



VALUE OF MEDICINES IN CANADA

SEPTEMBER 2023



Innovative medicines and vaccines are some of the most powerful tools available to help prevent illness, manage chronic disease, and in some cases offer curative solutions.

These medicines help Canadians live longer, healthier, and more productive lives. They offer tremendous value to patients, our healthcare system, and our society.

This study examines and quantifies the value of innovative treatments in Canada to patient lives, the healthcare system and to society. Case studies include: the HPV vaccine, Melanoma treatments, Rheumatoid Arthritis treatments, and Hepatitis C treatments.



CASE STUDY 1

THE HPV VACCINE

Cervical cancer is the 20th most commonly diagnosed type of cancer in Canada and affects mostly working aged women.¹ Every year in Canada, approximately 1,450 women are diagnosed with cervical cancer, with 380 dying from the disease. Of these cases, 87% can be attributed to Human papillomavirus (HPV). HPV infections are the most common sexually transmitted infections, and most sexually active Canadians will have an asymptomatic HPV infection at some time.

Since 2006, there has been a vaccine available, which can prevent up to 97% of the cervical cancer cases caused by HPV.² Based on this effectiveness, the vaccine can potentially prevent 1,228 cases and 322 deaths each year in Canada. Cervical cancer is almost entirely preventable by vaccination, along with regular screening with pap tests for those cases not caused by HPV.³

Aside from the immeasurable value in preventing the death of 322 Canadian women each year, HPV vaccination saves money to the health system by reducing the costs for treating the avoided cases of cervical cancer and by reducing the number of pap screening tests that are required for those who are vaccinated. By preventing women from getting cervical cancer in the first place, it reduces lost working hours due to illness. HPV vaccination programs are a cost-effective intervention and show the value of innovative vaccines to support longer, healthier and more productive lives for Canadians.

VALUE TO PATIENTS

- HPV vaccines can prevent up to **97%** of cases attributed to HPV and **97%** of the deaths associated with these types of cervical cancer.

VALUE TO THE HEALTHCARE SYSTEM

- HPV vaccines can result in up to **\$51.3M** in annual savings to the healthcare system due to prevented cases of cervical cancer.
- HPV vaccines can also reduce the screening required for cervical cancer and generate up to **\$3.2M** annual savings for the health care system due to fewer screenings required for those who have received the vaccine (2.5/lifetime vs 16/lifetime before vaccine)⁴

VALUE TO SOCIETY

- Reducing the burden of illness and mortality related to cervical cancer can lead to **\$26.2M** in annual indirect cost savings to the Canadian economy by reducing working hours lost due to cervical cancer treatment.

CASE STUDY 2

MELANOMA TREATMENTS

Melanoma is the 7th most commonly diagnosed cancer type in Canada, mostly affecting those over age 45.⁵ Melanoma almost always starts in specific types of skin cells, and in advanced cases will spread to other parts of the body.⁶ Approximately 9,000 Canadians are diagnosed with melanoma annually and about 1,200 die following diagnosis.⁷ For those diagnosed with stage 3 or 4 melanoma, the 5-year survival rates were quite low before the advent of modern therapies.

Since the introduction of immunotherapies and other targeted approaches in the early 2010s, however, life expectancy for these patients has been improved by 13-18%.⁸ These improved treatments and standard of care, save the lives of hundreds of Canadians each year and allow them to remain as productive members of the Canadian economy.

IMMUNO- AND TARGETED THERAPIES FOR MELANOMA PATIENTS

VALUE TO PATIENTS

- Immuno- and targeted therapies can increase patient survival rates for advanced melanoma (stage 3 and 4) by 13%-18%
- Stage 3: 5-year survival went from **58% to 71%** after the introduction of these treatments.
- Stage 4: 5 year-survival more than doubled going from **15%** before the introduction of the treatment to **33%** after immunotherapy was introduced.
- This increase in survival saves approximately **184 Canadians** annually.

VALUE TO SOCIETY

- Increased survival rates can prevent **1,214 weeks** of lost labour income, adding **\$42.2 million⁹** to the Canadian economy over the course of the lifetime of patients who otherwise would not have survived their melanoma diagnosis.

CASE STUDY 3

TREATMENTS FOR RHEUMATOID ARTHRITIS

Rheumatoid Arthritis (RA) is a chronic, destructive autoimmune disease that attacks tissue near joints and other body parts. It causes chronic swelling and pain that is sometimes severe. RA can develop at all ages but is mostly diagnosed between 30 and 60 years of age and is twice as common in women as in men.¹⁰ Approximately 467,159 Canadians live with RA, 184,910 of whom are working age.¹¹ For many of these patients, there was no effective treatment for RA before the arrival of biologics in 1998.

The introduction of biologics, which are more effective at treating and allowing patients to manage their symptoms, significantly increased the standard of care for Canadians living with RA. These treatments can increase a patient's quality of life by decreasing pain and allowing them to be more mobile and participate in activities of daily life. Studies have demonstrated a reduction in absences from work, and increased presentism among patients taking biologics.¹² Biologics have also been shown to help slow disease progression.

About 53,000 Canadians were treated with biologics in 2022 – 35,329 of them of working age.¹³ It is estimated that more than 1.4 million days of absenteeism were reduced and just under a million productive days were gained as a result of these treatments. Productive days, including the enjoyment of activities of daily life, were also realized by Canadians of non-working age who were receiving biologics. Expanding the use of biologics to other Canadians who could benefit from them would further increase the value of this innovative treatment in managing RA, and lead to further gains in both quality of life and economic productivity.

VALUE TO PATIENTS

- Biologics have the potential to significantly improve quality of life for patients living with RA by lessening symptoms such as swollen and tender joints, reduced inflammation and better overall health compared to the previous standard of care.
- Studies have demonstrated increased quality of life of **44% (women) and 64% (men)** one year after treatment initiation.¹⁴

VALUE TO THE HEALTHCARE SYSTEM

- Potential reduction in health care visits and utilization due to improved disease management and fewer symptoms as a result of treatment with biologics.

VALUE TO SOCIETY

- Among the working age population living with RA, treatment with biologics resulted in **1,405,176 workdays gained annually** (absenteeism), and **923,401 fully productive workdays gained annually** (presenteeism).

CASE STUDY 4

HEPATITIS C TREATMENTS

Hepatitis C is a viral infection which affects the liver and can lead to severe complications including cirrhosis, liver failure, and liver cancer.¹⁵ If left untreated, untreated, these patients face lengthy and costly health care journeys.

Since the early-to-mid 2010s, direct acting antivirals (DAA) have been available for Hepatitis C. These treatments offer nearly 100% efficacy in curing patients of Hepatitis C and preventing liver disease and other liver-related conditions associated with the virus.

Approximately 11,000 Canadians become infected with Hepatitis C every year, 10,220 of which are chronic cases. DAAs have the potential to cure 10,016 of those chronic cases and improve quality of life through reduced mobility concerns, pain, anxiety and depression.¹⁶ Treatment with DAAs can also reduce health care costs and increase workforce participation.

TREATING HEPATITIS C WITH DIRECT ACTING ANTIVIRALS

VALUE TO PATIENTS

- Third generation DAAs have a **98%** effectiveness in curing Hepatitis C (10,016 Canadians).
- These treatments also help to reduce mobility problems, pain and discomfort, and anxiety and depression.

VALUE TO THE HEALTHCARE SYSTEM

- Average lifetime treatment cost for patients living with Hepatitis C was estimated at approximately **\$65,000** in 2013 (\$79,656 in 2022, adjusted for inflation), though treatment costs can range from a low of **\$52,176** to over **\$400,000** for those requiring more intensive interventions such as liver transplant.¹⁷
- A study estimated 1,200 Hepatitis C-related hospitalizations were avoided in 2016 due to new antiviral treatments which cured Hepatitis C.

VALUE TO SOCIETY

- A study estimated a **41%** reduction in workplace absenteeism when comparing 2nd generation Hepatitis C direct acting antivirals to non-antiviral treatments.¹⁸
- This reduction in absenteeism could contribute to approximately **\$13,000** gained annually per patient cured.¹⁹
- When accounting for the Canadians who could be cured of Hepatitis C and are active participants in the workforce (4,655)²⁰, almost **300,000 workdays** could be gained with approximately **\$60.5 million** added to the Canadian economy.

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