

Beyond Public Health Insurance: Autonomous Treasury Architecture for Canada's Private- Pay Clinic Economy

Independent clinics are paid through a web of private insurers, patients and public programs, and they reconcile all of it by hand. Administrative latency is the cost. A shared financial layer is the remedy.

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Rooted Node is building the autonomous financial layer for Canada's private-pay outpatient care economy. This is the market of independent, mostly owner-operated clinics that work beyond provincial public health insurance (OHIP in Ontario, MSP in British Columbia, and so on): physiotherapy, chiropractic, massage therapy, psychology and counselling, optometry, dentistry and the other allied health professions. These clinics are paid by dozens of private extended-health and dental insurers, by patients directly, and by a handful of public programs. Almost all of them reconcile those payments by hand. Our software is designed to keep the clinic's records, its payers and its bank in agreement without a person doing the matching. The product is in development and has not been released. This paper sets out why the problem is large, why it is structural, and why one layer can serve every profession in the market.

Two terms recur. *Administrative latency* is the elapsed time, and the human labour, between delivering a service and having the money owed for it confirmed, received and matched in the clinic's books. *Autonomous capital velocity* is its inverse: the rate at which

earned revenue becomes reconciled, usable cash without a person moving it along. *Autonomous treasury architecture* is our name for the design principles of a system built to shrink the first and raise the second.

The market beyond public coverage

Public health insurance funds hospitals and physicians through a single public payer in each province. The clinics this paper is about work on different economics. The Canadian Institute for Health Information (CIHI) groups their services under "other professionals": the work of dentists, chiropractors, optometrists, massage therapists, physiotherapists, psychologists and similar practitioners.¹² This category reached about \$38.9 billion in 2023, the latest year of actual data, and CIHI forecasts about \$43.6 billion for 2025. In 2023, 87 per cent of this spending was private, paid by insurers or by patients out of pocket. Across the health system as a whole, the private share was 29 per cent.¹ Public coverage is the exception in this market, not the rule.

Private insurers carry much of the cost. In 2024 Canada's life and health insurers paid \$40.5 billion in supplementary health benefits to 27 million people, close to 70 per cent of the population. Massage therapy accounted for \$1.9 billion, vision care \$1.6 billion, physiotherapy \$1.1 billion, chiropractic \$0.9 billion, mental health services \$0.9 billion and other paramedical services \$1.0 billion. Dental benefits added \$12.6 billion.³ By our calculation, the paramedical and vision lines alone come to about \$7.4 billion. They are also the fastest-growing: the Canadian Life and Health Insurance Association (CLHIA) reports that paramedical claims such as mental health and massage rose 16 per cent in 2024, leading the growth of health claims.³

The supply side is fragmented. Statistics Canada data published by Innovation, Science and Economic Development Canada count about 23,800 employer establishments in "offices of other health practitioners," the category for allied health clinics outside dentistry and medicine. Two-thirds of them have fewer than five employees. Another 72,600 establishments in the same category have no employees or an indeterminate status.⁴ Offices of dentists add about 17,900 employer establishments.⁵ (Statistics Canada cautions against simply adding the employer and non-employer counts.) In practitioner terms, CIHI counts more than 30,000 physiotherapists, 31,000 psychotherapists and

counselling therapists, 22,000 occupational therapists, 21,000 psychologists, 27,000 dentists, 8,700 chiropractors and 7,300 optometrists in 2024. Massage therapists are not included in its national tables.⁶ In most of these small businesses, the owner is also the finance department.

The payer web

A clinic in this market does not have one payer. It has a web of them.

Private insurers and their networks. Most extended-health claims from allied health clinics travel through TELUS Health eClaims. Its participating list names more than 30 insurers, plan administrators and union plans, and it accepts claims from 24 kinds of practitioners, from acupuncturists and chiropractors to psychologists, physiotherapists and optometrists.⁷ Coverage is not uniform. One of the country's largest insurers, Sun Life, left eClaims in January 2022 and runs its own provider billing service.⁷ Dental claims do not use eClaims at all. They move through a separate network, the Canadian Dental Association's CDAnet and ITRANS service.⁷⁸ Even within eClaims, money and remittance information come back on each payer's own terms: payment timing "varies by insurer." Electronic claims must be submitted within 31 days of service. Payment statements for one insurer can be viewed in the portal, while for the others the clinic must contact the insurer.⁷ Where a patient has two plans, coordination of benefits splits a single visit into a primary and a secondary claim.⁷

Patients. A large share of revenue comes straight from patients. In a 2023 survey of more than 1,600 Canadian chiropractors, 45 per cent named patients' out-of-pocket payment as their primary payment source and 44 per cent named direct-billed extended health insurance.⁹ In a 2023 national survey of massage therapists, about 73 per cent of respondents said their practice accepted direct billing to health insurers.¹⁰ Most clinics therefore run two streams at once: card payments at the front desk, and insurer deposits that arrive later, in batches.

Federal public payers. Several federal programs pay these clinics directly, each through its own administrator. Indigenous Services Canada's Non-Insured Health Benefits program covers dental care, vision care and mental health counselling, among other benefits, for eligible First Nations and Inuit. Claims are processed by Express Scripts Canada. Other

public or private coverage must be billed first, and the other plan's explanation of benefits must accompany the claim. If verification finds a claim was billed inappropriately, the payment can be recovered from the provider directly or withheld from future claim statements.¹¹ Veterans Affairs Canada uses Medavie Blue Cross as its claims administrator. Providers register with Medavie, verify eligibility, obtain pre-authorization and submit claims through its ePay portal.¹² Medavie's related-health-services program covers chiropractors, massage therapists, physiotherapists, occupational therapists, psychologists and others.¹³ The Canadian Dental Care Plan, administered by Sun Life, had 29,293 participating oral health providers as of August 31, 2026.¹⁴

Provincial and quasi-public payers. Provinces add narrower but real streams. In Ontario, OHIP covers eye examinations by optometrists for people aged 19 and under, for adults with specified medical conditions, and periodically for people 65 and over.¹⁵ Government-funded community physiotherapy clinics serve people 65 and over, people 19 and under, patients recovering from a hospital stay or day surgery, and recipients of Ontario Works or the Ontario Disability Support Program.¹⁶ Workers' compensation boards are a separate payer. In Ontario, the Workplace Safety and Insurance Board (WSIB) bills and pays providers through the TELUS Health provider portal and issues its own remittance statements.¹⁷ CIHI counts workers' compensation health spending as public.² Auto insurance accident benefits are another stream, each with its own provincial rules. In Ontario, every clinic that submits treatment plans and invoices to auto insurers must use the Health Claims for Auto Insurance system, and only clinics holding a licence from the Financial Services Regulatory Authority of Ontario may be paid by insurers directly.¹⁸ In British Columbia, members of ICBC's Recovery Network invoice through a provider portal, while physiotherapists, chiropractors, massage therapists, psychologists and others outside the network submit by email.¹⁹

None of these programs is unreasonable on its own. Together, they mean a single multidisciplinary clinic can deal with many payers, each with its own enrolment, eligibility rules, claim format, timing, payment rail and remittance document.

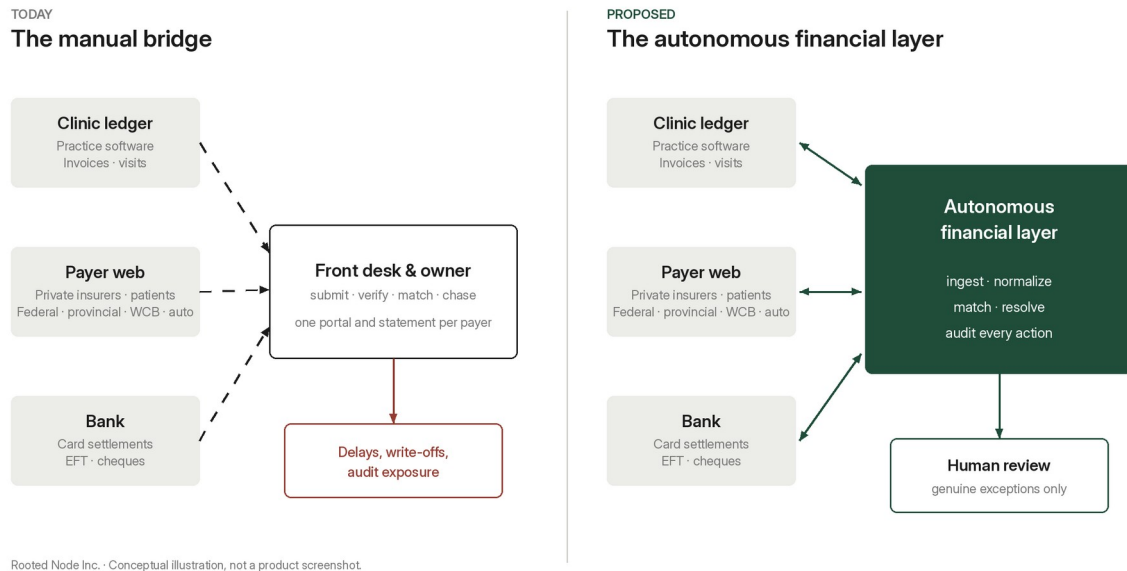


Figure 1. Left: in today's private-pay clinic, staff carry information between the clinic's records, a web of payers and the bank. Right: in the proposed architecture, one software layer keeps the three in agreement and routes only genuine exceptions to people.

Why this is structural, not a staffing problem

The single-payer side of Canadian health care is costly to administer, but it is comparatively coherent: one payer per province, one fee schedule, one remittance cycle. The research supports the contrast. A 2020 study in the *Annals of Internal Medicine* estimated that administration consumed 17.0 per cent of Canadian health expenditures in 2017, against 34.2 per cent in the multi-payer United States, and concluded that the gap apparently reflects the inefficiencies of the US multi-payer system.²⁰ Canada's private-pay clinic economy runs on multi-payer financing. The study did not measure these clinics directly; the point is that the disorder public health insurance reduced for physicians is their normal operating environment.

This friction shows up as a large drain on clinical time. National tracking by the Canadian Medical Association (CMA) and the Canadian Federation of Independent Business (CFIB) finds that Canadian physicians lose 19.8 million hours a year to unnecessary administrative work, a systemic misallocation of high-cost clinical labour acting as a human data bridge. Seventy-six per cent of respondents named insurance companies as a primary source of that unnecessary work.²¹ These are physician figures, and most

physician work is paid for by public health insurance. Private-pay clinics have no equivalent national count, so this is the closest measured proxy for what manual administration costs Canadian clinicians.

Three features make the problem structural.

First, the three ledgers share no common key. The clinic's invoice number, the payer's claim reference and the bank's deposit description are produced by different systems for different purposes. Matching them is an act of interpretation, and interpretation has historically fallen to people.

Second, the work grows with the number of payer relationships, not the number of patients. A clinic that adds a psychologist to a physiotherapy practice, or begins taking auto insurance cases, takes on new formats, timelines and exceptions. Headcount grows in a straight line; combinations of payers, plans and rules grow much faster.

Third, the cost of error is rising. Insurers have industrialized claims integrity. Through CLHIA's industry anti-fraud initiatives, insurers had analyzed data from more than 200 million claims using artificial intelligence by the end of 2024, generating more than 13,000 alerts for potential fraud. More than 500 alerts involving over 700 entities had been recorded in a shared registry, and insurers had conducted close to 40 joint investigations of suspected provider fraud.³ For a clinic, the consequence of a finding can be severe. The Registered Massage Therapists' Association of Ontario explains that a delisted therapist's claims are no longer paid, that delisting typically extends to all services at any clinic the therapist operates, and that the stated reasons can be as brief as "sub-standard recordkeeping" or "non-compliant administrative practices."²² The same association notes that such concerns typically originate from a plan member complaint or from irregular billing patterns identified by an insurer's fraud detection software.²² Because insurers now run AI-driven analytics across more than 200 million claims, a clerical mismatch between the clinic ledger and the portal, such as a mistyped code or a misapplied co-pay, can resemble problem billing to automated screening. Delisting typically follows an investigation into suspected fraud or abuse, not a single keying error, and fraud control is necessary. But a clinic whose records do not reconcile is in a weaker position when its

charts and billings are reviewed. Administrative latency is no longer only a cash-flow constraint; it is a risk to the clinic's ability to direct-bill.

The human cost shows up in the evidence that exists. In the 2023 chiropractic survey, third-party payment models were consistently associated with higher anxiety, burnout and depressed mood. The authors suggest this may reflect the administrative burden of managing reimbursement, and propose studying whether payment-administration technology could reduce it.⁹ Massage therapists listed billing and direct billing among the challenges they face.¹⁰ All of this sits on top of the regulatory load carried by any small business. The Canadian Federation of Independent Business estimates that businesses with fewer than five employees spend 198 hours and \$10,208 per employee a year on government regulatory compliance.²³ That figure excludes insurer administration; the payer work comes on top of it.

Hiring a billing coordinator moves this work around without changing its shape. The connections between systems run through people because nothing else connects them.

Why one layer serves every profession

For an investor, the important structural fact is that the payer web is shared. A physiotherapy clinic, a counselling practice, an optometry office and a massage clinic in the same city deal with largely the same insurers, the same claims networks, the same federal and provincial programs and the same banks. eClaims alone spans 24 practitioner types.⁷ Medavie's veterans program covers chiropractors, physiotherapists, psychologists and massage therapists under one program.¹³ The Non-Insured Health Benefits program's coordination rules apply to whichever benefit is being claimed.¹¹

Profession-specific detail does exist: service codes, frequency limits, pre-authorization rules, the handling of devices and appliances. But it can be expressed as configuration on a common engine. The reconciliation problem itself is the same everywhere: an expected amount in the clinic ledger, an adjudicated amount from a payer, and a deposit at a bank. Software built around that three-way problem is a horizontal platform, not a collection of vertical tools. It can follow multidisciplinary clinics and clinic groups as they add services.

The same logic marks the boundaries of the market. Physician and hospital care funded by public health insurance is out of scope. Veterinary care is an adjacent market for later: its clinics share the owner-operated, private-pay structure, but pet insurance mostly reimburses owners rather than paying clinics, so the reconciliation problem takes a different form there.

Why now

Three developments make this layer buildable now.

The first is software that can act. AI systems can now read semi-structured documents such as remittance statements and explanations of benefits, reason about likely matches, and carry out multi-step work through existing applications' sanctioned interfaces, without waiting for every payer to adopt a new standard. The asymmetry is striking. Insurers already apply AI across hundreds of millions of claims to detect anomalies.³ The clinics on the other side of those claims mostly reconcile with spreadsheets.

The second is the payment rails. Payments Canada's Real-Time Rail is positioned to introduce data-rich ISO 20022 messaging to Canadian payment channels, a standard that allows far more remittance detail to travel with the payment itself. While its phased rollout remains a moving institutional timeline, its architecture structurally enables overlay services, and Payments Canada expects services such as automated cash-flow tools to be built on top of it.²⁴

The third is permissioned financial data. The federal consumer-driven banking framework, whose regulations were pre-published in June 2026, will replace screen scraping with secure, API-based data sharing under Bank of Canada oversight. The government estimates that about nine million Canadians currently share financial data through screen scraping.²⁵ For a clinic, this opens a sanctioned, accredited route to its own bank data, the third ledger in every reconciliation.

The autonomous financial layer

Rooted Node's layer sits between existing systems rather than replacing them. The clinic keeps its practice software, payer enrolments and bank. What follows is the architecture we are building toward, not deployed results. It has four responsibilities.

Ingestion through sanctioned interfaces. The layer connects to each source the way it is meant to be connected to: clinic records through practice software integrations, payer data through certified networks and payer portals, and bank data through accredited, permissioned access as it becomes available. It does not depend on scraping screens that were built for people.

A common financial event model. Every invoice, claim, adjudication, adjustment, recovery, card settlement and deposit is converted into one internal representation. The clinic gets one view of each visit's financial life.

Continuous three-way matching. The core of the layer is reconciliation. It ties each expected amount to the adjudicated amount and then to the funds received, across batched deposits, primary and secondary claims, patient co-payments and later recoveries. Matching runs as events arrive, not at month end.

Governed resolution. Where a discrepancy has a clear, rule-bound remedy, such as a correctable rejection or an unfiled secondary claim, the layer prepares the next step with its inputs, the rule applied and the evidence attached. It acts on its own only within categories the clinic has explicitly authorized. Anything consequential goes to a person to accept or override. Every action is logged and can be audited, which matters more as payer audits intensify.

The goal is simple to state. For a clean claim, administrative latency should approach the payer's own processing time, and the share of revenue reconciled without a human touch should rise steadily. That is autonomous capital velocity.

Implications

For clinic owners, the gains are time and visibility: hours return to patients, receivables are known daily, and leakage from unfiled secondary claims, missed windows and

untraced short payments becomes measurable and recoverable. Clean, matched records are also the best defence in an insurer audit.

For multidisciplinary clinics and clinic groups, one financial event model across locations and professions makes consolidated treasury and consistent controls possible without forcing every site onto the same practice software.

For insurers and public programs, cleaner submissions, correctly sequenced coordination of benefits and complete documentation reduce rework, inquiries and avoidable disputes on both sides of the claim.

For policy-makers, the layer offers measurement. National accounts record what is spent on these services, not what it costs to get paid for them. Latency that can be timed can be managed.

There are real constraints. Health and financial data in Canada are governed by federal and provincial privacy law, payer agreements and professional regulation. A layer of this kind has to be built privacy-first: data minimization, explicit clinic authorization, Canadian data residency, no use of a clinic's data to train general models, and audit trails that a regulator or a college could follow.

What comes next

The administrative burden of Canada's private-pay clinics is usually described as paperwork. It is more accurately a missing layer of infrastructure: the connection between clinic records, payers and the bank has been built out of human attention because nothing else was available. That is no longer true, and the same layer can serve every profession that shares the web.

A forthcoming companion technical whitepaper will set out how three-way reconciliation between the clinic ledger, the payer and the bank can be specified and governed. This thesis makes the broader claim that the whitepaper rests on: beyond public coverage, much of the cost of administration is the cost of latency, and latency is an engineering problem.

Endnotes

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Rooted Node Inc. is an Ontario company building the autonomous financial layer for Canada's private-pay outpatient care economy. Its software is in development and not yet commercially available; nothing in this paper describes deployed products, customers or results.