Solventum Sponsored Learning:

Advancements In Wound Care For Improving Patient Outcomes: The Latest Innovations In Negative Pressure Wound Therapy

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The Wound Healing Equation and Pyramid

Wound healing is a complex physiological process and, as a result, wound care is a complex problem. A wound's healing potential is dependent on many factors, including bacteria bioburden, perfusion, tissue mechanics and more importantly, the host.[1]

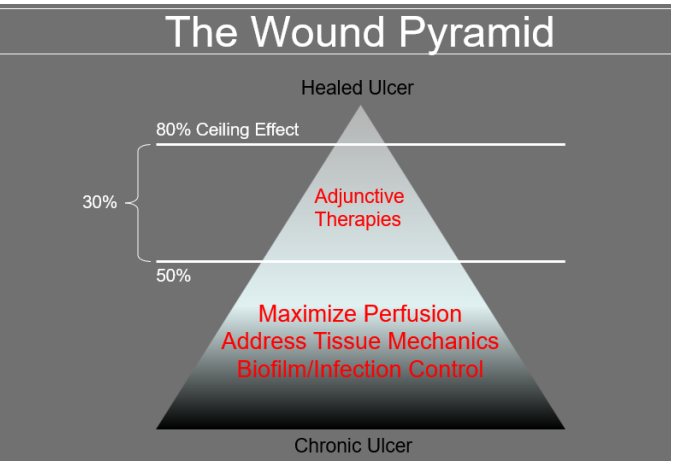
$$\text{Healing Potential} = \frac{1}{\frac{\text{Bacteria x Perfusion x Tissue Mechanics}}{(\text{Host})^{X}}}$$

X= Unknown

Source: Kim PJ (Guest Editor): The Diabetic Foot. "Diabetes and the Impact on the Lower Extremity". Clinics in Podiatric Medicine and Surgery. Vol 36 (3). July 2019.

The biggest driver of healing potential is the 'host'. (e.g., medical history, medication, social history etc.). Host factors are complicated and vary from patient to patient. These factors present the greatest challenges to all wound care providers. Even when perfusion is maximized, tissue mechanics addressed and biofilm/infection managed, only 50% of chronic wounds will achieve healing. With adjunctive therapy, an additional 30%

of chronic wounds will heal. There is a ceiling effect of what wound care providers can do to help patients achieve complete wound healing. The reality is that 20% of chronic wounds will just never heal, regardless. This is largely due to the host-related factors that we don't yet understand well.[1]



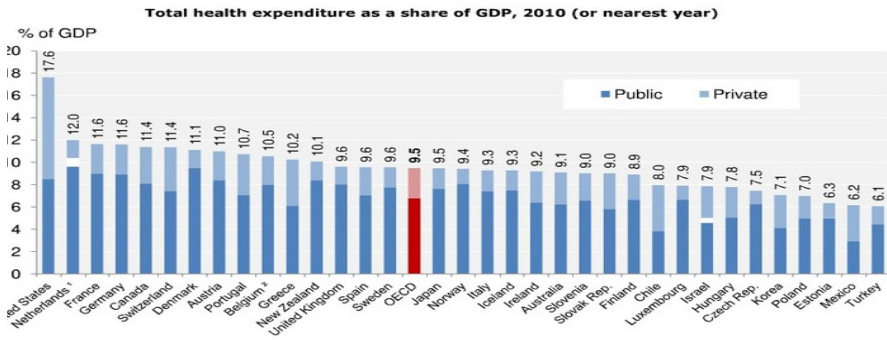
Source: Kim PJ (Guest Editor): The Diabetic Foot. "Diabetes and the Impact on the Lower Extremity". Clinics in Podiatric Medicine and Surgery. Vol 36 (3). July 2019.

The Drivers Of Care

The drivers of health care (including wound care) are universal. Policy makers, funders, and administrators are interested in the economics, efficiency, and efficacy/effectiveness of care:

- Economics: How much does/will it cost/save?
- Efficiency: Can it be delivered quickly and economically?
- Efficacy: Does it work in a controlled experimental environment?
- Effectiveness: Does it work in the real world?

Canada has one of the highest health expenditures as a share of gross domestic product (%GDP) among Organisation for Economic Co-operation and Development (OECD) countries.[2] According to the Canadian Institute for Health Information (CIHI), Canada's total wound care expenditure in 2014 was $3.9 billion CAD.[3] An estimate of $500 million CAD was spent on compromised wound (e.g., chronic wounds, skin barrier breaches, iatrogenic wounds).[3] According to Wound Care Alliance Canada, wound care expenditure was expected to grow by 30% by 2020.[4]



Source: Organization for Economic Co-Operation and Development (OECD), 34 Member Nations. 2011 Report.

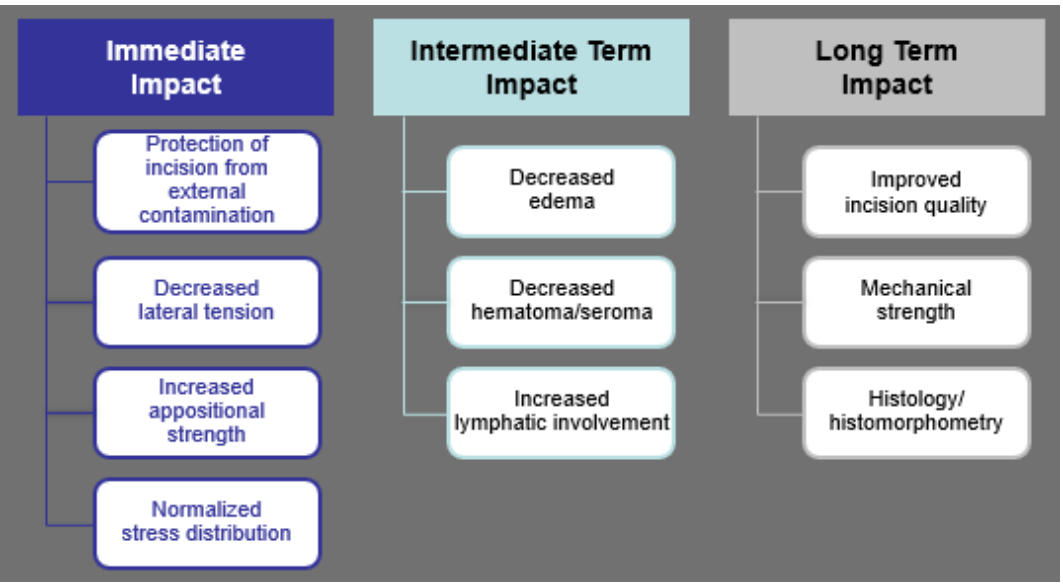
The estimated prevalence of diabetes mellitus (DM) is expected to increase by 44% from 2015 to 2025.[5] The cost of diabetes management is expected to grow by 25% in the same time frame. Diabetic foot ulcers (DFUs) are associated with increased number of, and length of, hospital stays. According to Hopkins et al. (2015), the estimated annual cost associated with DFU-related care across all care settings is $547 million CAD.[6] More than half of the cost is associated with acute care ($320.5 million CAD).[6] A single admission costs $11,492 in the first year; a cumulative 3-year admission cost is $18,957.[6] More importantly, DFUs and other types of wounds, are not just costly to the health-care system but to the patients and their families. Living with a wound can negatively affect the patient's quality of life, physically (e.g., muscle atrophy, joint stiffness), mentally and emotionally (e.g., sleep deprivation, stress, learned helplessness).

The Next Evolution In Negative Pressure Wound Therapy – The 3M™ V.A.C® Peel And Place Dressing

Negative pressure wound therapy (NPWT) has fundamentally changed how wound care is practiced. Vacuum assist closure (V.A.C. Therapy), an example of NPWT, was first introduced in 1994. There was a slow period of adoption within the first 10 years. Since then, negative pressure

wound therapy (NPWT) has been robustly studied and has become a standard of care. Different technologies (e.g., instillation therapy, portability, incisional management) have since been added to traditional NPWT to improve application and achieve better outcome. When deciding on which type of NPWT to use, wound care providers must consider factors such as anatomical location, depth, and the host.

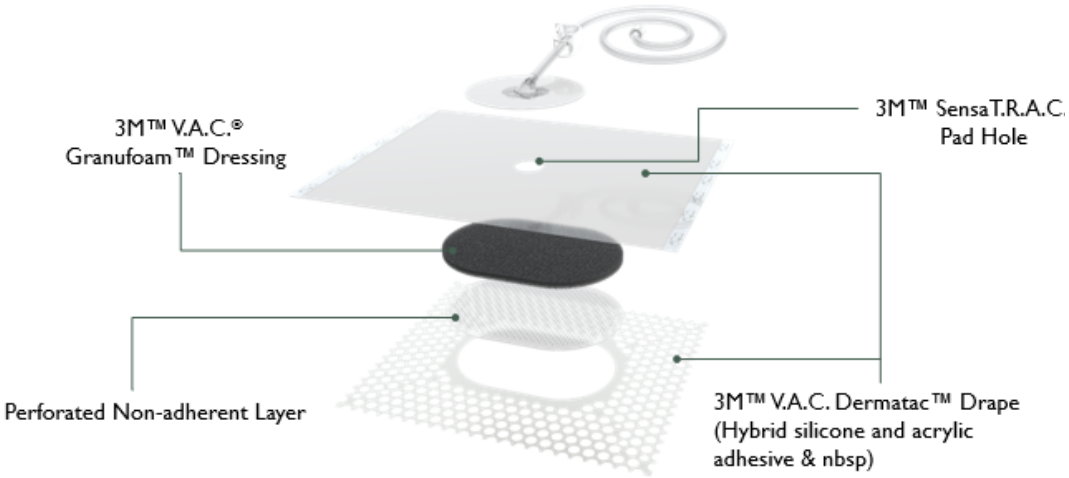
The 3M™ V.A.C® Peel and Place Dressing is the next evolution in V.A.C. Therapy. It combines the benefits of traditional NPWT with incision NPWT. The benefits of incisional NPWT can be seen below:[7]



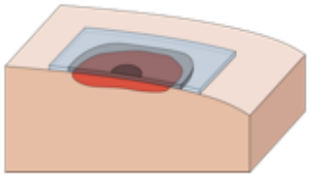
Source: Reference #7.

Wound care providers should take a holistic approach when managing patients living with wounds. A critical aspect of wound care is to optimize the local wound environment. It involves wound cleansing and debridement, managing bioburden, and controlling moisture levels. The use of appropriate dressing and advanced therapies to accomplish these objectives is essential. The 3M™ V.A.C® Peel and Place Dressing does just that – it can effectively address of all aspects of local wound management for certain patient populations.

The 3M™ V.A.C® Peel and Place Dressing has an all-in-one, integrated design. It contains a 3M™ Dermatac™ Drape made with an acrylic top layer and a perforated silicone layer. The acrylic layer provides a tight seal and keeps the silicone against the skin. Meanwhile, the silicone layer minimizes wrinkles and leaks, allows for easier handling and repositioning, and supports patient comfort at dressing changes. The perforated non-adherent bottom layer also allows for up to seven days of wear[8] by mitigating tissue ingrowth and reducing foam adhesion to the wound and pain upon removal. Application of the 3M™ V.A.C® Peel and Place Dressing takes less than two minutes.[9] Unlike traditional V.A.C. there is no cutting of materials involved. The pre-cut hole at the top of the dressing minimizes practitioner errors – a common issue of NPWT machines is blocked tubing when the hole is insufficiently sized. Not having to cut the Granufoam™ dressing reduces application time and minimizes iatrogenic adverse events such retained pieces of foam in the wound. The 3M™ V.A.C.® Peel and Place Dressing comes in different sizes to cover a variety of wound depths. Practitioners should select a foam size larger than the wound to cover the peri-wound skin and ensure the foam can accommodate the depth of the wound.

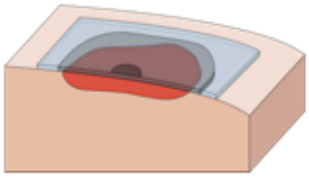


Small



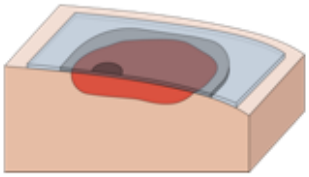
- **Foam:** 6.1 cm x 8.6 cm
- **Overall Dressing:** 16.9 cm x 20.6 cm
- **Max Wound Depth:** 2 cm

Medium



- **Foam:** 11.1 cm x 16.6 cm
- **Overall Dressing:** 23.7 cm x 29.2 cm
- **Max Wound Depth:** 4 cm

Large

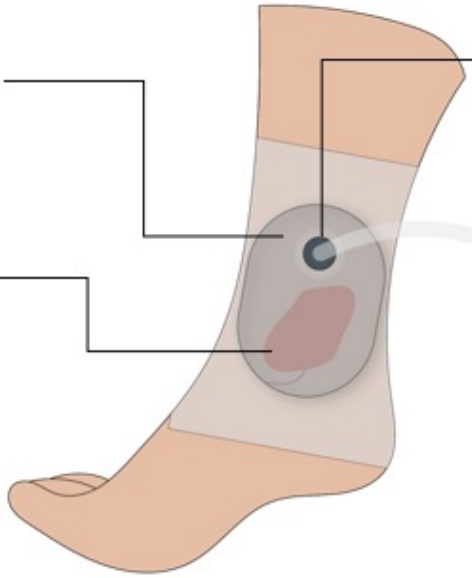


- **Foam:** 13.6 cm x 24.2 cm
- **Overall Dressing:** 26 cm x 35.6 cm
- **Max Wound Depth:** 6 cm

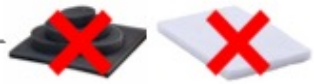
1. Foam should extend beyond wound and touch periwound skin.

2. To offload, select the Large dressing size

3. Undermining must be ≤2 cm, and no tunneling can be present.



4. Don't combine with other dressings.
The use of additional foam fillers is prohibited.



Place

Place the dressing with the pre-cut SensaT.R.A.C. Pad hole facing up. Leave at least 5 cm of drape border for sealing.

Check

Check the initial placement and reposition if needed. Once ready, smooth any wrinkles, press down on the drape border, and remove the handlebars to establish a seal.

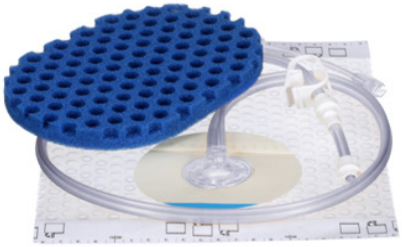
Connect

Remove both backing layers and apply the SensaT.R.A.C. Pad over the center of the pre-cut hole. Connect tubing to the V.A.C.® Therapy unit and begin therapy.

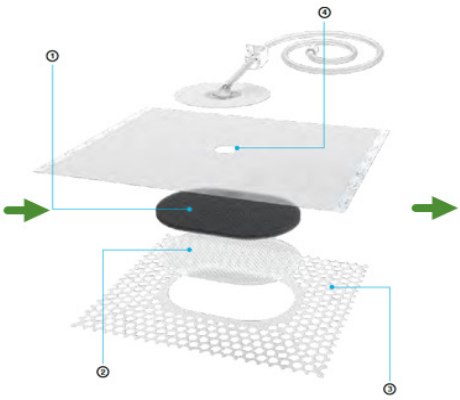
Removal

The integrated design of the V.A.C.® Peel and Place Dressing allows the dressing to be worn for up to seven days. When it's time to remove or change dressing, gently remove the dressing from the wound, using sterile water or normal saline if the dressing adheres to the wound.

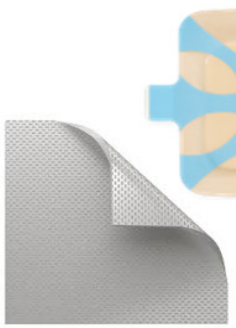
Complete Solution Bundle



3M™ Veraflo™ Cleanse Choice Complete™ Dressing



3M™ V.A.C.® Peel and Place Dressing



3M™ Silvercel™

3M™ Tegaderm™ Silicone Foam Border Dressing

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In a simulated use test with 12 nurse and surgeon users. Average time of 01:48. SAT-MTF-05-995965 Marketing study for 3M™ V.A.C.® Peel and Place dressing. 2023.

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