



Canada

The Certified Employee Benefit Specialist Program

International Foundation of Employee Benefit Plans

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Readings Update—September 2009

for

GBA 3—Health Care Economics and Issues

First Edition

Modules 1, 8 and 11

The accompanying material updates GBA 3—Health Care Economics and Issues. This Readings Update supplements the Readings Update—March 2009, Readings Update—September 2008 and Readings Update—March 2008. They are required reading for purposes of the CEBS program and are subject to inclusion on the national examination for GBA 3.



Readings Update—September 2009

GBA 3—Health Care Economics and Issues

Module 1—The Relevance of Health Care Economics

1. Learning Guide, replace pages 1.C1-1.C2.
2. Learning Guide, pages 1.C43-1.C47, replace excerpts from “Drug Expenditure in Canada,” 1975-2007, CIHI with excerpts from “Drug Expenditure in Canada,” 1975-2008, CIHI.

Module 8—Impact of Information Asymmetries in Health Care Markets

1. Learning Guide, replace pages 8.3-8.4, Key Concepts.

Module 11—Economic Analysis Techniques and Evaluation Measures Applied to Pharmaceuticals

1. Learning Guide, replace pages 11.13-11.14.

Reading C—Trend Data

Note that this is the most current data available and will be updated as new data becomes available.

A. Excerpts from “National Health Expenditure Trends,” 1975-2008, CIHI

The Canadian Institute for Health Information (CIHI) is an independent, not-for-profit organization that provides essential data and analysis on Canada’s health system and the health of Canadians. Its National Health Expenditure Database (NHED) contains information on all health expenditures in Canada, by spending category and source of finance. Data are extracted manually from diverse public documents, including national and provincial/territorial public accounts and other financial reports. Other sources include private insurance companies, AC Nielsen Canada and Statistics Canada.

- Pages 1.C36-1.C42 provide an explanation of the variables and definitions used in the report. **Read first** as it provides the context for the trend data and also expands upon the introduction to Canada’s health care system by defining the public sector sources of financing, the key categories of health care expenditures that will surface in later modules and various other terms relevant to understanding the structure of the health care system and interpreting expenditure trend data.
- Pages 1.C3-1.C35 provide an overview of national health expenditure trends for both the public and private sectors and some international expenditure comparisons. Candidates are expected to know the approximate magnitude of the national expenditures, the direction of the trends (e.g., Canada’s total expenditures on health have been projected to **increase** to approximately \$172 billion in 2008) and any policy significance addressed (e.g., directional changes in the relationship between public and private financing of expenditures).

Note: On pages 1.C7-1.C8, Canada’s total health care spending is expressed as a percentage of Gross Domestic Product (GDP). GDP is the market value of final goods and services produced within the borders of a country over a period of one year. In expressing increases in “real” and nominal terms, CIHI is trying to isolate the increases due to just utilization changes (“real” rates of increase) as opposed to nominal rates of increases, which are a combination of prices and changes in quantities utilized.

Note: On page 1.C9, regarding total expenditure by source of finance, it should be mentioned that a significant portion of private insurance expenditures are from auto insurance to treat those involved in motor vehicle accidents. Although the number of people involved is not large, the types of injuries sustained tend to be both very expensive and of extended treatment duration. Depending on the province or territory, somewhere between 5-10% of private sector expenditures are borne by auto insurance policies.

Note: Page 1.C33, regarding provincial/territorial government health expenditure by age and sex, it should be noted there are certain age-sex groups that are known to have much higher average health care expenditures than others (e.g., females ages 25 to 55 account for more than 45% of total physician expenditure—This is most likely due to these years including the major child-bearing years for which there are extra expenditures that both younger and older females and males do not experience). Since certain provinces and territories have heavier concentrations of younger people than other provinces and

territories, it makes sense to age-sex adjust so that one can compare per capita expenditures that are reflective of differences in resource commitments, rather than reflecting differences in age-sex distribution in the different provincial/territorial populations.

B. Excerpts from “Drug Expenditures in Canada,” 1985-2008, CIHI

- Pages 1.C43-1.C47 examine the factors that may be influencing the drug expenditure patterns.

Note: Pharmaceutical products are not covered under CHA as “medically necessary” except in the hospital in-patient setting, and the market dynamic that produces pharmaceutical expenditures differs from other health care goods and services. Because of the significant amounts of private drug insurance coverage for those under the age of 65 and widespread provincial/territorial coverage for those over the age of 65, the production and distribution of drugs more closely mirrors supply and demand dynamics for hospital and physician services in the U.S. health care system (i.e., U.S. Medicare mainly covers only those over the age of 65).

Full reports can be found at www.cihi.ca.

Factors Affecting Drug Expenditure in Canada

Numerous factors (see Table 6), many of which are inter-related, may influence drug expenditure. Since drug prices, as measured by several price indices,^{xxi} have been relatively stable over the past 10 years, factors affecting increased drug spending in Canada essentially relate to the volume of drug use and the entry of new drugs (typically introduced to the market at higher prices).

Although some literature exists on the effects of various factors on drug expenditure, more research is required to quantify the effect of each factor and to inform the relationship between drug expenditure and other health care spending.

The following review of some of the factors affecting drug expenditure is intended to facilitate discussion and is not meant to be a systemic review of all relevant literature.

Cost-Related Factors

Although the ingredient prices of drugs, once on the market, are relatively stable, the introductory price and overall cost of drugs may be influenced by several factors. These factors include international pricing, inflation, changes in retail or wholesale mark-ups and other market forces. Market forces can be competitive forces (for example, the introduction of new products can increase drug expenditures while generics can decrease drug expenditure by offering a lower-priced alternative) or regulatory forces (for example, changes in price controls or extending patent legislation that prevents a less-expensive alternative from coming to the market).

Quantity-Related Factors

There are many factors that can affect the quantity of drugs dispensed. A change in quantity can be a result of a change in the number of users or a change in the volume of drugs used.

Population-Related Factors

Population size affects the number of potential users in an area (for example, P.E.I. versus Ontario). Demographics such as age, gender and ethnic distribution, as well as changes in health status, also play a role in determining levels of drug expenditure. Changes in the health status of the population can be the result of the emergence of new diseases, epidemics and changes in the prevalence or severity of existing disease. Typically, healthier populations use fewer drugs.

xxi. For more information on price indices, see the Data Limitations section of the Methodological Notes.

What We Know:

- Drug expenditure rose every year between 1985 and 2008, with an average annual growth rate of 9.4%.
- New drugs are often introduced at much higher prices than existing therapies.⁸
- In 2007, 64 new patented drugs were introduced to the market for human consumption in Canada.⁹
- Since 1988, the price of patented medicines in Canada rose at a lower rate than economy-wide inflation in every year but one (1992).^{9, xxii}
- Some new drugs have reduced overall medical expenditures.^{10, 11}
- An increasing number of drug therapies is being administered outside of the hospital setting, thereby shifting costs from hospitals^{xxiii} to the community (for example, in-home cancer treatments).¹²
- The Canadian population has been growing at roughly 1.1% per year since 1985. The proportion of the population age 65 and older increased by just more than one percentage point between 1997 and 2007.¹³ These changes were gradual and did not have a great impact on drug expenditure.¹⁴

What We Don't Know:

- Whether increases in total drug expenditure negatively or positively affect overall health outcomes.
- Will increased drug use reduce spending in other sectors of health care (for example, decreased hospitalization)?
- To what degree does each of the possible influencing factors discussed in the section above affect drug expenditure?
- How does direct-to-consumer advertising affect the marketplace, prescribing practices, physician–patient communication and the public's understanding of drug therapy in Canada?¹⁵

xxii. For more information on drug prices, see the Data Limitations section of the Methodological Notes.

xxiii. Drugs paid through hospital budgets are not identified separately in the NHEX database but are classified as hospital expenditure.

Health System–Related Factors

The health system also plays a role in drug expenditure. Changes in policies and programs, including regulations around drug plan eligibility and co-insurance, the extent of formulary listings and the availability of and access to third-party insurance coverage can all affect drug spending.⁷ In general, the more accessible and more generous insurance coverage is, the less costly drugs are to the end consumer and the more likely people are to consume drugs.

New Drugs

New drugs introduced to the market have an influence on drug expenditure. New drugs can result in switching between classes of drugs used to treat similar conditions (for example, switching from metformin to rosiglitazone for diabetes) or switching between drugs within a class (for example, switching between the cholesterol-lowering drugs simvastatin and rosuvastatin). Provided there is a difference in price, any switching will affect drug expenditure.

New drugs may be safer or have fewer potential side effects while being an alternative to, or even a replacement for, existing non-drug therapies (for example, surgery). In addition, new drugs may be used to treat or slow the progression of diseases or symptoms of diseases that were previously undertreated or untreatable.

Other Factors

Aside from the development of new drugs, the pharmaceutical industry plays a role in influencing the trends in drug expenditure. Pharmaceutical companies promote their products to prescribers (for example, physicians, dentists, nurse practitioners) and pharmacists through a practice known as detailing, as well as by advertising to the general public, known as direct-to-consumer advertising (DTCA). Although regulated in Canada, Canadians are exposed to DTCA through international media.

Changes in clinical practice guidelines, prescribing practices or consumer preferences can also lead to changes in the amount or types of drugs dispensed. Changes in pharmaceutical care practices by pharmacists can improve a person's compliance with a treatment regimen, resulting in improved health outcomes, improved utilization of first-line therapies (thereby decreasing use of more costly alternative treatments) or decreasing the use of other health care resources that may be more costly, such as hospital visits. Adoption of primary prevention strategies, such as promoting improved diet, exercise or other forms of healthy living, can improve the health status of the population.

Table 6 Factors That May Influence Drug Expenditure in Canada (cont'd)

<ul style="list-style-type: none">• Pharmaceutical Industry<ul style="list-style-type: none">– Development of new drug products (for example, new strengths, new drug forms and presentations)– Promotion of drugs to physicians– Drug sampling– Direct-to-consumer advertising• Practice- and People-Related (health care providers and consumers)<ul style="list-style-type: none">– Changes in prescribing and dispensing practices– Number and mix of prescribers (specialists, general practitioners, nurse practitioners and others)– Multiple doctoring– Consumers' expectations and behaviours– Adherence to treatment
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Table 6 Factors That May Influence Drug Expenditure in Canada

<p>Prices</p> <ul style="list-style-type: none">• Changes in the unit prices of drugs (both patented and non-patented)• Changes in retail and wholesale mark-ups and professional fees• Availability of generics• International prices• Inflation <p>Entry of New Drug Chemicals</p> <p>Volume of Drug Use</p> <ul style="list-style-type: none">• Population-Related<ul style="list-style-type: none">– Changes in population size– Changes in population structure/distribution– Age, gender and ethnicity– Changes in health status of a population– Emergence of new diseases– Epidemics– Prevalence and severity of disease• System-Related<ul style="list-style-type: none">– Changes and transition associated with health system reform– Availability of and access to third-party insurance coverage– Changes in policies and programs– The extent of formulary listings– Eligibility and copayments• Research- and Technology-Related<ul style="list-style-type: none">– New treatment approaches– Drugs replacing surgery– Drug therapy for previously untreatable or undertreated diseases– Availability of more and/or improved diagnostic technology– Outcomes research, evidence-based preventive or curative approaches in diagnosis or treatment– Use of programs and technology in monitoring patients
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Key Concepts

1. Imperfect information
2. Asymmetric information
3. Akerlof's Lemons Principle
4. Inefficiencies of adverse selection
5. Policy solutions for adverse selection
6. Criticisms of experience rating
7. Relationship between consumer information and prices
8. Agency relationship
9. Reputation good
10. Price dispersion
11. Quality indicators
12. McGuire and Pauly's benchmark model of physician's practice
13. Supplier-induced demand (SID)
14. Roemer's Law
15. Target income hypothesis of SID
16. Similarities between inducement and advertising
17. Small area variations
18. Physician practice style hypothesis
19. Social cost of inappropriate utilization

Impact of Information Asymmetries in Health Care Markets

NOTES

5. Consider the following data over five years regarding per case marginal monetary benefits (expected long-term cost savings from reduced followup treatments) and costs of a new type of cardiac stent (i.e., a device inserted in the coronary arteries to keep them open).

Year	Extra costs over existing technologies	Extra cost savings/benefits over existing technologies
1	\$5,000 marginal cost of device	\$ 0
2	0	\$ 850
3	0	\$1,300
4	0	\$1,500
5	0	\$1,800

Assume the discount rate is 3% and that year one costs are incurred at the beginning of the year, while the other costs and benefits are incurred as of the end of the year in which they are listed. Calculate the B/C ratio if the averted costs are considered as a reduction in costs rather than as benefits. What is the lesson learned? (Text, p. 75 and Text Commentary, p. 11.A1)

PV of marginal costs = \$5,000 (i.e., incurred at the beginning of the five-year time period).

PV of marginal benefits

$$= (\$850 \div (1.03^2)) + (\$1,300 \div (1.03^3)) + (\$1,500 \div (1.03^4)) + (\$1,800 \div (1.03^5)) = \$4,876.$$

It is possible to calculate this with the benefits considered as reductions in costs:

$$0 \div (\$5,000 - \$4,876) = 0 < 0.975 < 1.$$

This answer is very different from the calculation when averted costs are considered as benefits rather than reductions in costs. It is important to consider not just the B/C ratio but also the net benefits.

6. Briefly explain how false positives add to the cost of a screening program. (Text, pp. 79-80)

There are unneeded treatment costs with incorrectly diagnosing somebody with a condition they do not have. The major costs of the screening program are related to the unnecessary treatments that accrue to patients who are incorrectly diagnosed to have a disease, reflected by the false positive rate. The CBA of screening programs in which false positive rates are high may indicate net economic losses due to the unnecessary treatment.

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