PERFORMANCE MEASUREMENT IN A SERVICE: THE PARAMETERS AND THEIR APPLICATION IN A NEWLY ESTABLISHED SERVICE

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ABSTRACT

Objective: The objective of this clinical audit was to evaluate the performance of a newly established Psychiatry department during the first ten and a half months of its existence.

Design: Cross-sectional study.

Place and duration of study: The audit took place from February 2004 to December 3004, at the Department of Psychiatry and Behavioral Sciences, Independent Medical College.

Subject and methods: Data was collected by the staff members during their routine work. This data was then compiled, categorized and analyzed, to evaluate the quality of work.

Results: 125 total teaching hours during the audit period and 658 sessions conducted. Monthly growth rate of client turnover was 10%. Multiple research projects were undertaken during this period.

Conclusion: A service like this in the private sector is both valuable and commercially viable. The findings of this audit can be used to forecast the future service use. It will also provide the parameters for auditing the services provided by the department in future.

Key words: Clinical audit, Psychiatry, Behavioral sciences.

INTRODUCTION

Clinical audits and practice profiling have become popular tools, all over the world, in order to guide physician behavior to improve quality of care. Pakistan, however, is lagging behind in this area; with the unfortunate consequence that our health care system is far from effective, and our national health indicators are moving from bad to worse. This article aims to present an overview of the issues involved in performance measurement. It also aims to evaluate the performance of the department during the first ten and a half months of its existence to highlight the application of the principles of audit. It is also used to use these audit findings to make predictions and recommendations for the future, about how to further improve the services already being offered.

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PERFORMANCE MEASUREMENT

Since the seminal work of Wennberg and Gittelsohn[1] in the 1970s, numerous studies have sought to understand the reasons for large geographic variations in the use of clinical services, as well as variations in patient outcomes[2]. For much of the 1980s and early 1990s, these studies have served to indicate that there might be important differences in the quality of medical care as a result of overuse, underuse, and/or misuse of medical interventions[3,4]. In response, the health-care system has begun to explore ways to use this information to influence changes in provider behavior to improve care.

Use of clinical data to improve outcomes is not a new concept. For decades, hospitals have routinely held surgical morbidity and mortality reviews as a means by which to learn from experience. More recently, the focus has shifted to clinical data review across multiple settings, and among differing types of provider groups. Before exploring these different tools, it may be useful to review a couple of the basic concepts of performance measurement.

INDIVIDUAL VS POPULATION PERFORMANCE MEASUREMENT

Individual case review provides different data from population-based reviews, and both types of review have their strengths and weaknesses. Individual case review is principally used to explore concerns that are associated with rare, but sentinel, events. This type of review is best suited for events that are infrequent but important enough to warrant the use of resources so as to minimize the chances of a similar error in the future. Yet, one may or may not be able to

generalize from the knowledge gained from such a review. There is also little opportunity to use epidemiological and statistical tools to assist in judging the degree of certainty of the findings from individual case reporting.

The alternative to individual case review is the population-based approach. Aggregated experience from multiple cases can provide insights to patterns of clinical behavior for more common conditions that affect many more patients. With population-based assessment, it is possible to use standard epidemiological and statistical techniques to help assess the degree of certainty of the conclusions drawn from the observed clinical experiences.

QUALITY AS MEASURED BY STRUCTURE, PROCESS, AND OUTCOMES

Donabedian[5] offered the concept that quality could be measured based on structure, process, and outcomes. **Structure** encompasses physical factors, such as buildings, as well as professional and institutional factors, such as the regulatory and financing environments in which health care is delivered. **Process** refers to the actions that health-care providers take in delivering medical care, such as performing examinations, ordering tests, and prescribing medications. **Outcomes** are the end result of the process interventions: the effects on the patient's health and well being. While early attempts at measuring the quality of health care focused on the structure, much of the current focus relates to exploring clinical processes and outcomes.

Although patient outcomes are the ultimate judge of the quality of health care, there are several advantages to using process measures instead of outcome measures for purposes of performance evaluation. Most notably, it is much easier for physicians or other health-care providers to accept responsibility for their actions in providing care than to accept responsibility for their patients' outcomes, because there are many factors affecting patient outcomes that are not directly under the control of providers. For example, while a provider might make a concerted effort to ensure that a patient has been offered the Hepatitis B vaccine, the patient may choose not to take the vaccine and may subsequently develop hepatitis. In this situation, performance evaluation will produce very different results depending on whether it is the process (providing access to the vaccine) or the outcome (Hepatitis B infection) that is measured.

Process measures are also useful in evaluating the quality of care for common chronic conditions for which the ultimate outcomes may take years to determine, such as hypertension and stroke, or glycemic control and complications from diabetes. For these reasons, it is attractive to focus on using process measures rather than outcome measures for performance measurement. However, it would seem that the best measure of health-care performance rests with patient outcomes, including physiological status, health-related quality of life, and satisfaction with the health-care system.

FORMATIVE VS EVALUATIVE INFORMATION

A third central concept for performance measurement relates to how the data are used. Formative data are gathered for immediate use, to guide clinical decisions affecting ongoing patient care[6]. As such, this type of information is different from the kind used for evaluation. Although evaluative data may be collected at any time in the process of care, they are generally examined retrospectively in an attempt to evaluate good vs bad quality health care, overuse vs underuse of services, or perhaps to compare one type of service to another.

Currently, there are several major types of performance measurement in use. These include:

- Clinical audits/practice feedback,
- Practice profiling/benchmarking,
- Regulatory oversight of performance indicator systems.

CLINICAL AUDITS AND PRACTICE FEEDBACK

For decades, health-care systems have used clinical audits as a tool for quality assessment. Audits of this type usually seek to characterize care through the systematic review of a series of patient experiences. Most often, the information is obtained by examining charts or medical records for documentation of specific clinical practices/procedures. Since the 1970s, the British have used audits to examine issues of quality surrounding clinical management of minor acute problems or preventive health practices[7,8], chronic disease management (eg, diabetes[9] and asthma[10]), and the use of specialty consultations[11].

While clinical audits are widely used to assess performance, there is conflicting evidence regarding whether or not they are effective in changing provider behavior. For example, a study at one hospital demonstrated significant improvements in preventive health processes that were audited vs other health-care processes that were not monitored[12]. Two small studies, examining the quality of Papanicolaou smears, demonstrated that performance of both residents and faculty physicians substantively improved after they received feedback from clinical audits[13,14]. By contrast, a study demonstrated little change in targeted prescribing patterns for various clinical conditions as a result of audit and feedback[15].

The Ambulatory Care Medical Audit Demonstration Project[16] is the largest formal study of the use of audit information in the United States. The project was designed as a randomized controlled clinical trial of the use of quality-improvement techniques to improve clinical performance in areas of primary care. Although audit information was only one element in a multidimensional intervention, this study demonstrated that it is possible to improve the quality of care with feedback of audit information.

PRACTICE PROFILING/BENCHMARKING

Another approach to performance measurement compares the performance of a single provider against that of a

panel of similar providers. This type of measurement is often referred to as practice profiling or benchmarking[17]. In practice profiling the performance of a single physician or a group is expressed as a rate, a measure of resource use during a defined period for the population served. A profile is created by comparing this rate to that of a community norm based on the practices of other physicians or on other standards such as guidelines[18].

The studies of physician profiling as a tool for changing practice behavior present a very mixed picture. The randomized, controlled trial literature suggests that profiling can produce a modest, but statistically significant effect on improving physician behavior[19]. However, more recent studies on the validity and reliability of this measurement technique have opened up new questions about its usefulness.

REGULATORY OVERSIGHT AND PERFORMANCE INDICATOR SYSTEMS

With such increased interest in attempting to improve the quality of care through feedback of clinical data, it is perhaps no surprise that there have been efforts to create complex systems to evaluate clinical performance. The apparent premise behind such performance measurement systems is to use them as administrative tools, either voluntary or regulatory, to broadly measure quality-improvement activities.

In the United States, one of the prototypes of these systems is the Health Plan Employer Data Information Set (HEDIS). The HEDIS was developed in the early 1990s by the National Committee on Quality Assurance, a not-for-profit organization committed to evaluating and reporting the quality of care delivered by managed care plans. Using standardized methodology, HEDIS data are gathered from several sources within each health plan, including administrative claims and encounter information, medical records, and survey information. The National Committee on Quality Assurance, which uses the information from HEDIS as part of its accreditation program, makes the results publicly available through a national database of HEDIS information and accreditation results[20]. Employers and consumers alike can use this information about quality of care to make choices among health plans. Although apparently attractive, there are still many unanswered questions about this approach; such as what are the costs and burdens of collecting such complex and comprehensive data? Perhaps most importantly, what effect will such data have on changing the quality of health care?

Audit-a practical approach

The department of Psychiatry at Independent medical college Faisalabad is newly established department. To establish a baseline for the performance of the department, the following services offered by the department were audited.

1. Teaching of Psychiatry to fourth and final year MBBS classes.
2. Teaching of Behavioral Sciences to first and second year MBBS classes.
3. Tutorial discussions of third and fourth year MBBS classes.
4. Counseling services to students and staff members.
5. Psychological assessment and testing services.
6. Clinical services such as outpatient and inpatient services for psychiatric patients.

METHODOLOGY

Systematic data was collected by the staff members during their routine work. This data was then compiled, categorized and analyzed, to evaluate the quality of work, during the time period from 10th February 2004 to 31st December 2004. The following parameters were used as variables:

a. Number of teaching hours per week and in the whole audit period.

b. Total number of sessions (consultations, assessment, counseling and therapy sessions, etc) seen by both staff members on a monthly basis and in the total audit period.

c. Break up of this data along the lines of patient's vs students and staff members, cases seen by psychiatrist vs cases seen by psychologist etc.

d. Research activities carried out in the department.

The software package SPSS-8 for Windows was used for statistical analysis of the data. These statistics were then used to make predictions for the year 2005.

RESULTS

TEACHING ACTIVITIES:

The teaching activities carried out in the department are shown in Table 1.

Table I
Teaching activities carried out in the department

Teaching Activities	Hours per week	Total hours in audit period
Behavioral Sciences lectures	First Year- 2 hours	30 hours
	Second Year- 2 hours (from 1st May onwards)	30 hours
Tutorial Discussions	Third Year- 2 hours	19 hours
	Fourth Year- 2 hour (10th Feb to 30th April)	20 hours
Psychiatry lectures	FourthYear- 1 hour (10th Feb onwards)	26 hours
Total Teaching Hours	5 hours per week	125 hours

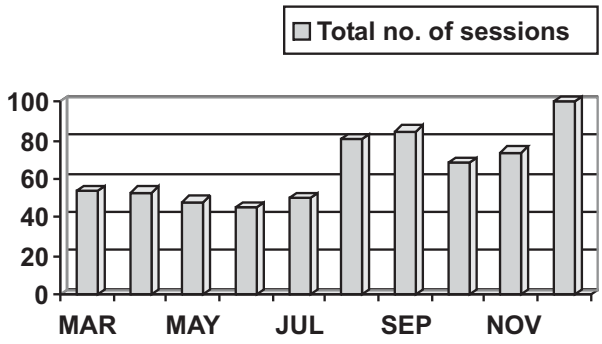
CLINICAL ACTIVITIES

NUMBER OF SESSIONS CONDUCTED:

Clinical activities were initiated on 1st March 2004 (in contrast to teaching activities which were initiated on 10th February 2004, accounting for the difference in the audit figures reported). During the audit period, a total of 658 sessions were conducted by both members of the department. This breaks down to an average of 66 sessions per month with a range of 45-100 sessions per month.

Looking at the monthly statistics, it was observed that the number of sessions per month showed wide fluctuations, but a generally upward trend was apparent. During the audit period as a whole, the number of sessions per month approximately doubled (54 sessions in March and 100 sessions in December). The monthly statistics are shown in Figure I.

Fig. I: Total Number of sessions per month.



CLINICAL ACTIVITIES OF INDIVIDUAL STAFF MEMBERS.

During the audit period, 515 (78%) sessions were carried out by the consultant psychiatrist while 143 (22%) sessions were carried out by the clinical psychologist. Thus the ratio of sessions between the staff members comes to about 3.5:1. The monthly breakup of this data is shown in Figure II.

Fig. II: Sessions per month conducted by individual staff members.

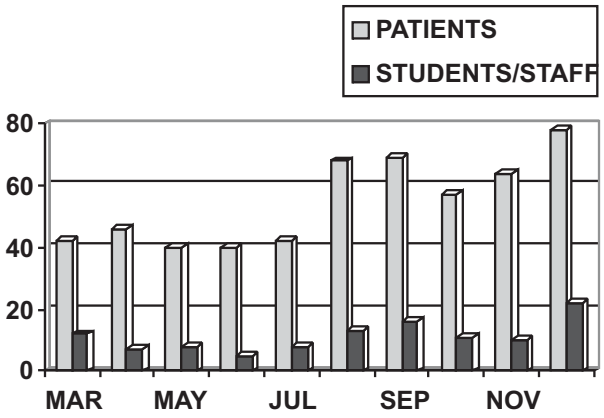
CATEGORIES OF CLIENTS SEEN:

For the purpose of analysis, the clients catered for by the department were divided into two broad categories, viz:

- GROUP 1: This consisted of paying private patients and nonpaying poor patients.
- GROUP 2: This consisted of students of Independent Medical College, doctors and paramedical staff, and their families.

During the audit period, 546 (83%) sessions were conducted with Group 1 clients, while 112 (17%) sessions were conducted with Group 2 clients. Thus the ratio of sessions for Group 1 vs Group 2 clients was about 5:1. The monthly breakup of these sessions is shown in Figure 1II. Though fluctuations occurred on a monthly basis, but the upward trend seen in the previous figure is also evident in this one, with the monthly sessions in both groups approximately doubling during the audit period.

Fig. III: Group-wise breakup of sessions on a monthly basis.



RESEARCH ACTIVITIES

1. A number of research activities were initiated in the department during the audit period. Some projects were completed during the audit period while others are still ongoing. Two original articles have been accepted / published in peer reviewed journal in Pakistan. Two research projects on "Association of gender and intelligence in medical students" and "Association of intelligence and performance in the Pakistani examination system" have been started. A case report and a chapter in a book were also published during this period.

DISCUSSION

The data collection in the department is still at a rudimentary level, but like the department itself, it is improving with time. The first variable used to assess the performance of an academic department is its teaching activity. The Department of Psychiatry and Behavioral Sciences is unique in the sense that it is the only department in the medical college which offers teaching services for both basic science (Be-

havioral Sciences) and a clinical science (Psychiatry). In a period of about ten and a half months, the total number of teaching hours was 125 and spanned across all the classes of MBBS in the college. If calculated on a yearly basis, this amounts to about 143 teaching hours per year. These 143 hours were shared between 2 staff members. The teaching hours per staff member amount to about 71 per year.

The second performance parameter used was the clinical activities carried out in the department. Due to the nature of clinical work in psychiatry, the variable used was number of sessions conducted. For this purpose, the term "session" was used to denote meetings with clients for the varied objectives of mental health assessment, psychometric testing (including assessment of personality, intelligence, aptitude and testing for the diagnosis and progress of psychiatric illness), counseling, consultation for pharmacotherapy, and psychotherapy sessions. The term "client" was used to denote any person seeking help from us, whether paying patients, nonpaying patients, students, staff members, or their family members. As the results show, a total of 658 sessions were conducted during the 10 month audit period, with each session lasting an average of 45 minutes. This breaks down to a mean of 66 sessions per month with a range of 45-100 sessions per month. During the total audit period the number of sessions per month doubled, with an average growth of about 10% per month.

The third parameter used for assessing performance was the differential analysis of data about sessions conducted by individual staff members. It can be seen from the results given above that majority of the sessions were conducted by the consultant psychiatrist (78%). Moreover, the number of sessions per month conducted by the psychiatrist approximately tripled during the audit period (a monthly growth rate of about 20%), whereas the number of sessions per month conducted by the clinical psychologist did not show any significant change during the audit period. There can be a number of reasons for this difference, such as:

- The awareness in the public, regarding psychotherapy and counseling is still very deficient, and plagued by myths and misconceptions.
- Treatment of illnesses without medications and prescriptions is still a novel concept for Pakistani clients, and people still consider paying for such treatment a financial burden.
- Psychotherapy and counseling require a certain level of motivation, commitment, and active participation from clients, a fact still alien to the health care system in Pakistan, where patients still consider themselves as passive recipients of treatment interventions.
- A psychotherapy or counseling session lasts at least 45 minutes and occasionally even more than an hour, limiting the number of sessions a psychologist can conduct in one sitting.

The final parameter used was research activity carried out in the department during the audit period. The results shown above echo the enthusiasm and activity level seen in this area. A variety of research activity was seen, ranging from a case report, multiple original research projects, and contributions in a book.

CONCLUSIONS AND RECOMMENDATIONS

This audit of a new established psychiatry department in a private teaching hospital is a preliminary attempt to evaluate the service. The audit cycle is not yet completed. We believe this is one of the few published audit of a newly established department. The private sector is emerging as a major player in the field of medical education. It is encouraging to note that psychiatry had a high demand both in teaching and clinical services. Such a service in the private sector is both valuable and commercially viable. It is a unique aspect of the psychiatry departments in medical college that these provide teaching to both the basic and clinical sciences students. This puts heavy demand for the personnel these findings have several implications for the service development such as:

- All the newly developed services should have an audit established from the start.
- The staff needs to be trained in the evaluation of services.
- There is high demand for psychiatric services. This arises right at the inception of the college. The training of psychiatrist in the country needs to be accelerated to meet this high demand.

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