

MEDICAL POLICY

POLICY TITLE	NEGATIVE PRESSURE WOUND THERAPY IN THE OUTPATIENT SETTING
POLICY NUMBER	MP-4.004

Effective Date:	6/1/2023
------------------------	-----------------

[POLICY RATIONALE](#)
[DISCLAIMER](#)
[POLICY HISTORY](#)

[PRODUCT VARIATIONS](#)
[DEFINITIONS](#)
[CODING INFORMATION](#)

[DESCRIPTION/BACKGROUND](#)
[BENEFIT VARIATIONS](#)
[REFERENCES](#)

I. POLICY

Powered negative pressure therapy systems should be used as part of a comprehensive wound care program that includes attention to other factors that impact wound healing such as diabetes control, nutritional status, relief of pressure, etc.

INITIATION OF A POWERED NEGATIVE PRESSURE WOUND THERAPY (NPWT):

An initial therapeutic trial of not less than 2 weeks using a powered negative pressure wound therapy (NPWT) system, as part of a comprehensive wound care program that includes controlling factors such as diabetes, nutrition, relief of pressure, etc., may be considered **medically necessary** in the following indications:

- Chronic (> 30 days) stage III or IV pressure ulcers that have failed to heal despite optimal wound care when there is high-volume drainage that interferes with healing and/or when standard dressings cannot be maintained due to anatomic factors, **or**
- Traumatic or surgical wounds where there has been a failure of immediate or delayed primary closure **and** there is exposed bone, cartilage, tendon, or foreign material within the wound **or**
- Wounds in patients with underlying clinical conditions which are known to negatively impact wound healing, which are non-healing (at least 30 days), despite optimal wound care. Examples of underlying conditions include, but are not limited to diabetes, malnutrition, small vessel disease, and morbid obesity. Malnutrition, while a risk factor, must be addressed simultaneously with the negative pressure wound therapy.

It is not required that a patient be homebound to receive nursing services in the patient's home for wound care using NPWT.

NPWT will be denied at any time as **not reasonable and necessary** if one or more of the following are present:

- The presence in the wound of necrotic tissue with eschar, if debridement is not attempted;
- Osteomyelitis within the vicinity of the wound that is not concurrently being treated with intent to cure;
- Cancer present in the wound;
- The presence of an open fistula to an organ or body cavity within the vicinity of the wound.

MEDICAL POLICY

POLICY TITLE	NEGATIVE PRESSURE WOUND THERAPY IN THE OUTPATIENT SETTING
POLICY NUMBER	MP-4.004

Therapeutic trials of powered NPWT systems for the treatment of other acute or chronic wounds except as noted above are considered **not medically necessary**.

CONTINUATION OF POWERED NPWT:

Continuation of the powered NPWT system, as part of a comprehensive wound care program, may be considered **medically necessary** following an initial 2-week therapeutic trial if the treatment trial has resulted in documented objective improvements in the wound, and if there is ongoing objective improvement during subsequent treatment. Objective improvements in the wound should include the development and presence of healthy granulation tissue, progressive wound contracture and decreasing depth, and/or the commencement of epithelial spread from the wound margins.

NPWT may be considered **medically necessary** when continuation of treatment is ordered beyond discharge to the home setting.

Continuation of the powered NPWT system is considered **not medically necessary** when any of the following occurs:

- The therapeutic trial or subsequent treatment period has not resulted in documented objective improvement in the wound, **OR**
- The wound has developed evidence of wound complications contraindicating continued NPWT, **OR**
- The wound has healed to an extent that either grafting can be performed or the wound can be anticipated to heal completely with other wound care treatments.

Note: Continuation of healing during use of the NPWT system should be monitored on a monthly basis.

Note: Complete healing of a wound would normally be anticipated if all bone, cartilage, tendons, and foreign material were completely covered, healthy granulation were present to within 5 mm of the surface, and the wound edges were reduced to 2 cm in width or diameter.

NON-POWERED NPWT

Use of non-powered NPWT systems for the treatment of acute or chronic wounds is considered **investigational**. There is insufficient evidence to support a conclusion concerning the health outcomes or benefits associated with this procedure.

Cross-references:

- MP 1.017** Bio-Engineered Skin and Soft Tissue Substitutes
- MP 2.033** Recombinant and Autologous Platelet-Derived Growth Factors as a Treatment of Wound Healing and Other Non-Orthopedic Conditions
- MP 2.070** Hyperbaric Oxygen Pressurization
- MP 4.028** Wound and Burn Care and Specialized Treatment Centers
- MP 6.026** Durable Medical Equipment (DME) and Supplies

MEDICAL POLICY

POLICY TITLE	NEGATIVE PRESSURE WOUND THERAPY IN THE OUTPATIENT SETTING
POLICY NUMBER	MP-4.004

MP 8.001 Physical Medicine and Specialized Physical Medicine Treatments (Outpatient)

II. PRODUCT VARIATIONS

[TOP](#)

This policy is only applicable to certain programs and products administered by Capital Blue Cross and subject to benefit variations as discussed in Section VI below. Please see additional information below.

FEP PPO - Refer to FEP Medical Policy Manual. The FEP Medical Policy manual can be found at:

<https://www.fepblue.org/benefit-plans/medical-policies-and-utilization-management-guidelines/medical-policies>

III. DESCRIPTION/BACKGROUND

[TOP](#)

Management

The management and treatment of chronic wounds, including decubitus ulcers, remain a treatment challenge. Most chronic wounds will heal only if the underlying cause, i.e., venous stasis, pressure, infection, etc., is addressed. In addition, cleaning the wound to remove nonviable tissue, microorganisms, and foreign bodies is essential to create the optimal conditions for either re-epithelialization (i.e., healing by secondary intention) or preparation for wound closure with skin grafts or flaps (i.e., healing by primary intention). Therefore, debridement, irrigation, whirlpool treatments, and wet-to-dry dressings are common components of chronic wound care.

Negative pressure wound therapy (NPWT) consists of the use of a negative pressure therapy or suction device to aspirate and remove fluids, debris, and infectious materials from the wound bed to promote the formation of granulation tissue. The devices may be used as an adjunct to surgical therapy or as an alternative to surgery in a debilitated patient. Although the exact mechanism has not been elucidated, it is hypothesized that negative pressure contributes to wound healing by removing excess interstitial fluid, increasing the vascularity of the wound, reducing edema, and/or creating beneficial mechanical forces that lead to cell growth and expansion.

A non-powered (mechanical) NPWT system has also been developed; one device is the Smart Negative Pressure (SNaP) Wound Care System. This device is portable and lightweight (3 oz.) and can be worn underneath clothing. This system consists of a cartridge, dressing, and strap; the cartridge acts as the negative pressure source. The system is reported to generate negative pressure levels similar to other NPWT systems. This system is fully disposable.

The focus of this document is on use of NPWT in the outpatient setting. It is recognized that patients may begin using the device in the inpatient setting as they transition to the outpatient setting.

Regulatory Status

MEDICAL POLICY

POLICY TITLE	NEGATIVE PRESSURE WOUND THERAPY IN THE OUTPATIENT SETTING
POLICY NUMBER	MP-4.004

Negative pressure therapy or suction devices cleared by the U.S. Food and Drug Administration (FDA) for treating chronic wounds include, but are not limited to: Vacuum-Assisted Closure® Therapy (V.A.C., also known as negative pressure wound therapy; 3M™/KCI); Versatile 1™ (V1) Wound Vacuum System (Blue Sky Medical), RENASYS™ EZ PLUS (Smith & Nephew), Foryou NPWT NP32 Device (Foryou Medical Electronics), SVED® (Cardinal Health), and PICO Single Use Negative Pressure Wound Therapy System (Smith & Nephew).

Portable systems include the RENASYS™ GO (Smith & Nephew), XLR8 PLUS (Genadyne Biotechnologies), extriCARE® 2400 NPWT System (Devon Medical), the V.A.C. Via™ (KCI), NPWT PRO to GO (Cardinal Health), and the PICO Single Use Negative Pressure Wound Therapy System (Smith & Nephew). The Prevena™ Incision Management System (KCI) is designed specifically for closed surgical incisions.

A nonpowered NPWT device, the SNaP® Wound Care System (now SNAP™ Therapy System) (3M™/ previously Spiracur, acquired by Acelyty in 2015), is a class II device requiring notification to market but not having the FDA premarket approval. In 2009, it was cleared for marketing by the FDA through the 510(k) pathway (K081406) and is designed to remove small amounts of exudate from chronic, traumatic, dehisced, acute, or subacute wounds and diabetic and pressure ulcers.

Negative pressure wound therapy devices with instillation include the V.A.C. VERAFLOR™ Therapy device (3M™/KCI/Acelity). It was cleared for marketing in 2011 by the FDA through the 510(k) pathway (K103156) and is designed to allow for controlled delivery and drainage of topical antiseptic and antimicrobial wound treatment solutions and suspensions. It is to be used with the V.A.C. Ultra unit, which is commercially marketed for use in the hospital setting. Instillation is also available with Simultaneous Irrigation™ Technology tubing sets (Cardinal Health) for use with Cardinal Health SVED® and PRO NPWT devices, however, its use is not indicated for use in a home care setting (K161418).

No NPWT device has been cleared for use in infants and children.

In November 2009, the FDA issued an alert concerning complications and deaths associated with NPWT systems. An updated alert was issued in February 2011.

FDA product code: OMP.

IV. RATIONALE

[TOP](#)

Summary of Evidence

For individuals who have diabetic lower-extremity ulcers or amputation wounds who receive outpatient negative pressure wound therapy (NPWT), the evidence includes randomized controlled trials (RCTs) and a systematic review of RCTs. Relevant outcomes are symptoms, change in disease status, morbid events, quality of life, and treatment-related morbidity. There was a higher rate of wound healing and fewer amputations with NPWT, although the studies were at risk of bias due to lack of blinding. The evidence is sufficient to determine that the technology results in a meaningful improvement in the net health outcome.

MEDICAL POLICY

POLICY TITLE	NEGATIVE PRESSURE WOUND THERAPY IN THE OUTPATIENT SETTING
POLICY NUMBER	MP-4.004

For individuals who have chronic pressure ulcers who receive outpatient NPWT, the evidence includes RCTs and systematic reviews. Relevant outcomes are symptoms, change in disease status, morbid events, quality of life, and treatment-related morbidity. The evidence is sufficient to determine that the technology results in a meaningful improvement in the net health outcome.

For individuals who have lower-extremity ulcers due to venous insufficiency who receive outpatient NPWT, the evidence includes 1 RCT and a systematic review. Relevant outcomes are symptoms, change in disease status, morbid events, quality of life, and treatment-related morbidity. A single RCT in patients with nonhealing leg ulcers who were treated with skin grafts found a faster rate of healing with NPWT when used in the inpatient setting. The evidence is sufficient to determine that the technology results in a meaningful improvement in the net health outcome.

For individuals who have burn wounds who receive outpatient NPWT, the evidence includes RCTs and systematic reviews. Relevant outcomes are symptoms, change in disease status, morbid events, quality of life, and treatment-related morbidity. An interim report of an RCT evaluating NPWT in partial-thickness burns, summarized in a Cochrane review, did not permit conclusions on the efficacy of NPWT in partial-thickness burns. A separate RCT comparing NPWT with split-skin grafts in patients with full-thickness burns did not show differences in graft take and wound epithelialization. The evidence is insufficient to determine the effects of the technology on health outcomes.

For individuals who have traumatic or surgical wounds who receive outpatient NPWT, the evidence includes RCTs and systematic reviews. Relevant outcomes are symptoms, change in disease status, morbid events, quality of life, and treatment-related morbidity. NPWT showed no benefit in the treatment of patients with surgical wounds or skin grafts healing by primary intention, and a systematic review of NPWT for traumatic and surgical wounds found no differences between standard dressing and NPWT for any wound outcome measure. However, 1 small RCT has suggested that prophylactic NPWT may reduce the number of dressing changes and pain when used in an outpatient setting. The evidence is sufficient to determine that the technology results in a meaningful improvement in the net health outcome. For individuals who have any wound type (acute or nonhealing) who receive portable single-use outpatient NPWT, the evidence includes RCTs. Relevant outcomes are symptoms, change in disease status, morbid events, quality of life, and treatment-related morbidity. The evidence includes an RCT of the PICO Single Use Negative Pressure Wound Therapy System, and a pseudorandomized study of the Prevena Incision Management System. The PICO device was studied in an adequately powered but unblinded RCT of combined in- and outpatient use following total joint arthroplasty. Results showed some benefits that approached statistical significance. Further study in an outpatient setting is needed, though the evidence is sufficient to determine that the technology results in a meaningful improvement in the net health outcome.

For individuals who receive non-powered NPWT systems, the evidence includes an RCT of the non-powered Smart Negative Pressure (SNaP) Wound Care System. One study with the SNaP non-powered Wound Care System showed noninferiority to a vacuum-assisted closure device. However, interpretation of this trial is limited by a high loss to follow-up and lack of a control

MEDICAL POLICY

POLICY TITLE	NEGATIVE PRESSURE WOUND THERAPY IN THE OUTPATIENT SETTING
POLICY NUMBER	MP-4.004

group treated with dressings. These studies are insufficient to draw conclusions about its efficacy. Well-designed comparative studies with larger numbers of patients are needed to determine the effects of the technology with greater certainty. The evidence is insufficient to determine the effects of the technology on health outcomes.

V. DEFINITIONS

[TOP](#)

ATMOSPHERIC PRESSURE is the pressure exerted by the weight of the atmosphere, also known as barometric pressure.

COMPREHENSIVE WOUND CARE PROGRAM includes a minimum of all the following general measures:

- Documentation in the patient’s medical record of evaluation, care, and wound measurements by a licensed medical professional; and
- Application of dressings to maintain a moist wound environment; and
- Debridement of necrotic tissue when present; and
- Evaluation of and provision for adequate nutritional and vascular status

GRANULATING TISSUE refers to formation of granule-like projections on the internal surface of the wound that represents the outgrowth of new capillaries, bringing a rich blood supply to the wound, promoting healing.

PRESSURE (DECUBITUS) ULCER is a type of wound that forms as a result of prolonged pressure against areas of the skin. This is commonly seen over the bony prominences, such as sacrum and heels, in bedridden and/or wheelchair confined individuals. Pressure ulcers are classified into four stages (and an unstageable category), to signify the degree of skin damage:

Stage I- Intact skin with non-blanchable redness of a localized area usually over a bony prominence. Darkly pigmented skin may not have visible blanching; its color may differ from the surrounding area.

Stage II- Partial thickness loss of dermis presenting as a shallow open ulcer with a red pink wound bed, without slough. May also present as an intact or open/ruptured serum-filled blister.

Stage III- Full thickness tissue loss. Subcutaneous fat may be visible but bone, tendon, or muscle is not exposed. Slough may be present but does not obscure the depth of tissue loss. May include undermining and tunneling.

Stage IV- Full thickness tissue loss with exposed bone, tendon, or muscle. Slough or eschar may be present on some parts of the wound bed. Often include undermining and tunneling.

Unstageable- Full thickness tissue loss in which the base of the ulcer is covered by slough (yellow, tan, gray, green, or brown) and/or eschar (tan, brown or black) in the wound bed.

MEDICAL POLICY

POLICY TITLE	NEGATIVE PRESSURE WOUND THERAPY IN THE OUTPATIENT SETTING
POLICY NUMBER	MP-4.004

(Until enough slough and/or eschar is removed to expose the base of the wound, the true depth, and therefore stage, cannot be determined.)

VASCULARITY is the state of blood vessel development and functioning in an organ or tissue.

VI. BENEFIT VARIATIONS

[TOP](#)

The existence of this medical policy does not mean that this service is a covered benefit under the member's contract. Benefit determinations should be based in all cases on the applicable contract language. Medical policies do not constitute a description of benefits. A member's individual or group customer benefits govern which services are covered, which are excluded, and which are subject to benefit limits, and which require preauthorization. Members and providers should consult the member's benefit information or contact Capital Blue Cross for benefit information.

VII. DISCLAIMER

[TOP](#)

Capital Blue Cross's medical policies are developed to assist in administering a member's benefits, do not constitute medical advice, and are subject to change. Treating providers are solely responsible for medical advice and treatment of members. Members should discuss any medical policy related to their coverage or condition with their provider and consult their benefit information to determine if the service is covered. If there is a discrepancy between this medical policy and a member's benefit information, the benefit information will govern. Capital Blue Cross considers the information contained in this medical policy to be proprietary and it may only be disseminated as permitted by law.

VIII. CODING INFORMATION

[TOP](#)

Note: This list of codes may not be all-inclusive, and codes are subject to change at any time. The identification of a code in this section does not denote coverage as coverage is determined by the terms of member benefit information. In addition, not all covered services are eligible for separate reimbursement.

Investigational; therefore, not covered:

Procedure Codes							
A9272							

Covered when medically necessary:

Procedure Codes							
A6550	A7000	A7001	E2402	K0743	K0744	K0745	K0746
97605	97606	97607	97608				

MEDICAL POLICY

POLICY TITLE	NEGATIVE PRESSURE WOUND THERAPY IN THE OUTPATIENT SETTING
POLICY NUMBER	MP-4.004

ICD-10-CM Diagnosis Code	Description
E08.621	Diabetes mellitus due to underlying condition with foot ulcer
E08.622	Diabetes mellitus due to underlying condition with other skin ulcer
E09.621	Drug or chemical induced diabetes mellitus with foot ulcer
E09.622	Drug or chemical induced diabetes mellitus with other skin ulcer
E10.621	Type 1 diabetes mellitus with foot ulcer
E10.622	Type 1 diabetes mellitus with other skin ulcer
E11.621	Type 2 diabetes mellitus with foot ulcer
E11.622	Type 2 diabetes mellitus with other skin ulcer
E13.621	Other specified diabetes mellitus with foot ulcer
E13.622	Other specified diabetes mellitus with other skin ulcer
I70.231	Atherosclerosis of native arteries of right leg with ulceration of thigh
I70.232	Atherosclerosis of native arteries of right leg with ulceration of calf
I70.233	Atherosclerosis of native arteries of right leg with ulceration of ankle
I70.234	Atherosclerosis of native arteries of right leg with ulceration of heel and midfoot
I70.235	Atherosclerosis of native arteries of right leg with ulceration of other part of foot
I70.238	Atherosclerosis of native arteries of right leg with ulceration of other part of lower leg
I70.241	Atherosclerosis of native arteries of left leg with ulceration of thigh
I70.242	Atherosclerosis of native arteries of left leg with ulceration of calf
I70.243	Atherosclerosis of native arteries of left leg with ulceration of ankle
I70.244	Atherosclerosis of native arteries of left leg with ulceration of heel and midfoot
I70.245	Atherosclerosis of native arteries of left leg with ulceration of other part of foot
I70.248	Atherosclerosis of native arteries of left leg with ulceration of other part of lower leg
I70.25	Atherosclerosis of native arteries of other extremities with ulceration
I70.331	Atherosclerosis of unspecified type of bypass graft(s) of the right leg with ulceration of thigh
I70.332	Atherosclerosis of unspecified type of bypass graft(s) of the right leg with ulceration of calf
I70.333	Atherosclerosis of unspecified type of bypass graft(s) of the right leg with ulceration of ankle
I70.334	Atherosclerosis of unspecified type of bypass graft(s) of the right leg with ulceration of heel and midfoot
I70.335	Atherosclerosis of unspecified type of bypass graft(s) of the right leg with ulceration of other part of foot

MEDICAL POLICY

POLICY TITLE	NEGATIVE PRESSURE WOUND THERAPY IN THE OUTPATIENT SETTING
POLICY NUMBER	MP-4.004

170.338	Atherosclerosis of unspecified type of bypass graft(s) of the right leg with ulceration of other part of lower leg
170.341	Atherosclerosis of unspecified type of bypass graft(s) of the left leg with ulceration of thigh
170.342	Atherosclerosis of unspecified type of bypass graft(s) of the left leg with ulceration of calf
170.343	Atherosclerosis of unspecified type of bypass graft(s) of the left leg with ulceration of ankle
170.344	Atherosclerosis of unspecified type of bypass graft(s) of the left leg with ulceration of heel and midfoot
170.345	Atherosclerosis of unspecified type of bypass graft(s) of the left leg with ulceration of other part of foot
170.348	Atherosclerosis of unspecified type of bypass graft(s) of the left leg with ulceration of other part of lower leg
170.35	Atherosclerosis of unspecified type of bypass graft(s) of other extremity with ulceration
170.431	Atherosclerosis of autologous vein bypass graft(s) of the right leg with ulceration of thigh
170.432	Atherosclerosis of autologous vein bypass graft(s) of the right leg with ulceration of calf
170.433	Atherosclerosis of autologous vein bypass graft(s) of the right leg with ulceration of ankle
170.434	Atherosclerosis of autologous vein bypass graft(s) of the right leg with ulceration of heel and midfoot
170.435	Atherosclerosis of autologous vein bypass graft(s) of the right leg with ulceration of other part of foot
170.438	Atherosclerosis of autologous vein bypass graft(s) of the right leg with ulceration of other part of lower leg
170.441	Atherosclerosis of autologous vein bypass graft(s) of the left leg with ulceration of thigh
170.442	Atherosclerosis of autologous vein bypass graft(s) of the left leg with ulceration of calf
170.443	Atherosclerosis of autologous vein bypass graft(s) of the left leg with ulceration of ankle
170.444	Atherosclerosis of autologous vein bypass graft(s) of the left leg with ulceration of heel and midfoot
170.445	Atherosclerosis of autologous vein bypass graft(s) of the left leg with ulceration of other part of foot
170.448	Atherosclerosis of autologous vein bypass graft(s) of the left leg with ulceration of other part of lower leg
170.45	Atherosclerosis of autologous vein bypass graft(s) of other extremity with ulceration

MEDICAL POLICY

POLICY TITLE	NEGATIVE PRESSURE WOUND THERAPY IN THE OUTPATIENT SETTING
POLICY NUMBER	MP-4.004

170.531	Atherosclerosis of nonautologous biological bypass graft(s) of the right leg with ulceration of thigh
170.532	Atherosclerosis of nonautologous biological bypass graft(s) of the right leg with ulceration of calf
170.533	Atherosclerosis of nonautologous biological bypass graft(s) of the right leg with ulceration of ankle
170.534	Atherosclerosis of nonautologous biological bypass graft(s) of the right leg with ulceration of heel and midfoot
170.535	Atherosclerosis of nonautologous biological bypass graft(s) of the right leg with ulceration of other part of foot
170.538	Atherosclerosis of nonautologous biological bypass graft(s) of the right leg with ulceration of other part of lower leg
170.541	Atherosclerosis of nonautologous biological bypass graft(s) of the left leg with ulceration of thigh
170.542	Atherosclerosis of nonautologous biological bypass graft(s) of the left leg with ulceration of calf
170.543	Atherosclerosis of nonautologous biological bypass graft(s) of the left leg with ulceration of ankle
170.544	Atherosclerosis of nonautologous biological bypass graft(s) of the left leg with ulceration of heel and midfoot
170.545	Atherosclerosis of nonautologous biological bypass graft(s) of the left leg with ulceration of other part of foot
170.548	Atherosclerosis of nonautologous biological bypass graft(s) of the left leg with ulceration of other part of lower leg
170.55	Atherosclerosis of nonautologous biological bypass graft(s) of other extremity with ulceration
170.631	Atherosclerosis of nonbiological bypass graft(s) of the right leg with ulceration of thigh
170.632	Atherosclerosis of nonbiological bypass graft(s) of the right leg with ulceration of calf
170.633	Atherosclerosis of nonbiological bypass graft(s) of the right leg with ulceration of ankle
170.634	Atherosclerosis of nonbiological bypass graft(s) of the right leg with ulceration of heel and midfoot
170.635	Atherosclerosis of nonbiological bypass graft(s) of the right leg with ulceration of other part of foot
170.638	Atherosclerosis of nonbiological bypass graft(s) of the right leg with ulceration of other part of lower leg
170.641	Atherosclerosis of nonbiological bypass graft(s) of the left leg with ulceration of thigh
170.642	Atherosclerosis of nonbiological bypass graft(s) of the left leg with ulceration of calf

MEDICAL POLICY

POLICY TITLE	NEGATIVE PRESSURE WOUND THERAPY IN THE OUTPATIENT SETTING
POLICY NUMBER	MP-4.004

170.643	Atherosclerosis of nonbiological bypass graft(s) of the left leg with ulceration of ankle
170.644	Atherosclerosis of nonbiological bypass graft(s) of the left leg with ulceration of heel and midfoot
170.645	Atherosclerosis of nonbiological bypass graft(s) of the left leg with ulceration of other part of foot
170.648	Atherosclerosis of nonbiological bypass graft(s) of the left leg with ulceration of other part of lower leg
170.65	Atherosclerosis of nonbiological bypass graft(s) of other extremity with ulceration
170.731	Atherosclerosis of other type of bypass graft(s) of the right leg with ulceration of thigh
170.732	Atherosclerosis of other type of bypass graft(s) of the right leg with ulceration of calf
170.733	Atherosclerosis of other type of bypass graft(s) of the right leg with ulceration of ankle
170.734	Atherosclerosis of other type of bypass graft(s) of the right leg with ulceration of heel and midfoot
170.735	Atherosclerosis of other type of bypass graft(s) of the right leg with ulceration of other part of foot
170.738	Atherosclerosis of other type of bypass graft(s) of the right leg with ulceration of other part of lower leg
170.741	Atherosclerosis of other type of bypass graft(s) of the left leg with ulceration of thigh
170.742	Atherosclerosis of other type of bypass graft(s) of the left leg with ulceration of calf
170.743	Atherosclerosis of other type of bypass graft(s) of the left leg with ulceration of ankle
170.744	Atherosclerosis of other type of bypass graft(s) of the left leg with ulceration of heel and midfoot
170.745	Atherosclerosis of other type of bypass graft(s) of the left leg with ulceration of other part of foot
170.748	Atherosclerosis of other type of bypass graft(s) of the left leg with ulceration of other part of lower leg
170.75	Atherosclerosis of other type of bypass graft(s) of other extremity with ulceration
183.011	Varicose veins of right lower extremity with ulcer of thigh
183.012	Varicose veins of right lower extremity with ulcer of calf
183.013	Varicose veins of right lower extremity with ulcer of ankle
183.014	Varicose veins of right lower extremity with ulcer of heel and midfoot
183.015	Varicose veins of right lower extremity with ulcer other part of foot
183.018	Varicose veins of right lower extremity with ulcer other part of lower leg
183.021	Varicose veins of left lower extremity with ulcer of thigh

MEDICAL POLICY

POLICY TITLE	NEGATIVE PRESSURE WOUND THERAPY IN THE OUTPATIENT SETTING
POLICY NUMBER	MP-4.004

I83.022	Varicose veins of left lower extremity with ulcer of calf
I83.023	Varicose veins of left lower extremity with ulcer of ankle
I83.024	Varicose veins of left lower extremity with ulcer of heel and midfoot
I83.025	Varicose veins of left lower extremity with ulcer other part of foot
I83.028	Varicose veins of left lower extremity with ulcer other part of lower leg
I83.211	Varicose veins of right lower extremity with both ulcer of thigh and inflammation
I83.212	Varicose veins of right lower extremity with both ulcer of calf and inflammation
I83.213	Varicose veins of right lower extremity with both ulcer of ankle and inflammation
I83.214	Varicose veins of right lower extremity with both ulcer of heel and midfoot and inflammation
I83.215	Varicose veins of right lower extremity with both ulcer of other part of foot and inflammation
I83.218	Varicose veins of right lower extremity with both ulcer of other part of lower extremity and inflammation
I83.221	Varicose veins of left lower extremity with both ulcer of thigh and inflammation
I83.222	Varicose veins of left lower extremity with both ulcer of calf and inflammation
I83.223	Varicose veins of left lower extremity with both ulcer of ankle and inflammation
I83.224	Varicose veins of left lower extremity with both ulcer of heel and midfoot and inflammation
I83.225	Varicose veins of left lower extremity with both ulcer of other part of foot and inflammation
I83.228	Varicose veins of left lower extremity with both ulcer of other part of lower extremity and inflammation
I87.311	Chronic venous hypertension (idiopathic) with ulcer of right lower extremity
I87.312	Chronic venous hypertension (idiopathic) with ulcer of left lower extremity
I87.313	Chronic venous hypertension (idiopathic) with ulcer of bilateral lower extremity
I87.331	Chronic venous hypertension (idiopathic) with ulcer and inflammation of right lower extremity
I87.332	Chronic venous hypertension (idiopathic) with ulcer and inflammation of left lower extremity
I87.333	Chronic venous hypertension (idiopathic) with ulcer and inflammation of bilateral lower extremity
L89.003	Pressure ulcer of unspecified elbow, stage 3
L89.004	Pressure ulcer of unspecified elbow, stage 4
L89.013	Pressure ulcer of right elbow, stage 3
L89.014	Pressure ulcer of right elbow, stage 4
L89.023	Pressure ulcer of left elbow, stage 3
L89.024	Pressure ulcer of left elbow, stage 4
L89.103	Pressure ulcer of unspecified part of back, stage 3

MEDICAL POLICY

POLICY TITLE	NEGATIVE PRESSURE WOUND THERAPY IN THE OUTPATIENT SETTING
POLICY NUMBER	MP-4.004

L89.104	Pressure ulcer of unspecified part of back, stage 4
L89.113	Pressure ulcer of right upper back, stage 3
L89.114	Pressure ulcer of right upper back, stage 4
L89.123	Pressure ulcer of left upper back, stage 3
L89.124	Pressure ulcer of left upper back, stage 4
L89.133	Pressure ulcer of right lower back, stage 3
L89.134	Pressure ulcer of right lower back, stage 4
L89.143	Pressure ulcer of left lower back, stage 3
L89.144	Pressure ulcer of left lower back, stage 4
L89.153	Pressure ulcer of sacral region, stage 3
L89.154	Pressure ulcer of sacral region, stage 4
L89.203	Pressure ulcer of unspecified hip, stage 3
L89.204	Pressure ulcer of unspecified hip, stage 4
L89.213	Pressure ulcer of right hip, stage 3
L89.214	Pressure ulcer of right hip, stage 4
L89.223	Pressure ulcer of left hip, stage 3
L89.224	Pressure ulcer of left hip, stage 4
L89.303	Pressure ulcer of unspecified buttock, stage 3
L89.304	Pressure ulcer of unspecified buttock, stage 4
L89.313	Pressure ulcer of right buttock, stage 3
L89.314	Pressure ulcer of right buttock, stage 4
L89.323	Pressure ulcer of left buttock, stage 3
L89.324	Pressure ulcer of left buttock, stage 4
L89.43	Pressure ulcer of contiguous site of back, buttock, and hip, stage 3
L89.44	Pressure ulcer of contiguous site of back, buttock, and hip, stage 4
L89.503	Pressure ulcer of unspecified ankle, stage 3
L89.504	Pressure ulcer of unspecified ankle, stage 4
L89.513	Pressure ulcer of right ankle, stage 3
L89.514	Pressure ulcer of right ankle, stage 4
L89.523	Pressure ulcer of left ankle, stage 3
L89.524	Pressure ulcer of left ankle, stage 4
L89.603	Pressure ulcer of unspecified heel, stage 3
L89.604	Pressure ulcer of unspecified heel, stage 4
L89.613	Pressure ulcer of right heel, stage 3
L89.614	Pressure ulcer of right heel, stage 4
L89.623	Pressure ulcer of left heel, stage 3
L89.624	Pressure ulcer of left heel, stage 4

MEDICAL POLICY

POLICY TITLE	NEGATIVE PRESSURE WOUND THERAPY IN THE OUTPATIENT SETTING
POLICY NUMBER	MP-4.004

L89.813	Pressure ulcer of head, stage 3
L89.814	Pressure ulcer of head, stage 4
L89.893	Pressure ulcer of other site, stage 3
L89.894	Pressure ulcer of other site, stage 4
L97.111	Non-pressure chronic ulcer of right thigh limited to breakdown of skin
L97.112	Non-pressure chronic ulcer of right thigh with fat layer exposed
L97.113	Non-pressure chronic ulcer of right thigh with necrosis of muscle
L97.114	Non-pressure chronic ulcer of right thigh with necrosis of bone
L97.115	Non-pressure chronic ulcer of right thigh with muscle involvement without evidence of necrosis
L97.116	Non-pressure chronic ulcer of right thigh with bone involvement without evidence of necrosis
L97.118	Non-pressure chronic ulcer of right thigh with other specified severity
L97.121	Non-pressure chronic ulcer of left thigh limited to breakdown of skin
L97.122	Non-pressure chronic ulcer of left thigh with fat layer exposed
L97.123	Non-pressure chronic ulcer of left thigh with necrosis of muscle
L97.124	Non-pressure chronic ulcer of left thigh with necrosis of bone
L97.125	Non-pressure chronic ulcer of left thigh with muscle involvement without evidence of necrosis
L97.126	Non-pressure chronic ulcer of left thigh with bone involvement without evidence of necrosis
L97.128	Non-pressure chronic ulcer of left thigh with other specified severity
L97.211	Non-pressure chronic ulcer of right calf limited to breakdown of skin
L97.212	Non-pressure chronic ulcer of right calf with fat layer exposed
L97.213	Non-pressure chronic ulcer of right calf with necrosis of muscle
L97.214	Non-pressure chronic ulcer of right calf with necrosis of bone
L97.215	Non-pressure chronic ulcer of right calf with muscle involvement without evidence of necrosis
L97.216	Non-pressure chronic ulcer of right calf with bone involvement without evidence of necrosis
L97.218	Non-pressure chronic ulcer of right calf with other specified severity
L97.221	Non-pressure chronic ulcer of left calf limited to breakdown of skin
L97.222	Non-pressure chronic ulcer of left calf with fat layer exposed
L97.223	Non-pressure chronic ulcer of left calf with necrosis of muscle
L97.224	Non-pressure chronic ulcer of left calf with necrosis of bone
L97.225	Non-pressure chronic ulcer of left calf with muscle involvement without evidence of necrosis
L97.226	Non-pressure chronic ulcer of left calf with bone involvement without evidence of necrosis

MEDICAL POLICY

POLICY TITLE	NEGATIVE PRESSURE WOUND THERAPY IN THE OUTPATIENT SETTING
POLICY NUMBER	MP-4.004

L97.228	Non-pressure chronic ulcer of left calf with other specified severity
L97.311	Non-pressure chronic ulcer of right ankle limited to breakdown of skin
L97.312	Non-pressure chronic ulcer of right ankle with fat layer exposed
L97.313	Non-pressure chronic ulcer of right ankle with necrosis of muscle
L97.314	Non-pressure chronic ulcer of right ankle with necrosis of bone
L97.315	Non-pressure chronic ulcer of right ankle with muscle involvement without evidence of necrosis
L97.316	Non-pressure chronic ulcer of right ankle with bone involvement without evidence of necrosis
L97.318	Non-pressure chronic ulcer of right ankle with other specified severity
L97.321	Non-pressure chronic ulcer of left ankle limited to breakdown of skin
L97.322	Non-pressure chronic ulcer of left ankle with fat layer exposed
L97.323	Non-pressure chronic ulcer of left ankle with necrosis of muscle
L97.324	Non-pressure chronic ulcer of left ankle with necrosis of bone
L97.325	Non-pressure chronic ulcer of left ankle with muscle involvement without evidence of necrosis
L97.326	Non-pressure chronic ulcer of left ankle with bone involvement without evidence of necrosis
L97.328	Non-pressure chronic ulcer of left ankle with other specified severity
L97.411	Non-pressure chronic ulcer of right heel and midfoot limited to breakdown of skin
L97.412	Non-pressure chronic ulcer of right heel and midfoot with fat layer exposed
L97.413	Non-pressure chronic ulcer of right heel and midfoot with necrosis of muscle
L97.414	Non-pressure chronic ulcer of right heel and midfoot with necrosis of bone
L97.415	Non-pressure chronic ulcer of right heel and midfoot with muscle involvement without evidence of necrosis
L97.416	Non-pressure chronic ulcer of right heel and midfoot with bone involvement without evidence of necrosis
L97.418	Non-pressure chronic ulcer of right heel and midfoot with other specified severity
L97.421	Non-pressure chronic ulcer of left heel and midfoot limited to breakdown of skin
L97.422	Non-pressure chronic ulcer of left heel and midfoot with fat layer exposed
L97.423	Non-pressure chronic ulcer of left heel and midfoot with necrosis of muscle
L97.424	Non-pressure chronic ulcer of left heel and midfoot with necrosis of bone
L97.425	Non-pressure chronic ulcer of left heel and midfoot with muscle involvement without evidence of necrosis
L97.426	Non-pressure chronic ulcer of left heel and midfoot with bone involvement without evidence of necrosis
L97.428	Non-pressure chronic ulcer of left heel and midfoot with other specified severity
L97.511	Non-pressure chronic ulcer of other part of right foot limited to breakdown of skin
L97.512	Non-pressure chronic ulcer of other part of right foot with fat layer exposed

MEDICAL POLICY

POLICY TITLE	NEGATIVE PRESSURE WOUND THERAPY IN THE OUTPATIENT SETTING
POLICY NUMBER	MP-4.004

L97.513	Non-pressure chronic ulcer of other part of right foot with necrosis of muscle
L97.514	Non-pressure chronic ulcer of other part of right foot with necrosis of bone
L97.515	Non-pressure chronic ulcer of other part of right foot with muscle involvement without evidence of necrosis
L97.516	Non-pressure chronic ulcer of other part of right foot with bone involvement without evidence of necrosis
L97.518	Non-pressure chronic ulcer of other part of right foot with other specified severity
L97.521	Non-pressure chronic ulcer of other part of left foot limited to breakdown of skin
L97.522	Non-pressure chronic ulcer of other part of left foot with fat layer exposed
L97.523	Non-pressure chronic ulcer of other part of left foot with necrosis of muscle
L97.524	Non-pressure chronic ulcer of other part of left foot with necrosis of bone
L97.525	Non-pressure chronic ulcer of other part of left foot with muscle involvement without evidence of necrosis
L97.526	Non-pressure chronic ulcer of other part of left foot with bone involvement without evidence of necrosis
L97.528	Non-pressure chronic ulcer of other part of left foot with other specified severity
L97.811	Non-pressure chronic ulcer of other part of right lower leg limited to breakdown of skin
L97.812	Non-pressure chronic ulcer of other part of right lower leg with fat layer exposed
L97.813	Non-pressure chronic ulcer of other part of right lower leg with necrosis of muscle
L97.814	Non-pressure chronic ulcer of other part of right lower leg with necrosis of bone
L97.815	Non-pressure chronic ulcer of other part of right lower leg with muscle involvement without evidence of necrosis
L97.816	Non-pressure chronic ulcer of other part of right lower leg with bone involvement without evidence of necrosis
L97.818	Non-pressure chronic ulcer of other part of right lower leg with other specified severity
L97.821	Non-pressure chronic ulcer of other part of left lower leg limited to breakdown of skin
L97.822	Non-pressure chronic ulcer of other part of left lower leg with fat layer exposed
L97.823	Non-pressure chronic ulcer of other part of left lower leg with necrosis of muscle
L97.824	Non-pressure chronic ulcer of other part of left lower leg with necrosis of bone
L97.825	Non-pressure chronic ulcer of other part of left lower leg with muscle involvement without evidence of necrosis
L97.826	Non-pressure chronic ulcer of other part of left lower leg with bone involvement without evidence of necrosis
L97.828	Non-pressure chronic ulcer of other part of left lower leg with other specified severity

MEDICAL POLICY

POLICY TITLE	NEGATIVE PRESSURE WOUND THERAPY IN THE OUTPATIENT SETTING
POLICY NUMBER	MP-4.004

L97.911	Non-pressure chronic ulcer of unspecified part of right lower leg limited to breakdown of skin
L97.912	Non-pressure chronic ulcer of unspecified part of right lower leg with fat layer exposed
L97.913	Non-pressure chronic ulcer of unspecified part of right lower leg with necrosis of muscle
L97.914	Non-pressure chronic ulcer of unspecified part of right lower leg with necrosis of bone
L97.915	Non-pressure chronic ulcer of unspecified part of right lower leg with muscle involvement without evidence of necrosis
L97.916	Non-pressure chronic ulcer of unspecified part of right lower leg with bone involvement without evidence of necrosis
L97.918	Non-pressure chronic ulcer of unspecified part of right lower leg with other specified severity
L97.921	Non-pressure chronic ulcer of unspecified part of left lower leg limited to breakdown of skin
L97.922	Non-pressure chronic ulcer of unspecified part of left lower leg with fat layer exposed
L97.923	Non-pressure chronic ulcer of unspecified part of left lower leg with necrosis of muscle
L97.924	Non-pressure chronic ulcer of unspecified part of left lower leg with necrosis of bone
L97.925	Non-pressure chronic ulcer of unspecified part of left lower leg with muscle involvement without evidence of necrosis
L97.926	Non-pressure chronic ulcer of unspecified part of left lower leg with bone involvement without evidence of necrosis
L97.928	Non-pressure chronic ulcer of unspecified part of left lower leg with other specified severity
L98.411	Non-pressure chronic ulcer of buttock limited to breakdown of skin
L98.412	Non-pressure chronic ulcer of buttock with fat layer exposed
L98.413	Non-pressure chronic ulcer of buttock with necrosis of muscle
L98.414	Non-pressure chronic ulcer of buttock with necrosis of bone
L98.415	Non-pressure chronic ulcer of buttock with muscle involvement without evidence of necrosis
L98.416	Non-pressure chronic ulcer of buttock with bone involvement without evidence of necrosis
L98.418	Non-pressure chronic ulcer of buttock with other specified severity
L98.421	Non-pressure chronic ulcer of back limited to breakdown of skin
L98.422	Non-pressure chronic ulcer of back with fat layer exposed
L98.423	Non-pressure chronic ulcer of back with necrosis of muscle
L98.424	Non-pressure chronic ulcer of back with necrosis of bone

MEDICAL POLICY

POLICY TITLE	NEGATIVE PRESSURE WOUND THERAPY IN THE OUTPATIENT SETTING
POLICY NUMBER	MP-4.004

L98.425	Non-pressure chronic ulcer of back with muscle involvement without evidence of necrosis
L98.426	Non-pressure chronic ulcer of back with bone involvement without evidence of necrosis
L98.428	Non-pressure chronic ulcer of back with other specified severity
L98.491	Non-pressure chronic ulcer of skin of other sites limited to breakdown of skin
L98.492	Non-pressure chronic ulcer of skin of other sites with fat layer exposed
L98.493	Non-pressure chronic ulcer of skin of other sites with necrosis of muscle
L98.494	Non-pressure chronic ulcer of skin of other sites with necrosis of bone
L98.495	Non-pressure chronic ulcer of skin of other sites with muscle involvement without evidence of necrosis
L98.496	Non-pressure chronic ulcer of skin of other sites with bone involvement without evidence of necrosis
L98.498	Non-pressure chronic ulcer of skin of other sites with other specified severity
S31.100D	Unspecified open wound of abdominal wall, right upper quadrant without penetration into peritoneal cavity, subsequent encounter
S31.100S	Unspecified open wound of abdominal wall, right upper quadrant without penetration into peritoneal cavity, sequela
S31.101D	Unspecified open wound of abdominal wall, left upper quadrant without penetration into peritoneal cavity, subsequent encounter
S31.101S	Unspecified open wound of abdominal wall, left upper quadrant without penetration into peritoneal cavity, sequela
S31.102D	Unspecified open wound of abdominal wall, epigastric region without penetration into peritoneal cavity, subsequent encounter
S31.102S	Unspecified open wound of abdominal wall, epigastric region without penetration into peritoneal cavity, sequela
S31.103D	Unspecified open wound of abdominal wall, right lower quadrant without penetration into peritoneal cavity, subsequent encounter
S31.103S	Unspecified open wound of abdominal wall, right lower quadrant without penetration into peritoneal cavity, sequela
S31.104D	Unspecified open wound of abdominal wall, left lower quadrant without penetration into peritoneal cavity, subsequent encounter
S31.104S	Unspecified open wound of abdominal wall, left lower quadrant without penetration into peritoneal cavity, sequela
S31.105D	Unspecified open wound of abdominal wall, periumbilic region without penetration into peritoneal cavity, subsequent encounter
S31.105S	Unspecified open wound of abdominal wall, periumbilic region without penetration into peritoneal cavity, sequela
T81.31XA	Disruption of external operation (surgical) wound, not elsewhere classified, initial encounter

MEDICAL POLICY

POLICY TITLE	NEGATIVE PRESSURE WOUND THERAPY IN THE OUTPATIENT SETTING
POLICY NUMBER	MP-4.004

T81.31XD	Disruption of external operation (surgical) wound, not elsewhere classified, subsequent encounter
T81.32XA	Disruption of internal operation (surgical) wound, not elsewhere classified, initial encounter
T81.32XD	Disruption of internal operation (surgical) wound, not elsewhere classified, subsequent encounter
T81.33XA	Disruption of traumatic injury wound repair, initial encounter
T81.33XD	Disruption of traumatic injury wound repair, subsequent encounter
T81.42XA	Infection following a procedure, deep incisional surgical site, initial encounter
T81.42XD	Infection following a procedure, deep incisional surgical site, subsequent encounter
T81.49XA	Infection following a procedure, other surgical site, initial encounter
T81.49XD	Infection following a procedure, other surgical site, subsequent encounter

IX. REFERENCES

[TOP](#)

1. U.S. Food and Drug Administration. *UPDATE on Serious Complications Associated with Negative Pressure Wound Therapy Systems: FDA Safety Communication*. 2011 Feb
2. Blue Cross and Blue Shield Association Technology Evaluation Center (TEC). *Vacuum-assisted closure in the treatment of chronic wounds*. TEC Assessments. 2000;Volume 15:Tab 23.
3. Food and Drug Administration (FDA). *Guidance for Industry. Chronic Cutaneous Ulcer and Burn Wounds - Developing Products for Treatment*. June 2006
4. Rhee SM, Valle MF, Wilson LM, et al. *Negative Pressure Wound Therapy Technologies For Chronic Wound Care in the Home Setting*. Evidence Report/Technology Assessment (Contract No. 290-201-200007-I) Rockville, MD: Agency for Healthcare Research and Quality; 2014.
5. Rhee SM, Valle MF, Wilson LM, et al. *Negative pressure wound therapy technologies for chronic wound care in the home setting: A systematic review*. *Wound Repair Regen*. 2015; 23(4): 506-17. PMID 25845268
6. Sullivan N, Snyder DL, Tipton K, et al. *Technology assessment: Negative pressure wound therapy devices (Contract No. 290-2007-10063)*. Rockville, MD: Agency for Healthcare Research and Quality; 2009.
7. Dumville JC, Hinchliffe RJ, Cullum N, et al. *Negative pressure wound therapy for treating foot wounds in people with diabetes mellitus*. *Cochrane Database Syst Rev*. Oct 17 2013; (10): CD010318. PMID 24132761
8. Liu Z, Dumville JC, Hinchliffe RJ, et al. *Negative pressure wound therapy for treating foot wounds in people with diabetes mellitus*. *Cochrane Database Syst Rev*. Oct 17 2018; 10(10): CD010318. PMID 30328611
9. Wynn M, Freeman S. *The efficacy of negative pressure wound therapy for diabetic foot ulcers: A systematised review*. *J Tissue Viability*. Aug 2019; 28(3): 152-160. PMID 31056407

MEDICAL POLICY

POLICY TITLE	NEGATIVE PRESSURE WOUND THERAPY IN THE OUTPATIENT SETTING
POLICY NUMBER	MP-4.004

10. Chen L, Zhang S, Da J, et al. A systematic review and meta-analysis of efficacy and safety of negative pressure wound therapy in the treatment of diabetic foot ulcer. *Ann Palliat Med.* Oct 2021; 10(10): 10830-10839. PMID 34763444
11. Kirsner R, Dove C, Reyzelman A, et al. A prospective, randomized, controlled clinical trial on the efficacy of a single-use negative pressure wound therapy system, compared to traditional negative pressure wound therapy in the treatment of chronic ulcers of the lower extremities. *Wound Repair Regen.* Sep 2019; 27(5): 519-529. PMID 31087729
12. Kirsner RS, Zimnitsky D, Robinson M. A prospective, randomized, controlled clinical study on the effectiveness of a single-use negative pressure wound therapy system, compared to traditional negative pressure wound therapy in the treatment of diabetic ulcers of the lower extremities. *Wound Repair Regen.* Nov 2021; 29(6): 908-911. PMID 34525239
13. Armstrong DG, Marston WA, Reyzelman AM, et al. Comparison of negative pressure wound therapy with an ultraportable mechanically powered device vs. traditional electrically powered device for the treatment of chronic lower extremity ulcers: a multicenter randomized-controlled trial. *Wound Repair Regen.* 2011; 19(2): 173-80. PMID 21362084
14. Armstrong DG, Marston WA, Reyzelman AM, et al. Comparative effectiveness of mechanically and electrically powered negative pressure wound therapy devices: a multicenter randomized controlled trial. *Wound Repair Regen.* 2012; 20(3): 332-41. PMID 22564228
15. Lerman B, Oldenbrook L, Eichstadt SL, et al. Evaluation of chronic wound treatment with the SNaP wound care system versus modern dressing protocols. *Plast Reconstr Surg.* Oct 2010; 126(4): 1253-1261. PMID 20885246
16. Wanner MB, Schwarzl F, Strub B, et al. Vacuum-assisted wound closure for cheaper and more comfortable healing of pressure sores: a prospective study. *Scand J Plast Reconstr Surg Hand Surg.* 2003; 37(1): 28-33. PMID 12625392
17. Dumville JC, Land L, Evans D, et al. Negative pressure wound therapy for treating leg ulcers. *Cochrane Database Syst Rev.* Jul 14 2015; 2015(7): CD011354. PMID 26171910
18. Vuerstaek JD, Vainas T, Wuite J, et al. State-of-the-art treatment of chronic leg ulcers: A randomized controlled trial comparing vacuum-assisted closure (V.A.C.) with modern wound dressings. *J Vasc Surg.* Nov 2006; 44(5): 1029-37; discussion 1038. PMID 17000077
19. Marston WA, Armstrong DG, Reyzelman AM, et al. A Multicenter Randomized Controlled Trial Comparing Treatment of Venous Leg Ulcers Using Mechanically Versus Electrically Powered Negative Pressure Wound Therapy. *Adv Wound Care (New Rochelle).* Feb 01 2015; 4(2): 75-82. PMID 25713749
20. Dumville JC, Munson C, Christie J. Negative pressure wound therapy for partial-thickness burns. *Cochrane Database Syst Rev.* Dec 15 2014; 2014(12): CD006215. PMID 25500895
21. Bloemen MC, van der Wal MB, Verhaegen PD, et al. Clinical effectiveness of dermal substitution in burns by topical negative pressure: a multicenter randomized controlled trial. *Wound Repair Regen.* 2012; 20(6): 797-805. PMID 23110478

MEDICAL POLICY

POLICY TITLE	NEGATIVE PRESSURE WOUND THERAPY IN THE OUTPATIENT SETTING
POLICY NUMBER	MP-4.004

22. Krug E, Berg L, Lee C, et al. Evidence-based recommendations for the use of Negative Pressure Wound Therapy in traumatic wounds and reconstructive surgery: steps towards an international consensus. *Injury*. Feb 2011; 42 Suppl 1: S1-12. PMID 21316515
23. Ehrl D, Heidekrueger PI, Broer PN, et al. Topical Negative Pressure Wound Therapy of Burned Hands: Functional Outcomes. *J Burn Care Res*. Jan 01 2018; 39(1): 121-128. PMID 28368916
24. Norman G, Shi C, Goh EL, et al. Negative pressure wound therapy for surgical wounds healing by primary closure. *Cochrane Database Syst Rev*. Apr 26 2022; 4(4): CD009261. PMID 35471497
25. Li HZ, Xu XH, Wang DW, et al. Negative pressure wound therapy for surgical site infections: a systematic review and meta-analysis of randomized controlled trials. *Clin Microbiol Infect*. Nov 2019; 25(11): 1328-1338. PMID 31220604
26. De Vries FEE, Wallert ED, Solomkin JS, et al. A systematic review and meta-analysis including GRADE qualification of the risk of surgical site infections after prophylactic negative pressure wound therapy compared with conventional dressings in clean and contaminated surgery. *Medicine (Baltimore)*. Sep 2016; 95(36): e4673. PMID 27603360
27. Iheozor-Ejiogor Z, Newton K, Dumville JC, et al. Negative pressure wound therapy for open traumatic wounds. *Cochrane Database Syst Rev*. Jul 03 2018; 7(7): CD012522. PMID 29969521
28. Stannard JP, Volgas DA, McGwin G, et al. Incisional negative pressure wound therapy after high-risk lower extremity fractures. *J Orthop Trauma*. Jan 2012; 26(1): 37-42. PMID 21804414
29. Costa ML, Achten J, Bruce J, et al. Effect of Negative Pressure Wound Therapy vs Standard Wound Management on 12-Month Disability Among Adults With Severe Open Fracture of the Lower Limb: The WOLLF Randomized Clinical Trial. *JAMA*. Jun 12 2018; 319(22): 2280-2288. PMID 29896626
30. Seidel D, Diedrich S, Herrle F, et al. Negative Pressure Wound Therapy vs Conventional Wound Treatment in Subcutaneous Abdominal Wound Healing Impairment: The SAWHI Randomized Clinical Trial. *JAMA Surg*. Jun 01 2020; 155(6): 469-478. PMID 32293657
31. Stannard JP, Robinson JT, Anderson ER, et al. Negative pressure wound therapy to treat hematomas and surgical incisions following high-energy trauma. *J Trauma*. Jun 2006; 60(6): 1301-6. PMID 16766975
32. Monsen C, Acosta S, Mani K, et al. A randomised study of NPWT closure versus alginate dressings in peri-vascular groin infections: quality of life, pain and cost. *J Wound Care*. Jun 2015; 24(6): 252, 254-6, 258-0. PMID 26075373
33. Costa ML, Achten J, Parsons NR. Five-year outcomes for patients sustaining severe fractures of the lower limb : mid-term results from the Wound management for Open Lower Limb Fracture (WOLLF) trial. *Bone Joint J*. May 2022; 104-B(5): 633-639. PMID 35491582
34. Seidel D, Lefering R. NPWT Resource Use Compared With Conventional Wound Treatment in Subcutaneous Abdominal Wounds With Healing Impairment After Surgery: SAWHI Randomized Clinical Trial Results. *Ann Surg*. Feb 01 2022; 275(2): e290-e298. PMID 34117147

MEDICAL POLICY

POLICY TITLE	NEGATIVE PRESSURE WOUND THERAPY IN THE OUTPATIENT SETTING
POLICY NUMBER	MP-4.004

35. Karlakki SL, Hamad AK, Whittall C, et al. Incisional negative pressure wound therapy dressings (iNPWTd) in routine primary hip and knee arthroplasties: A randomised controlled trial. *Bone Joint Res.* Aug 2016; 5(8): 328-37. PMID 27496913
36. Peterson AT, Bakaysa SL, Driscoll JM, et al. Randomized controlled trial of single-use negative-pressure wound therapy dressings in morbidly obese patients undergoing cesarean delivery. *Am J Obstet Gynecol MFM.* Sep 2021; 3(5): 100410. PMID 34058423
37. Pauser J, Nordmeyer M, Biber R, et al. Incisional negative pressure wound therapy after hemiarthroplasty for femoral neck fractures - reduction of wound complications. *Int Wound J.* Oct 2016; 13(5): 663-7. PMID 25125244
38. Murphy PB, Knowles S, Chadi SA, et al. Negative Pressure Wound Therapy Use to Decrease Surgical Nosocomial Events in Colorectal Resections (NEPTUNE): A Randomized Controlled Trial. *Ann Surg.* Jul 2019; 270(1): 38-42. PMID 30499799
39. Hussamy DJ, Wortman AC, McIntire DD, et al. Closed Incision Negative Pressure Therapy in Morbidly Obese Women Undergoing Cesarean Delivery: A Randomized Controlled Trial. *Obstet Gynecol.* Oct 2019; 134(4): 781-789. PMID 31503147
40. Tuuli MG, Liu J, Tita ATN, et al. Effect of Prophylactic Negative Pressure Wound Therapy vs Standard Wound Dressing on Surgical-Site Infection in Obese Women After Cesarean Delivery: A Randomized Clinical Trial. *JAMA.* Sep 22 2020; 324(12): 1180-1189. PMID 32960242
41. Bertges DJ, Smith L, Scully RE, et al. A multicenter, prospective randomized trial of negative pressure wound therapy for infrainguinal revascularization with a groin incision. *J Vasc Surg.* Jul 2021; 74(1): 257-267.e1. PMID 33548422
42. American Academy of Orthopaedic Surgeons. *Prevention of Surgical Site Infections After Major Extremity Trauma Evidence-Based Clinical Practice Guideline*
43. Willy C, Agarwal A, Andersen CA, et al. Closed incision negative pressure therapy: international multidisciplinary consensus recommendations. *Int Wound J.* Apr 2017; 14(2): 385-398. PMID 27170231
44. Lipsky BA, Berendt AR, Cornia PB, et al. 2012 infectious diseases society of america clinical practice guideline for the diagnosis and treatment of diabetic foot infections. *J Am Podiatr Med Assoc.* 2013; 103(1): 2-7. PMID 23328846
45. Qaseem A, Humphrey LL, Forciea MA, et al. Treatment of pressure ulcers: a clinical practice guideline from the American College of Physicians. *Ann Intern Med.* Mar 03 2015; 162(5): 370-9. PMID 25732279
46. Association for the Advancement of Wound Care (AAWC). *International Consolidated Venous Ulcer Guideline (ICVUG). Update of AAWC Venous Ulcer Guideline, 2005 and 2010.* 2015
47. National Institute for Health and Care Excellence (NICE). *Negative Pressure Wound Therapy for the Open Abdomen [IPG467].* 2013
48. National Institute for Health and Care Excellence (NICE). *Diabetic Foot Problems: Prevention and Management [NG19].* 2019
49. National Institute for Health and Care Excellence (NICE). *Pressure ulcers: prevention and management [CG179].* 2014

MEDICAL POLICY

POLICY TITLE	NEGATIVE PRESSURE WOUND THERAPY IN THE OUTPATIENT SETTING
POLICY NUMBER	MP-4.004

50. National Institute for Health and Care Excellence (NICE). PICO negative pressure wound dressings for closed surgical incisions [MTG43]. 2019
51. National Institute for Health and Care Excellence (NICE). Cesarean birth [NG192]. 2021
52. National Institute for Health and Care Excellence (NICE). The VAC Veraflo Therapy system for acute infected or chronic wounds that are failing to heal [MTG54]. 2021.
53. Blue Cross Blue Shield Association Medical Policy Reference Manual. 1.01.16, Negative Pressure Wound Therapy in the Outpatient Setting February 2023

X. POLICY HISTORY

[TOP](#)

MP 4.004	CAC 2/25/03
	CAC 3/25/03
	CAC 2/22/05
	CAC 3/29/05
	Retire Policy Use InterQual Criteria effective 7/1/06
	CAC 2/27/07
	CAC 5/27/08
	CAC 11/25/08
	CAC 11/24/09 Consensus Review
	CAC 11/30/10 Medicare Variation
	CAC 6/26/12 Consensus. FEP variation changed to reference FEP Medical Policy Manual MP-1.01.16 Negative Pressure Wound Therapy in the Outpatient Setting.
	CAC 9/24/13 Minor. Adopting BCBSA for the following changes.
	<ul style="list-style-type: none"> • Changed Vacuum Assisted Wound Closure (VAWCD) to negative pressure wound therapy (NPWT). • Added the term “powered” to existing policy statements to specify criteria is for the powered NPWT. • Added statement indicating coverage for non-powered NPWT is investigational. Previously silent on non-powered VAWCD. • Added description for chronic wounds as > 90 days • Added medically necessary indication for Non-healing wounds despite optimal wound care (at least 30 days) in patients with underlying clinical conditions which are known to negatively impact wound healing. • Expanded objective improvements of wound healing to include the development and presence of healthy granulation tissue, progressive wound contracture, and decreasing depth, and/or the commencement of epithelial spread from the wound margins. • BCBSA Description/Background adopted. • Added definition of comprehensive wound management program.

MEDICAL POLICY

POLICY TITLE	NEGATIVE PRESSURE WOUND THERAPY IN THE OUTPATIENT SETTING
POLICY NUMBER	MP-4.004

	<ul style="list-style-type: none"> • Deleted additional description of wound care for specific types of wounds. • Deleted statement indicating The VAWCD may be considered medically necessary in the presence of a fistula, except to an organ or body cavity within the vicinity of the wound. • Added rationale section • Added policy guidelines which indicate the following -- Contraindications to the use of NPWT systems include the following conditions as noted by a November 2009 FDA alert: necrotic tissue with eschar, untreated osteomyelitis, nonenteric and unexplored fistulas, malignancy in the wound, exposed nerve, exposed anastomotic site, and exposed organ. • Deleted 2 statements related to earlier initiation of therapy. • Deleted the following statement “Use of a VAWCD may be considered medically necessary at the time of hospital discharge for the specific diagnoses listed above, and for similar surgical wounds if wound care was begun in the hospital. It is not required that a patient be homebound to receive nursing services in the patient’s home for wound care using a VAWD.” <p>Administrative code review completed.</p>
	CAC 9/30/14 Consensus review. Rationale and references updated. No changes to the policy statements.
	01/2015 -New 2015 CPT code added to the policy.
	CAC 9/29/15 Consensus review. No change to policy statements. References and rationale updated. Coding reviewed.
	04/04/16 - admin add A6550
	CAC 11/29/16 Consensus. No change to policy statements. References and rationale updated. Variation reformatting. Coding reviewed.
	Admin update 1/17/18: Medicare variations removed from Commercial Policies effective 1/1/18.
	<p>11/14/17 Minor revision. Policy statement revisions:</p> <ul style="list-style-type: none"> • Chronic stage III or IV pressure ulcers further described as > 30 days. • NPWT not reasonable and necessary criteria added. • Added statement that NPWT may be considered medically necessary when continuation of treatment is ordered beyond discharge to the home setting. • Length of coverage criteria added. <p>Cross-Reference, Description/Background, Rationale, and Reference sections updated. Coding updated. Effective 6/1/18.</p>
	7/17/18 Consensus review. No change to policy statements. Rationale condensed. References updated.
	10/1/18 Admin Update: Removed deleted ICD-10 codes and added new ICD-10 codes effective 10/1/18.

MEDICAL POLICY

POLICY TITLE	NEGATIVE PRESSURE WOUND THERAPY IN THE OUTPATIENT SETTING
POLICY NUMBER	MP-4.004

	4/23/2019 Consensus review. Policy statements remain unchanged. References updated.
	04/23/2020 Consensus review. Policy statements remain unchanged.
	2/12/2021 Minor review. Changed frequency of monitoring from every 14 days to monthly. Took out Length of Coverage Section. Deleted Policy Guidelines. Updated cross-references. No changes to coding. Updated references.
	3/7/2022: Consensus review. Summary of Evidence updated, FEP and references updated. No changes to policy statement.
	2/15/2023: Consensus review. Updated description/background, coding table, and references.

[TOP](#)

Health care benefit programs issued or administered by Capital Blue Cross and/or its subsidiaries, Capital Advantage Insurance Company[®], Capital Advantage Assurance Company[®], and Keystone Health Plan[®] Central. Independent licensees of the Blue Cross BlueShield Association. Communications issued by Capital Blue Cross in its capacity as administrator of programs and provider relations for all companies.