Peer Review of a Small Group Practice

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How does one group of physicians go about rating the medical care given by another? Variously described as "peer review," "medical audit," or "patient care appraisal," attempts to answer this question have recently received much emphasis. Such assessments usually serve either a disciplinary or an educational purpose, and the two do not mix well. Disciplinary assessments are generally intended to improve patient care by limiting costs or restricting physician privileges. The assessors are not obliged to provide constructive feedback or opportunity for reform to the person or institution under investigation. Educational appraisals, however, aim at helping physicians identify the subjects in which they need additional training or a better conceived program of patient care. Such an educational appraisal is reported here with one year follow-up documenting the results.

The methodology for peer review is still being developed. Early approaches as pioneered by Brown concentrated on hospitalized patients and medical record review.[1] Such assessments are now becoming common in hospitals throughout the country and are beginning to be accepted by their medical staffs.

Taking peer review out into the community is new. Hamaty has reported a West Virginia project to evaluate office practices for individual physicians.[2] This article will describe a pilot project to assess a small group practice. The report includes results of a follow-up one year later to measure the usefulness of the initial assessment for the physicians requesting it.

Origin of Study

Those who organized the Washington/Alaska Regional Medical Program (W/ARMP) in the late 1960's particularly emphasized continuing education. This generated immediate interest among the region's rural practitioners. When asked to describe their educational needs, however, many physicians replied that they could not identify these until someone audited their current level of practice. Although a method had yet to be developed, one physician persisted in request for an audit. By November, 1970, a Department of Family Medicine had been formed at the University of Washington Medical School, and its chairman agreed to undertake the requested audit on behalf of the W/ARMP as the coordinator of an evaluating team.

The clinic under review is located in a town of 6,500 persons and provides all available immediate care for the townspeople and the surrounding villagers who constitute a total population of 8,000 in an isolated rural area of the Pacific Northwest. One group of physicians (three when the study began in January, 1971, and four upon follow-up 15 months later)* runs the clinic with access to the community's recently built 25-bed hospital.

Methods

General Preparations

After exchanging ideas of specific information desired from the audit, the coordinator and the requesting physicians agreed upon the following goals.

1. *Education:* To help the clinic physicians identify the subjects in which they could benefit from further study.
2. *Audit methodology:* To develop an evaluation procedure for wider application.
3. *Curriculum development:* To collect information on the functioning of a primary care clinic which would assist in development of family physician curriculum in the School of Medicine.

The team coordinator was already familiar with the clinic's locale through six years of practice in the same region before he entered academic medicine. For a second team

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**In 1971 the group consisted of: Family Physician — 15 years' practice following internship; Family Physician — 7 months' practice following internship; General Surgeon — 6 years' practice and Board Certified. In 1972 another Family Physician had been added with 9 months' practice following an internship*

member he called on a W/ARMP organizer who is a full-time family physician with (at that time) 11 years of experience in a remote town similar to the one where the clinic is located. The clinic physicians had been asked to submit a list of five diseases whose management the reviewers could inspect in the records for an in-depth appraisal of patient care. The reviewers selected two of the five, diabetes and urinary infection, as index diseases. The coordinator then invited an internist-endocrinologist with many years of experience in academic medicine (and a particular interest in diabetes) as the third member. The team thus included one physician familiar with the clinic's geographic locale, one familiar with the type of practice, and one an expert on one of the index diseases. Prior to their audit, the team reviewed literature on practice audit and patient care appraisal.[2-7]

The clinic physicians were asked to submit their criteria for the optimum management of diabetes and urinary infection in both office and hospital so that the reviewers could compare ideal against actual performance. One reviewer organized the criteria into checklist form which was adapted by a medical record librarian for use in abstracting information from records of patients with the index diseases. The librarian then spent one day at the clinic abstracting office and hospital records assembled for her by the staff, as well as making notes on the quality of record keeping.

All arrangements for the initial visit were made by letter and telephone. The three team members did not meet together until actual departure for their visit to the clinic. Once there they were able to complete the investigation in two and one-half days.

Specific Assessment Methods

Assessing Patient Care on Site. Using the clinic physicians' criteria, the evaluators examined abstracted records of all patients hospitalized in 1970 with urinary infection (14) or diabetes (8). As a second method of patient care assessment, the team also reviewed a sample of 20 hospital records (all patients in hostal at time of the visit) and 30 clinic records (pulled at random from the files).

Donabedian has stressed that the ultimate measure of patient care is the final outcome at the end of therapy.[3] Fessel has shown that the course of care noted in a patient's record may have no relation to his outcome later.[4] As an index of outcome, the assessors thus looked for notes on the patient's condition during the year following treatment for any particular problem.

As a third assessment method, the reviewers observed clinic physicians at work, on hospital rounds, in the emergency room, at the clinic, answering phone calls at home, at a lunch meeting with community members and at the mental health clinic.

While reviewing the records and making direct observations, the team asked these questions about medical care:

a) Was it rational and based on current medical knowledge?

b) Did it emphasize prevention?

c) Did it make use of intelligent cooperation between patient and physician?

d) Did it treat the individual as a whole?

e) Did it maintain a close and continuing personal relationship between the physician and the patient?

f) Was it coordinated with social work and other allied professions?

g) Did it coordinate all types of medical services? [(a) through (g) adapted from Lee and Jones, 1933][5]

h) Was the care rendered easily available and acceptable to the patients?

i) Was it documented? [(h) and (i) adapted from Esseltyne, 1958][6]

j) Was the care provided comprehensive in the sense of approaching all four stages of disease as defined by James?[7]

— Stage 1: the foundations of disease
— Stage 2: presymptomatic disease
— Stage 3: symptomatic disease
— Stage 4: chronic disease

k) Do the medical records help achieve efficiency and continuity of patient care?

l) How is the follow-up of patient problems carried out?

m). How do physicians and other clinic personnel share time and tasks?

Assessing Practice Management. The team inspected physical facilities, including both hospital and clinic. Clinic management was checked with an eye to appointment scheduling, the system for recording charges, fees, billings, collections, circulation pattern of patient charts, supportive services and their quality and level of use, and personnel policies. The reviewers also examined hospital medical staff practices, the routine for clinical rounds, communications between physicians and with the other members of the hospital staff, hospital-staff relations and laboratory usage.

Assessing the Function of the Clinic Team. Throughout their observations the reviewers tried to evaluate the manner in which the physicians and other clinic and hospital staff members worked together, what facilitated good functioning and what stood in the way of continuous improvement.

Assessing Patient Satisfaction. Noting that earlier reviews of physician performance had not tried to assess patient satisfaction as an index of care, the reviewers decided to take advantage of the clinic's isolated setting for a community survey. After discussion with faculty from the University of Washington School of Public Health, a simple questionnaire was designed (Table 1) to learn on what occasions com-

TABLE I

Community Medical Survey

M F ________ S M W D ________ Age ________
Occupation ________ Husband's Occupation ________

1. How long have you lived here? ________
   Came from? ________
2. Do you have a family doctor? ________
3. When did you last see him? ________
4. Do you have a medical problem now? ________
5. Are you under care now? ________
6. Do you have a good hospital here? ________
7. What do you do for problems your family doctor can't handle? ________
8. Is it hard to talk to, or see the doctor? ________
9. How long do you wait in the office? ________
10. Can you get care on weekends—nights—etc.? ________
11. Is the medical care you get in this area good? ________
12. Have there been any changes in health-medical care in the past year? ________

munity residents used the clinic and what they thought of the level of care. This was done to assess the feasibility of such a survey only. There was no attempt at developing statistically significant data.

Radio and newspapers ran announcements of the auditors' forthcoming visit. During the visit one team member interviewed 16 community residents (9 men and 7 women) ranging in age between 18 and 72 years. They were surveyed away from the hospital and clinic setting and asked 11 questions, many of which were open-ended to elicit a discussion of health care rather than a listing of statistics.

Follow-up Assessment. The reviewers summarized their findings in a list of 22 specific recommendations (Table II).

One year later the team returned for two and one-half days to learn the effects of their suggestions. The same method was followed once again to assess patient care, practice management, functioning of the clinic team and community attitudes. The assessors studied patient care through the same two index diseases, this time reviewing the records of 19 patients hospitalized with urinary infection and 11 with diabetes. At the request of the clinic physicians, they also reviewed against criteria the clinicians had submitted earlier the management of 11 patients hospitalized for alcoholism. Reviewers also ex mined the records of 18 patients hospitalized at the time f the follow-up visit and a random sample of clinic recoı ls.

The follow up community survey this time included 14 persons between the ages 14 and 67, eight of them male and six female. The interviewer used the same questionnaire as in the first survey but added the question: "Have there been any changes in the health-medical care here in the past year?"

Findings

Assessment of Patient Care. The reviewers noted a distinct improvement in the diagnosis and treatment of urinary infection patients between the first and second visits. As Table III shows, improvement in the handling of this disease was a matter of bringing performance, as documented in patients' records, up to well defined criteria.

In the case of diabetes, however, after examining the 1971 report the clinic physicians revised their criteria. The 1971 criteria, for example, had recommended oral hypoglycemic drugs for almost all newly discovered diabetics, and these in fact were being used in seven out of the eight cases reviewed. The 1972 criteria called for these drugs only in special instances, and only four of the 11 cases reviewed were on such drugs. Another change in criteria was a de-emphasis on maintaining perfect control of the patient's blood sugar in favor of assessing his status according to weight, symptoms and urine sugar. This change in criteria between the first and second visits meant that comparison of performance was not really as helpful as in the case of urinary infections.

The reviewers examined 30 randomly selected clinic rec-

TABLE II

Summary of Recommendations — 1971	Implemented by 1972?
1) Continue as group of general family doctors	No
2) Each member of group could pursue an area of special interest for benefit of the entire group	Yes
3) Each member should work at developing proficiency in all areas of family practice	Yes
4) Each member should undertake regular short-term post-graduate study in his area of interest	Yes
5) Establish a regular group conference for educational purposes	Yes
6) Establish a regular staff conference to discuss clinic operation and policy — including office personnel	Yes
7) Establish a system of communication with the itinerant public health nurse	Yes
8) When seeing a patient with whom he is not familiar, each physician should review more regularly the past and family histories previously recorded	Yes
9) Make clinic records more specific in outlining plans for patient management	Yes
10) Regularly record the interpretation of electrocardiograms	Yes
11) Consider a more frequent interval for patient appointments	Yes
12) Consider more regular use of short, return follow-up visits	Yes
13) Consider a duplicate or numbered charge slip for tighter money control in the office	No
14) Consider use of a standard relative value fee schedule	No
15) Modify office routine so that patients are not asked to carry clinical records from examining room to business office	Yes
16) Become more familiar with services now available through the hospital laboratory	Yes
17) Consider removing physical therapy unit from the office	Yes
18) Tighten up scheduling and starting time for surgery	No
19) Include nurse in physician rounds at hospital	No
20) Consider improved communication with physicians at Naval base nearby	Yes
21) Consider planning for extended care facility or nursing home in community	Yes
22) Repeat audit in one year	Yes

TABLE III

Urinary Tract Infection in Hospitalized Patients

Criterion	Performance 1971	Percent	Performance 1972	Percent
Careful Physical Exam (e.g.: including careful genital-pelvic and rectal exam)	4/14	28.6%	16/19	84.2%
Blood Pressure	13/14	92.9%	18/19	94.7%
Urinalysis	14/14	100.0%	19/19	100.0%
Urine Culture	11/14	78.6%	17/19	89.5%
Radiologic Study	3/14 received studies, but criteria and records too vague to tell how many more were included	21.4%	5/5 both needed and received studies according to more precisely defined criteria	100.0%
Treatment: 10 days of antibiotics and a follow-up urine culture.	Information unavailable to assessors		Length of treatment known in 18/19 (94.7%). The clinic did follow-up cultures for 11/19. (Of the 8 others, 3 were transferred to other towns for care, 3 failed to return for appointments, 1 signed out of the hospital. Record was in doubt for only 1 case.)	

ords in 1971 and a comparable number in 1972. After their first visit they had recommended that, at the time of a patient visit, the physician review that patient's past and family history in the record, especially when unfamiliar with the patient. They also suggested that plans for diagnosis and treatment be outlined more specifically so that one doctor could easily take over a case from another. By 1972 the clinicians were dictating approximately half their records. Both recommendations had been implemented in the dictated records but not in others. The recording of interpretations on the electrocardiogram was also suggested to help one team member pick up from another. This was being carried out in 1972.

Hospital records were in excellent condition in both 1971 and 1972. They indicated close physician follow up and an efficient record keeping system. The hospital maintained a good disease and operations index. Inclusion of more detailed plans in hospital discharge summaries was the one recommended change in 1971, and a 1972 check showed that this was being done.

Observation of physicians and staff in action, along with record review, led to other suggestions for improvement in patient care. To give follow-up care to patients returning to remote villages, the reviewers had recommended equipping the travelling public health nurse with the hospital patient's discharge summaries. Since then the hospital has installed a radio-phone, and the doctor on call has regularly held evening radio contacts with the villages. The clinic also sends instructions and suggestions to the public health nurse in writing and by radio.

Unfamiliarity with the capabilities of a new technician who served both hospital and clinic appeared responsible for the clinician's underutilization of the laboratory. Reviewers recommended that they rely more heavily on the sophisticated lab testing available. Follow-up revealed that while hospital patient volume remained the same, utilization of laboratory services rose markedly.

Exploring the possibility of establishing a nursing home or extended care facility for patients who did not need acute hospital care was also recommended. A year later the hospital administrator reported specific plans underway for such a service.

Assessment of Practice Management. The clinic had been sandwiching drop-in visits between formal appointments scheduled at 30 minute intervals. Reviewers suggested that the clinic accept scheduled patients every 15 to 20 minutes, in order to dispel the community belief that appointments were difficult to obtain except for acute problems, discourage a reliance on drop-ins, and encourage physicians to request that the patient return for follow-up care. Since then the clinic has scheduled appointments at more frequent intervals. Followup visits have been requested of patients more frequently than before.

Formerly patients carried their records from the examining room to the business office. The reviewers criticized this practice and observed that it might pressure the physician to write shorter, less complete comments on the chart than he would were the patient not waiting to carry it off. This practice has since been discontinued.

For more stringent fiscal control the reviewers suggested duplicating the charge slip to protect against loss by the patient or inefficiency or dishonesty by a business office employee. No change had been made one year later.

In billing patients the clinic had not been keeping strictly to its fee schedule, which the reviewers thought could be more flexible and more rationally thought out. They recommended consideration of the relative value fee schedule. This has since been used in charging for surgery and hospital care, but has not been routinely followed for office visits. In a group practice, the reviewers said, much better agreement should be possible on charges for specific services.

Business practices in the office were still judged as weak on the follow-up visit. A further suggestion was made that the business manager be sent to survey other offices and methods or that a professional team come in to evaluate and improve current practices. The reviewers noted that for either measure to be effective, the physicians would have to show a greater desire for change.

To avoid wasting time and lowering hospital staff morale, it was suggested that physicians try to arrive on time for scheduled surgeries. The situation appeared to have remained the same during the following year.

Assessment of Clinic Personnel as a Team. In 1971 reviewers observing clinic physicians found that they neither thought of themselves nor functioned as much as a team as might be expected. Rather than remaining generalists they seemed to be heading toward reorganization as a group of specialists in separate disciplines. The evaluators proposed that each member instead develop his proficiency in all areas of family practice since the clinic's position as an isolated medical unit in a rural community makes the physicians dependent upon each other professionally. The reviewers also recommended that each physician pursue an area of special interest from which he could share his knowledge with the others in the group.

One year later observers saw that the group had moved even further toward some specialty organization, but this appeared to be working well. At the same time the members had begun sharing special knowledge to a greater extent. Although one member of the group is surgically trained and does nearly all the surgery, he was assisting the newest member to develop some emergency surgical skills. The suggestion that clinicians attend short-term courses and post-graduate study programs was acted upon by all three members during the intervening year. Each clinician had improved family practice proficiency as well, so that each adequately covered for the others in the broad range of medical practice. The exception was one member who did not practice obstetrics.

Staff conferences were strongly recommended by the reviewers in several instances. A regular weekly morning conference at the hospital for all physicians was suggested for its educational value. Its institution appears responsible for one of the most striking changes between the two visits.—the consistency and standardization of practice developed. For example, the revised criteria for management of diabetes which were submitted for the follow up review indicated there had been combined effort by the physicians as a group. Review of records of patients with diabetes indicated general adherance to these criteria. In addition, informal conversation revealed that each physician was much more knowledgeable about his associates' patients and management routines that had been true at the time of the first visit.

A regular conference for other clinic personnel was also suggested and has been held once and sometimes twice a month. Although the physicians call these meetings "frustrating," they have increased communication and permitted discussion of policy decisions.

Having a nurse accompany the physician when he makes hospital rounds was highly encouraged by the reviewers so that the nurse could record and implement any instructions given to the patient and so that she could provide added information about him. A check one year later showed that this was sometimes done when the nurse was not involved in care elsewhere.

Assessment of Patient Satisfaction. The follow-up community survey produced very similar responses in 1971 and 1972. Those questioned knew where to get health care, how to go about it, and felt that access to the clinic was easy. Most of them did not specify a particular physician as their family doctor. Four of the sixteen reported a practice of going outside the area of medical care in the first survey in 1971 while none of the fourteen in the second survey did. The first survey included several storeowners who may have been better able to pay for such trips than the working people who constituted almost all those questioned in the follow-up interview.

The follow-up survey was also intended to ascertain whether the original survey had been valid and whether the public had noted any changes in health care delivery. Not even the addition of a fourth physician to the practice was noted by those asked in 1972 about any significant change in health care during the past 15 months. They described the last major improvement in medical care as the building and opening of the hospital which had occurred several years earlier.

Discussion

The peer review reported here was not strictly disease-oriented and clinical, but it had broader goals. It included hospital as well as office practice and touched upon practice management, staff communications and community satisfaction.

The follow-up visit demonstrated that such an audit can produce measurable results. Physician performance measured against self-determined criteria for at least one index disease showed significant improvement. For the other index disease the first review led to re-evaluation of management. Implementation of 17 of 22 recommendations from the review committee provided another measure of change upon follow up one year later. Five situations showed no change where the reviewers had suggested some change might be indicated. Two of these concerned business practices, one involved surgery schedules and one involved the inclusion of nurses on hospital rounds. The lack of implementation of the other recommendation (retreat from specialization), suggested to the reviewers that their specific advice may not have been appropriate in the first place.

Implementation of two recommendations, staff rounds and communications with surrounding villages, far exceeded the reviewers' expectations. Stimulation of interest in continued self-evaluation was another observable result, shown by increased sophistication of the criteria submitted for index disease handling and by the request that a third index disease be examined during the follow-up visit. Clinic physicians have also reported a project to develop additional criteria for their own examination of performance in managing other illnesses.[8]

The project appears to have satisfied its initial purposes. With respect to education, all three physicians present during the initial audit have since attended post-graduate courses in subjects recommended by the evaluation team. As for the development of family physician curricula, the study not only provided descriptive information about the functioning of a small, private, primary care clinic, but also stressed the importance of teaching students and residents how to perform well as a team. The project convinced the reviewers that considerable learning and conscious effort is required for four physicians to work together successfully. In training students for clinical practice, medical schools have emphasized aquisition of information and skills but have often neglected attitudes and understanding necessary for such learning. During the audit it became apparent that the clinic physicians did not succeed as well as possible with group problem-solving. On such issues as specialization versus general competence for all, the clinic's role in the community, and the event of the group's responsibility for health care beyond the clinic's doors, the members had difficulty resolving problems together.

The project also succeeded in developing a workable evaluation procedure which can be conducted in less than three days on site and with limited disruption of the practice. Further refinement of this approach could undoubtedly be achieved. Reviewers might use more sophisticated measures of patient care outcome such as those suggested by Williamson.[9] They could put more time and effort into defining acceptable patient care criteria in the way Hamaty describes. Expert consultants in practice management could be added to the team. A sampling system with greater statistical reliability could be used for the community survey. A pollster skilled in assessing community opinion and attitudes could be hired to administer a pre-tested and sophisticated questionnaire. On the other hand, the most comprehensive evaluation might not be the optimal one.

An important value of the audit method presented here, however, is that it represents true peer review through which both the reviewed and the reviewers have much to gain. An unexpected result of this project was that the reviewers have looked at their own practices and educational responsibilities from a new perspective and have instituted such changes as using cultures more often in treatment of urinary infection and emphasizing the teaching of attitudes and understanding. In this sense the method could be useful to geographic or professional medical groups, such as state medical societies, or to local specialty organizations as a tool for continuing education. It seems particularly adaptable for isolated and rural practice where physicians from one town could be evaluated by their peers in another similar community.

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