

The Essential Linkage of Professional Socialization and Pharmaceutical Care¹

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The charge from COF Chair Lee Evans explains the name given to this Committee:

1. Prepare a report which explores potential avenues which Schools/Colleges might employ to facilitate inculcation of pharmaceutical care philosophy/ professionalism by students and faculty.
2. Prepare recommendations and/or resolutions for transmission to the COF Resolutions Committee for action at the 1994 COF annual business meeting.

Through the numerous discussions and initiatives resulting from the background papers of the AACP Commission to Implement Change in Pharmaceutical Education, pharmacy's academic community has developed new insights and new resolve to base the academic learning component of pharmacy education on outcome abilities and perspectives needed by pharmacy graduates to enter and grow as providers of pharmaceutical care. The context for addressing the charge to this Committee derives in large measure from key themes of the AACP Commission to Implement Change in Pharmaceutical Education and the related AACP Focus Group on Liberalization of the Professional Curriculum, as exemplified by the following:

1. The mission of pharmacy practice is to provide pharmaceutical care. Pharmaceutical care focuses the pharmacist's abilities and responsibilities on the goal of achieving optimal outcomes in drug therapy aimed at helping improve a patient's quality of life(1).
2. Pharmaceutical education must prepare students to enter pharmacy practice with the abilities necessary to provide care to patients at a level defined by the evolving mission statement of pharmacy practice, regardless of practice environment(1).
3. Ability-based education necessitates understanding the term "curriculum" to mean an educational plan designed to assure that each student can perform well-defined general and professional outcome abilities(2).

The Committee was also introduced to a comparable multifaceted study process in nursing to define the "essential knowledge, practice, and values that the baccalaureate nurse should possess." The first report of a national panel of representatives from the nursing, health care and higher education communities entitled "Essentials of College and University Education for Professional Nursing" was released in 1986(3). A second report reflecting an updating of this document is due in 1995. This nursing report is intended to assure the *essentials of professional nursing* are reflected as core values in the education of nursing students. In

a similar context, this Committee (On Changing the Culture Within Our Schools/Colleges of Pharmacy) envisions an evolving dialogue from this initial report which will generate growing consensus on the *essentials of professional pharmacy practice* that must become reflected as core values throughout the education of pharmacy students.

Academic Learning and Professional Socialization— Essential Attributes for Student Growth

An important emphasis within the Commission and Focus Group reports has been the necessity of involving the students actively in a variety of hands-on learning experiences throughout the curriculum, such that knowledge developed is understood, reinforced and enlarged through application in solving problems. For example, the strategy of the curricular plan being promoted by the Focus Group intends to reflect the interrelationship of ability-based outcomes and curricular content by:

1. "Transforming an understanding of knowledge from individual disciplines into a foundation of interrelated knowledge;
2. Providing for practice and assessment of general abilities across courses as a strategy to generate a foundation of interrelated knowledge and abilities; and
3. Continually relating the developing knowledge and abilities to the performance expectations of an entry-level practitioner capable of providing pharmaceutical care"(2).

This approach to academic learning is an essential attribute of the educational process for preparing students with intellectual abilities and confidence to provide pharmaceutical care.

In addition to academic learning, essential attributes for providing pharmaceutical care are the sensitivity and commitment to develop caring, collaborative relationships with the patient and with other care providers for the patient. Developing understanding and commitment to the interpersonal caring dimensions of pharmaceutical care is an essential theme which must complement and invigorate each student's academic learning throughout the curriculum. The April 7, 1993 proposed revision of Accreditation Standards and Guidelines from the American Council on Pharmaceutical Education emphasizes these important elements in student development as follows:

Standard No. 1. The College or School of Pharmacy should have a published statement of its mission, goals and objectives. . . . This statement should include a fundamental commitment to the preparation of its students for the general practice of pharmacy with provision of entry-level competencies necessary to the delivery of pharmaceutical care in any practice setting.

Guideline 1.1 The mission statement should include the College's or School's educational philosophy and how its professional pro-

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gram in pharmacy is designed to insure that graduates will be prepared for the present and evolving scope of the practice of pharmacy.

Guideline 1.2 . . . an environment for teaching and learning should be fostered that . . . facilitates the ability of students to work and communicate effectively with diverse colleagues and patients.

Guideline 1.4 The College or School should assure an understanding of pharmaceutical care by its students early in the professional program in pharmacy so that the philosophy of practice as well as the necessary professional attitudes, ethics and behaviors may evolve during the course of the program. Moreover, the College or School should foster the professionalization of students by providing a positive outlook on all aspects of pharmacy practice(4).

The Committee agrees strongly with the importance of these standards and guidelines in developing an environmental context for preparing pharmacy students to enter and grow as providers of pharmaceutical care.

It is the Committee's view that pharmacy faculty understand the needs for educational process reform to enhance *student academic learning* to provide pharmaceutical care. However, faculty have only a general or narrow understanding of the term *professional socialization of students, i.e.,* a spectrum of discrete activities which somehow benefit student's professional perspectives (e.g., summer practice experience, experiential components early in the curriculum, student professional organization involvement). Faculty should understand that catch-as-catch-can learning experiences relating to "professional socialization" will not assure that students achieve the optimal benefits of this dimension of learning in their preparation to become providers of pharmaceutical care.

If faculty do not adequately appreciate what professional socialization entails, they may not realize that every student will experience professional socialization through the composite of their curricular and extracurricular experiences. But if developed without planning and coordination to achieve specific goals, as described below, not all professional socialization outcomes for individual students will be supportive of the curricular goals of preparing graduates who are able and motivated to enter practice and grow as providers of pharmaceutical care.

The Need for a Consistent, Broadly-Based Professional Socialization Process

Professional socialization describes the general process whereby students learn about the professional role of pharmacists and the expectations of performance in that role. They also develop perspectives on a professional identity in that role and on the ideologies which underpin the profession. Role models, namely faculty; institutional philosophy; student's values/reasons for selecting the profession; peers, previous and concurrent practice experiences and experiential programs all affect the process. In this context, pharmacy has been "plagued" with two distinct identities, businessman and professional(5-9). Ideally, a homogeneous perspective within the profession promotes consistency in socialization leading to a common identity and ideology among students. Two perspectives have been described to illustrate the factors and processes which contribute to a student's professional socialization, the "structural-functional" perspective and the "situation adaptation" perspective(10).

In theory, the "structural-functional" perspective of professional socialization assumes there is a homogeneous ideal practitioner(10). This perspective is ideal because the objects of socialization (students) receive consistent messages from educators and practitioners regarding the profession's ideology and the philosophy/values/attitudes of being a practitioner. Though considered ideal, it is not realistic, especially in an occupation like pharmacy which has been changing dramatically in the past 25-30 years. The "structural functional" perspective implies that socialization pro-

ceeds linearly and smoothly, that all agents of socialization contribute in a positive reinforcing way and, consequently, students passively are molded into future practitioners.

The "situation-adaptation" perspective is perhaps more realistic by advocating that professional socialization does not proceed linearly or smoothly(10). This is because students interact and affect agents of socialization and messages from these socializing agents may not be consistent(11). Such a multidirectional process may result in conflict and ambiguity in messages received and internalized. It has been argued that these different, inconsistent messages compromise students' commitment to the profession and the level of practice to which they aspire(12).

Given the two distinct role orientations, businessman and professional, recent attempts at reprofessionalization of pharmacy have led to differences in practice behaviors and attitudes within practice and education. As a result of these changes and differences within the profession, forces of socialization have been "inconsistent." Manasse *et al*, coined the term "inconsistent socialization" to represent these clashes in socialization forces and define it as "the process by which the individual develops or acquires incompatible or conflicting behaviors, beliefs and values from formal or informal sources due to the absence of uniformity or agreement within the idealized group model into which he is being socialized"(13). The clashes of socialization forces lead to differences between students' (young graduates') expectations about their role in the provision of health care and others' expectations of their role. Hatoum and Smith, in a study to investigate the internalization of professional values in students, concluded that "the socialization of pharmacy students into a proper professional role is rather incomplete when it comes to issues that tie the professional member to pharmacy within their profession." (14)

Studies of the outcomes of socialization forces have indicated the development of "disillusionment" or "realistic disenchantment" as students progress through a pharmacy curriculum(15-17). Students either come in with a level of idealism or are given optimism in early years only to have that idealism diminish over time. It has been argued that students are presented the ideal, patient-oriented perspective by pharmacy educators, only to have those levels of expectations unsupported and unmet as they progress through the curriculum, gain experience in the real world, and enter practice. If students are unclear about what should be expected of them, as a result of mixed, inconsistent messages during socialization, they might experience role ambiguity where they are unsure exactly what their role should be. Their behaviors could be significantly swayed by the opinions of powerful others (e.g., employers, physicians, patients). The difference in role expectations (by some pharmacists) in current practice may not be consistent with the role expectations of recent graduates (they are trained at a higher level to pursue expanded roles) culminating in role stress/strain and a dissatisfaction with practice.

Hornesty claims it is the disparity between the two concurrent processes of socialization and education, (*i.e.*, academic learning) which culminates in the development of cynicism in Canadian pharmacy students(18). Ideologists set the vision for these students in their first professional year, *i.e.*, that clinical, patient-oriented pharmacy is the future for pharmacy. The second professional year of the curriculum does not prepare these students for this advanced role. They see no connection between courses taken and the future role and develop a cynicism which diminishes once students gain exposure to clinical experiences in their third and fourth years.

The pharmacy profession, in the midst of change, has found it difficult to embrace one common ideology. It is only recently that "pharmaceutical care" has been embraced as the mission for pharmacy by most subgroups in the profession, including pharmacy educators. Hepler argues for the need to focus on the profession's contributions to society (rather than ideological differences between pharmacy subgroups) as the context for reprofessionalization(19). By focusing outwardly, the profession emphasizes commonalities rather than differences within, thus promoting a united front to outsiders as well as to those students

who are being socialized into the professional pharmacist's role.

Based on these premises about professional socialization, the Committee recommends continuing efforts within AACP to encourage faculty to give comparable attention to professional socialization as to optimizing the traditional academic components. These two educational (professional socialization and academic learning) processes should be planned as mutually dependent and mutually reinforcing contributions to student growth in achieving the overall educational goals adopted by the faculty. As a starting place to initiate a broad-based, continuing discussion of the "potential avenues which Schools/Colleges might employ to facilitate inculcation of pharmaceutical care philosophy/professionalism by students and faculty," the Committee presents the following commentaries on essential attributes which we believe are important to optimizing the culture, the philosophy, the professional socialization processes within schools and colleges of pharmacy.

Caring as an Essential Dimension of Pharmaceutical Care Which Must Complement and Infiltrate the Pharmacy Student's Academic Learning Throughout the Curriculum

Hepler and Strand define pharmaceutical care as "the responsible provision of drug therapy for the purpose of achieving definite outcomes that improve a patient's quality of life." Rather than restricting the pharmacist's role to supplying medications and monitoring drug outcomes, Hepler and Strand expand the concept to include involvement with the patient and other health care professionals to design, implement, and monitor a therapeutic plan that will produce therapeutic outcomes. Further, in this role the relationship between the pharmacist and the patient should be a "... covenant, a mutually beneficial exchange in which a patient promises to grant authority to the provider, and provider promises competence and commitment (responsibility) to the patient."⁽³⁰⁾

The Commission to Implement Change in Pharmaceutical Education elaborates on the underlying notion of care implicit in the covenantal relationship emphasized by Hepler and Strand by stating, "... it (pharmaceutical care) espouses CARING, an emotional commitment to the welfare of patients as individuals who require and deserve pharmacists' compassion, concern and trust"⁽¹⁾. This major tenet of pharmaceutical care necessitates a commitment to caring as an essential core value within pharmacy education.

In order for the concept and process of caring to have its needed impact on the practice goals and strategies of pharmacists and the educational goals and strategies of schools/colleges of pharmacy, the key attributes of caring must be delineated, illustrated and agreed upon, as they have been in other health professions, most notably nursing⁽²¹⁻²³⁾. The Committee suggests the following attributes of caring which should be reflected in the philosophy and environment of education of pharmacy students.

1. Commitment to serving a patient's needs through a caring relationship
2. Commitment to exercising therapeutic interventions and to helping enhance patient's growth
3. A moral imperative to protect and enhance the patient's dignity and sense of self-worth
4. A covenantal relationship in which there is granting of authority to the pharmacist by the patient and other care providers
5. Commitment to exercise patience, honesty and humility
6. Commitment to personal competence

How then might the philosophy and process of pharmacy education enable pharmacy students to embrace these dimensions of caring and the explicit use of care? It is clear that pharmacists must deliver their portion of health care within human relationships. The primary relationship is with the patient; secondary relationships include those with the patient's family and other health care providers. These attributes of caring can be enhanced through faculty-student and faculty-to-faculty relationships which are characterized by cooperation and respect. Caring is learned by experiencing caring practices of faculty and other students, and that

is only possible when the culture of the school supports enactment of caring practices among faculty. Pharmacy faculty can enhance this relationship between students and teachers by exhibiting respect for the students' knowledge and experience. Such a relationship between faculty and students recognizes the growing diversity in pharmacy student populations and the tremendous talents that these men and women bring to preparation for pharmacy practice. It is not that teachers disavow their own knowledge and experience, but rather they seek means to validate and encourage different, yet valid perspectives of their students. A useful strategy in this regard is through students working in small groups on projects and exercises, which foster mutual learning and experiences in professional collaboration in addition to achieving the specific end product of the exercise (*e.g.*, a presentation, a report, a case analysis).

Students also need the opportunity to get in touch with the predicament of what it means to be ill and dependent on another for assistance. Patients are mere abstractions in traditional pharmacy education. For too long, pharmacy education has desensitized students to human illness and suffering. In order for pharmacists to care, they must not only learn to "do to", but "be with" patients. Thus, pharmacy students must be given continuing opportunities and encouragement, beginning early in the curriculum, to interact with patients as persons. Appreciating patients' real needs for caring help is predicated on establishing rapport. Even students in the first professional year of the pharmacy curriculum are capable of interacting with patients on some level. Brief, personal encounters with patients in a variety of settings will help students develop a more realistic and engaging picture of the recipients of their care.

Assuming Responsibility and Accepting Accountability as Essential Attributes to Providing Pharmaceutical Care

Assuming responsibility and accepting accountability are key attributes the pharmacy students need to learn. "Responsible" is defined in Webster's Dictionary as "liable to be called upon to answer for one's acts or decisions; able to fulfill one's obligations; involving accountability or important duties, and able to distinguish right and wrong." These characteristics are, in fact, exactly what pharmaceutical care practitioners must possess. Students need to develop the ability to not only suggest, provide and monitor drug therapy, but the ability to defend their recommendations from both the literature and personal experience. Pharmacy students need to learn not only to distinguish a wise versus unwise decision, they should be required to defend and be accountable for their decisions, and be prepared that their decisions may, in some cases, lead to untoward outcomes. When the student assumes responsibility, self-confidence is developed. If students who graduate today do not believe themselves that they have the ability to make a difference in patient outcomes, how should they expect others (patients, physicians, etc.) to believe it?

An effective way to teach responsibility and accountability is for the student to develop a sense of patient "need." The genesis of this sense of need is the first time a student helps a patient and the patient thanks the student or states how this will make their medical management easier or will mitigate a particular adverse effect and improve their quality of life. This sense of patient need also motivates students to improve self-directed learning and initiative to become the best pharmacist possible. This "need" must be experienced in the first professional year and throughout the student's curricular and non-curricular education.

The Mentor Role of Instructors (within labs, recitations, experiential rotations) as an Essential Shaping of Students' Habits and Self-Confidence

Student habits and self-confidence in assuming responsibility are facilitated by faculty mentoring. This needs to be done intensively early in the educational process, and over time weaned such that the student, by the end of his professional program, assumes all the responsibility for patient care. Ultimately then, the precept

tor acts in an advisory capacity. As a mentor, an instructor (in the lab, the recitation, the experiential rotation) subjectively knows which students have crossed over to assuming personal responsibility and which have not. However, objectively measuring responsibility is quite a bit more difficult. Evaluation tools need to be developed to help the mentoring role of the instructor. Instruments which provide for input of student peers, physicians and nurses help the student appreciate the level of trust which others' have in their work and their contributions.

Mentorship is a most effective way to teach a student how to document progress and self-assess outcomes. A useful tool is to show students how to keep a brief summary log of their experiences, their learning processes, their interactions with patients and other members of their team (e.g., students or care providers). In an experiential rotation, for example, this log provides a basis for generating what interventions were undertaken to educate others or improve a patient's quality of life, what cost savings or cost avoidance resulted. This tool also constantly reminds the students of their responsibilities, due to daily entries in the log. It also helps to reinforce material learned, through the process of reflectively thinking about and writing on the outcomes of their newly learned interventions.

Communication Skills and Habits as Essential to Providing Pharmaceutical Care

Communication is the skill that bundles all other skills and makes them useful. Communications take on many forms in the practice of pharmacists today and will expand in importance in the years ahead. Communication is required to help patients directly, to educate other care givers, to document findings and thoughts in the patient record, to deliberate issues regarding patient care with others. Communication is required to disseminate innovations in health care to others, and to function properly as a health care team member.

This is among the most difficult of skills to teach. Mentorship is an important way to teach students. Students should be encouraged to observe and draw upon as many communication styles as possible, from many role models, so they may develop their own best ways of communicating effectively. One committee member (KJ) in his clerkship mentor role asks his students to present a one or two page summary of either a new drug, a therapeutic issue, or a recent key journal publication to the team three times weekly. This serves several purposes. The preceptor is able to monitor student writing skills, and offer suggestions as appropriate. It helps the students gain confidence in speaking with physicians, nurses and other care givers, and helps them organize their thoughts for efficient, focused communication. By the end of the rotation, students have become much better at presenting ideas, and are much more confident in themselves. Equally important, the other team members feel as though they have benefited from the student's input and are therefore more willing to accept therapy recommendations and trust the students' decisions regarding patient care. Similarly, short, multipurpose writing and speaking exercises appropriate to the laboratory and recitation components of education must also be developed and utilized as additional means to teach and practice communication skills.

The Role of Evaluation to Inform and Guide Refinements in the Pharmaceutical Care Process and the Educational Preparation of Students to Provide Pharmaceutical Care

As the profession of pharmacy shifts its focus beyond the dispensing of prescriptions to caring for the patient, new practice outcomes must be pursued. The role of the pharmacist will become increasingly participatory, necessitating relationship sensitivity and skills, lifelong learning skills and habits, and an emphasis on assessing patient pharmaceutical outcomes. A new system of evaluation will result which includes documenting of pharmaceutical care delivered and analysis of the outcomes of that care.

The Pew Health Professions Commission recommends several strategies which are needed to prepare practitioners for the

competencies needed to practice in the decade ahead(24). Among these are the "development of systems of peer review and evaluation that include documentation and review of care delivered, analysis of the outcomes of care, and efforts to ensure the continuing quality of care." Due to several recent forces of change such as managed health care, a more scarce health care dollar, and the movement to include the patient in health care decisions, pharmacists are now also compelled to not just be providers, but are responsible to demonstrate outcome achievement and document those outcomes. Pharmacists are increasingly being held accountable to show they are improving care, promoting rational drug use and doing this in the most cost-effective way. Strand, Cipolle and Morely have described a prototype of the pharmaceutical care process which delineates the elements of the care process and outcomes to be documented and evaluated in this context (see Appendix A)(25).

Central to developing pharmacy students as providers of pharmaceutical care is inculcating the habits and skills of documenting and evaluating the process and outcomes of their own performance. Pharmaceutical educators must increasingly utilize student performance evaluation processes as means to enhance student abilities and confidence to provide pharmaceutical care. These processes of measuring practice-based outcomes for students will in themselves contribute to a socialization for each student and a resocialization for the profession. What is measured becomes important and is subsequently rewarded.

Throughout their professional education, students should have a variety of experience opportunities, some focusing on orientation to the health care system, some service-based, and some pharmaceutical care-based experience opportunities. These experiences will help them develop perspectives on patient care drug therapy needs; on the respective roles of other health professionals; and on the abilities, sensitivities and commitment essential for them to provide pharmaceutical care. Integral to these experiential learning opportunities should be strategies to document the learning process and outcomes and evaluate the appropriateness and quality of the process as well the outcomes.

As the delivery of all health care moves towards an emphasis on quality outcomes, pharmacy students who train with other health professionals will be expected to document, defend and measure their practice. An emphasis on demonstrating and measuring clinical competence in all pharmacy practice settings necessitates the development of new clinical evaluation instruments. These new clinical evaluation instruments must measure the application of theory to practice, problem solving, critical thinking as well as the performance of psychomotor and relationship skills. There has been a lengthy and difficult history of clinical evaluation measurement in other health professional disciplines(26). Many difficulties have been attributed to the inappropriateness of the objectives(27) as well as inadequate methods(28, 29).

Diagnostic reasoning, the inference and decision-making components of all clinical care, is implicit in clinical evaluation tools. The diagnostic reasoning process has been studied extensively in medicine, somewhat in nursing and other health professions. The diagnostic reasoning process is a complex observation/critical thinking/data-gathering process used to identify and classify phenomena that are encountered in presenting clinical situations. This classification and the knowledge associated with it in turn shape the decision or treatment regimens that can be undertaken to produce a desired outcome in patient response(30). The conceptual basis for many diagnostic reasoning instruments has been derived from Janis and Mann's (1977) *Decision Making: A Psychological Analysis of Conflict, Choice, and Commitment*. Janis and Mann arrived at seven criteria assumed to be ideal for making decisions (see Appendix B). Carnevali and Patrick in 1979 proposed a basic model for nursing diagnosis and management that reflects a similar process for pharmaceutical diagnostic reasoning as illustrated in Strand *et al*, pharmaceutical care process (compare Appendix C and A). Drawing upon these initiatives in nursing, it is appropriate to emphasize that pharmaceutical care is also

based on a diagnostic reasoning process aimed at optimizing outcomes in patient therapy.

Pharmaceutical educators need to continue with their development of evaluation instruments which measure cognitive performance such as tests of diagnostic reasoning, critical thinking, patient education outcomes, and indices of quality. Also needed are effective measures which will evaluate professional role performance, professional autonomy, role orientation, helping relationship skills, and helping outcomes.

The measurement of educational outcomes to effect change in pharmaceutical education can build from other health disciplines' experience with similar challenges(32,33). A rich research literature in measurement of clinical outcomes should be utilized when attempting this challenge.

Conclusion and Recommendations

Caring, personal responsibility and accountability, communication effectiveness, and documentation and evaluation of performance process and outcomes are, individually and collectively, essential attributes of providing pharmaceutical care. They must become integral components of each student's professional socialization learning. These abilities and habits must be modeled, practiced and mentored throughout each student's professional education. Each school/college's curriculum philosophy and design should provide students with a variety of simulation and field experience learning opportunities through which these and other essential abilities to provide pharmaceutical care are emphasized as component strategies to create a culture for optimizing student professional socialization.

Building on these initial concepts and commentaries, the Committee recommends the following initiatives by the Council of Faculties:

1. Develop a questionnaire to assess current initiatives within schools/colleges to involve students early and regularly in experiential learning opportunities which enable them to develop perspectives, commitment, skills and habits which pertain to the charge and emphases in this Report.
2. Encourage programming within AACP for sharing examples and fostering networking among schools/colleges concerning how commitment to professional socialization can best be reflected in non-curricular components of the students' education, including:
 - a. the admissions process;
 - b. academic advising;
 - c. student organization involvement;
 - d. service-based learning experiences (curricular and non-curricular);
 - e. work experience.
3. Survey current initiatives within schools/colleges of pharmacy to develop and validate evaluation tools to measure the process and outcomes of providing pharmaceutical care, e.g., to measure cognitive performance, professional role performance and professional attitudes such as autonomy and role orientation.
4. Conduct and summarize a review of the literature on other health discipline experience and efforts at measuring similar educational and clinical outcomes.
5. Consider developing a companion background paper to the excellent ones prepared by the AACP Commission to Implement Change in Pharmaceutical Education. This COF paper would seek to generate a consensus on the **essentials** which should be represented in the professional socialization of pharmacy students. As such, it would reflect much of the thrust of the original and evolving revision of the American Association of Colleges of Nursing Report "Essentials of College and University Education for Professional Nursing"(3).

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Step 9. Follow up to measure success:
Determine the pharmacist's success on an individual patient basis and on a long-term basis.

^a Reprinted from *Current Concepts*, (1992) with permission from The Upjohn Company, Kalamazoo MI.

APPENDIX A.

The Pharmaceutical-Care Process: An Overview^a

- Step 1. Establish the pharmacist-patient relationship:
Make contact with and commitment to the patient.
- ↓
- Step 2. Collect, synthesize and interpret the relevant information:
Determine necessary patient, drug and disease data—
Interpret as a pharmacist with the patient..
- ↓
- Step 3. List and rank the patient's drug-related problems:
Define and prioritize all actual and potential drug-related problems.
- ↓
- Step 4. Establish a desired pharmacotherapeutic outcome for each drug-related problem:
For each problem needing resolution or prevention, determine with the patient the desired outcome—quantitative and measurable.
- ↓
- Step 5. Determine feasible pharmacotherapeutic alternatives:
List those therapeutic modalities that could achieve the desired outcome in this patient.
- ↓
- Step 6. Choose the "best" pharmacotherapeutic solution and individualize the therapeutic regimen: With the patient, decide the best drug, dose, formulation, regimen, schedule, etc.
- ↓
- Step 7. Design a therapeutic drug-monitoring plan:
Develop a plan to determine whether the desired therapeutic outcome has been achieved—plan must include monitoring for adverse effects.
- ↓
- Step 8. Implement the individualized regimen and monitoring plan:
With the help of the patient and the health-care professionals responsible for the patient, implement and document the decisions made.
- ↓

APPENDIX B.

Janis and Mann's criteria came from an extensive review of literature on effective decision making and include the following:

The decision maker, to the best of his ability and within his information processing capabilities,

1. thoroughly canvasses a wide range of alternative courses of action:
2. surveys the full range of objectives to be fulfilled and the values implicated by the choice:
3. carefully weighs whatever he knows about the costs and risks of negative consequences, as well as the positive consequences, that could flow from each alternative:
4. intensively searches for new information relevant to further evaluation of the alternative:
5. correctly assimilates and takes account of any new information or expert judgement to which he is exposed, even when the information or judgement does not support the course of action he initially prefers:
6. reexamines the positive and negative consequences of all known alternatives, including those regarded as unacceptable, before making a final choice:
7. makes detailed provisions for implementing or executing the chosen course of action, with special attention to contingency plans that might be required if various known risks were to materialize.

APPENDIX C.

Carnevali and Patrick proposed a model of the nursing diagnostic process which with few changes (as noted) could be used by pharmaceutical educators.

1. Collecting an adequate... data base and utilizing a... pathway of branching logic.
2. Arriving at the most accurate and precise... diagnosis that can be derived from the data.
3. Making a plan of... (pharmaceutical) management that will effectively treat the defined problem area.
4. Implementing the treatment plan with the patient and family.
5. Using... (pharmaceutical) criteria appropriate to the diagnosis to evaluate patient's family response to ... (pharmaceutical) management.