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A Practice-profiling System for Residents

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ABSTRACT

Providers are increasingly evaluated and measured as part of quality, credentialling, and reimbursement programs, an approach often used by managed care organizations. However, these evaluations are rarely used in residency training, meaning that physicians entering practice have little experience or understanding of these measures. To address this issue, in 1998 the authors successfully developed a three-part practice-profiling system for internal medicine residents at their institution that includes measures of patient satisfaction, disease-management profiles for diabetes and hypertension, and an Internet-based faculty-evaluation program. The patient-satisfaction profile utilizes a ten-question patient survey that emphasizes physician–patient communication issues. The diabetes and hypertension disease-management profiles use the resident's own patients to profile process and outcome measures for common chronic ambulatory conditions. The faculty-evaluation profile is conducted over the Internet, and allows the resident to compare faculty evaluations with those of his or her peer group. Residents receive the profiles as a packet in a scheduled session with a faculty supervisor twice each year. A total of 120 residents are profiled annually for the above measures. Residents rated the program very highly, and found the profiling program to be instructive and effective feedback. As payers and regulators increasingly use physician profiling, residents will benefit from learning the strengths and weaknesses of profiling systems early in their training.

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Health care delivery is changing rapidly, with inpatient hospitalization decreasing, ambulatory care increasing, a growing emphasis on evidence-based medicine, and efforts to require physicians to assume responsibility for defined populations of patients.[1–6] Physicians are increasingly accountable for the care they deliver, with practice decisions being judged against objective standards of appropriateness and effectiveness.[7] Measures of quality, utilization, and patient satisfaction are part of the evaluation and feedback delivered to practicing physicians. While managed care programs were among the first to adopt these approaches, state and federal programs are establishing similar measurement systems, meaning that greater physician accountability is likely to extend across all payer groups.[8–11]

Thus far, formal training in clinical effectiveness has not commonly been part of the residency training experience.[12,13] Although evidence-based medicine is taught in many residency programs,[14–20] objective evaluations of the quality of care provided by residents are rarely part of the feedback process.[21–23] Furthermore, in some residency programs, constructive feedback mechanisms are often neglected altogether; rather, feedback is sometimes indirect[24] and rarely includes data on issues such as patient satisfaction or outcomes of care.[25–28]

As part of a program to improve the quality of feedback provided to internal medicine residents at our institution, the New York–Presbyterian Hospital in New York City, and to introduce them to population medicine concepts, in 1998 the authors developed a computer-based profiling system that provides a three-part snapshot of a resident's practice. The practice profile consists of the following components: (1) patient-satisfaction evaluations, (2) disease-management profiles of common ambulatory conditions, and (3) Web-based faculty evaluations. In this paper we describe the profiling system, and report our hospital's experiences with the program.

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Setting

The New York–Presbyterian Hospital–Cornell campus is a 760-bed academic medical center located in New York City that is the primary teaching hospital for Weill Medical College of Cornell University. There are 40 residents in each year of the internal medicine residency training program, for a total of 120 trainees. Residents pursue their ambulatory care block rotations and continuity clinical experiences at Cornell Internal Medicine Associates (CIMA), an integrated resident–faculty practice with 18 full-time and seven part-time faculty members. Faculty physicians see their own patients in the same clinical facility used by the residents. Approximately 25,000 active patients make 52,000 annual visits to the CIMA practice, which has a payer mix of 35% commercial managed care, 30% Medicaid, 30% Medicare, and 5% indemnity insurance. Residents see commercial managed care, Medicare, and Medicaid patients, and provide care during approximately 40% of the visits made by patients. Every patient in the CIMA practice has an assigned attending physician, resident, or nurse practitioner as the primary care provider.

CIMA uses a computerized medical record that captures provider identification, patient demographics, order entry, scheduling, prescriptions, problem lists, laboratory results, telephone calls, patient messages, and progress notes. The computerized medical record resides on a local server and is accessed through personal computers located in every office and exam room in the practice. The computerized medical record can be queried across multiple domains to retrieve data and to identify patients for the profiling measures.

In July 1996 The Pew Charitable Trusts initiated a three-year program called Partnerships in Quality Education (PQE) to develop innovative models for training primary care physicians to provide high-quality, cost-effective managed care.[29] Weill Medical College of Cornell University was one of six lead partnerships that were initially funded. Our resident-practice–profiling program was one of the efforts supported by this grant.

Overview of the Profiling Program

We (the authors) established a systematic resident-practice–profiling system with three dimensions: patient satisfaction, disease management of common ambulatory problems (hypertension and diabetes mellitus), and an Internet-based faculty-evaluation system. Examples of an individual resident's profiles are shown in Figures 1–3. Each resident receives data about his or her individual performance compared with mean data for his or her peer group every six months. The profiles are reviewed with the resident's faculty mentor in structured feedback sessions. To help ensure that these feedback sessions actually occur, these meetings are scheduled as the first appointment of a resident's clinic session.

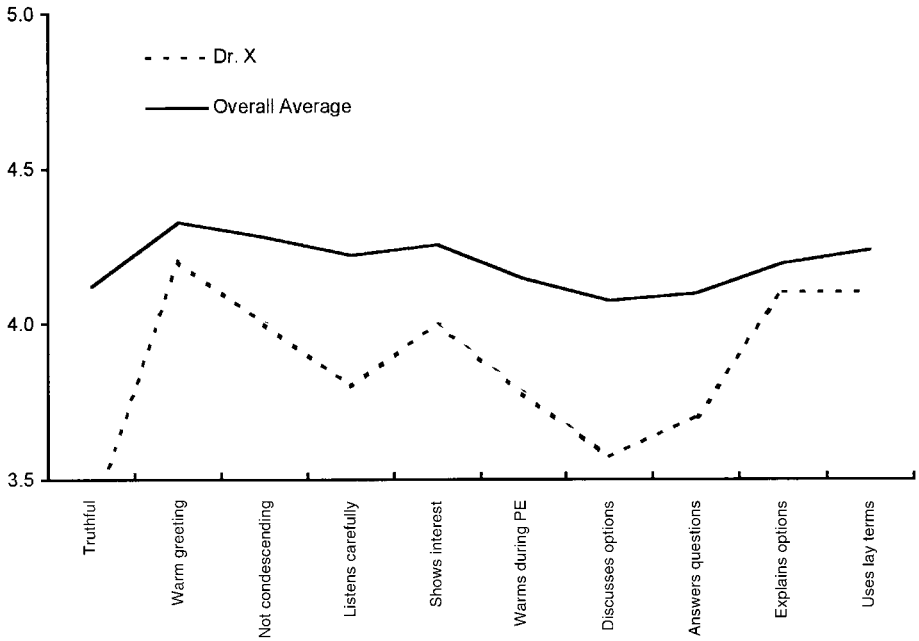

Figure 1. Patient-satisfaction profile. The resident (Dr. X) is compared with his or her peer group (overall average) across ten questions that emphasize physician–patient communication.

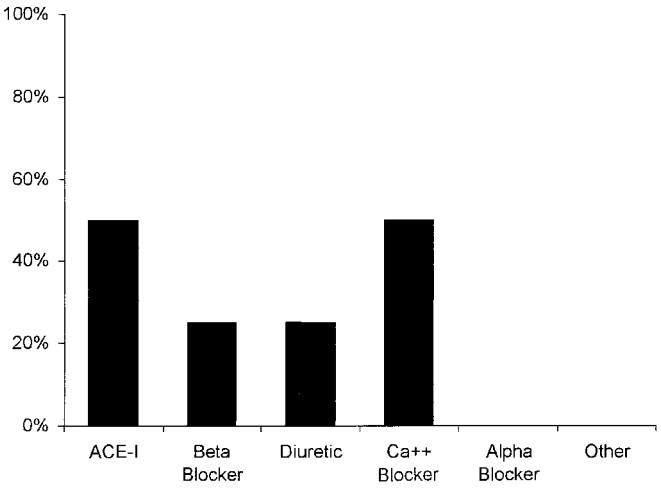

Figure 2. Part of a diabetes mellitus profile. The resident's use of different classes of antihypertensive medications is shown for patients who have both diabetes and hypertension.

The Patient-satisfaction Profile

Data for the patient-satisfaction profile are gathered via a telephone survey of at least ten patients per resident for whom the resident must be the patient's primary care physician. In addition, he or she must have seen the patient at least twice within the 12 months prior to the survey. The American Board of Internal Medicine–10 (ABIM-10) patient satisfaction instrument is used for this survey.[30] The ABIM-10 asks behaviorally focused questions that measure aspects of patient–physician communication. The survey is administered to patients twice a year for each of the residents in the Department of Internal Medicine. Interns are not included until the end of their internship, to give them an opportunity to acquire sufficient numbers of patients to meet the inclusion criteria. Trained assistants obtain verbal consent and administer the survey over the phone. Responses are entered into a spreadsheet for analysis and summary graphs are generated. The patient-satisfaction profile includes the individual resident's results with a comparison with those of his or her peer group (Figure 1). The graphs are done in color, which enhances legibility.

The Disease-management Profile

The disease-management profiles are designed to incorporate patient demographics and process-of-care variables relevant to the management of hypertension and diabetes. The profiles are created by downloading information from the electronic medical record into a computerized database. Data retrieved include patient demographics, the name of the primary care physician, appointments, medications, problem lists, laboratory test results, blood pressure readings, orders for tests, and referrals. The data are then sorted by resident and analyzed as a number of populations of patients, each of which an individual resident is responsible for.

The disease-management profiles incorporate process and outcome variables, including average glycosylated hemoglo-

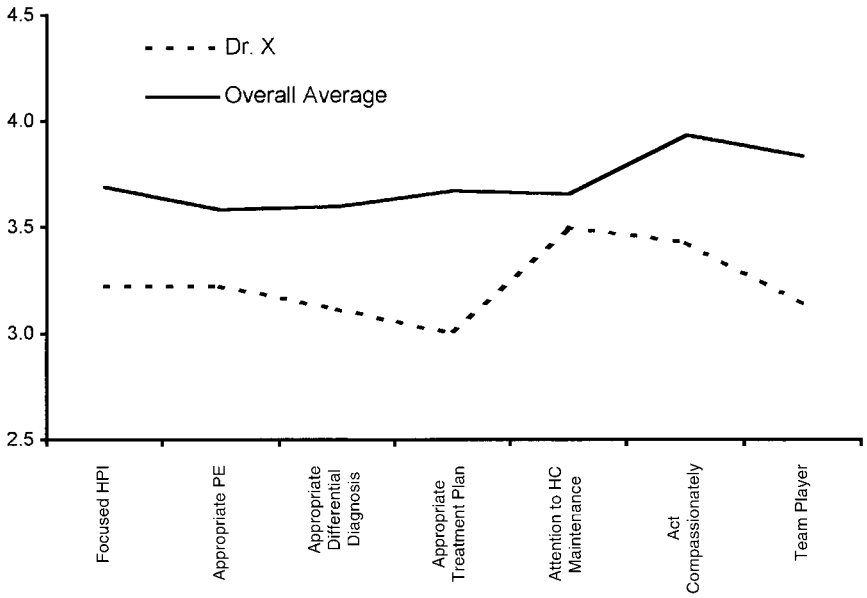

Figure 3. Attending physicians' evaluation profile of a resident. The resident (Dr. X) is compared with his or her peer group (overall average) across seven questions that emphasize ambulatory care issues.

bin, average blood pressure readings over several visits, average serum cholesterol, and the medications prescribed for the patient population. For example, the first part of a diabetes mellitus profile for a third-year resident would include information about the demographics of the residents' patients, the percentage of diabetics in whom glycosylated hemoglobin is measured, their average glycosylated hemoglobin level, and their average cholesterol level. The residents' patients are compared with the patients of his or her peer group of third-year residents, and with the entire population of diabetic patients managed in the practice.

Figure 2 presents the second part of the diabetes profile, and shows the choice of antihypertensive medications for this resident's diabetic patients with hypertension. During discussions with the faculty mentors, evidence favoring the use of ACE inhibitors for the diabetic hypertensive patient is reviewed. An additional graph, showing the use of other medications relevant to managing diabetes (i.e., use of insulin, hypoglycemics) and the use of medications that have significant risks for complications in diabetic patients (i.e., frequent use of nonsteroidal anti-inflammatory medications, which may worsen renal function in a diabetic), is also provided to the resident as part of the profile.

Residents' practices have small numbers of patients with any given disease. In our residency program, the numbers of diabetic patients in a third-year internal medicine resident's practice range from 3 to 17, with an average of 7. The numbers of patients with hypertension range from 6 to 23, with an average of 11, for third-year internal medicine residents. These small numbers make it difficult to establish statistically valid means for comparisons among residents.

Attending-physician-evaluation Profile

An Internet-based system is used for attending physicians to evaluate residents during their continuity and block ambulatory rotations. Residents are scored across seven domains, using a five-point Likert scale. The seven evaluation questions were developed through a consensus process by the CIMA faculty, and are designed to focus on important issues in ambulatory care.

To complete the attending physician's evaluation form, the faculty physician accesses a protected Web site. The faculty member then identifies himself or herself as the evaluator and identifies the resident who will be evaluated. The evaluation is rapidly completed; a separate test box allows for narrative comments. The attending physician submits the completed form electronically over the Internet, and it is automatically entered into a database. The responses are analyzed for each resident to develop the individual profiles (Figure 3). The resident's mean evaluation across the seven questions is compared with that of his or her peer group.

The seven questions used in the evaluation are as follows:

1. Did the resident present an appropriate and focused history of the present illness?
2. Did the resident perform an appropriate physical examination?
3. Did the resident develop an appropriate differential diagnosis?
4. Did the resident describe an appropriate diagnostic and/or treatment plan?
5. Does the resident attend to health care maintenance issues?
6. Does the resident act compassionately in dealing with patients?
7. Is the resident a "team player"?

During the past two academic years (1998–99 and 1999–2000), 123 residents have been profiled during their second and third years of training.

Residents' Evaluation of the Program

Residents were asked to rate their impressions of the profiling program using a five-point Likert scale, with 1 being the lowest rating and 5, the highest rating. The residents were surveyed on their impressions of the usefulness of the profiling, of the quality of the profiling, and whether it would change their practice patterns. There was space for residents to provide written comments as well. Overall response to the profiling has been extremely positive, with 95% of residents rating the feedback as useful or very useful. Narrative comments frequently mentioned that the profiling program was the most comprehensive feedback received during their residency. However, only 57% felt the profiles would influence their practice styles.

Discussion

Profiling is defined as the "systematic method of collecting, collating and analyzing patient data to develop provider-specific information about medical practice."[31] Although the concept was pioneered in managed care it is increasingly being used for credentialing and reimbursement of practicing physicians in a variety of settings. In medical education, feedback is designed to reinforce good performance and improve clinical competence.[24,32] Effective feedback focuses on the decision, not the decision maker, on objective behaviors rather than character observations. We have tried to combine the objective qualities of practice profiling in which residents are assessed in relation to their peers with the formative qualities of feedback that focus on improving physician skills through mentorship. Since public and private

payers are increasingly relying on the principles of practice profiling and population-based medicine, introducing these concepts during residency training will better prepare residents for practice in an environment of increasing accountability.

A variety of patterns have been observed on the patient-satisfaction profiles. Many residents consistently score above or below their peer group means on all variables, while others may score above the mean on some measures, and below it on others. Similar patterns are observed with attending-physician evaluations.

The patient-satisfaction profile has several advantages. First, we have adapted a standardized, validated instrument (the ABIM-10), which focuses on objective physicians' behaviors. By contrast, global satisfaction questions such as, "Were you satisfied with your visit today?" can be influenced by factors such as telephone access or interactions with front-desk personnel, which are often beyond the control of the individual resident. Second, by using a standardized instrument and a trained interviewer we have improved the uniformity of data collection, allowing for comparisons between residents. Peer-group comparisons allow residents to assess their patients' perceptions of individual residents' strengths and weaknesses in doctor–patient communications as benchmarked against their colleagues.

Disease-management profiles introduce residents to the concepts of population medicine. They further provide a comparison of the processes and outcomes of the residents' care with the processes and outcomes discussed in evidence-based medical literature.[33–35] The disease-management profiles facilitate discussion between residents and their preceptors around issues of outcomes, quality of care, risk adjustment, sample size, and generalizability.

However, both physician profiling by managed care companies and resident-practice profiling can be criticized for making comparisons based on too few patients to draw statistically meaningful comparisons.[34] Practicing physicians see patients from multiple health plans, and the profiling data they receive frequently rely on small samples of patients. The situation with residents is similar, but for a different reason. Although we aggregate all diabetic and hypertensive patients in a resident's practice regardless of payer source, individual residents do not practice enough to accumulate large numbers of patients. Nevertheless, we believe that profiling is valuable in residency training because it raises these issues for discussion. We readily acknowledge the limitations of sample size in discussions with the residents but nonetheless feel the concepts of responsibility for a population, accountability for processes and outcomes of care, and ongoing measurement of quality will be central in their future practices.

The attending-physician evaluations provide a third perspective on residents' growth and development as physicians, augmenting the patient-satisfaction and disease-specific profiles. Providing attending physicians with a simple evaluation tool via the Internet has dramatically improved the rate and timeliness of their resident evaluations.

Another reason we think that the three types of profiling are valuable is that residents want this information, and their overall response to the new feedback system has been quite favorable, while many cite the program to be the most comprehensive feedback they have received in their residency training. In addition, introducing the concepts of population medicine by using data from the residents' own practices makes this important topic more meaningful.

Further research is needed to demonstrate that this and similar programs help residents succeed in future health systems where measurement and accountability will be increasingly important.

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