PharrnacoEconornics 5 (4): 278-285, **1994** 1170- *7690/94/(XX)4-02781$04.OO/0*

Pharmaceutical Price Review in Canada

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Prior to 1987, Canada sought to moderate the prices of patented medicines by means of compulsory licences to increase competition. Since 1987, Canada has strengthened patent protection of pharmaceutical products. It has also created the Patented Medicine Prices Review Board (PMPRB) to ensure that the price of patented medicines is not excessive. The regulation of drug prices is a subject of international debate, in particular in the US in the context of the reform of healthcare and in Europe with the formation of a single European market. Canadian experience is relevant to both initiatives.

Both the federal government and the governments of the Provinces affect the prices of medicines in Canada. The particular features of the intervention of these governments have varied over time, but the fundamental pattern is constant: the federal government regulates the prices of patented medicines by its use of the Patent Act for which it is responsible, while provinces affect the prices of medicines through their reimbursement programmes.

These roles are based on the powers established for the 2 levels of government by the Constitution Act of 1867. Section 91(22) gives the federal government control of patents amongst its enumerated powers. Section 92(13) gives the provinces responsibility for 'property and civil rights'. Thus, commercial matters, including the power to control prices, are generally a provincial responsibility, but the federal government's enumerated powers exclude provincial competence even when these powers intrude into the general fields that the Constitution gives the provinces. The Constitution also allots healthcare as a provincial responsibility.

1. *History*

The use of the Patent Act to affect the prices of patented medicines in Canada has its origin in 1923 when the Act was amended to permit compulsory licensing to manufacture patented medicines in Canada virtually as a matter of right. This measure followed the introduction of compulsory licensing for medicines and food in the UK in 1919, a mea- sure widely adopted throughout the British Commonwealth. Compulsory licensing had little effect on competition in the market for medicines in Canada, because the small size of the Canadian market relative to economies of scale in the manufacture of fine chemicals to which the patents applied made manufacturing in Canada generally unprofitable.

Concern with the prices of medicines in Canada in the 1960s led to 3 inquiries, each of which concluded that prices were too high, and proposed a range of patent and tax measures to address this perceived problem (Canada Department of Justice Restrictive Trade Practices Commission 1963; Canada, House of Commons, Special Committee on Drug Costs and Prices 1966; Canada Royal Commission on Health Services 1964). The principal result was an amendment to the Patent Act in 1969 permitting compulsory licensing to import. This measure, in addition to the wording of the Act respecting royalties, led to a significant growth of companies selling generic products under compulsory licences as well as drug products without

patents. These products have chiefly been manufactured with imported active ingredients, but some manufacturing of fine chemicals under compulsory licences has also developed.

The Act directed the Commissioner of Patents to set royalties for compulsory licences with regard to the desirability of making the medicine available to the public at the lowest possible price consistent with giving the patentee 'due reward for research leading to the invention' .The wording of the Act led the Commissioner of Patents to consider only the research expenditures incurred prior to the award of the patent. This resulted in a royalty rate of 4% of the value of sales since that time on virtually all such licences.

Two of the companies manufacturing generics, both owned in Canada. grew rapidly and were the first and second largest companies in the country in terms of scripts sold, and fifth and eighth largest in value of sales by 1992 (Canadian Pharmaceutical Industry 1992 Year in Review 1993). Generic firms accounted for 7% of value of sales of all medicines in that year.

The competition introduced by compulsory licensing was estimated to reduce the total Canadian drug bill by $Can211 million out of total sales of all medicines of approximately $Can 1.56 billion in 1983 (Commission of Inquiry on the Pharmaceutical Industry 1985). The value of sales of only patented medicines at the time is unknown. but may have been about half of the total. Sales of generic products under compulsory licences produced very significant reductions in the market share of patent- holding companies for many of their most important products.

Concern about the appropriateness of Canadian policy led to the appointment of a Commission of Inquiry on the Pharmaceutical Industry which recommended. amongst other things, that royalties should be increased and channelled to fund research on medicines in Canada and that a minimum period of exclusivity of 4 years be established after the first Notice of Compliance (NOC) for a patented medicine before compulsory licences could be exercised and generic versions sold.

Amendments to the Patent Act were passed at the end of 1987 after contentious debate among the public and in Parliament. These amendments consisted chiefly of establishing periods of exclusivity of 10 years after the NOC for the first patent on an active ingredient for medicines imported under compulsory licences, and of 7 years for medicines manufactured in Canada under compulsory licences. Medicines invented and developed in Canada could not receive compulsory licences to import, but compulsory licences to manufacture in Canada could be exercised 7 years after the NOC unless the patentee made the medicine in Canada. Given the length of time it took to obtain an NOC, a 10-year period of exclusivity after the NOC on average approximated the protection from competition given by the 20-year life of the first patent.

In view of widespread concern that these amendments would cause the prices of medicines to rise unacceptably, the PMPRB was established to en- sure that the price of no patented medicine was 'excessive'.

These 1987 amendments were an attempt to balance considerations respecting the protection of intellectual property in Canada, the encouragement of research and development in Canada, international negotiating pressure and concern for the cost of the healthcare system. The Pharmaceutical Manufacturers Association of Canada, which includes most of the patent-holding companies, nearly all of which are not Canadian-owned, had undertaken to raise the research and development to sales ratio for patentees in Canada from less than 5% in 1984 to 8% in 1991 and 10% in 1996.

The regulatory scheme has been accompanied by a number of legal challenges including one to the constitutionality of compulsory licensing of medicines itself. The grounds for the latter case included the contention that the federal government was removing property rights that were within provincial jurisdiction. However, the judgment held that modifying the terms of the temporary monopoly given to medicines by patents through the use of a system of compulsory licensing was an integral

part of the patent power (Smith Kline & French Laboratories Ltd. 1985).

The most recent change in the Patent Act was the abolition of compulsory licensing of pharmaceuticals in early 1993 so that Canadian law would clearly accord with the so-called 'Dunkel' draft of the General Agreement on Tariffs and Trade (GATT) and with the proposed North American Free Trade Agreement (NAFTA). The new law also exempts pharmaceutical patents from the general provisions of the Patent Act which permits compulsory licencing when the patentee does not work the invention on a commercial scale in Canada.

2. *The Patented Medicine Prices Review Board*

2.1 Mandate

The mandate of the PMPRB is to ensure that the price of no patented medicine is deemed excessive in Canada. It also reports to Parliament on the trend in prices of patented (and indeed all other) medicines in Canada, and on the ratio of research and development expenditures to sales by patentees as a group and by individual companies.

The Board does not regulate the prices of drugs directly, but reviews prices after the products have been sold in Canada so as to ensure that these prices are not 'excessive' (see below). It is a quasijudicial tribunal that is empowered by the Patent Act to take certain measures if it finds that a patentee is selling a medicine in any market in Canada at an excessive price. The Board's staff have always been prepared to give advice on pricing questions before a product was put on the market. Since 1993, the Patent Act has provided that the Board itself may issue a nonbinding Advanced Ruling Certificate if it is satisfied that a future price would not be excessive.

2.2 Assessing Prices

An excessive price is a concept that exists no- where else in Canadian law. The law does not de- fine what constitutes excess, but lists factors that the Board is to take into account. The primary factors are the price at which the medicine has been sold in the past, the prices of other medicines in the same therapeutic class, the prices of the same medicine and of other medicines in the same therapeutic class in other countries, and changes in the Consumer Price Index (CPI). If the Board is unable to make a determination based on these factors, it may take into consideration the costs of producing and marketing the medicine and any other relevant factor.

The Patented Medicines Regulations specify 7 countries with whose prices the prices of medicines patented in Canada are to be compared by the Board: France, Germany, Italy, Sweden, Switzer- land, the UK and the US. The Regulations also establish how patentees report every 6 months on the price of each drug product by region and by class of customer in Canada and the prices in other countries. The prices in Canada are actual average trans- action prices; the prices in other countries are list prices.

2.3 Compliance with Guidelines

From its inception, the Board adopted a policy of voluntary compliance under which it expects patentees to set prices that are presumed not to be excessive. To enable patentees to do this, the factors in the Act were interpreted in guidelines which provide clear and simple criteria for pricing.

For the purposes of these guidelines, the Board distinguishes between drug products already on the market (existing drug products), and newly introduced drugs. The price of an existing drug product would be judged as excessive if it increased faster than the CPI since its introduction at a price not considered to be excessive (the so-called bench- mark price).

New drugs are separated into 3 categories to which different guidelines apply.

Line extensions, which are new strengths or comparable dosage forms of existing drug products, must have prices within a reasonable price relation- ship with existing drug products in terms of the price per kilogram of the active ingredient: basically, this price must not rise for larger dosages.

The prices of new drug products that are the first to treat patients with a particular indication effec-

tively, or that bring a substantial therapeutic improvement, may not exceed the higher of the prices of all other drugs in the same therapeutic category in Canada, and of the median price of the same drug in the 7 countries listed in the Regulations.

Other drugs, which may bring some improvement, are limited to the prices of existing drug products in the same therapeutic category in Canada. New patented medicines with multiple indications are compared with other medicines on the basis of the indication for which the medicine offers the greatest therapeutic advantage in a significant patient population.

The Board has adopted the Anatomical Therapeutic Chemical classification system (ATC) as a basis for identifying therapeutically comparable drugs. In 1993, the Board published a modification of the ATC classification to apply to drugs and their indications approved in Canada. The Board receives advice on appropriate categories, comparable drugs, dosages and courses of treatment from committees of independent scientific experts. As part of its purpose to provide clear guidelines, the Board wishes to establish criteria to identify those medicines that fall into the category of break-throughs, or constitute substantial therapeutic improvement. To provide firmer definition to these criteria, the Board publishes lists of medicines it considers to fall in that category, together with a description of their attributes and uses and, amongst these, those that warranted inclusion of each medicine in the category (Patented Medicine Prices Re- view Board 1992a, 1993a).

2.4 Enforcing the Guidelines

The guidelines only establish a presumption that a price is or is not excessive and do not fetter the discretion of the Board in the exercise of its quasijudicial function should it examine a particular case in a formal hearing. In its first 5 years, the regulatory mechanism functioned entirely voluntarily, thereby avoiding the delays and costs of formal hearings.

However, should the Board find in a formal public hearing that the price of a medicine was excessive, it could issue an order directing the patentee to lower the price to a level that was not excessive. It could also issue a directive to further reduce the price of that medicine or another patented medicine of the same patentee, so as to recover any excess revenue that might have been earned. Alternatively, it could order that the patentee pay to the federal government the excess revenue which may then be shared with provincial governments. Where the Board is of the opinion that a patentee has engaged in a policy to sell at an excessive price, the sum recaptured may be doubled. The order to re- capture excess revenue can be applied to persons who are no longer patentees if the Board commences proceedings within 3 years. Should the order not be followed, the patentee or former patentee is exposed to specified fines and imprisonment and to being found guilty of con- tempt of court. Such sanctions are also available should a patentee fail to follow an order to file the information specified in the Regulations.

Under the Board's procedures for compliance, the Board staff examine for consistency with the guidelines the data on prices that are periodically received. If a price is above that outlined in the guidelines, the patentee is given an opportunity to undertake to adjust the price into conformity. Over l00 such undertakings have been made, in themselves alone bringing a saving to purchasers of $Can28 million by the end of 1992 (Patented Medicine Prices Review Board 1994). If such an undertaking is not made, the Board may decide to issue a Notice of Hearing and proceed with a formal case.

So far only two Notices of Hearing have been issued. The first matter was resolved in 1993 by a formal voluntary compliance undertaking, accepted by the Board, whereby the former patentee, who had dedicated the patent, made a payment to the Crown of $Can 1.755 million (Patented Medicine Prices Review Board 1993b). The second matter is ongoing. Five other cases were settled in 1993 be- fore the issuance of Notices of Hearing by payments to the Crown of $Can4.7 million and some

price reductions (Patented Medicine Prices Re- view Board 1994).

The prices of approximately 800 patented products are reviewed by the Board, of which 100 or so are new drugs introduced during the course of the year. In 1992, the value of sales of all patented drug products by patentees to hospitals, pharmacies, wholesales and sales to other customers was $Can2.1 billion, or 44% of sales of medicines in Canada of $Can4.8 billion (Patented Medicine Prices Review Board 1992b).

2.5 Effectiveness of the Board in Ensuring That Prices are Not Excessive

It is fair to claim that the Board has been successful in limiting increases in the price of drugs in Canada. The increase in drug prices was the issue that dominated debate in Parliament in 1987 on proposed changes in the Patent Act. The regulation of the prices of these drugs was the first task undertaken by the Board, because spending on existing drugs necessarily constituted the largest part of the drug bill in the early years.

The success of the Board in limiting the maxi- mum increase in price of each existing patented drug product to changes to the CPI has meant that the average increase has been much below that of the index. From January 1987 to December 1992, the prices of such drugs increased by an annual average of2.9% compared with the 4.2% permitted by the guidelines. This rate of increase was less than that during the 5 years before the Board's establishment, when the average increases in drug prices consistently exceeded that of the CPI by a wide margin, a relationship that also occurred in the US. Furthermore, the rate of increase in the prices of nonpatented products has somewhat exceeded that of patented medicines which are under the Board's jurisdiction.

The generally acknowledged success of the Board in restraining increases in prices naturally turned public discussion of the Board's effectiveness to emphasise the prices of new drugs. The prices of a few of these drugs are many times greater than those of older products in Canada, as elsewhere, and are a major source of increase in the drug bill.

The costs of the drug reimbursement programmes of provinces and private insurers have been increasing at over 10% each year in real terms in Canada, as in most countries, and have given rise to profound concern. A 1992 study of the costs of a private nonprofit insurer drew particular attention to this phenomenon and its causes (Green Shield Prepaid Services Inc. 1992). It estimated that increases in the insurer's costs per claim from 1987 to 1991 was attributable to the substitution of new for older medicines in prescriptions (43%), the increase in the prices of existing medicines (42%), larger prescription sizes (13%) and a change in the mix of existing medicines (3%). Its measure of change in the prices of existing patented drugs con- firmed the effectiveness of the Board in regulating the prices of those drugs and pointed to the important role of new medicine prices in elevating drug costs.

The effectiveness of the PMPRB in ensuring that the prices of new medicines are not excessive is to some extent conjectural, because it is difficult to determine what prices would have been in the Board's absence. Nonetheless, it is clear that the PMPRB has exerted a downward pressure on these introductory prices. There was a tendency in Canada before the Board was established (and it persists in the US) to introduce new medicines that brought only moderate or slight improvements, at higher prices to those of existing medicines. That was no longer possible under the guidelines, which were criticised especially strongly for this feature by patentees.

The Board has ensured that the prices of new patented drugs accord with the guidelines. In 1990 and 1991, 30 to 40% of the introductory prices of the 100 or so new medicines introduced appeared to exceed the guidelines, although mostly by small amounts, which were subsequently reduced in response to Board action.

Further evidence of the Board's effectiveness is to be found in a study undertaken by the US General Accounting Office (1992a) in response to a

request of the US Senate's Special Committee on Aging that is concerned with the costs of health- care, including the prices of drugs. With respect to the prices of existing drugs, the Report found that '... our statistical analysis suggests that, relative to US drug prices, the Canadian prices of some drugs, subject to the Board's Review, were on average one-third lower ~an had there been no Board'.

On the introductory prices of new drugs, the Report is more tentative: 'While our statistical analysis suggests that introductory prices, at least on some drugs, are lower than they would have been in the absence of the Board, this finding is based on a small sample and may not be generalisable to all drug prices'.

Another study of the General Accounting Office reported on the difference between the factory prices in the US and Canada of 121 of the 200 most frequently dispensed prescription drugs in the US (US General Accounting Office 1992b). It showed that the cost of purchasing a common US prescription of these 121 drugs was 32% higher in the US than in Canada and that 81% of the drugs were more expensive in the US. The most relevant passage to the role of the Board was: 'Our statistical analysis shows that price differentials are higher for drugs under the PMPRB's jurisdiction. This analysis controls for other factors that may affect the drug price differentials, such as the drugs' therapeutic category and availability of generic substitutes'.

It was noted in section 2.1 that the Board reports annually to Parliament on the research and development expenditures of patentees. The Board has no responsibility for research and development performance in Canada beyond the reporting function. The record shows that the research and development to sales ratio of patentees, which was about 5% in 1987, nearly reached 10% in 1991 and 1992.

3. *Current Issues*

The substance of the guidelines was published in the middle of 1988 (Patented Medicine Prices Review Board 1988) and came into force for existing medicines in 1989, but the base period to which prices were to be adjusted was 1987, the year in which the Patent Act was amended. The guidelines for new drugs came into force in 1990, but applied to all medicines introduced after 1987. Over the years, the guidelines have been refined with respect to their interpretation and application, but remain essentially unchanged.

A review of experience with the guidelines in late 1992 identified 2 possible shortcomings. One was that a substantial range of possible future price increases existed for some of the existing drug products which had not taken the full permissible cumulative increase in previous years. This gap between actual price and ceiling was increasing year by year and raised the possibility of unacceptably large increases in future years.

The other perceived shortcoming was that Canadian prices were not converging toward the international median. This seemed to the Board to be contrary to the intent of Parliament, reflected in the Act, that Canadians pay their international share, but not more, of the cost of discovering and developing new medicines. An international comparison of 124 new drug products introduced in Canada in 1990 and 1991 (Patented Medicine Prices Review Board 1993d) showed that the prices of those products bringing substantial therapeutic improvements accorded on average with the international median, but that those bringing less improvement exceeded the median by an average of 20%.

The reason for this dichotomy appeared to be that the guidelines limited the introductory price of products bringing only moderate improvements or less to those of existing drug products in the same therapeutic category in Canada. Some of these prices may have been high by international standards when the comparable products were originally introduced. However, in addition, they may have become so with time because the maximum permissible price increase in Canada under the guide- lines exceeded those permitted in most European countries. The products bringing substantial improvements were in most cases limited by the guidelines to the median international price.

After full consultation with all interested parties, the Board amended the guidelines to limit the

increase of each drug product to the cumulative change in the CPI over the previous 3 years. In no case may the annual increase exceed the higher of 1.5 times the expected rate of inflation, or 5%. The amendments also added to existing guidelines a provision that the price of no drug product in Canada may exceed the prices of the same drug in all the 7 comparator countries. This guideline applies to both new drugs and drugs already on the market, with a period of adjustment for the latter. The prices in Canada of a substantial number of drugs are today the highest in the world. If this rule had been in place in the period from 1990 to 1992, the average price of new drugs in Canada would have been at about the international median.

4. *Canadian Provincial Drug Plans*

The 10 provinces and 2 territories in Canada exercise their constitutional responsibility for health in part by means of reimbursement plans for drugs. These vary considerably from one jurisdiction to another and evolve over time (Health and Welfare Canada 1990).

Some provincial plans reimburse the drug costs of all their residents, but their copayment requirements differ. Some cover only some categories of residents, typically the elderly and those on social assistance. Some pay the actual acquisition costs for pharmacists; others have formularies stating the price to be reimbursed. Some have limited lists; others do not. All provinces and territories pay for hospital drug expenditures. The populations covered account for about 50% of the sales of medicines and the formulary prices also indirectly determine the drug costs of third party payers and of the uninsured. The prices at which patentees sell to pharmacies do not vary significantly across the country. Considerable literature exists which describes and evaluates the effects of different features of provincial plans (Anis 1992; Gorecki 1986a,b, 1992, 1993).

The extent to which the price of drugs has been affected by the monopsony power of provincial public drug plans in Canada has not been estimated. Budgetary constraints have given incentives to limit expenditures on medicine. In earlier years, provinces with formularies typically accepted the prices set by manufacturers, but decided whether to list particular drug products as eligible for provincial reimbursement. A partial exception was Saskatchewan which negotiated exclusive contracts for the entire provincial consumption of 6 major medicines and obtained low prices.

As financial pressures increase, provinces have become involved in directly affecting prices. Two recent examples are Quebec's decision not to list products in its formulary if the prices in this province exceed the lowest price in Canada, and Ontario's present freeze on all prices in its formulary. Copayments by the consumer have also been established or increased in some provinces as a means of raising revenue, and perhaps of affecting demand.

The interest of provincial ministers of health in patented drug prices has been recognised in the Patent Act which gives them the right to intervene in hearings by the Board and to be consulted on changes to the Guidelines and Regulations.

5. Conclusion

The joint effect of provincial measures respecting the prices of reimbursed medicines and of the PMPRB have undoubtedly reduced the price of medicine in Canada. Nevertheless, the average price of patented medicines is higher than in all but the US and Germany among the 7 industrialised countries listed in the Regulations. It is the Board's expectation that its regulatory activities will cause prices in Canada to converge gradually to the median level in the 7 countries.

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