

EDITORIAL



by DON E. FRANCKE

THE INTERDISCIPLINARY NATURE OF MEDICATION ERRORS

ALTHOUGH MAN HAS BITTEN deeply into the fruit of the tree of knowledge of drugs, the steps involved in prescribing, dispensing, and administering them has not changed markedly since François Magendie and Claude Bernard initiated the development of experimental pharmacology in France in the early nineteenth century. The drug explosion of the past few decades has completely altered the character of therapeutic agents until today we have many drugs which fundamentally affect the metabolism of the human body. Not only that, but many are themselves biotransformed into other agents with powerful actions, which are responsible for some of the side or toxic effects of drugs. Some drugs interact with others to produce profound effects. Today's drugs may be likened to ballistic missiles with atomic warheads, while we prescribe, dispense, and administer them as if they were bows and arrows. As man unlocks more completely the molecular and enzymatic secrets of drug action he has a parallel responsibility to establish more effective measures for their control and safe use. The bigger bites we take of the fruit of the tree of knowledge—symbol of good and evil—the greater our responsibility for the consequences.

Each of the three professions involved in prescribing, dispensing, and administering drugs makes its own characteristic errors. Physicians, for example, sometimes write incomplete or incorrect orders for drugs only recently discovered; pharmacists occasionally mislabel prescription containers, misread prescriptions, dispense drugs of poor quality resulting from incorrect storage conditions or poor procurement practices; while nurses too often administer the wrong dose in the wrong dosage form to patients.

Studies, by various authors, of prescribing and administration errors indicate that there is an incidence of about 15 to about 22 percent of the drugs given. This rate is far too high, especially in view of the potency of today's drugs. Few good studies have been published on dispensing errors.

What approaches can be made to help solve this difficult and complex problem? First, a more general recognition of the problem itself by members of medical, nursing, and pharmacy professions would be helpful. Until it is widely accepted that a problem exists, little will be done to correct it. Each profession should recognize that medication errors are serious problems that affect patient safety and welfare. Then together they should discuss ways to prevent them.

Second, more well-controlled studies should be under-

taken of the value of placing a pharmacist on the nursing unit where he can interact with the nurse and physician and give guidance to each of them in the hundred and one questions regarding drugs, dosage forms, trade names, nonproprietary names, stability, compatibility, dose and routes of administration side effects, and other factors that arise daily.

Many medication errors occur because no one knows when to raise a question or what question to raise. In this situation I am thinking especially of a hospital in which a staff member may direct the resident to prescribe a drug; the resident, in turn, may have an intern write the medication order. An important part of the problem in medication errors is poor communication. We may assume for the moment that the staff physician knows all there is to be known about the drug, but he is not at the nursing unit except for short periods of time and thus does not know in detail the many questions and problems that arise. Many times interns and residents hesitate to ask what they believe they should know. Eventually the resident and intern do learn a great deal about drugs, but at the expense of the patient for whom drugs have been prescribed. The patient should not be a pawn in the educational process.

Third, studies of ways to computerize and otherwise automate large portions of the chain of decisions involved in prescribing, dispensing, and administering medication should be continued. Between prescribing a drug and administering it to a patient, a large number of individual decisions are made by physicians, nurses, and pharmacists. The more of these decisions that can be programmed and automated, the greater will be the reduction in the incidence of error. The error rate in machine-sorted punch cards, for example, can be reduced by checking to about 1 in 10,000.

Despite advances in mechanization and automation, there is still great need for improved programs of continuing education for physicians, pharmacists, and nurses, and this need is becoming apparently more and more acute. What is needed is an effective way to communicate authoritative information on drugs when and where it is needed and to accomplish this in a simplified way.

Recognition that there is a problem of medication errors, that it is interdisciplinary in nature and can only be solved by cooperative interdisciplinary action, and that it greatly affects the welfare of the patient would be a healthy first step.