

Nontraditional Clerkships at the University of Arkansas

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The clerkships of the nontraditional PharmD program at the University of Arkansas are described. Arkansas has a large nontraditional PharmD program with more than 400 students in the program. The majority of the clerkship experience is conducted in the student's own practice environment where a change in practice habits has maximal impact on the profession and the public it serves. Clerkships were designed to minimize the amount of time the student must be on campus away from his/her professional practice. The clerkships are accessible to the student because they do not require a leave of absence during the clerkship training period. Clerkships compel the student to take the initiative in the identification of patients with specific disease states who could benefit from a pharmacist's knowledge and intervention.

BACKGROUND

Based upon changes taking place in the profession and in academic programs in pharmacy nationally, the College of Pharmacy at the University of Arkansas developed a proposal in 1987 to discontinue its BS degree program in pharmacy and to replace it with the professional entry-level Doctor of Pharmacy degree program. Both traditional and nontraditional Doctor of Pharmacy degree program pathways were proposed. As a part of its developmental process, the College requested and received an ACPE consultative visit in 1988. Later that year, and based upon perceived differences in its BS and PharmD curricula, the faculty adopted a list of courses in the traditional program which nontraditional students would have to satisfy in order to complete the requirements for the PharmD degree. That list of courses serves as the curriculum for the nontraditional pathway. The College implemented its traditional program option in the Fall of 1989. Its nontraditional option was implemented in the Fall of 1990 following a 1989 survey of alumni and pharmacists licensed in Arkansas. In 1990, a Nontraditional PharmD Advisory Committee was established. By the end of 1992, the content and the process for the didactic and experiential components of the traditional pathway and the didactic component of the nontraditional pathway had been completed. Although a conceptual design for the provision of nontraditional clerkships was an initial component of the program, formalized clerkship development did not start until early 1993. Students began entering the nontraditional experiential component in early Fall, 1993.

INTRODUCTION

The holder of an entry-level PharmD is brought into the university environment at great expense, educated by the university's best, and mentored in professional practice and conduct by innovative preceptors. However, the entry level PharmD graduate often enters employment in a position at the bottom of the decision-making process. This circumstance severely limits application of education to practice and is frustrating to the graduate. In contrast, enhancing the

practicing pharmacist's skills and knowledge via a degree program educates the decision makers of established practices—those in the best position to have an immediate impact on the future of the profession. The nontraditional graduate is perfectly positioned to make pharmaceutical care a reality.

The experiential component of the nontraditional PharmD Program (NTPDP) at the University of Arkansas (with 58 out of 390 active nontraditional students currently enrolled in clerkships and 19 who have completed the clerkships) has three unique educational features that facilitate the licensed BS pharmacist to earn a PharmD degree. The first unique feature of the clerkship experience is the self-study component which is completed in the student's home community, thereby minimizing the amount of time on campus away from one's practice, family, and community. The clerkships are truly accessible, with many students being solo independent pharmacy practitioners. The second unique feature is that students conduct the majority of their learning experience in their own professional practice environments. Changed practice habits here have maximal impact on the profession and the public it serves. Thirdly, clerkships are designed to encourage communication among the various types of pharmacist practitioners and between them and medical practitioners in their community. For example, retail pharmacists are encouraged to follow their retail patients into the hospital setting and interact with local hospital pharmacists and physicians in the development of case studies of acutely ill patients.

The American Pharmaceutical Association (APhA), the American Society of Hospital Pharmacists (ASHP) and the National Association of Retail Druggists (NARD) issued a joint statement(1) in November, 1991 that supported the entry-level PharmD degree. The joint statement strongly encouraged colleges of pharmacy to develop a degree transfer process for current holders of the Bachelor of Science in Pharmacy degree in concert with the active support of the American Council on Pharmaceutical Education (ACPE). Degree equivalence is of primary importance to practitioners seeking equal professional opportunity, avoidance of

professional or career barriers, and professional equity. The forceful APhA/ASHP/NARD joint statement has provided colleges of pharmacy with a daunting challenge. Most academicians perceive the method to meet this challenge to be through the development of nontraditional academic programs of study. Six colleges of pharmacy have made a commitment to provide nontraditional PharmD programs(2). Most of these programs utilize similar distance education and independent study techniques, although one University has elected to teach didactics on campus in day and evening time slots. Videocassette and textbook learning approaches form the core of the didactic component in these programs. Most students in the didactic portion of these programs can progress through the didactics at their own speed by study at home.

DESCRIPTION OF THE NONTRADITIONAL DOCTOR OF PHARMACY PATHWAY

The University of Arkansas NTPDP encompasses 21 semester hours of didactic courses and 12 semester hours of clerkships. These 33 semester hours (representing roughly a year) were decided upon by the faculty to bridge the gap between the BS and traditional entry-level PharmD. This bridge was devised by the faculty by ascertaining the differences between the old BS program and the perceived needs of the nontraditional student from the entry level PharmD program. Didactic requirements include three credit hours of drug literature evaluation/biostatistics, four credit hours of pharmacokinetics/biopharmaceutics, ten credit hours of therapeutics, and four credit hours of pharmacy practice. These courses are offered through independent study. The student is not required to come to the campus for any purpose. The independent study techniques used in the didactic portion of the program include: syllabus, textbooks, videotapes, and instructors available for assistance in person by appointment or via a toll free telephone line. After each credit hour of each course a proctored test must be successfully completed. Most nearby students take tests at the College of Pharmacy, but those who live some distance away use College-approved proctors to administer the test and mail it in for grading. All didactic requirements must be completed prior to enrollment in the experiential coursework.

The uniqueness of the University of Arkansas for Medical Sciences (UAMS) program is that the bulk of the experiential component of the program can take place in the students' own communities under faculty tutelage. There are different needs between the adult, degree holding learner and the traditional student. Accessibility is the paramount issue at our institution. Most programs require the student to arrange 20 to 32 weeks leave of absence from their established practices to meet experiential requirements(2). Most colleges of pharmacy traditionally have conducted clerkships in a university setting. From our experience, most practitioners desiring the PharmD degree find it impossible to complete a traditional clerkship and maintain their business or employment. When the student must move or commute to another city in order to take clerkships, additional problems are created for those students with family and community obligations. Arkansas has developed a NTPDP that is accessible to the licensed practitioner.

The experiential component of the NTPDP consists of one selective rotation (either Ambulatory Care/Family Practice or Adult Medicine) and three elective rotations. The

three electives may be chosen from any traditional clerkship or any traditional clerkship available in the nontraditional format. To date the following clerkships have been developed in the nontraditional format: Ambulatory Care, Adult Medicine, Geriatrics/Clinical, Geriatrics/Consulting and Administrative, Home IV Infusion, Hospital Practice, Community Clinical, Drug Use Evaluation, Drug Information, Pharmacy Informatics, and Managed Care. Students who desire and are in a position to take traditional clerkships are assigned to them as slots are available. However, entry-level traditional students take precedence in assignment to clerkship rotations. To date, all traditional clerkship requests have been met for nontraditional students. Furthermore, although not promoted, when preceptors are available to the out-of-state student from other accredited PharmD level programs, those traditional clerkships are accepted for credit in the Arkansas program. Out-of-state preceptors must be on the faculty of an ACPE accredited College of Pharmacy offering the PharmD and serve as preceptor of a rotation that they normally offer to their traditional PharmD students. Before enrollment in the clerkships, each student must complete a plan of study that details the student's professional goals and current practice. The role of the clinical coordinator is to evaluate the clerkships requested to ensure they support the student's professional goals and then to coordinate the scheduling.

All faculty participation in the NTPDP is strictly voluntary. Since the program is considered an overload situation, preceptors are paid modest stipends for those NTPDP students they precept.

Each of the four three-credit hour Doctor of Pharmacy clerkships is designed to take the average "traditional" clerkship student 160 hours to complete. UAMS College of Pharmacy faculty determined that 12 hours of clerkship were appropriate in the nontraditional program by comparing the clerkship experiences obtained by students in the previous UAMS curriculum and subtracting that from the entry-level PharmD curriculum. This method also provides indirect credit for both academic and life experience by requiring 12 credit hours of clerkship experience instead of the normal 32 hours in the traditional PharmD curriculum. Students enrolled in the NTPDP are highly motivated just to endeavor a post baccalaureate degree. They include owners, managers, directors and supervisors who (unlike traditional option graduates) are in a position to implement change in their respective practice environments. These students already know drug products, have established patient populations, possess good communication skills, are seasoned by life and the profession, have an established rapport with physicians and other health care providers in their respective communities, and are more personally mature. With these attributes, the nontraditional student brings much to the clerkship experience that an average traditional student gains only by a process of maturation.

Parity is established between the two clerkship pathways (traditional and nontraditional) of the one PharmD degree by several mechanisms. The first is by having the same goals, objectives, and outcomes in both pathways. The second mechanism is through the use of the same evaluation instrument, utilizing a behaviorally anchored grading scale. Third, the same preceptors instruct and evaluate students in both pathways. The preceptor must mentor traditional students in order to be eligible to mentor nontraditional stu-

dents. The preceptors hold nontraditional students to the same outcome expectations as they do traditional students.

As noted above, the same competency statements as well as the same behaviorally anchored grading scales are used in both traditional and nontraditional pathways. These are developed to be as descriptive as practical to the nontraditional student and provide consistency between faculty members teaching the same course. One of the four coordinated sections dealing with patient monitoring competency statements and patient monitoring behaviorally anchored grading scales is attached verbatim as an example. The behaviorally anchored grading scales were adopted and modified from other colleges of pharmacy. (See Appendix A and B, respectively, for examples) Similar coordinated sections are also developed for cognitive skills, communication skills, and personal dimensions. These descriptive statements are utilized to give the student guidance on what is expected in successfully completing the course. They are to be used by the preceptor in determining if the student has met the competency statements and goals. Critical to the evaluation of many of these competencies is the direct observation of the student by the faculty member. The sections requiring direct observation should be done during the orientation section of the clerkship (see Appendix C). These orientation sessions can last from one day to twenty-one days. The students requiring more development require more orientation time both to direct the student's learning experience and for the faculty member to evaluate the student's progress. The time required for "orientation" is determined solely by the faculty preceptor.

Although the clerkships are conducted across a wide geographic area and use a variety of practice sites, the clerkships are student-focused, and problem-based with preceptors readily available to the student. The program has a toll-free line that the students can call for assistance, as well as a VMX system for after-hours messages. Most preceptors provide students with their home phone numbers. Further, students may access MICROMEDEX, PLUSNET in the UAMS library, MEDLINE, CANCERLIT, and several other data bases either from remote sites through computer link, at their own telephone time expense, or directly on the UAMS campus. Over 150 modems, software, and training have been provided to students interested in computerized support for their educational program. Communications between faculty are enhanced by a local area network (LAN). Implementation of an interactive two-way digitalized (phase) TV will be available in the summer of 1994 at six locations throughout the state for use by students and faculty in the traditional and nontraditional PharmD curriculum. The digitalized TV could also carry didactic materials as well as formal and informal case presentations. Additionally, digitalized TV will be explored for "clinical cluster" group discussions within clerkships. The main studio is housed in the same building as the College of Pharmacy. Arkansas is a large rural state, and the University has taken several steps to make the program more accessible to remote practitioners through available highly sophisticated communication systems.

Arkansas also has a well developed Area Health Educational Center (AHEC) program with full-time ambulatory care pharmacy faculty located at six centers around the State. These centers provide instruction to medical residents, traditional and nontraditional pharmacy students.

The Ambulatory Care/Family Practice model was the prototype nontraditional clerkship developed. It has served as the template for development of other elective clerkships. Although differences, reflecting unique clerkship competencies, expected outcomes, and site arrangements occur among the nontraditional clerkships, most clinical clerkships follow this general format. Some clerkships such as pediatrics and nuclear medicine have not lent themselves to the long-distance mode. They continue to challenge the College. Further, some clerkships, such as adult medicine, require that nontraditional students spend more time on campus during the "orientation" period.

DESCRIPTION OF THE AMBULATORY CARE/FAMILY PRACTICE CLERKSHIP

In a student-based, self-directed program more structured guidelines must be given to the student. Thus, the NTPDP clerkship manuals are more descriptive than the traditional manuals. A supplemental text titled, "Clinical Clerkship Manual"⁽³⁾ is required. The course description, a verbatim excerpt from the 62 page Ambulatory Care/Family Practice manual is found in Appendix B. As can be seen from this passage and the competency and evaluation sections of the manual, (Appendix A and C) attention is given to careful description of expectations from the student.

The nontraditional clerkships are organized into an orientation phase, a self-directed professional practice period, and an evaluation component. The first encounter in the orientation phase is where the student and preceptor get to know each other, where the manual is carefully reviewed, and where the preceptor details what is expected of the student successfully to complete the course. The second, third, and fourth encounters of the orientation involve the development of pharmacy care plans from mock medical records. In these exercises the preceptor can identify strengths and weaknesses of the student and provide direction on how to identify, approach, and initiate pharmaceutical care opportunities. Although face to face interaction of these activities are strongly encouraged, the distance student may conduct them by telephone. Finally, and most importantly in the orientation phase the student spends time in the preceptor's professional practice. During this orientation period the preceptor can evaluate by direct observation the student's skills, provide instruction, and allow the student to observe the "role model" practice. This orientation period can be as little as one day and as long as 21 days depending on the developmental needs of the student. To date most experiences have been in a very intensive two to four day range. The degree of orientation time is determined solely by the preceptor.

In the self-directed professional practice period the student identifies patients from his/her own practice to develop pharmaceutical care plans. These patients must be from selected disease states in various organ system "domains" to ensure a broad clerkship exposure. These cases are developed from one to three at a time and presented to the faculty by the student. Actual opportunities to improve patient care are emphasized. Students obtain the information they need by establishing a relationship with a local physician to access clinic records, by release of information forms from the patients, or by working with and through the local hospital pharmacy. This self-directed professional practice period takes considerable initiative by the student to

complete. It often creates new working relationships with the medical community.

Finally, the evaluation component of the clerkship involves the preceptor measuring the individual competencies met during the clerkship. As noted earlier, both traditional and nontraditional clerkships use the same preceptors, goals, competency statements, and behaviorally anchored grading tools. Non-traditional clerkships involve considerable self-study, and thus greater emphasis is placed on outcome competencies that can be demonstrated to the preceptor while less emphasis is placed on the processes involved. It is more important to measure outcomes achieved than it is to measure the steps (*e.g.*, number of patient rounds, etc.) taken. This emphasizes the importance and need for valid and reliable evaluation methods applicable to experiential settings and provides ample opportunity for future study.

CONCLUSION

It has been a dilemma in pharmacy education that students are brought into a university environment, accumulate a wealth of information, graduate, and enter into the work force where they are lowest in the decision making process and sometimes placed in a "count, pour, type, lick, and stick" approach to pharmacy grossly under-utilizing their knowledge. If academia can assist the practitioners and leaders of community and hospital practice in elevating their professional practice, then a real opportunity for progressive change in the profession can occur.

Faculty members have been impressed thus far by the strength of the nontraditional students in their clerkships. For nontraditional students who want to further their education, we encourage residency and fellowships as we do for traditional students. Academia has more opportunity to affect rapid change in the profession of pharmacy through nontraditional programs than perhaps exists with traditional programs.

Am. J. Pharm. Educ., **58**, 294-299(1994); received 3/26/94, accepted 7/23/94.

References

- (1) APhA/ASHP/NARD Joint Statement, Entry-Level Doctor of Pharmacy Degree, November (1991).
- (2) News. "Requirements vary in existing nontraditional PharmD programs." *A. Hosp Pharm.*, **50**, 1791-1799(1993).
- (3) Boh, L.E., *Clinical Manual*, Applied Therapeutics, Inc., Vancouver WA (1993).

APPENDIX A. COMPETENCIES

4.0 Patient Monitoring

- 4.1 Display the ability to interpret patient data found in the patient chart.
- 4.2 State the desired endpoint or goal of therapy when treating a patient with a common disease state.
 - 4.2.1 *The candidate shall recognize therapeutic endpoints (e.g., appropriate length of therapy, desired response versus observed response, specific maximum or minimum drug serum levels)*
- 4.3 Develop a rational drug regimen given a specific patient with a specific disease state **using clinical data to optimize therapeutic drug regimens.**
 - 4.3.1 *The candidate shall calculate the dose or rate of administration of a drug when given appropriate data.*
 - 4.3.2 *The candidate shall identify, collect, or evaluate patient information that relates to the effectiveness*

of drug therapy (e.g., clinical observations, pharmacokinetic data, laboratory test results, sensitivities.)

4.4 Demonstrate the ability to obtain a complete drug history from a patient.

4.4.1 *The candidate shall evaluate the suitability of the dosage form to best accommodate patient compliance.*

4.5 The candidate shall recognize or remedy problems with drug therapy.

4.5.1 The candidate shall identify, interpret, or explain patient or pharmacokinetic factors that affect either the efficacy or safety of individual drug therapy.

4.5.2 Design, implement, monitor, evaluate, and modify or recommend modifications in drug therapy to insure effective, safe and economical patient care

4.6 Anticipate potential complications caused by drug therapy.

4.6.1 *The candidate shall identify or remedy interactions or contraindications with disease states or medical situations.*

4.6.2 *The candidate shall identify or remedy interactions or contraindications with diagnostic test or procedures.*

4.6.3 *The candidate shall identify or remedy interactions or contraindications with sensitivities or allergies; genetic, environmental or biosocial factors (e.g., alcoholic beverage consumption, smoking); or in special patient populations (e.g., geriatric, pediatric, pregnant, post-surgical, ileostomy).*

4.6.4 *The candidate shall identify or remedy interactions or contraindications with special diets or dietary practices.*

4.6.5 *Given a medical history, medication record, drug therapy history, or a set of prescriptions or medication orders, the candidate shall identify the warnings, untoward effects, or major precautions associated with a patient's drug therapy.*

4.7 Identify actual and potential iatrogenic or drug-induced illness.

4.8 Identify actual and potential adverse drug events in specific patients.

PROPOSED ACPE PROFESSIONAL COMPETENCIES ARE BOLDED

APPENDIX B. COURSE DESCRIPTION

The Ambulatory Care Pharmacy Practice Rotation is a three hour course designed to integrate basic pharmacy-related concepts and patient care normally addressed in an ambulatory setting. This is accomplished through the student's involvement in patient care, case studies, written and oral presentations, pharmacotherapeutic discussions and selected exercises. In this process the skills of therapeutic drug monitoring to identify potential drug problems and initiating problem-solving measures will be stressed. The Nontraditional Ambulatory Care/Family Practice Rotation is designed to minimize time that the working practitioner is absent from his primary place of employment, and to maximize the benefit of working with the preceptor. The requirements for each rotation are designed in a way that requires the average traditional student 160 "contact" hours to complete. The actual time required of nontraditional students to satisfy the requirements will vary according to their professional maturation and the clinical knowledge and skill they bring to a given rotation. The program is designed with flexibility to allow it to be conducted up to a maximum of four months. If the rotation is not completed within four months from the original orientation date, the student must either petition the preceptor and Clinical Coordinator for a one-

APPENDIX C. PATIENT MONITORING

GOAL ASSESSMENT				
	4.1	4.2	4.3	4.4
LEVELS OF PERFORMANCE	PATIENT DATA INTERPRETATION	THERAPEUTIC ENDPOINT	DRUG REGIMEN DEVELOPMENT	DRUG HISTORY
Less than expected level of performance (score = 1)	Is unable to comprehend essential information about patients; cannot verbalize information without use of notes. Little knowledge of laboratory data and its use.	Unable to state endpoint of therapy. Unable to select appropriate monitoring parameters.	Dosing regimens do not reflect knowledge of A.D.M.E. parameters or pharmacokinetic principles. Regimens do not reflect utilization of A.D.M.E.	Student elicits obvious data, but is consistently ineffective in attempts to obtain information on subtle points.
Expected or average level of performance (score = 2)	Comprehends most of patient history. Knowledge of routine laboratory data and its use is sufficient to monitor drug.	States desired endpoint of therapy. Monitors therapy with appropriate and inappropriate parameters.	Develops dosing regimens. Regimens are patient specific.	Student obtains and records complete drug history, including prescriptions and OTC drugs.
Better than expected level of performance (score = 3)	Able to accurately synthesize available information regarding patient care to properly and completely monitor drug therapy.	States desired endpoint of therapy. Monitors therapy with appropriate monitoring parameters (labs, physical signs). States limitations of these parameters.	Develops dosing regimens using A.D.M.E. parameters of the drug. Regimens are patient-specific and pharmacokinetically accurate. Provides alternative regimens.	Student obtains and records complete drug history, including present and past usage adverse reactions, individual idiosyncracies, and compliance information.
GOAL ASSESSMENT				
	4.5	4.6	4.7	4.8
LEVELS OF PERFORMANCE	SOLVING THERAPEUTIC PROBLEMS	ANTICIPATES THERAPEUTIC PROBLEMS	DRUG INDUCED DISEASE	DRUG INTERACTIONS AND ADVERSE DRUG INTERACTIONS
Less than expected level of performance (score = 1)	Does not consider the goal or need for drug treatment. Guesses on a treatment plan. Allows therapy to continue past when needed. States drug of choice. Unable to explain rationale. Repeats medical staff notes.	Does not identify nor anticipate potential problems. Does not handle current problems without assistance. Does not identify nor anticipate problems of situations. Handles immediate problems as they arise with assistance.	Actual or potential drug-induced diseases or problems are not recognized after coaching. Perceives actual or potential drug-induced disease or problems if coached.	Unable to state possible drug interactions or adverse drug reactions. States possible drug interactions or adverse drug reactions if coached. Unable to state appropriate monitoring parameters.
Expected or average level of performance (score = 2)	Discusses risk/benefit ratios. Able to devise a therapeutic regimen for all or part of the patient's medical problems.	Identifies but does not anticipate some potential problems or situations. Has no alternative plan if original course of action fails. Handles problems with assistance.	Perceives drug induced diseases or problems accurately. Draws appropriate conclusions.	States actual and possible drug interactions or adverse drug interactions. States appropriate monitoring parameters. Lacks appreciation for the limitations of these parameters.
Better than expected level of performance (score = 3)	Discusses risk/benefit ratios of various therapeutic modalities. Substantiates the facts with specific references in the literature. Provides a rational therapeutic plan.	Identifies and anticipates problems and their potential solutions. Has an alternative plan if original course of action fails. Handles problems without assistance.	Perceives potential drug induced disease or problems accurately. Displays knowledge of incidence, significance, and MOA. Draws appropriate conclusions in light of the case history.	States actual and possible drug interactions or adverse drug interactions with a given drug and dosing regimen. States appropriate parameters and limitations of those parameters.

^aForm adapted from Creighton University, University of Minnesota School of Pharmacy and the University of Nebraska Medical Center School of

time two-month extension or the student must re-enroll and repay tuition fees.

The clerkship shall be conducted in three phases:

PHASE I: ORIENTATION

A. Introduction

1. The Student shall meet with the preceptor for an introductory period during which the preceptor will review the contents of the manual with the student and become acquainted.
2. At the orientation the preceptor shall communicate to the student the objectives, competencies, and outcomes expected which shall be identical to traditional rotations), and those unique to the preceptor's practice site.
3. The student will be advised that he/she is expected to be self-directed with essential preceptor support.
4. The student and preceptor shall establish realistic time frames for completion of the clerkship.
5. The student shall be expected to review Chapters 1, 3, 5, and 13 of the required accompanying text "Clinical Clerkship Manual" prior to the first meeting with the preceptor. (Please note that this manual will also serve as an excellent reference for such topics as diagnostic procedures, lab values, etc.)

B. Simulation Exercises

1. The preceptor shall assign the student three self-directed simulated case studies from mock medical records.
2. The student shall complete each case study sequentially. When the student has a case study which has been completed, the student shall either make an appointment to bring it in person to the preceptor where the preceptor shall discuss it with the student; or the student shall mail or fax the case study to the preceptor and then discuss it over the phone. Face to face discussions are desirable, but not required.
3. If necessary, simulations will continue until the preceptor feels that the student understands the principles of monitoring and evaluation of drug therapy.
4. Simulations shall be scored using the standard grading scale.

C. Rounding with the Preceptor

1. Following successful completion of simulated case studies, the student spends time in the practice environment of the preceptor.
2. The time spent with the preceptor will be from 1 day to 3 weeks, depending upon the skills and experience of the student.
3. This experience is for the student to see exactly how the preceptor conducts himself and interacts with medical personnel, to allow the student to have hands-on experience under the direct tutelage of the preceptor, and to give the non-traditional student an understanding of the traditional clerkship experience.

PHASE II: SELF DIRECTED PROFESSIONAL PRACTICE PERIOD

A. Case Studies

1. From a list of 56 commonly found pathophysiological states in ambulatory care/family practice, the student is to work up nine patients where opportunities to improve pharmaceutical care exist. The nine cases must represent different domains, (see disease state domains) Additionally, one pediatric patient and one geriatric patient shall be represented.

2. The student is to use patients from his/her patient pool if possible. Otherwise the student and preceptor are to identify a practice site by securing the cooperation and assistance of local physicians and institutions.
3. The student must secure patient information release forms where required. (In all instances the patient should not be identified by name but by other identifiable means, such as a case number, medical record number, or other assigned number).
4. Contributions of the student to the improvement of patient care are to be emphasized in this phase of learning.
5. Patients are to be worked up in groups of three, using the standard patient monitoring form, for presentation to the preceptor, followed by informal discussion.

B. Literature Evaluation

1. The student shall conduct a literature evaluation on 2 articles in the recent literature using the evaluation format described in this manual.
2. One article review shall represent a good article, and one article review shall represent a poor article. The student shall be responsible for identifying these articles.
3. Attach the article to the respective evaluation form.

PHASE III: EVALUATIONS OF CASE PRESENTATIONS AND DISCUSSIONS

A. Case Presentations and Discussions

1. This manual contains a format for verbal case presentation. Additionally, for illustration purposes, there is a videotape with a faculty member and student demonstrating case presentations. It shall be noted that there are different styles, but the core principles are the same.
2. The student is expected to make one formal stand-up verbal case presentation with at least the preceptor in attendance. This presentation can be expanded, at the student's request, to include the preceptor and a local health care audience, or an audience of faculty and students. Additionally, 2-way closed circuit digital TV between an AHEC site and faculty at UAMS may be arranged.
3. The student is expected to field reasonable questions from the audience. The purpose of this oral presentation is to develop the student's confidence in his/her ability to think and talk on his/her feet.
4. In order to facilitate the growth of all participants, the student is encouraged to engage in group discussions about case studies with other students, preceptors, or health care professionals.

B. Student Evaluation by Preceptor According to Clerkship Objectives and Competencies

1. To insure uniformity among the various clerkships, standardized evaluation forms shall be used by the preceptor, establishing the identified competency and outcome expectations.
2. To establish parity between the traditional and nontraditional rotations, the same evaluation tools are used in both programs.
3. Students shall be evaluated on their:

Simulated cases (3)	Real cases (9)
Cognitive skills	Communication skills
Personal dimension's	Monitoring skills
Literature evaluation (2)	Case presentation