Use of Computer-Based Medicaid Drug Data to Analyze and Correct Inappropriate Medication Use

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In an experimental controlled trial, prescribing records were obtained from the Medicaid Management Information Systems (MMIS) of four states for all physicians participating in the Medicaid programs of those states. Three categories of drugs that are commonly misprescribed were identified, and moderate to high prescribers of these drugs were identified from the MMIS data set. These physicians were then randomly divided into three groups. One group received no intervention, the second group received an innovative series of print materials urging appropriate drug use, and a third group received the print materials and was visited by consultant pharmacists to discuss the drugs in question. Our experience suggests that use of Medicaid prescribing data can be an efficient and accurate way of conducting large-scale surveillance of misprescribing, and of targeting interventions that can improve such suboptimal drug utilization. Use of the same data set in a follow-up period can monitor the effectiveness of each mode of intervention and will measure the degree of behavior change for each physician.

INTRODUCTION

Each year, the number of prescription drugs available to the practicing physician increases, as do the potential toxicities and side effects of those drugs, as well as their benefits. It has become very difficult for physicians to keep abreast of all major developments in pharmacology that relate to their practice. Substantial informational input is generated by pharmaceutical companies through advertising and direct contact by professional representatives, but the purpose of this information is generally to encourage sales of a particular product, and it often does not address other informational needs of physicians completely. A variety of other unrelated factors also predispose the physician to what may at times be excessive use of prescription drugs: patient demand for a certain agent, the physician's desire to see and satisfy a large number of patients in a given day, and the pharmacological orientation of most physicians, which
predisposes them to seek chemical solutions for many patient complaints. These factors often conspire to generate a significant amount of overprescribing or misprescribing in daily practice.¹

Simultaneously, the 1980s represent a period of retrenchment in budgets for a wide variety of health and human services programs, including health care. State Medicaid budgets are being stressed as never before, and it is becoming increasingly important to find ways to achieve efficiency and economy without sacrificing the quality of patient care. A significant amount of unnecessary prescribing (or unnecessarily costly prescribing) takes place in and is reimbursed by the Medicaid system. Any method that could improve the appropriateness of this prescribing by eliminating unnecessary costs would be an important means of bolstering the economic status of such programs. In response to these twin problems, we have developed an innovative method of communicating with physicians to educate them about commonly used drugs. We have taken the communication style of the pharmaceutical companies, which utilizes visually attractive, arresting typographic styles and illustrations, as well as personal contact, and put it at the service of a more neutral source of information—the department of internal medicine of a medical school. In this manner, we planned to implement a selective educational program aimed at physicians who seemed most in need of targeted education concerning specific drugs, as evidenced by their prescribing practices. In order to accomplish this, however, we first needed to develop means of identifying such physicians and tracking their drug utilization patterns before, during, and after our randomized controlled trial. The bulk of this paper will discuss the utilization of computerized Medicaid data to achieve this goal.

MEDICAID AS A DATA SOURCE FOR DRUG USE

Drug utilization data are unique in health services research and quality assurance in that they are often harder to retrieve than are, for example, data about hospitalizations or physician visits. There are only a few systems of care that systematically record drug utilization experience in a coherent and usable manner for outpatients: Medicaid, several large Health Maintenance Organizations, and the Veterans Administration. For each of these sources, the quality and reliability of data systems vary widely. For the past decade, state Medicaid programs have been mandated by the federal government to generate Medicaid Management Information Systems (MMIS) to assist in the recording, reimbursement, and surveillance of all health care activities supported by these programs. Some states have progressed well in this regard and have developed complete, accurate systems, whereas others have been slower in doing so. In many states, the MMIS has been used primarily for reimbursement purposes and administrative control, with relatively little work being done through it on research questions and quality assurance. However, an automated data and retrieval system such as this presents excellent opportunities for both such activities, and states are increasingly broadening the purposes to which their MMIS data set can be put. One major advantage of the MMIS data set for drug utilization studies is that because the acquisition of data about drug use is part of the reimbursement procedure to pharma-