

Selected Presentations

Use of a Student-Driven, University-Based Pharmaceutical Care Clinic to Define the Highest Standards of Patient Care¹

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PROLOGUE

The goal of this educational strategy is preparation of pharmacy students to care for patients at the highest level possible in terms of a complete and comprehensive pharmaceutical care practice. Pharmacy students' abilities to provide direct patient care utilizing the pharmaceutical care process are evaluated. This educational strategy is designed for third professional year pharmacy students, although other pharmacy students also participate in the patient care process as care plan team members. A university dental clinic model has been adapted to create a functional structure for the egress of patients through this Pharmaceutical Care Clinic. Patient care process criteria developed by experienced pharmaceutical care practitioners are an important focus of students' performance evaluation. Patients receiving care in this clinic also evaluate student performance with a patient-as-the-expert strategy utilized in medicine. Patients receiving care in this clinic have, on average, 5.2 medical conditions, take 7.8 active medications/remedies, and have 2.6 drug therapy problems per patient (level four on the resource-based relative value scale). Patient care process criteria utilized to assess student performance can also be applied to evaluation of a student's performance in experiential clerkship rotations. Future plans include utilizing this clinic strategy to also define pharmaceutical care compensation standards.

INTRODUCTION

The practice of pharmaceutical care represents a consistent and systematic process for achieving a patient's drug therapy treatment goals and reducing drug-related morbidity and mortality. This practice fulfills a unique social need(1). Pharmaceutical educators and colleges of pharmacy have been actively scanning the health care environment to identify, analyze and predict those changes likely to influence the preparation of practitioners to meet this unique social need(2). A set of assumptions to guide the building of a new framework for the curricular preparation of students to meet this social need has also been advanced(1). These assumptions are as follows:

1. The primary objective of the educational program is the preparation of a health care practitioner who can con-

tribute to society in a meaningful, measurable manner, and those responsible for the program are to be held accountable for meeting this objective.

2. The educational program has as its focus a single, specific, professional practice that can be explicitly and clearly articulated. Faculty must understand and teach to the same practice.
3. The specific practice is pharmaceutical care. It must be understood completely and at an intellectually sophisticated level by both faculty and administration. This practice must be agreed to and accepted by faculty and practitioners as the basic generalist practice, a primary care practice. The specific practice of pharmaceutical care has a clearly defined philosophy of practice, patient care process and practice management system(1).
4. The content of the educational program must reflect practice as described by actual patient care experience and data generated by practitioners providing pharmaceutical care.
5. The educational program should be constructed in an orderly, logical, systematic, and comprehensive manner. This is necessary for the program to be internally consistent and externally valid. This also makes it possible for those responsible to be held accountable.
6. To be complete, and to succeed at producing a practitioner who can care for patients, the program must have the following:
 - A clearly defined and consciously constructed culture.
 - Relevant and complete content.
 - Appropriate teaching/learning methods designed for the specific content of the program.
 - An appraisal process that holds all participants accountable.

Teaching and evaluating students' ability to apply principles related to the three components of pharmaceutical care practice (philosophy of practice, patient care process and prac-

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tice management system) is a necessary focus for a program designed to fulfill these assumptions. In this article, we describe the development of an appraisal method that documents performance within the pharmaceutical care process, illustrates its application in a controlled educational environment, and proposes additional applications for this appraisal methodology.

BACKGROUND

Initial results and experiences that served as the pilot initiative for this educational strategy have been presented previously (3). The goal of the pilot initiative, supported by an individual study grant from the District Five National Association of Boards of Pharmacy/American Association of Colleges of Pharmacy titled, "Evaluation of Pharmacy Students' Abilities to Provide Pharmaceutical Care," were to:

1. provide pharmacy students with opportunities to apply their assessment, care planning and evaluation skills to the care of actual patients (in the presence of experienced faculty practitioners);
2. prepare and deliver a Personal Pharmaceutical Care Plan(1) to each patient after the student's follow-up evaluation was completed and documented;
3. create and submit a resource-based relative value scale (RBRVS) trial compensation and billing claim; and
4. evaluate the student's performance using patient care process criteria.

A university "dental clinic" educational strategy(4) served as the model for designing the University of Minnesota Pharmaceutical Care Clinic. Empirical observations of patients presenting to university dental clinics indicate that patient expectations of the university experience are slightly different compared to expectations in actual practice. Expectations of university dental clinic patients were utilized to develop this Pharmaceutical Care Clinic. Observations of university dental clinics indicate that patients are generally cognizant of the experience whereby:

1. they will be receiving dental care by an advanced standing student in the presence of experienced faculty;
2. the dental care they receive will be "letter perfect;"
3. the clinic experience and care they receive will take longer than that encountered in dental practice; and
4. the care they receive will generally cost less than that charged in dental practice.

A seminal article developed from the pilot initiative discusses efforts to establish a functional pharmaceutical care clinic, describes the causes of drug therapy problems identified by students, and categorizes the drug information sources utilized by students to develop pharmaceutical care plans for patients. A discussion of the entire clinic experience from patient recruitment and appointment scheduling through to trial billing and follow-up evaluation, including faculty responsibilities and time commitments are presented in this article(3).

RATIONALE FOR AN APPRAISAL METHODOLOGY

A meaningful appraisal method is needed to evaluate student performance within the patient care process of pharmaceutical care practice. Desirable attributes of this appraisal method within pharmacy have been introduced and discussed(1,5).

An academic program that teaches a single, specific patient care process to students must develop a system that documents acquisition of the knowledge and skills required for the provi-

sion of pharmaceutical care. The need for this methodology extends beyond the academic setting and has practice implications as well. It can be argued that a significant barrier to the attainment of compensation for pharmaceutical care has been the profession's lack of a single and distinct patient care process. Practitioners within all other health care professions utilize a standard process of care, however, pharmacy has traditionally referred to many different "practices." These "practices" are generally defined by a list of activities, differentiated by practice setting, with services delivered based on practitioner preferences within a drug category, disease state, or patient characteristic.

Unlike all other health care professions, pharmacy has never adopted a single, systematic approach that allows a practitioner to evaluate a patient with respect to the unique health problems that define the profession's philosophy of practice. One can only imagine the disarray that medicine, nursing or dentistry would be in if they did not have a single, specific and systematic approach to define their practices. An appraisal method that documents performance with respect to a specific patient care process may help pharmaceutical care practitioners create practices, as well as, to advance the development of compensation models.

APPRAISAL METHOD DEVELOPMENT

The goal of this appraisal method is to evaluate performance within the patient care process. Performance is defined utilizing the learning pyramid, or hierarchical framework, for assessing clinical performance skills described by Miller in *Academic Medicine*(6). This learning pyramid moves progressively from the knowledge level (achieving a minimum score on a written examination) up to competence (describing how to care for a patient), to performance (showing how to care for a patient), and then to action assessment at the highest level possible (successfully providing patient care by integrating complex clinical functions into a practice).

The development of this appraisal method has been facilitated by the work of colleagues who have established university-affiliated, pharmaceutical care clinics previously. Input from practitioners at The Ohio State University Pharmaceutical Care Clinic(7,8) and at the University of Mississippi Pharmaceutical Care Clinic in the Jackson Medical Mall(9) were instrumental in developing a functional structure for the egress of patients through the University of Minnesota Pharmaceutical Care Clinic. One notable need expressed by colleagues practicing in other pharmaceutical care clinics is a consistent and systematic method for appraising student performance in experiential rotations.

The appraisal method developed in the University of Minnesota Pharmaceutical Care Clinic employs three components to evaluate performance within the patient care process. These components include: (i) appraisal of student performance within the patient care process by experienced faculty practitioners; (ii) patient evaluation of the student's performance; and (iii) student self-evaluation. This evaluation strategy was synthesized through techniques used in the education of other health care professions(4,6), the work accomplished by previous pharmacy researchers(5,10,11), and efforts of pharmaceutical care practitioners(12). These three evaluation components are described below.

Evaluation of Student Performance by Experienced Faculty Practitioners

The development of a meaningful student performance appraisal process has been facilitated by the efforts

of pharmaceutical care practitioners throughout the world. Practitioners who have developed complete and comprehensive pharmaceutical care practices can readily determine whether or not peers are providing an "acceptable" level of care. The Minnesota Pharmacists Association (MPhA) working in conjunction with a group of pharmaceutical care practitioners commissioned one of the first instruments developed to quantify this acceptable level of pharmaceutical care practice. A four-part Pharmaceutical Care Competency Assessment Tool (12) was constructed in consultation with peers throughout the United States, Canada and New Zealand.

The second part of the four-part MPhA assessment tool is devoted to evaluating a candidate's abilities within the patient care process. The three objectives of the patient care process are to(1):

1. assess the patient's health care and drug-related needs and identify drug therapy problems;
2. assemble resources and construct a care plan to meet those needs; and
3. complete a follow-up evaluation to determine the patient's actual outcomes.

The patient care process utilized in this Pharmaceutical Care Clinic is identical to that used in complete and comprehensive pharmaceutical care practices. Students, and practitioners, who are learning this patient care process are assisted by organizing their thoughts and developing a rational flow prior to the initial patient assessment. The initial patient assessment can be viewed as having a flow consisting of three broad, general phases, namely: (i) development of the therapeutic relationship; (ii) assessment of all active medications/remedies in use by the patient to ensure that each medication/remedy is indicated, effective, safe, and convenient to use; and (iii) a verbal review of systems to account for any other health care or drug-related needs that the patient may have.

In evaluating the objectives of the patient care process, seven uncompromising components were identified among pharmaceutical care practitioners. These fundamental components form the basis of performance appraisal within the patient care process. The seven components utilized to construct the criteria for evaluating performance within the patient care process are:

1. ascertaining and documenting the patient's understanding, concerns and expectations about their drug therapy;
2. linking each of the patient's active medications/remedies to an appropriate medical indication;
3. determining the goals of therapy for each of the patient's medical conditions;
4. assessing the patient for the presence of drug therapy problems related to the indication, effectiveness, safety and convenience of medications;
5. probing for additional drug-related needs and drug therapy problems through a review of systems;
6. establishing a mutually agreed-upon care plan; and
7. following-up with an evaluation for every patient.

Evaluation of Student Performance by Patients

Patient evaluation of a student's abilities is incorporated into this educational experience using a "patient as the expert" strategy utilized in medical school education(13,14). In medicine, it is argued that this approach to teaching "interviewing" skills enables students to examine the assumptions they make

about the patient and to become aware of their own difficulties in discussing sensitive issues(13).

The patient exit survey was developed to gain input relative to the patient's perceptions of the student's professional demeanor, caring attitude, and knowledge level, as well as, the perceived value of the care. An example of the exit survey is presented in the pilot initiative report(3).

Self-Evaluation of Performance

Development of the student self evaluation component is based on responding to students' needs for creating an optimal learning experience. It is anticipated that students will utilize this learning experience to commence their careers in providing complete and comprehensive pharmaceutical care. Therefore, structured, self-reflection is viewed as an important aspect of developing life-long practice goals and objectives.

It is equally important to elicit input from students on how to improve this learning experience. As with any quality improvement effort, it is important to obtain opinions and input from those individuals who are "clients" of the service. Since this represents a new educational strategy it is important to receive continual feedback on aspects of the experience that can be improved.

APPRAISAL METHOD APPLICATION

Application of this appraisal method was initially evaluated in an elective, Pharmaceutical Care Clinic course for third professional year students at the University of Minnesota College of Pharmacy. This elective, Pharmaceutical Care Clinic course was offered in three different quarters from March 1998 to June 1999.

Student preparation for this patient care experience begins on the student's first day of pharmacy school instruction. The University of Minnesota College of Pharmacy has commenced a revised entry level PharmD curriculum that is integrating the practice and concepts of pharmaceutical care with basic science and pharmacotherapy courses(15). This revised curriculum facilitates an approach to instruction utilized in all other health care professions, and that is teaching to a specific practice.

First professional year pharmacy students begin their education with formal pharmaceutical care coursework woven in among other didactic courses. Content taught in didactic courses is then integrated with practice skill development through learning activities conducted in the College's Pharmaceutical Care Laboratory. By the end of their second professional year, each student will have engaged in 15-20 learning exercises that are designed to help develop their systematic and comprehensive problem-solving skills.

Having learned the patient care process over their initial two professional years, students apply their skill development to the care of a "real" patient during their third professional year. In September of 1999, this pharmaceutical care clinic experience was expanded from an elective studies course to a required component of the third year Pharmaceutical Care Laboratory course. Every student must now apply the patient care process to the care of at least one patient as part of this pharmaceutical care clinic experience.

Evaluation of Student Performance by Experienced Faculty Practitioners

After the patient departs the clinic, the experienced faculty observer provides the student with feedback on the student's performance. The student and faculty first review the

Table I. Student performance within patient care process criteria at the University of Minnesota Pharmaceutical Care Clinic: (n = 56 patients)

Criteria	Criteria results
1. Ascertaining and documenting the patient's understanding, concerns and expectations about their drug-related needs.	100% of students met criteria
2. Linking each of the patient's active medications & remedies to an appropriate medical indication.	100% of students met criteria
3. Determining the goals of therapy for each of the patient's medical conditions.	66% of all medical conditions tied to a goal of therapy by students
4. Assessing the patient for the presence of drug therapy problems.	85% of all drug therapy problems identified by students
5. Probing for additional drug-related needs through a review of systems.	100% of students met criteria
6. Establishing a mutually agreed-upon care plan.	100% of students met criteria
7. Follow-up evaluation for every patient.	98% of students met criteria

clinical aspects of the patient's case including active medications/remedies, medical conditions, goals of therapy, drug therapy problems and care plan responsibilities. Then, a formal critique of the student's performance within the first six patient care process criteria ensues. Evaluation of the student's documentation occurs after follow-up evaluation but before a Personal Pharmaceutical Care Plan(1) is sent to the patient.

After development of a pharmaceutical care plan, each student is required to present their patient case to peers at weekly class meetings. Case presentations represent another opportunity for students to get comfortable with the patient care process. The case presentation format utilized by students is the same as that utilized to prepare practitioners for career transition to a complete and comprehensive pharmaceutical carepractice(16).

Evaluation of Student Performance by Patients

At the conclusion of the clinic visit, patients are asked to evaluate and critique the care they received. The patient is asked, in the presence of the student, to comment on aspects of the student's assessment skills that they like best, and to discuss areas they think the student could work to improve. The student is then able to openly discuss the patient's observations with the patient and faculty observer at this time.

Patients are then asked to complete a brief, written exit survey(3). The exit survey is intended to obtain input relative to the student's professional demeanor, concern for the patient, general knowledge of medications, the value of care received, and the amount they would be willing to pay for the care received.

Self Evaluation of Performance

Student self evaluation commences after the patient departs the clinic. The faculty observer asks the student to discuss their feelings relative to the care delivered and to rate their own performance on a simple 1-10 scale. Although this is a subjective rating scale with no anchored reference, this is one of the first chances a student has to critically evaluate their own performance when caring for patients with actual drug-related needs. The intent of introducing critical self-reflection is to help the student develop a personal life-long learning and self-appraisal strategy as a pharmaceutical care practitioner.

Students also submit a final paper (4-6 pages) describing any aspect of the learning experience as it relates to the care they delivered. Students are asked to briefly describe the care delivered to the patient and discuss how this experience can be expected to contribute to their career development. Students

are also asked to include suggestions for improving the patient care learning experience in the final term paper.

RESULTS

The following represent results from Pharmaceutical Care Clinic experiences during spring quarter 1998, fall quarter 1998, and spring quarter 1999. A total of 105 students participated in the elective studies course during these academic quarters. Students enrolled in the initial, elective courses include 50 third-year, three second-year, 51 first-year, and one reciprocal fourth-year student from Creighton University. Advanced standing students conducted assessments while first and second year students observed the assessment and participated as care plan team members.

A total of 56 patients received care from students in this Pharmaceutical Care Clinic over the initial 15-month time frame. The demographic distribution of patients include 44 females and 12 males with a median age of 54 years old (range = 25-86). A total of 147 drug therapy problems were identified in this patient population. Patients receiving care in this clinic had, on average, 5.2 medical conditions, take 7.8 active medications/remedies, and have 2.6 drug therapy problems per patient. This level of complexity approximately corresponds to level four (out of five levels) on the resource-based relative value (RBRVS) scale (1,3).

Documentation of care was achieved with use of the Assurance Patient-Centered Pharmaceutical Care Program offered by Health Outcomes Management, Inc. of Minneapolis. Trial compensation claims were constructed for the care of each patient. Trial compensation claims included a HCFA Form 1500 billing claim and a patient invoice of services. Trial compensation claims were not adjudicated for the initial 15 months of this Pharmaceutical Care Clinic. Beginning in the fall of 1999, patients were asked to make a \$20 contribution to the College of Pharmacy for the care delivered. Upon completion of a formal business plan, patients will be charged a copayment amount with the balance submitted to the patient's health insurance carrier. It is believed that student involvement with billing will create a culture conducive to obtaining compensation for pharmaceutical care in future practice settings.

Evaluation of Student Performance by Experienced Faculty Practitioners

Results within the patient care process criteria are reported in Table I. Results within criterion numbers 1,2,5,6 and 7 are self-explanatory. Results within criterion number three indicate that 66 percent of patients' medical conditions were tied to a

Table II. Postgraduate positions of first 15 Pharmaceutical Care Clinic students

Initial postgraduate position	Number of students
Employed to open an ambulatory pharmaceutical care practice	5
Hospital pharmacy residency (1 year program)	3
Ambulatory pharmaceutical care residency (2 year program)	2
Traditional community pharmacy practice	2
Rural, clinic pharmaceutical care residency (1 year program)	1
University research residency (1 year program)	1
Time off for personal development	1
Total	15

corresponding goal or therapy by the student (192 of 291 medical conditions). Results within criterion number four indicate that students identified 85 percent (125 of 147) of patients' drug therapy problems without assistance from the experienced faculty observer. The remaining 15 percent of patients' drug therapy problems were identified by experienced faculty observers at the conclusion of the student's initial assessment.

Evaluation of Student Performance by Patients

Patient evaluations of the students' performance were of great interest to students. The patient's subjective evaluation of the student's performance, conducted in the presence of the student and faculty observer, provided meaningful feedback to students from a "real-life" perspective (as opposed to receiving a grade based on faculty role-playing during a simulated assessment). A copy of the patient exit survey has been presented previously and results from subsequent clinic experiences are comparable to those reported within the initial pilot population of 18 patients(3). In regards to compensation, all patients believed that pharmaceutical care services should be included in their health insurance coverage, patients were willing to pay \$39.80, on average, for this care, and pharmacists should be paid, \$78.20, on average, by health insurance companies for these services (n = 48 completed surveys).

Self Evaluation of Performance

It is recognized that this patient care experience is, in almost all cases, the student's first comprehensive assessment conducted in the presence of a patient not previously familiar to the student. The notion that this experience represents the first time a person is coming to the student to place trust and confidence in their pharmaceutical care abilities can lead to some anxious moments for the student prior to the initial assessment. Students are generally relieved to know that they can provide care to patients consistent with the tenets and principles of pharmaceutical care.

Results may also be reported so as to begin providing preliminary data on educational outcomes of this instructional strategy. The first 15 students who participated in this Pharmaceutical Care Clinic experience have graduated and are now licensed to practice pharmacy. A review of the initial, postgraduate placement of these 15 students may prove useful as colleges of pharmacy formulate tools to measure pharmaceutical care educational outcomes. Table II presents the postgraduate positions of the first 15 Pharmaceutical Care Clinic students.

DISCUSSION

Results reported in Table I indicate that students did a good job ascertaining the patient's drug-related needs, linking active medications to appropriate medical conditions, establishing mutually agreed upon care plans, and following-up with patients (criterion 1, 2, 6 and 7). Although all students probed for additional drug-related needs through a verbal review of systems, there appear to be "degrees" of effectiveness within this criterion. Students who performed the best in this area utilized the Pharmacist's Work-up of Drug Therapy(17), introduced in their first year of instruction, to design a checklist (or systems flow sheet) to account for all systems affecting patients' overall well-being.

It is noted that students identified 85 percent of patients' drug therapy problems without assistance from experienced faculty observers. This can be considered to be an impressive figure as the development of skills related to identification, resolution and prevention of drug therapy problems are typically shaped and modified through years of experience.

Results related to determining the goals of therapy for patients' medical conditions are not surprising. Students and practitioners alike must work hard to listen to the patient and develop drug therapy effectiveness benchmarks specific to the patient's needs. This can be a challenging task, particularly in the case of patients with diseases such as arthritis or fibromyalgia where effectiveness may be the ability to walk two trips around the block after dinner. One suggestion made by the students for improving performance within this criterion is to triage the patient at the time of appointment scheduling to obtain some idea of their current medications and medical conditions. Students have pointed out that this would provide them with an opportunity to review information taught in previous pharmacy school courses prior to the initial assessment.

The fact that students performed very well with respect to the patient care process may be linked to the environment in which care was provided. Pharmaceutical care was provided in a controlled setting which presented a number of unique characteristics that are important to effectiveness of practicing, teaching and evaluating the patient care process. It may seem redundant, or unnecessary, to bring patients into a controlled setting such as this Pharmaceutical Care Clinic when a student could experience pharmaceutical care in a practice clerkship. However, the intent of experiential programs is for students to observe, and then replicate "practice perfect", where preceptors demonstrate and teach exemplary pharmaceutical care practice without taking short cuts, jumping to conclusions or being less than comprehensive. Nevertheless, efficiencies of practice (due to time and resource constraints) do not always allow students the optimal environment to provide comprehensive pharmaceutical care to their first patients at a comfortable pace.

When learning the "proper way" to care for patients the student needs an uninterrupted opportunity to focus, concentrate and get comfortable with this new responsibility. In addition, because this practice is new it is essential that a student understand the practice well enough to be able to shape his/her future practice environment. This controlled setting also allows for extensive feedback from the patient and the experienced faculty member, which is crucial when developing pharmaceutical care practice skills.

Another environmental factor contributing to the overall success of students in providing pharmaceutical care may be the orientation of patients choosing to make clinic appointments at a teaching institution. As discussed previously, a uni-

versity "dental clinic" model was adapted for the structure of this Pharmaceutical Care Clinic. Therefore, patients receiving pharmaceutical care in this setting may be self-selected and conscious of the educational nature of the assessment. As a result, the patient may be more willing to share information and display patience with student inefficiencies. This in turn may place the student at a greater degree of ease and allow them to focus on the purpose of the assessment.

Additional Applications of this Appraisal Methodology

The appraisal method employed in this controlled clinic environment can be applied to several other settings. These patient care process criteria can also be utilized in evaluating student performance in clerkship rotations, recruiting quality sites for student rotations, accrediting practitioners, establishing postgraduate residency training standards, and evaluating curricular educational outcomes.

Pharmaceutical care clerkship rotations are increasing in popularity as students now have the opportunity for experiential education in the presence of active pharmaceutical care practitioners. It is envisioned that preceptors will be able to utilize the patient care process criteria to evaluate student performance when providing care to patients. Conversely, colleges of pharmacy are continually seeking quality sites for student experiential rotations. Experiential program administrators wishing to evaluate the practice level of prospective preceptors could incorporate these patient care process criteria into a suitable evaluation tool.

Pharmaceutical care practitioners have been instrumental in the development of these patient care process criteria. Therefore, it would stand to reason that practitioner performance could be evaluated using these same criteria. Practitioners in transition from dispensing-related pharmacy careers to complete and comprehensive pharmaceutical care practices should find these patient care process criteria useful in self-evaluation of their progress. Use of these patient care process criteria in assessing practitioner performance within accreditation 12) is discussed in the evaluation methodology section above. It is anticipated that a national (or international) pharmaceutical care accreditation system would include, among other components, these patient care process criteria. Postgraduate residency training in pharmaceutical care practice is another potential application for this appraisal methodology. National accrediting bodies could incorporate this methodology into accreditation standards, requiring residency programs to consistently document competence and performance within this standard patient care process.

Finally, these appraisal criteria may be useful as colleges of pharmacy evaluate the educational outcomes of their curricula. The products of educational efforts in colleges of pharmacy are practitioners who will contribute to society in a unique, meaningful, and measurable manner. Ultimately, it is the performance of these new practitioners that, in the final analysis, the profession itself will be judged.

Use of the patient care process criteria presented herein, could represent one important component of an educational outcomes, or program evaluation, strategy. Measurements that could be incorporated into evaluations of programmatic outcomes include: number of graduates providing pharmaceutical care, number of patients in care plans, number of patients achieving treatment goals, number of drug therapy problems identified, resolved and prevented, and a pharmacoeconomic analysis of value to society.

The final destiny of graduates produced as a result of a

revised pharmacy school curriculum may be of interest to colleges of pharmacy, as part of an overall program evaluation strategy. The first 15 students who participated in the initial pilot stage of this educational strategy have now graduated. Although these initial 15 students self-selected for participation in this Pharmaceutical Care Clinic initiative, it may be of interest to begin examining their practice destinies by reviewing their initial postgraduate placement as presented in Table II.

Limitations of the Appraisal Method

As stated earlier, there are three components to the practice of pharmaceutical care - a philosophy of practice, a patient care process and a practice management system. This appraisal method only measures performance within one of these components, the patient care process. A comprehensive evaluation of a pharmaceutical care practitioner should include strategies appropriate for evaluating a student or practitioner's understanding and application of the philosophy of pharmaceutical care as well as their ability to develop and manage an appropriate practice environment. It is anticipated that the development of compensation standards will be of great utility in establishing an appraisal system for the practice management component of pharmaceutical care.

Faculty commitment and time requirements for assisting in this educational strategy as faculty observers are recognized. Use of adjunct faculty practitioners and pharmaceutical care residents has helped to evenly distribute experienced faculty time commitments to this Pharmaceutical Care Clinic initiative.

Development of Compensation Standards

The profession of pharmacy is currently experiencing a dilemma that no other health care profession has endured. Chiropractors, optometrists and other healthcare professions have fought to receive compensation for their services. One important aspect to compensation is that practitioners within all other health care professions utilize a standard process of care. Pharmacy, traditionally, refers to many different "practices," defined by a list of activities, differentiated by practice setting, with services delivered based on practitioner preferences within a drug category, disease state or patient characteristic.

The practice of pharmaceutical care represents a consistent and systematic process for fulfilling a unique social need. This consistent and systematic patient care process meets the definitions and requirements of a practice utilized by other health care professions, and fulfilling this unique social need may be considered creating a new health care professional. Consistent with the notion that pharmaceutical care practitioners represent a new health care professional, there appears to be an added burden of having to "prove" this practice. Few, if any, other health professions have demonstrated that they improve therapeutic outcomes, decrease morbidity and mortality, and reduce health care expenditures.

The patient care process criteria and competency assessment mechanism developed by practitioners functioning in clearly defined pharmaceutical care practices provides society with the means to recognize, and compensate, practitioners for the provision of pharmaceutical care. Compensation for pharmaceutical care services can be expected to accelerate through recognition of a standard patient care process. The patient care process criteria presented herein can be used throughout society to recognize and identify pharmaceutical care practitioners. Furthermore, it is believed that student involvement with billing will create a culture conducive to obtaining compensation for pharmaceutical care in future practice settings.

The University of Minnesota College of Pharmacy is one institution that is accepting responsibility for facilitating pharmaceutical care compensation. The movement from providing "free" pharmaceutical care with trial compensation claims to charging patients a co-payment amount and billing health insurance carriers is evidence of this institutional commitment. It is postulated that, as long as the work has been done to define the patient care process, the next step is to define compensation standards for this care. To this end, the Department of Pharmaceutical Care & Health Systems within the University of Minnesota College of Pharmacy is developing a comprehensive business plan for this Pharmaceutical Care Clinic.

CONCLUSIONS

This pharmaceutical care clinic strategy is helping prepare practitioners to make unique, meaningful and measurable contributions to society. The methodology utilized to devise this educational strategy has been in use in other health care professions. Students who have participated in this educational experience have performed well based upon results within the patient care process criteria, as well as, in terms of number of drug therapy problems identified, resolved and prevented.

There has been a call for designing a meaningful appraisal process from the individual student and practitioner levels through to program evaluation and final analysis of the profession of pharmacy. The evaluation of student, and practitioner, performance using patient care process criteria represent an important component of a meaningful appraisal process. Compensation standards can now be developed based upon this clearly defined and recognizable patient care process.

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