



GODDARD
PRODUCT DEVELOPMENT



CASE STUDY

Wearable Negative Pressure Wound Therapy Device

Client:

Guard Medical

Objective:

Develop a simple, cost-effective, wearable negative pressure wound therapy (NPWT) device that improves healing, reduces surgical site infections, and lowers healthcare costs.

The Vision

Guard Medical set out to disrupt a stagnant category. Traditional NPWT systems are bulky, expensive, and complex, creating barriers that have long limited broader adoption. The challenge was clear: create a lightweight, patient-friendly device that delivers clinically effective negative pressure through a self-contained, intuitive design.

To bring this bold concept to life, Guard Medical partnered with Goddard Product Development, from first sketches through regulatory clearance.

Engineering Simplicity

Goddard Product Development began by helping Guard Medical solidify the product concept and build a strong IP strategy to support future patents. Our engineers and designers then tackled the heart of the challenge: a compact, manual pump that reliably creates and maintains negative pressure with just a few squeezes. No batteries, no electronics.

Achieving this called for meticulous material selection and precision bonding to ensure airtight seals and consistent performance. Prototypes were rapidly developed and refined to meet clinical requirements.



From Prototype to Production

With a working design in hand, Goddard Product Development led a comprehensive verification and validation process. Every aspect of the device, including biocompatibility, sterilization, usability, and shelf life, was tested against stringent healthcare standards.

In parallel, the team prepared the design for manufacturing by optimizing joining methods, streamlining assembly, and managing transfer to a contract manufacturer. Regulatory support for the FDA 510(k) submission completed the development lifecycle.

The Outcome

NPseal passed all testing and earned FDA 510(k) clearance. At just 1/100th the weight of traditional NPWT systems, it delivers the same therapeutic benefits in a far more accessible format. With no close competitors and strong clinical performance, NPseal is now positioned for commercial launch.

Impact

By transforming a complex therapy into a sleek, user-friendly device, Guard Medical and Goddard Product Development created a scalable solution with the potential to improve healing outcomes, reduce infections, and lower healthcare costs, one patient at a time.

