numerous pharmacists in North Carolina. Certificate programs are continuing to emerge. This program represents an important phase in the evolution of certificate programming in North Carolina.

INTRODUCTION

As a result of the changes in health care and the movement toward pharmaceutical care, there is a critical need for pharmacists to upgrade their skills and assume greater responsibility for patient care outcomes. Certificate programming is rapidly becoming one method of focused competency-based, continuing education. Certificate programs offer pharmacists the opportunity to acquire knowledge and skills necessary to develop new roles in disease state management (1,2). The approach of imparting focused knowledge and skills through patient case application will hopefully allow pharmacists to take on new roles in patient education and disease state management.

Certificate Program versus Certification

According to the 1989 American Association of Colleges of Pharmacy (AACP) and the American Council on Pharmaceutical Education (ACPE) Conference on Certificate Programs, certificate programs provide opportunities for practitioners to acquire knowledge and develop skills that enable the development of predetermined practice competencies(3,4). Upon meeting the program requirements, a certificate of achievement is usually given to the participant(5). In North Carolina (NC), the NC Center for Pharmaceutical Care has been developed to evaluate and certify programs. Providers of certificate programs submit their program for approval in order to obtain recognized certification for pharmacists in the state.

In contrast, certification indicates recognition of competency in a specialized area and requires consistent performance in didactic, skills and patient care activities(2-6). The purpose of certification is to grant recognition to practitioners who are competent in an area and to safeguard the public(2-6). On the national level, the Board of Pharmaceutical Specialties (BPS) is the only organization empowered to certify specialists in pharmacy. Currently, BPS administers specialty certification examinations in pharmacotherapy, nuclear,

nutrition support, oncology, and psychiatric pharmacy(7). In addition, the American Society of Consultant Pharmacists is currently developing a national certification exam for pharmacists in geriatric pharmacy(8). Another certification of interest to pharmacists is the Certified Diabetes Educator (CDE), a national certification process for health care professionals. Requirements include documentation of one thousand patient care hours and successful completion of an exam every five years(9). Some disagree on the use of the term certificate program since the terminology can be confusing when compared to the examples of national certification processes described above(3,10,11). While the specific terminology is debated, the potential utility of certificate programs in continuing pharmacy education is compelling.

One of the areas of concern regarding certification has been the lack of consistency. A review of existing certificate programs indicates great variation in time requirements, ranging from a few days to more than a year(12,13). In an attempt to develop standardization and quality control of certificate programs in NC, a certificate programs task force was appointed jointly in 1996 by the Deans of two Schools of Pharmacy in NC. Members of the task force included representatives from both Schools of Pharmacy, the NC Society of Health-System Pharmacists, the NC Pharmaceutical Association and the NC Area Health Education Centers Program. The task force studied the definition adopted by the 1989 AACP/ACPE Conference on Certificate Programs and developed a definition for NC certificate programming(3).

A certificate program was defined by the NC task force as an educational experience that has the components of the acquisition of new knowledge, the development of skills, and the application of knowledge and skills to practice via experiential training. The specific criteria for certificate programs are outlined in Table I. The primary objective of this paper is to describe a certificate program in diabetes that was developed to fill an ongoing need of improving the delivery of diabetes care as requested by numerous practicing pharmacists in NC.

Table I. Certificate program criteria

- Require certain minimum competencies and/or knowledge base for entrance into the program
- Are curriculum based
- Are academically rigorous
- Require satisfactory completion of lessons/examinations
- Contain physical assessment component when appropriate
- Contain direct patient care contact
- Contain both didactic and experiential elements
- Have an outcomes focus oriented on new or advanced practice competencies rather than providing information to assist practitioners to keep up in their practice area

METHODS

Development of a Diabetes Certificate Program

Certificate program design and delivery continues to evolve in NC. One of the first certificate programs to be offered under the NC task force guidelines was in diabetes. This program serves as an example of certificate program implementation and was designed as a statewide effort in NC through the Northwest Area Health Education Center and the School of Pharmacy at the University of NC at Chapel Hill. The proposed template for NC certificate programs requires three levels of participation as described in Table II. It was estimated that the total time commitment for this program averaged 57 hours (15 hours for home study manual and posttest, 13 hours for skill sessions, four hours per patient case including education sessions and write-up for a total of 24 hours, and five hours for case presentation). In general, the program requires a minimum of three months to complete but the rate is dependent on the participant.

Level 1 - Content Update

A certificate program brochure was mailed to all licensed pharmacists in NC approximately three months prior to the skills seminar. This allowed time for the participant to complete a study manual and pass a posttest which fulfilled Level 1 criteria in Table II. A pharmacist could apply to the program as long as he/she had access to working with patients who have diabetes. Selection of participants was on a first-come, first-served basis.

The home study manual provided an avenue for pharmacists to update, strengthen, and build their diabetes knowledge base at their own pace. The sections of the study manual included pathophysiology, exercise, stress management, nutrition, pharmacotherapy, self-monitoring, acute and chronic complications, special management issues, and the pharmacist's role in diabetes management. The manual was written using a number of references primarily from the American Diabetes Association(14). A posttest was designed by developing 40 multiple choice questions covering each area in the study manual to assure that participants had some baseline competency. Field testing took place to determine the amount of time required to read the study manual and complete the posttest. The material was mailed to 10 practicing pharmacists who were not enrolled in the program. A total of five completed and returned the material. The average time for completion of the manual and posttest was approximately 15 hours. It was decided that if participants did not pass the posttest with a score of at least 80 percent, a re-test would be offered once using a different set of multiple choice questions for the posttest. If participants successfully completed the manual and passed the posttest, they were allowed to register for a two day skills seminar.

Table II. Certificate program participation levels

Level 1	Content Update - May be provided as self-study or didactic lectures.
Level 2	Clinical Application of Skills - should consist of interactive workshops, discussions, demonstrations and hands-on sessions. Mechanisms for reimbursement for pharmacists' cognitive services from third party payers should be included during level 2 discussions. (Levels 1 and 2 should total a minimum of 28 hours.)
Level 3	Implementation and Application - Each participant must submit an action plan describing implementation of patient education in their practice. In addition, each participant must submit a minimum of one satisfactory case study demonstrating patient intervention and patient outcomes utilizing the skills learned in the certificate program.

Level 2 - Clinical Application of Skills

A maximum of 25 participants were allowed to participate in a two-day skills seminar. Prior to attending the skills seminar, participants were sent information regarding how to prepare a case presentation and a SOAP (Subjective-Objective-Assessment-Plan) note. Other information provided to aid in the case work-up of at least one patient included a request for the release of patient medical information and a sample cover letter to a physician that explained the program and how the pharmacist might work with the patient. Additional materials consisted of a data collection for initial patient work-up, an interview form, a flow sheet, and educational objectives for patients with diabetes.

The first day of the skills seminar focused on having the participants obtain a detailed patient case work-up. Activities consisted of interviewing techniques, physical assessment, medical chart review, and assessment of patient data. Use of monitoring parameters, treatment approaches, nutritional issues in diabetes, and practical aspects of exercise were also covered in lecture format. Participants also learned how to develop an implementation plan to carry forth their future plans in caring for patients with diabetes. Appropriate documentation and physician communication, including setting up a meeting with each physician prior to requesting patient information were emphasized.

On the second day of the skills seminar, pharmacists were taught how to use devices related to diabetes patient management. Self-monitoring of blood glucose (SMBG) instruction included advantages and disadvantages of different glucose meters, overview of meter technology, and user error. The participants demonstrated proper use of each blood glucose meter by applying a drop of their own blood and interpreting the result. Considering the variety of SMBG devices, pharmacists rotated among five stations containing different meters (Glucometer Elite, One Touch Profile, SureStep, AccuChek Advantage, and Glucometer Dex). An instructor at each station used a check-off list to verify a competent performance. Informed consent was obtained from each pharmacist before they participated in this portion of the program.

The pharmacists were taught to use injection devices, including insulin pens and auto injectors. Pharmacists demonstrated proper technique of drawing up insulin from a vial using a syringe and injected themselves with normal saline. SMBG and insulin injection training provided "hands-on"

experience. Topics discussed in lecture format included hypoglycemia and hyperglycemia, reimbursement, setting up a consultation service, and a review of diabetes resources and educational materials.

After completing the two day skills session (Level 2), the pharmacist was ready to return to his or her practice site for work-up of six cases. Each participant was expected to work with a mentor who provides oral and written feedback about the case work-ups and notes written to the patient's physician. Participants were required to continue to communicate with the patients' physicians throughout the program. The pharmacists then reconvened approximately six weeks later to present one case in front of a small group of their colleagues and submit the remaining five case work-ups for evaluation.

Level 3 - Implementation and Application

The oral case discussion session was a day-long program at which participants presented one 20 minute case and responded to questions. They were critiqued by an instructor and the other participants through oral and written evaluation. In addition, each participant also participated in the discussion of at least six additional cases. Participants were also asked to submit an action and implementation plan for diabetes care. The purpose of this exercise was to allow the pharmacist to realistically describe their specific goals related to delivering diabetes care to patients. It was emphasized to participants that they needed to structure a formalized plan describing how they would institute a practice focused on diabetes care over a four month time frame. A copy of this plan was mailed back to the pharmacist by the program coordinator with suggestions to remind them of their goals approximately six months after they finished the program.

RESULTS AND DISCUSSION

Three sessions of the diabetes certificate program have been conducted with the maximum number of 25 participants. Another session is being planned for the latter half of 1998. Pharmacists from community pharmacy (37), hospital settings, including ambulatory care clinics (25), consulting practices (7), and managed care (6) comprise the majority of participants thus far. The evaluation of the program by the pharmacists indicate that the time commitment of the estimated 57 hours is accurate and that the flexibility of the program is attractive. Many participants plan to take the national Certified Diabetes Educator (CDE) exam and are already delivering some type of education or service to patients with diabetes.

After the participant completed all components of Levels 1, 2, and 3, they were asked to evaluate the program. If the participant completed all requirements of the program satisfactorily, a Certificate in Diabetes Education was mailed that stated the pharmacist had completed the knowledge, skills, and application aspects of a diabetes pharmacotherapy certificate program. The certificate was issued by the Northwest Area Health Education Center and is valid for a period of one year from date of issue. Pharmacists completing the program also receive 33 hours of continuing education credit (ACPE). The total cost per participant for all components of the program was \$395.00.

Each year, participants will have the opportunity to renew their certificate by attending a one day continuing

education (CE) program on diabetes and completion of six cases for assessment by the program director. The anticipated cost for certificate update is \$100.00 which includes the mandatory one day CE program and evaluation of the six cases. An optional component of the renewal process consists of the participants documenting patient outcomes including measures of health care utilization such as hospitalizations, number of physician visits, complications (amputation, need for dialysis), diabetes control (blood glucose, hemoglobin A1c), and a quality of life assessment. Samples of the "Patient Interview Forms" and "Diabetes Outcome Forms," that are completed by pharmacists in the certificate program can be obtained by writing the first author.

CONCLUSION

The development and implementation of a diabetes certificate program has been a challenging and rewarding experience. Participant feedback has been overwhelmingly positive, and most have found the program to be beneficial in expanding their practice regarding direct patient care. Communication of patient care information to other health care professionals is an essential skill in the overall management of the patient with diabetes. Case workup and presentation were required and rated highly on participant evaluations. Educating physicians about the expanding role of pharmacists in direct patient care and obtaining medical information from physician offices has been noted to be difficult for some participants. Future programs will provide more instruction regarding the acquisition of patient data through personal inquiry, prior meetings with physicians and patient input. This program has provided information, skills, and support for pharmacists to begin a patient care practice in diabetes care that will hopefully improve patient outcomes. The preliminary response from pharmacists have been excellent. Overall, knowing that some of the pharmacists participating in this program are changing their practice and improving patient care outcomes makes the demands of this type of program worthwhile.

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