Fee code creep among general practitioners and family physicians in Ontario: Why does the ratio of intermediate to minor assessments keep climbing?

Ben Chan,*†‡§ MD, MPA; Geoffrey M. Anderson,*† MD, PhD; Marc-Erick Thériault,* BSc

Abstract

Background: "Fee code creep" is the increasing tendency of primary care physicians in Ontario to bill for more intermediate than minor assessments over time. The authors examine the extent and nature of fee code creep and describe physician characteristics associated with the changes.

Methods: A cross-sectional and longitudinal analysis of Ontario Health Insurance Plan billing and physician characteristic data was conducted for fee-for-service general practitioners and family physicians (GP/FPs) in Ontario. The ratio of intermediate to minor assessments (I-M ratio) was determined for the period 1978–79 to 1994–95, and the relation of various physician characteristics to high ratios was tested with bivariate and multivariate analysis.

Results: The I-M ratio rose 10-fold, from 0.3 in 1978–79 to 2.9 in 1994–95. Although the I-M ratio was higher for older patients and young children, changes in population age profile over time did not account for any of the increase. The median ratio varied widely among groups of physicians: urban physicians had higher ratios than rural ones (3.9 v. 3.0, $p < 0.05$), and recent graduates had higher ratios than physicians 60 years of age or older (5.1 v. 2.9, $p < 0.05$). The I-M ratio was inversely related to number of visits; physicians billing for fewer than 5000 visits had a median ratio of 4.2, whereas those billing for 20 000 visits or more had a median ratio of 1.6.

Interpretation: Fee code creep has contributed to expenditure growth in Ontario. This phenomenon was related to both an increase in I-M ratio over time among physicians practising throughout the study period and an influx of new physicians billing at a higher ratio. Creep was not the result of aging of the population.

Résumé

Contexte : La «reptation des codes de frais» est la tendance croissante chez les médecins de première ligne en Ontario à facturer, avec le temps, plus d'évaluations intermédiaires que mineures. Les auteurs examinent l'étendue et la nature de ce phénomène et décrivent les caractéristiques des médecins associées à cette évolution.

Méthodes : Une analyse transversale et longitudinale des données caractéristiques des médecins et de la facturation dans le Régime d'assurance-maladie de l'Ontario a été effectuée à l'égard des omnipraticiens et des médecins de famille (OP/MF) rémunérés à l'acte en Ontario. Entre 1978–1979 et 1994–1995, on a déterminé le ratio des évaluations intermédiaires aux évaluations mineures (ratio I/M) et analysé à l'aide de deux et de plusieurs variables la corrélation qui existe entre diverses caractéristiques des médecins et un ratio élevé.

Résultats : Le ratio I/M a décuplé, passant de 0,3 en 1978–1979 à 2,9 en 1994–1995. Même si le ratio I/M est plus élevé dans le cas des patients âgés et

Evidence

Études

From *the Institute for Clinical Evaluative Sciences in Ontario, Toronto, Ont.; the Departments of †Health Administration and ‡Public Health Sciences, Faculty of Medicine, University of Toronto, Toronto, Ont.; and §Price Waterhouse Management Consultants, Toronto, Ont.

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des enfants, l'évolution du profil d'âge de la population avec le temps est complètement étrangère à cette augmentation. Le ratio médian a largement varié entre les groupes de médecins : les médecins urbains présentaient un ratio plus élevé que les médecins ruraux (3,9 c. 3,0, $p < 0,05$), tout comme les diplômés récents par rapport aux médecins de 60 ans ou plus (5,1 c. 2,9, $p < 0,05$). Le ratio I/M présentait une corrélation inverse avec le volume des visites; les médecins ayant facturé moins de 5000 visites affichaient un ratio médian de 4,2 tandis que ceux dont les facturations renfermaient 20 000 visites ou plus montraient un ratio médian de 1,6.

Interprétation : La reptation des codes de frais a contribué à faire augmenter les dépenses en Ontario. Ce phénomène est à la fois lié à une augmentation du ratio I/M avec le temps chez les médecins qui ont pratiqué pendant toute la période de l'étude, et à un afflux de nouveaux médecins dont la facturation présentait un ratio plus élevé. Le phénomène ne découle pas du vieillissement de la population.

The Ontario Health Insurance Plan (OHIP) provides first-dollar universal coverage for medical services in the province. Most physicians (95%) are reimbursed by OHIP within a fee-for-service system, whereby the physicians submit claims for services rendered, in accordance with a fee schedule listing some 8000 fee codes, which describe each insured service and its fixed price. Despite this detailed schedule, physicians still have some discretion in how they bill for their services, since they can choose which services to perform in a given clinical situation and which fee code to use. A classic example is the basic primary care assessment. In Ontario there are 2 fee codes for such visits: the minor assessment, currently valued at $16.25, and the intermediate assessment, valued at $24.80. This 2-fee structure was introduced in 1978–79 to replace the previous single fee. The OHIP fee schedule gives few guidelines for distinguishing between the 2 codes, noting only that the intermediate assessment is "more extensive" than the minor one and should also be used for well-baby visits.[1]

Governments, as payers of medical services, and the medical profession have an important interest in fee code discretion. In recent years, Ontario has implemented strict measures to control expenditures, including expenditure caps and reductions in payments to high-volume physicians, introduced in 1991–92. One response to these measures may be to use discretionary billing powers to maintain physician income. In Ontario, "fee code creep," the increasing use of the intermediate instead of the minor assessment code, has been recognized as a contributor to expenditure growth. Although the Ontario Medical Association and the Ministry of Health have studied this phenomenon,[2–5] both have been reluctant to enact policies to address it.

Despite the policy relevance of fee code creep, little is known about it. This study examines 3 questions relating to the phenomenon: What has been the extent of fee code creep since the introduction of the 2-fee structure? Are all physicians engaged in fee code creep or only a small minority, and if the latter, what are their defining characteristics? Is fee code creep the result of established physicians increasing the ratio of intermediate to minor assessments (I–M ratio), or is it caused by an influx of new physicians billing at higher ratios? In this study we did not assess the quality of care delivered nor the appropriateness of the fee billed.

Methods

We examined OHIP billings of general practitioners and family physicians (GP/FPs) for the period 1989–90 to 1994–95. Data were drawn from the National Physician Database (NPDB), maintained by the Canadian Institute for Health Information (CIHI). This database records, for each fee-for-service physician, the number of services billed and the payment received for each fee code as well as the physician's age, sex, registered postal code, specialty and school of graduation. Services performed by the 5% of physicians practising under alternative payment plans were excluded (Paul Brochu, Ontario Ministry of Health, Toronto: personal communication, 1995). The NPDB also records, for each fee code, the total number of services provided per year by the age and sex of the patient. Using these data, we constructed profiles of the I-M ratio for both physicians and patients. To test if aging or other changes in the population structure might have affected the I–M ratio over time, we used direct standardization techniques to calculate I–M ratios standardized for age and sex; the standard was the Ontario population as measured in the 1991 census. For each fiscal year, the I–M ratio for each age–sex group was calculated, and a weighted average I–M ratio was calculated with the proportion of the standard population belonging to each age–sex group as the weight.

Only data for active physicians billing more than

$35 000 annually were analysed in this study. Although 15% of physicians bill $35 000 or less, they account for only 1% of billings.[6] Hence, their inclusion would have distorted the identified characteristics of those physicians who account for the large majority of billings. We also excluded physicians who billed for fewer than 200 intermediate and minor visits, as well as 4 specialists who used these codes for an apparent side practice in family medicine.

The NPDB was established in 1989–90, so individual physician data were not available before that fiscal year. However, CIHI was able to supply aggregate yearly totals of the number of intermediate and minor assessments from 1978–79 onward. There was a slight discrepancy between the I–M ratios calculated from aggregate data and those determined from NPDB data for the years for which both types of data were available, because some low-volume physicians were excluded from the NPDB analysis. In 1989–90 this discrepancy resulted in the I–M ratio being 2.5% lower when calculated from the NPDB data This discrepancy was accepted because, if anything, it would lead to an underestimation of the magnitude of fee code creep over time.

We classified physicians by the concentration of specialists in their immediate vicinity. Both specialists and GP/FPs were assigned to the nearest hospital; if, after these assignments, a hospital had only GP/FPs or no more than 2 specialists, then those physicians were designated as being rural. The physicians were also classified as to the stage of their practice: recent graduates who had completed medical school within the preceding 7 years, physicians 60 years of age or older and "established" physicians (less than 60 years of age and not recent graduates). For each of these groups median I–M ratios were reported as well as the 95% confidence interval for these ratios calculated according to bootstrap techniques.[7]

Empirical examination revealed that a log transformation of the I–M ratio provided a dependent regression variable that best met the assumptions for ordinary least-squares estimation. The log ratio was regressed against independent variables for sex, age (stage of practice), rural or urban status, Ministry of Health planning region, foreign graduate status, number of patient visits and proportion of total billings for children under 10 years of age (for whom many intermediate assessments for well-baby visits would be expected).

Results

The I–M ratio grew steadily, from 0.3 in fiscal year 1978–79 to 2.9 in 1994–95 (Fig. 1). Growth was greatest in the first years after introduction of the intermediate assessment. From 1982–83 to 1994–95, growth was relatively stable, at 9.6% per year.

The overall I–M ratio for services provided to female patients was slightly higher than for male patients (2.9 v. 2.8 in 1994–95). Children under 4 years of age, for whom intermediate assessments are billed for routine well-baby care, had the highest ratio (6.2). Somewhat higher ratios were noted for elderly patients, with a peak of 3.3 at age 75–79 years. I–M ratios from 1989–90 to 1994–95, adjusted for changes in the age–sex profile of the Ontario population over time, were virtually identical with unadjusted ratios in each fiscal year.

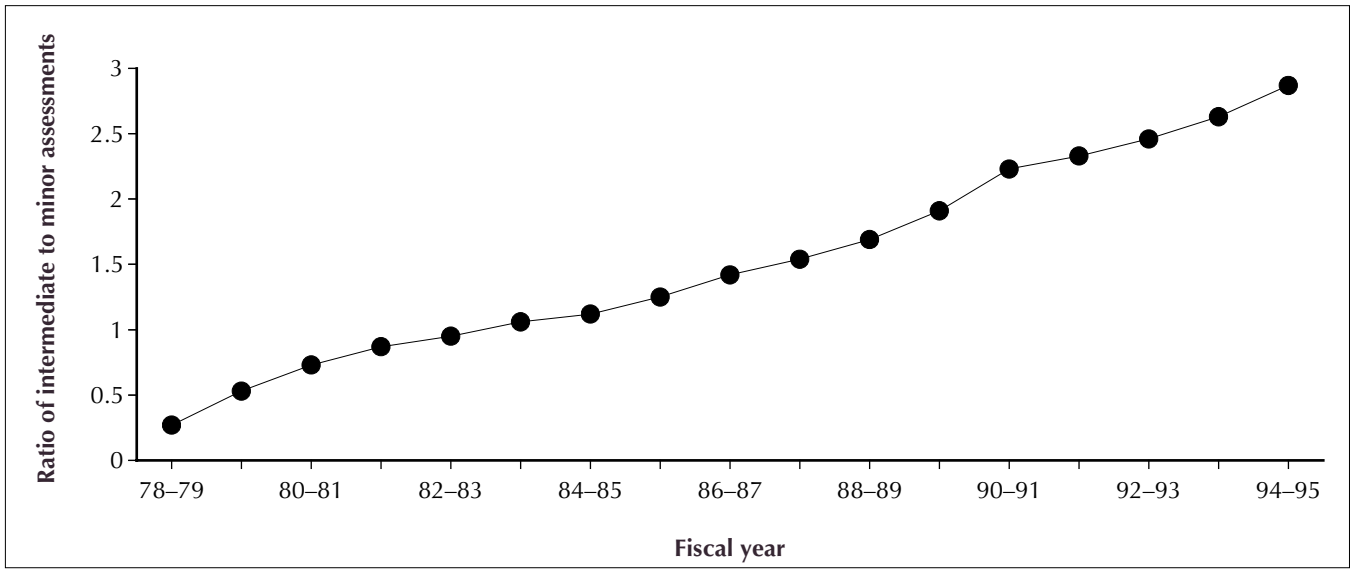

Fig. 1: Fee code creep, as indicated by the ratio of intermediate to minor primary care assessments (I–M ratio) for the period 1978–79 to 1994–95. Intermediate assessments, valued at $24.80, are "more extensive" than minor assessments, valued at $16.25. Source: Ontario Health Insurance Plan (OHIP) data, National Physician Database.

Variation among physicians in I–M ratio

The I-M ratio varied widely among physicians (Table 1, Fig. 2). In 1994–95 the mean province-wide ratio was 2.9 and the median 3.8. Forty-five physicians billed intermediate assessments exclusively. The distribution of ratios was right-skewed; 714 (9.0%) of physicians had ratios under 1, whereas 1452 (18.3%) had ratios over 10.

Female physicians, recent graduates and urban physicians all had higher ratios, whereas physicians aged 60 years and over had lower ratios (Table 1). The ratios declined steadily with increasing number of patient visits (Table 2). Physicians billing for 15 000 or more intermediate and minor assessments accounted for only 1.2% (96/7937) of physicians but 3.9% of billings for these fee codes.

Table 1: Median ratio of intermediate to minor primary care assessments (I–M ratio) for Ontario general practitioners and family physicians (GP/FPs) in 1994–95*

Characteristic	No. of GP/FPs	Median I–M ratio (and 95% bootstrap CI[7])
Sex		
Male	5885	3.5 (3.4–3.6)
Female	2047	4.5 (4.3–4.7)
Stage in practice		
Recent graduate†	1409	5.1 (4.8–5.3)
Established physician‡	5569	3.6 (3.5–3.7)
Age ≥ 60 yr	959	2.9 (2.6–3.2)
Location		
Rural§	892	3.0 (2.7–3.2)
Urban	6986	3.9 (3.8–4.0)
School of graduation		
Foreign	1763	3.3 (3.1–3.5)
Domestic	6174	3.9 (3.8–4.0)
All GP/FPs	7937	3.8 (3.7–3.9)

Note: CI = confidence interval.
*For "active" GP/FPs billing more than $35 000 and billing for at least 200 intermediate and minor assessments per year. For 5 physicians, information about sex was missing, and 59 could not be classified as urban or rural because of postal code irregularities. Source: Ontario Health Insurance Plan (OHIP) 1994–95 data, National Physician Database.
†Completed medical school within the preceding 7 years.
‡Less than 60 years of age and not a recent graduate.
§Working in communities with no more than 2 specialists for backup (see text for more complete description).

Table 3 compares the behaviour of physicians active in both 1989–90 and 1994–95 with that of physicians active in 1994–95 but not in 1989–90. It is presumed that the latter began their practice in the preceding 4 years. The I–M ratio for physicians active throughout the study period increased from 1.9 to 2.7, whereas the ratio for physicians active only in 1994–95 was higher, at 3.8. The former group accounted for two-thirds of the increase in the I–M ratio between 1989–90 and 1994–95.

Physician characteristics predicting I–M ratio

Table 4 gives the results of the multivariate analysis. As noted for the bivariate analyses, higher numbers of patient visits were associated with lower I–M ratios, as were physician age of 60 years or over, urban setting and foreign graduate status. Northern Ontario physicians also had lower ratios. Physicians tended to have a higher I–M ratio if their practice had a relatively high proportion of children less than 10 years old.

Female sex (of the physician), low number of visits and recent graduate status were strongly correlated with each other. As a result, sex of the physician was significant in models that included either number of visits or recent graduate status, but not in models that included all 3 variables.

Interpretation

This study demonstrates steady fee code creep since the introduction of the intermediate assessment in 1978–79. Creep was related to the gradual increase in

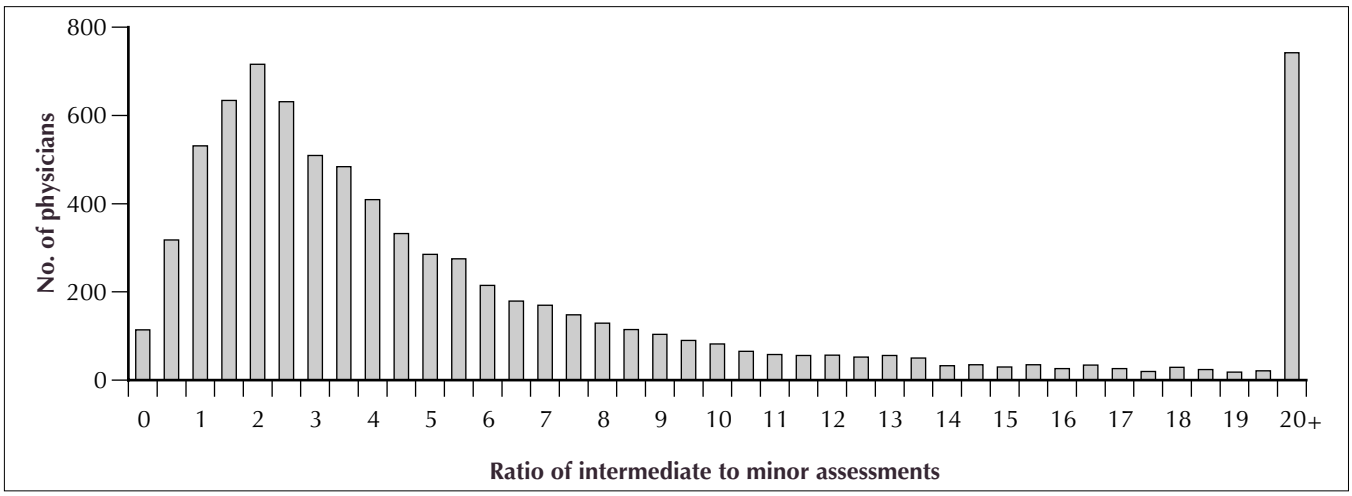

Fig. 2: Number of physicians at different I–M ratios in 1994–95. Source: OHIP data, National Physician Database.

I–M ratio among physicians in active practice throughout the study period, with an important contribution from the influx of new physicians beginning their practices at relatively higher I–M ratios. Creep was not related to aging of the population, as demonstrated by the fact that the ratios adjusted for age and sex in different years were identical with the unadjusted ratios.

The I–M ratio varied widely among physicians. Young physicians had higher ratios than older physicians. One explanation may be that young physicians are more likely to adopt recommended practices in health promotion and disease prevention,[8–10] which may be more time-consuming. Alternatively, inexperience may lead recent graduates to conduct more detailed assessments.

The finding that the I–M ratio varies inversely with number of visits may reflect differences in practice style. Low-volume physicians may have more time to spend with their patients. This could be either a deliberate choice or the result of not yet having a practice as large as desired, because the practice is new or because of high competition among physicians for patients. High-volume physicians may have less time to spend with each patient, which could result in relatively more minor assessments.

Table 2: I–M ratio according to number of patient visits for 1994–95

No. of visits per physician	No. of GP/FPs	I–M ratio	
		Median	Mean
< 5 000	4030	4.2	3.3
5 000–9 999	3244	3.5	2.9
10 000–14 999	567	3.0	2.5
15 000–19 999	85	2.1	1.8
≥ 20 000	11	1.6	2.0
All GP/FPs	7937	3.8	2.9

Source: OHIP 1994–95 data, National Physician Database.

Table 3: Personal and practice characteristics of GP/FPs active in both 1989–90 and 1994–95 and those active in 1994–95 but not 1989–90

Characteristic	GP/FPs active in both 1989–90 and 1994–95	GP/FPs active in 1994–95 but not 1989–90
No. of GP/FPs	5770	2167
No. (and %) female	1093 (18.9)	954 (44.0)
No. (and %) with < 5 000 intermediate and minor assessments, 1994–95	2544 (44.1)	1486 (68.6)
No. (and %) with ≥ 15 000 intermediate and minor assessments, 1994–95	81 (1.4)	15 (0.7)
Total no. of intermediate and minor assessments, 1994–95	29.8 million	7.8 million
I–M ratio, 1989–90	1.9	–
I–M ratio, 1994–95	2.7	3.8

Source: OHIP 1994–95 data, National Physician Database.

Future research could examine the nature and quality of patient assessments in such practices.

Female physicians had higher ratios than male physicians in the bivariate analysis. This trend is consistent with studies showing that female physicians conduct longer medical visits,[11,12] and spend more time taking histories, building partnerships and giving information.[12] In the multivariate analysis, however, sex was insignificant, a result that suggests that differences related to sex occurred because women physicians tended to be recent graduates with low numbers of visits. However, the lack of significance for physician sex must be interpreted with caution. Age, sex and number of visits are multicollinear, meaning that they are strongly associated with each other. Multicollinearity makes it difficult to simultaneously identify underlying associations with the I–M ratio. Nonetheless, previous studies on differences between the sexes[11,12] did not control for both age and number of visits, and this study suggests that these factors may be strong predictors of practice style.

The relation between practice location and I–M ratio is consistent with the controversial and unproven theory of supply-induced demand. This theory suggests that where physician supply is high, physicians are faced with declining market share and influence patient demand for services upward to maintain their incomes.[13] Ratios were low in traditionally underserviced Northern Ontario[6] and highest in urban areas.

Table 4: Predictors of high I–M ratios, as determined from log–linear multiple regression

Variable	Multiplicative factor* (and 95% CI)
Female	1.02 (0.96–1.10)
Recent graduate	1.20 (1.11–1.30)
Physician age ≥ 60 yr	0.86 (0.78–0.94)
Urban practice location with specialty backup	1.24 (1.13–1.36)
Ministry of Health planning region	
Northwest	0.82 (0.68–0.99)
Northeast	0.73 (0.64–0.83)
Southwest	0.93 (0.85–1.01)
East	1.05 (0.97–1.14)
Central West	0.99 (0.91–1.08)
Foreign graduate	0.92 (0.86–0.99)
Visit volume† (each 1000 visits)	0.96 (0.95–0.97)
Proportion of billings for patients aged < 10 yr‡	2.68 (1.81–3.97)

*Multiplicative factors are the exponents of parameters from log–linear regression on the I–M ratio and represent the proportionate increase in the ratio compared with the baseline if the physician is a member of the specified group. For example, urban physicians had an I–M ratio 1.24 times higher than that of rural physicians, on average.

†For each 1000 patient visits, the I–M ratio tends to be lower by a factor of 0.96. Thus, for a physician seeing 12 000 patients, the I–M ratio is 0.96^{10} or 0.66 times lower than that for a physician seeing 2000 patients, on average.

‡The multiplicative factor here is the proportionate difference in I–M ratio between physicians with all billings for patients less than 10 years of age and those with no billings for such patients. If a physician has a proportion of billings for such patients, the multiplicative factor is reduced exponentially by this proportion. For example, if 35% of billings are for children under age 10, then the I–M ratio is $(2.68)^{0.35}$ or 1.41 times higher than that for a physician with no billings for such patients.

One might speculate that increasingly stringent constraints on billings encouraged physicians to maintain their incomes by engaging in fee code creep. Global expenditure caps were introduced in 1991–92,[14] and yearly growth in indices of creep was somewhat higher in the later years of expenditure control plans, particularly in 1993–94 and 1994–95. However, there was no appreciable difference in yearly growth rates in the I–M ratio before and after expenditure cap policies were introduced. Hence, these data neither support nor refute this hypothesis.

One reason why fee code creep has attracted the interest of policy-makers is its presumed impact on expenditures. If there had been no fee code creep from 1982–83 to 1994–95, OHIP expenditures would have been $85 million lower in 1994–95. If the I–M ratio continues to grow at its annual rate of 9.6%, OHIP expenditures will rise by $24 million by 1999–2000, all other factors remaining equal.

However, any attempt at addressing fee code creep is fraught with difficult trade-offs. If policy-makers choose the status quo (a 2-fee structure), continued creep could lead to more expenditure growth. A single fee for office visits would control creep but would reward high-volume physicians and penalize recent graduates, female physicians and low-volume physicians. One could audit individual practices for compliance with more rigid criteria for intermediate and minor assessments, but this could be time-consuming and costly. Lastly, the intermediate and minor assessment fees could be periodically deflated to account for fee code creep. Physicians, however, may be discontent if they are unable to predict their annual earnings, an issue plaguing previous "claw-back" policies in Ontario.[6]

This study was limited by the lack of clinical data and information on the quality of the physician–patient interaction. We could not describe the relation between the fee billed and the time spent with patients or the thoroughness of examinations. Such information could have provided insight into the appropriateness of billing patterns and the differences between physicians in how they use the intermediate and minor fee codes. Another limitation is the existence of multicollinearity in the sample. Although multicollinearity does not bias the estimates of the magnitude of effects of variables in the regressions, it does lead to large standard errors which may mask true relations between variables.[15] A related issue is that the tests for significance for some variables were not robust, an issue further compounded by the existence of multiple comparisons in the regressions.

The fee code creep demonstrated in this study poses a difficult challenge for policy-makers. The underlying cause of creep remains a mystery, and each option for dealing with creep (including the status quo) has some potential adverse impact. Further research is needed to examine what types of services provided by physicians are billed as intermediate and minor, and the extent of variation in how physicians bill for the same clinical condition.

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Reprint requests to: *Dr. Ben Chan, Institute for Clinical Evaluative Sciences in Ontario, Ste. G–106, 2075 Bayview Ave., North York ON M4N 3M5; fax 416 480-6048; ben@ices.on.ca*