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Impact of alternate payment plans on the practice patterns of fee-for-service physicians in the Northwest Territories

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Background: The objective of this study was to determine if the practice patterns of fee-for-service (FFS) general practitioners in the Inuvik Region of the Northwest Territories differed after the introduction of an alternate payment (salary) program for newly arriving physicians.
Methods: Three years (April 1993 to March 1996) of administrative billing data from the Northern Health Information Management System were used to compare 28 FFS physicians with 38 salaried physicians along 5 practice indicators (service intensity, billing intensity, propensity to recall, billings from recall, and the most frequently billed services) after an alternate payment plan had been introduced in the Region.
Results: The FFS physicians significantly increased the number of services provided during a visit, the amount billed per visit, and the proportion of recall visits of total visits. FFS physicians also increased the number of claims for "laboratory examination," a previously infrequently billed code.
Interpretation: FFS physicians changed their practice patterns after the introduction of an alternate payment program in the Inuvik Region. These changes may result from a redistribution of clinical responsibilities, efforts to sustain or elevate income levels, or the provision of additional preventive screening.

Contexte : Cette étude visait à déterminer si les tendances de pratique des omnipraticiens rémunérés à l'acte de la région d'Inuvik, dans les Territoires du Nord-Ouest, ont changé après le lancement d'un programme prévoyant un autre mode de rémunération (salariat) pour les nouveaux médecins.
Méthodes : On a utilisé trois ans (avril 1993 à mars 1996) de données administratives de facturation tirées du système de gestion de l'information sur la

santé dans le Nord pour comparer 28 médecins rémunérés à l'acte à 38 médecins salariés selon cinq indicateurs de pratique (intensité du service, intensité de la facturation, tendance aux rappels, facturation à la suite des rappels et services facturés le plus fréquemment) après la mise en œuvre dans la région d'un autre mode de rémunération.
Résultats : Les médecins rémunérés à l'acte ont augmenté considérablement le nombre de services dispensés par consultation, le montant facturé par consultation et le ratio des consultations de rappel sur les consultations totales. Les médecins rémunérés à l'acte ont aussi augmenté le nombre de demandes de paiement pour des «examens de laboratoires», code de facturation peu utilisé auparavant.
Interprétation : Les médecins rémunérés à l'acte ont changé leurs tendances de pratique après la mise en œuvre d'un autre mode de rémunération dans la région d'Inuvik. Ces changements peuvent découler d'une redistribution de responsabilités cliniques, d'efforts visant à maintenir ou à hausser les niveaux de revenu, ou de la prestation de services supplémentaires de dépistage préventif.

Introduction

Increasingly, rural and northern regions are adopting alternate payment plans (such as payment by contract, salary or capitation) for general practitioners. Alternate payment plans are believed to reduce physician turnover and encourage participation in health promotion, preventive and administrative services that were under-remunerated or not remunerated under a traditional fee-for-service (FFS) payment plan.[1,2] FFS reimburses physicians for each unit of service or procedure according to a negotiated fee schedule.[3] It may provide physicians with financial incentives to choose procedure-oriented specialties or to overuse technical services and procedures.[4,5] FFS may discourage physicians from participating in non-billable activities (e.g., quality assurance and health promotion programs) and from using potentially less expensive sources of care, such as nurse practitioners.[1]

In many jurisdictions, alternate payment plans are being introduced incrementally as new physicians are recruited. A number of studies have compared the practice patterns and resource utilization of FFS and alternate payment plan physicians.[5-11] We were unable to find studies that examined the impact of the alternate payment plan on the practice patterns of existing FFS general practitioners in rural or remote areas. The purpose of this article is to examine practice patterns of FFS general practitioners after the introduction of a salary program for physicians new to the Inuvik Region of the Northwest Territories (NWT).

The Inuvik Region is located in the northwest corner of the NWT. During the study

period (April 1993 to March 1996), the Region extended from the south shore of Great Bear Lake to Banks Island in the Beaufort Sea and included 12 communities, ranging in size from 100 to 3200 people for a total population of 9300.12 Health services were delivered through health centres located in each community and through the Inuvik Regional Hospital, located in Inuvik. The community health nurse, a nurse practitioner, was the primary care provider and "gatekeeper" in all communities except the town of Inuvik, where these roles were performed by physicians. Physician services were available throughout the year in the town of Inuvik. In all other communities, physicians were available every 4 to 6 weeks for a 2- to 4-day period.

Beginning in 1993, the Inuvik Regional Health and Social Services Board (IRHSSB) recruited salaried physicians in an incremental fashion to replace FFS physicians once they had left the region. In 1993, FFS physicians provided physician services to all communities in the Region and also provided hospital services. During the study period, salaried physicians took increasing responsibility for providing physician services to the outlying communities. By June 1995 (3 months into the last year of the study) FFS physicians primarily provided services to residents of 2 communities (Inuvik and Norman Wells, total pop. approximately 3800) and shared responsibility for hospital-based services.

During our study period, April 1993 to March 1996, both salaried and FFS general practitioners worked in the Inuvik Region. Since the salaried physicians were recruited to supplement existing FFS general practitioners, we hypothesized that the practice patterns of FFS physicians would not change as a result of the salary program.

Methods

Permission to conduct this study was obtained from the Government of the Northwest Territories (GNWT) Department of Health and Social Services and the IRHSSB. Data from the Medicare database of the Northern Health Information Management System were obtained from the GNWT Department of Health and Social Services for the 1993/94 through 1995/96 fiscal years for the Inuvik Region. The Medicare database includes billings submitted by FFS physicians as well as shadow billings (i.e., billings containing the same information as FFS billings, but not used for payment) submitted by salaried physicians. Patient Health Care Plan numbers, physician billing numbers, primary diagnosis, service codes, and dates of service and billings were obtained from the database. Because these variables are required for payment, all necessary data were present.13 The patient and physician

identification numbers were scrambled to protect the confidentiality of both the physician and the patient. The data were sorted by physician number, patient number, date and diagnostic code. The dollar values of the billings were adjusted to reflect fee changes between 1993 and 1996 and are presented in Apr. 1, 1993, Canadian dollars.

Five indicators were used to compare the practice patterns of the 2 groups: 1) Service Intensity — the total number of services provided per visit; 2) Billing Intensity — dollars billed per visit; 3) Propensity for Recall — proportion of total visits consisting of recall visits; 4) Billings from Recall — the proportion of total billings consisting of billing from recall visits; and 5) the 5 most frequently billed services. Because the data were not normally distributed, Mann-Whitney tests (a nonparametric test similar to the t test) were used to test for differences in the FFS physician practice patterns (service intensity, billing intensity, propensity for recall and billings from recall) before 1993/94 and after 1995/96, the introduction of the salary program. Frequencies were used to examine differences in most frequently billed services.

Results

Between 1993/94 and 1995/96, 28 FFS and 35 salaried physicians worked in the Inuvik Region (Table 1). Because each physician worked in the Region for a varying period of time, we tabulated monthly full-time equivalents by dividing by 4 the total number of weeks FFS or salaried physicians spent in the region. At any given time there was a total complement of roughly 7 physicians in the region. None of the FFS physicians opted for the salary program.

Between 1993/94 and 1995/96 there was a decrease in the total number of claims (-7%), billings (-7.6%) and patient visits (-7.0%) (Table 2). During this 3-year period, the number of claims submitted by the FFS physicians fell from 97.7% to 65.2% of total claims. Billings submitted by the FFS physicians also decreased during this period, from 98.3% (1993/94) to 67.7% of the total billings. Patient visits to FFS physicians decreased from 97.5% (1993/94) to 62.0% (1995/96).

Between the 1st and 3rd years of the salary payment program, the service intensity, billing intensity, and propensity to recall of FFS physicians significantly increased (Table 3). The proportion of billings stemming from recall visits, however, did not significantly change. Recall visits are designated by specific service codes in the billing record and may have been either physician- or patient-induced. Most recalls

occurred within a 2- to 3-week period after the initial encounter.

Ranking of the 5 diagnostic codes most frequently submitted by FFS physicians also suggests that their practice behaviour changed over the 3-year period (Table 4). The most common service in 1995/96 was not present in the 2 preceding years: although there was no change in the fee schedule, 1544 laboratory examination claims were submitted in 1995/96, whereas hardly any were billed in the previous 2 years. Supervision of normal pregnancy, the most frequently billed service code in the first year of the study, sunk to 7th most frequently billed service code by the 3rd year (data not shown). In addition, the number of follow-up exams also increased in the 2nd and 3rd year of the study.

Discussion

The first 3 years of the salary program saw a general decrease in the total number of visits, claims and billings submitted by all physicians in the Inuvik Region. This decrease likely reflects the slight decrease in the population in the Inuvik Region, from 9300 in 1993/94 to 9016 in 1995/96.12,14 In addition, this decrease may also reflect the change in medical practice as salaried physicians, who are facing no financial disincentive of sharing patient treatment with other health professionals, may have referred patient visits to community and public health nurses. For example, as salaried physicians assumed a greater proportion of patients residing in the communities outside the town of Inuvik, the common practice was for community health nurses to carry out follow-up visits, minor procedures and preventive care. Additional analysis of the shadow billings of salaried physicians and the Community Health Management Information System database (which records services provided by nurse practitioners in the NWT) may verify changes to medical practice.

Although making up only a minority of the physicians in the Inuvik Region 2 years after the introduction of the salary payment program, FFS general practitioners continued to account for a greater number and proportion of total visits, claims and billings than salaried physicians. Because their remuneration depended upon the claims submitted, FFS physicians were more likely than salaried physicians to submit a more thorough account of services provided. However, the GNWT Department of Health and Social Services monitored the shadow billings submitted by salaried physicians to ensure that salary levels were justified, thereby providing salaried physicians with motivation to submit accurate shadow billings. Moreover, FFS physicians may have worked longer hours and worked "harder" (i.e., at a greater intensity) than salaried physicians.

Incentives to bill thoroughly and work "harder" than salaried physicians would not, however, explain the change in FFS practice patterns because these incentives were present before the salary program was introduced. Contrary to our hypothesis, this study suggests that FFS physicians changed their practice patterns after the implementation of a salary payment program in the Region. This change may stem from an effort to sustain or elevate revenue levels by providing additional services (or providing services previously performed by nurses or laboratory technicians), aggressively billing and recalling patients more often. Alternatively, it may have resulted from an effort to provide more preventive screening. As salaried physicians took over responsibility for services to the outlying communities, FFS physicians may have had more time to provide more preventive care.

The decrease in pregnancy monitoring likely results from the redistribution of duties between the 2 physician groups. During the study period salaried physicians were more likely to monitor pregnant women who resided in the outlying communities, and they also took over the hospital-based obstetrics and gynecology clinic.

Although this study provides a general overview of the changes in FFS practice patterns, further study is needed to illuminate how these changes have affected the quality of patient care. Future research using chart audits can determine whether these indicators reflect changes in billing practices or actual changes in patient care. Also, although the databases used in the project are similar to those used in other Canadian studies, independent confirmation of their reliability would strengthen the validity of these findings. In addition, more sophisticated scrambling methodologies than that used in the study would allow for linkage between individual patient records, therefore permitting more in-depth analytical methods, including adjustment for patient characteristics and case mix and direct comparison of similar episodes of care.

This study highlights the need to address concerns of existing medical providers when alternate payment plans are introduced. Although the Inuvik Region recruited salaried physicians to replace outgoing FFS physicians, this new payment program may have been perceived as a threat to the livelihood of existing physicians in the Region. It also suggests that evaluations of alternate payment plans should include assessments of the practice patterns of all health professionals who are either directly or indirectly affected by a new program.

Our study found that FFS general practitioners in the Inuvik Region changed their

practice patterns after the introduction of an alternate payment program. The increases in service intensity, billing intensity and propensity to recall patients as well as a change in the billing of laboratory examinations may stem from a redistribution of clinical responsibilities, efforts to sustain or elevate income levels, or the provision of additional preventive screening.

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