

Development of Ambulatory Clerkships in a Managed Care Setting¹

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The primary goal of this project was to develop and evaluate undergraduate ambulatory care clerkships in a group-practice health maintenance organization. A twenty-hour training program was developed by College faculty and conducted over three days. The program incorporated the preceptor training program developed by the University of North Carolina, the patient counseling program developed by the Indian Health Service, discussions of selected therapeutic topics utilizing case scenarios, and instruction in drug regimen review. The project resulted in the development of eight effective ambulatory clerkship sites. The preceptors were perceived as positive role models and students gained experience in a number of areas not routinely available in traditional community experiential sites. A program of this type may be useful to other schools of pharmacy which are attempting to increase and/or improve their clerkship sites.

INTRODUCTION

Much has recently been said about how both health care and pharmacy education are undergoing radical change. Managed care is dramatically changing the face of health care. In Oregon, 1.1 million people are estimated to be enrolled in some type of health maintenance organization (HMO)(1), versus approximately 428,000 just 10 years ago(2). Managed health care emphasizes cost containment and outpatient management, for which pharmacists are well placed to assume greater responsibility. In order to maximize these opportunities for expanded roles, pharmacists must be prepared to provide clinical services in the outpatient managed-care setting. The development of ambulatory clinical clerkships in managed-care systems is important to provide the appropriate experiential training for students who will be entering pharmacy practice in these systems.

Just as managed care is changing the way health care is provided, the movement toward the entry-level PharmD degree is altering pharmacy education. The need for experiential training sites is expected to increase exponentially as colleges increase the required number and expectations of clinical rotations. A program designed to enhance the skills of pharmacists practicing in ambulatory care settings might help colleges of pharmacy improve or expand student training in ambulatory care sites.

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group-practice HMO. A preceptor training program was developed using resources available to most colleges of pharmacy. This paper discusses the pharmacists' perceptions of the impact of the program on their practice and role as preceptors. A description and evaluation of the effects of this program on the ability of the preceptors and students to counsel patients will be published separately.

BACKGROUND

In 1990, the Oregon State University College of Pharmacy offered only the baccalaureate degree in pharmacy and graduated approximately 80 students per year. Students were required to complete 12 weeks of experiential training, with four weeks each in an ambulatory pharmacy, a hospital pharmacy, and an inpatient clinical site. Traditionally, the ambulatory experience was in community and chain pharmacies where dispensing was the primary focus, with limited opportunity for students to gain experience in providing nondistributive services. The College recognized the need to improve and expand clerkship training, particularly in the ambulatory setting, and revised the curriculum to require an additional eight weeks of clerkship beginning in 1996. Like many pharmacy programs with severe budgetary constraints and limited numbers of full-time practice faculty, this meant reliance on volunteer adjunct faculty to teach much of the increased clerkship requirements.

Kaiser Permanente Northwest is a group-practice health maintenance organization serving the health care needs of more than 380,000 people in Northwest Oregon and Southwest Washington. An increasing number of their outpatient clinic pharmacists are developing practices where nondistributive activities such as patient counseling and drug regimen

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review comprise a significant portion of their efforts. Pharmacists are also involved in specialty clinics treating conditions such as diabetes or hyperlipidemia, and are involved with formulary management and target drug programs. Some of the pharmacists practice in small patient care area pharmacies (PCAPs), which are satellite pharmacies located within clinic areas, separate from the ambulatory clinic's main pharmacy. This environment enhances the pharmacists' ability to provide patient counseling and physician consultation, and provides access to laboratory data, patient charts, and other information.

METHODS

Preceptors were selected in collaboration with Kaiser Permanente Northwest Region pharmacy management. Pharmacists practicing in family or internal medicine were felt to be best suited for the project as these sites would expose students to a wide variety of patients and pharmacotherapy issues. A member of the Kaiser Permanente pharmacy management team contracted approximately 20 pharmacists to determine their interest in becoming preceptors and participating in the project. The project was described in detail in a meeting with three faculty from the College of Pharmacy. A member of the pharmacy management then contacted the pharmacists to determine their continued interest. Seventeen pharmacists agreed to participate in the training program.

Of these 17 pharmacists, nine individuals practicing in eight PCAPs were chosen by college faculty members with representatives of the pharmacy management to initially precept students and participate in the assessment of the training program. While the remaining eight pharmacists were not selected as preceptors, the level of interest was so high that they also were allowed to attend the training program. Selection criteria for preceptors included the perceived likelihood of effectiveness as a teacher, clinical services provided, and location of the clinic site. In order to obtain data on the program effectiveness, three to four students were assigned to each of the eight assessment sites during the three academic quarters prior to preceptor training, and three to four students were assigned to each site in the two academic quarters after preceptor training.

Prior to receiving their first assigned students, the preceptors were oriented to rotation objectives using those criteria already established for the required ambulatory care rotation. Experience in patient counseling, drug regimen review, and other clinical activities available at that site, in addition to learning dispensing skills, were emphasized, with the requirement that at least 50 percent of the student's time be spent in nondistributive activities. Students were assigned to these sites using the standard procedures of the required ambulatory rotation.

Description of the Preceptor Training Program

A twenty-hour training program was developed by College faculty and conducted over three days. The program incorporated the preceptor training program developed by the University of North Carolina (UNC) and made available through American Association of Colleges of Pharmacy (AACCP)(3), the patient counseling program developed by the Indian Health Service (IHS), discussions of selected therapeutic topics utilizing case scenarios, and instruction in drug regimen review. Two College faculty members

Attended an IHS training programs in Phoenix, Arizona to learn how it was conducted. The program was then modified for this project.

Approximately six weeks prior to the training program, reading materials were sent to the participating pharmacists to be completed prior to the start of the program. The reading material consisted of articles on communication skills, patient interviewing, conflict resolution, drug regimen review, and six therapeutic topics. The therapeutic topics were determined by surveying the participants as to the disease states they would prefer to review. The program was taught by four full-time OSU College of Pharmacy practice faculty and an adjunct faculty member from the IHS. A variety of instructional techniques were used, including small group discussions, role-playing exercises, trigger videotapes, and case studies to assure active participation from the attendees. The program was conducted at an off-site facility, and meals and lodging were provided for participants.

The first part of the program focused on communication and conflict resolution skills. Topics covered included overcoming barriers to communication, use of different types of questions (open, closed, leading), reflective responses and empathy. Group discussion and trigger videotapes were used for this section.

The next module consisted of the Indian Health Service patient counseling program, available through Pfizer Pharmaceuticals as the Pharmacist-Patient Counseling Program. This program is designed to teach an interactive approach to patient education. The technique uses key open-ended questions to determine what the patient knows about his prescriptions. The pharmacist then only needs to supply the information the patient needs, and verify that the patient understands. The training program consists of videotape vignettes and role-playing in counseling and conflict resolution. The participants alternated between patient and pharmacist roles and practiced counseling on new and refill prescriptions using the key questions. Facilitators provided feedback and encouraged discussion.

The third part of the program consisted of small group discussions of therapeutic topics using case scenarios developed by College faculty (examples may be obtained by contacting the corresponding author). The group was divided into two sections with two facilitators in each. One pharmacist was provided with a prescription, medication profile, chart note and laboratory data for the "patient", while other participants were provided scripts for the patient and the physician. The pharmacist was expected to assess the information and either counsel the "patient" or contact the "physician" as appropriate. This exercise was designed to incorporate additional patient information in order to build skills in history taking, drug regimen and laboratory review and counseling. It provided a basis for small group discussion of the therapeutic topics of diabetes mellitus, hypertension, hyperlipidemia, asthma, depression, and arthritis.

The program ended with the UNC Training Pharmacy Preceptors Program, which has been described elsewhere(3). Briefly, this program is designed to help preceptors develop skills in communicating the objectives for a rotation, teaching within the practice setting, performing student evaluations, and motivating students. It consists of videotape scenarios, facilitated discussion, and small group role-playing.

Table I. Preceptor demographics

Characteristic	
Highest degree earned	
BS percent	100
Number of years since degree awarded (mean ± SD)	12.1 ± 4.6
Past experience in precepting students	
Yes (percent)	11
No (percent)	89
Time spend on activity in 18 months pre-program (mean percent ± SD)	
Outpatient dispensing	45 ± 11.7
Patient Counseling	19 ± 5.7
DUR/target drug programs	7.8 ± 8.9
Obtaining medication histories	2.6 ± 3.5
Problem Solving	8.9 ± 3.7
Interacting with physicians and other health care	
Personnel	5.4 ± 2.0
Reviewing specific patients' drug regimens	7.4 ± 4.7
Other activities	5.3 ± 6.7

Approximately two weeks after completion of the three-day program, an OSU faculty member visited clerkship sites to determine how each preceptor was progressing with applying the clinical skills learned and to discuss how these skills could be taught to students. The faculty member addressed questions posed by the preceptors and provided additional instruction, as needed.

Evaluation Methods

Evaluation of the training program and clerkship was by survey and by direct observation of the patient counseling skills of the preceptors and students. The responses of the students and pharmacists were blinded and they were told that their responses were confidential and anonymous. The results of the patient counseling assessment will be described and analyzed in a subsequent paper.

Evaluation of the Training Program. Approximately six months after its completion, all pharmacists who participated in the training program were mailed surveys and asked to provide a candid evaluation about various aspects of the program and its effectiveness and impact, and to return the survey in a postage-paid envelope. This delay in evaluation was designed to allow the participants an adequate period for critical assessment of the impact of the program on their practice and student teaching. Participants were also queried as to their satisfaction with the College of Pharmacy in terms of administration of the clerkship and responsiveness to practitioners. Most survey questions used a Likert scale from one to five, where one represented strongly disagree or poor, and five represented strongly agree or excellent. A number of open-ended questions about the strengths and weaknesses, suggestions for improvement and desire for future training were also included.

Evaluation of Clerkship Experience. Upon completion of the clerkship, students provided a detailed evaluation of their experience. This clerkship evaluation collected information about student satisfaction with the rotation, an estimate of how much time was spent on various activities, and their assessment of the strengths and weaknesses of the rotation. A combination of Likert scale ratings and open-ended questions was used.

Table II. Pharmacists' evaluation of training program (n=17)

Statement	Likert score ^a (mean)
"The Gaps program had a positive impact on my practice."	4.6
"As a result of the training program, I improved my counseling technique."	4.6
"As a result of the training program, I improved my drug regimen review skills."	3.9
"As a result of the training program, I improved my precepting skills."	4.4
"The case study format used in the GAPS training program was an effective teaching approach."	4.0
"The use of the "trigger" videotape with discussion in the GAPS training program was an effective teaching technique."	4.2
"The assignment of readings prior to the GAPS training program was an effective educational technique."	3.5
The GAPS training program required my active participation."	4.5
"The GAPS training program required me to engage in problem-solving."	4.4
<i>"The following were important to the success of GAPS training program:</i>	
"Conducting the program in a location away from work, home, etc."	4.6
"Informal programming/setting"	4.9
"Use of a small group interactive educational approach."	4.9
"Opportunity for casual interactions with colleagues and program faculty."	4.6
"Overall, I would rate the GAPS training program as"	4.7
"I would like to be involved in training OSU pharmacy students in the future."	4.3
<i>The following components from the GAPS training program were useful in teaching/precepting students. (Responses are from 9 preceptors only)</i>	
"Sessions on precepting skills."	4.1
"Session on Drug Regimen Review."	3.6
"Session on Patient/Counseling technique."	4.9
"Session on conflict resolution/communication skills."	4.0

^aLikert Scale: 1 = Strongly disagree, 3 = neither agree nor disagree, 5 = strongly agree.

The preceptors were also questioned about the clerkship program and rotation at the end of the project (approximately six months post-training). This survey was combined with the training program evaluation questionnaire and used a combination of Likert scale rating of various aspects of the program and open-ended questions for written responses.

RESULTS

Preceptor Background Data. The characteristics of the pharmacists selected to serve as preceptors are detailed in Table I. All of these preceptors hold the Bachelor of Science as their practice activities during the 18 month period prior to becoming a preceptor. The level of nondistributive practice activities is high, with greater than 50 percent of their

Table III. Student evaluation of the clerkship rotation

Statement	Likert score ^a (mean ± SD)	
	Year 1	Year 2
A rotation that integrates clinical training with distribution training is preferred to training that separates these two aspects into separate components.	4.54 ± 0.65	4.24 ± 1.16
I would encourage other students to take this rotation.	4.89 ± 0.32	4.81 ± 0.40
If I could choose, I would choose to take a traditional externship site instead of the Kaiser Permanente site.	1.30 ± 0.67	1.54 ± 0.90
The organization of the rotation by the school was satisfactory.	3.70 ± 1.10	4.21 ± 0.88
The organization of the rotation by the preceptor was satisfactory.	4.52 ± 0.89	4.46 ± 0.81
The expectations of me as a student were clearly explained.	4.48 ± 0.80	4.15 ± 1.12
The projects assigned to me by my preceptors were a valuable part of my experience.	4.69 ± 0.62	4.64 ± 0.64
I felt I had adequate input as to how my time was spent.	4.23 ± 0.99	4.15 ± 1.16
My preceptor provided adequate feedback on my progress.	4.74 ± 0.53	4.46 ± 0.90
My preceptor is a good role model.	4.63 ± 0.93	4.46 ± 0.95
This rotation enhanced my ability to provide medication counseling to patients.	4.52 ± 0.64	4.73 ± 0.67
This rotation enhanced my ability to evaluate patients medications regimens and make appropriate recommendations.	4.15 ± 0.77	4.19 ± 0.85
This rotation enhanced my confidence in making recommendations to physicians regarding patients drug therapy.	3.78 ± 0.89	3.80 ± 0.96
As a result of this rotation, I better understand the important clinical activities pharmacists provide in the outpatient setting.	4.41 ± 0.75	4.48 ± 0.77
As a result of this rotation I am more enthusiastic about my role as a pharmacist in non-distributive patient care activities.	4.54 ± 0.71	4.50 ± 0.76
My preceptor was an effective teacher.	4.78 ± 0.64	4.65 ± 0.63
My preceptor was knowledgeable about pharmacy.	4.85 ± 0.36	4.85 ± 0.37

^aLikert Scale: 1 = strongly disagree, 3 = neither agree nor disagree, 5 = strongly agree.

Table IV. Estimates by both students and preceptors of percentage time spent by students on various activities

Activity	Percent	
	Students	Preceptors
Outpatient dispensing	30.6	30.0
Patient counseling/teaching	24.2	29.4
Drug use review/target drug programs	10.1	5.1
Obtaining patient medication histories	7.4	2.5
Problem solving	7.4	8.5
Interacting with physicians and other health care personnel	7.0	6.6
Reviewing specific patients' drug regimens	7.9	10.6
Other activities	5.3	6.9

time spent in activities such as patient counseling, drug regimen review and target drug programs. One pharmacist had previous experience as a preceptor.

Evaluation of the Training Program by Participants. The training program was highly rated (Table II). Participants strongly agreed that the program had a positive impact on their practice, particularly in the area of patient counseling, and on their precepting skills. They also strongly agreed that the counseling training was useful in their teaching. The pharmacists indicated that conducting the program in an informal setting away from work and other distractions was very important, as was the opportunity for casual interaction with colleagues and program faculty. The use of a small-group educational approach was felt to be very important to the success of the program. It was apparent from written comments that the attendees, in general, strongly desired future training programs of this type.

Evaluation of Clerkship Experience. Fifty-three students completed clerkship rotations during an 18 month period, reflecting three to four students at each site per year. Student evaluations of the clerkships demonstrate a high level of satisfaction with the content of the rotations as well as the preceptors, as shown in Table III. Preceptors were perceived as knowledgeable, good role models, and effective teachers. The students felt that the rotation improved their skills in cognitive functions, as well as in dispensing. There were no significant differences in satisfaction between the students who completed the rotation prior to preceptor training and those who did so after the training.

Table IV lists the reported percent of time spend by the student in various clerkship-related activities. These estimates were obtained from both the students and the preceptors and correlated well between the groups. Students and preceptors estimated that approximately 70 percent of the students' time was spent in nondistributive functions, with the highest percentage of time spent in patient counseling. Activities were varied and focused on influencing medication use through interactions with patients and other health care providers.

Preceptor ratings of various aspects of the clerkship are shown in Table V. Most of the preceptors were satisfied with their experience as clerkship preceptors. Six of the nine preceptors expressed a desire to continue with the program, while two found it difficult to juggle the normal demands of practice along with the added responsibility of preceptorship, and a third had enrolled in a PharmD program. In addition, three of the nonpreceptor pharmacists attending the program subsequently became preceptors. The majority of preceptors felt the rotation should be at least six weeks in duration, and were willing to teach three or four students yearly.

Table V. Evaluation of the clerkship experience by preceptors

Statement	Likert score ^a (mean ± SD)
"I would be willing to precept more students per year than I currently precept"	1.6 ± 0.53
"The College of Pharmacy communicates with me in a timely fashion."	4.2 ± 0.44
"Precepting students in the ambulatory care externship/clerkship has had a positive impact on my opinion of the College."	3.6 ± 1.01
"I would recommend to other pharmacists to participate in the College's externship/clerkship program."	4.2 ± 0.83
"Kaiser Permanents has been supportive of my serving as a preceptor."	4.0 ± 1.12
"Serving as a preceptor has clearly defined by written and oral communications from the Colleges."	4.4 ± 0.73
"The organization of the ambulatory externship/clerkship by the College of Pharmacy was satisfactory."	4.0 ± 0.50
"My role as a preceptor was clearly defined by written and oral communications from the College."	4.2 ± 0.44
"The learning objectives for students in the ambulatory externship/clerkship were clearly delineated."	4.2 ± 0.44
"The number of meetings with College-based coordinators was adequate."	3.4 ± 1.33
"I would like to precept students in the ambulatory externship/clerkship next year."	3.2 ± 1.30
"The workload expected of me as a preceptor was excessive."	2.8 ± 0.67
"Overall, the performance of students on the rotation was acceptable."	3.9 ± 0.78
"The College was available and responsive in resolving any questions or problems that arose."	4.0 ± 0.50

^aLikert Scale: 1 = strongly disagree, 3 = neither agree nor disagree, 5 = strongly agree.

DISCUSSION

Eight ambulatory managed-care clerkship sites were developed as a result of this project. These sites were able to take a large number of students over two academic years. Importantly, six of the eight sites developed have continued in the clerkship program after completion of the two-year project. Eight additional pharmacists who initially offered to participate but were not selected to be preceptors attended the training program. Several of these have subsequently become clerkship preceptors, which will be of benefit to our program as clerkship requirements are increased.

These clerkships appeared to be well suited for preparing students to provide clinical services to ambulatory HMO patients. Students spent much more time in nondistributive functions than is usual in a traditional ambulatory setting such as a community pharmacy. In contrast to the finding of Vanderveen *et al.* where students spent 78 percent of their time dispensing during community pharmacy externships(4), students in this ambulatory care rotation spent 30 percent of their time in this activity, had more access to physicians, and were exposed to a wider variety of clinical activities. The high level of student satisfaction suggests a quality learning experience. Kradjan and colleagues(5) also reported a positive student response when clinical and distributive training were integrated in an HMO.

Preceptor training was perceived to have a positive impact on the activities of the attendees, and they believed the program improved their abilities as practitioners and preceptors. This resulted in an improved relationship between this important training site and the College of Pharmacy. Pharmacy management was very supportive of this program and viewed it as a way to improve the skills of their pharmacists and provide continuing education at no charge. It is our opinion that this was instrumental in obtaining their strong support and assistance in the recruitment of preceptors.

The preceptor training program utilized resources that are readily available to all colleges of pharmacy. The UNC preceptor training program is accessible through AACP, and the Pharmacist-Patient Counseling Program developed

by the IHS may be obtained through Pfizer Pharmaceuticals. Both are excellent tools for faculty who wish to conduct similar programs to improve or expand their clerkship programs. The patient case scenarios developed specifically for this project are available upon request.

Limitations

The program described may be limited in its generalizability in that other HMO models may not offer the same opportunities and advances. Our evaluation on activities was by survey, and may be subject to recall bias. However, the independent reports of the students and the preceptors were very similar. Perceptions of the clerkship and training program were also subjectively measured, but the satisfaction of both students and preceptors are important outcomes in developing and maintaining a clerkship site.

CONCLUSIONS

The project resulted in the development of eight effective ambulatory clerkship sites in an HMO. In general, the preceptors were perceived as positive role models and students gained experience in a number of areas not routinely available in traditional community experiential sites. A program of this type may be useful to other schools of pharmacy which are attempting to increase and/or improve their clerkship sites.

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