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ANALYSIS OF CHANGES IN EXPENDITURES ON PHYSICIAN
SERVICES**

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AN APPLICATION OF PRICE AND QUANTITY INDEXES IN THE ANALYSIS OF
CHANGES IN EXPENDITURE ON PHYSICIAN SERVICES ¹

Frank T. Denton, Christine H. Feaver, and Byron G. Spencer

ABSTRACT

Price and quantity indexes are applied in the analysis of expenditure on physician services in the province of Ontario, Canada, using newly available data files for 1992 and 2004. Price indexes for such services are found to have increased less rapidly than indexes of general inflation and quantity indexes are found to account for the largest share of physician expenditure increases. The quantity indexes imply substantial gains in services per capita, especially for older adults. They imply also an increase in labour productivity for physicians that is somewhat greater than the corresponding increase for the economy at large.

Key words: physician services; price and quantity indexes

JEL classification: C43, I11, I12

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1. INTRODUCTION

The supply and delivery of physician services have undergone major changes in Canada since the early 1990s, in both substance and perception. Our focus in this paper is Ontario, the largest of the Canadian provinces, and there, as elsewhere in the country, concerns about surpluses (Barer and Stoddart, 1991) have given way to concerns about shortages (Kralji, 2001a, Chan, 2002). There have been important developments in medical technology and the institutional patterns of practice and delivery (capitation vs. fee for service, substitution of out-patient for in-patient treatment in hospitals). These changes have taken place at a time when the age distribution of the population has been evolving, with greater changes in prospect.

Population aging and its implications for health care costs are very much in the public mind. The median age of the Ontario population was 32.9 in 1990; by 2000 it had risen to 36.5, and by 2030 it is projected to be in the range 40 to 46 (Denton, Gafni, and Spencer, 2002). Such is the background to this paper. While the paper is concerned with physician services in Ontario we think that its analytical framework may have more general applicability in the analysis of health care expenditure patterns.

The specific questions of interest here have to do with changes in the price of physician services during this rather unusual period in Canadian health care history, changes in the quantities supplied, the relative contributions of price and quantity changes to changes in expenditure, the extent to which price and quantity changes vary by age of patients, and the implications of the quantity changes for physician productivity. To address these questions we construct and analyse price and quantity-of-service indexes for 2004 relative to 1992 based on newly available data files from the Canadian Institute for Health Information (CIHI), and using

procedures that are well known in the literature on economic index theory.² The data files cover services of physicians paid for on a fee-for-service basis by the Government of Ontario under the terms of OHIP, the universal Ontario Health Insurance Plan.

The paper proceeds as follows. We describe the data files on which our calculations are based and take a quick look at the way in which 2004 expenditures were distributed among type-of-service categories (represented by fee billing codes) and among categories of physicians. We then describe how we have used the files, including the index formulas employed, present price indexes for physician services, and compare those indexes with indexes for the economy at large to see how increases in physician fees compare with the general rate of inflation. Following that we present separate price indexes by age group of patients, corresponding expenditure indexes, and a decomposition of the expenditure indexes into price and quantity components. We consider the changes in quantities of services in relation to changes in the Ontario population and in relation to changes in the numbers of physicians.

It should be noted that the price indexes we calculate are indexes of *costs* of physician services, not physician incomes. Physicians paid on a fee-for-service basis (or a capitation basis, for that matter) receive gross payments, from which they pay their office and other expenses, not net payments that represent only personal income. The distinction is important and often overlooked in discussing issues relating to the remuneration of physicians. Also, it should be kept in mind that the fee rates underlying the indexes are administratively imposed. They are not determined by market supply and demand, although the administrative process by which the

² No such indexes have been constructed for Ontario, to our knowledge. The only other calculations of a similar kind, of which we are aware, are those of Pascali (1995) for the province of British Columbia, relating to the period 1979-1991.

rates are set may be influenced (one would suppose) by supply/demand-type considerations.

2. THE PHYSICIAN SERVICE DATA

The physician service data files provided by CIHI are of two types. The first contains detailed records of services billed to OHIP on a fee-for-service (FFS) basis, by billing code (type of service) and age and sex of patient. The second contains similar information, but by category of physician rather than patient age/sex.³ Both types were provided for the March 31 fiscal years 1992/93 (the earliest year available on a consistent basis) and 2004/05 (the most recent year). The majority of records for the 1992/93 fiscal year relate to the calendar year 1992, and for convenience we refer to them as 1992 data. Similarly, we refer to the 2004/05 fiscal year records as 2004 data.

Some preliminary observations on the general characteristics of the data may be of interest. Table 1 shows total expenditure in 2004 and the number of individual services provided for each of the top 25 billing codes, based on their expenditure rankings. Altogether there were some 198 million services provided in Ontario in that year (about 16 per person in the population), at a total cost of 5.2 billion dollars (\$420 per person). There were 7,677 billing codes in effect, of which the top 25 accounted for 40 percent of total expenditure, the other 7,652 for 60 percent. Nine of the top 25 relate to particular types of family practice or paediatric services.

The final column of Table 1 shows the cost per service for each code. The average cost

³ We have excluded all fee codes with initial letter L. These codes represent laboratory tests and have little direct connection with physician services, as such. Laboratory physicians may bill under other codes, though, and we have retained those.

was approximately \$26 in 2004, overall, but the individual figures range widely, from \$9 at one end to \$393 at the other. The distribution is thus highly skewed towards a small number of frequently provided services, and highly variable in costs per service.

Table 2 provides similar information by category of physician. There are 19 categories. Ranking them by expenditure, the top three account for almost two-thirds of the total. Family Practice is first, by a wide margin, accounting for 35 percent; Neurosurgery is last, with 0.4 percent. Again there is wide variation in (average) costs per service, from about \$14 for each of Anaesthesia and Paediatrics to \$100 for Neurosurgery.

These results are probably not surprising, in general terms. Putting them on display serves though to emphasize the diversity of individual services in the weights that they contribute in the construction of the price and quantity indexes to follow, and in the relative prices that go into the indexes. It serves also to suggest the usefulness of some simple measures that summarize the large amount of detailed data representing the highly heterogeneous collection of services that physicians provide.

3. INDEX CALCULATIONS

Suppose two periods; call them period 1 and period 2. A basic idea in index number theory is that of calculating a price index by pricing the “basket” of commodities or services purchased in one period at the prices prevailing in the other, and thus comparing the total cost in each of the two periods when quantities are held constant. (See Banerjee, 1975, for a general treatment of index formulas and issues.) One could calculate the cost of the period 1 basket at period 2 prices, or of the period 2 basket at period 1 prices. The calculations done in these two

ways produce, respectively, the well known Laspeyres and Paasche price indexes. An alternative, the Fisher index, combines these two. We use the Fisher index in this paper. First, though, there is a practical issue to consider, one that is common in many index contexts.

In the construction of a consumer price index, for example, there is the fact that the goods on the market in one period may not be the same as those on the market in the other, and one must confine attention only to those goods that are the same, or deal with the matter in some other way. An analogous situation occurs here because the lists of billing codes are not identical in the two years 1992 and 2004. Most codes appear on both lists, and represent the same services. Some though have been added and others dropped. We consider therefore basing the calculations on those codes that are common. The question is whether the common codes are a sufficiently large proportion of all codes to justify doing this, or more correctly, whether the *expenditures* associated with the common codes are a sufficiently large proportion of total expenditures, since it is the expenditure weights that are important for our purposes. (A code with only a relatively small aggregate billing share will have little effect on the index calculations.)

The situation is as presented in Table 3. The total numbers of billing codes are shown for 1992 and 2004, along with the number of codes common to both years. The common codes represent 85 percent of all codes in 1992, 87 percent in 2004. More importantly, the common codes represent about 90 percent of total expenditure in both years. There are thus reasonable grounds for calculating a price index for physician services based on the common set.

We have been discussing the calculation of a price index. The obverse of a price index is a quantity index. In fact, there is a straightforward correspondence between the two types of

index. For a price index one may think of holding constant the quantities involved and letting only the prices vary; for a quantity index one may think of holding constant the prices and letting only the quantities vary. We calculate price indexes using the Fisher price index formula and quantity indexes using the corresponding Fisher quantity index formula.

Technical details are as follows. Let $P(L)$ stand for the Laspeyres price index and $P(P)$ for the Paasche price index. The formulas are

$$P(L) = (\sum f_{i1}n_{i0}) / (\sum f_{i0}n_{i0})$$

$$P(P) = (\sum f_{i1}n_{i1}) / (\sum f_{i0}n_{i1})$$

where f_{it} is the fee (price) for service of type i in year t (equal to 0 or 1), n_{it} is the corresponding number of type i services in that year, and all summations are over i .

Alternative (and exactly equivalent) formulas are

$$P(L) = \sum e_{i0} (f_{i1} / f_{i0})$$

$$P(P) = (\sum e_{i1} (f_{i1} / f_{i0})^{-1})^{-1}$$

where e_{it} is the expenditure share (the proportion of total expenditure) for services of type i in year t . (Writing the formulas in this alternative way makes clear that it is relative expenditure that matters for the index calculations, not the number of services.) However the Laspeyres and Paasche indexes are calculated, the Fisher price index is given by

$$P(F) = (P(L) \cdot P(P))^{1/2}$$

Quantity indexes are defined in an analogous manner: instead of holding the numbers of services constant and allowing the fees to vary, as in the price indexes, the fees are now held constant and the numbers of services are allowed to vary. Writing $Q(L)$ and $Q(P)$ for the Laspeyres and Paasche versions of the quantity index we have

$$Q(L) = (\sum f_{i0}n_{i1}) / (\sum f_{i0}n_{i0}) = \sum e_{i0}(n_{i1} / n_{i0})$$

$$Q(P) = (\sum f_{i1}n_{i1}) / (\sum f_{i1}n_{i0}) = (\sum e_{i1}(n_{i1} / n_{i0})^{-1})^{-1}$$

and the Fisher quantity index is then given by

$$Q(F) = (Q(L).Q(P))^{1/2} .$$

An advantage of the Fisher formulas is that they allow an index of total expenditure to be factored into price and quantity components. Thus

$$E = P(F).Q(F)$$

holds exactly, where $E = (\sum f_{i1}n_{i1}) / (\sum f_{i0}n_{i0})$ is the expenditure index. The Fisher formulas have other desirable properties as well.

4. PHYSICIAN PRICE INDEXES AND THE RATE OF INFLATION

Price indexes for physician services are shown in Table 4 and compared with three measures of general price inflation. Separate indexes are shown for Family Practice physicians, specialists, and the two groups combined. The overall index rose by 12.6 percent between 1992 and 2004. The index for Family Practice rose a little more (14.8 percent), the index for

specialists a little less (11.2 percent). In no case though did the increase match the rate of inflation in the general economy.

Three indexes of general inflation are shown in the table. (The source for all three is the Statistics Canada CANSIM data base.) The first is the often cited consumer price index (CPI) for Canada. The other two are more broadly based indexes, relating specifically to Ontario, and taken from the provincial economic accounts: the index used to deflate consumer expenditure and the index used to deflate final domestic demand. The all-Canada CPI is shown even though our study relates to Ontario because it is such a widely used index across the country, and in many contexts. We note again that payments to physicians do not represent personal income, but rather gross payments from which office and other expenses must be paid, as well as income for the physicians themselves. For this reason there is no price index for the general economy that provides an exactly correct standard of comparison for the physician services price indexes. The CPI and the consumer expenditure deflator index relate only to personal consumption, and are too narrow. The index for final domestic demand, on the other hand, is too broad: it relates to a wide range of personal consumption, government purchases, and investment transactions that enter the economic accounts. For our purposes, though, it does not matter which index is used as the standard of comparison. The overall price index for physician services rose by 12.6 percent; general economy inflation was in the range 20 to 25 percent. The increase in the price of physician services thus fell well short of average price increases elsewhere in the economy.

5. PHYSICIAN PRICE INDEXES FOR DIFFERENT AGE GROUPS

The populations at various ages do not consume physician services in the same

quantities. Older people consume more services than younger people, and in different combinations. (See Denton, Gafni, and Spencer, 2002, or forthcoming, for population age profiles by category of physician.) It need not be the case, therefore, that price indexes are the same at all ages. We have calculated separate indexes for male and female patients in each of seven age groups, ranging from 0-14 to 85 and over. The indexes are shown in Table 5.

The indexes are highest for the oldest group. The 1992-2004 price increase was about 18 percent for males and females aged 85 and over, compared with 12 or 13 percent for all ages combined. There was a somewhat greater increase for females in the 15-34 range too, about 16 percent, but for other groups the differences are generally small. The relatively large increase for 85 and over, which is perhaps of particular interest, is entirely a consequence of the different combinations of services provided to older people. (The fee rate for any individual service is the same regardless of the age of the person to whom it is provided; the indexes are affected only by the differences in weights attaching to the different services.) Even the increase for the oldest group falls short, though, of the general rate of inflation, as indicated in Table 4.

6. EXPENDITURE INDEXES AND THEIR PRICE/QUANTITY COMPONENTS

There was a large increase in health care expenditure generally over the period 1992-2004, and in particular (for our purposes) in expenditure for the services of physicians. Total payments to fee-for-service physicians rose by 31 percent overall, and by much more than that for older groups. A question to ask, then, is how much of the increase was a consequence of higher fee rates and how much a consequence of an increase in the quantity or volume of services provided. The index framework described in section 3 allows that question to be

answered with precision. As noted there, it permits the increase in expenditure to be decomposed exactly into price and quantity components.

The decomposition is provided in Table 6. The table displays indexes of expenditures, prices, and quantities, both at the aggregate level and by age and sex of patients. Quantity increases are seen to account for somewhat higher fractions of expenditure increases overall but the most interesting results are the differences among age groups. Price effects exceed quantity effects for the youngest ages but for ages 35 and over the reverse is true, and it is most conspicuously true for ages 50 and over. For ages 85 and over the increase in the quantity index is about 84 percent for males and females combined and 99 percent for males alone, compared with an 18 percent increase in the price index.

7. QUANTITY CHANGES IN RELATION TO CHANGES IN THE POPULATION

The population of Ontario is aging, as is the population of Canada, and indeed the populations of virtually all industrialized countries. The “baby boom” gave way to the “baby bust” starting around the mid-1960s. (The dating is conventional but somewhat arbitrary.) Fertility rates declined persistently until the total rate fell below the rate required for natural replacement of the population – about 2.1 children per woman – and then continued to decline further. By the late 1990s the Canadian rate had fallen to about 1.5, and it remains at that level today; the rate in Ontario is about the same. The proportion of young people in the population has fallen and the proportion of older people has risen. Overall, the population of Ontario increased by 17.5 percent between 1992 and 2004. In the same period, the population 0-14 years of age increased by only 7 percent while the population 75 and over increased by 50 percent. We

noted in the previous section the large increases in the quantities of services provided to older patients . A question of interest now is the extent to which the increases in services match the increases in population.

The results reported to this point – the price, quantity, and expenditure indexes – were based entirely on data relating to fee-for-service physicians. What we do now is to construct more broadly based indexes of the quantities of services, measures that incorporate services by both physicians working on a fee-for-service basis and those providing the same services, but under alternative-payment schemes (capitation or other schemes that do not require billing for individual services). We refer to the two payment categories as FFS and AP.

We start with payments of both types combined in 1992 and 2004, by age of patient, and deflate the 2004 totals using the price indexes calculated previously to remove the effects of price changes over the twelve-year period, thus obtaining a more comprehensive quantity index for each age group.⁴ The more comprehensive indexes are shown in Table 7. They incorporate all physician services covered by OHIP, and thus represent all but the very small proportion of expenditures on services that are financed outside the public insurance system.⁵

⁴ CIHI (2007) provides annual expenditure-by-age series for males and females (FFS plus AP), starting in 1996. We have projected the series back to 1992 based on corresponding unpublished FFS series provided to us by CIHI. We note that FFS expenditures accounted for almost all of total expenditure in the early 1990s.

⁵ The use of the FFS-based price indexes for deflation of the broader totals can be justified on the grounds that FFS payments accounted for the largest proportion of total payments, and by the fact that both types of payments are made under OHIP, and hence that changes in prices over the period would have been administered by the same agency, and presumably made on a consistent basis. The composition of the FFS and AP recipients need not have been the same, of course, in terms of categories of physicians. We were unable to obtain information on the actual differences in composition. However, some numerical experimentation makes it clear that as a practical matter that is not a serious problem. The main conclusions that one can draw from the calculations are quite robust to any changes in the price deflators that might be implied by such a difference.

Table 8 compares percentage changes in population with percentage changes in service quantities, as represented by the indexes in Table 7, and shows the changes in services per capita. (Population data are from the Statistics Canada Cansim data base.) The quantity changes based on Table 7 are generally greater than those implied by the corresponding indexes in Table 6, reflecting the fact that the more broadly defined expenditure totals (FFS plus AP) rose faster than FFS expenditures alone. Otherwise though the general patterns are similar. With the exception of males and females in the 15-34 age range, where quantities actually declined, the increases in services outpaced the increases in population in all age groups, and especially in those 50 or over. The quantities of services per capita rose sharply in the latter groups. For ages 85 and over the per capita increase was 45 percent for males, 42 percent for females. For all ages combined the per capita increase was 18 percent for males, 13 percent for females. Thus the population experienced an appreciably higher level of services per capita in 2004 than in 1992, especially at older ages. The decline in the age group 15-34, and the lower rates of increase in the 0-14 and 35-49 groups, imply (for whatever reason) a decline in the “intensity” of services for children and younger adults, relative to older adults.

There is a general perception of a shortage of physicians in Ontario. The term “shortage” implies a standard of comparison, of course – an earlier period, another region or country. Taking the beginning of the 1990s as reference period it is certainly true that the population/physician ratio rose during that decade and into the present one, with or without adjusting for changes in the age distribution of the population. The actual ratio increased by about 8 percent between 1990 and 2003; after adjustment to eliminate the effects of changes in age distribution, the ratio increased by 13 percent (Denton, Gafni, and Spencer, forthcoming).

The changes in age distribution thus worked to moderate the increase in the ratio over the period, but there was still an increase. There is also analytical evidence (Kralji, 2001b) and much anecdotal evidence that the geographic distribution of physicians within the province significantly constrains the availability of services in some regions relative to others. How then should the 15 percent increase in quantity per capita be interpreted? An argument that seems to us to have merit is that the per capita increase took the form of a higher standard of treatment for patients being treated rather than a wider distribution of treatment among the population – a deepening as opposed to a broadening, so to speak.

8. QUANTITY CHANGE IN RELATION TO CHANGE IN NUMBER OF PHYSICIANS

The overall change in service quantity between 1992 and 2004 can be compared with the change in the number of physicians practicing in Ontario. The number of physicians increased by about 8 percent, based on annual totals reported in CIHI (2005 and earlier years). Over the same period the overall quantity index rose by 35 percent. The implication is that there was an increase in labour productivity (output per physician) of roughly 25 percent, or 1.9 percent per annum. That can be compared with an increase in real gross domestic product per person employed in Ontario of about 1.5 percent per annum (based on provincial economic accounts and Labour Force survey data from the Statistics Canada CANSIM data base). Productivity calculations and comparisons are subject to all sorts of difficulties and one does not want to make too much of small differences. However, the calculations do suggest that productivity in the physician service sector did increase at a pace not unlike that of the economy at large, and apparently a little faster.

If there was an increase in productivity of the order of 25 percent one can ask a question similar to the one posed in the previous section: who benefitted? As before, it can be argued that the greater output per physician took the form of a higher standard of treatment rather than an increased rate of throughput of patients – a deepening rather than a broadening of the services provided, to put it that way again. That is not to say that there could not be effects of both kinds, rather that the predominant effect may well have of the deepening kind.

9. SUMMING UP

We have constructed and analysed price and quantity indexes for physician services in Ontario over the period 1992 to 2004, using newly available data from the Canadian Institute for Health Information and formulas that are well known in the literature on economic indexing theory. The price indexes imply that physician fees increased less rapidly than the rate of inflation in the economy as a whole, as represented by the consumer price index and other indicators. There was some variation in price indexes by age group of patients but much greater variation in quantity indexes. The largest proportionate increases in expenditure over the period were accounted for by increases in the quantities of services supplied rather than higher fee rates. The increases in quantity indexes imply substantial gains to the population in services per capita, overall, but especially for older adults relative to children and younger adults. They imply also a rate of increase in physician productivity that exceeds somewhat the corresponding increase in the economy at large. We have conjectured that the increases in services per capita and physician productivity manifested themselves largely in a higher standard of services rather than a broader distribution among the population.

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Table 1: The Top 25 Categories of Expenditure on FFS Physician Services in 2004

| Category | Fee code | Expenditure (\$'000) | % of total expenditure | Cumulative % of total expenditure | Number of services performed ('000) | Expenditure per service (\$) |
|---|----------|-------------------------|---------------------------|---|--|---------------------------------------|
| 1. Family Practice or Paediatrics: Intermediate assessment or well baby care | A007A | 849,528 | 16.26 | 16.26 | 30,575 | 27.78 |
| 2. Family Practice: General assessment | A003A | 163,484 | 3.13 | 19.39 | 3,089 | 52.93 |
| 3. Family Practice: Minor assessment | A001A | 142,792 | 2.73 | 22.12 | 8,446 | 16.91 |
| 4. Psychiatry: Individual out-patient psychotherapy | K197A | 106,051 | 2.03 | 24.15 | 1,857 | 57.10 |
| 5. Internal & Occupational Medicine: Consultation | A135A | 90,314 | 1.73 | 25.88 | 746 | 121.11 |
| 6. Family Practice: Psychotherapy: Individual care | K007A | 71,123 | 1.36 | 27.24 | 1,455 | 48.89 |
| 7. Psychiatry: Psychiatric care: Out-patient | K198A | 69,153 | 1.32 | 28.56 | 1,214 | 56.98 |
| 8. Family Practice: Counselling: Individual care | K013A | 45,462 | 0.87 | 29.43 | 917 | 49.59 |
| 9. Ocular Surgery: Removal of intraocular foreign body | E140A | 44,337 | 0.85 | 30.28 | 113 | 393.34 |
| 10. Family Practice: Primary mental health care: Individual care | K005A | 40,989 | 0.78 | 31.06 | 815 | 50.27 |
| 11. Family Practice: Emergency department equivalent: Partial assessment | A888A | 40,204 | 0.77 | 31.83 | 1,485 | 27.07 |
| 12. Diagnostic Radiology: Chest, 2 views | X091B | 38,341 | 0.73 | 32.57 | 1,777 | 21.58 |
| 13. General Surgery: Consultation | A035A | 37,367 | 0.72 | 33.28 | 511 | 73.06 |
| 14. Family Practice: Non-emergency hospital in-patient: Subsequent visit, first 5 weeks | C002A | 36,248 | 0.69 | 33.97 | 1,653 | 21.93 |
| 15. Echocardiography: Complete study, 1 & 2 dimensions, technical component | G570A | 34,653 | 0.66 | 34.64 | 484 | 71.55 |
| 16. Chronic dialysis weekly team fee: Hospital haemodialysis | G860A | 33,226 | 0.64 | 35.27 | 259 | 128.08 |
| 17. Paediatrics: Consultation | A265A | 30,991 | 0.59 | 35.87 | 241 | 128.85 |
| 18. Echocardiography: Complete study, 1 & 2 dimensions, professional component | G571A | 30,280 | 0.58 | 36.45 | 430 | 70.48 |
| 19. Obstetrics & Gynaecology: Consultation | A205A | 29,827 | 0.57 | 37.02 | 404 | 73.85 |
| 20. Ophthalmology: Specific assessment | A233A | 26,755 | 0.51 | 37.53 | 667 | 40.11 |
| 21. After hours procedure premium | E409A | 26,514 | 0.51 | 38.04 | 190 | 139.23 |
| 22. Obstetrics: Vaginal delivery | P006A | 26,424 | 0.51 | 38.54 | 80 | 329.31 |
| 23. Electrocardiogram, professional component | G313A | 25,798 | 0.49 | 39.03 | 2,813 | 9.17 |
| 24. Psychiatry: Psychiatric care: In-patient | K199A | 25,380 | 0.49 | 39.52 | 418 | 60.68 |
| 25. Diagnostic sleep study, technical component | J890B | 24,928 | 0.48 | 40.00 | 70 | 356.96 |
| Other categories | | 3,135,556 | 60.00 | 100.00 | 136,846 | 22.91 |
| All categories | | 5,225,726 | 100.00 | 100.00 | 197,554 | 26.45 |

Table 2: Expenditure on FFS Physician Services by Physician Type in 2004

| Category | Expenditure (\$'000) | % of total expenditure | Cumulative % of total expenditure | Number of services performed ('000) | Expenditure per service (\$) |
|-------------------------------------|-------------------------|---------------------------|---|---|---------------------------------------|
| 1. Family Practice | 1,833,818 | 35.09 | 35.09 | 84,505 | 21.70 |
| 2. Internal Medicine | 795,832 | 15.23 | 50.32 | 25,715 | 30.95 |
| 3. Radiology | 732,953 | 14.03 | 64.35 | 26,140 | 28.04 |
| 4. Psychiatry | 268,983 | 5.15 | 69.49 | 4,745 | 56.69 |
| 5. Anaesthesia | 245,513 | 4.70 | 74.19 | 18,144 | 13.53 |
| 6. Obstetrics/Gynecology | 217,349 | 4.16 | 78.35 | 5,771 | 37.66 |
| 7. General Surgery | 198,074 | 3.79 | 82.14 | 3,900 | 50.79 |
| 8. Ophthalmology | 172,274 | 3.30 | 85.44 | 4,034 | 42.71 |
| 9. Pediatrics | 134,023 | 2.56 | 88.00 | 9,845 | 13.61 |
| 10. Orthopedic Surgery | 125,824 | 2.41 | 90.41 | 2,240 | 56.17 |
| 11. Laboratory | 120,013 | 2.30 | 92.71 | 2,531 | 47.42 |
| 12. Urology | 74,166 | 1.42 | 94.13 | 1,749 | 42.40 |
| 13. Otolaryngology | 73,427 | 1.41 | 95.53 | 3,214 | 22.85 |
| 14. Neurology | 53,582 | 1.03 | 96.56 | 948 | 56.52 |
| 15. Dermatology | 49,308 | 0.94 | 97.50 | 1,876 | 26.28 |
| 16. Thoracic/Cardiovascular Surgery | 46,282 | 0.89 | 98.39 | 696 | 66.50 |
| 17. Plastic Surgery | 41,440 | 0.79 | 99.18 | 779 | 53.20 |
| 18. Physical Medicine | 23,040 | 0.44 | 99.62 | 524 | 43.97 |
| 19. Neurosurgery | 19,827 | 0.38 | 100.00 | 199 | 99.63 |
| All categories | 5,225,726 | 100.00 | 100.00 | 197,554 | 26.45 |

Table 3: FFS Fee Codes Common to 1992 and 2004, and Associated Expenditures

| | 1992 | 2004 |
|--|-------|-------|
| Total number of fee codes | 7,887 | 7,677 |
| Fee codes common to both years | 6,711 | 6,711 |
| Common codes as % of all codes | 85.1 | 87.4 |
| Total expenditure, all codes (\$'000,000) | 3,932 | 5,226 |
| Total expenditure, common codes (\$'000,000) | 3,549 | 4,647 |
| Common-code expenditure as % of all-code expenditure | 90.3 | 88.9 |

Table 4: Price Indexes for Physician Services Compared with General Economic Price Indexes, 2004 (Base year 1992 = 100.0)

| <u>Physician services indexes</u> | |
|--|-------|
| All physicians | 112.6 |
| Family Practice | 114.8 |
| Specialists | 111.2 |
| <u>General economic indexes</u> | |
| Consumer price index (Canada) | 124.7 |
| Price deflator for consumer expenditure (Ontario) | 122.0 |
| Price deflator for final domestic demand (Ontario) | 120.0 |

Table 5: Price Indexes for Physician Services, by Age and Sex of Patients,
2004 (Base year 1992 = 100.0)

| Age | Both sexes | Males | Females |
|----------|------------|-------|---------|
| 0-14 | 113.3 | 113.7 | 112.8 |
| 15-34 | 114.8 | 111.7 | 116.3 |
| 35-49 | 112.3 | 111.9 | 112.5 |
| 50-64 | 111.3 | 111.2 | 111.3 |
| 65-74 | 111.6 | 111.5 | 111.7 |
| 75-84 | 113.4 | 113.1 | 113.5 |
| 85+ | 118.1 | 117.6 | 118.4 |
| All ages | 112.6 | 112.0 | 113.4 |

Table 6: Decomposition of Expenditure Indexes for FFS Physician Services into Price and Quantity Components, by Sex and Age of Patients, 2004
(Base year 1992 = 100.0)

| Sex and Age | Expenditure index | Price index | Quantity index |
|-------------------|-------------------|-------------|----------------|
| <u>Both sexes</u> | | | |
| 0-14 | 99.7 | 113.3 | 88.0 |
| 15-34 | 79.2 | 114.8 | 69.0 |
| 35-49 | 133.6 | 112.3 | 119.0 |
| 50-64 | 176.2 | 111.3 | 158.3 |
| 65-74 | 150.7 | 111.6 | 135.0 |
| 75-84 | 197.1 | 113.4 | 173.8 |
| 85+ | 216.8 | 118.1 | 183.6 |
| All ages | 130.7 | 112.6 | 116.1 |
| <u>Males</u> | | | |
| 0-14 | 103.0 | 113.7 | 90.6 |
| 15-34 | 70.3 | 111.7 | 62.9 |
| 35-49 | 132.9 | 111.9 | 118.8 |
| 50-64 | 171.2 | 111.2 | 154.0 |
| 65-74 | 155.8 | 111.5 | 139.7 |
| 75-84 | 208.0 | 113.1 | 183.9 |
| 85+ | 234.1 | 117.6 | 199.1 |
| All ages | 132.6 | 112.0 | 118.4 |
| <u>Females</u> | | | |
| 0-14 | 96.1 | 112.8 | 85.2 |
| 15-34 | 84.0 | 116.3 | 72.2 |
| 35-49 | 134.0 | 112.5 | 119.1 |
| 50-64 | 180.4 | 111.3 | 162.1 |
| 65-74 | 146.0 | 111.7 | 130.7 |
| 75-84 | 188.9 | 113.5 | 166.4 |
| 85+ | 208.9 | 118.4 | 176.4 |
| All ages | 129.7 | 113.4 | 114.4 |

Table 7: Decomposition of Expenditure Indexes for All Physician Services (FFS and AP) into Price and Quantity Components, by Sex and Age of Patients, 2004
(Base year 1992 = 100.0)

| Sex and Age | Expenditure index | Price index | Quantity index |
|-------------------|-------------------|-------------|----------------|
| <u>Both sexes</u> | | | |
| 0-14 | 124.3 | 113.3 | 109.7 |
| 15-34 | 94.7 | 114.8 | 82.5 |
| 35-49 | 154.7 | 112.3 | 137.8 |
| 50-64 | 195.7 | 111.3 | 175.8 |
| 65-74 | 170.5 | 111.6 | 152.8 |
| 75-84 | 228.6 | 113.4 | 201.6 |
| 85+ | 254.3 | 118.1 | 215.4 |
| All ages | 152.0 | 112.6 | 135.0 |
| <u>Males</u> | | | |
| 0-14 | 125.3 | 113.7 | 110.2 |
| 15-34 | 85.0 | 111.7 | 76.1 |
| 35-49 | 157.5 | 111.9 | 140.7 |
| 50-64 | 192.1 | 111.2 | 172.7 |
| 65-74 | 177.0 | 111.5 | 158.8 |
| 75-84 | 241.7 | 113.1 | 213.7 |
| 85+ | 278.1 | 117.6 | 236.5 |
| All ages | 155.1 | 112.0 | 138.5 |
| <u>Females</u> | | | |
| 0-14 | 123.2 | 112.8 | 109.2 |
| 15-34 | 99.7 | 116.3 | 85.7 |
| 35-49 | 153.0 | 112.5 | 136.0 |
| 50-64 | 198.7 | 111.3 | 178.5 |
| 65-74 | 164.7 | 111.7 | 147.5 |
| 75-84 | 219.0 | 113.5 | 193.0 |
| 85+ | 243.5 | 118.4 | 205.6 |
| All ages | 149.9 | 113.4 | 132.2 |

Table 8: Percentage Changes in Quantity of Physician Services (FFs + AP) in Relation to Percentage Changes in Population, by Sex and Age, 1992-2004

| | Population | Physician services | Services per capita |
|-------------------|------------|--------------------|---------------------|
| <u>Both sexes</u> | | | |
| 0-14 | 6.6 | 9.7 | 3.0 |
| 15-34 | 0.5 | -17.5 | -17.9 |
| 35-49 | 29.5 | 37.8 | 6.4 |
| 50-64 | 45.4 | 75.8 | 20.9 |
| 65-74 | 13.1 | 52.8 | 35.0 |
| 75-84 | 49.5 | 101.6 | 34.9 |
| 85+ | 49.7 | 115.4 | 43.8 |
| All ages | 17.5 | 35.0 | 14.9 |
| <u>Males</u> | | | |
| 0-14 | 6.0 | 10.2 | 3.9 |
| 15-34 | 0.5 | -23.9 | -24.3 |
| 35-49 | 30.4 | 40.7 | 7.9 |
| 50-64 | 43.8 | 72.7 | 20.1 |
| 65-74 | 19.0 | 58.8 | 33.4 |
| 75-84 | 57.6 | 113.7 | 35.7 |
| 85+ | 62.7 | 136.5 | 45.4 |
| All ages | 17.5 | 38.5 | 17.8 |
| <u>Females</u> | | | |
| 0-14 | 7.1 | 9.2 | 2.0 |
| 15-34 | 0.5 | -14.3 | -14.8 |
| 35-49 | 28.6 | 36.0 | 5.7 |
| 50-64 | 46.9 | 78.5 | 21.5 |
| 65-74 | 8.3 | 47.5 | 36.1 |
| 75-84 | 44.2 | 93.0 | 33.8 |
| 85+ | 44.6 | 105.6 | 42.2 |
| All ages | 17.5 | 32.2 | 12.6 |

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