

## **CLINICAL GUIDELINE**

# Single use Negative Pressure Wound Therapy (sNPWT)

A guideline is intended to assist healthcare professionals in the choice of disease-specific treatments.

Clinical judgement should be exercised on the applicability of any guideline, influenced by individual patient characteristics. Clinicians should be mindful of the potential for harmful polypharmacy and increased susceptibility to adverse drug reactions in patients with multiple morbidities or frailty.

If, after discussion with the patient or carer, there are good reasons for not following a guideline, it is good practice to record these and communicate them to others involved in the care of the patient.

Version Number:	3
Does this version include changes to clinical advice:	Yes
Date Approved:	23 <sup>rd</sup> August 2022
Date of Next Review:	31st August 2025
Lead Author:	Lynne Watret
Approval Group:	Non Medicines Utilisation Sub Committee of ADTC

#### **Important Note:**

The Intranet version of this document is the only version that is maintained.

Any printed copies should therefore be viewed as 'Uncontrolled' and as such, may not necessarily contain the latest updates and amendments.

Contents: Page No

Introduction	1
Background	2
Contraindications:	
Cautions/considerations:	3
Patient Considerations:	4
Prior to initiation of sNPWT	
<ul> <li>Following application the patient should be able to report</li> </ul>	
Most Common Wound Types for sNPWT (Table one)	5
Wound bed preparation prior to initiation of sNPWT (Table 2)	6
Responsibility and consideration to be made by the clinician prescribing/administering sNPWT:  Patient safety/Realistic Medicine Prescribing to support patient care and reduce risk of waste Time to Stop Therapy Additional reasons to stop therapy	7
Evaluation or considering use of alternative sNPWT	
<ul><li>Device power pack</li><li>Dressing characteristics</li></ul>	8
For further information refer to Smith and Nephew:  • Pico® instructions for use  • Pico 7 and 14® Quick Reference Guides  • Pico Patient Information	
SIMPLE summary considerations (Table 3)	9
Appendix one: Current preferred sNPWT choice  • Prescribing information: Community Drug Tariff Pico 7 and 14® dressing kit and accessories	10,11
Appendix two: Order information -Procurement PECOS route	12
<ul> <li>Pico 7® and multipack dressings</li> </ul>	
Further information	13

## Non Medicines Utilisation Sub Committee review group contact details

Lynne Watret, Interim Non Medical Prescribing Lead	Lynne.watret@ggc.scot.nhs.uk	
Gillian Harkin, Lead Podiatrist	Gillian.Harkin@ggc.scot.nhs.uk	
Susan Shankie, Prescribing Support Pharmacist	Susan.Shankie@ggc.scot.nhs.uk	
Celia Macaskill, Clinical Nurse Specialist, Dermatology	Celia.Macaskill@ggc.scot.nhs.uk	
Tricia McShane, Community Vascular Nurse Specialist	Tricia.McShane@ggc.scot.nhs.uk	
Ruth Potter, Julie Astley, Clinical Nurse Specialists Tissue Viability	Ruth.potter@ggc.scot.nhs.uk;	
Elaine Farrell, Clinical Nurse Specialist Tissue Viability External Advisor, NHS Highland and Argyle & Bute	Elaine.farrell@nhs.scot	
Annette Hollis, Alexa Crawford, Clinical Nurse Specialists Tissue Viability External Advisors Golden Jubilee	Annette.Hollis@gjnh.nhs.scot; Alexa.crawford@gjnh.nhs.scot	

#### INTRODUCTION

This prescribing guideline has been developed by a Short Life Working Group on behalf of the NHSGGC Non Medicines Utilisation Sub Committee of the Area Drugs and Therapeutics Committee to support safe and cost effective prescribing in primary care.

The clinician prescribing and/or managing the patient treated with single Use Negative Pressure Wound Therapy (sNPWT) should be competent in assessing suitability, application and ongoing management of the patient, in their care.

This guideline highlights where sNPWT can be considered for chronic wounds which have been managed with standard wound therapy, but have demonstrated less than 10% per week wound area reduction in size over a four week period; advice is also provided on when to stop therapy when success has been achieved, if the wound has been a "good responder"; or when a "non-responder" with a need to stop sNPWT and review the care plan; and the prophylactic one week therapy role for patients at high risk of post op dehiscence or as preparation for further surgical intervention.

The sNPWT device provides an alternative to wound management dressing products and is complementary to mechanical Negative Pressure Wound Therapy (NPWT). When considering cost effectiveness of sNPWT and patient centred care, the clinician should take into account the potential reduced number of clinical interventions, required over duration of therapy to achieve wound progression, compared to standard wound formulary products. It is therefore essential when initiating therapy to consider if its use demonstrates safe, cost effective and positive patient outcomes. Choice between mechanical NPWT, standard wound dressing products and sNPWT is based on a number of considerations, including: wound size; exudate level; depth and location of wound and patient preference. Choice should be kept as straightforward as possible and individualised to the patient.

Depending on wound type and status, the duration of use of sNPWT does not in general exceed 14 days for management of wounds or 7 days for prophylaxis. For this reason, only prescribe required 7 or 14 day sNPWT kit, for intended treatment duration and reassess for suitability to meet patient needs. Wound progression would be expected to become apparent within one week or two dressing changes.

To optimise the efficacy of sNPWT, ensure best use of resources and reduce risk of prolonged healing time, the wound bed should be prepared for healing with removal of slough, necrosis and management of infection prior to commencement of therapy.

This guideline should be used in conjunction with NHS GGC Wound Formulary, Compression Therapy Formulary and additional wound product prescribing guidance HERE

If clinicians wish to evaluate a particular sNPWT they should contact the Non Medicines Utilisation Sub Committee to support future resource management and sharing of best practice HERE

#### **BACKGROUND**

- The sNPWT works on the same principals as the mechanical NPWT powered device promoting granulation, perfusion, contraction and exudate management at the wound bed. <u>HERE</u>
- The sNPWT utilises a single use battery powered pack, which is significantly smaller, "pocket sized" and portable and can be more acceptable for patients in primary care than mechanical devices.
- The range of sNPWT devices currently available can accommodate varying volumes of exudate, with shaped dressings of various sizes to accommodate a range of wound sizes and sites (appendices one and two). Some sNPWT types have different mechanism of achieving therapeutic levels at the wound bed and capacity of exudate management compared to mechanical NPWT. This must be considered prior to initiation to minimise number of dressing changes over the course of treatment and ensure cost effectiveness. (see appendices for preferred NHSGGC choice)
- As with all advanced therapies the evidence to support when to start, duration of use and when to stop is often limited, the guidance provided is based on the best available evidence. (Refer to section on Time to Stop. page 9.)
- The guidance in this document should be used with clinical judgement based on the best available evidence to reduce risk of harm, waste and variations in practice.

It is important to note that Cautions and Contraindications are the same regardless if the delivery of NPWT is by the single or mechanical powered device.

#### **CONTRAINDICATIONS**

#### Wound bed:

Contraindications	Increased Risk
Non-enteric and unexplored fistulas	Bowel perforation
Direct placement over exposed vital structures	Damage to underlying structures e.g. blood vessels, organs, anastomotic sites, nerves.
Circumferential wounds	Restricting blood flow
Active bleeding or difficult wound haemostasis	Haemorrhage

## **CAUTIONS/CONSIDERATIONS**

In presence of cautions/further considerations; address underlying cause if possible and reassess to establish whether sNPWT remains preferred treatment choice and/or seek medical advice prior to commencing therapy.

Cautions/further considerations	Rationale
Presence of slough and necrosis	Debride wound to achieve maximum exposure of wound bed prior to applying sNPWT (Table 2)
Wounds with overt signs of infection <u>HERE</u> .	Patient may require systemic antibiotics during or prior to application of sNPWT
Malignant wound (on medical advice only)	Although previous research cited has been on healthy tissue; it is suggested that NPWT should not be discounted in malignant wounds. (Cai, Gowda, Alexander et al (2017)
Patients prescribed anticoagulation medication for bleeding disorder such as haemophilia or requirement for anticoagulant therapy for underlying medical condition.	Medication such as Direct Oral Anticoagulants, warfarin, Low Molecular Weight Heparin and aspirin or 'Over the Counter' medication may affect coagulation and increase risk of bleeding. (seek medical or anticoagulant specialist nurse advice)
Patients receiving MRI, hyperbaric chamber therapy, cardio version/ defibrillation	Disconnect battery pack during procedure and check to ensure negative pressure is achieved when reconnected and there is no evidence of leakage.
Patients with implantable medical devices such as cardiac rhythm management devices.  Further information for patients and clinicians on safety when using batteries with magnets with current formulary choice (courtesy of Smith and Nephew) HERE	Patients/carers should be advised that sNPWT Pico® battery pack should be should be positioned at least 10cm from devices such as pacemaker, implantable cardioverter defibrillator; similar to advice provided to patients with regard to mobile phones etc.  FAQs Pacemaker implantation

#### **PATIENT CONSIDERATIONS**

#### **Prior to initiation of sNPWT**

- The treatment goal should be defined and agreed with the patient
- Following discussion, patient expresses sNPWT in preference to standard dressing choices or mechanical NPWT HERE
- Patient is motivated and wishes to be involved in care plan
- Patient can troubleshoot (e.g. know how to check for leaks, reset, remove and apply standard dressing
  if necessary), and/or;
- Carers are able to support patient if required

#### Following application the patient should be able to report that:

- Dressing is comfortable, conformable and remains in place
- There has been minimal need to check and reset negative pressure between dressing changes
- If applicable dressing changes are minimised compared to previous treatment choices
- They candemonstrate ability to troubleshoot
- They have ability to detach and reattach powered pack for showering
- Carer can support patient if appropriate

## **MOST COMMON WOUND TYPES SUITABLE FOR sNPWT (Table one)**

The most common wound types which may benefit from sNPWT are those which are perceived as chronic hard to heal or complex, with wound areas which have reduced in size less than 10% per week over previous four weeks. (Refer to Time to Stop Section and Dowsett et al (2017) further information at end of guideline)

## Table One: wound types suitable for sNPWT

Common wound types	Additional considerations/rationale for use on specific wound types following wound bed preparation		
Diabetic foot ulcer	To promote granulation and wound closure following surgery or wounds healing by secondary intention, when wound bed has been prepared for healing.		
Dehisced surgical or trauma wounds	To promote wound closure. Can be considered under medical guidance if wound closure is required prior to commencement of radiotherapy/chemotherapy treatment.		
Closed incision wounds prophylactic 7 day treatment)	The ciNPWT is applied in theatre on incision wounds or skin grafts in high risk patients e.g. high BMI, poor perfusion, reduce risk of infection, seroma, haematoma, local skin ischaemia.  The therapy is left in situ for seven days and then discontinued.  Clear evidence and recommendations are still required for ciNPWT for high risk of post op dehiscence or as preparation for further surgical intervention. (Expert Panel Consensus 2022).		
Pressure ulcer grade 3 or 4 (EPUAP)	Patient discharged from in-patient care with powered NPWT and exudate level < 300mls per week allowing for switch to sNPWT.		
Venous leg ulcer	Can be considered under compression therapy for complex leg ulcers due to chronic venous insufficiency to promote wound progression.		
Palliative management of symptoms at end of life	Can be considered if patient, carer and palliative care team, agree that the device may reduce need for frequent dressing changes and/or relieve symptoms e.g. exudate, odour, pain. (see under cautions)		

#### WOUND BED PREPARATION PRIOR TO INITIATION of SNPWT

Prior to initiation of sNPWT consider some of the factors at the wound bed which may result in barriers to healing or prevent maximum interaction between wound interface and NPWT. (Table two)

Wound bed preparation prior to use of therapy will promote safe, cost effective use of device which should support timely and positive patient and wound outcomes.

Table 2: Wound bed preparation prior to commencement of sNPWT

Pr	Preparation of wound bed prior to and during therapy  Rationale for preparation of wound be to and during therapy		ationale for preparation of wound bed	
ιο	and during therapy	to	to ensure safe, cost effective use of	
		de	evice	
1.	All wounds should be debrided to remove slough and necrosis from wound bed.	1.	SNPWT is not a recognised debridement tool. To use as such may prolong time to expose granulating wound bed and delay therapeutic action of sNPWT	
2.	Treat infection/biofilm formation prior to use	2.	Presence of infection/biofilm will increase the need for frequent dressing changes to assess and cleanse wound bed	
3.	Exposed tendon or bone. There is a risk of dehydrating exposed tendon or bone if used on a wound bed with minimal exudate.	3.	To reduce risk the addition of a silicone dressing layer on the wound bed has been used to protect wound bed. However, this provides an additional layer between the wound bed and reduces efficacy of sNPWT by up to 30%. Clinical judgement is required to ensure that perceived benefits of adding additional contact layer outweighs any undesirable "side effects". Consider this against other treatment modalities.	
4.	Cavity wounds	pul larg sur cha	If cavity dressings are used; ensure these are compatible with the therapeutic surface of negative pressure pad.  rlix™ gauze or specially designed insert dressings for this rpose are the only products compatible with s NPWT to fill ger cavities. (Appendixone). These will not be required with face and shallow wounds. In deeper wounds with narrow annels filler may act as a "splint" and hinder closure and ould be used with caution.	
	Best practice with all wound products is to maximise coverage with the wound bed, to ensure optimum interaction between the wound bed and the contact dressing layer, with even distribution of negative pressure.			

## RESPONSIBILITY and CONSIDERATIONS TO BE MADE BY THE CLINICIAN PRESCRIBING/ADMINISTERING SNPWT

#### Patient safety/Realistic Medicine

"All healthcare professionals (HCP) who can prescribe or are administering prescribed products are subject to: their individual clinical competence; the professional codes and ethics of their statutory bodies; and the prescribing policies of their employers." (MHRA, 2009). Prior to initiating sNPWT, the HCP should be satisfied that this will provide the safest most cost effective method of treatment; that all members of the patient's multi-disciplinary care team have been included in care plan; which support the principles of "Personalising Realistic Medicines"

#### Prescribing to support patient centred care and reduce risk of waste

- Prescribe appropriate amount of products for one or two week use in first instance; 7 or 14 day kit, dressing
  packs etc.). If longer required, only prescribe sufficient for two week challenges at a time with review
- Refer to Time to Stop below; Appendix 1 for ordering codes and sizes; and to appropriate specialists, if further consultation or advice is required or if prolonged use is indicated.
- Ensure therapy is not continued for prolonged period of time which exceeds therapeutic potential (refer to Time to stop below).

#### Time to stop therapy (edited from Dowsett et al 2017, Pico® Pathway)

- Wound progression: when the wound has granulated level with surrounding skin; contraction of the wound bed and epithelialisation is evident; and/or the initial goals defined at the outset of single use NPWT have been met
- Wounds reduced in area by greater than 40% within two weeks i.e. "good responder" may have therapy discontinued (can reinstate if wound healing rate stalls if appropriate)
- A "non responder" wound reduced in area <5% at week two; 7.5% at week three; 10% by week four, the wound requires further investigation.
- Exudate has diminished sufficiently to allow for a standard dressing or below 20-30mls a day.
- Frank pus and/or blood evident within the dressing or canister reassess wound
- Incision wounds therapy will be commenced in theatre and dressing left undisturbed for one week and thereafter discontinued. There should not be a need to prescribe additional sNPWT

#### Additional reasons to stop therapy

- Patient is returning to theatre for further surgical intervention (tertiary closure of wound) or medical intervention (radio or chemotherapy)
- Risk factors increased e.g. bleeding, infection, exposed tendon or bone is dehydrating (should be pearly white shiny in appearance)
- Patient choice and withdraws consent
- Patient is not physically or psychologically tolerant of NPWT

Any adverse effects should be reported on Datix and MHRA (yellow card) <a href="https://yellowcard.mhra.gov.uk/">https://yellowcard.mhra.gov.uk/</a>

#### **Evaluation or considering use of alternative sNPWT**

The current preferred formulary choice **Pico® sNPWT** fulfills the following criteria; if evaluation or use of an off formulary device is being considered clinicians should submit request to NMUS after considering the following factors <u>HERE</u>:

#### **Device power pack**

- Is there evidence to support use of device and ability to sustain therapeutic levels of negative pressure across wound bed?
- What type of alarm function does the device have and will it suit the individual patient sensory needs if there is leakage or undetected loss of pressure i.e. is alarm function: visual/ auditory/vibratory or all three?
- What is the life span of the power pack?

#### **Dressing characteristics**

- Does the dressing pad conform to area you wish to treat?
- Are there a range of sizes and shapes of dressings to provide therapy over course of treatment?
- How much exudate does a single dressing manage this will indicate number of dressing changes required per week? Wound dressing changes should not exceed x 2 weekly
- Will there be a need for additional accessories e.g. silicone strips. Are accessories provided in the pack or do they have to be prescribed separately?

#### For further information refer to Smith and Nephew:

- PICO® Instructions for use and additional information for healthcare professionals
- PICO 7<sup>®</sup> System Quick Reference Guide
- PICO 14® Quick Reference Guide
- PICO® Patient Information

## **SIMPLE Summary considerations:**

When managing a patient with sNPWT it is essential to provide regular ongoing review to ensure treatment goals are being met and patient centred care isachieved. (Table three)

#### Table Three: SIMPLE acronym considerations for sNPWT

SIMPLE	Product suitability:
<b>S</b> afe	Have you checked cautions and contraindications? Have you reviewed manufacturers' evidence to ensure appropriate use
Indicated	Check wound type and assess wound bed, patient circumstances: In your clinical opinion is sNPWT the most effective choice of treatment to progress the wound to healing?
<b>M</b> easurable	Considered effective if the wound progressing to healing and reducing in size and exudate as expected.  Wear time is optimised: Over a two week period is the product proving cost effective compared to alternative wound products, taking into account wound progression and number of interventions required?  Prescribing activity is monitored via Prisms data
Patient advantage	Does the patient finds the device, comfortable, stays in place conformable and user friendly?  Can the patient report ability to carry out activities of daily living, work and socialise. Does it promote patient wellbeing and they report that they can manage the device and are in control.
Longevity	Has the dressing achieved the expected wear time? If there a need for frequent dressing changes outwith expected time; review wound, product choice and patient issues.
End Point	When treatment goals are met (Time to Stop) The wound has contracted and reduced in size, level with surrounding skin, and/or exudate is below 30mls per day; OR Any adverse effects, patient choice, limited wound progression which will require treatment choice review. (Time to Stop).

#### **APPENDIX ONE:**

## Prescribing information community: Scottish Drug Tariff, Part 2 (DT)

# **Current NHS GGC formulary preferred choice for Single Use Negative Pressure Wound Therapy:**

## PICO 7 KIT® Smith and Nephew

PICO 7 dressing kit® (contains two dressings, adhesive retention strips, 7 day battery pack)			
Two dressings per kit	New PICO7 PIP code	DT Price (£) (correctat time of print)	
10cm x 20cm	407-4514	£133.06	
10cm x 30cm	407-4506	£132.39	
15cmx15cm	407-4100	£132.39	
10cm x 40cm	407-4522	£152.56	
15cm x 20cm	407-4530	£132.39	
15cm x 30cm	407-4480	£152.56	
20cmx20cm	407-4498	£152.56	
25cmx25cm	407-5123	£152.56	
Small 15cm x 20cm Multisite	407-5214	£131.80	
Large 20cm x 25cm Multisite	406-5206	£151.21	

## PICO 14 KIT® Smith & Nephew

Pico 14 dressing kit® (contains two dressings, adhesive retention strips, 14 day battery pack)			
Dressing sizes	Pico 14 <sup>®</sup> PIP Code	DT Price (correct at time of print)	
10cm x 20cm	415-5214	£201.17	
10cm x 30cm	415-5222	£201.17	
15cm x 15cm	415-5248	£201.17	
10cm x 40cm	415-5230	£201.17	
15cm x 20cm	415-5255	£201.17	
15cm x 30cm	415-5263	£201.17	
20cm x 20cm	415-5271	£201.17	
25cm x 25cm	415-5289	£201.17	
Small 15cm x 20cm Multisite	415-5479	£196.00	
Large 20cm x 25cm Multisite	415-5487	£196.00	

## **SNPWT Accessories Community (Drug Tariff)**

## Additional dressings for Pico 7 & 14®

MULTIPACK DRESSINGS	PIP code	DT Price each (correct at time of print)
Multisite small15cm x 20cm	407-5222	£38.95
Multisite large 20cm x 25cm	407-5230	£61.97
10cm x 20cm	407-6006	£17.70
10cm x 30cm	407-5743	£24.79
10cm x 40cm	407-5768	£33.05
15cm x 15cm	407-5792	£17.70
15cm x 20cm	407-5776	£25.97
15cm x 30cm	407-5826	£28.33
20cm x 20cm	407-5818	£33.05
25cm x 25cm	407-5800	£51.65

Filler for cavity wounds	Size	DT Price (correct at time of print)
Gauze filler (Kerlix AMD)	11.4cm x 3.7m	£1.66 (pack of 5)
Gauze Filler (Kerlix AMD)	15.2cm x 17.1 cm	£0.72 (pack of 2)
Gauze Filler (Kerlix AMD)	15.2cm x 17.1cm	£1.80 (pack of 5)
Foam wound dressing	10 x 12.5 x 1.5cm	£8.21 (single pack)

#### **APPENDIX TWO:**

## **Acute care**

## **Ordering information - Procurement PECOS route**

# Current Preferred NHS GGC choice: PICO 7® sNPWT Smith & Nephew (S & N)

Pico 7® one dressing kit		Pico 7 <sup>®</sup> two dressing kit	
Dressing sizes	S & N order code	Dressing sizes	S & N order code
Multisite small	66802010	Multisite small	66802000
15cm x20cm		15 x 20cm	
Multisite large	66802011	Multisite large	66802001
20 x 25cm		20 x 25cm	
10 x 20cm	66802012	10 x 20cm	66802002
10 x 30cm	66802013	10 x 30cm	66802003
10 x 40cm	66802014	10 x 40cm	66802004
15 x 15cm	66802015	15 x 15cm	66802005
15 x 20cm	66802016	15 x 20cm	66802006
15 x 30cm	66802017	15 x 30cm	66802007
20 x 20 cm	66802018	20 x 20 cm	66802008
25 x 25cm	66802019	25 x 25cm	66802009

#### Accessories multipacks available via procurement (PECOS)

MULTIPACK DRESSINGS	S & N Order Code
Multisite small15cm x 20cm	66802020
Multisite large 20cm x 25cm	66802021
10cm x 20cm	66802022
10cm x 30cm	66802023
10cm x 40cm	66802024
15cm x 15cm	66802025
15cm x 20cm	66802026
15cm x 30cm	66802027
20cm x 20cm	66802028
25cm x 25cm	66802029

Nb PICO 14 kits® are not available via procurement (PECOS) route

#### **Further references**

Banasiewicz et al (2019) Traditional and single use NPWT: when to use and how to decide on the appropriate use? Recommendations of an expert panel. Wounds International Vol 10, No 3: pp 56-62

Cai SS, Gowda AU, Alexander RH, Silverman RP, Goldberg NH, Rasko YM. Use of negative pressure wound therapy on malignant wounds - a case report and review of literature. Int Wound J. 2017 Aug;14(4):661-665. doi: 10.1111/iwi.12665. Epub 2016 Oct 3. PMID: 27696723; PMCID: PMC7949817.

Silverman, Apostolides, Chatterjee et al (2022) the use of closed incision negative pressure therapy for incision and surrounding soft tissue management: Expert panel consensus recommendations. International Wound Journal (2022, Mar) 19(3):643-655 accessed 14.6.2022

Cochrane (2018) Negative pressure wound therapy for treating foot wounds in people with diabetes mellitus. <a href="https://www.cochrane.org/CD010318/WOUNDS">https://www.cochrane.org/CD010318/WOUNDS</a> negative-pressure-wound-therapy-treating-foot-wounds-people-diabetes-mellitus

Dowsett C. (2015) Breaking the cycle of hard-to-heal wounds: balancing cost and care. Wounds Int.; 6(2):1-6

Dowsett C et al (2017) Use of Pico to improve clinical and economic outcomes in hard- to- heal- wounds. Wounds International. 8(2); 53-58 www.woundinternational.com

Expert Panel Consensus: The use of closed incision negative pressure therapy for incision and surrounding soft tissue management: Expert panel consensus recommendations (wiley.com)
https://pubmed.ncbi.nlm.nih.gov/34382335/

Health & Care Professions Council (HCPC)

http://www.hpc-uk.org/assets/documents/100000DBBStandards of Proficiency Chiropodists.pdf

Health Improvement Scotland, HTA Report 12: Topical negative pressure therapy for wounds. August 2010. http://www.healthcareimprovementscotland.org/previous\_resources/hta\_report/hta\_12.aspx Accessed April 2017

Health Improvement Scotland (2013) Management of Diabetes SIGN 116 Section 11.5.5 http://www.sign.ac.uk/assets/sign116.pdf. AccessedJune2017

Hospital Home Health (2010). Deaths, injuries associated with negative pressure wound therapy. Hospital Home Health 27(3); 25-36

Hyldig N, Birke-Sorensen H, Kruse M, et al. (2016) Meta-analysis of negative-pressure wound therapy for closed surgical incisions. Br J Surg.; 103(5):477-486.

MHRA (Yellow card) link adverse incidents. https://yellowcard.mhra.gov.uk/

NHS PresQUIPP (2016) Wound Care — Negative Pressure wound therapy Bulletin 131. NHSQualityImprovementhttps://www.prescqipp.info/wound-care-negative-pressure-wound-therapy/2583-bulletin-131-negative-pressure-wound-therapy/2583-bulletin-131-negative-pressure-wound-therapy

National Prescribing Centre (2012) A single competency framework for all prescribers. https://www.associationforprescribers.org.uk/images/Single Competency Framework.pdf

NICE (2019) PICO negative pressure wound dressings for closed surgical incisions Medical technologies guidance Published: 9 May 2019

https://www.nice.org.uk/guidance/mtg43/resources/pico-negative-pressure-wound-dressings-for-closed-surgical-incisions-pdf-64372054098373 accessed 14.6.22

NHS GGC Non-medicines Formularies (accessed August 2019) <a href="http://www.ggcprescribing.org.uk/non-medicines-formularies/">http://www.ggcprescribing.org.uk/non-medicines-formularies/</a>

Nursing & Midwifery Standards for competence for registered nurses (2016)

https://www.nmc.org.uk/globalassets/sitedocuments/standards/nmc-standards-for-competence-for-registered-nurses.pdf accessed 27.6.17

Scottish Adapted European Pressure Ulcer Advisory Panel (EPUAP) Grading Tool. (January 2014) www.healthcareimprovementscotland.org

The Clinical Services Journal (April 2015) Reducing C-section wound complications. Open Access: http://www.clinicalservicesjournal.com/csj-archive

<u>Scottish Drug Tariff accessed August 2022 https://www.isdscotland.org/health-topics/prescribing-and-medicines/scottish-drug-tariff/Docs/2022/2022-09-SDT-PART-2.pdf</u>

Vig S, Dowsett C, Berg L, et al. (2011) Evidence-based recommendations for the use of Negative Pressure Wound Therapy in chronic wounds: steps towards an international consensus. J Tissue Viability; 20 Supplement 1:S1-18