Continuing Education and Library Services for Physicians in Office Practice*†

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ABSTRACT

A program is described which incorporates library services into continuing medical education for physicians. The educational service is based on the actual needs of the physician rather than on his perceived needs. The needs assessment is accomplished by reviewing drug-prescribing habits. Current medical literature is then selected for the physician to coincide with his unique educational needs. The program is further designed to evaluate the change in the physician's drug-prescribing habits as a result of his study of the literature received.

EFFORTS are continually being made to increase and update the knowledge base of practicing physicians. Not only are medical educators involved in this goal, but librarians as well are seeking ways to facilitate this objective. In doing so it is helpful to examine the underlying premise of both the utilization and provision of library services.

Services are generally based on the concept of perceived needs. In terms of utilization this concept relies on the physician's ability to identify those areas of his practice which could benefit most from an educational activity. However, this approach to utilizing library resources does not always maximize benefits. The physician may not be aware of a deficiency in a particular area and, as a result, is not in a position to correct it. Thus, in some cases his "perceived" need is not equivalent to his "actual" need.

Similarly, library services are most often provided on the same perceived-need basis. The librarian offers assistance based on his perception of what the user's information requirements are or will be in the future. In most cases, from both the point of view of the user and the librarian, the application of library resources on a perceived-need basis is sufficient to meet the educational needs of the physician [1]. However, the potential impact of library services can be broadened by incorporating into them an actual-needs assessment.

This paper describes the Office Education Project, which is designed to evaluate a "noninvasive" continuing medical education program focused on the physician's office practice. A joint effort of the University of Southern California's Division of Postgraduate Medical Education, School of Pharmacy, and Norris Medical Library, the project integrates library-based information services with continuous review and evaluation of the physician's performance.

The individual physician's actual educational needs are assessed by an analysis of his drug-

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prescribing behavior. A committee of university physicians and clinical pharmacists monitors the prescribing habits of the physician, and determines whether the best known drug therapy is being utilized and whether improvements could be made in prescribing patterns. Once the educational needs of a particular physician are identified, the librarian searches the literature and prepares packets of educational materials consisting of reprints or abstracts of pertinent medical literature, as well as specific recommendations from the review committee. The packets are given to the physician, and his prescribing practice is monitored a second time to determine the effectiveness of the packets in modifying his prescribing behavior.

The integration of educational activity and the provision of library service within the context of the physician's own environment, his office, are major features of the program. There are several reasons for expanding education into office practice and for involving librarians in this arena. First, since the vast majority of patient contacts occur outside the hospital and in the physician's office, this type of educational activity is more likely to have a major impact on patient care. Second, because the activity is practice related, it can be focused on specific patient care needs and become more relevant to actual clinical decisions. And third, since the practicing physician is always pressed for time, education and access to the literature will be more acceptable if it can be provided to him at the location of his practice.

PHYSICIAN PARTICIPANTS

One hundred practitioners in family practice, internal medicine, pediatrics, and other primary care fields have volunteered for the study. As a group they see a wide range of patients and conditions. Recruitment of persons to enter the study has relied on direct mail invitations to physicians in private practice in the Los Angeles area. Once a physician indicates an interest in becoming a participant, orientation materials are sent to him. This is followed by a personal visit from either the project director or the librarian, who further explains the project and describes the information required on each prescription that is written. All physicians who participate in this program are given 2½ hours of continuing education credit from the California Medical Association for each month of participation.

DATA GATHERING

Information about the physician's practice comes from duplicate prescription forms which also list the diagnosis and other patient data. The prescription form serves as the basis for the needs assessment and educational intervention provided by the project. It must contain sufficient information for purposes of assessment, and yet it must not take an inordinate amount of time to complete, as this would create an undue burden on the physician's time.

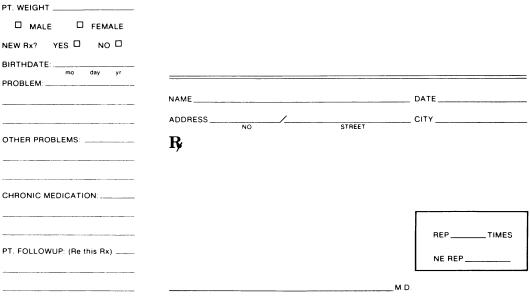The prescription form currently used is shown in

FIG. 1.—Sample prescription form.

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Complete the right-hand side of the form in your usual manner.

Complete the information on the left side of the form by following these guidelines:

Pt. Birthdate, Sex, and Weight:
Enter the appropriate information or check the proper box.

New Rx:
Check here if this is a new prescription for the present diagnosis.

Problem:
Enter the diagnosis, physical finding, lab results, or symptoms which prompted *this* prescription.

Other Problems:
List other diagnoses or findings which may affect the management of the problem stated above.

Chronic Medication:
List other medications the patient is taking concurrently with this prescription. Omit other medications prescribed during this office visit.

Pt. Follow-up: (Re this Rx)
Enter time and mode of next or ongoing patient contact related to this prescription, i.e., office visit in 6 months; telephone 5 days; office visit ea. 3 months, etc.

FIG. 2.—Instructions for completing the prescription form.

Fig. 1. Fig. 2 reproduces the instruction sheet given to the physician for completing the form. The right side of the blank is used for the prescription and is filled in by the physician in his normal manner. He also fills in the left side, which contains informa-

tion later used by the review committee to determine the appropriateness of the prescription.

Each blank is carbonized so that three copies are generated. One copy goes to the patient, another is kept by the physician, and the third, which has the patient's name and address blocked out for reasons of confidentiality, is returned to the project staff. The physician's letterhead and signature are also deleted from this copy to assure his anonymity to the members of the review committee. He is identified solely by a code number.

Once the physician has completed writing 200 prescriptions, he returns them to the project staff for a determination of the ten most frequently prescribed drugs. The prescriptions for these drugs are reviewed in depth while those less frequently prescribed drugs are given only a minimal amount of processing. After all the data are coded and keypunched, a computer printout is generated in a variety of formats.

For each physician the first printout format is arranged in order of the ten most frequently prescribed drugs and provides detailed information on each prescription (Fig. 3). A second printout lists the diseases or problems associated with a particular drug. A third format reverses this information and lists all drugs given for a particular disease or problem. Another printout groups all multiple prescriptions for a single patient together, so that potential drug interactions may be identified. (Although the patient's name and address are blocked out on the prescription form, the first five

PRESCRIPTION EVALUATION WORKSEET

MD#	RX#	RX DATE	ADDR	SEX	WEIGHT	AGE
42	35	1-19-79	5353	F	194	65

DRUG =   DALMANE

RX =   DALMANE 30MG #30 SIG = 1 HS PPN INSOMNIA

NEW RX =   YES

REFILL =   001

PROB =   INSOMNIA

OTHER PROB =   ARTHRITIS

OTHER MEDS =   DARVON

PT FOLLOW UP = 3 MO

FIG. 3.—Format of data provided to review committee.

digits of the street number are allowed to remain and together with the year of birth serve as a patient identification code.)

Finally a list of all drugs prescribed by the physician is printed, whether they are in the "top ten" group or not, so that a check can be made for any drug prescribed which is, in and of itself, an irrational prescription.

REVIEW PROCESS

Each Prescription Review Committee is composed of one physician, two clinical pharmacists, and the project libarian. After receiving the computer printouts showing the prescribing activity of a physician, the committee members individually check them to determine which prescriptions warrant educational feedback to the physician. They look at such factors as drug choice, dosage levels, potential drug interactions, and any other areas which may be potential problems. The four members then meet together in a group to compare their findings and arrive at a consensus. If the committee members together feel they lack sufficient expertise in a particular area to make an adequate assessment, a consultant on the faculty is contacted to evaluate those prescriptions affected. During these review meetings the project librarian participates actively by listening to the reviewers discuss the problems, noting any comments which can be useful in searching the literature on the topic being discussed, and by asking questions to clarify what type of information is needed to correct the situation. At the conclusion of each meeting, the librarian summarizes the problems identified.

DEVELOPMENT OF INSTRUCTIONAL PACKET

After the educational need of the physician is established, the librarian attempts to locate articles which address the particular problem. Generally, a MEDLINE search is run, and depending on the retrieval generated, the backfiles are included as needed. Since turnaround time is an important factor, the Bibliographic Retrieval Service (BRS) capability of printing backfiles on-line the next day is extremely useful and is relied on heavily. The citations resulting from the computer search are scanned for their suitability to the problem. After noting those citations which appear to be relevant, the librarian then examines each article and selects three to six key articles for inclusion in a packet. Manual searches of textbooks, reference works, and additional indexes may be conducted as well

until the librarian feels the problem is sufficiently covered by the literature.

Once the preliminary packet of educational materials has been assembled by the librarian, it is reviewed by the committee member who has the most expertise in that particular subject area. Included in the preliminary packet are the following materials:

1. A brief summary of the problem and any pertinent comments which were made by the committee while discussing it at the review meeting.
2. Copies of the prescriptions relating to this problem.
3. Any literature the librarian feels is appropriate to the topic.
4. The computer-generated bibliography from which the librarian performed the initial selection.
5. A standardized form listing indexes, reference works, and textbooks utilized by the librarian. This is provided so the reviewer will know which sources were used in this search, the years covered, and other facts concerning the search process which might be relevant.

At this point the faculty member selects materials to go into the final educational packet which will be sent to the physician. If the reviewer is not satisfied with any of these materials, he may scan the bibliography to determine if other articles not selected by the librarian would be more appropriate. If still not satisfied the reviewer then discusses the problem with the librarian to determine if an alternate search strategy is necessary. If so, the process is repeated until the specific information needed is located.

After evaluating the materials the reviewer returns the preliminary packet to the librarian with comments stating why each of the articles was suggested for inclusion or omission from the packet intended for the participating physician. These comments are kept on file with the article so the reviewer will not have to duplicate his effort by reviewing the same articles over and over again as the project continues. Moreover, a file of materials previously used for the instructional packets is maintained and used as a source of information when similar educational needs arise for later participants. Each item designated for inclusion in the final packet is highlighted by the faculty member to emphasize specific passages which are particularly relevant to the identified educational need. The faculty member is also responsible for writing a short statement to the physician about

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the problem being addressed and may include a brief synthesis of the enclosed materials, in addition to the committee's recommendations.

The final educational packet is then assembled by the librarian based on the recommendations of the review committee member. Packets going to the physician include the following materials:

1. A statement of the educational need
2. Copies of any prescriptions relating to this need
3. One to four highlighted articles
4. A form to evaluate the materials included in the packet.

The physician is asked to evaluate the contents of the packet in terms of its applicability and usefulness. He is asked if the educational packet presented new information to him and if, as a result, he would modify his future prescribing patterns to coincide with the recommendations of the committee and the literature provided to him. If the physician feels the packet is not useful, he is asked to state his reasons.

After the materials have been received by the physician and all evaluation forms returned, the monitoring of his prescribing practice is immediately resumed. This is to determine if any changes in behavior have occurred or if changes have remained only on a cognitive level. That is, the physician may state in the evaluation that the information he received will have an effect on how he prescribes in the future, but then may continue to prescribe according to his previous pattern. However, by no means is the review committee forcing the physician to follow its recommendations. Rather, we are suggesting therapeutic alternatives supported by evidence from the literature which the physician should consider. It is solely an educational approach to drug therapy, not a regulatory one.

GOALS

At the completion of the three-year grant period, we hope to answer the following questions:

1. Can useful data be collected to identify specific educational needs in office practice in a "noninvasive" fashion which will not disrupt the physician's office routine or add significantly to his time burden?
2. Can a faculty committee effectively cooperate with a medical library staff to provide practical and specific information that will be used by the physician in an office practice setting?
3. Does the library feedback provided to the physician have any effect on changing his prescribing behavior?
4. Can the program be incorporated into existing library services in a self-sustaining, cost-effective fashion?

In addition to these major areas of interest, the project will also investigate the librarian's effectiveness in selecting materials for the educational packet. Recent studies have indicated that the librarian working in clinical settings can successfully identify appropriate literature on specified areas of user interests. Operating a clinical medical librarian (CML) program at the University of Missouri–Kansas City, Reid [2] found a high degree of correlation between the judgment of the CML and that of the user. Among the users 95% stated that the documents supplied to them by the CML were pertinent. Furthermore, 75% responded that the document packages, which consisted of one to six articles, completely satisfied their needs. In another program involving clinical librarians, Greenberg et al. [3] found an 85% relevancy factor. Other studies indicate similar CML effectiveness in document selection [4–9].

We are also interested in identifying the following: (1) the most effective and productive means of gathering literature for the educational response, (2) the amount of time spent gathering material for an instructional packet, including time spent scanning the literature, (3) any special skills needed by the librarian, and (4) those journals most useful in preparing packets on drug therapy, in order to estimate the size of the library collection needed to support this type of program.

EARLY OBSERVATIONS AND DISCUSSION

Experience with six physicians during the pilot phase in the first year of the project indicates our system of incorporating library services into continuing education for the physician in private practice is well received. Evaluations completed by initial participants have been positive. Seventeen packets were evaluated, and in eleven evaluations (65%) physicians rated the information and literature they received as "helpful and informative." In fourteen evaluations (82%) the material was judged "appropriate." In ten cases (59%) the physician indicated he intended to "change this particular prescribing practice." Furthermore, the physicians participating have expressed in personal interviews that they welcome the opportunity to have their prescribing habits reviewed, because they themselves recognize a need in this area for self-improvement.

The project has demonstrated during the initial stages that it is capable of: (1) detecting prescribing patterns needing educational intervention and (2) utilizing medical and pharmacy faculty in conjunction with library personnel and resources to produce an educational response. By the conclusion of the three-year project, we hope to demonstrate further a positive impact on improving the physician's prescribing behavior. Based on the full sample of 100 physicians, a complete analysis will be made of the quantitative data derived from this study.

Eventually, if it is determined this can be an effective form of continuing education in medicine, areas other than that of drug information might be explored. However, for librarians the actual area of involvement is less important than the level of involvement. This program provides an exciting and challenging opportunity for librarians to expand their role by working directly with medical and pharmaceutical educators to enrich the continuing education program of physicians.

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