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SENT VIA E-MAIL (douglas.clark@pmprb-cepmb.gc.ca)

Mr. Douglas Clark
Executive Director
Patented Medicines Price Review Board
Standard Life Centre
333 Laurier Avenue West Suite 1400
Ottawa, Ontario, K1P 1C1

Dear Mr. Clark:

The purpose of this document is to provide the views and recommendations of Merck Canada Inc. (Merck) on the *Patented Medicines Price Review Board (PMPRB) Guidelines Modernization - Discussion Paper* (Discussion Paper), released in June, 2016. The Discussion Paper raises a number of questions that will inform the policy debate with regard to the merits for changes of the current PMPRB guidelines and mandate. Merck would like to thank the PMPRB for the opportunity to provide feedback and participate in the public consultation process about to commence.

As we enter into this dialogue, it is important to note that the policy objective of the PMPRB to date has been largely achieved as Canadian prices for patented medicines remain below the international median. We look forward to continued engagement with the Board and other stakeholders during this very important discussion as the outcome of this consultation could have a significant impact on both patient access to innovative medicines and healthcare system sustainability.

We would also like to highlight our support of the submissions to the PMPRB by Innovative Medicine Canada (IMC) and BIOTECanada (BTC). Merck agrees with IMC and BTC that the assumptions and rationales for any proposed changes in the Discussion Paper should be supplemented by evidence as well as insights and perspectives brought to the policy discussion by all stakeholders.

The issues and questions raised in the Discussion Paper are broad and encompassing. In markets across the globe today, continuing budget pressures are motivating payers to make pricing and formulary decisions for innovative medicines based on the perceived affordability of new therapies, rather than primarily focusing on the value that the health technology provides. Merck believes the PMPRB public

consultation requires a common and balanced understanding of the current drug spending and pricing environment in Canada. In addition to dialogue on the 12 questions posed by PMPRB, we would suggest that the discussion should begin with these four fundamental questions:

1. **Is there clear and consistent evidence that current prices of innovative medicines in Canada are actually higher and rising faster than international comparators?**

    - Merck believes that the fuller breadth of evidence, as outlined in the Question 1 section of this paper, does not support the PMPRB claim that Canadian prices "have been steadily rising relative to prices in the PMPRB7." Prices for innovative patented medicines for which there is no generic equivalent (i.e. true market exclusivity) actually rank below the international median. As a first step, we propose that more work be done to align on an assessment of the current environment and definition of the "problems" that need to be addressed.

2. **Should the PMPRB mandate change from ensuring that list prices of patented medicines are not "excessive" to a mandate that is based on affordability of medicines?**

    - Merck believes that drug affordability is more appropriately addressed within the mandate of payers and that the PMPRB mandate should remain focused on ensuring that list prices established in Canada are not excessive. Additionally, the Canadian pricing and reimbursement environment has evolved tremendously and has become more effective in reducing prices to make innovative medicines more affordable, and several indicators point to continued progress. Merck, along with IMC and BTC, acknowledges that there remain gaps in affordability for some Canadians (i.e. non-insured or underinsured). We commit to work alongside Canada's governments as meaningful partners to address this problem.

3. **Does differential pricing create more value than transparent pricing in terms of access to affordable innovative medicines?**

    - Merck believes that differential pricing has greatly contributed to enhanced access to innovative medicines and the sustainability of public drug benefits, and should be recognized by policy makers for healthcare in Canada as such. The practice forged together between provinces and manufactures of entering into product listing agreements (PLAs) has significantly enhanced drug affordability to public payers. Specifically, the practice of confidentially of pricing terms within these PLAs has been a critical enabling factor that should be preserved going forward within the pricing environment of Canada.

      In their own way, privately funded drug plans also have mechanisms to work with innovative medicines companies in a business-to-business relationship to negotiate PLAs to benefit their clients in a highly competitive marketplace. In the last 5 years, substantial progression has been observed throughout health insurance plans with regard to the breadth and depth of the tools they have implemented to manage spending in the drug benefit.

In principle, we support differential pricing for public payers, including hospitals and public health, as well as, private payers, who have their own capability to work with innovative medicines companies to negotiate drug price to benefit their clients. We believe that stakeholders influential to healthcare policy also should continue to adopt the merits of differential pricing.

4. **As changes to modernize the PMPRB Guidelines are considered, how can PMPRB preserve a fair and predictable pricing and reimbursement environment that fosters access to innovative medicines for patients?**

   - Merck believes that changes to the PMPRB Guidelines need to maintain a fair and predictable pricing environment. Potential changes to reduce pricing thresholds for patented medicines should not replace nor duplicate the actions payers are taking to ensure drug affordability to individuals facing challenges due to lack of or insufficient drug coverage in Canada. Solving these challenges will require collaboration among all stakeholders: the federal, provincial and territorial governments, the private insurers, and the pharmaceutical industry.

     We note that the PMPRB plans to establish working groups for the final phase of consultations. We strongly believe that these working groups should be established earlier on, in order to facilitate a common understanding of the data sources and definitions, the rationale for specific changes in each of the issue areas, and practical issues related to Guidelines implementation. This will allow Merck as well as other health system stakeholders to provide more informed and meaningful input.

For 125 years, Merck has focused its efforts on patients with a clear goal of saving and improving lives. Merck has been, and will continue to be, a strong and proactive contributor to practices and policies which help ensure that innovative medicines are available and affordable to patients and payers in Canada. We look forward to participating in the public consultation with regard to the PMPRB mandate and Guidelines.

Best regards,

Tama Donoahue-Walker
Vice President
Patent Access & Pricing

Merck's Response

Merck's response is organized into the following three sections:

- Value of Innovative Medicines Innovation & Research
- Evolution of the Pricing & Reimbursement Environment in Canada and Implications
- Discussion of Key Questions at the Forefront of the Public Consultation:

    1. Is there clear and consistent evidence that current prices of innovative medicines in Canada are actually higher and rising faster than international comparators?

    2. Should the PMPRB mandate change from ensuring that list prices of patented medicines are not "excessive" to a mandate that is based on affordability of medicines?

    3. Does differential pricing create more value than transparent pricing in terms of access to affordable innovative medicines?

    4. As changes to modernize the PMPRB Guidelines are considered, how can PMPRB preserve a fair and predictable pricing and reimbursement environment that fosters access to innovative medicines for patients?

Value of Innovate Medicines Innovation & Research

I. Value of Innovative Medicines

Essential to a strong health care system in Canada is the rapid introduction and access to innovative medicines. At Merck, we are committed to working collaboratively with governments, patients, caregivers and other stakeholders to discover, develop and implement health solutions that improve patient outcomes in a manner that is consistent with health system sustainability.

Merck understands governments' need to receive good value from their investments in medications, and is committed to demonstrating how its innovations are making a difference, both in terms of health outcomes and economic impacts.

Merck globally invests billions of dollars each year in research and development, allowing our scientists to focus on discovering medicines and vaccines that address some of the leading causes of illness and death around the world. For example, Merck has introduced breakthrough innovations that make a real difference for patients living with life-threatening diseases like cancer, heart disease, and infectious diseases such as Hepatitis C, HIV, Ebola and drug-resistant pathogens, including improvements in quality of life. Merck also develops and commercializes a range of childhood, adolescent and adult vaccines, which prevent Canadians from contracting infectious diseases, i.e. prevention of cervical cancer. Working with payers and patients, Merck aims to ensure its treatments are accessible and affordable, while recognizing the need to fund future innovation that will lead to new breakthrough therapies and vaccines.

Merck is committed to getting new medicines and vaccines to all patients in Canada including those who do not have prescription drug or health insurance coverage and who, without assistance, cannot afford their Merck medicines and vaccines. In addition to working with public and private payers to ensure rapid listing and reimbursement of new medicines, Merck also is proactive developing programs for patient access while reimbursement is being pursued. This goal is achieved through a broad range of patient assistance programs (PAPs) that provide support services provided through third-party organizations which offer access for eligible patients. The PAPs are customized locally to reflect differing healthcare systems. They include a variety of initiatives designed to support those in need, such as access programs for specific medicines and therapeutic areas, co-payment assistance programs, patient navigation programs and telephone access to registered nurses.

While Merck strives to develop its medicines as safely and quickly as possible so that patients in need may access them, there is a delay between the time that a promising treatment is discovered and its authorization for sale or use in Canada. In cases where diseases are immediately life-threatening and alternatives for treatment are either completely absent or have been exhausted, Merck tries to help. If a Merck medicine in development has shown what appears to be a favorable benefit/risk profile in an indication and access to clinical trials is not possible, Merck may create an Expanded Access Program (EAP). Additional information about the company's EAP policy is available on Merck.com.

Despite these efforts, Merck acknowledges and recognizes more needs to be done to create rapid access to and affordability for introduction of innovative medicines in Canada. Merck is committed to continuing to do its part to ensure patients receive the best possible care. By striking the appropriate balance between access and innovation, it will be possible to continue to introduce innovative health technologies that prevent and treat serious diseases.

II. Research & Development Reporting

One component of PMPRB's mandate today, in addition to ensuring non-excessive drug prices in Canada, is the collection and reporting of R&D investment in Canada. Within the public consultation on PMPRB modernization, in addition to the appropriate administrate elements of R&D reporting, the relevance of R&D investment in Canada to pricing regulation vs. broader healthcare policy will undoubtedly be an area for discussion. Merck supports the IMC and BIOTECanada position that PMPRB's mandate to report on R&D is based on a definition which is out of date and a research model that has evolved.

The 1987 Income Tax definition of R&D used by PMPRB focuses on R&D done within a company selling products. However, our R&D approach has shifted from conducting in-house research to forming partnerships with Canadian universities, hospitals, and biotech businesses, and includes, venture capital investments and clinical trials. As such a significant portion of these investments do not meet the PMPRB's definition and therefore are not reported by them.

Merck supports using the platform of the Federal Innovation Agenda, outside of the PMPRB's mandate for regulating non-excessive drug pricing, as an opportunity to develop a forward-looking strategy for establishing appropriate goals and metrics for biotechnology and pharmaceutical innovation as an alternative to the outdated PMPRB approach to reporting of R&D spending.

Evolution of the Pricing & Reimbursement Environment in Canada

The "eco-system" for pricing and reimbursement has evolved tremendously, both globally and within Canada, to ensure access to innovative medicines while managing drug spending and affordability of medicines. This evolution has contributed greatly to enhanced access and to affordability of new innovative medicines. Going forward, it will be critical that modifications to PMPRB Guidelines, therefore, work to complement and comply with practices within this eco-system versus potentially introducing unintended consequences.

As stakeholders engage in a public consultation regarding the need for change in healthcare policy and specifically modernization of the PMPRBR guidelines, it is important that a balanced and common understanding of the current drug spending and pricing environment in Canada is shared across stakeholders. Appendix A - Evolution of Pricing & Reimbursement in Canada - provides the trends observed and data sources that support the following conclusions on the current pricing and reimbursement environment:

- In 2015, growth in drug spending in Canada reached a long-term low of 1.7% for all drugs[1] (9.4% for patented drugs[2]); lower in both hospital and physician spending and growth in spending.
- Use of generics now exceeds that of innovative medicines by a factor of 2 : 1 representing significant savings in drug spending versus 2007 when generic use was equal to that of innovative medicines.[3]
- Since 2010, patent expirations for drugs representing more than $11.2B of drug spending contributed to significant reductions in drug spending.[4]
- Continued introduction of biosimilars, supported by appropriate policies to encourage the use of biosimilars, is likely to lead to further substantial reductions in drug spending in Canada as use of biologics now represents greater than 20% of drug spending.
- Differential pricing via PLAs has become an established practice with public payers, contributing to enhanced new drug access & improved sustainability in drug benefits in Canada.
- Establishment of the pan Canadian Pharmaceutical Alliance (PCPA) in 2010 has led to significant incremental reductions in drug spending in Canada.[5]
- Private payers have implemented multiple tools to manage drug spending in Canada, including PLAs, mandatory generic substitution, special authorization processes and preferred provider networks.
- Greater globalization of drug pricing, including price referencing of Canadian list prices versus eight other international countries, creates an important consideration for the launch timing and pricing of new innovations in Canada. Specifically, Canada has become an important drug market referenced now by other countries with combined drug budgets 1.5 times that of Canada. Any changes to PMPRB Guidelines must be considered with regard to impact on other areas of the eco-system and potential for unintended negative consequences that might impact access to new innovative medicines.

These trends, when considered in aggregate, provide strong evidence that underlying practices are being established and are indeed working to help ensure a drug pricing and reimbursement environment in Canada that allows for improved access to innovative new medicines while continuously working to ensure appropriate value for monies spent, and ultimately greater drug affordability. A common appreciation for what is working in today's eco-system, as well as the evolved role of the payer in terms of ensuring drug affordability, is important as we look to make decisions on the modernization of PMPRB Guidelines.

To date, PMPRB has played a complementary role within this eco-system by establishing non-excessive prices versus international comparator countries and the relative value of existing drug treatment alternatives in Canada. This non-excessive price ceiling is then the starting point for payers as they determine the appropriate coverage conditions for a new medicine and any subsequent terms to be negotiated between the payer and manufacturer for reimbursement. Going forward, it will be important that the role of the PMPRB and any subsequent modernization remain complementary and not duplicative nor overlapping with the role of payers and HTA contributors, such as, Canadian Agency for Drugs and Technologies in Health (CADTH) and Institut national d 'excellence en santé et en services sociaux (INESSS) within this evolved eco-system. Equally important will be the preservation of an environment in Canada that encourages rapid access to innovative new medicines for consumers.

QUESTION # 1

Is there clear and consistent evidence that current prices of innovative medicines in Canada are actually higher and rising faster than international comparators?

In the Discussion Paper, the PMPRB states that the rationale for this consultation is that Canadian prices "have been steadily rising relative to prices in the PMPRB7".[6]

To validate whether this assessment by the PMPRB is indeed correct, Merck notes findings reported in the following three data sources:

1. The PMPRB Annual Report 2015 (released in July 2016)[7]
2. International Price Comparison of Patented Medicines in Canada by IMC (April 2016)[8]
3. Exchange Rate Assessment by PDCI (October 2015)[9]

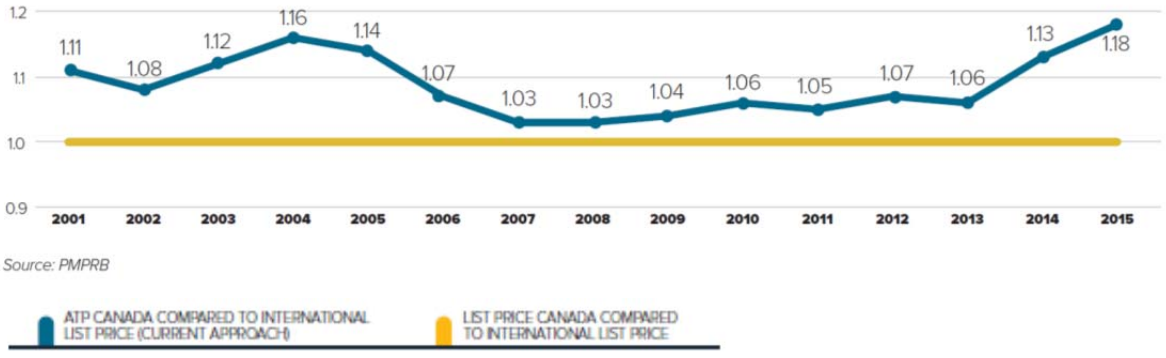
We would propose, as outlined below, that the data from these three analyses do not support the assessment by PMPRB that Canadian prices "have been steadily rising relative to prices in the PMPRB7".[10] Instead, after removing branded medicines, for which generic competition exists in Canada, prices for single source innovative medicines appear to be below the international median.

A review of these data sources demonstrates the following:

1. ***The PMPRB's Annual Report 2015 shows that Canadian prices are actually declining relative to G7 countries:***

   According to the latest PMPRB Annual Report, prices in all seven of the other comparator countries increased relative to Canadian prices from 2013 to 2015.[11] Canadian prices are actually declining relative to all seven countries and Canada is now tied for third and fourth highest behind Germany and the United States versus third highest in 2014. These data are consistent with the trend that since 2001 Canadian prices on average have been consistently below the median international prices (18% below in 2015) as shown below:

Figure 1 Average Ratio of Median International Price (MIP) to Canadian Price, at Market Exchange Rates, 2001–2015



In its Strategic Plan, released in December 2015[12], the PMPRB states that Canadian prices are projected to surpass those in Germany, and therefore, become the 2nd highest price country only

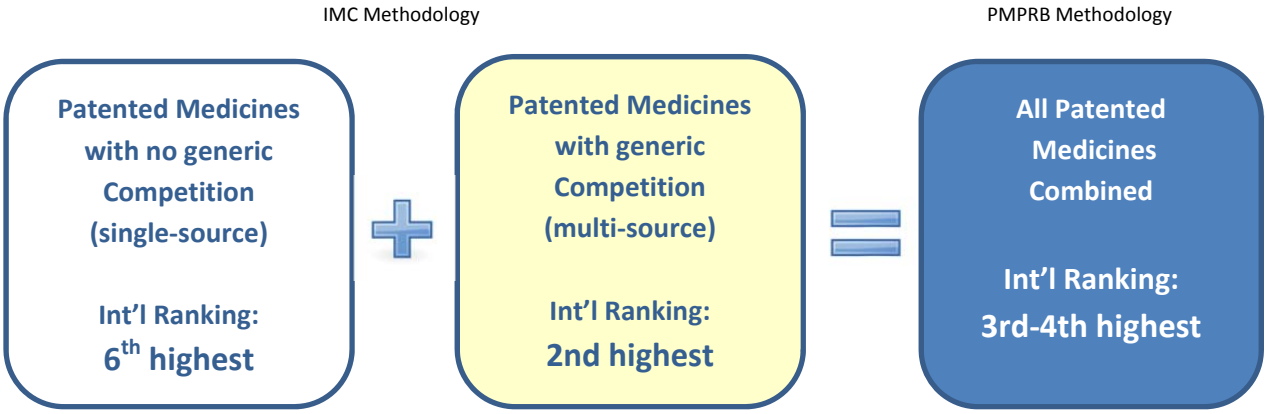
behind the United States. However, the 2015 PMPRB Annual report indicates that German prices increased again over the 2014-2015 period, so in 2015, German prices were actually 16% higher than Canadian prices.[13]

2. ***International Price Comparison of Patented Medicines in Canada*** **reveals that Canadian prices of single-source innovative medicines (after removing branded medicines with generic competition in Canada, i.e. multi-source) are 43% below the median international prices and its ranking in the PMPRB7 drops <u>below</u> the median to 6th of 8 countries.[14]**

   The PMPRB's definition of a patent is extremely broad and includes many products which have lost market exclusivity and are facing generic competition (e.g. SINGULAIR, EZETROL etc.). In their respective ranking, the PMPRB includes (1) patented medicines with no generic competition (i.e. single-source) and (2) patented medicines with generic competition (i.e. multi-source).

   A segmentation study by IMC was commissioned to reveal how Canada compares when looking at the prices of **ONLY <u>innovative medicines for which there is no generic competition on the market</u>** (i.e. single-source and would therefore have the most power to price higher). The analysis revealed that Canada's prices in this segment are 43% below the median international prices and its ranking in the PMPRB7 drops **<u>below</u>** the median (i.e. 6th highest of 8 countries; or third lowest). The same study showed that patented medicines that have generic competition (i.e. multi-source) are 2nd highest only to the United States.[15] So when combing the two, as per the methodology PMPRB uses in their 2015 Annual Report ranking, Canada ranks 3rd & 4th tied with Switzerland [16], as shown below:

Figure 2 - IMC Methodology focus on prices of single-source agents versus PMPRB Methodology focus on all patented medicines



A full illustration of the study results is included in Appendix B.

This IMC analysis clearly confirms that Canadian prices for innovative medicines with no generic competition are relatively low in comparison to the PMPRB7 and that PMPRB has succeeded in its mandate in keeping Canadian prices at or below the median. At the very least, the claim that

Canadian prices are high and rising versus the PMPRB7 is inconsistent with other evidence brought forward by PMPRB.

3. **Utilizing current exchange rates instead of a 36-month rolling average as assumed in the PMPRB analyses shows Canada prices rank lower vs. PMPRB7 than suggested by PMPRB.[17]**

   The use of a 36-month rolling average, when establishing price ceiling prices, is appropriate for setting and regulating prices, but has limitations when comparing real time prices for medicines in the PMPRB7. If current exchange rates were used by the PMPRB for its comparison reported in their Annual Report, it would be expected that the strong Canadian dollar of years back would have caused an "artificial" rise in Canadian prices, and now that the Canadian dollar has weakened in recent years, Canadian prices would be "artificially" lower vis à vis the PMPRB7.

   Accordingly, an analysis by PDCI in October 2015 [18] showed that the choice of exchange rates did in fact affect the results when comparing prices of patented medicines in Canada against prices in the PMPRB7. The analysis showed that, based on the 2014 PMPRB annual report, Canada would have ranked 4th instead of 3rd and almost tied with Sweden for 5th, had PMPRB applied the current exchange rate in effect. The fact that one year later, the 2015 Annual Report shows that Canada is now fourth, tied with Switzerland further validates the effect of exchange rates.

It can, therefore, be concluded that PMPRB has consistently achieved and continues to achieve its mandate of ensuring that patentees do not abuse their patent rights by charging consumers excessive prices during the statutory monopoly period. Prices in Canada are reasonable and allow for Canada to be considered a top-tier country for new product launches by global manufacturers; hence enabling patients in Canada to have early access to these medications for optimal health outcomes.

Recommendation: Merck agrees with IMC & BTC that there is no strong and consistent evidence to support guidelines changes for the purposes of lowering Canadian patented drug prices in relation to other countries. As a first step, Merck proposes that more work be done to align on an assessment of the current environment and definition of the "problems" that need to be addressed. Within this step, Merck requests that PMPRB Staff commission a third party group to conduct a similar segmented analysis as presented in Appendix B and share the results during the public consultation.

QUESTION #2

Should the PMPRB mandate change from ensuring that list prices of patented medicines are not "excessive" to one that is based on affordability of medicines?

In its Strategic Plan and Discussion Paper, the PMPRB announced its new Vision Statement that appears to introduce "affordable" rather than non-excessive pricing of patented medicines as part of its mandate. Moreover, the first series of questions in the Discussion Paper appear to assume that "affordable" has now replaced "excessive" in the PMPRB's statutory authority.

Merck appreciates the issue of affordability and is committed to working with payers to ensure sustainability of drug plans. Affordability, however, cannot be solved by focusing solely on list prices of patented prices. Currently, PMPRB plays an important role in setting a non-excessive *ceiling price* for new innovative patented medicines, which is consistent with its statutory mandate. Notably, in this role, PMRPB does not duplicate or interfere with the responsibilities and decisions of drug plans, which are in the best position to assess value, leverage competition and reimbursement listing status, and allocate their respective budgets for drug reimbursement.

As described earlier in the pricing and reimbursement environment section of this document, stakeholders need to appreciate the rapid evolution that has occurred in Canada's regulatory, reimbursement and pricing "ecosystem" since the inception of the PMPRB. Substantial progress has been made in drug affordability in Canada by payers and innovative manufacturers. From an industry perspective, greater reliance on PLAs and the benefits of differential pricing have led to more affordable innovative medicines and better access for patients. The PCPA, negotiating on behalf of federal, provincial and territorial plans, has garnered savings of $712 million.[19] Private payers have also achieved savings through implementation of cost management approaches, such as, mandatory generic substitution, preferred provider networks, prior authorization programs, tiered formularies and PLA's.

Beyond the trends in payer management of drug spending and most notable for consumers, Merck, as well as other manufacturers of innovative medicines, have put in place a variety of support programs to make our medicines available to those who do not have the benefits of drug coverage and who struggle to afford medicine(s). Between 2010 and 2014, IMC has tallied more that $770 million in product donations by member companies through compassionate use and special access programs in Canada.[20]

With regard to drug affordability and individuals who do not have the benefits of drug coverage, Dr. Monika Dutt, during the Standing Commission on Health, in June 2016, stated, "*We know that even a small cost barrier, say just $10, to pay for medications is a barrier that prevents patients from taking their medications".*[21] Affordability, therefore, is a relative concept: what may be deemed an appropriate price to pay for one institution/jurisdiction may be different from another. Similarly different payers may value the same pharmaceuticals differently. A private payer may have a different perspective on the value of a medication that keeps people productive and at work, avoiding costly short term or long term disability, while a public payer may view this decision through a different lens. So affordability and

the appropriate allocation of resources to pharmaceutical therapy are a complicated issue, and therefore, a matter of broad health care policy.

Recommendation: Merck believes that drug affordability is more appropriately addressed within the mandate of payers and that PMPRB mandate should remain focused on ensuring list prices established in Canada are not excessive. Additionally, the Canadian ecosystem has reduced prices to make innovative medicines more affordable and several indicators point to continued progress.

Merck agrees with a fundamental belief that all Canadians should have timely access to the medicines they need *without affordability as a barrier*. Merck acknowledges that there remain gaps in affordability for some Canadians. We, along with IMC and BTC, commit to work alongside Canada's governments as meaningful partners to work to address this problem. We believe solutions to affordability – and health care sustainability issues more generally – will be best served by ensuring the benefits of drug coverage to all Canadians. From this perspective, the PMPRB Strategic Plan should be only one part, of a broader discussion and evaluation of the pricing and reimbursement environment as it relates to access of appropriate medicines for consumers.

QUESTION # 3

Does differential pricing create more value than transparent pricing in terms of access to affordable innovative medicines?

The Discussion Paper suggests that the PMPRB believes it has not been effective in its mandate because of differential pricing that exists across different payer groups. The question poses whether differential pricing between public and private payers inappropriately discriminates between payers and creates an excessive pricing concern.

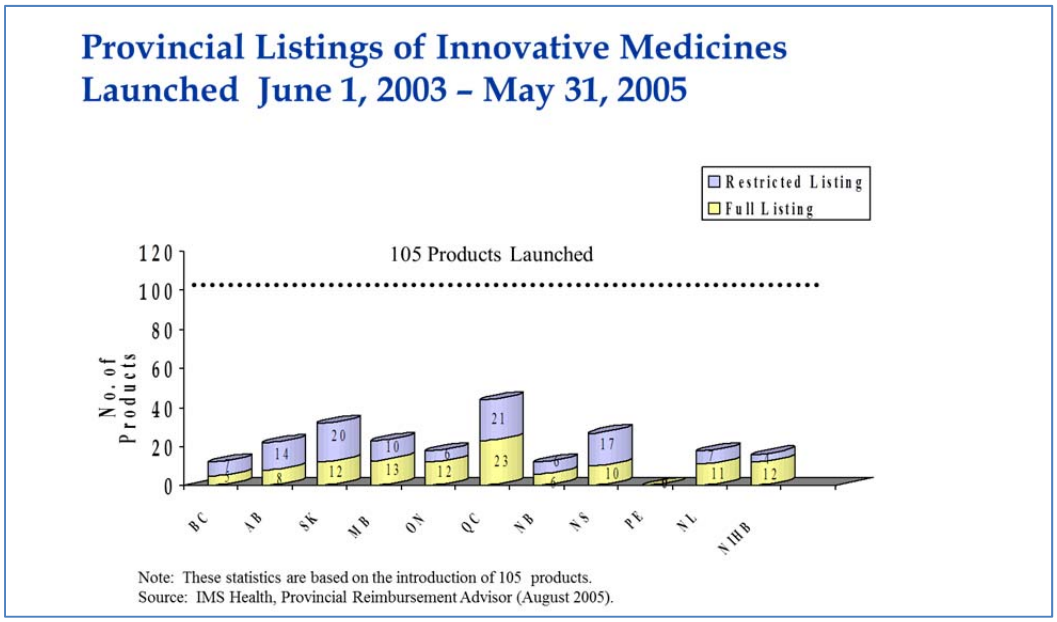
From Merck's perspective, differential pricing allows biopharmaceutical companies to fulfill societal expectations to provide access to affordable drugs to all segments of the local and global populations.

The development of innovative medicines is a high risk business, which requires significant investment to continue research and development in new medicines and vaccines. The longstanding practice of differential pricing is critical to the equitable functioning of the global health care ecosystem, as it distributes the burden of sustaining the capital investment required to fund medical innovation while at the same time ensuring the broadest access possible. Differential pricing takes into account the value that medicines create in a given market as well as a particular health system's ability to pay for them. The practice recognizes that more economically developed, prosperous nations pay higher prices for innovation because it delivers more health economic value in these environments. In countries with less ability to pay, innovation creates correspondingly less health economic value, justifying the lower prices and enabling greater access. If price differentiation were replaced by a single global price, prices would tend to rise in less wealthy markets. This could present a financial barrier to access for the vulnerable populations in less economically developed countries.

From a Canadian perspective, publicly funded drug plans cover the majority of health care spending and provide access to medicines to the elderly as well as the most vulnerable populations. Providing differential pricing to public drug plans, therefore, is consistent with common practice by Canadian governments to ensure that those at greatest need are not penalized by their inability to pay. It also provides solutions to issues of affordability and sustainability for all payers of the Canadian pricing and reimbursement environment. In principle, we support differential pricing for public payers, including hospitals and public health, as well as, private payers, who have their own capability to work with innovative medicines companies to negotiate drug price to benefit their clients.

Prior to 2006, transparent pricing characterized the Canadian pricing environment with discounts and rebating reserved only for hospital and vaccine contracting and tendering. The majority of drug plans struggled with strapped budgets and patient access to innovative medicines was compromised. For example, an IMS study revealed that from 2003-2005, out of 105 products launched less than 50% were reimbursed; the Province of Ontario only reimbursed 18 products (or ~15%); one of the lowest in the country.[22]

Figure 3 - Access to Medicines was Limited before Differential Pricing in Canada

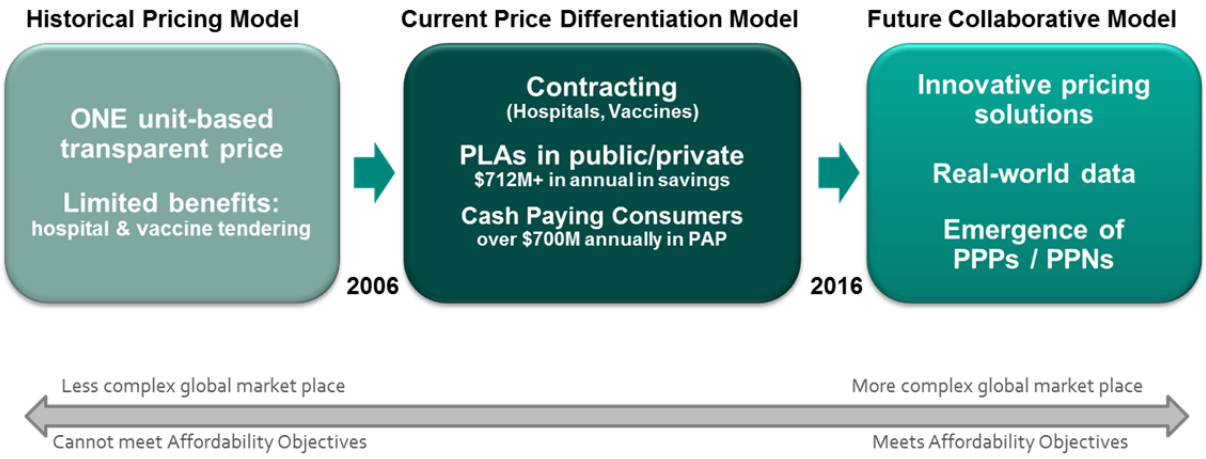


This led to the creation of Bill 102 in Ontario, in 2006, and the first PLAs between drug plans (i.e. Ontario Provincial Drug Plan) and innovative medicines manufacturers were signed with the intention to improve both patient access to innovative medicines and affordability. Fast forward a decade to 2016, pCPA, in collaboration with manufacturers, has negotiated $712 million dollars in annual savings on behalf of Canada's public drug plans and the Province of Ontario is considered one of the top jurisdictions for provincial listings of innovative medicines.[23]

A critical factor in securing these savings is the ability of manufacturers to maintain the confidentiality of the financial terms. This confidentiality respects that the pharmaceutical market is global and that Canada is directly and indirectly referenced by international countries. Therefore, differential pricing enables manufacturers to support the mandate assigned by the Council of the Federation to the PCPA: to achieve greater savings for public drug plans; while respecting patient access in global markets. Consequently, any policy initiatives to lower Canadian list prices below levels of international comparators could interfere with the ability of manufacturers to provide these greater savings, and therefore, put at risk Canada's position as one of the first-tier countries for launch of new medicines, which extends rapid access, and which would ultimately impede access to innovative medicines for consumers.

Moving forward, the market-based evolution of payer drug pricing & contracting, as shown in Figure 4, will demand new collaborative solutions to meet access, affordability & budget sustainability objectives. For example, for eradication of Hepatitis C in Canada, a private/public collaboration to rethink broader access and affordability solutions is required. Market differentiation and confidential pricing is, therefore, an essential mechanism to delivering the most value to Canadians. This cannot be achieved with historic transparent pricing models.

Figure 4 - Evolution of Payer Drug Pricing & Contracting



Recommendation: Differential pricing adds substantial value to Payers and patients in terms of providing real solutions to address the predicament of access and affordability. We request that PMPRB take a new approach to its position. Rather than considering differential pricing as potentially being excessive, work with the innovative medicines industry and payers to embrace it as a means to sustainability. Going back to a historical one-price transparent model would simply hamper the ability of all Payers (public, private, hospital, and public health) to leverage innovative pricing mechanisms to improve access for patients and meet sustainability objectives**.**

QUESTION #4

As changes to modernize the PMPRB Guidelines are considered, how can PMPRB preserve a fair and predictable pricing and reimbursement environment that fosters access to innovative medicines for patients?

The PMPRB is proposing a need for modernization to the Guidelines to ensure they remain effective in the face of changes that have taken place in the Canadian biopharmaceutical environment since the PMPRB was created. The following areas have been identified as potential areas of change:

I. Replacing Therapeutic Benefit with a Risk-Based Assessment
II. Modifications to the Basket of Countries for International Price Comparisons
III. Changes to Introductory Price Tests for Domestic Price Comparisons to Lower Price Ceilings
IV. Elimination of Price Increases Currently Allowed within the Consumer Price Index
V. Periodic Reassessment of Drug Prices
VI. Limiting the Practice of Differential Pricing with Any Market Price Review

The potential areas of change to the PMPRB regulatory framework and Guidelines have yet to be fully explored, and require more rigorous evaluation and consultation in the context of optimal and timely access to appropriate medicines for consumers for better health outcomes.

The underlying issue with the proposed changes in the Discussion Paper is that they presume that drug prices in Canada are high, so the changes are narrowly framed in the context of lower price ceilings due to high and excessive prices; even when broader data suggests that prices in Canada are reasonable compared to the International comparators. The highly technical nature of these proposed changes could potentially create new complexities and could have unintended consequences for the marketplace.

A recent study by the Canadian Health Policy Institute[24] compared the Canadian reimbursement and pricing environment with the one in New Zealand; a national Pharmacare scheme used to control drug costs. Although, the New Zealand government has lowered drug costs, this was achieved by restricting access to essential medicines. Canadians have a greater choice of the most effective and best tolerated innovative medicines for the potential of greater health outcomes; where New Zealanders have access to a limited range of mostly low-cost medicines.

At this time, it is difficult for Merck to properly evaluate and comment effectively on the proposed changes without further evidence, understanding or consultation. As a result, only preliminary commentary and recommendations are provided.

I. Replacing Therapeutic Benefit with Risk-Based Assessment:

The Discussion Paper introduces for consideration the concept of a "risk-based approach" of protecting against anticipated market monopolistic powers as opposed to the current PMPRB practice of setting prices of innovative medicines based on comparison to current therapeutic treatments or benchmarking to prices of international comparators. Specifically, a new factor is suggested to trigger regulatory scrutiny for drugs that have a launch price that exceeds a pre-established threshold or that is likely to cause rationing by payers based on cost or projected usage or which has "few, if any competitors". The rationale for the enhanced regulatory scrutiny is market concentration among a patentee and increased spending on high cost specialty drugs.

Within this approach, PMPRB is signaling that increased regulation would mostly be diverted to high cost drugs. However, it should be noted that often these specialty medicines have high value not only for patients but also the entire health care system in terms of cost savings. Consistent with Merck's early statement (Question 2 above) that drug affordability is largely the role of the payer, Merck does not believe it is appropriate for PMPRB to attempt to assess budget impact in establishing a non-excessive price ceiling. Additionally, if HTA assessment shows that these relatively higher-priced drugs add more value than alternative therapies, then a risk based-assessment may be inconsistent with the core objective of the Patent Act: rewarding innovation. This could cause undesirable consequences, such as, delays to access to critical specialty medicines or increased frequency of unnecessary hearings that would not serve the interests of patients or anyone in the health care system. Therefore, relative therapeutic benefit of a medicine should remain as the central methodology used by PMPRB to determine whether the price of a new innovative medicine is non-excessive.

Recommendation - Conceptually, there may be some merit in exploring a "risk based approach" or other innovative ways of setting price ceilings for new medicines. For example, changes that would simplify regulation and reduce regulatory burden for the majority of patented medicines could be beneficial. Merck, along with IMC and BTC wish to consult and engage with the PMPRB throughout this process. Merck also agrees with IMC that, as with the question of affordability, it is not appropriate for PMPRB to attempt to assess potential budget impact in establishing a non-excessive price.

II. Modifications to the Basket of Countries for International Price Comparisons:

The PMPRB is questioning whether the composition of the PMPRB7 (i.e. France, Germany, Italy, Sweden, Switzerland, the United Kingdom and the United States) should be changed or be more restrictive in order to lower prices in Canada.

As illustrated in Merck's response to Question #1, it is not clear that prices in Canada are either high or rising relative to the international country comparators. The 2015 PMPRB Annual Report supports this claim.[25] The Discussion Paper points out the fact that Switzerland has more restrictive pricing policies. Despite this, Canadian prices were at par with Switzerland in 2015, and when looking at only innovative medicines with no generic competition (i.e. single-source products only), the prices in Switzerland are 6% higher than those in Canada.[26] The policy objective has been successful and the basket of countries

does not warrant any change as it creates fair and reasonable pricing to countries with similar economic capacity to finance public drug benefits.

The removal of the Unites States from the PMPRB7 basket has been proposed as a potential approach to lowering drug prices in Canada. However, there are also several policy reasons to keep the United States as an important international comparator for Canada. Canada, as a wealthy nation, is an important member of the Group of 7 (G7), consisting of Canada, France, Germany, Italy, Japan, the United Kingdom, and the United States. The European Union is also represented within the G7. These countries are the seven major advanced economies as reported by the International Monetary Fund and have a higher GDP per capita; Canada ranked second in 2014 (please see Table 1).[27]

Differential pricing takes into account the value that medicines create in a given market as well as a particular health system's ability to pay for them. The practice recognizes that more developed, prosperous nations pay higher prices for innovation because it delivers more health economic value in these environments. It would be reasonable and fair from a pricing perspective that Canada continues to reference these G7 countries including the United States.

Table 1 –G7 GDP per Capita

Country	2014 GDP per Capita
United States	$45,759
Canada	$38,065
United Kingdom	$35,047
Germany	$34,065
Japan	$33,523
France	$31,161
Italy	$29,393

http://www.nationmaster.com/country-info/groups/Group-of-7-countries-(G7)

The U.S. is also Canada's biggest trading partner, and headquarters to the majority of innovative pharmaceutical manufactures. One of the primary benefits of having the U.S. as a comparator is it allows Canada to be a first-tier launch country so Canadians benefit in terms of early access to new innovative patented medicines at significantly lower list prices. Hundreds of patented medicines are only available in the United States and in Canada, and are not even sold in the European Union [28] making the U.S. a necessary comparator. Furthermore, the PMPRB price tests purposely use the median and not the highest priced international comparator to determine the maximum price for a new innovative medicine in order to keep the prices fair and not excessive.

Recommendation - Merck agrees with IMC and BTC that the Canadian government should consider the potential trade, health system, i.e. access to patients, and economic impacts of changing the basket of countries or removing the U.S. in order to lower introductory prices of patented innovative medicines in Canada. Notably, the intent of the PMPRB is to ensure list prices are not excessive and it is not intended to drive Canadian prices downward. Instead, we should strive to find solutions that provide the best possible access to innovative medicines to Canadians. In the event that the PMPRB is considering revising the basket of comparator countries, we support the G7 countries as being a relevant and globally recognized basket of countries from an economic perspective.

III. Changes to Introductory Price Tests for Domestic Price Comparisons to Lower Price Ceilings:

The Discussion Paper suggests to introduce lower price ceilings for subsequent incremental innovations (i.e. "me-too drugs"), but then take a more relaxed approach in monitoring these drugs on a go-forward basis having regard to lower risk of excessive pricing.

On one hand, the idea of reducing the regulatory burden for innovative medicines that face some measure of competition appears to be reasonable and deserving of further consideration by the Board. On the other hand, subsequent incremental innovations often are not duplicative but evolutionary in nature of the pharmaceutical R&D process. They can result in key improvements in existing drug therapy and patient care, provide an important choice if the original drug fails in development; guarantee supply in the market in the case of supply shortages, and provide physicians with options when the first agent used is either ineffective or not tolerated. Fundamentally, an innovative company, such as Merck, often not know whether it will be first to market with a product in a specific therapeutic class.

Perhaps even more importantly for payers, subsequent entrants reduce total costs of therapy as they create competition. Over time, it is important to consider that most incremental innovations will be priced below the previous entrant as they face competition from several therapeutic alternatives, including generic products. Drug plans and HTA bodies already take these factors into consideration, so it is uncertain whether further regulation by the PMPRB would be duplicating efforts.

Recommendation - Merck agrees with IMC and BTC that failure to recognize the uniqueness of incremental innovations when creating pricing policies may ultimately result in undesirable consequences, such as denying patients access to important therapies, reducing competition, risking supply shortages and eroding incentives for research.

IV. Elimination of Price Increases Based on Changes in the Consumer Price Index:

The Discussion Paper is questioning price increases in Canada. Data actually shows that patented medicines have been increasing at rates at, or below, inflation since 1988,[29] and list prices have been consistently below the international median, so the need for change is not clear.

Recommendation - Merck agrees with IMC and BTC that given that Canadian payers are already imposing effective limits on price increases in their price policies and negotiations, there is no evidence with respect to the CPI limit that would warrant any changes.

V. Periodic Reassessment of Drug Prices:

The Discussion Paper asks if prices of a patented drug should be reassessed from time to time and points to practices in some PMPRB7 countries of reassessing the prices of some drugs. It should be noted that reassessment of drugs already occurs in Canada.

Both private and public drug plans will systematically review the price being reimbursed with each new indication or through therapeutic reviews, and adjust pricing and contracting accordingly. These are a form of "re-benchmarking" for payers to ensure that over time they are achieving the best value to meet the needs and objectives of their drug plan. Any efforts to pursue this policy change would impose increased unpredictability for manufacturers as it would be uncertain whether prices could be reduced based on the global nature of the industry.

Recommendation - Merck agrees with IMC and BTC that it is unclear what value a change in PMPRB's Guidelines related to periodic reassessment would add to the existing system other than duplication and unnecessary complexity in the system with payers already taking similar actions.

VI. Limiting the Practice of Differential Pricing with Any Market Price Review:

The Discussion Paper is considering an assessment of price in "any market ", i.e. equity in prices between customer classes, whether by region or payer type, to determine whether a price of a patented medicine is excessive. PMPRB has consulted on this issue during the 2009-2010 Guideline changes but did not pursue beyond the introductory review period of a patented medicine.

From its inception, the PMPRB has always supported manufacturers to provide "benefits" to Customers:

"*Subsection 4(4) of the Regulations provides that, in calculating the average price per package or net revenues, the actual price or actual revenue after any reduction including rebates, discounts, refunds, free goods, free services, gifts or any other benefit of a like nature and after the deduction of federal sales taxes shall be used".* [30]

Moving to a one-price transparent system in "any market" would ultimately undermine the ability to provide benefits to a Customer, which is definitely not the intention of the Board. As stated in Merck's response to Question #3 - going back to a historical one-price transparent model would simply hamper the ability of all Payers (public, private, hospital, and public health) to use innovative pricing mechanisms to improve access for patients and meet sustainability objectives of the healthcare system.

Recommendation - Differential pricing adds substantial value to payers and patients in terms of addressing access and affordability. We agree with IMC that changes that require parity pricing may impact the ability or incentive to offer benefits to customers. We request that PMPRB take a new approach. Rather than considering differential pricing as potentially being excessive, work with the pharmaceutical industry and payers, to embrace differential pricing in situations that bring more value to the entire healthcare system.

In summary, it is clear that the proposed changes to the PMPRB Guidelines need to adhere to principles of fairness and predictability in order to preserve a pricing and reimbursement environment that fosters physician choice and timely access to the most appropriate innovative medicines for more consumers. Therefore, new thinking from this consultation process requires a perspective that goes beyond the necessity to mandate further price control on list prices of patented medicines. The PMPRB Strategic Plan should, therefore, only be considered as one part of a wider discussion and evaluation of the sustainability of the Canadian drug benefit programs, and more broadly, the Canadian health care systems.

CONCLUSION

The PMPRB has indeed been relevant since its inception. Its mandate - to ensure that the prices of patented medicines are not excessive – has consistently kept Canadian prices below the international median; and even more so for innovative patented medicines without generic competition. Consequently, the consultation needs to start from the premise that it is not just prices of drugs that are driving the need for change but rather broader issues of cost, quality and access within the Canadian health care system.

The Canadian pricing and reimbursement environment has evolved tremendously and has become more effective in reducing prices to make innovative medicines more affordable. Several indicators point to continued progress. Any future changes must build and complement on the roles established by key contributors to this evolution and not duplicate nor have negative consequences that will delay or limit access to innovative medicines.

At this stage in the consultation, Merck recommends the following:

1. The PMPRB Strategic Plan should be only one part, of a broader discussion and evaluation of healthcare policy in Canada and the pricing and reimbursement environment within as it relates to access of appropriate medicines for all consumers, including addressing gaps.
2. As data does not support the PMPRB assessment that Canadian prices "have been steadily rising relative to prices in the PMPRB7", we request that PMPRB Staff commission a third party group to conduct a similar segmented analysis as presented in Appendix B and share the results during the public consultation.
3. Drug affordability is more appropriately addressed within the mandate of payers and the PMPRB mandate should remain focused on ensuring list prices established in Canada are not excessive.
4. Differential pricing adds substantial value to Payers and patients in terms of providing real solutions to address the predicament of access and affordability. We request that PMPRB take a new approach to its position. Rather than considering differential pricing as potentially being discriminatory or a form of excessive pricing, work with the innovative medicines industry and payers to embrace it as a means to sustainability.
5. If the PMPRB decides to pursue any changes to Guidelines, we encourage the use of a Working Group of stakeholders to define the issues, provide clear evidence and rationale, identify and consider options and make recommendations to the Board.

For 125 years, Merck has focused its efforts on patients with a clear goal of saving and improving lives. Merck has been, and will continue to be, a strong and proactive contributor to practices and policies which help ensure that innovative medicines are available and affordable to patients and payers in Canada. We look forward to participating in the public consultation with regard to the PMPRB mandate and Guidelines.

Appendix A – Evolution of Pricing & Reimbursement in Canada

This section summarizes the trends and data sources that characterize the evolution that has taken place within the pricing and reimbursement environment in Canada:

As illustrated in Figures 5, 6, and 7, the following trends are noteworthy:

- A total of $29.2B is spent annually in Canada for drugs with $22.6B for brands and $6.5B for generics[31]
- Total drug spending in Canada remains smaller than hospital and physician spending
- In 2015, growth in drug spending in Canada reached a long-term low of less than 1.7% (despite sales of patented drug products increasing to $15.2 billion from $13.8 billion, an increase of 9.5%)[32]

Figure 5 Drug spending is $29.2B in Canada

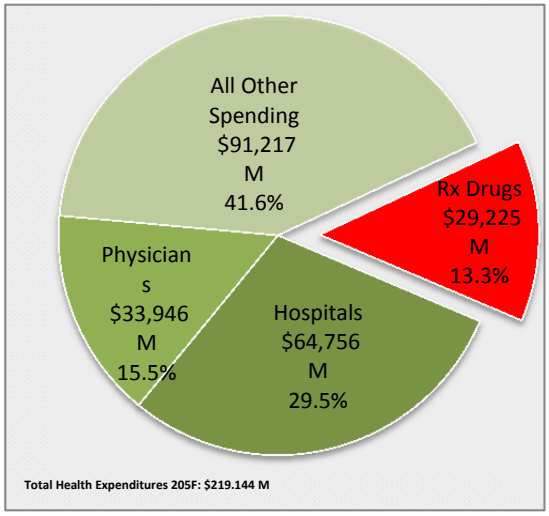


Figure 6 Brand is 77.5% of drugs

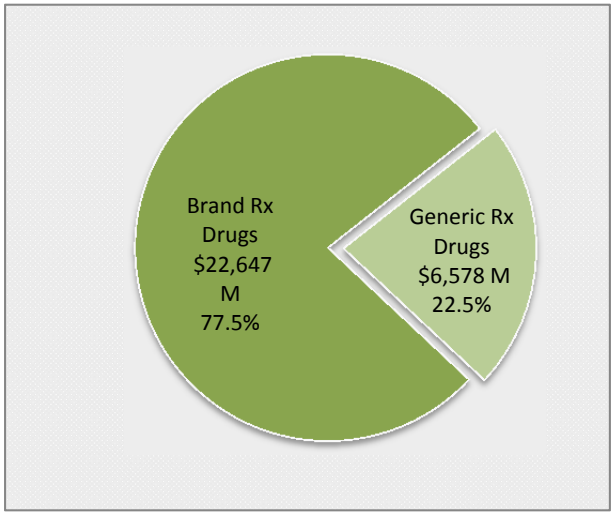
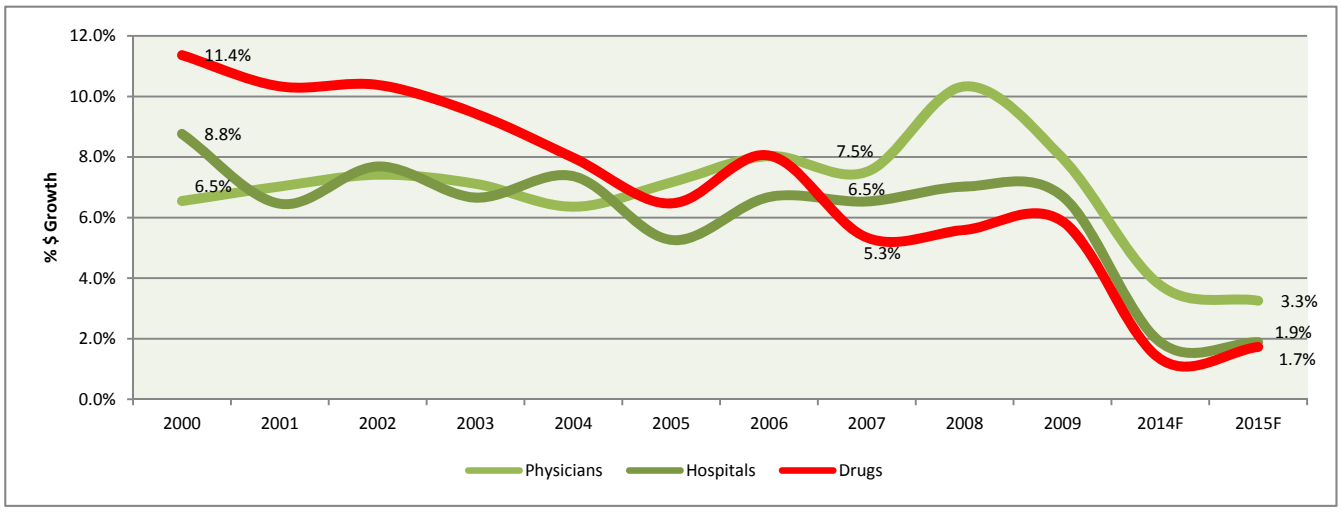


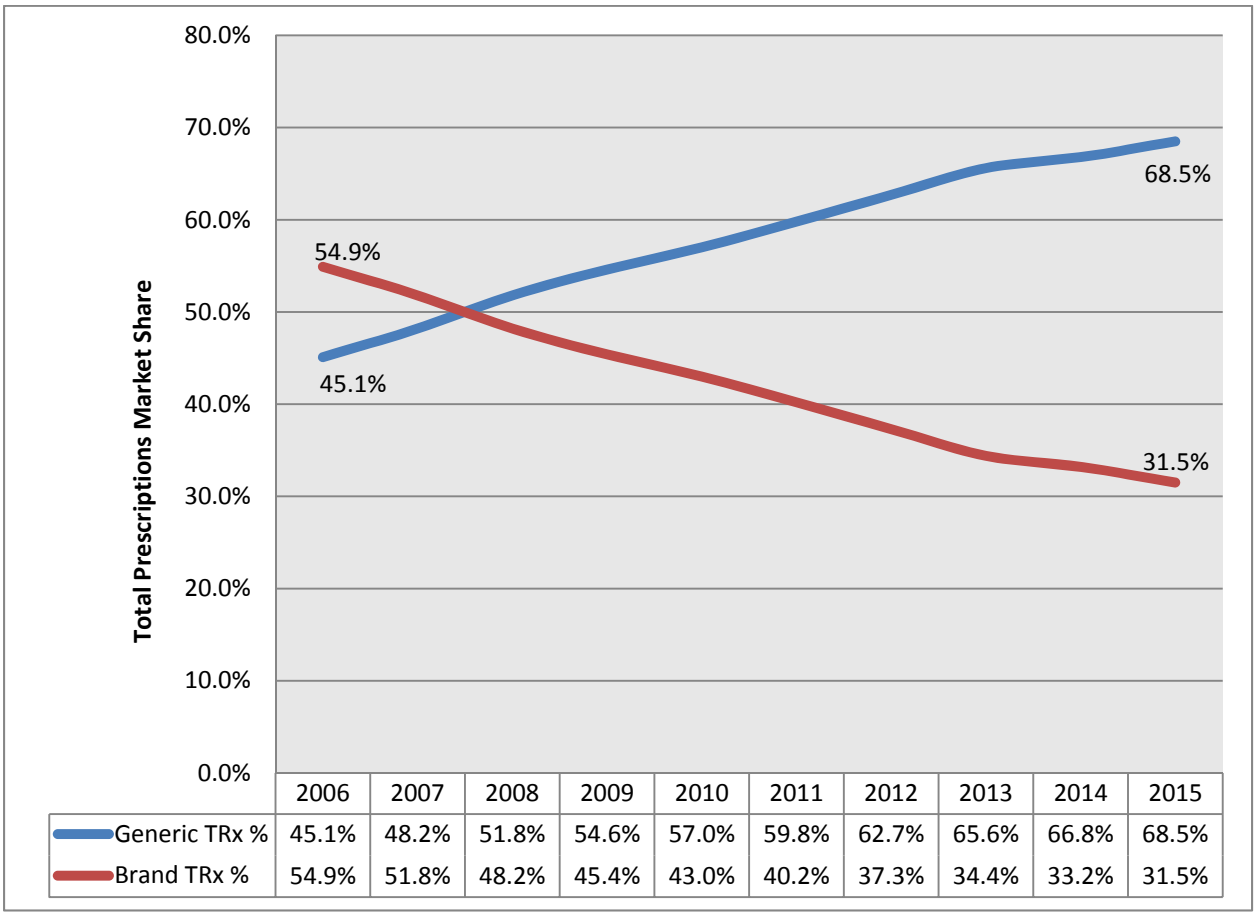
Figure 7 Growth of Drug Spending remains lower than Physicians and Hospital spending



Total Drug Spending growth is less than Hospital & Physician spending Growth

- **<u>Use of Generics Exceeds that of Innovative Medicines</u>:** Patent laws in Canada are designed to provide a period of market exclusivity for a new innovative medicine (typically 20 years) after which time multiple generic manufacturers enter, making the compound available at significantly lower costs. This is the quid-per-quo agreement between government and industry, intended to balance the reimbursement of innovative medicines consistent with value based pricing and competition in Canada with the eventual generic availability, making those drug's available at patent expiration at a significantly reduced cost. In 2008, generic use exceeded that of single-source branded medicines and the gap continues to grow, where in 2015, 68.5% of total prescriptions were for generic medicines. This is an important trend for payers attempting to manage their budgets.

Figure 8 Use of Generics exceeds Brands, now representing twice the volume of Brands



	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Generic TRx %	45.1%	48.2%	51.8%	54.6%	57.0%	59.8%	62.7%	65.6%	66.8%	68.5%
Brand TRx %	54.9%	51.8%	48.2%	45.4%	43.0%	40.2%	37.3%	34.4%	33.2%	31.5%

Source: IMSBrogan PharmaFocus 2020

- **<u>Patent Expiries Contributed Significantly to Drug Spending Reductions in CA:</u>** We have observed that since 2005 (and until 2015), multiple patents have expired leading to average $11.3 reductions in spending in Canada. Figure 9, below, illustrates the substantial reductions in drug spending due to recent patent expirations and those expected in the near future:

Figure 9 Total Value of Patent Expirations Exceeded $11B in Canada since 2005

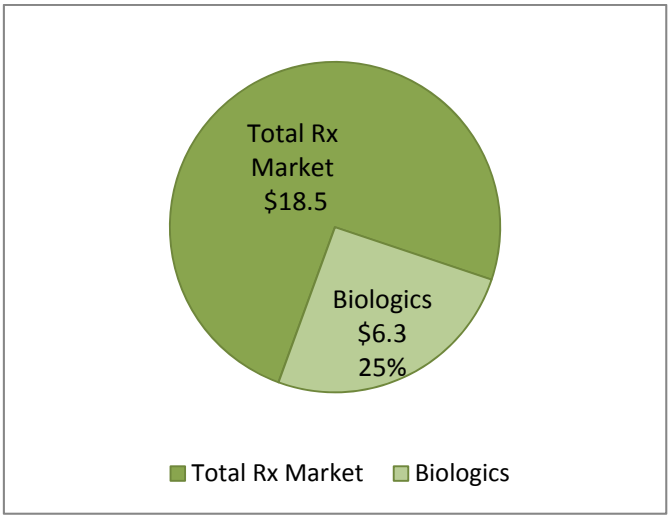
Source IMSBrogan Pharmafocus 2020

- **<u>Introduction of Biosimilars in Canada is Likely to Lead to Further Substantial Reductions in Drug Spending in Canada:</u>** Over the past five years, there has been a significant increase in drug spending in Canada for biologics. Today, biologics represent an increasing share of the Canadian drug spend and are a fast growing area of drug spend. Figure 10 illustrates that biologics represent 25% of drug spending in CA.

- Figure 11, illustrates that 4 of the 7 largest drugs in CA are biologics, 2 of them growing at double digits rates.

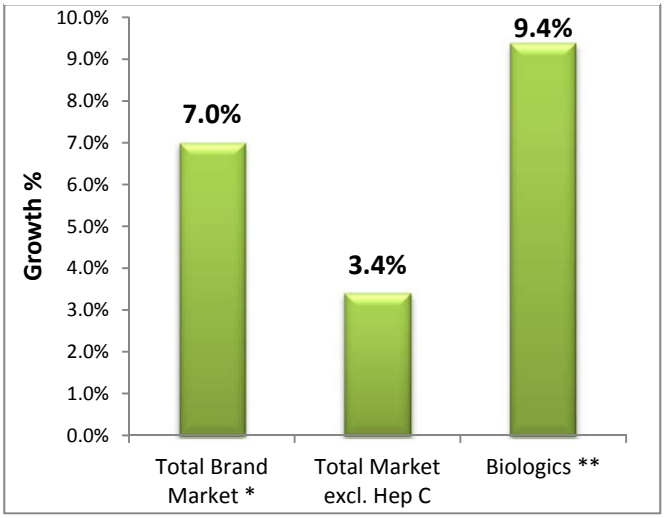
- Figure 12 represents that biologics are growing 3 times that of the total branded market excluding hepatitis C agents. Unlike the life cycle for small molecules which have low cost generics available to payers at patent expiry, there has been no mechanism for generic biologics or biosimilars to enter the market in Canada until recently. Of note is Health Canada's recent approval of biosimilars for REMICADE and ENBREL. Additionally, it is anticipated that biosimilars for many more originator biologics will be filed for approval in Canada over the next few years. Internationally, where government payers have successfully implemented switch initiatives to biosimilars spending significant savings have been reported. These introductions, current and planned in Canada, collectively represent significant saving opportunities going forward.

Figure 10 Biologics Represent More Than 20 % of Drugs



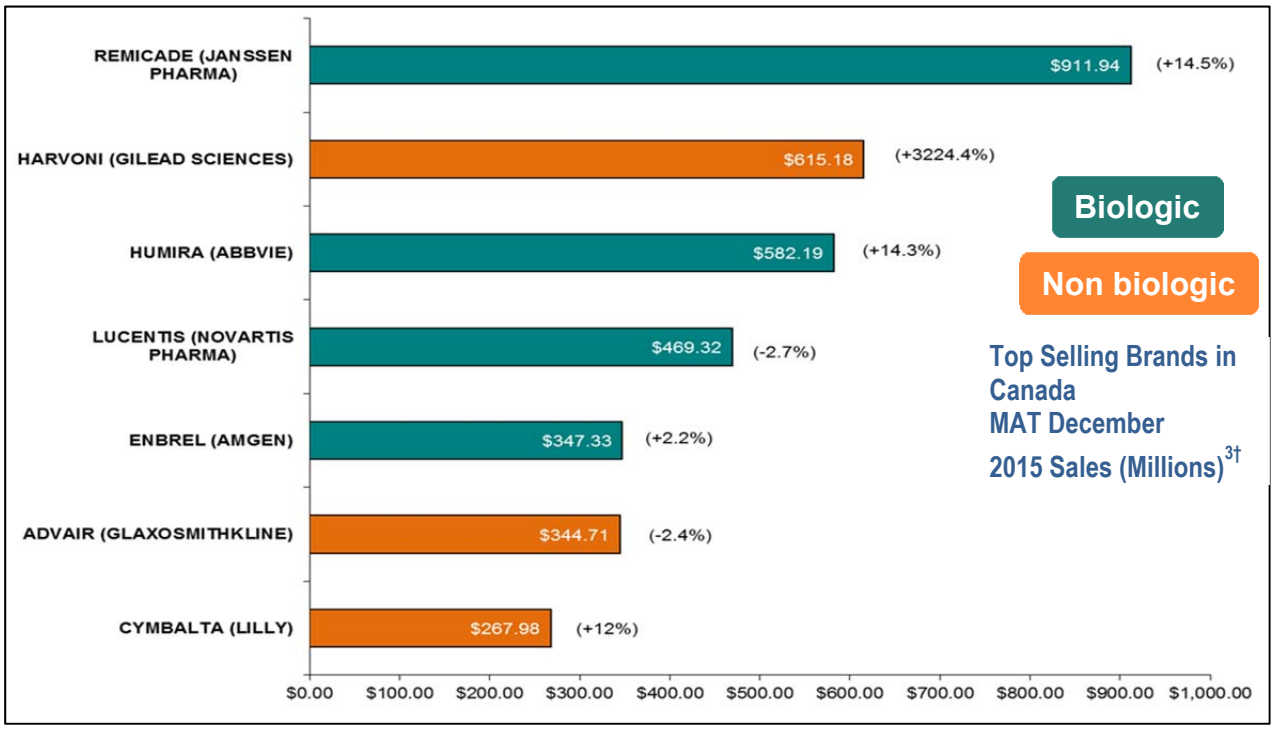
Source IMSBrogan CDH. MAT Dec 2015- Pharmafocus 2020

Figure 12 Growth of Biologics is 3 Times the Market



* Total Brand market includes Biologics and Oncology segment.
** The Biologics market segment includes some oncology products
Source IMSBrogan CDH. MAT dec 2015- Pharmafocus 2020

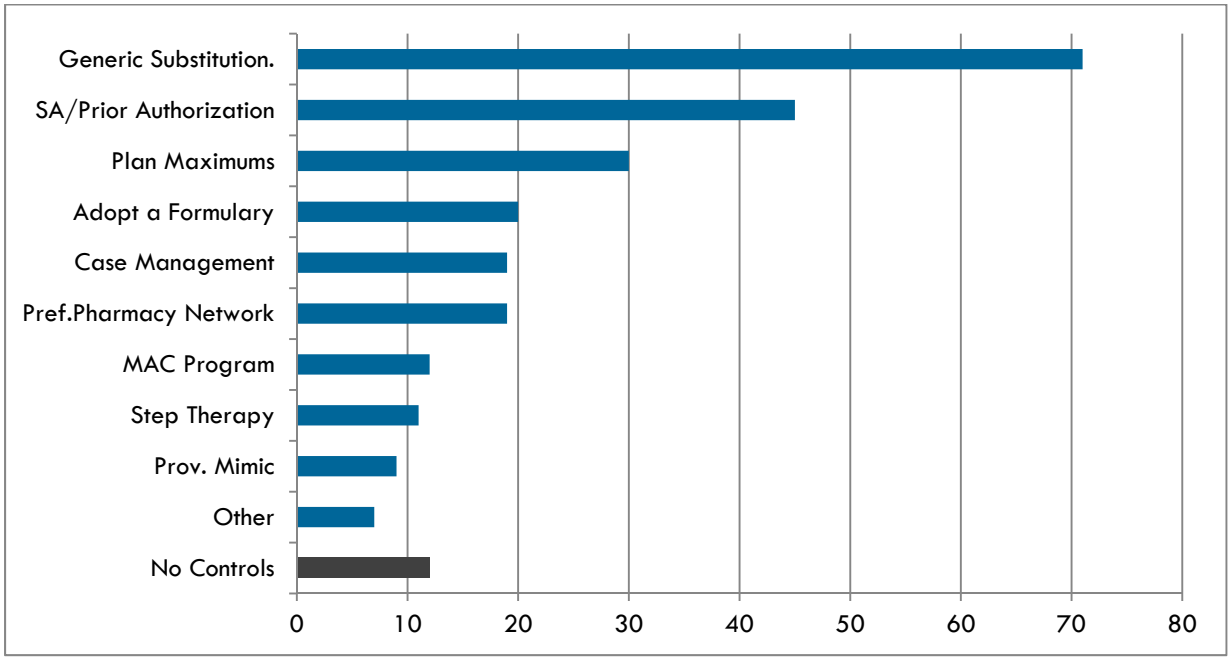
Figure 11 4 of the 7 Biggest Drugs in the Market are Biologics



1. IMS Health Canada Inc., PharmaFocus 2019
2. Canadian Institute for Health Information, Prescribed Drug Spending in Canada, 2013: A Focus on Public Drug Programs
3. IMSight, Canadian Drug Store & Hospital Purchases Audit (MAT December 2015)

- Private Payers have also evolved in the management of drug spending in Canada: In the last 5 years, substantial progression has been observed throughout health insurance plans with regard to the breadth and depth of the tools they have implemented to manage spending in the drug benefit. As illustrated in Figure 13 , these changes have included requiring generic substitution, prior authorization for high expense drugs, higher plan deductibles, and implementation of drug formularies:

Figure 13 Private Payers are Adopting Tools to Better Manage Drug Affordability.



Source: ***PMG Intelligence Survey of Canadian Plan Sponsors 2015.***

• Pricing decisions of innovative medicines are made in a global, as well as, local context. Currently, Canadian prices are referenced in several global markets. Similar to Canada in that drug prices are referenced to international comparators, known as the PMPRB7 (France, Germany, Italy, Sweden Switzerland, United Kingdom and United States)[33], it is important to note that Canadian drug prices are now referenced by at least eight international countries (Bahrain, Brazil, Egypt, Kuwait, Oman, Qatar, Saudi Arabia, and United Arab Emirates), as well as, indirectly referenced by several other countries including the PMPRB7.

Notably, Canada as a drug market represents drug purchases of less than 2% internationally, while combined countries now referencing Canada represent more than 3.5% of global sales. This size of the Canadian drug market relative to the reference countries is important as Canada considers the merits of a policy change that potentially could lower ceiling prices lower than list prices of international comparators. Specifically, with larger aggregate sales in countries referencing Canada, this may result in the adverse consequences including delaying or eliminating the availability of a new drug in the Canadian market. This phenomenon is now being reported in those markets that have adopted such policies including most recently New Zealand and Australia.

Appendix B – Int'l Price Comparison of patented medicines in Canada-

IMC Analysis

Figure 14 Single-source innovative medicines (i.e. no generic competition)

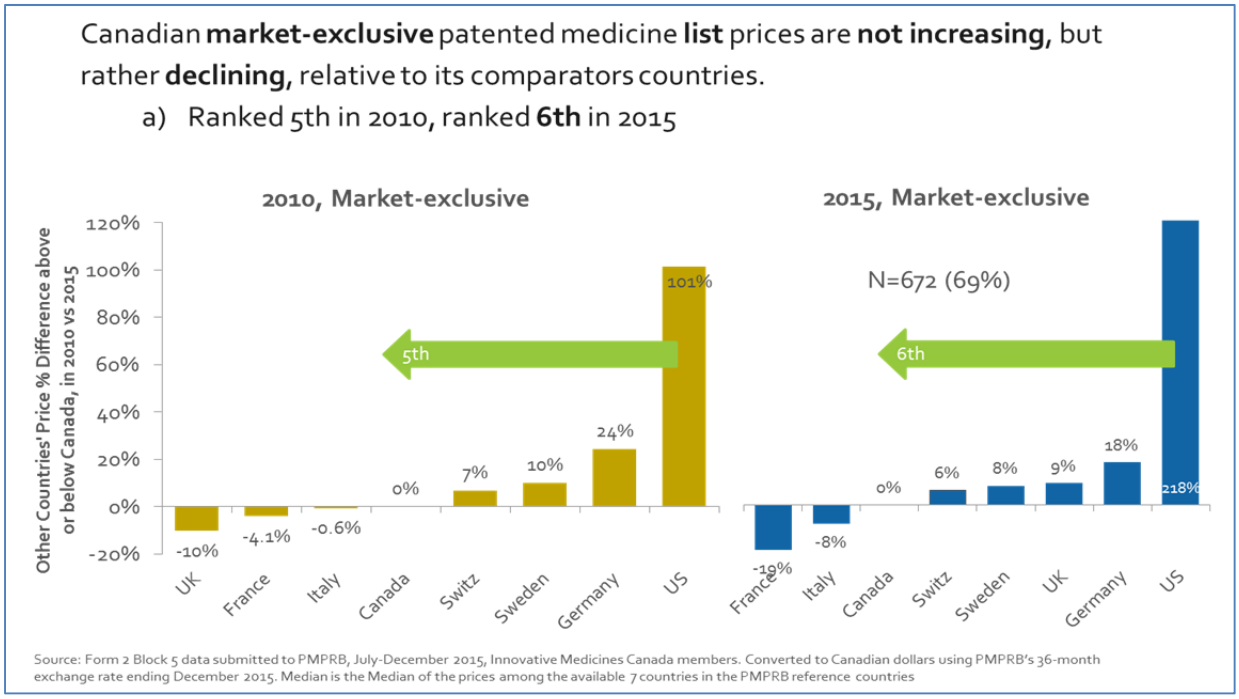
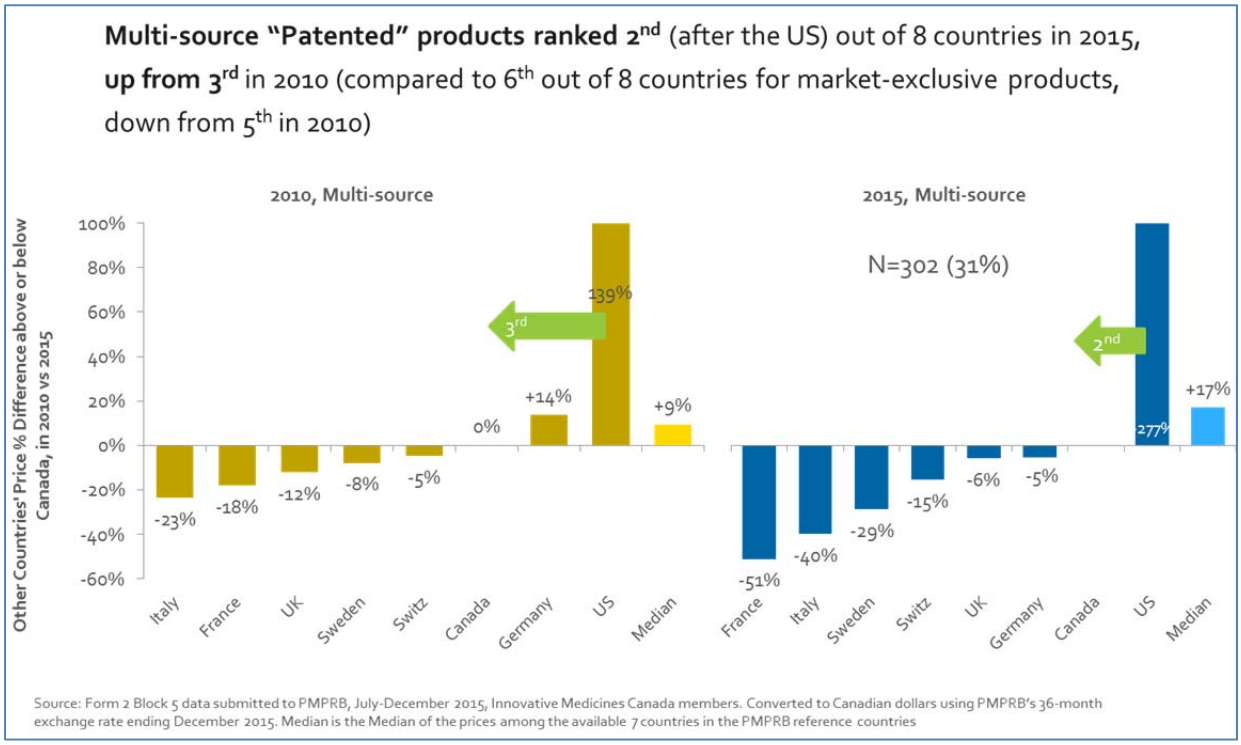
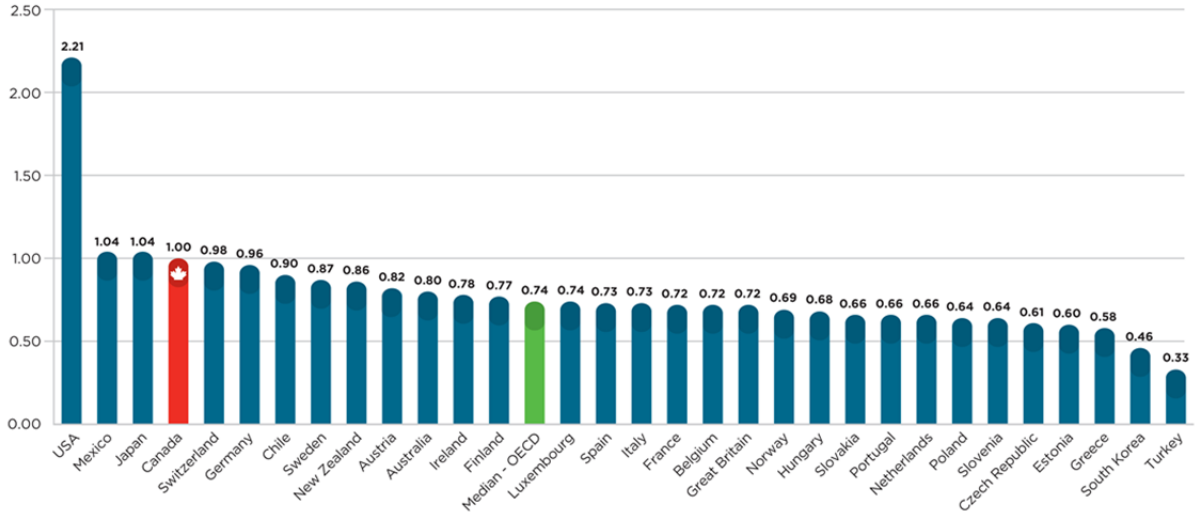


Figure 15 Multi-source patented medicines



Appendix C – OECD Study

Figure 16 Average foreign-to-Canadian price ratios in 2014



Source: IMS MIDAS™ database, 2005–2014, IMS AG. All rights reserved.

In the Discussion Paper, as well as their public consultations, the PMPRB uses this graph comparing Canadian prices with those of OECD countries. The methodology of the MIDAS IMS data base is not described: Are list prices or average prices compared? Are only patented medicines included? Are generic medicines included? Are over-the-counter medicines included? Why are these results different from the PMPRB Annual Report? So this analysis would require a further segmentation to understand the ranking of only single-source innovative products. Still, there is always a challenge of calculating any reliable price comparison as results are compounded by a wide range of other factors, including exchange rate fluctuations, product differences, medical practice and reimbursement policies, among others.

The IMC analysis presented in Appendix B was commissioned to obtain a clear and unbiased comparison of ranking of list prices versus international comparators. As a wealthy nation, PMPRB should focus its comparisons with G7 countries and not emerging economies and consider the same segmentation methodology for its international ranking.

End Notes

[1] CIHI, NHEX Trend reports 2015
[2] Patented Medicines Price Review Board Annual Report 2015; PMPRB; July 29, 2016.
[3] IMSBrogan CDHMAT Dec 2015-PharmaFocus 2020
[4] CDHMAT Dec 2015-PharmaFocus 2020
[5] pCPA website (October 19, 2016): http://canadaspremiers.ca/en/initiatives/358-pan-canadian-pharmaceutical-alliance - "As of April 1, 2016, these collaborative efforts between provinces and territories have resulted in 95 completed joint negotiations on brand name drugs and price reductions on 18 generic drugs. This has resulted in an estimated $712 million in combined savings annually".
[6] PMPRB Guidelines Modernization: Discussion Paper; PMPRB; June 2016
[7] Patented Medicines Price Review Board Annual Report 2015; PMPRB; July 29, 2016.
[8] Form 2 Block 5 data submitted to PMPRB, July-December 2015, Innovative Medicines Canada members. Converted to Canadian dollars using PMPRB's 36-month exchange rate ending December 2015
[9] Assessment and Response to PMPRB Policy Positions; PDCI - Prepared for Merck Canada Inc.; October 30, 2015
[10] PMPRB Guidelines Modernization: Discussion Paper; PMPRB; June 2016
[11] Patented Medicines Price Review Board Annual Report 2015; PMPRB; July 29, 2016.
[12] Strategic Plan 2015-2018; PMPRB; December 2015
[13] Patented Medicines Price Review Board Annual Report 2015; PMPRB; July 29, 2016.
[14] Form 2 Block 5 data submitted to PMPRB, July-December 2015, Innovative Medicines Canada members. Converted to Canadian dollars using PMPRB's 36-month exchange rate ending December 2015
[15] Form 2 Block 5 data submitted to PMPRB, July-December 2015, Innovative Medicines Canada members. Converted to Canadian dollars using PMPRB's 36-month exchange rate ending December 2015.
[16] Patented Medicines Price Review Board Annual Report 2015; PMPRB; July 29, 2016.
[17] Assessment and Response to PMPRB Policy Positions; PDCI - Prepared for Merck Canada Inc.; October 30, 2015
[18] Assessment and Response to PMPRB Policy Positions; PDCI - Prepared for Merck Canada Inc.; October 30, 2015
[19] pCPA website (October 19, 2016): http://canadaspremiers.ca/en/initiatives/358-pan-canadian-pharmaceutical-alliance
[20] KPMG, R&D Spending and Investments by IMC Members - Product donations to patients through compassionate use and special access programs.
[21] Standing Committee on Health; HESA; June 6, 2016
[22] Provincial Reimbursement Advisor; IMS; August 2005.
[23] pCPA website (October 19, 2016): http://canadaspremiers.ca/en/initiatives/358-pan-canadian-pharmaceutical-alliance
[24] Rawson, N.S.B.; *How might the choice of prescription drugs in provincial public insurance plans be impacted if a cost-control system like New Zealand's was adopted in Canada?* Canadian Health Policy; September 26, 2016
[25] Patented Medicines Price Review Board Annual Report 2015; PMPRB; July 29, 2016.
[26] Form 2 Block 5 data submitted to PMPRB, July-December 2015, Innovative Medicines Canada members. Converted to Canadian dollars using PMPRB's 36-month exchange rate ending December 2015.
[27] Nation Master website (October 17, 2016): http://www.nationmaster.com/country-info/groups/Group-of-7-countries-(G7).
[28] Form 2 Block 5 data submitted to PMPRB, July-December 2015, Innovative Medicines Canada members,
[29] Patented Medicines Price Review Board Annual Report 2015; PMPRB; July 29, 2016,
[30] *PMPRB Compendium of Policies, Guidelines and Procedures, June 2012*
[31] CIHI, NHEX Trend reports 2015 / IMSBrogan CDH Compuscript MAT 2016-04
[32] CIHI, NHEX Trend reports 2015 / PMPRB Annual Report 2015
[33] Merck Global Access Network: Center of Excellence for International Price Referencing