CASE STUDY · QUÉBEC, CANADA

# From Silos to a Seamless Pathway

## How the CHUM reinvented the liver transplant journey with Transplant'Action Connectée – Liver (TAC-F)

A clinical and research innovation of Santé Québec – Centre hospitalier de l'Université de Montréal (CHUM)
Supported by CareSimple cellular telemonitoring

**Grand Prix Hippocrate 2026 — Transformateur category · Prix innovation Jean-Paul Marsan**

Results are preliminary (first 24 patients vs. 2019–2020 historical cohort) and drawn from the CHUM's 2026 Prix Hippocrate submission. Amounts in CAD.

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# The CHUM: Québec's referral centre for liver transplantation

Santé Québec – Centre hospitalier de l'Université de Montréal (CHUM) is one of only two adult liver transplant programs in Québec, both located in Montréal. Patients are referred from every region of the province, often hundreds of kilometres from the hospital. Its research centre (CRCHUM) led the evaluation of TAC-F, funded first by the Institut de la pertinence des actes médicaux (IPAM) and now by the Ministère de la Santé et des Services sociaux (MSSS).

**60–75**
liver transplants per year at the CHUM

**2**
adult liver transplant programs in all of Québec

**60**
patients enrolled in the TAC-F cohort (Aug 2024 →)

**54**
patients in the 2019–2020 historical comparison cohort

**Project leadership**

**Dr. Marie-Pascale Pomey, MD, PhD**
Principal investigator · Professor, Université de Montréal · Senior clinician-scientist, CRCHUM · Scientific co-director, CEPPP
With the CHUM liver transplant clinic (hepatology, nursing, nutrition, kinesiology, social work), the nursing directorate and five trained peer mentors, all transplant recipients.

CHUM
CRCHUM
CENTRE DE RECHERCHE
Centre hospitalier de l'Université de Montréal



The TAC-F clinical, research and technology teams at the CHUM, December 2024

# The challenge: a long, fragmented, anxiety-inducing pathway

A liver transplant journey runs from eligibility work-up to one year after surgery. Patients deteriorate while they wait, and every missed or poorly coordinated appointment translates into days of fragile life. Before TAC-F, each stage was handled by a different team, with no common thread.

### Many providers, no shared framework

Hepatologists, nurses, dietitians, social workers and kinesiologists intervened at different moments with sometimes inconsistent messages.

### Risky transitions

Work-up → listing → waiting → surgery → discharge: each hand-off was a potential break in follow-up.

### Growing frailty

Advanced liver disease brings malnutrition and deconditioning — yet the pre-transplant work-up included no nutrition or kinesiology assessment.

### Geography

With both programs in Montréal, patients from every region faced long, repeated and costly trips while already unwell.

**For patients:** repeating their story to every new provider, not knowing whom to call when a symptom appears, not even knowing whether they are still on the list. **For teams:** no way to intervene early, before a need turns into an emergency visit or an avoidable admission.

# The TAC-F model: five components, one integrated team

Developed by the CHUM liver transplant clinic and a CRCHUM research team, TAC-F rebuilds the pathway longitudinally around the patient rather than around professional silos. It operationalises the principles of Value-Based Health Care: fewer unnecessary acts, stronger relational continuity.

### What makes it different

- From episodic appointments to a continuous flow of real-life clinical data
- Peer mentors are full members of the care team, not a peripheral resource
- One shared language and reference document for clinicians, peers, patients and families
- Shared accountability across the whole trajectory instead of each team optimising its own segment

### A single interdisciplinary team

Physicians, nurses, dietitian and kinesiologist follow the patient from pre-transplant to one year post-transplant — no hand-offs between teams.

### A co-built nutrition and exercise plan

Designed with the patient on a dedicated 'Day Zero' and adjusted over time rather than fixed once.

### Cellular connected devices + telemonitoring

Activity tracker, blood-pressure monitor and scale feed the CareSimple platform for daily follow-up at home, in real-life conditions.

### Peer mentors

Trained transplant recipients hold a monthly one-on-one with each patient: emotional, informational and navigation support, independent of clinic schedules.

### A shared Health Learning Pathway (PAS)

A reference document co-written by peers and clinicians so every provider delivers the same message at the same moment of the journey.

# The patient journey, in three continuous phases

## 1 Pre-transplant

Waiting list

- GRIT-F work-up week expanded with nursing, nutrition, kinesiology, education and digital-literacy assessments — listing delay cut from 8 weeks to 1
- 'Day Zero': the team co-builds the exercise and nutrition plan and hands over the connected devices
- Predictable calendar: nurse and peer mentor every 4 weeks; dietitian and kinesiologist every 3 months
- Patient writes a personal commitment stating why they are engaging in the transplant

## 2 Transplant

Hospital episode

- Continuity is not interrupted: the ward's kinesiologist and dietitian adapt the plan to the patient's in-hospital capacity
- The pre-transplant nurse and the peer mentor visit the patient on the ward
- Same team, same reference document, same messages

## 3 Post-transplant

Home, up to 12 months

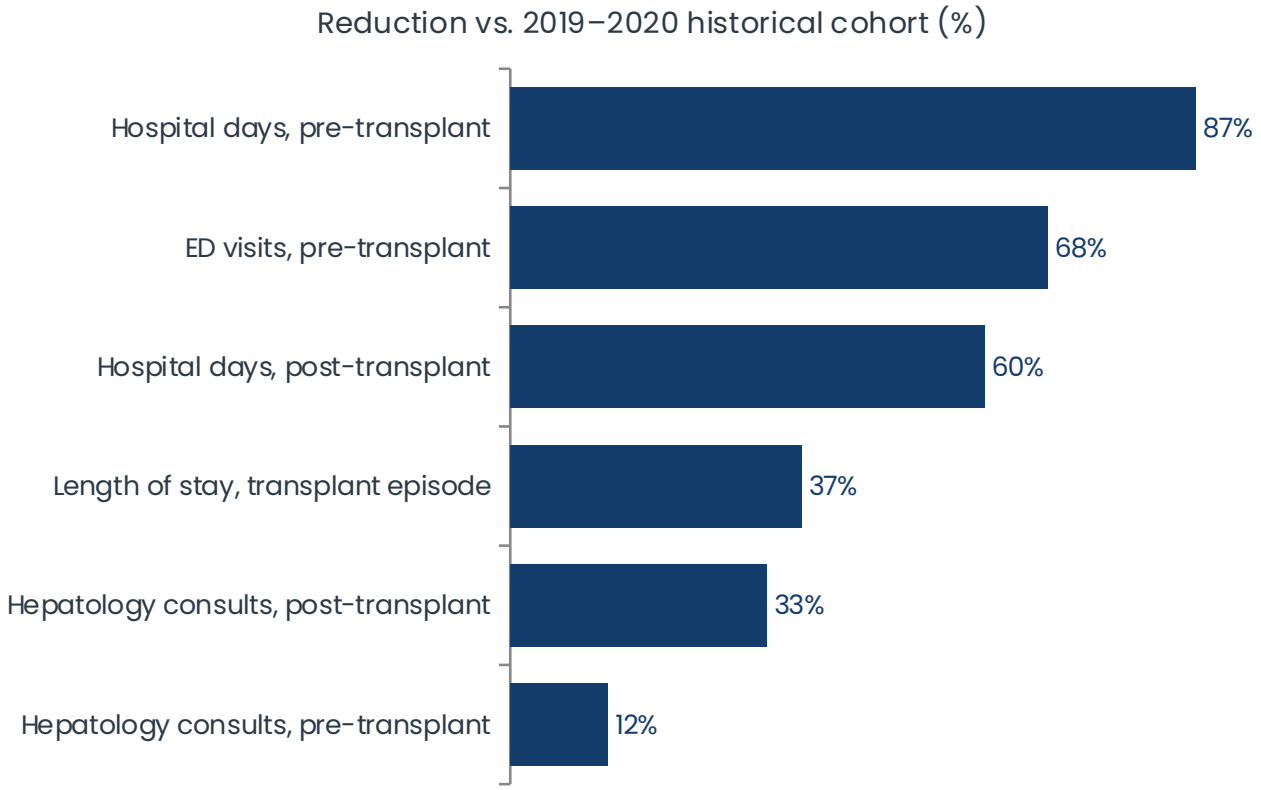
- Connected devices reactivated at discharge for daily home monitoring
- Post-transplant nurse in weekly, then monthly contact
- Exercise and nutrition plans reassessed continuously
- Peer mentor resumes monthly one-on-ones




A 'Day Zero' at the CHUM, October 2024: a future transplant recipient and his spouse with the nurses, the telehealth team and CareSimple.

*Every data point, every professional contact and every peer conversation feeds one integrated team with shared accountability.*

# Outcomes: sharply lower use of acute care, end to end




| Indicator | Before | TAC-F |
|---|---|---|
| Hospital days, pre-transplant (days/patient) | 30.7 | **4** |
| ED visits, pre-transplant (visits/patient) | 3.14 | **1** |
| Hospital days, post-transplant (days/patient) | 30.13 | **12** |
| Length of stay, transplant episode (days) | 37.6 | **23.7** |
| Hepatology consults, post-transplant (consults/patient) | 8.9 | **6** |
| Hepatology consults, pre-transplant (consults/patient) | 4.26 | **3.73** |

**8 wks → 1 wk** time from work-up to listing

**70% → 100%** professional satisfaction with the care model

**2 in 3** patients change their lifestyle habits before transplant; 100% maintain them after

Before/after comparison, first 24 TAC-F patients vs. 54-patient historical cohort (2019–2020); no contemporaneous control group. Transplant-episode length of stay includes 5 patients with complications (15.8 days without them). Source: CHUM Prix Hippocrate 2026 submission, IPAM indicator table.

# Value created: care costs per pathway cut by more than half

## Total cost per transplant pathway (CAD)

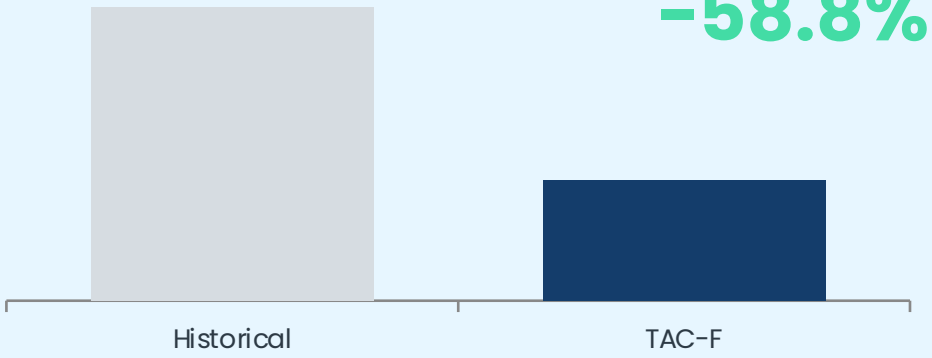
Historical cohort

**$222,142**

TAC-F cohort

**$91,458**

**-58.8%**




Includes hospitalisations, physician and allied-health consultations, connected devices and the telemonitoring platform.

## Avoided utilisation per patient

**58.7**

**bed-days avoided per patient**

26.7 pre-transplant · 13.9 transplant episode · 18.1 post-transplant

**2.1**

**emergency visits avoided per patient**

at $183 per visit

**≈ $131K**

**in acute-care costs avoided per patient**

at $2,225 per acute bed-day at the CHUM

## Projected to the full 60-patient cohort

**3,522**

bed-days freed for the CHUM

**$7.8M**

acute-care costs avoided

**- $1.3M**

full cost of the intervention*

**$6.5M**

net savings for the CHUM

*Staff, connected devices and telemonitoring platform. Projection assumes the results of the first 24 patients hold across the 60-patient cohort. Preliminary, before/after design without a control group. Per-patient acute-care saving computed as 58.7 bed-days × $2,225 + 2.1 visits × $183.48. Source: CHUM Prix Hippocrate 2026 submission.

# The technology layer: cellular telemonitoring behind the team

CareSimple is the telemonitoring partner of the CHUM for TAC-F, alongside the hospital's telehealth coordination centre (SQ-CHUM / Santé connectée, RUISSS Université de Montréal), which provides ongoing technical and operational support.

### Cellular devices, nothing to set up

Blood-pressure monitor and scale transmit over the cellular network — no Wi-Fi, app or smartphone pairing. Patients with low digital literacy use them successfully; a literacy questionnaire shapes each learning plan.

### From appointments to a data flow

Daily measurements from the patient's real environment let the team anticipate a difficulty instead of discovering it at the next visit — proactive rather than reactive follow-up.

### Integrated into the hospital's IT environment

Deployed under a partnership framework agreement, a public notice of intent and a security certificate issued by the CHUM; designed to connect to the Epic electronic health record now rolling out across Québec.

### Transparent, modest cost base

Roughly $125 per cellular device plus $15 per device per month for the platform — a fraction of the per-patient care costs avoided.

**In the CHUM's words**

*"Connected devices linked to the CareSimple telemonitoring platform replace the logic of in-person appointments with daily follow-up based on data collected in the patient's real living environment."*

*"This integration translates into patients (and families) who are better supported, more engaged and less isolated — including those with low digital literacy, who are also able to use the connected devices."*

*"Founded on the principles of Value-Based Health Care, this model creates value by reducing unnecessary acts while strengthening relational continuity."*

— CHUM, Prix Hippocrate 2026 submission (translated)

PRIX HIPPOCRATE 2026

# Grand Prix Hippocrate 2026 — Transformateur catego

## and Prix innovation Jean-Paul Marsan — Transformation of complex care pathways and value creation in health

The Prix Hippocrate is Québec's recognition program for healthcare innovation, bringing together the province's health and social services network, academia and industry. The 2026 edition awarded twelve innovation prizes across six themes — from population health and integrated pathways to artificial intelligence and international reach. Each prize distinguishes 'Transformateur' projects (18+ months in operation with measured results) from 'Émergent' ones. The awards were presented on October 29, 2026.

On October 29, 2026, TAC-F received two distinctions: the Prix innovation Jean-Paul Marsan in its theme, Population health and integrated pathways, and the Grand Prix Hippocrate, Transformateur category — the evening's highest honour. Both were awarded to the CHUM team led by Dr. Marie-Pascale Pomey, with the liver transplant clinic, the CRCHUM research team, the nursing directorate and its peer mentors. CareSimple is proud to have supported the team as its telemonitoring technology partner.



The Hippocrate 2026 trophy

### What the jury rewards

- Coordination across the care continuum
- Less fragmentation, shorter delays
- Integrated responses to complex clinical situations
- Measured before/after results
- Equity, sustainability and scalability

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# A transferable model, already drawing interest beyond the liver

| | |
|---|---|
| **Québec** | McGill University Health Centre (liver transplant) · CHU Sainte-Justine · CHUM Centre of Excellence in Metabolic Health (obesity) · Hôpital Pierre-Boucher, Sacré-Cœur and Jean-Talon (bariatric surgery) |
| **Canada** | Toronto hospital program (interest expressed) |
| **International** | AP-HP Paris — Pitié-Salpêtrière and Paul-Brousse (implementation and funding under study) · Hospices Civils de Lyon (adaptation to kidney transplantation) |

## Conditions for reproducing the model, as identified by the CHUM

- Senior leadership and local clinical leadership on board before deployment
- About one peer mentor for every ten patients
- A culture shift toward interdisciplinarity, transparency and shared accountability
- Coordinated mobilisation of several hospital directorates (patient partnership, medical affairs, nursing, multidisciplinary services, finance, telehealth)

### Sustaining the model

The CHUM is working to secure recurring funding for the nurse, kinesiologist and dietitian positions, to finance connected devices through the Fondation du CHUM, and to explore episode-of-care funding with the MSSS and Santé Québec — on the strength of the return on investment demonstrated. Telemonitoring is not yet covered by a billing code in Québec, unlike in other health systems.

Interested in the TAC-F approach or in cellular telemonitoring for complex pathways? sales@caresimple.com · (866) 822-8461