



“The patient’s pharmacist is concerned with the individual patient’s health and safety.”

===== **ALLEN J. BRANDS** =====
(1978)

At the time he received this award, Allen J. Brands was the Chief Pharmacy Officer of the Public Health Service, U.S. Department of Health, Education, and Welfare, and the Chief of the Indian Health Service Pharmacy Branch.

The Patient’s Pharmacist

Henry Ford once said: “The only foundation of real business is service.” How true this statement is when applied to health care and pharmacy service. The word “service” is included in the term “pharmacy service” and is the very foundation upon which the practice of hospital pharmacy is based.

While a large number of drugs are stocked and dispensed in hospital pharmacies, each drug is dispensed for administration to an individual patient with a specific health problem. It must be remembered that the patient is being treated with a drug which has other actions besides those directed at the particular disease or target symptom. The patient’s physical and mental well-being must be considered in treatment planning.

The assessment and treatment of patients by pharmacists go back several hundred years.¹ The general practitioner in England today is the lineal descendent of the apothecary of the 17th century. The Society of Apothecaries of England came into being in 1617, when it was constituted by the Royal Charter of James I. The Charter was drafted by Francis Bacon. At that time, the apothecaries were compounders and

dispensers of medicines and assisted physicians in applying certain forms of treatment under their direction. During the first century after the Charter was granted, many members began to give advice and to supply medicines without the intervention of a physician. The College of Physicians exercised its legal powers in the endeavor to suppress this form of medical practice, but in 1703 the Society carried a test case to the House of Lords and gained a decision in its favor. Henceforth, it was recognized that the apothecaries could give advice to the sick, although they were not allowed to charge for it.

Taking advantage of the freedom the decision gave them, they studied medical textbooks to render themselves better equipped for the work before them. The result was the Apothecaries Act of 1815, which gave the Society the legal right to grant licenses to practice medicine throughout England and Wales and entrusted to it the duty of controlling that practice.

Changes in the practice of pharmacy have been taking place in hospital pharmacies in the United States, with pharmacists becoming deeply involved in the drug therapy of patients. I predict that this trend will grow because of the increasing complexity of drug therapy and the effects of drugs on patients.

The Study Commission on Pharmacy² emphasized that pharmacy is a knowledge system in which chemical substances and a people called patients interact. Needed and optimally effective drug therapy results only when drugs and those who consume them are fully understood. I wish to stress this reference in that the drugs and those who consume them are fully understood. When the pharmacist fully understands his patient and the prescribed drugs, we have the patient's pharmacist. The Study Commission³ also stated that when pharmacy is viewed as a knowledge system, it must be judged as being only partially successful in delivering its full potential as a health service to the members of society.

Prior to the 1960s, hospital pharmacists had little or no patient contact, and they had little or no information concerning the problems of patients for whom they were supplying drugs. Barker⁴ reported that while serving as a senior student in a hospital pharmacy class, the professor repeated an often-heard dictum "that one of the most important traditional responsibilities of the pharmacist is to prevent mistakes involving drugs." This professor's statement resulted in a study of medication errors in a hospital and a method of reducing medication errors in hospitals through the development of the unit dose drug distribution system. Over the years, unit dose drug distribution has been expanded and refined to include a systematic review of each patient's prescribed drugs for dosage and drug-drug interactions. The Joint Commission on Accreditation of Hospitals has included in its standards for pharmaceutical services a requirement that the pharmacist should review the prescriber's order, or a direct copy thereof, before the initial dose of medication is dispensed. This provides the opportunity for the pharmacist—the patient's pharmacist—to use his knowledge and skills in serving the individual patient.

Pharmacy is a profession. It is a knowledge system which the Study Commission on Pharmacy³ reported as only partially successful in delivering its full potential as a health service to the members of society.

What is the purpose of the profession of pharmacy and the responsibilities of the individual pharmacist to a patient? The purpose and responsibilities of pharmacists are clearly stated in the Code of Ethics,⁵ and I quote the preamble and first three principles:

These principles of professional conduct for pharmacists are established to guide the pharmacist in his relationship with patients, fellow practitioners, other health professionals and the public.

A pharmacist should hold the health and safety of patients to be of first consideration; he should render to each patient the full measure of his ability as an essential health practitioner.

A pharmacist should never knowingly condone the dispensing, promoting or distributing of drugs or medical devices, or assist therein, which are not of good quality, which do not meet standards required by law or which lack therapeutic value for the patient.

A pharmacist should always strive to perfect and enlarge his professional knowledge. He should utilize and make available this knowledge as may be required in accordance with his best professional judgment.

Why am I speaking of the patient's pharmacist? Wang⁶ stated that with the complexity of drug therapy in current practice, it is difficult for one physician to become a leading authority of a medical center with experience and knowledge in both diagnosis and treatment. He further stated that in postgraduate medicine, the emphasis has been on diagnosis and not on treatment. Rational drug therapy means the proper use of drugs; it frequently means elimination of duplicating and conflicting drugs and the use of drugs at optimum therapeutic levels. Wang recommended the use of clinical pharmacologists for education in the treatment of patients in large teaching centers.

However, for the day-to-day patient care, clinical pharmacists have assumed much responsibility in drug therapy in many hospitals and clinics. Their clinical expertise concerns the use of drugs and choice of drugs in the treatment of disease. Now, if we take the clinical pharmacist and direct all of his efforts to the individual patient with prospective and concurrent drug use review, we have the patient's pharmacist.

What is a patient's pharmacist? What is his knowledge base? What are his duties and responsibilities?

A patient's pharmacist is familiar with the patient's medical and social history and his present health problems and ensures that the patient's drug therapy is appropriate at all times with no preventable harm to the patient from drug therapy. He speaks four languages—medical, nursing, lay, and pharmaceutical. Briefly, his knowledge base is the clinical use and actions of drugs, pharmacokinetics, optimum clinical response expected from drug therapy, monitoring and evaluating clinical response, and education counseling communication skills.

The activities of the patient's pharmacist include a prospective drug review and a concurrent drug review for inpatients and outpatients. Ideally, the pharmacist should be involved in the development of the drug treatment plan.

In order to evaluate adequately the drug therapy regimen, the patient's pharmacist

must have certain information about the patient. This includes a *drug history*. After an assessment is made of the patient's condition which is to be treated, one of the most reliable guides in selecting a drug for the individual patient is the patient's previous response to medication. A comprehensive drug history should include detailed information on daily dosage, dosage schedule, reason for using, clinical efficacy, side effects, patient acceptance, and reliability in adhering to the medication schedule. This information may prevent the prescribing and use of drugs which have been ineffective for the patient, have been unacceptable, or have caused adverse effects. It is also useful in the determination of the daily dosage and dosage schedule for those drugs in which the daily dosage and dosage schedule may vary from patient to patient. This prospective review of the drug therapy plan, using a comprehensive drug history, will eliminate problems that often develop from the drug therapy.

The *diagnosis and target symptoms* are essential in both the prospective and concurrent drug review and evaluation. The patient's pharmacist, in his prospective drug review, must be assured that the drug is indicated for the disease and target symptoms. In this review, the pharmacist should consider the relative efficacy of the prescribed drug and its cost as compared to other drugs used for the same condition. For many conditions, several drugs may be effective and available at different costs. In considering the patient's interest and health, the relative effectiveness of the drugs indicated should be of prime consideration in the decision and selection process. The patient's drug history will also have an impact on the drug selection. If the patient has had previous treatment with a particular drug for the same condition, this information, with the results of the treatment, should be considered in developing the drug treatment plan.

The dosage and dosage schedule should be tailored to the particular patient, his age and weight and other conditions that the drug therapy may affect. Too many times an average dose of a drug may be prescribed without any regard to the age or the weight of the patient.

The diagnosis and target symptoms are also necessary in the concurrent drug review by the patient's pharmacist. For inpatients, the pharmacist must collaborate with the physician and nurse in the sharing of information on the patient's progress under treatment. The pharmacist should also visit the patient to monitor and evaluate the results of the drug therapy. Has the natural course of the disease been modified as it should have been by the drug? Have the target symptoms such as fever, pain, malaise, or agitation been reduced or eliminated? Is it necessary to modify the drug therapy plan by changing the dosage or the drug because the desired results have not been obtained?

A patient interview, visual observations, physical assessment, and laboratory test results may be necessary to monitor and to evaluate the drug therapy in a concurrent drug use review. The patient's condition, the drug therapy, and anticipated results will dictate the frequency with which the pharmacist monitors and evaluates the drug aspects of his patient's care. For inpatients, this may vary from more than once a day to once a week or less often. For outpatients, the quantity of medicine dispensed would determine when the concurrent drug use review for monitoring and evalua-

tion is done. The quantity of drugs dispensed to outpatients should be determined by when the patient's drug therapy should be reviewed and evaluated. This period, too, will vary with the patient's condition, his reliability in taking his medicine, and the drugs prescribed.

The patient's pharmacist will know whether the patient has *other diseases or conditions* that would be affected by the use of the drug and what drugs were being used concurrently. Some drugs are contraindicated, or special precautions must be taken when a patient has some chronic disease (e.g., glaucoma, impaired liver function, cardiovascular diseases). Age is of importance because of the possibility of decreased absorption, metabolism, and excretion rates. Other drugs prescribed for other conditions may interact with the new drug to decrease or increase the effectiveness of one or more of the drugs.

Adverse effects from drugs may result from known adverse reactions and allergies or adverse results from the misuse of drugs or improper dosages. The drug history is again important from the standpoint of the drugs that have caused adverse effects for the patient. The patient's history of other conditions or diseases is necessary to prevent or minimize adverse effects. If a drug must be used and it has potential for producing adverse effects, then this potential should be known by all the staff involved in the patient's care. The staff should also know the symptoms of the adverse effects.

Patient education and consultation is an integral part of the pharmacist's patient care responsibility. Education of the patient on the drugs used and drug-related aspects should begin on the day treatment is started or as soon thereafter as possible. For the inpatient, education should be a part of each visit to the patient, with a thorough review at the time of discharge of those drugs the patient will be using at home. The education should include the favorable results to be expected and the possible adverse effects. By knowing what results to expect from the drug therapy, the patient can assist the staff in determining if the desired results are obtained and when adverse effects occur.

Outpatients should receive education and counseling at each visit, even though they may have been taking the same drug over a long period of time. The *Pharmacy Practice*⁷ newsletter stated that the typical level of memory retention is not high. Within two days, people forget 20% of what they have learned. Within four days, 40%, within nine days, 60%, and within 30 days, 74%. Therefore, repetition is essential.

Patient education and counseling should be done in privacy. A private consultation office has been found to be very effective in the U.S. Public Health Service hospital pharmacies. The patient and pharmacist are more at ease, and the patient has a tendency to ask questions for clarification. Pharmacists in the privacy of an office have learned of other health problems that the patient did not mention to the physician. Privacy is of utmost importance when the pharmacist is obtaining data for patient assessment to determine whether the disease is under control and the drug should be continued. Privacy is also essential in demonstrating the use of some drugs during education and counseling. The pharmacist comes to understand his patient and his problems when counseling is done in privacy, and the patient better understands, respects, and trusts his pharmacist.

The pharmacist should record in the medical record the results of his patient care activities.

First of all, the pharmacist should prepare a drug treatment plan for inclusion in the medical record for use by the nursing and medical staff. This drug treatment plan should have the drug name, dosage form, amount of each dose, time of day for each dose, anticipated length of therapy, favorable results to be expected, potential significant adverse effects and when to expect them, and laboratory tests and other physical and visible measurements with the times they should be conducted to determine the effect of the drug on the disease and to detect adverse effects. The plan should indicate action to take if adverse effects occur or treatment is not effective. This treatment plan can also be used in patient education.

When the patient's pharmacist conducts his prospective drug review, he should indicate in writing in the patient's record that the drug is indicated, the dosage and dosage schedule are appropriate, and there are no known preventable adverse drug effects, and sign his name. For the concurrent drug reviews, he should enter his findings as to the effectiveness of the therapy, the presence or absence of adverse effects, and the results of his patient education.

When the pharmacist finds a problem, it should be corrected immediately. He should take the appropriate action, which may be contacting the physician or the nurse or making the correction himself.

In conducting concurrent drug use reviews, there are three aspects to be considered: first, to assure that the disease is responding to the therapy; second, to detect any adverse drug effects; and third, to determine compliance or receipt of the drug by the patient.

The pharmacist's activities or process can be evaluated by a review of the pharmacist's notes in the medical record. Did he write a drug treatment plan? Did he review the drug therapy for appropriateness of the drug, dosage, and dosage schedule and for adverse effects? Did he provide counseling and education for the patient?

The outcome or results can be measured by a review of the patient's record to answer the following questions:

1. Was the drug indicated?
2. Were the dosage and dosage schedule appropriate?
3. Were there adverse drug effects?
4. Was the patient's disease cured or controlled in the appropriate period of time?
5. As an outpatient, did the patient comply in taking his drugs?

The American Society of Hospital Pharmacists has the right forum for the patient's pharmacist in the Special Interest Groups that it sponsors. At this 13th Annual Midyear Clinical Meeting, there are 11 Special Interest Group meetings that are concerned with patient pharmacy care. ASHP is moving forward, and pharmacists are moving forward.

The patient's pharmacist is concerned with the individual patient's health and safety. He uses his knowledge of the patient, drug actions, and drug treatment of diseases to ensure appropriate drug therapy. He collaborates with other professional staff, visits the patient for assessment and counseling, and enters his findings and assessments in the patient's medical record.

(For the complete list of references cited, please see page 315 of the *American Journal of Hospital Pharmacy*, Mar. 1979.)

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