pregnant women will not understand weighted multiple regression, and will make their choice of care by physician or other attendant rather than by hospital. In my judgment, the best method for determining an optimal rate will be through prospective clinical studies conducted in one or more hospitals with large numbers of births. Such studies would require the ability to standardize for risk, written protocols, mandatory consultation, and data gathering on each potential cesarean section, whether carried out or not.

Remember, however, that the optimal rate will be a population-wide rate, not one that can be applied to individual hospitals or birth centers unless their populations are risk-standardized. Finally, with all other factors equal, the cost of 3.1 extra days in the hospital for a necessary cesarean section is clearly balanced by a lifetime free of sequelae of birth injury.

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A Prescription is Not a Simple Matter Anymore

Once upon a time, when a patient consulted a physician and received a prescription, the encounter was a private affair, known only to the two persons in this dyad and perhaps also to the dispensing pharmacist. How times have changed! The article in this issue of the Journal by Koepsell, *et al.*,[1] typifies the phenomenal growth in applications of technology to the solutions of everyday problems in the area of drug therapy. The prescription today is reviewed by countless persons; that little piece of paper or hospital chart entry is one of the keystones of contemporary medical care, of interest to physicians, pharmacists, hospital administrators, pharmaceutical houses, insurance companies, health services, and social science researchers, to name only a few constituencies.

The Seattle evaluation of computerized drug profiles is a good example of one of the efforts to upgrade the quality of health care services while containing costs through efficiency and access improvements. Other equally interesting activities revolving around prescriptions include the two major pharmaceutical marketing research companies—IMS and PDS (Pharmaceutical Data Service). IMS sells subscriptions to its studies; the National Prescription Audit (NPA), a compilation of prescriptions dispensed in community pharmacies, as copied from actual prescription files, and the National Disease and Therapeutic Index (NDTI) which lists the diagnosis or reason for use for prescribed drugs, as well as a listing by disease entity of the drugs employed.

PDS, a subsidiary of Foremost-McKessonn' captures data from the hundreds of thousands of third-party prescription drug claims it processes daily; it sells manufacturers data about how new products are doing by location, etc.

My guess is that about one-third of community pharmacies have some type of computer system that maintains patient drug history files coupled with other patient information such as allergies and major conditions. Probably another one-third or more of US pharmacies maintain paper records or patient profiles. Naturally, hopsitals maintain drug records in the overall chart. Insurers and health maintenance organizations (HMOs) obviously keep records of patient files as well as, in some cases, prescribing records for drug utilization review (DUR) purposes on a physician-by-physician basis. At the US Health Care Financing Administration (HCFA), Medicaid keeps records by patient and provider for statistical, planning, and evaluation purposes.

Even the data available to prescribers has recently changed in format and accessibility. The American Medical Association (AMA) and General Telephone and Electronics (GTE) have just launched AMA/NET, a medical information network, from which four data bases will be available: drug information, disease information, medical procedure coding and nomenclature, and socioeconomic bibliographic information. All that is required to access the data bases are computer terminal and telephone. The drug information base contains "evaluative, up-to-date and unbiased information" on the clinical use of more than 1,500 drug products marketed under 5,000 brand names in North America.

Information on a specific drug can be retrieved in its entirety, in summary, or as part of a group of drugs for treatment of a given condition or disease. These monographs or any facet of them (e.g., "interactions") can be accessed by brand name or generic name.

The Disease Information base is an electronic update of AMA's "Current Medical Information and Terminology," which summarizes the diagnostic features of more than 3,500 identifiable diseases, disorders, and conditions.

The third data base, derived from AMA's "Physician's Current Procedural Terminology" (CPT), contains more than 6,000 descriptions of procedures in medicine, surgery, and diagnostic services, with their identifying codes.

The final base—a refinement of AMA's "Socioeconomic Research Resources" (MEDSOC)—is a guide to the current literature on such non-clinical aspects of health care as malpractice premiums. For this base, more than 700 journals are monitored on a continuing basis, along with legislative reports, books, and selected newspapers. Searches may be instituted by subject, title, author, or a combination of keywords to call up all relevant references to a given subject.[2]

Even the patient is attempting to and actually succeeding in looking over the shoulder of prescribers. The PDR

(Physicians Desk Reference)[3] continues to be a brisk seller in lay book shops. Patient package inserts (PPIs), an effort championed by the US Food and Drug Administration, appear to be alive and well through the AMA's Patient Medication Information (PMI) leaflet program and via several other commercial sources.

Balint and others have studied extensively the psychosocial aspects of prescribing and the relationship of the prescription, between patient and provider.[4] Barber examined the multiple functions of drugs (aesthetic, ideological, political, psychological support, etc.) in a classic work.[5] Literally, hundreds of reports have explored prescribing decision making, compliance, the placebo effects, habituation and psychosomatic disease, to name but a few of the related injuries.

It is no small wonder that there is such an industry built around the writing of, dispensing of, monitoring, and everything else associated with the prescription for a legend drug. According to *Pharmacy Times*,[6] the total number of prescriptions written in outpatient settings alone totaled 1.5 billion. At an average prescription price of $10.37 at retail, one can see the general magnitude of this enormous and growing market. It is also interesting to note that the total number of prescriptions written during 1982, versus the preceding year, showed a gain of 5.3 per cent in volume with a 20.2 per cent gain in price of the average prescription. When hospital-prescribed drugs are included, and over-the-counter drugs are further added, we see the shape of a massive industry. When it is further recognized that approximately 9 per cent of all health care expenditures are for drugs, we can begin to understand why there is such an enormous emphasis and importance in rationalizing prescribing within the health care system in the United States. The article by Koepsell, *et al.*,[2] is a fine example of one such effort.

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