

Transforming Heart Failure Care:

The Clinical and Economic Case for the Medly Platform

Heart failure patients managed through Medly experience 50% fewer heart failure-related hospitalizations, reach guideline-directed medication therapy 60 days faster, and generate healthcare savings at an impressive \$8,850 per quality-adjusted life year gained—making Medly one of the most rigorously validated digital therapeutics for heart failure available to health systems today. By reducing acute care use and enabling remote triage and management, Medly also helps curb demand on hospitals and emergency services—shifting care upstream into outpatient and community settings where it is less costly and more sustainable.

"Medly makes me feel safe. I know that if something is wrong, someone will know right away and help me. I'm not alone with this anymore." — Medly patient, Peter Munk Cardiac Centre

For health system leaders evaluating digital health technologies, Medly represents a rare convergence: a platform backed by over 15 years of peer-reviewed clinical research, regulatory designations from both Health Canada and the FDA, and real-world implementation data from over 2,500 patients across multiple hospital sites. Unlike many solutions that emerged rapidly during the pandemic, Medly's evidence base includes randomized controlled trials published in leading cardiology journals, providing the clinical rigor that medical staff and administrators require.

The Human Burden of Heart Failure

Heart failure changes everything about a person's life. Simple activities become exhausting. Breathing grows difficult. And beneath it all runs a constant undercurrent of anxiety: Is today the day I'll end up back in the hospital?

There are more than 750,000 Canadians living with heart failure, a condition that means far more than a medical diagnosis. It means cancelled plans when fatigue strikes without warning. It means family members watching helplessly, unsure when to worry. It means long waits between clinic appointments, wondering whether subtle changes in symptoms matter or can be safely ignored.

The statistics tell the same story. Heart failure accounts for more than \$30 billion in annual U.S. healthcare costs. Nearly 25% of patients hospitalized for heart failure are readmitted within 30 days.



The condition remains the leading cause of hospitalization among adults over 65. Each hospitalization takes a physical and emotional toll—and too often marks another step in disease progression.

The fundamental challenge is one of visibility and timing. Heart failure patients deteriorate gradually at home, often presenting to emergency departments only after symptoms have progressed significantly. By then, hospitalization is frequently unavoidable, costly, and traumatic. Traditional outpatient follow-up models—with visits spaced weeks or months apart—simply cannot detect early decompensation or support the intensive medication titration protocols that guideline-directed medical therapy requires.

Beyond Passive Monitoring: What Makes Medly a Digital Therapeutic

The healthcare technology landscape includes many devices and apps that collect patient data—weight scales that transmit readings, blood pressure cuffs that sync to smartphones, symptom trackers that compile information for later review. These tools serve a purpose, but they share a fundamental limitation: they are passive. They collect information and wait for a busy clinician to eventually notice something concerning.

Medly represents a different category entirely: a digital therapeutic. The distinction matters because it reflects a fundamental difference in what patients actually experience.

With passive monitoring, a patient steps on a scale, the number uploads somewhere, and then... nothing. Days might pass before anyone reviews it. By then, the moment for early intervention may have passed. The patient has no way of knowing whether their reading was reassuring or concerning.

With Medly, that same patient receives immediate, personalized feedback based on a sophisticated algorithm developed by heart failure specialists over 15 years of clinical refinement. The system doesn't just collect data—it interprets it in the context of that individual patient's history, medications, and clinical trajectory. It provides actionable guidance. And when human attention is truly needed, it ensures the right clinician knows immediately, with all the context required to help.

"Before Medly, I was always second-guessing myself. Should I call the clinic? Am I overreacting? Now I know. The app tells me when things are okay and when I need help. That peace of mind is everything." — Heart failure patient, Toronto



This is why Medly achieved regulatory designation as a Class II Medical Device from Health Canada and Breakthrough Device status from the FDA—classifications typically reserved for therapeutic interventions, not simple data transmission tools. The regulators recognized what patients experience firsthand: Medly actively contributes to treatment, not just measurement.

How the Platform Works

Each day, patients record weight, blood pressure, heart rate, and responses to a symptom questionnaire through the Medly mobile app. Data can be entered manually or captured automatically via Bluetooth-connected scales and blood pressure monitors. The proprietary algorithm—developed and refined at the Peter Munk Cardiac Centre—analyzes these inputs against personalized thresholds established for each patient, immediately providing actionable guidance such as medication reminders, dietary recommendations, or instructions to contact the clinic.

The clinician-facing dashboard presents contextualized patient information rather than raw data streams. Care coordinators are alerted when a vital sign is exceeded, but can also view the patient's current medication list, recent laboratory values, historical trends, and contact information—enabling informed clinical decisions without toggling between systems.

This architecture enables remarkable clinical efficiency. Now, a single Medly nurse coordinator can manage up to 300 patients, compared to conventional care models where 25-100 patients are supported through standard outpatient workflows.

Peer-Reviewed Evidence: What the Research Shows

Medly's evidence base distinguishes it from competitors relying primarily on observational data or internal outcomes reports. The platform has generated over 30 peer-reviewed publications across journals including the Journal of Medical Internet Research, JACC: Heart Failure, and Canadian Journal of Cardiology. Three landmark studies anchor the clinical case.

Keeping Patients Out of the Hospital (JMIR, 2020)

A study of 315 patients using Medly as standard of care at the University Health Network Heart Function Clinic demonstrated:

- 50% reduction in heart failure-related hospitalizations (IRR 0.50; $P < .001$)
- 24% reduction in all-cause hospitalizations (IRR 0.76; $P = .02$)



- 9.8-point improvement in quality of life scores—nearly double the clinically meaningful threshold
- 59% decrease in brain natriuretic peptide levels, a key biomarker for heart failure severity

These statistics represent real people staying home with their families rather than having to make multiple ER visits or spending days in hospital beds.

Reaching Better Treatment Faster (JACC: Heart Failure, 2024)

The Medly Titrate randomized controlled trial compared remote medication titration through Medly against usual care for 108 patients with heart failure with reduced ejection fraction:

- 82.1% of Medly patients achieved complete guideline-directed medical therapy optimization vs. 53.8% in usual care ($P=0.001$)
- Medly patients reached optimal dosing 60 days faster—a clinically significant acceleration given that early GDMT optimization is associated with improved survival
- 45% lower all-cause hospitalization in the intervention arm (IRR 0.55; $P=0.042$)
- 35% fewer in-person clinic visits

For patients, this means less time in the difficult early phase of treatment adjustment, less travel to appointments, and faster arrival at the medication regimen that will serve them best for years to come.

Cost-Effectiveness Analysis (JMIR, 2020)

A microsimulation cost-utility analysis modeled 25-year outcomes for 1,000 patients from the Ontario public healthcare payer perspective:

- Incremental cost-effectiveness ratio of \$8,850 per Quality Adjusted Life Year (“QALY”)—well below standard willingness-to-pay thresholds
- 0.566 additional QALYs per patient over the analysis horizon
- 90.1% probability of cost-effectiveness at \$50,000/QALY threshold
- Improved cost-effectiveness forecasted by new patient owned device models could see ICER dropping to \$3,349/QALY.

A key takeaway from these findings is that investing in Medly is an efficient use of public health dollars. The program is projected to deliver meaningful improvements in patients’ quality and length of life while costing far less per unit of benefit than the levels we normally accept.



Bringing Specialist Care to Underserved Communities

For patients in rural and remote communities, accessing heart failure specialists often means traveling hundreds of kilometers—an exhausting journey for anyone, and potentially dangerous for someone with a serious cardiac condition. Medly bridges this gap, bringing expert-guided care directly into patients' homes regardless of where they live.

Through partnerships with the Weeneebayko Area Health Authority and Sioux Lookout First Nations Health Authority, Medly now supports Indigenous communities across Northern Ontario. Patients who previously had to leave their families and communities for cardiac care can now receive specialist-guided monitoring at home.

A 2024 study of this implementation found 93% of enrolled patients received guideline-directed medical therapy and 87% would recommend the program to others facing similar health challenges. These numbers represent real people whose lives improved because care came to them rather than requiring them to travel to care.

The Medly Platform: Evidence-Based Heart Failure Care

Heart failure places an immense burden on patients and healthcare systems, characterized by high costs, frequent hospital readmissions, and patient anxiety. Medly is an evidence-based digital therapeutic that moves beyond passive monitoring to actively guide patients, enabling clinicians to prevent crises, optimize treatment, and significantly improve outcomes.

The Challenge of Heart Failure



STATISTIC

A Widespread Human & Economic Burden

Nearly 1 million Canadians live with heart failure, contributing to over \$30B in U.S. healthcare costs.



KEY FINDING

A Revolving Door of Hospitalizations

Nearly 25% of patients are readmitted to the hospital within 30 days of discharge.



PROBLEM

The Visibility Gap in Traditional Care

Patients often deteriorate gradually at home, with issues only detected once symptoms become severe.

The Medly Solution: Proven Outcomes



STATISTIC

50% Fewer Heart Failure-Related Hospitalizations

Medly's active monitoring and guidance helps prevent crises before they start.



KEY FINDING

Achieve Optimal Medication Therapy 60 Days Faster

82% of Medly patients reached optimal therapy vs. just 54% in usual care.



PROBLEM

Highly Cost-Effective at \$8,850 per Quality-Adjusted Life Year

The platform delivers significant clinical value well below standard willingness-to-pay thresholds.



Developed by Clinicians, Scaled Through Partnership

Medly was developed at Toronto's Peter Munk Cardiac Centre by Dr. Heather Ross, one of Canada's leading heart failure specialists, and Dr. Joseph Cafazzo, Executive Director of Biomedical Engineering at UHN and an expert in healthcare human factors. The platform has been standard care at UHN since 2016 and now supports patients across five Toronto-area hospitals and the remote Indigenous communities of Northern Ontario.

"Today's health system is too focused on treating patients once they become acutely ill and end up in hospital. Leveraging the incredible power of big data, artificial intelligence and predictive analytics, Medly provides a more proactive, scalable and affordable solution to manage the epidemic of heart failure." — Dr. Heather Ross, Division Head of Cardiology, Peter Munk Cardiac Centre

The UHN-VITALL Partnership

In December 2025, University Health Network granted VITALL Intelligence an exclusive worldwide license to commercialize Medly, creating a dedicated pathway for health systems seeking to implement this digital therapeutic. This partnership structure provides clarity: UHN continues its role as clinical developer and innovator, while VITALL handles commercial deployment, technical integration, and ongoing support.

"Patients deserve access to the best care options that modern technology can offer. To bring proven innovations like Medly into hospitals at scale, we need to update how we fund and adopt these—so that life-changing tools and therapies reach more patients faster." — Mark Taylor, Director of Commercialization, University Health Network

VITALL brings established health technology infrastructure including SOC II certification, FHIR compliance for healthcare data exchange, and strong patient consent frameworks. The partnership includes collaboration on AI-enhanced capabilities currently in development:

- Medly Auto Titrate – Intelligent algorithm recommending safe medication adjustments
- Medly AI – Learns from patient data to reduce false alerts and ease clinician workload
- Medly Conversational AI – Enables patients to share daily health information by phone in multiple languages
- Medly Auto-Documentation – Instantly logs patient readings and notes into medical records



International Expansion

A \$2 million CIHR grant is funding implementation trials in the United Kingdom and Australia in collaboration with the University of Manchester and University of Melbourne. Heart failure is a global challenge, and patients everywhere deserve access to tools that help them live better with this condition.

Implementation Considerations

Medly's development within an academic medical center meant the platform evolved alongside real clinical workflows rather than being designed in isolation. The implementation model combines technology deployment with attention to staffing models, clinical protocols, and change management.

Clinical Workflow Integration: Deployment typically involves installing a Medly subject matter expert on site for an initial period — to facilitate training, patient enrollment, recommending adjustments to clinical workflows and operating procedures. Medly-trained resources then receive all alerts, manage day-to-day patient communications, and escalate concerns to cardiologists when physician-level intervention is needed.

Equipment Flexibility: The platform supports full-kit provision (Bluetooth-connected scales, blood pressure monitors or bring-your-own-device approaches. Patient onboarding can occur remotely, and equipment can be sent directly to patients' homes.

Demonstrated Scalability: Medly has expanded from a single site in 2016 to five Toronto hospital sites including Sunnybrook Health Sciences Centre, Mount Sinai Hospital, and Women's College Hospital, serving over 2,500 patients.

Conclusion: Evidence-Based Care for Heart Failure Patients

Heart failure will remain a reality for millions of people. The condition cannot be cured, but it can be managed—and how well it is managed determines whether patients spend their days living life to its fullest or merely surviving.



Medly represents a vision of care where patients are never alone with their condition. Where expert guidance is available every day, not just during occasional clinic appointments. Where warning signs are caught early and crises are prevented. Where patients living in remote communities receive the same quality of specialist-guided care as those living next door to major cardiac centers.

The evidence is clear: 50% fewer hospitalizations, 82% guideline-directed therapy achievement, and cost effectiveness well within accepted thresholds. The regulatory credentials are established. The commercial partnership infrastructure exists to support implementation.

For patients living with heart failure, and for the clinicians dedicated to caring for them, Medly offers what matters most: better outcomes, better quality of life, and a true companion for the journey ahead.

To learn more, visit vitall.com/medly or contact VITALL at medly@vitall.com.

All references to dollar values are stated in CAD.

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