



Recognizing The Real Barrier To Smarter Wound Care: A North American View

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Mr. L is a 68-year-old man living with diabetes. One morning he notices a small blister on the bottom of his foot. At first it seems minor. He cleans it, covers it with a bandage and assumes it will heal on its own.

Weeks pass before the wound is evaluated by a specialist. By then infection has begun to develop. Circulation is compromised. What began as a small ulcer now requires advanced treatment, repeated clinic visits and careful monitoring.

For clinicians who treat chronic wounds, this story is not unusual. It is routine.

Chronic wounds, particularly diabetic foot ulcers, venous leg ulcers and pressure injuries remain among the most complex and costly conditions managed by modern health-care systems. In Canada alone, hundreds of thousands of individuals live with compromised wounds at any given time, placing

substantial demands on hospital and community care services.¹ Diabetes-related complications remain a leading cause of non-traumatic lower-limb amputations nationwide.²

A wound left unchecked behaves much like a small leak in a ship's hull. Ignore it long enough, and the vessel begins to sink.

Yet, medicine increasingly has the tools to detect these problems much earlier.

The Real Problem

The real barrier to smarter wound care isn't technology. It's the system.

The problem in wound care is not a lack of innovation. Health-care systems across North America often struggle to use the innovations that already exist.

Across research laboratories, biotechnology companies and clinical innovation centres, a new generation of wound technologies is emerging. Smart dressings can detect biochemical changes in the wound bed. Artificial intelligence (AI) platforms analyze wound images and predict healing trajectories. Remote monitoring tools allow clinicians to observe wound progression from a patient's home rather than waiting for the next clinic visit.

The science is advancing rapidly. The systems surrounding it, however, are not always keeping pace. Technology accelerates--systems hesitate.

The next revolution in wound care will not come from a laboratory.

It will come from redesigning the systems that allow clinicians to use the tools they already have.

A Quiet Technological Revolution

Over the past decade, wound care has entered a period of remarkable technological progress.

Sensor-enabled dressings are being designed to detect changes in temperature, oxygen levels, and pH—physiological signals that may indicate infection or impaired healing before visible symptoms appear. Artificial intelligence systems can quantify wound dimensions and analyze healing patterns from digital images. Remote monitoring platforms enable clinicians to follow wound progression between clinic visits.

In many ways, the shift resembles what happened in meteorology several decades ago. Weather forecasting once relied on local observation—cloud formations, wind patterns and atmospheric pressure readings. Today, satellite systems allow storms to be detected long before they reach land.

Wound care is beginning to develop a similar predictive capability. Signals that once went unnoticed can now be detected sooner. Earlier signals allow earlier intervention. Earlier intervention saves tissue, mobility and sometimes entire limbs. At least in theory.

The Implementation Paradox

Despite rapid technological progress, clinicians encounter a persistent paradox. Innovation appears everywhere--implementation too often does not.

New wound technologies emerge at remarkable speed. Yet their path into routine clinical practice remains slow. In health care, progress rarely depends only on what can be invented. It depends on what clinicians are allowed to use. And in many environments, that pathway remains complicated.

The US Model: Innovation At Full Speed

Few countries generate medical innovation on the scale of the United States.

Academic medical centres, biotechnology firms, venture capital networks and entrepreneurial clinicians collectively form one of the most powerful medical innovation ecosystems in the world. In wound care alone, advances in biomaterials, imaging systems, digital documentation platforms and therapeutic technologies continue to emerge at extraordinary pace.

But invention and adoption are not the same.

For many clinicians, integrating new technologies into everyday practice resembles navigating a maze of reimbursement codes, payer policies and documentation requirements.

For practitioners already managing patients with diabetes, peripheral arterial disease and multiple comorbidities, this complexity can feel like steering a Formula One racing car through a city traffic jam.

The capability for speed exists. The environment does not always allow it.

The Canadian Model: Stability, With A Different Kind Of Friction

Canada approaches health care through a different structural philosophy.

The country's publicly funded health-care system is designed to ensure equitable access to medically necessary services. Guided by the principles of the Canada Health Act, the system emphasizes universality, accessibility and coordinated delivery of care across provinces and territories.³

Health systems evaluate new technologies through structured processes that assess clinical evidence, cost-effectiveness and health system impact before widespread adoption occurs.

This approach can slow early adoption. But once technologies enter provincial care pathways, they can be implemented consistently across large patient populations.

If the American model sometimes resembles a sports car racing forward but braking unpredictably, the Canadian system resembles a cargo vessel crossing the ocean—steadily if slowly, deliberate and capable of delivering solutions at scale once the course is set.

Both systems have strengths, both encounter friction.

Lessons From The Global Laboratory

Several health-care systems outside North America are already experimenting with ways to integrate digital wound care more effectively.

In Denmark, telemedicine programs allow community nurses to capture wound images that specialists review remotely. In Singapore, AI-supported wound assessment tools integrate directly into electronic medical records. The United Kingdom's National Health Service has explored remote monitoring programs designed to support wound care across rural populations.

Across these models, one principle consistently emerges. Technology should reduce distance:

- Distance between patient and clinician
- Distance between observation and decision
- Distance between risk and intervention.

In a connected health-care ecosystem, the wound clinic no longer exists solely within hospital walls. It extends into homes, community clinics and digital networks. The clinic becomes a system.

The Real Determinant Of Impact

The success of smart wound technologies ultimately depends on something less visible than the technologies themselves. It is dependent on system design.

A sensor capable of detecting infection early has limited impact if reimbursement policies discourage clinicians from using it. Artificial intelligence platforms provide little value if they cannot integrate with electronic health records.

Remote monitoring technologies generate large volumes of clinical data. Without clear response pathways, that data becomes noise rather than insight.

Health-care innovation rarely fails because ideas are lacking. More often it fails because systems cannot deploy those ideas efficiently. In modern medicine, the bottleneck is rarely invention. The bottleneck is integration.

A North American Opportunity

Despite their differences, the US and Canada possess complementary strengths.

The US contributes unmatched innovation capacity through research universities, biotechnology development and entrepreneurial investment. Canada offers coordinated health-care infrastructure capable of implementing solutions across large populations.

If these strengths align, the result could be a new model for digital wound care. One in which clinicians identify complications earlier, intervene sooner and prevent deterioration before it escalates.

Instead of asking how to treat advanced wounds, health-care systems may more frequently ask how to prevent them.

The System Decides

Smart wound technologies represent one of the most promising frontiers in modern health care.

Sensors, AI and remote monitoring platforms can transform wound management from reactive treatment into proactive prevention.

But technology alone cannot deliver that future. The systems surrounding innovation—policy frameworks, reimbursement models, clinical workflows and digital infrastructure—determine whether these tools become everyday instruments of care or remain isolated breakthroughs.

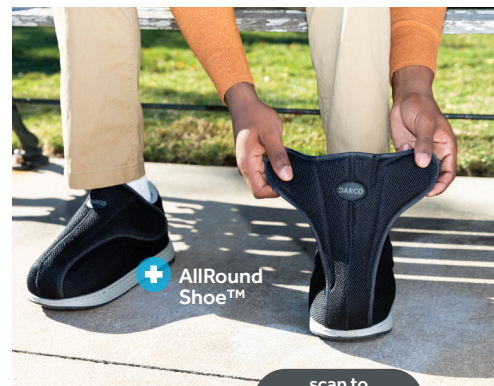
Because, ultimately, the future of wound care will not be decided in laboratories. It will be decided in the systems that allow clinicians to act on what science already knows.

Innovation may build the tools. But the system decides whether healing happens in time.

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