

| <b>CLINICAL MEDICAL POLICY</b>    |   |
|-----------------------------------|---|
| <b>Policy Name:</b>               | Negative Pressure Wound Therapy in the Outpatient Setting |
| <b>Policy Number:</b>             | MP-022-MD-DE  |
| <b>Responsible Department(s):</b> | Medical Management  |
| <b>Provider Notice Date:</b>      | 04/01/2019; 05/15/2018; 11/01/2016                        |
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| <b>Products:</b>                  | Highmark Health Options Medicaid                          |
| <b>Application:</b>               | All participating hospitals and providers                 |
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**DISCLAIMER**

**Highmark Health Options medical policy is intended to serve only as a general reference resource regarding coverage for the services described. This policy does not constitute medical advice and is not intended to govern or otherwise influence medical decisions.**

**POLICY STATEMENT**

Highmark Health Options may provide coverage under the Durable Medical Equipment (DME) benefit of the Company's Medicaid products for medically necessary electrically powered negative pressure, vacuum assisted wound closure therapy.

This policy is designed to address medical necessity guidelines that are appropriate for the majority of individuals with a particular disease, illness or condition. Each person's unique clinical circumstances warrant individual consideration, based upon review of applicable medical records.

The qualifications of the policy will meet the standards of the National Committee for Quality Assurance (NCQA) and the Delaware Department of Health and Social Services (DHSS) and all applicable state and federal regulations.

## DEFINITIONS

**Licensed Health Care Professional** – For the purposes of this policy, a licensed health care professional is a physician, physician assistant (PA), registered nurse (RN), licensed practical nurse (LPN), or physical therapist (PT). The practitioner should be licensed to assess wounds and/or administer wound care within the state where the beneficiary is receiving vacuum assisted wound closure therapy.

**Vacuum Assisted Wound Closure Device** – A type of medical therapy that involves the use of suction (negative pressure) underneath airtight wound dressings to promote the healing of open wounds that have been resistant to previous treatments. Device is also known as: Wound VAC, negative pressure wound therapy (NPWT), vacuum assisted wound closure, sealed surface wound suction (SSS), sub atmospheric pressure therapy or dressing (SWT), foam suction dressing and vacuum pack technique (VPT), vacuum sealing technique (VST), incisional negative pressure wound therapy (INPWT), closed incision management (CIM) topical negative pressure therapy (TNP) and prophylactic negative pressure wound therapy (PNPWT).

**Exudate (drainage)** – Interstitial fluid produced by the body in response to tissue damage. Exudate production is essential for moist wound healing. Normally, the production reduces overtime but there are wounds that do not heal as expected, which will produce excessive exudate or no exudate. A wound should not have extreme wetness or dryness in the healing process.

**Wound Healing** – The improvement occurring in either surface area (length x width) or the depth of the wound.

## PROCEDURES

1. Negative Pressure Wound Therapy may be considered medically necessary when the following criteria are met for all wound types:
  - A. The patient must be 12 years of age and older; AND
  - B. A complete wound care program has been tried which includes all of the following:
    - 1) Documentation in the medical record by a licensed medical professional on the current and previous wound care management and wound healing progress; AND
    - 2) The patient has a complex wound where size, depth, location, complications, exudate amount, etiology and/or other specific factors support non-feasibility of healing with moist topical dressing; AND
    - 3) Wound care physician notes contains an initial wound measurement followed by measurements at a minimum of once a month. Documentation must show the progress of the healing wound and anticipated duration of vacuum assisted wound therapy (e.g., degree of wound healing required); AND
    - 4) Controlling of comorbid conditions diabetes, nutritional issues, and pressure relief at wound site (**Note:** Please see Contraindications and Precautions Below) ; AND
    - 5) Operative note or wound care notes if requests are for treatment in surgical and/or traumatic wounds; AND
    - 6) If the initiation of NPWT occurred during an inpatient stay, the initial date of service is to be documented.
  - C. Use of vacuum assisted wound devices in the outpatient setting are considered medically appropriate for the following conditions:
    - 1) Chronic Stage III or IV pressure ulcers (>30 days) that have failed to heal despite optimal wound care when:

- a. Standard dressings cannot be maintained due to anatomic factors; AND
- b. The patient's incontinence and/or moisture issues have been appropriately managed; AND
- c. There has been use of group 2 or 3 support surface for pressure ulcers on the trunk or pelvis;

OR

- 2) Neuropathic (e.g., diabetic) ulcers
  - a. The patient has been actively involved in a comprehensive diabetic management program; AND
  - b. Pressure on a foot ulcer has been appropriately reduced using medically appropriate modalities;

OR

- 3) Venous or arterial insufficiency ulcers or chronic ulcers of mixed etiology
  - a. Compression bandages OR garments have been applied appropriately; AND
  - b. Elevating the affected extremity has been maintained while the patient is sedentary; AND
  - c. Ambulation/leg exercises that promote circulation have been encouraged and utilized; AND
  - d. For initiation of vacuum assist wound device in the home setting, the ulcer must have been present for at least 30 days;

OR

- 4) Traumatic or surgical wounds (i.e., preoperative flap or graft, exposed bones, tendons, or vessels) that need accelerated formation of granulation tissue; not achievable by other topical wound treatments (e.g., comorbid conditions of the patient that will hamper appropriate healing with other topical wound treatments) and no contraindications to negative pressure wound therapy. The following traumatic or surgical wound conditions include:
  - a. Wounds refractory to standard wound regimens; OR
  - b. Burns; OR
  - c. Complications of surgically created wounds (i.e., dehiscence, post-sternotomy disunion with exposed sternal bone, post-sternotomy mediastinitis, or post-operative disunion of the abdominal wall) which may include the use of skin grafts to assist in wound closure.

**Note:** The individual NPWT pump is able to accommodate more than one wound dressing set for multiple wounds on a patient. If more than one NPWT pump is utilized on the patient during the same period, the service will be denied as not medically necessary.

- 2. The following supplies are medically necessary for negative pressure wound therapy, including:
  - A. Wound care sets will be limited to up to 15 dressing kits per wound, per month. Documentation must be provided to support the medical necessity for requests in excess of limitation.
  - B. Canister sets will be limited to 10 per month in most cases. Documentation must be provided showing evidence that a large volume of drainage exists. (Example: Documentation must show an exudate amount greater than 90 ml of exudate per day.

**Note:** Vacuum assist devices are capable of accommodating more than one wound dressing set for multiple wounds on a patient. Therefore coverage for more than one pump per patient for the same time period will be considered noncovered and not medically necessary.

### 3. Continuation of Services

- A. Continuation of the powered vacuum assist wound device is considered medically necessary following an initial two week therapeutic trial or a subsequent period if the treatment has resulted in documented improvements of the wound; AND
- B. Coverage for the medically necessary powered vacuum assist wound device will end when the treating physician reports adequate wound healing has occurred to the degree where the device may be discontinued; AND
- C. There must be documentation by the wound care physician regarding wound healing. Documentation of wound progress measurements include:
  - 1) Decrease wound size (length, width, depth, undermining, tunneling); AND
  - 2) Increased granulation tissue; AND
  - 3) Increase epithelialization; AND
  - 4) Decreased wound odor; AND
  - 5) Decreased wound pain; AND
  - 6) Decreased volumes of exudate; AND
- D. Continued use of this therapy should be reviewed against outcome criteria at the beginning of therapy, at each dressing change or, at a minimum of every two weeks and reported on a monthly basis
- E. Recent laboratory values do not demonstrate a contraindication exists

**Note:** In some circumstances, the use of this treatment modality when initiated in the inpatient setting may not meet the criteria for use in the outpatient setting. A review for medical necessity determination by a Medical Director will be performed.

### 4. Contraindications

The wound being treated must be free of the following absolute contraindications for NPWT:

- A. No vacuum assisted wound device has been cleared for use in infant and children. Patient size and weight should be considered when prescribing this device; OR
- B. Exposed anastomotic site; OR
- C. Exposed nerves; OR
- D. Exposed organs; OR
- E. Exposed vasculature; OR
- F. Malignancy in the wound; OR
- G. Necrotic tissue with eschar present; OR
- H. Non-enteric and unexplored fistulas; OR
- I. Untreated osteomyelitis; OR
- J. Severe peripheral arterial disease: Ankle Brachial Pressure Index  $\leq 0.5$  needs investigation, and if appropriate, revascularization prior to commencement of vacuum assist device; OR

### 5. Precautions:

- A. The following factors have been identified as risks to wound healing and should be adequately addressed by the ordering provider:
  - 1) Active smoking
  - 2) Obesity
  - 3) Poorly-managed Diabetes
  - 4) Pulmonary disease
  - 5) Uremia
  - 6) Ascites
  - 7) Anemia
  - 8) Jaundice
  - 9) Steroid Use

- B. Malnourished patients who have not received adequate nutrition/nutritional supplements (e.g. hyperalimentation).
  - C. Caution should be used for patients with neuropathic or circulatory compromise.
  - D. Caution should be used towards non-concordant or combative patients.
  - E. Caution should be used towards patients with infected wounds; they may require more frequent dressing changes
  - F. Patients with burns-the devitalized burned tissue must be debrided prior to application of NPWT.
  - G. Patients with wounds in close proximity to blood vessels, delicate fascia, vital organs or exposed tendons (ensure adequate protection with overlying fascia, tissue or other protective barriers).
  - H. Bone fragments or sharp edges could puncture protective barriers, vessels, or organs causing injury. Any injury could cause bleeding, which, if uncontrolled results could be fatal.
  - I. The dressing must be removed if defibrillation is required in the area of dressing placement. Failure to remove the dressing may inhibit transmission of electrical energy and/or patient resuscitation.
  - J. The therapy unit is MRI unsafe and should not be taken in the MRI environment; dressings can typically remain on the patient with minimal risk in an MRI environment.
  - K. Hyperbaric Oxygen Therapy (HBOT): the therapy unit is unsafe in the hyperbaric oxygen chamber and is considered a fire hazard. Care must be taken with the dressing to ensure HBO compatible.
  - L. Precautions need to be taken in patients receiving long-term anticoagulant therapy, hemophilia and patients with hemoglobinopathies, such as sickle cell.
6. The NPWT services are not covered and considered not medically necessary when:
- A. The safety and effectiveness of NPWT systems in newborns, infants and children has not been established at this time and currently, there are no NPWT systems cleared for use in these populations; OR
  - B. In the judgment of the treating physician The adequate wound healing has occurred to the degree that NPWT may be discontinued and the wound can be anticipated to heal completely with other wound care treatments; OR
  - C. Any measurable degree of wound healing has failed to occur over the prior month. Wound healing is defined as improvement occurring in either surface area (length X width) or depth of the wound; OR
  - D. The patient/caregiver is unable/unwilling to follow the plan of care; OR
  - E. The wound has developed evidence of a wound complication contraindicating continued use of the device;
  - F. NPWT that extends beyond 4 months (this includes NPWT applied in an inpatient setting prior to discharge to the home) is considered not medically necessary and requires Medical Director Review.

Any conditions not listed in criteria above will be considered not medically necessary since the scientific evidence has not been established. Examples of indications not covered include but are not limited to:

- Use following cardiac surgery not meeting medical necessity criteria above;
- Use following surgical excision of pilonidal sinus and/or recurrent pilonidal disease;
- Use of device as a preventive/prophylactic intervention in patients with surgical wounds, such as a diagnosis of diabetes or obesity as risk factors, ventral hernia repair or post cesarean delivery, post knee arthroplasty or kidney transplantation;
- Use of chemotherapeutic agents in intermittent instillation with NPWT

Use of a non-powered vacuum assist device (e.g., SNaP® system) or a battery operated (A9272), disposable system (e.g., PICO™ system) have not been proven in peer-reviewed literature as medically effective and are not medically necessary for the treatment of acute and/or chronic wounds.

If it is determined during the course of treatment for an initial wound that the NPWT system will be applied to additional wounds, all additional wounds must meet the criteria listed in this policy to determine medical necessity.

7. DME

The negative pressure wound therapy device (E2402) is classified as a DME rental item and may be subject to prior authorization requirements.

8. Post-payment Audit Statement

The medical record must include documentation that reflects the medical necessity criteria and is subject to audit by Highmark Health Options at any time pursuant to the terms of your provider agreement.

9. Place of Service

For the purposes of this policy, the place of service for vacuum assisted wound therapy is in the home setting.

### **GOVERNING BODIES APPROVAL**

On December 20, 2002, the VAC device received premarket approval to include the indication of partial-thickness burns.

On November 13, 2009, the U.S. Food and Drug Administration (FDA) released a Medical Device Alert regarding the use of negative pressure wound therapy systems. The alert notified medical practitioners of possible death or serious complications due to the use of the vacuum assisted wound therapy systems. Per the FDA, it had received reports of six deaths and 77 injuries associated with this device over the two years. Major complications reported included bleeding and infection. The alert provided the recommendations to reduce risks with the device:

- A. More careful selection of patients for vacuum assisted wound therapy;
- B. Assure that patient monitoring is performed frequently in an appropriate care setting by a trained practitioner. To determine the frequency of monitoring, the provider must consider the patient's condition, including wound status, wound location and comorbidities;
- C. Proper training must be obtained prior to prescribing and using the device;
- D. Instructions for proper home use of the vacuum assisted wound therapy device to the patient and/or caregiver must be given. This instruction is to include how to use the device, potential complications and their signs and symptoms, and management of complications.

In addition, the FDA listed the following contraindications for vacuum assisted wound therapy:

- A. Necrotic tissue with eschar present
- B. Untreated osteomyelitis
- C. Non-enteric and unexplored fistulas
- D. Malignancy (within the wound)
- E. Exposed blood vessels, nerves, anastomoses, or organs

To review the full text of the FDA warning, please see:

<https://www.fda.gov/ForConsumers/ConsumerUpdates/ucm193277.htm>

The FDA release an updated Safety Communication on February 24, 2011 regarding major complications of the vacuum assisted wound therapy device. The update addressed the use of the device in the treatment of infants and children. Specifically 'The safety and effectiveness of vacuum assisted wound therapy devices in newborns, infants and children has not been established at this time and currently, there are no such devices cleared for use in these populations. The FDA defines a child as 'greater than 2 to 12 years of age' (U.S. FDA Premarket Assessment of Pediatric Medical Devices, 2004).

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

NPD 1000 Negative Pressure Wound Therapy System previously manufactured by Kalypto (Smith and Nephew, St. Petersburg, FL) is a proprietary battery powered negative pressure wound therapy system that absorbs and lock-in small amounts of exudate without a collection container. The dressing drainage capacity is 70 cc. The Centers for Medicare and Medicaid (CMS) has reclassified the device as a portable wound suction pump. The device is marketed as the smallest, lightest and most portable battery operated system available. The device received FDA approval in October 2008.

## **CODING REQUIREMENTS**

### Procedure Codes

| <b>CPT Codes</b>   | <b>Description</b>  |
|--------------------|---|
| 97605              | Negative pressure wound therapy (e.g., vacuum assisted drainage collection), utilizing durable medical equipment, including topical application(s), wound assessment, and instruction(s) for ongoing care, per session, total wound(s) surface area less than or equal to 50 square centimeters |
| 97606              | Negative pressure wound therapy (e.g., vacuum assisted drainage collection), utilizing durable medical equipment, including topical application(s), wound assessment, and instruction(s) for ongoing care, per session, total wound(s) surface area greater than 50 square centimeters          |
| <b>HCPCS Codes</b> | <b>Description</b>  |
| A6550              | Wound care set, for negative pressure wound therapy electrical pumps, includes all supplies and accessories   |
| A7000              | Canister, disposable, used with suction pump, each  |
| A7001              | Canister, nondisposable, used with suction pump, each   |
| E2402              | Negative pressure wound therapy electrical pump, stationary or portable   |

### \*Non-Covered Procedure Codes

| <b>CPT Codes</b> | <b>Description</b>  |
|------------------|---|
| 97607            | Negative pressure wound therapy, (e.g., vacuum assisted drainage collection), utilizing disposable, non-durable medical equipment including provision of exudate management collection system, topical application(s), wound assessment, and instructions for ongoing care, per session; total wound(s) surface area less than or equal to 50 square centimeters. |

| 97608       | Negative pressure wound therapy, (e.g., vacuum assisted drainage collection), utilizing disposable, non-durable medical equipment including provision of exudate management collection system, topical application(s), wound assessment, and instructions for ongoing care, per session; total wound(s) surface area greater than 50 square centimeters *(effective 01/01/2015) |
|-------------|---|
| HCPCS Codes | Description   |
| A9272       | Wound suction, disposable, includes dressing, all accessories and components, any type, each (Not covered)  |
| K0743       | Suction pump, home model, portable, for use on wounds [for use with NPD 1000]   |
| K0744       | Absorptive wound dressing for use with suction pump, home model, portable, pad size 16 square inches  |
| K0745       | Absorptive wound dressing for use with suction pump, home model, portable, pad size more than 16 square inches but less than or equal to 48 square inches   |
| K0746       | Absorptive wound dressing for use with suction pump, home model, portable, pad size greater than 48 square inches   |

These procedure codes will not be reimbursed without Medical Director approval.

#### Diagnosis Codes

| ICD-10 Codes | Description  |
|--------------|--|
| E08.40       | Diabetes mellitus due to underlying condition with diabetic neuropathy, unspecified  |
| E08.41       | Diabetes mellitus due to underlying condition with diabetic mononeuropathy   |
| E08.42       | Diabetes mellitus due to underlying condition with diabetic polyneuropathy   |
| E08.43       | Diabetes mellitus due to underlying condition with diabetic autonomic (poly) neuropathy                                    |
| E08.44       | Diabetes mellitus due to underlying condition with diabetic amyotrophy   |
| E08.49       | Diabetes mellitus due to underlying condition with other diabetic neurologic complication                                  |
| E08.51       | Diabetes mellitus due to underlying condition with diabetic peripheral angiopathy without gangrene                         |
| E08.52       | Diabetes mellitus due to underlying condition with diabetic peripheral angiopathy with gangrene                            |
| E08.59       | Diabetes mellitus due to underlying condition with other circulatory complications   |
| E08.610      | Diabetes mellitus due to underlying condition with diabetic neuropathic arthropathy  |
| E08.618      | Diabetes mellitus due to underlying condition with other diabetic arthropathy  |
| E08.620      | Diabetes mellitus due to underlying condition with diabetes dermatitis   |
| E08.621      | Diabetes mellitus due to underlying condition with foot ulcer  |
| E08.622      | Diabetes mellitus due to underlying condition with other skin ulcer  |
| E08.628      | Diabetes mellitus due to underlying condition with other skin complications  |
| E08.641      | Diabetes mellitus due to underlying condition with hypoglycemia with coma  |
| E08.649      | Diabetes mellitus due to underlying condition with hypoglycemia without coma   |
| E08.65       | Diabetes mellitus due to underlying condition with hyperglycemia   |
| E08.69       | Diabetes mellitus due to underlying condition with other specified complication  |
| E09.00       | Drug or chemical induced diabetes mellitus with hyperosmolarity without nonketotic hyperglycemic-hyperosmolar coma (NKHHC) |
| E09.01       | Drug or chemical induced diabetes mellitus with hyperosmolarity with coma  |
| E09.10       | Drug or chemical induced diabetes mellitus with ketoacidosis without coma  |



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| E09.11  | Drug or chemical induced diabetes mellitus with ketoacidosis with coma   |
| E09.21  | Drug or chemical induced diabetes mellitus with diabetic nephropathy   |
| E09.22  | Drug or chemical induced diabetes mellitus with diabetic chronic kidney disease  |
| E09.29  | Drug or chemical induced diabetes mellitus with other diabetic kidney complication                                       |
| E09.40  | Drug or chemical induced diabetes mellitus with neurologic complications with diabetic neuropathy, unspecified           |
| E09.41  | Drug or chemical induced diabetes mellitus with neurological complications with diabetic mononeuropathy                  |
| E09.42  | Drug or chemical induced diabetes mellitus with neurological complications with diabetic polyneuropathy                  |
| E09.43  | Drug or chemical induced diabetes mellitus with neurological complications with diabetic autonomic (poly) neuropathy     |
| E09.44  | Drug or chemical induced diabetes mellitus with neurological complications with diabetic amyotrophy                      |
| E09.49  | Drug or chemical induced diabetes mellitus with neurological complications with other diabetic neurological complication |
| E09.51  | Drug or chemical induced diabetes mellitus with diabetic peripheral angiopathy without gangrene                          |
| E09.52  | Drug or chemical induced diabetes mellitus with diabetic peripheral angiopathy with gangrene                             |
| E09.59  | Drug or chemical induced diabetes mellitus with other circulatory complications  |
| E09.610 | Drug or chemical induced diabetes mellitus with diabetic neuropathic arthropathy   |
| E09.618 | Drug or chemical induced diabetes mellitus with other diabetic arthropathy   |
| E09.620 | Drug or chemical induced diabetes mellitus with diabetic dermatitis  |
| E09.621 | Drug or chemical induced diabetes mellitus with foot ulcer   |
| E09.622 | Drug or chemical induced diabetes mellitus with other skin ulcer   |
| E09.628 | Drug or chemical induced diabetes mellitus with other skin complications   |
| E09.641 | Drug or chemical induced diabetes mellitus with hypoglycemia with coma   |
| E09.649 | Drug or chemical induced diabetes mellitus with hypoglycemia without coma  |
| E09.65  | Drug or chemical induced diabetes mellitus with hyperglycemia  |
| E09.69  | Drug or chemical induced diabetes mellitus with other specified complication   |
| E09.8   | Drug or chemical induced diabetes mellitus with unspecified complications  |
| E09.9   | Drug or chemical induced diabetes mellitus without complications   |
| E10.10  | Type I diabetes mellitus with ketoacidosis without coma  |
| E10.11  | Type I diabetes mellitus with ketoacidosis with coma   |
| E10.21  | Type I diabetes mellitus with diabetic nephropathy   |
| E10.22  | Type I diabetes mellitus with diabetic chronic kidney disease  |
| E10.29  | Type I diabetes mellitus with other diabetic kidney complication   |
| E10.40  | Type I diabetes mellitus with diabetic neuropathy, unspecified   |
| E10.41  | Type I diabetes mellitus with diabetic mononeuropathy  |
| E10.42  | Type I diabetes mellitus with diabetic polyneuropathy  |
| E10.43  | Type I diabetes mellitus with diabetic autonomic (poly) neuropathy   |
| E10.44  | Type I diabetes mellitus with diabetic amyotrophy  |
| E10.49  | Type I diabetes mellitus with other diabetic neurological complication   |
| E10.51  | Type I diabetes mellitus with diabetic peripheral angiopathy without gangrene  |

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| E10.52  | Type 1 diabetes mellitus with diabetic peripheral angiopathy with gangrene  |
| E10.59  | Type 1 diabetes mellitus with other circulatory complications   |
| E10.610 | Type 1 diabetes mellitus with diabetic neuropathic arthropathy  |
| E10.618 | Type 1 diabetes mellitus with other diabetic arthropathy  |
| E10.620 | Type 1 diabetes mellitus with diabetic dermatitis   |
| E10.621 | Type 1 diabetes mellitus with foot ulcer  |
| E10.622 | Type 1 diabetes mellitus with other skin ulcer  |
| E10.628 | Type 1 diabetes mellitus with other skin complications  |
| E10.641 | Type 1 diabetes mellitus with hypoglycemia with coma  |
| E10.649 | Type 1 diabetes mellitus with hypoglycemia without coma   |
| E10.65  | Type 1 diabetes mellitus with hyperglycemia   |
| E10.69  | Type 1 diabetes mellitus with unspecified complications   |
| E10.8   | Type 1 diabetes mellitus with unspecified complications   |
| E10.9   | Type 1 diabetes mellitus with without complications   |
| E11.00  | Type 2 diabetes mellitus with hyperosmolarity without nonketotic hyperglycemic-hyperosmolar coma (NKHHC)          |
| E11.01  | Type 2 diabetes mellitus with hyperosmolarity with coma   |
| E11.21  | Type 2 diabetes mellitus with diabetic nephropathy  |
| E11.22  | Type 2 diabetes mellitus with diabetic chronic kidney disease   |
| E11.29  | Type 2 diabetes mellitus with other diabetic kidney complication  |
| E11.40  | Type 2 diabetes mellitus with diabetic neuropathy, unspecified  |
| E11.41  | Type 2 diabetes mellitus with diabetic mononeuropathy   |
| E11.42  | Type 2 diabetes mellitus with diabetic polyneuropathy   |
| E11.43  | Type 2 diabetes mellitus with diabetic autonomic (poly) neuropathy  |
| E11.44  | Type 2 diabetes mellitus with diabetic amyotrophy   |
| E11.49  | Type 2 diabetes mellitus with other diabetic neurological complication  |
| E11.51  | Type 2 diabetes mellitus with diabetic peripheral angiopathy without gangrene                                     |
| E11.52  | Type 2 diabetes mellitus with diabetic peripheral angiopathy with gangrene  |
| E11.59  | Type 2 diabetes mellitus with other circulatory complications   |
| E11.610 | Type 2 diabetes mellitus with diabetic neuropathic arthropathy  |
| E11.618 | Type 2 diabetes mellitus with other diabetic arthropathy  |
| E11.620 | Type 2 diabetes mellitus with diabetic dermatitis   |
| E11.621 | Type 2 diabetes mellitus with diabetic foot ulcer   |
| E11.622 | Type 2 diabetes mellitus with other skin ulcer  |
| E11.628 | Type 2 diabetes mellitus with other skin complications  |
| E11.641 | Type 2 diabetes mellitus with hypoglycemia with coma  |
| E11.649 | Type 2 diabetes mellitus with hypoglycemia without coma   |
| E11.65  | Type 2 diabetes mellitus with hyperglycemia   |
| E11.69  | Type 2 diabetes mellitus with other specified complications   |
| E11.8   | Type 2 diabetes mellitus with unspecified complications   |
| E13.00  | Other specified diabetes mellitus with hyperosmolarity without nonketotic hyperglycemic-hyperosmolar coma (NKHHC) |
| E13.01  | Other specified diabetes mellitus with hyperosmolarity with coma  |
| E13.11  | Other specified diabetes mellitus with ketoacidosis with coma   |

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| E13.21  | Other specified diabetes mellitus with diabetic neuropathy                                     |
| E13.22  | Other specified diabetes mellitus with diabetic chronic kidney disease                         |
| E13.29  | Other specified diabetes mellitus with other diabetic kidney complication                      |
| E13.40  | Other specified diabetes mellitus with diabetic neuropathy, unspecified                        |
| E13.41  | Other specified diabetes mellitus with diabetic mononeuropathy                                 |
| E13.42  | Other specified diabetes mellitus with diabetic polyneuropathy                                 |
| E13.43  | Other specified diabetes mellitus with diabetic autonomic (poly) neuropathy                    |
| E13.44  | Other specified diabetes mellitus with diabetic amyotrophy                                     |
| E13.49  | Other specified diabetes mellitus with other diabetic neurological complication                |
| E13.51  | Other specified diabetes mellitus with diabetic peripheral angiopathy without gangrene         |
| E13.52  | Other specified diabetes mellitus with diabetic peripheral angiopathy with gangrene            |
| E13.59  | Other specified diabetes mellitus with other diabetic circulatory complications                |
| E13.610 | Other specified diabetes mellitus with diabetic neuropathic arthropathy                        |
| E13.618 | Other specified diabetes mellitus with diabetic arthropathy                                    |
| E13.620 | Other specified diabetes mellitus with diabetic dermatitis                                     |
| E13.621 | Other specified diabetes mellitus with foot ulcer  |
| E13.622 | Other specified diabetes mellitus with other skin ulcer  |
| E13.628 | Other specified diabetes mellitus with other skin complications                                |
| E13.641 | Other specified diabetes mellitus with hypoglycemia with coma                                  |
| E13.649 | Other specified diabetes mellitus with hypoglycemia without coma                               |
| E13.65  | Other specified diabetes mellitus with hyperglycemia   |
| E13.69  | Other specified diabetes mellitus with specified complications                                 |
| E13.8   | Other specified diabetes mellitus with unspecified complications                               |
| 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 other part of lower right leg  |
| I70.239 | Atherosclerosis of native arteries of right leg with ulceration of unspecified site            |
| 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 left leg |
| I70.249 | Atherosclerosis of native arteries of left leg with ulceration of unspecified site             |
| I70.25  | Atherosclerosis of native arteries of other extremities with ulceration                        |
| I70.261 | Atherosclerosis of native arteries of extremities with gangrene, right leg                     |
| I70.262 | Atherosclerosis of native arteries of extremities with gangrene, left leg                      |
| I70.263 | Atherosclerosis of native arteries of extremities with gangrene, bilateral legs                |
| I70.268 | Atherosclerosis of native arteries of extremities with gangrene, other extremity               |
| I70.269 | Atherosclerosis of native arteries of extremities with gangrene, unspecified extremity         |

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| 170.331 | Atherosclerosis of unspecified type of bypass graft(s) of the right leg with ulceration of thigh                   |
| 170.332 | Atherosclerosis of unspecified type of bypass graft(s) of the right leg with ulceration of calf                    |
| 170.333 | Atherosclerosis of unspecified type of bypass graft(s) of the right leg with ulceration of ankle                   |
| 170.334 | Atherosclerosis of unspecified type of bypass graft(s) of the right leg with ulceration of heel and midfoot        |
| 170.335 | Atherosclerosis of unspecified type of bypass graft(s) of the right leg with ulceration of other part of foot      |
| 170.338 | Atherosclerosis of unspecified type of bypass graft(s) of the right leg with ulceration of other part of lower leg |
| 170.339 | Atherosclerosis of unspecified type of bypass graft(s) of the right leg with ulceration of unspecified site        |
| 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  |
| 170.349 | Atherosclerosis of unspecified type of bypass graft(s) of the left leg with ulceration of unspecified site         |
| 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 part of foot                |
| 170.438 | Atherosclerosis of autologous vein bypass graft(s) of the right leg with ulceration of part of lower leg           |
| 170.439 | Atherosclerosis of autologous vein bypass graft(s) of the right leg with ulceration of unspecified type            |
| 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 part of foot                 |
| 170.448 | Atherosclerosis of autologous vein bypass graft(s) of the left leg with ulceration of other part of lower leg      |

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| 170.449 | Atherosclerosis of autologous vein bypass graft(s) of the left leg with ulceration of unspecified site                  |
| 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 |
| 170.539 | Atherosclerosis of nonautologous biological bypass graft(s) of the right leg with ulceration of unspecified site        |
| 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                             |
| 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 the foot   |
| 170.548 | Atherosclerosis of nonautologous biological bypass graft(s) of the left leg with ulceration of other part of lower leg  |
| 170.549 | Atherosclerosis of nonautologous biological bypass graft(s) of the left leg with ulceration of unspecified site         |
| 170.631 | Atherosclerosis of nonautologous biological bypass graft(s) of the right leg with ulceration of thigh                   |
| 170.632 | Atherosclerosis of nonautologous biological bypass graft(s) of the right leg with ulceration of calf                    |
| 170.633 | Atherosclerosis of nonautologous biological bypass graft(s) of the right leg with ulceration of ankle                   |
| 170.634 | Atherosclerosis of nonautologous biological bypass graft(s) of the right leg with ulceration of heel and midfoot        |
| 170.635 | Atherosclerosis of nonautologous biological bypass graft(s) of the right leg with ulceration of other part of foot      |
| 170.638 | Atherosclerosis of nonautologous biological bypass graft(s) of the right leg with ulceration of other part of lower leg |
| 170.639 | Atherosclerosis of nonautologous biological bypass graft(s) of the right leg with ulceration of unspecified site        |
| 170.641 | Atherosclerosis of nonautologous biological bypass graft(s) of the left leg with ulceration of thigh                    |
| 170.642 | Atherosclerosis of nonautologous biological bypass graft(s) of the left leg with ulceration of calf                     |

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| 170.643 | Atherosclerosis of nonautologous biological bypass graft(s) of the left leg with ulceration of ankle                   |
| 170.644 | Atherosclerosis of nonautologous biological bypass graft(s) of the left leg with ulceration of heel and midfoot        |
| 170.645 | Atherosclerosis of nonautologous biological bypass graft(s) of the left leg with ulceration of other part of foot      |
| 170.648 | Atherosclerosis of nonautologous biological bypass graft(s) of the left leg with ulceration of other part of lower leg |
| 170.649 | Atherosclerosis of nonautologous biological bypass graft(s) of the left leg with ulceration of unspecified site        |
| 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           |
| 170.739 | Atherosclerosis of other type of bypass graft(s) of the right leg with ulceration of unspecified site                  |
| 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            |
| 170.749 | Atherosclerosis of other type of bypass graft(s) of the left leg with ulceration of unspecified site                   |
| 183.001 | Varicose veins of unspecified lower extremity with ulcer of thigh  |
| 183.002 | Varicose veins of unspecified lower extremity with ulcer of calf   |
| 183.003 | Varicose veins of unspecified lower extremity with ulcer of ankle  |
| 183.004 | Varicose veins of unspecified lower extremity with ulcer of heel and midfoot   |
| 183.005 | Varicose veins of unspecified lower extremity with ulcer of other part of foot   |
| 183.008 | Varicose veins of unspecified lower extremity with ulcer of other part of lower leg                                    |
| 183.009 | Varicose veins of unspecified lower extremity with ulcer of unspecified site   |
| 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 of other part of foot   |
| 183.018 | Varicose veins of right lower extremity with ulcer of other part of lower leg  |
| 183.019 | Varicose veins of right lower extremity with ulcer of unspecified site   |

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| 183.021 | Varicose veins of left lower extremity with ulcer of thigh  |
| 183.022 | Varicose veins of left lower extremity with ulcer of calf   |
| 183.023 | Varicose veins of left lower extremity with ulcer of ankle  |
| 183.024 | Varicose veins of left lower extremity with ulcer of heel and midfoot   |
| 183.025 | Varicose veins of left lower extremity with ulcer of other part of foot   |
| 183.028 | Varicose veins of left lower extremity with ulcer of other part of lower leg                                    |
| 183.029 | Varicose veins of left lower extremity with ulcer of unspecified site   |
| 183.201 | Varicose veins of unspecified lower extremity with both ulcer of thigh and inflammation                         |
| 183.202 | Varicose veins of unspecified lower extremity with both ulcer of calf and inflammation                          |
| 183.203 | Varicose veins of unspecified lower extremity with both ulcer of ankle and inflammation                         |
| 183.204 | Varicose veins of unspecified lower extremity with both ulcer of heel and midfoot and inflammation              |
| 183.205 | Varicose veins of unspecified lower extremity with both ulcer other part of foot and inflammation               |
| 183.208 | Varicose veins of unspecified lower extremity with both ulcer of other part of lower extremity and inflammation |
| 183.209 | Varicose veins of unspecified lower extremity with both ulcer of unspecified site and inflammation              |
| 183.211 | Varicose veins of right lower extremity with both ulcer of thigh and inflammation                               |
| 183.212 | Varicose veins of right lower extremity with both ulcer of calf and inflammation                                |
| 183.213 | Varicose veins of right lower extremity with both ulcer of ankle and inflammation                               |
| 183.214 | Varicose veins of right lower extremity with both ulcer of heel and midfoot and inflammation                    |
| 183.215 | Varicose veins of right lower extremity with both ulcer of other part of foot and inflammation                  |
| 183.218 | Varicose veins of right lower extremity with both ulcer of other part of lower extremity and inflammation       |
| 183.219 | Varicose veins of right lower extremity with both ulcer of unspecified site and inflammation                    |
| 183.221 | Varicose veins of left lower extremity with both ulcer of thigh and inflammation                                |
| 183.222 | Varicose veins of left lower extremity with both ulcer of calf and inflammation                                 |
| 183.223 | Varicose veins of left lower extremity with both ulcer of ankle and inflammation                                |
| 183.224 | Varicose veins of left lower extremity with both ulcer of heel and midfoot and inflammation                     |
| 183.225 | Varicose veins of left lower extremity with both ulcer of other part of foot and inflammation                   |
| 183.228 | Varicose veins of left lower extremity with both ulcer of part of lower extremity and inflammation              |
| 183.229 | Varicose veins of left lower extremity with both ulcer of unspecified site and inflammation                     |
| 187.2   | Venous insufficiency (chronic) (peripheral)   |
| 187.311 | Chronic venous hypertension (idiopathic) with ulcer of right lower extremity                                    |
| 187.312 | Chronic venous hypertension (idiopathic) with ulcer of left lower extremity                                     |
| 187.313 | Chronic venous hypertension (idiopathic) with ulcer of bilateral lower extremity                                |
| 187.319 | Chronic venous hypertension (idiopathic) with ulcer of unspecified lower extremity                              |

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| K68.11  | Post procedural retroperitoneal abscess                             |
| 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                 |
| L89.104 | Pressure ulcer of unspecified part of back, Stage 3                 |
| 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 4                          |
| L89.144 | Pressure ulcer of left lower back, Stage 3                          |
| 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                               |



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| L89.623 | Pressure ulcer of left heel, Stage 3   |
| L89.624 | Pressure ulcer of left heel, Stage 4   |
| 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  |
| L89.93  | Pressure ulcer of unspecified site, Stage 3                                  |
| L89.94  | Pressure ulcer of unspecified site, Stage 4                                  |
| L97.101 | Non-pressure chronic ulcer of unspecified thigh limited to breakdown of skin |
| L97.102 | Non-pressure chronic ulcer of unspecified thigh with fat layer exposed       |
| L97.103 | Non-pressure chronic ulcer of unspecified thigh with necrosis of muscle      |
| L97.104 | Non-pressure chronic ulcer of unspecified thigh with necrosis of bone        |
| L97.109 | Non-pressure chronic ulcer of unspecified thigh with unspecified severity    |
| 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              |
| L97.119 | Non-pressure chronic ulcer of right thigh with unspecified 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               |
| L97.129 | Non-pressure chronic ulcer of left thigh with unspecified severity           |
| L97.201 | Non-pressure chronic ulcer of unspecified calf limited to skin breakdown     |
| L97.202 | Non-pressure chronic ulcer of unspecified calf with fat layer exposed        |
| L97.203 | Non-pressure chronic ulcer of unspecified calf with necrosis of muscle       |
| L97.204 | Non-pressure chronic ulcer of unspecified calf with necrosis of bone         |
| L97.209 | Non-pressure chronic ulcer of unspecified calf with unspecified 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               |
| L97.219 | Non-pressure chronic ulcer of right calf with unspecified severity           |
| L97.221 | Non-pressure chronic ulcer of left calf limited to skin breakdown            |
| 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                |
| L97.229 | Non-pressure chronic ulcer of left calf with unspecified severity            |
| L97.301 | Non-pressure chronic ulcer of unspecified ankle limited to breakdown of skin |
| L97.302 | Non-pressure chronic ulcer of unspecified ankle with fat layer exposed       |
| L97.303 | Non-pressure chronic ulcer of unspecified ankle with necrosis of muscle      |
| L97.304 | Non-pressure chronic ulcer of unspecified ankle with necrosis of bone        |
| L97.309 | Non-pressure chronic ulcer of unspecified ankle with unspecified severity    |

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| L97.311 | Non-pressure chronic ulcer of right ankle limited to skin breakdown                            |
| 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                                |
| L97.319 | Non-pressure chronic ulcer of right ankle with unspecified 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                                 |
| L97.329 | Non-pressure chronic ulcer of left ankle with unspecified severity                             |
| L97.401 | Non-pressure chronic ulcer of unspecified heel and midfoot limited to breakdown of skin        |
| L97.402 | Non-pressure chronic ulcer of unspecified heel and midfoot with fat layer exposed              |
| L97.403 | Non-pressure chronic ulcer of unspecified heel and midfoot with necrosis of muscle             |
| L97.404 | Non-pressure chronic ulcer of unspecified heel and midfoot with necrosis of bone               |
| L97.409 | Non-pressure chronic ulcer of unspecified heel and midfoot with unspecified 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                     |
| L97.419 | Non-pressure chronic ulcer of right heel and midfoot with unspecified 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                      |
| L97.429 | Non-pressure chronic ulcer of left heel and midfoot with unspecified severity                  |
| L97.501 | Non-pressure chronic ulcer of other part of unspecified foot limited to breakdown of skin      |
| L97.502 | Non-pressure chronic ulcer of other part of unspecified foot with fat layer exposed            |
| L97.503 | Non-pressure chronic ulcer of other part of unspecified foot with necrosis of muscle           |
| L97.504 | Non-pressure chronic ulcer of other part of unspecified foot with necrosis of bone             |
| L97.509 | Non-pressure chronic ulcer of other part of unspecified foot with unspecified 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                  |
| L97.513 | Non-pressure chronic ulcer of other part of right foot with necrosis muscle                    |
| L97.514 | Non-pressure chronic ulcer of other part of right foot with necrosis bone                      |
| L97.519 | Non-pressure chronic ulcer of other part of right foot with unspecified 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 muscle                     |
| L97.524 | Non-pressure chronic ulcer of other part of left foot with necrosis of bone                    |
| L97.529 | Non-pressure chronic ulcer of other part of left foot with unspecified severity                |
| L97.801 | Non-pressure chronic ulcer of other part of unspecified lower leg limited to breakdown of skin |
| L97.802 | Non-pressure chronic ulcer of other part of unspecified lower leg fat layer exposed            |
| L97.803 | Non-pressure chronic ulcer of other part of unspecified lower leg with necrosis muscle         |

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| L97.804 | Non-pressure chronic ulcer of other part of unspecified lower leg with necrosis bone           |
| L97.809 | Non-pressure chronic ulcer of other part of unspecified lower leg with unspecified severity    |
| L97.811 | Non-pressure chronic ulcer of right lower leg limited to breakdown of skin                     |
| L97.812 | Non-pressure chronic ulcer of right lower leg with fat layer exposed                           |
| L97.813 | Non-pressure chronic ulcer of right lower leg with necrosis of muscle                          |
| L97.814 | Non-pressure chronic ulcer of right lower leg with necrosis of bone                            |
| L97.819 | Non-pressure chronic ulcer of right lower leg with unspecified severity                        |
| L97.821 | Non-pressure chronic ulcer of left lower leg limited to breakdown of skin                      |
| L97.822 | Non-pressure chronic ulcer of left lower leg with fat layer exposed                            |
| L97.823 | Non-pressure chronic ulcer of left lower leg with necrosis of muscle                           |
| L97.824 | Non-pressure chronic ulcer of left lower leg with necrosis of bone                             |
| L97.829 | Non-pressure chronic ulcer of left lower leg with unspecified severity                         |
| L97.901 | Non-pressure chronic ulcer of unspecified lower leg limited to breakdown of skin               |
| L97.902 | Non-pressure chronic ulcer of unspecified lower leg with fat layer exposed                     |
| L97.903 | Non-pressure chronic ulcer of unspecified lower leg with necrosis of muscle                    |
| L97.904 | Non-pressure chronic ulcer of unspecified lower leg with necrosis of bone                      |
| L97.909 | Non-pressure chronic ulcer of unspecified lower leg with unspecified severity                  |
| 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        |
| L97.919 | Non-pressure chronic ulcer of unspecified part of right lower leg with unspecified 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         |
| L97.929 | Non-pressure chronic ulcer of unspecified part of left lower leg with unspecified severity     |
| O24.011 | Pre-existing diabetes mellitus, Type 1, in pregnancy, first trimester                          |
| O24.012 | Pre-existing diabetes mellitus, Type 1, in pregnancy, second trimester                         |
| O24.013 | Pre-existing diabetes mellitus, Type 1, in pregnancy, third trimester                          |
| O24.019 | Pre-existing diabetes mellitus, Type 1, in pregnancy, unspecified trimester                    |
| O24.02  | Pre-existing diabetes mellitus, Type 1, in childbirth  |
| O24.111 | Pre-existing diabetes mellitus, Type 2, in pregnancy, first trimester                          |
| O24.112 | Pre-existing diabetes mellitus, Type 2, in pregnancy, second trimester                         |
| O24.113 | Pre-existing diabetes mellitus, Type 2, in pregnancy, third trimester                          |
| O24.119 | Pre-existing diabetes mellitus, Type 2, in pregnancy,, unspecified trimester                   |
| O24.12  | Pre-existing diabetes mellitus, Type 2, in childbirth  |
| O24.311 | Unspecified pre-existing diabetes mellitus in pregnancy, first trimester                       |
| O24.312 | Unspecified pre-existing diabetes mellitus in pregnancy, second trimester                      |
| O24.313 | Unspecified pre-existing diabetes mellitus in pregnancy, third trimester                       |

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| O24.319  | Unspecified pre-existing diabetes mellitus in pregnancy, unspecified trimester     |
| O24.32   | Unspecified pre-existing diabetes mellitus in childbirth                           |
| O24.410  | Gestational diabetes mellitus in pregnancy, diet controlled                        |
| O24.414  | Gestational diabetes mellitus in pregnancy, insulin controlled                     |
| O24.415  | Gestational diabetes mellitus in pregnancy, controlled by oral hypoglycemic drugs  |
| O24.419  | Gestational diabetes mellitus in pregnancy, unspecified control                    |
| O24.420  | Gestational diabetes mellitus in childbirth, diet controlled                       |
| O24.424  | Gestational diabetes mellitus in childbirth, insulin controlled                    |
| O24.425  | Gestational diabetes mellitus in childbirth, controlled by oral hypoglycemic drugs |
| O24.429  | Gestational diabetes mellitus in childbirth, unspecified control                   |
| O24.811  | Other pre-existing diabetes mellitus in pregnancy, first trimester                 |
| O24.812  | Other pre-existing diabetes mellitus in pregnancy, second trimester                |
| O24.813  | Other pre-existing diabetes mellitus in pregnancy, third trimester                 |
| O24.819  | Other pre-existing diabetes mellitus in pregnancy, unspecified trimester           |
| O24.82   | Other pre-existing diabetes mellitus in childbirth                                 |
| O24.912  | Unspecified diabetes mellitus in pregnancy, second trimester                       |
| O24.913  | Unspecified diabetes mellitus in pregnancy, third trimester                        |
| O24.919  | Unspecified diabetes mellitus in pregnancy, unspecified trimester                  |
| O24.92   | Unspecified diabetes mellitus in childbirth  |
| S41.021A | Laceration with foreign body of right shoulder, initial encounter                  |
| S41.022A | Laceration with foreign body of left shoulder, initial encounter                   |
| S41.029A | Laceration with foreign body of unspecified shoulder, initial encounter            |
| S41.041A | Puncture wound with foreign body of right shoulder, initial encounter              |
| S41.042A | Puncture wound with foreign body of left shoulder, initial encounter               |
| S41.049A | Puncture wound with foreign body of unspecified shoulder, initial encounter        |
| S41.121A | Laceration with foreign body of right upper arm, initial encounter                 |
| S41.122A | Laceration with foreign body of left upper arm, initial encounter                  |
| S41.129A | Laceration with foreign body of unspecified upper arm, initial encounter           |
| S41.141A | Puncture wound with foreign body of right upper arm, initial encounter             |
| S41.142A | Puncture wound with foreign body of left upper arm, initial encounter              |
| S41.149A | Puncture wound with foreign body of unspecified upper arm, initial encounter       |
| S51.021A | Laceration with foreign body of right elbow, initial encounter                     |
| S51.022A | Laceration with foreign body of left elbow, initial encounter                      |
| S51.029A | Laceration with foreign body of unspecified elbow, initial encounter               |
| S51.041A | Puncture wound with foreign body of right elbow, initial encounter                 |
| S51.042A | Puncture wound with foreign body of left elbow, initial encounter                  |
| S51.049A | Puncture wound with foreign body of unspecified elbow, initial encounter           |
| S51.821A | Laceration with foreign body of right forearm, initial encounter                   |
| S51.822A | Laceration with foreign body of left forearm, initial encounter                    |
| S51.829A | Laceration with foreign body of unspecified forearm, initial encounter             |
| S51.841A | Puncture wound with foreign body of right forearm, initial encounter               |
| S51.842A | Puncture wound with foreign body of left forearm, initial encounter                |
| S51.849A | Puncture wound with foreign body of unspecified forearm, initial encounter         |

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| S61.521A | Laceration with foreign body of right wrist, initial encounter                                 |
| S61.522A | Laceration with foreign body of left wrist, initial encounter                                  |
| S61.529A | Laceration with foreign body of unspecified wrist, initial encounter                           |
| S61.541A | Puncture wound with foreign body of right wrist, initial encounter                             |
| S61.542A | Puncture wound with foreign body of left wrist, initial encounter                              |
| S61.549A | Puncture wound with foreign body of unspecified wrist, initial encounter                       |
| S71.021A | Laceration with foreign body of right hip, initial encounter                                   |
| S71.022A | Laceration with foreign body of left hip, initial encounter                                    |
| S71.029A | Laceration with foreign body of unspecified hip, initial encounter                             |
| S71.041A | Puncture wound with foreign body, right hip, initial encounter                                 |
| S71.042A | Puncture wound with foreign body, left hip, initial encounter                                  |
| S71.049A | Puncture wound with foreign body, unspecified hip, initial encounter                           |
| S71.121A | Laceration with foreign body, right thigh, initial encounter                                   |
| S71.122A | Laceration with foreign body, left thigh, initial encounter                                    |
| S71.129A | Laceration with foreign body, unspecified thigh, initial encounter                             |
| S71.141A | Puncture wound with foreign body, right thigh, initial encounter                               |
| S71.142A | Puncture wound with foreign body, left thigh, initial encounter                                |
| S71.149A | Puncture wound with foreign body, unspecified thigh, initial encounter                         |
| S81.021A | Laceration with foreign body, right knee, initial encounter                                    |
| S81.022A | Laceration with foreign body, left knee, initial encounter                                     |
| S81.029A | Laceration with foreign body, unspecified knee, initial encounter                              |
| S81.041A | Puncture wound with foreign body, right knee, initial encounter                                |
| S81.042A | Puncture wound with foreign body, left knee, initial encounter                                 |
| S81.049A | Puncture wound with foreign body, unspecified knee, initial encounter                          |
| S81.821A | Laceration with foreign body, right lower leg, initial encounter                               |
| S81.822A | Laceration with foreign body, left lower leg, initial encounter                                |
| S81.829A | Laceration with foreign body, unspecified lower leg, initial encounter                         |
| S81.841A | Puncture wound with foreign body, right lower leg, initial encounter                           |
| S81.842A | Puncture wound with foreign body, left lower leg, initial encounter                            |
| S81.849A | Puncture wound with foreign body, unspecified lower leg, initial encounter                     |
| S91.021A | Laceration with foreign body, right ankle, initial encounter                                   |
| S91.022A | Laceration with foreign body, left ankle, initial encounter                                    |
| S91.029A | Laceration with foreign body, unspecified ankle, initial encounter                             |
| S91.041A | Puncture wound with foreign body, right ankle, initial encounter                               |
| S91.042A | Puncture wound with foreign body, left ankle, initial encounter                                |
| S91.049A | Puncture wound with foreign body, unspecified ankle, initial encounter                         |
| S91.321A | Laceration with foreign body, right foot, initial encounter                                    |
| S91.322A | Laceration with foreign body, left foot, initial encounter                                     |
| S91.329A | Laceration with foreign body, unspecified foot, initial encounter                              |
| S91.341A | Puncture wound with foreign body, right foot, initial encounter                                |
| S91.342A | Puncture wound with foreign body, left foot, initial encounter                                 |
| S91.349A | Puncture wound with foreign body, unspecified foot, initial encounter                          |
| T81.31XA | Disruption of external operation (surgical) wound, not elsewhere classified, initial encounter |

|          |  |
|----------|--|
| T81.32XA | Disruption of internal operation (surgical) wound, not elsewhere classified, initial encounter |
| T81.4XXA | Infection following a procedure, initial encounter   |
| T81.89XA | Other complications of procedures, not elsewhere classified, initial encounter                 |

## **REIMBURSEMENT**

Participating facilities will be reimbursed per their Highmark Health Options contract.

## **SUMMARY OF LITERATURE**

Negative pressure wound therapy (NPWT) is a vacuum assisted wound device that has been used in clinical applications for more than five decades. The concept of applying topical negative pressure in the management of wounds emerged in the late 1980s and is increasingly used for a wide variety of wounds. The merits of vacuum assisted wound therapy in the outpatient setting for a variety of wounds such as ulcers related to pressure sores, venous or arterial insufficiency or neuropathy and other wounds have been studied in a number of clinical contexts. NPWT has triggered accelerated wound healing in the outpatient setting which has reduced wound dressing, visits to specialists, and hospitalizations (Lukasz, 2014). An additional positive result of NPWT include significant antibacterial effects by reducing subcutaneous edema (Lukasz, 2014). NPWT devices are classified as either powered (requiring electric power source) or non-powered (mechanical) or battery operated.

It is important to note that these devices are adjunctive therapy and are not intended to replace good basic wound care (i.e., daily wound measurements of dimension and depth, wet dressing applications, necrotic debridement, adequate overall nutrition, and minimization of disease activity of comorbid conditions).

Numerous for NPWT include:

- 1) Decubitus (pressure) ulcers
- 2) Neuropathic ulcers
- 3) Ulcers related to venous or arterial insufficiency
- 4) Dehisced wounds or wound with exposed hardware or bone
- 5) Post sternotomy wound infection or mediastinitis, or
- 6) Complications of a surgically created wound where exhibiting accelerated granulation therapy is necessary and cannot be achieved by other available topical wound treatment.

Negative pressure wound therapy (NPWT) applies a localized vacuum to draw the edges of the wound together while providing a moist environment conducive to rapid wound healing. The development of negative pressure techniques for wound healing is based on two theories: (1) the removal of excess interstitial fluid (exudate) decreases edema and concentrations of inhibitory factors, and increases local blood flow; and (2) stretching and deformation of the tissue by the negative pressure is believed to disturb the extracellular matrix and introduce biochemical responses that promote wound healing.

There are concerns surrounding the quantification of exudate levels within clinical research and day-to-day treatment of wounds (Mulder, 1994). The characteristics of wound exudate vary heavily, in regards to factors such as, wound type, underlying patient conditions, wound bed description, and chronic or acute wound. These influencing factors make it difficult to standardize a specific exudate level for vacuum assisted wound therapy or any other wound therapy (Mulder, 1994). Gerit D. Mulder, the CEO of the

Wound Healing Institute in Denver, Colorado produced an exudate output classification for chronic wounds, including:

1. Absent (dry)
2. Minimal (less than 5cc per 24 hours)
3. Moderate (5-10 cc per 24 hours)
4. High (more than 10 cc per 24 hours)

According to the Journal of Wound Care (2014), Mulder terminology is familiar in the clinical environment but is not practical in clinical practice due to the numerous factors of wounds. Managing and decreasing exudate production is an important function within NPWT, a licensed clinical professional must assess the fluid quantity and type. A wound vacuum device removes exudate from a wound by applying the negative pressure which can be increased or decreased depending on the needs of the wound.

NPWT systems include a vacuum pump, drainage tubing, and a dressing set. The pump may be stationary or portable, may rely on AC or battery power, allows for regulation of the suction strength, has alarms to indicate loss of suction, and has a replaceable collection canister. The dressing sets may contain either foam or gauze dressing to be placed in the wound and an adhesive film drape for sealing the wound. The drainage tubes come in a variety of configurations depending on the dressings used or wound being treated.

The electric pump applies intermittent or continuous negative pressure to an open cell foam or gauze wound dressing. The dressing evenly distributes pressure to the wound surface. In early stages of healing, fluid is withdrawn by the device, removing inhibitory factors and reducing bacterial counts. In later stages, tensile forces applied to surrounding tissues by the dressing are thought to stimulate cellular proliferation and protein synthesis.

CMS partnered with the AHRQ and commissioned a review of NPWT devices. AHRQ contracted with the ECRI Institute Evidence-based Practice Center to perform the review (AHRQ, 2009). A technology assessment report on NPWT prepared for the AHRQ found that “the systematic reviews of NPWT reveal several important points about this technology. First, all of the systematic reviews noted the lack of high-quality clinical evidence supporting the advantages of NPWT compared to other wound treatments. The lack of high-quality NPWT evidence resulted in many systematic reviewers relying on low-quality retrospective studies to judge the efficacy of this technology. Second, the other systematic reviews found no studies directly comparing different NPWT devices or components have been published. Direct comparison studies are especially important in determining which dressing approach (foam or gauze) may provide the best potential for wound healing. Third, other systematic reviews concluded that NPWT must be evaluated according to wound type. Wound healing varies according to the type of wound being treated and NPWT benefits described for one wound type cannot be transferred to other wound types. Most wound types have insufficient high-quality NPWT evidence to judge if NPWT is better than standard care for specific wounds. Studies comparing foam to gauze are needed for each wound type before decisions can be made about which systems or components offer significant therapeutic distinctions.”

In 2012, the Cochrane Review conducted a systematic review of NPWT to surgical incisions using wound healing as the primary outcome of interest. Unfortunately, assessing the efficacy of NPWT by attempting to determine when a surgical incision is "completely healed" is a difficult endpoint to measure. A more clinically relevant question is how the application of NPWT affects the rate of surgical site complications.

Zhang (2014) conducted a meta-analysis to evaluate the effectiveness and safety of NPWT for diabetic ulcers. Eight qualified studies were identified with a total of 669 patients. Overall, use of the NPWT resulted in a significantly higher proportion of healed diabetic foot ulcers, reduction of ulcer area and shorter time to wound healing. Use of this therapy resulted in fewer major amputations but the rate of minor amputations was not impacted.

NPWT used in a prophylactic role has been reported in primarily observational studies. While there have been a small number of small trials, the use of prophylactic NPWT cannot be supported. Larger randomized trials are needed in order to determine health outcomes and cost effectiveness (Gestring, 2018).

Discontinuation criteria for *incisional* NPWT have not been clearly defined and may vary according to incision and patient factors. Reported duration of incisional therapy varies between 1 and 5 days in the literature. Reddix et al. (2009) reported discontinuation of incisional NPWT at the point when no edema fluid was evident in the device canister for 12 hours, usually 24 to 72 hours after surgery.

There are a number of non-powered, portable, disposable NPWT systems. The Smart Negative Pressure (SNaP®) Wound Care System, received 510(k) clearance from the FDA in 2009 and is designed to remove small amounts of exudate from chronic, traumatic, dehisced, acute, or subacute wounds and diabetic and pressure ulcers. The device consists of a cartridge that acts as the negative pressure source, a dressing, and a strap and can be worn under clothing. The cartridge utilizes specialized springs that generate continuous negative pressure and is preset at negative 75, 100, or 125 mmHg, weighs less than 3 ounces, and has a 60 cc capacity. The dressing is a hydrocolloid dressing with an antimicrobial gauze wound interface layer. (Powered NPWT systems usually have a foam-based interface layer.)

A single use, disposable NPWT device, the PICO™ system, received 510(k) clearance from the FDA in 2012 and is designed to remove low to moderate amounts of exudate. The system uses batteries instead of electrical power and instead of using a canister, the exudate is absorbed into the dressing. The pump is programmed to stop working after 168 hours (7 days) of use and will not restart after that time, even with new batteries.

According to one manufacturer (Smith-Nephew), optimal wound healing has occurred when:

- Initial therapy objectives have been met
- 100% granulation tissue in the wound bed
- Granulation tissue level with the surrounding skin
- Patient's overall condition/wound is improving
- Wound bed is ready to take a skin graft/flap
- Exudate levels less than 20-50 mls per day
- No improvement/reduction in size of wound is seen in the wound bed following two consecutive dressing change

The use of the disposable, single use portable NPWT systems are not supported in scientific literature. Clinical trials fail to provide sufficient evidence to support improvement in net health outcomes compared to alternatives (Armstrong et al., 2012, Gabriel et al., 2013, and Hudson et al. 2013)



## **Pressure Ulcer Stages**

### **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 are 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 includes 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.

## **List of Device Names U.S. Food and Drug Administration 510(k) clearance**

ActiV.A.C.® Therapy Unit  
Chariker-Jeter Wound Sealing Kit  
Engenex® Advanced NPWT System  
Exusdex® wound drainage pump  
EZCARE Negative Pressure Wound Therapy  
Chariker-Jeter Wound Sealing Kit  
InfoV.A.C.® Therapy Unit  
Invia Liberty Wound Therapy  
Invia Vario 18 c/i Wound Therapy  
Medela® Invia Liberty pump  
Mini V.A.C.®  
NPD 1000 Negative Pressure Wound Therapy System  
Prodigy™ NPWT System (PMS-800 and PMS-800V)  
PRO-I™  
PRO-II™  
PRO-III™  
RENASYS™ EZ Negative Pressure Wound Therapy  
SVEDMAN™ and SVED™ Wound Treatment Systems  
V.A.C.® ATS™  
V.A.C.® Freedom™  
V.A.C.® Instill Device  
V.A.C.® Therapy Unit  
V.A.C.® (Vacuum Assisted Closure™)  
V1STA Negative Pressure Wound Therapy

Venturi™ Negative Pressure Wound Therapy

**NOTE: This list is not all inclusive.**

### **POLICY SOURCE(S)**

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## Policy History

| Date       | Activity  |
|------------|---|
| 09/06/2016 | QI/UM Committee approval  |
| 12/01/2016 | Provider effective date   |
| 02/10/2017 | Revisions: General formatting of the outline and face sheet (PAGE 1-4), added definitions (PAGE 2), criteria revisions (PAGE 2-4), non-covered criteria revisions and additional Precautions were added (PAGE 5-6), summary of literature update (9,10,11), ICD-10/CPT/HCPCS update and revisions (13-26), and reference revisions and additions (26-29); operational guidelines from post-payment to prepayment and added "Policy History"; Highmark Health Options disclaimer update on external document |
| 03/14/2017 | QI/UM Review approval   |
| 08/09/2017 | Added Disclaimer Statement in opening of medical policy. EHS Revisions: Added Issue Date to opening policy box, added 'Covered' to Procedure & Diagnosis Code tables in Attachment B & C and reformatted tables; Added 'Informational' to reference table D & E; Operational Guidelines Updated with age and supply limits.   |
| 12/12/2017 | Clinical Review: Removed incorrect criterion from Section 3; Updated literature; Revised covered procedure codes-removed A9272 and added A6550, A7000, A7001 and E2402; Updated reference sources; Section 1.C.1) criteria change from 90> to 30>.  |

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|------------|--|
| 03/13/2018 | QI/UM Committee Review   |
| 04/25/2018 | Revision: Removed the word 'Covered' from the procedure and diagnosis code tables in Attachments B & C   |
| 05/15/2018 | New Provider effective date  |
| 07/24/2018 | Updated Operational Guidelines regarding claims processing for procedure codes A7000 & A7001 retroactive to 12/01/2016.  |
| 03/12/2019 | Annual Review: Revised language under Procedures in #1. A and added information regarding care initiated during inpatient stay #1.A.6; in section C removed 1.a, added medically appropriate in C.2.b; under section 4 revised language in letter A and removed letter K; added language in #6 regarding use of NPWT beyond 4 months requiring Medical Director review and added example situations of not medically necessary NPWT services; deleted prophylactic use paragraph because it is included as an example of not medically necessary situations; under Government Bodies Approval added new device NPD 1000; updated Summary of Literature; revised Procedure Code section with the addition of noncovered HCPCS codes K0743, K0744, K0745 & K0746; in the Reference Sources removed hyperlinks from all references and added additional references. |
| 03/12/2019 | QI/UM Committee review   |
| 05/06/2019 | Provider effective date  |