The Incentive Plan: An Approach for Modification of Physician Behavior

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Abstract: Blue Shield of Massachusetts undertook a one-year study in 1981 to determine if a group of obstetrician/gynecologists could be motivated to reduce average length of stay (ALOS) for normal deliveries, cesarean sections, and hysterectomies. The group decreased ALOS for all three procedures. Additional studies are required to determine what portion of the decrease in ALOS can be attributed to change in physician behavior. (Am J Public Health 1984; 74:150-152.)

Introduction

Most attempts at understanding motivation and changing human behavior are derived from theories. Process-oriented theories (e.g., Vroom Preference and Expectancy Theory, Porter-Lawler Theory)\(^2\) attempt to explain how behavior is initiated, sustained, and terminated. Content-oriented theories (e.g., Taylor's Classical Theory, Maslow's Hierarchy of Needs Theory, Herzberg's Two Factor Theory)\(^3\) attempt to identify specifically what is within the individual or the environment that initiates, sustains, or terminates behavior.

Research directed at understanding motivation and changing human behavior of blue and white-collar workers, managers, and executives in the various areas of the business industry has demonstrated the following:

- In motivating people in the work force to achieve desired results, some type of compensation is generally used to award certain behavior.\(^6\)
- Although a variety of rewards, such as pay, status symbols, vacation days, have been used in the past to motivate, money is usually considered the strongest motivator.\(^6\)
- Negative rewards or punishment can act as a motivation, but can also produce undesirable side effects such as self-protection and defensive behavior.\(^4\)
- The establishment of specific goals results in higher performance than when individuals are simply told to do their best.\(^7\)

Few attempts have been made to study such incentives and motivation as they relate to physician behavior. Health care research of this type has focused mainly on the effectiveness of incentive reimbursement mechanisms in motivating change in the behavior of hospitals or other organized health care institutions.

This study was conducted by Blue Shield of Massachusetts, Inc., during the calendar year of 1981 to determine if the prospect of being rewarded would motivate changes in the practice patterns of a group of fee-for-service obstetrician/gynecologists for three selected OB/GYN procedures.

Methods

Six obstetrician/gynecologists on the staff of a community hospital in the greater Boston area volunteered to participate (Incentive Plan Providers). The two remaining obstetrician/gynecologists on the staff at the same hospital who chose not to participate were used as a control group (Non-Incentive Plan Providers). The OB/GYN procedures included normal delivery, cesarean section, and hysterectomy performed in the study hospital on patients with full Blue Cross/Blue Shield coverage (Master Medical).

Orientation sessions were held for the participating physicians to explain the major objectives of the study, discuss and agree upon ALOS targets\(^e\) for each of the three types of procedures and the conditions under which financial rewards would be made. It was decided that for each of the three procedures, a reduction in ALOS below the target would result in an incentive payment to the physician to be determined by multiplying $5 for each one-tenth of a day reduction in ALOS below the target times the number of eligible patients. At no time was either physician group given formal progress reports, nor were individual physicians within the two groups provided with information on their 1980 ALOS experience.

Data were collected from physician office records and Blue Cross and Blue Shield claim files on 567 procedures performed during 1981 by Incentive Plan and Non-Incentive Plan Providers and 529 (93.3 per cent) were included in the study. Data on 607 of the same type of procedures were collected for the same physicians for 1980 to be used as the

\(^{*}\)3.6 days for normal deliveries, 6.2 days for cesarean sections, and 8.3 days for hysterectomies.
baseline for pre-Incentive Plan experience and 545 (89.8 per cent) were included in the study.**

At the conclusion of the study, financial incentive payments were awarded to those Incentive Plan Providers who, for any of the study procedures, achieved a reduction in their 1981 ALOS below the agreed upon targets or who utilized the participating hospital’s Maternity Day Care Program (One-Day Normal Delivery).*** These payments were in addition to the physicians’ usual and customary professional fees. Physicians agreed to credit such payments toward charges incurred by eligible patient participants for future ambulatory care which traditionally would not be covered under Master Medical contracts and for which the subscriber normally would pay (such as annual gynecological examinations or pediatric office visits).‡ In addition, a $100 financial incentive payment was forwarded to each maternity patient participant of an Incentive Plan Provider who delivered under the participating hospital’s Maternity Day Care Program.

Results

Only three complications were reported—two cases of eclampsia and one of toxemia; all were sectioned. Since the lengths of stay of these three cases were not significantly different from the ALOS of other sections, they were included in the analysis.

The 1981 ALOS for the Incentive Plan Providers was lower than the 1981 ALOS for the Non-Incentive Plan Providers for all three types of procedures (Table 1); none of the differences were statistically significant at the 0.05 level. For normal deliveries, an estimate of power indicates that had n2 (Non-Incentive Plan Providers) been approximately 150, the difference of .28 days would have been significant at the 0.05 level. The confidence limits for the difference between the two means at the 0.05 level was computed to be (.20, .36).

Three of the Incentive Plan Providers achieved decreases in their ALOS below the pre-established targets for one or more of the study procedures and thus received financial incentive payments commensurate with their performance. The Non-Incentive Plan Providers achieved decreases in ALOS for cesarean sections only, but none were below the target ALOS for that procedure. The Maternity Day Care Program had little if any impact; only one-day normal deliveries were performed by the Incentive Plan Providers on Master Medical patients and one by the Non-Incentive Plan Providers.

Discussion

Results suggest that the Incentive Plan Providers decreased their ALOS for all three types of procedures included in the Incentive Plan program (normal delivery, cesarean section, and hysterectomy). What part of the decrease is attributable to change in physician behavior cannot be directly ascertained at this time due to inherent limitations in the study such as reliance on voluntary participation by physicians, use of only one particular hospital, and the short time frame of the study. Additional studies are required before the Incentive Plan method can be considered an effective tool for understanding and motivating change in physician behavior.

**Those records which were not included lacked admission or discharge dates, could not be matched to appropriate hospital claims, were for hospital claims rejected for payment, or were for claims of subscribers employed by large national accounts for which Blue Cross of Massachusetts, Inc., was not the control plan. There is no reason to believe that the excluded records would significantly affect the results of the study since they were not confined to any one particular type of procedure, physician, or provider group. Detailed information on rejected hospital claims or claims of subscribers from some national accounts is not routinely included in the computerized hospital claims system used for the study. Of the 1980 procedures, 49/483 (10.1%) were performed by the Incentive Plan Group and 13/124 (10.5%) by the Non-Incentive Plan Group. Of the 1981 procedures excluded 24/444 (5.4%) were performed by the Incentive Plan Group and 14/123 (11.4%) by the Non-Incentive Plan Group.

***This program has traditionally been utilized very little by Blue Cross and Blue Shield Master Medical patients.

‡Due to the small numbers of patients and procedures involved, the average incentive plan payment was rather small and judged to be an inadequate amount for service credits. It was administratively decided to increase the incentive payments to $45 per eligible patient.

REFERENCES
Treated Incidence of Mental Disorders in a Prepaid Group Practice Setting

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Abstract: We followed a cohort of 7,666 individuals enrolled continuously for five years in a prepaid group practice in Columbia, Maryland. Incidence rates of all diagnosed mental disorders were estimated at approximately 3.7 per cent, lower for adolescents and children (about 3 per cent), higher for adult males aged 20-49 (4.3 per cent), and highest for adult females (5.8 per cent). Diagnoses are primarily for acute mental disorders and show a tendency to recur at fairly high rates. (Am J Public Health 1984; 74:152-154.)

Introduction

As recently as 1978, the report of the President's Commission on Mental Health emphasized the need for increased study of the incidence of mental disorders in the United States.

Despite the high estimates of prevalence of mental disorder (10-15 per cent) cited in that report, published studies of incidence based on cohorts of treated or untreated populations are lacking. Studies of the incidence of specific disorders, such as bipolar and nonbipolar depression have been made, but with few exceptions, no US studies of the incidence of minor psychiatric disorders have appeared. In a recent review of psychiatric epidemiologic findings, the Dohrenwends' suggest that estimation of incidence rates should be an important component of future studies.

The purpose of this paper is to describe a study estimating the treated incidence rate of mental disorders in a population enrolled in a prepaid group practice.

Methods

The Columbia Medical Plan (CMP) is a prepaid group practice located in Columbia, Maryland, a new town situated between Baltimore and Washington, DC. Its population, organizational structure, and service use have been described elsewhere.

To examine treated incidence of mental disorder, only those individuals enrolled continuously at the CMP for the five-year period 1973 through 1977 were included in these analyses (N = 7,666). Although the population is evenly divided between the sexes, the age distribution (as of July 1, 1975) is highly skewed toward younger individuals. When the study population was compared to the 16,417 individuals enrolled in CMP for all of 1975, no statistically significant differences on age or sex distributions were detected. Since 45 per cent of the population is under 20, age-sex specific rates of disorder presented are age-standardized to the US population later in the paper.

The Department of Psychiatry is part of the comprehensive health care delivery system of the CMP. Its staff of therapists include: psychiatrists, psychologists, and social workers. During the study period, the staff grew from 3.5 full-time equivalent (FTEs) therapists to 8.3 in 1977. The department and utilization patterns during the study period are described in more detail elsewhere.

For this paper, mental disorder diagnoses include any disorder found in the Second Edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-II). A treated incident case of mental disorder is operationally defined as a patient with a DSM-II diagnosis in the automated encounter-based information system who has not had a recent history of such diagnoses.

Results

Basic Data: Total Population

Figure 1 is a schematic representation of treated incidence of mental disorder by year for the entire study population. The total group of 7,666 individuals is split each year into two subgroups: those who receive any diagnoses of mental disorder (Y) and those who do not (N). For the five-year period, 32 unique subgroups are so defined. In this way incidence and recurrence of diagnosed disorder can be examined.

Of the total study group, 351 (4.6 per cent) received at least one DSM-II diagnosis during 1973. This figure combines new and continuing cases. Of the 7,315 individuals who did not receive any mental disorder diagnoses, 268 or 36.6 per 1000 person-years (s.d. = 2.2) were diagnosed during 1974. This is the first approximation to a treated incidence rate. In 1977, the estimate is 36.9 per 1000 person-years (s.d. = 2.3), almost identical to the 1974 estimate.

Mental disorder recurs at a high rate. Table 1 illustrates the importance of controlling for recorded history of mental disorder in the calculation of incidence.