2026 TL:SI

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the cancer paradox.

investment. spending. & the ROI we leave on the table

policy brief

trailer to full analysis | TL:SI | april 2026

the cost of cancer *paid by all*

Cancer is the leading cause of death in Canada. In 2025, an estimated 254,800 Canadians received a cancer diagnosis, and 87,400 died from the disease — more than from any other cause. And nearly 2 in 5 Canadians will be diagnosed with cancer in their lifetime.[1]

The human cost is staggering. So is the economic one. Yet despite spending nearly 37.7$B annually managing the burden of cancer - 80% on late stage health system costs - Canada invests a comparatively modest sum in the upstream research, prevention infrastructure, and early detection capacity that could meaningfully reduce that burden over time.[2]

This brief — the first output of the Thought Leadership **:** System Insight Initiative (TL:SI)— examines the relationship between what Canada spends on cancer and what it invests in cancer research and innovation, and what the evidence tells us about long term return on investment (ROI). At its centre is a structural paradox- Canada bears one of the highest per capita cancer cost burdens among comparable nations while committing proportionally less to the upstream research that evidence consistently shows reduces that burden over time. Understanding that paradox - its scale, drivers and costs - is the starting point for managing it.

A case study on GLP-1 receptor agonists — a class of drugs whose scientific foundations were developed in Canada — illustrates both the extraordinary return that upstream biomedical investment can generate, and the structural constraints that prevent Canada from fully capturing that return domestically.

A forthcoming full length paper will examine these dynamics in greater depth, including the equity dimensions of cancer's economic burden.

what canada spends
the 37.7$ billion dollar question

Canada directs an estimated ~500$M annually to cancer research across its entire ecosystem — Canadian Institute for Health Research (CIHR), the Canadian Cancer Society (CCS), the Terry Fox Research Institute (TFRI), provincial agencies, and other partners — equalling roughly 1.3% of the 37.7$B societal burden cancer imposes each year.[5] While comparable nations commit between 2-3.6% (see page 005).[12] That ratio is not a funding gap. It is a policy choice with a price tag.

The evidence on return is unambiguous. A 2016 US analysis estimated that each additional 1$ invested in cancer treatment research and development would produce over 28$ in cumulative societal value over the following 50 years — through lives saved, treatments avoided, and productive years gained.[6] Notably, this estimate excludes several categories of downstream economic returns. The true return would be higher still. A parallel UK analysis found an internal rate of return (IRR) of 10% annually on publicly funded cancer research — meaning every 1$ invested generates consistent, compounding value year over year.[7] Two independent analyses - same conclusion: the return on cancer research investment is large, durable, and well documented.

The tragedy. Countries that invest heavily in (cancer) discovery build pharmaceutical industries, generate licensing revenue, and create high value employment — capturing economic returns that compound over decades. Canada has demonstrated it can produce world changing science. But without the investment architecture to translate discovery into domestic benefit, Canada remains a science exporter and a treatment importer — spending 37.7$B annually on the consequences of underinvestment while the returns flow elsewhere.

37.7$B
societal cost of cancer

~500$M
total research ecosystem

1.3%
share of burden invested

28:1
societal return on investment

14$B
projected long term return on current investment

14$B
in unrealized return (at OECD investment average)

* ~500 $M ecosystem estimate based on the Canadian Cancer Research Alliance's Canadian Cancer Research Survey (CCRA, 2025), which reported cancer research investment in the low 500 $M range from 2018 to 2022 across federal, provincial, and charitable funders including CIHR, the Canadian Cancer Society, the Terry Fox Research Institute, and provincial agencies. When hospital foundations, industry-sponsored trials, and international sources are included, total investment may reach ~1.1 $B annually.

at a glance

what we spend

total societal cost	37.7$ billion	Canada, 2024
direct health system costs	30.2$ billion	80% of total cost
patients & caregiver costs	7.5$ billion	20% of total cost
direct out of pocket costs for patient & caregivers (drugs, parking, home care,..)	3.7$ billion	10% of total cost
time costs (travel, wait times, etc.)	2.5$ billion	3% of total cost
indirect costs (lost earnings)	1.3$ billion	3% of total
average lifetime cost per patient	32.778$	all cancers

what we invest

federal government	~265$M/year	Five year average 2016-2021
Canadian Cancer Society (CCS)	~50$M	National grants
Terry Fox Research Institute (TFRI)	~60$M	Translational research
provincial (ALL)	~100$M	OICR, Fonds de recherche du Québec, Alberta Innovates
charitable organizations	~50$M	Cancer Research Society, Patient Groups,..

Total tracked cancer research investment across all funders was 525.8 $M in 2022. Source: Canadian Cancer Research Alliance, Cancer Research Investment in Canada, 2022 (CCRA, 2025). CCS and TFRI figures reflect verified 2025 investment levels.

universal coverage
personal burden

In 2024, the total societal cost of cancer in Canada was projected to reach 37.7$B.[2] This figure, drawn from the landmark 2024 Canadian Cancer Statistics special report — the first of its kind to comprehensively map cancer's economic impact — encompasses three distinct cost streams.

Health system costs account for the largest share: 30.2$B, or 80% of the total. These include hospital and physician services, chemotherapy, immunotherapy, radiation therapy, home care, and complex continuing care. Four cancer types — lung, breast, colorectal, and prostate — together account for approximately 47% of health system costs, an estimated 14.2$B combined.[2]

Costs borne directly by patients and caregivers represent the remaining 20%: 7.5$B in 2024. Of this, 3.7$B (49%) represents direct out-of-pocket expenses — drugs, travel, parking, home care, prosthetics, supplements — 2.5$B (34%) represents the value of time lost to travel, waiting, and receiving care, and 1.3$B (18%) reflects indirect costs from lost employment earnings. These proportions — borne entirely by individuals and families within Canada's healthcare system — tell a story often obscured by the price of drugs.[2] The first year after diagnosis is the costliest. Costs during this initial care phase alone are projected at 5.2$B for patients and caregivers — nearly half of all health system expenditure for that same period.[2]

For the individual Canadian diagnosed with cancer, the average lifetime financial burden is 32,778 $ — comprising 16,018$ in direct out of pocket costs, 11,199$ in time costs, and 5,560$ in indirect costs from lost earnings.[2] For the more than 50% of Canadians who have less than 200$ remaining each month after essential bills, this figure is not an inconvenience. It is a financial crisis. And this burden is not distributed equally. Those in lower income households, those on fixed incomes, and those in rural and remote communities — where proximity to treatment centres is limited — face disproportionately higher costs. Women bear a particular burden- breast cancer alone accounts for the largest share of patient and caregiver costs among women, and the persistent gender wage gap means the same out of pocket costs represent a larger proportion of disposable income for women than for men.[2] In 2025, for the first time, more women than men will be diagnosed with lung cancer in Canada — a demographic shift that will compound this burden further.[1]

Crucially, Canada's out of pocket costs are high even by international standards. A systematic review found that Canadians with cancer pay an average of 253$/month out of pocket — compared to 93$/month in Australia and 240$/month in Western Europe.[3]

Direct health system costs are projected to increase by 24% by 2034, rising from 30.2$B to 37.4$B. Total patient and caregiver costs will climb from 7.5$B to 8.8$B by 2034, with out of pocket costs alone rising approximately 20% to 4.4$B. The continuing care phase — the years people live with and beyond cancer — is projected to see the steepest increase, rising 27% from 12.6$B to 16.0$B. Lung cancer costs are expected to increase the most of any cancer type, projected to reach 8.9$B in societal costs by 2034.[2] Absent structural investment in prevention and early detection, Canada is not managing a static problem — it is managing an accelerating one.

The demographics of that acceleration are shifting. In 2025, for the first time, more women than men are expected to be diagnosed with lung cancer in Canada.[1] The burden of cancer is not only growing — it is changing who it falls on.

190 spent *one invested*

Over the past 25 years, Canada has invested nearly 4$B in cancer research through CIHR alone.[4] It will spend nearly that much treating cancer in the next five weeks.

Canada directs an estimated ~500$M annually to cancer research across its entire ecosystem — (CIHR, CCS, TFRI, provincial agencies, and other partners) — roughly 1.3% of the 37.7$B societal burden cancer imposes each year.[5]

The evidence on return is unambiguous, and it comes from two independent analyses using different methodologies on different continents. A 2016 US study estimated that each additional 1$ invested in cancer treatment research and development produces over 28$ in cumulative societal value over the following 50 years.[6] A parallel UK analysis found an internal rate of return (IRR) of 10% annually on publicly and charitably funded cancer research — meaning every 1$ invested generates consistent, compounding value year over year.[7] It is worth pausing on what these figures actually mean. The 28$ figure is not a nominal future sum that inflation will erode — it is expressed in present value terms, using standard health economics discount rates that mathematically convert all future returns into what they are worth in today's dollars. Future gains are already adjusted downward to account for the time value of money before the ratio is calculated. The 28:1 return survives that adjustment. Even under conservative discount rate assumptions, the case for investment remains strongly positive. A 10% annual IRR, sustained over decades, is a return that most public or private investment portfolios would envy.

The mechanism is straightforward- earlier detection reduces the cost of treatment, successful therapies return people to productive lives, and prevention interventions compound their value across entire populations over time. Every dollar that avoids a Stage IV diagnosis, prevents a hospitalization, or returns a working-age Canadian to employment generates downstream value that conventional health budgets rarely capture — but that this evidence base does.

For Canada, the arithmetic is striking. At current investment levels, the ~500 $M research ecosystem stands to generate approximately 14 $B in long-term societal value. Scaling investment to just 5% of the cancer burden — 1.9 $B annually — would unlock an estimated 53 $B in return over 50 years, sufficient to offset more than 10% of current annual spend, or approximately 3.8 $B in annual savings. That level of investment would still leave Canada below what leading research nations commit proportionally — Canada's overall R&D spending sits at approximately 1.7% of GDP, below the OECD average of 2.7%, and well behind leaders like Sweden (3.6%), Japan (3.4%), and Belgium (3.3%).[12] The question is not whether the return justifies the investment but why Canada has not acted on it.

a note on comparators

Canada's cancer research investment as a share of its cancer burden sits below eight (8) of the 11 PMPRB11 comparator countries against which Canada benchmarks its own drug prices. Sweden invests 3.6%, Japan 3.4%, Belgium 3.3%, Germany 2.9%, the Netherlands and France roughly 2.2%, Norway and Australia approximately 2.0%. Canada outspends only Italy and Spain among its own reference group. The cancer investment gap is not an anomaly — it is a symptom of a broader national pattern of underinvestment in research relative to the peers Canada has chosen for itself.[12]

Canada's pharmaceutical expenditure, 990$ USD per capita - is the fourth highest in the OECD, 29% above the OECD average, and higher than nine (9) of its 11 PMPRB11 comparators.[13]

Canada is underinvesting in the science and overpaying for the results.

prevent more *spend less*

The economic logic of cancer prevention is well established. Early stage cancer diagnosis is dramatically less costly to treat and associated with far higher survival rates across virtually all cancer types. Colorectal cancer detected at Stage I has a five-year survival rate above 90%; detected at Stage IV, it falls below 15%.[8] The cost differential is equally significant.

Yet Canada's investment in prevention infrastructure — screening programs, public health campaigns, primary care capacity for risk stratification — remains fragmented, variable across provinces, and chronically underfunded relative to treatment budgets. The consequence is a system structurally biased toward expensive, late-stage intervention rather than cost-effective early detection.

Primary prevention addresses modifiable risk factors - diet, physical activity, tobacco, alcohol, and environmental exposures - and can stop cancer from developing in the first place. *Secondary prevention* improves screening and diagnostic capacity to ensure cancers are detected early, when they are most treatable and least costly. Both are underfunded. The consequence is a system structurally biased toward expensive late stage intervention rather than cost effective early detection.

The 41$M prevention research investment announced by the Government of Canada on February 26, 2026 — the single largest CIHR-led investment in cancer prevention research to date — is a meaningful and welcome signal that this is changing.[4] But context matters: 41$M against a 37.7$B annual burden represents just 0.1% of the cost Canada bears each year from cancer. The direction is right. The magnitude has yet to match the moment.

Up to 40% of cancer cases in Canada could be prevented through modifiable risk factors such as diet, exercise, and reduced exposure to environmental hazards.[4] Yet only 40% to 50% of adults in Canada are up to date with colorectal cancer screening guidelines, well below the national target of 60%.[2] Similar gaps exist for breast and cervical cancer screening.[2]

The urgency of this investment will only grow. Canada's population is aging, and incidence projections reflect that — more Canadians will be diagnosed with cancer over the coming decades simply as a function of demographics. But the burden is not confined to older populations: several cancer types, including colorectal cancer, are rising in incidence among younger adults. Acting earlier — through both primary and secondary prevention — is not only cost-effective today; it is the structural response to a burden that will otherwise compound.

CIHR's Institute of Cancer Research identified prevention, equity, and early detection as priority areas requiring accelerated investment in its 2024–2029 Research Priority Plan.[9]

global gains *domestic gap*

Dr. Daniel Drucker of the Lunenfeld-Tanenbaum Research Institute at the University of Toronto is one of the principal architects of GLP-1 science. His foundational research — supported by CIHR and conducted at U of T — helped establish that the hormone GLP-1 stimulates insulin release, suppresses appetite, and acts on receptors throughout the body. That work, begun in the late 1980s, ultimately paved the way for semaglutide (Ozempic, Wegovy) and the broader class of GLP-1 receptor agonists. As of 2025, these drugs generate tens of billions in global revenues annually.[10] They are also among the fastest-growing drivers of pharmaceutical expenditure in Canadian health systems — provincial drug plans are under significant and growing pressure to fund GLP-1 therapies at scale, with list prices exceeding 300 $/month per patient. The same science that Canada produced is now returning as a cost pressure on the very system that funded its early discovery. *That irony is not lost on health economists — and it should not be lost on policymakers.*

The GLP-1 story is, in many respects, the ideal illustration of what upstream biomedical investment in Canada can produce. It is also a provocation.

While the research originated in Canada, the clinical and commercial development occurred elsewhere — primarily in Denmark (Novo Nordisk) and the United States. This is not coincidental. Canada's life sciences sector is characterized by significant structural fragmentation: limited domestic capital for late-stage development, inadequate translation infrastructure between academic discovery and commercial deployment, and a regulatory and incentive environment that does not consistently reward domestic commercialization over foreign licensing. International competitiveness in this sector is not built through research alone — it requires the architecture to convert discovery into economic return. Dr. Drucker himself has noted that he received no financial benefit from Ozempic. The science was produced in Canada; the world captured the return.[10] This reflects a well-documented structural gap in Canada's innovation ecosystem: strong upstream research capacity combined with limited ability to translate that research into domestic commercial, clinical, and economic returns. Until the structural incentives change, the pattern will repeat.

GLP-1 receptor agonists are now emerging as a significant area of interest in cancer research — and the implications for this brief's core argument are direct. Obesity is one of the most significant modifiable risk factors for cancer, associated with elevated risk across more than a dozen cancer types including breast, colorectal, endometrial, kidney, and liver cancers. As of 2023, 1 in 3 Canadians lives with obesity.[10] The downstream cancer burden attributable to obesity is substantial, and the February 2026 CIHR prevention investment explicitly includes research into whether GLP-1 drugs can lower the risk of breast, blood, and obesity-related cancers.[4]

Emerging clinical data now suggests that GLP-1 receptor agonists may reduce cancer risk independent of weight loss alone. A 2025 retrospective cohort study published in JAMA Oncology found GLP-1 receptor agonist use was associated with a reduced overall cancer risk across 14 cancer types, including endometrial, ovarian, and other obesity-related malignancies.[11] Ongoing clinical trials are examining the mechanisms more rigorously. If GLP-1 therapies prove to reduce cancer incidence at population scale, they represent a potential prevention dividend of enormous magnitude — one whose scientific roots lie in publicly-funded Canadian research. The question this raises for Canadian health policy is urgent: is Canada positioned to systematically capture and deploy insights like this within its own health system, or will it remain a science exporter and a treatment importer?

The deeper cost is structural. Countries that invest heavily in cancer discovery build pharma industries, generate licensing revenue, and create high-value employment — capturing economic returns that compound over decades. Canada has demonstrated it can produce world-changing science; GLP-1 research at the University of Toronto is proof. But without the investment architecture to translate discovery into domestic benefit, Canada remains a science exporter and a treatment importer — spending 37.7 $B annually on the consequences of underinvestment while the returns flow elsewhere.

four questions *no answers*

the system insight lens

1. Is the 190:1 spend-to-invest ratio defensible? Canada spends nearly 38$B annually managing cancer consequences[2] while investing approximately 200$M in federal research.[4] What would a rebalanced ratio look like, and what is the evidence base for the optimal investment level?

2. What is the true cost of late stage diagnosis? The data strongly suggest that underinvestment in screening and early detection drives disproportionately higher treatment costs downstream. Quantifying this relationship at the system level could transform the policy conversation around prevention funding.[2]

3. Who is bearing the burden, and why? The equity dimensions of cancer's economic cost — across income, geography, sex, cancer type, and provincial jurisdiction — remain insufficiently mapped at the policy level.[2] The forthcoming full paper will examine this in depth.

4. Can Canada build a system that captures the return on its own science? The GLP-1 case illustrates the structural gap between research generation and domestic health system benefit.[10] Closing that gap — through dedicated translation infrastructure, sustained research investment, smarter HTA frameworks that reward innovation, earlier pharma engagement, and prevention systems capable of deploying what science discovers — is a national economic and public health imperative.

the cost of doing nothing
& the price we are paying

The gap between what Canada spends and what it invests is a direct consequence of a system built to manage sickness rather than invest in health.

That framing has consequences. A system oriented around managing sickness will always spend at the back end, underinvesting in research, underfunding early detection, and paying premium prices for treatments its own researchers have discovered. Absorbing the cost of late stage diagnosis, lost productivity, and financial crisis for patients and families - and calling it healthcare.

A system oriented around investing in health asks a different question: what does it cost to act now versus earlier? The 28:1 return on cancer research investment is not only a health system gain - it is an economic one, measured in treatments avoided, hospital resource utilization freed, burden lifted from an already overstretched workforce, years of productive life restored, and people who remain in the workforce.

Investing in health — whether through research, prevention, early detection, or smarter drug expenditure — is the foundation of a functionally productive society. The ROI is not theoretical. It is measurable and documented. Canada has the science, the evidence, and the opportunity to make that choice.

The full analysis is coming. But the conversation doesn't have to wait. Start it.
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