

Submission to the Standing Committee on Health (HESA) Pharmaceutical Sovereignty and Insulin Supply in Canada

Executive Summary

Insulin is one of the most important medicines in modern healthcare. For the 640,000 Canadians living with diabetes who need it, uninterrupted access to insulin is essential for survival. For those with Type 1 diabetes, an auto-immune disease, there are no substitutes for insulin and without it they will die within days or weeks.

Despite insulin's importance—and its discovery in Canada—we currently have no domestic manufacturing capacity for this medicine. Instead, Canadians rely entirely on three foreign corporations that control 95% of the global supply of insulin.

Recent developments in the global insulin market, including the discontinuation of multiple insulin products for commercial reasons, illustrate the dangers of relying exclusively on global pharmaceutical supply chains for essential medicines. The World Health Organisation estimates that [half of the world's population](#) who need insulin either [cannot afford](#) it or have no access to supplies.

Other jurisdictions have begun responding to these risks by strengthening domestic pharmaceutical manufacturing capacity and treating certain medicines, including insulin, as strategic assets. Canada is not currently among these.

Until the mid-1980s, however, Canada did maintain domestic production of insulin and other biologics through publicly owned Connaught Laboratories. Re-establishing domestic insulin manufacturing capacity—preferably under public ownership and accountability—would strengthen Canada's pharmaceutical sovereignty while ensuring secure access to one of the country's most important medicines.

Insulin as a Strategic Medicine

Insulin is unique among medicines because of its indispensable clinical role. Individuals living with Type 1 diabetes depend on insulin therapy every day to survive. Interruptions in insulin supply can rapidly lead to serious complications such as ketoacidosis and certain death if access is not possible.

The global insulin market is also highly concentrated. The vast majority of the world's insulin is produced in three countries – Denmark, France and Germany – by three multinational companies – Eli Lilly, Novo Nordisk and Sanofi – which control the global supply chain.

This concentration creates systemic vulnerability for people who live in countries that lack domestic manufacturing capacity.

At the same time, the global insulin market is chronically unstable. Over the past two decades more than sixty human, analogue and animal insulin products have been discontinued by manufacturers. Without exception, these discontinuations were driven by commercial considerations rather than safety concerns. Studies have consistently shown that newer replacements for these withdrawn insulin options provided [little to no therapeutic advantage](#) over older versions.

A recent example is the discontinuation of the popular [insulin detemir](#), marketed as Levemir by Novo Nordisk. Prior to its withdrawal, detemir was used by an estimated one million patients in the United States and was a commonly used long-acting insulin in Canada as well. Its discontinuation has increased the risk of harm among affected patients who require an often stressful, clinical re-evaluation while confronting reduced options and flexibility.

These developments illustrate how corporate portfolio decisions can affect access to clinically necessary medicines. Such decisions are beyond the control of the regulator.

Lessons From Market Withdrawal: Animal Insulin

The discontinuation of animal-derived insulin occurred in the aftermath of the privatisation and sale of Connaught Laboratories and provides another example of how market forces can eliminate necessary medicines. Since the mid-1990s, there have been [62 different animal, human and analogue insulins withdrawn from the global market](#), not a single one for reasons of safety or effectiveness.

Since the 1980s, when recombinant human and analogue insulins were first introduced, some patients relied on porcine or bovine insulin because they either preferred them or experienced fewer side effects. Today the world's only remaining porcine insulin brand is Hypurin, produced by Wockhardt in the U.K.

This is because manufacturers preferred the newer insulins – and it's no wonder. Human and analogue insulins cost an average [of \\$2-\\$6 per 10ml vial](#) to produce, but in Canada sell for between [\\$35 and \\$80](#) per vial, or 1500% above the cost of production.

The range of options available to those who need insulin has also narrowed considerably. This is harmful for those who cannot safely or effectively use what the market has to offer. There are different reasons that may be the case, including auto-immune responses / allergies, individual pharmacokinetics, or injection site reactions. Some people are also better able to detect hypoglycaemia (low blood sugar) on animal-sourced insulins, an issue which triggered an outcry in Europe and North America during the 1980s and 1990s.

The decreasing number of safe options in the insulin market resulted in a study conducted by the House Standing Committee on Health in 2003, including two days of hearings. HESA urged Health Canada to assure ongoing access to animal-sourced insulin products because of the serious, sometimes life-threatening reactions reported by patients and some of their doctors.

As a public interest producer, Connaught Laboratories included more than a dozen speciality insulins vital to a small number of Canadians but amounting to less than one half percent of the company's production by volume. Today, the population relying on animal insulin is small and the sole supplier, Wockhardt, has announced it will be discontinued in Canada. This situation illustrates a broader policy problem: when domestic manufacturing capacity disappears for essential medicines, patients are vulnerable to the decisions of a single global supplier.

International Responses to Insulin Supply Vulnerability

Several jurisdictions have begun responding to challenges posed by what is referred to as [the insulin oligopoly](#) by strengthening domestic pharmaceutical manufacturing capacity.

In January 2025 the European Parliament adopted the Critical Medicines Act, which seeks to strengthen supply security for essential medicines by encouraging domestic production and reducing reliance on external supply chains. One of the medicines that prompted the legislation was insulin. While this move is probably good for Europeans, it may have negative repercussions for Canadians because [Germany, Denmark and France](#) collectively export between 85% to 96% of global retail insulin (by value).

In the United States, governments have also begun exploring public or nonprofit insulin manufacturing initiatives in an effort to gain some control over the world's highest insulin prices. A 10ml vial of one popular brand, for example, [sells for over \\$380 in the United States, compared to \\$35 in Canada](#). The State of California has launched a partnership with the nonprofit manufacturer Civica Rx to produce low-cost generic insulin.

Other states—including New York and Michigan—have passed legislation enabling the development of state-supported insulin manufacturing programs.

Brazil, too, has taken steps [to regain control over the manufacture](#) and distribution of insulin more than 20 years after the acquisition of Biobras by Novo Nordisk in 2003. Biobras, Brazil's only domestic producer of animal and human insulin products, was the world's fourth largest insulin producer and an increasingly important supplier of low-cost human, bovine, and porcine insulins to the countries in the global south. Today, Brazil's ministry of health has entered into a partnership with two private companies for the manufacture and distribution of insulin to Brazilians and others across Latin Americans.

These initiatives reflect growing recognition that essential medicines such as insulin may require public-interest manufacturing models in order to ensure reliable access.

Canada's Experience with Public Pharmaceutical Manufacturing

Canada has a long history of domestic public pharmaceutical production through the work of Connaught Laboratories.

Established in 1913 at the University of Toronto, Connaught Laboratories was created to ensure reliable access to vaccines and biologics at a time when commercial supply was limited and often unaffordable.

The “[fundamental idea](#)” underpinning these early beginnings of Connaught Laboratories, “was the production of all sera and vaccines of value in public health work and their distribution at cost” to provinces. This idea underpinned the principle articulated by JJR Macleod and embraced by both the University and Connaught: “the best Insulin...at the lowest cost.”

But today, Canada doesn't produce a drop of insulin and instead relies on three global corporations that dominate the supply of all the insulin used. Human and analogue insulins cost an average [of \\$2-\\$6 per 10ml vial](#) to produce, but in Canada sell for between [\\$35 and \\$80](#) per vial, or 1500% above the cost of production.

For more than seventy years Connaught played a central role in producing vaccines, insulin, and other biologics for Canadians and the for the country's public drug plans. Because it operated as a publicly owned institution, Connaught was able to prioritize affordability and reliability of supply rather than shareholder returns.

This experience demonstrates that public pharmaceutical manufacturing can function as an effective public health instrument.

Recommendations

1. **Re-establish domestic insulin manufacturing capacity.**
The Government of Canada should support the development of domestic insulin production as part of a national pharmaceutical sovereignty strategy.
 2. **Recognize that a broad range of animal, human and analogue insulin options are essential for the diverse population of Canadians who need them.**
Insulin – both natural and biosynthetic – should be designated as a critical medicine within Canada's pharmaceutical supply resilience framework.
 3. **Create an Essential Medicines Manufacturing Program.**
Canada should identify medicines that are clinically indispensable but vulnerable to supply disruption and ensure domestic production capacity for those products.
 4. **Support public-interest pharmaceutical manufacturing.**
Canada should explore public or nonprofit manufacturing models similar to initiatives in other countries such as Brazil and the United States.
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Conclusion

Insulin was discovered in 1921 at the University of Toronto through the work of Frederick Banting, Charles Best, James Collip and JJR Macleod. It was manufactured by Connaught and distributed at cost to Canadians across the country. Today, however, Canada relies entirely on imported insulin produced by multinational pharmaceutical companies. At a time when approximately 640,000 Canadians depend on insulin therapy, rebuilding domestic manufacturing capacity would strengthen Canada's pharmaceutical sovereignty while reaffirming the public-health principles that guided the discovery and early production of insulin in Canada.