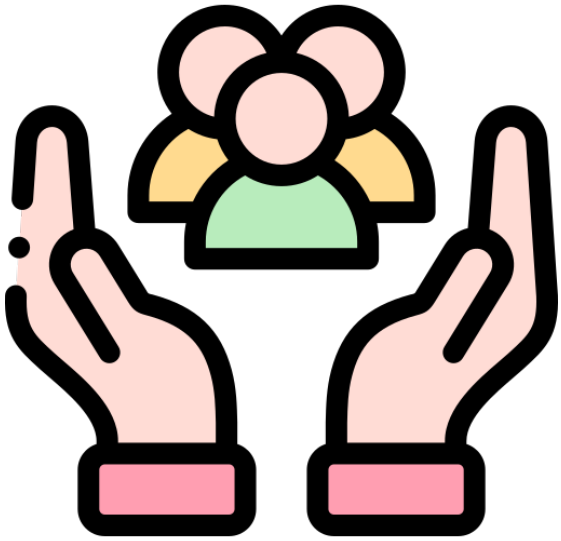
WUK BPS

Best Practice Statement

Active treatment of non-healing wounds in the community

2022



Identifying people with wounds at risk of non-healing

Listening to the patient with a non-healing wound

Goal setting

Active treatment

Escalating treatment with single-use NPWT

Wounds UK

BEST PRACTICE STATEMENT: ACTIVE TREATMENT OF NON-HEALING WOUNDS IN THE COMMUNITY

PUBLISHED BY:
Wounds UK
A division of Omniamed Communications,
108 Cannon Street
London EC4N 6EU, UK
Web: www.wounds-uk.com

Wounds UK

This document has been developed by Wounds UK and is supported by an unrestricted educational grant from Smith+Nephew.

Smith+Nephew

This publication was coordinated by Wounds UK with the Expert Working Group. The views presented in this document are the work of the authors and do not necessarily reflect the views of Smith+Nephew.

How to cite this document:
Wounds UK (2022) Best Practice Statement: Active treatment of non-healing wounds in the community. Wounds UK, London. Available to download from: www.wounds-uk.com

EXPERT WORKING GROUP:

Jacqui Fletcher (Chair), Independent Nurse Consultant

Jacqueline Dark, Tissue Viability Lead, Great Western Hospitals NHS Foundation Trust

Luxmi Dhoonmoon, Tissue Viability Nurse Consultant, Central and North West London NHS Foundation Trust

Caroline Dowsett, Clinical Nurse Specialist for Tissue Viability Services, East London NHS Foundation Trust

Jeanette Milne, Chief Matron Community, Northumbria Healthcare NHS Foundation Trust

Hollie Robinson, Tissue Viability Service Lead, North and South Warwickshire

Andrew Sharpe, Advanced Podiatrist – Wound Care, Salford Care Organisation

Foreword

Non-healing wounds develop due to an interruption in the body's natural healing process. It is accepted that within the normal parameters of acute wound healing, re-epithelialisation should be reached within 4 weeks (Vowden and Vowden, 2016) or reduce in size by 40% following 4 weeks of optimal therapy (Leaper and Durani, 2008; Gwilym et al, 2022). From a patient's perspective, living with a non-healing wound can often mean experiencing a decrease in quality of life with the potential of increased pain and anxiety (Olsson et al, 2019).

There has been a 71% increase in the annual prevalence of wounds between 2012/2013 and 2017/2018 (Guest et al, 2020). Thirty percent of all wounds are non-healing, and these disproportionately represent 67% of the total wound expenditure. This continued burden is set to be equally challenging alongside staff shortages relating to recruitment and retention, and other operational pressures following the after-effects of the COVID-19 pandemic. These challenges are felt most in the community setting.

In the burden of wounds study (Guest et al, 2015), high numbers of wound-related patient contact occurs in the community, i.e. patient visits to GP practices (10,815,655), practice nurses (19,744,618) and community nurse visits (10,932,199) compared with specialist nurse visits (51,106) and hospital outpatient visits (4,277,334). However, while most wounds are managed in community settings, there is considerable scope for improvement in care delivery with around 30% of wounds lacking a differential diagnosis, preventing the delivery of appropriate care (Guest et al, 2015).

Successful outcomes for patients with non-healing wounds relies on accurate assessment and identification of wound aetiology, alongside consideration of local and systemic factors that may be contributing to non-healing (Werdin et al, 2009). This document was developed with the overall objective of supporting practitioners, particularly in the community, to improve the care of patients with non-healing wounds by:

- Explaining the importance of holistic wound assessment in recognising if the patient's wound is likely to heal with evidence-based principles of wound care and standard dressings
- Empowering staff with the tools to escalate care to more active treatments to achieve better outcomes for people with non-healing wounds in the community when needed (e.g. single-use negative pressure wound therapy [sNPWT]; negative pressure wound therapy [NPWT])
- Increased awareness of available resources/specialists appropriate to the management of wounds
- Recognising how and when to refer to a specialist for guidance, advice or management.

The Best Practice Statements (BPSs) were derived from a 1-day meeting of the Expert Working Group. The BPSs were further developed by the Expert Working Group during an extensive review process. Each BPS is accompanied by a related statement that explains to patients with a non-healing wound what they should expect from high-quality wound care.

The Expert Working Group recognises that some elements of the BPSs may be challenging to achieve in some care settings. However, the hope is that, by setting out what is best practice and the processes required, practitioners may be supported in the quest to make organisational changes that would benefit patients with non-healing wounds.

Factors associated with non-healing

Consider using 'non-healing' as a more positive descriptor than 'hard-to-heal' when a wound has not progressed as expected in a 4-week time frame.

Best Practice Statement

For each patient with a wound, consider the modifiable and non-modifiable non-healing factors.

Best Practice Statement

Your clinician should talk to you about the factors that may be affecting the healing of your wound.

Patient expectation

Non-healing wounds can negatively impact quality of life for many reasons, including hampering sleep, mental health, hobbies, work, activities of daily living, relationships with family and friends, and desire to socialise. Pain, odour, and leakage from dressings are frequent concerns related to wounds (Green and Jester, 2009).

All wounds sit on a spectrum of likelihood of healing depending on intrinsic and extrinsic factors, which include patient-, wound- and organisation-related factors (Table 1). Recognising, understanding, and addressing the factors that contribute to non-healing will help set the direction of treatment. It is also important to consider which factors can be easily modified, are slow to be modified or cannot be modified, so that implementation of local and systemic care delivery offers patients improved but realistic outcomes.

Table 1. Factors that may impact on wound healing (Vowden, 2011; Wounds UK, 2018; Gethin et al, 2022a; 2022b)

Patient-related factors	Wound-related factors	Organisation-related factors
• Age >65 years Chronic disease/comorbidities, e.g.: - Diabetes mellitus - Circulatory disorders (e.g. peripheral arterial disease) - Obesity - Chronic respiratory, kidney or liver disease; anaemia - Immunosuppression (e.g. due to disease or medication) - Malnutrition/dehydration - Reduced mobility - Incontinence - Cognitive impairment - Autoimmune disease • Medication (e.g. corticosteroids, chemotherapy, immunosuppressants, anticoagulants, non-steroidal anti-inflammatory drugs) • Lifestyle (e.g. economic status, smoking, alcoholism, substance misuse) • Psychological stress • Health and social requirements • Pain • Tolerance to treatment • Refusal of care • Environment.	• Duration • Cause/aetiology • Size (area and depth) • Shape • Wound bed condition • Moisture level (exudate) • Ischaemia/perfusion • Inflammation/infection • Contamination/foreign body • Anatomical location • Ongoing local mechanical stress, pressure or trauma • Deformity • Treatment response.	• Healthcare system • Availability • Accessibility • Suitability • Effectiveness • Cost/reimbursement • Communication • Healthcare profession skill and knowledge.

Reframing non-healing

Non-healing wounds are a serious and severe health concern; if, for example, diabetic foot ulcers are not correctly managed, it can lead to amputation and mortality that is comparable to some cancers (Armstrong et al, 2007). To empower everyone who cares for people with wounds, using positive, encouraging language during training and when supporting colleagues and patients involved in their wound healing journey, frames wound healing as a real possibility. Terms like hard-to-heal or complex wounds can make healing sound unachievable (Box 1) and an explanation should be given to the patient when a more negative descriptor is used.

Box 1. Examples of a more negative descriptor

Chronic — suggests the wound will remain unhealed for a long time
Complex — suggests that the wound will be too difficult to heal
Hard-to-heal — suggests that healing is not possible or difficult
Long-standing — suggests the wound will be present for a long time
Static — suggests the wound will not progress

Delivery of standard care

Wound care is the business of all healthcare staff, regardless of the profession or the contract type. All healthcare staff, including agency and bank, should have mandatory wound care training and be signed off as competent by a specialist wound care clinician.

Best Practice Statement

All patients should be assessed and receive essential standard care by a registered healthcare practitioner who has the appropriate competence and capability.

Best Practice Statement

During an assessment with a wound care clinician, you should expect the person caring for you and your wound to look at your wound, ask questions about your wound and its impact on your life and identify your goals of care. This could be a nurse, podiatrist, or doctor.

Patient expectation

Elements of effective and optimal care

In wound care, there are several key principles that underpin effective wound and patient care. Although they may differ slightly based on local protocol, they can be summarised as the following:

- Assessment and diagnosis of wound aetiology with accurate documentation
- Accurate treatment planning
- Aetiology-specific wound care (including cleansing, debriding, dressing selection)
- Aetiology-specific patient care/ interventions (e.g. offloading, compression, metabolic control)
- Understanding the importance of healing rates which may require 'aetiology-specific' monitoring to inform service provision and quality improvement
- Collaborative working to improve patient outcomes and service delivery.

Assessment

The purpose of holistic patient assessment is to ensure that the patient receives the most appropriate treatment in line with best practice. Ultimately, holistic assessment involves the collection and interpretation of patient and wound data that is used to diagnose the underlying cause of the wound and aid clinical decision-making.

The importance of wound assessment and recognition of the potential benefits of improving standards was recognised through a Commissioning for Quality and Innovation (CQUIN) indicator that linked rates of wound assessment with funding payments (Wounds UK, 2017). The indicator was applied to community settings in England and to the assessment of wounds that had not healed after 4 weeks (Coleman et al, 2017). The community settings related predominantly to nursing but did not include primary care (e.g. GP practices). The goal of the indicator was "to increase the number of full wound assessments for wounds which have failed to heal after 4 weeks". Efficiency savings must be realised by reviewing staff time, patient outcomes, material costs and sustainability (Guest et al, 2020).

The elements of a generic wound assessment minimum data set (MDS; Coleman et al, 2017; Wounds UK, 2018) were developed to provide a benchmark for the CQUIN indicator on wound assessment. However, it provides a more consistent approach to generic wound assessment practice. See local protocols for wound assessment.

Scan the QR code to see Wounds UK (2018) Best Practice Statement Improving holistic assessment of chronic wounds.

Clinical documentation

Findings from all holistic wound assessments and reassessments should be accurately documented. Documentation should include details of the findings of the assessments, the objectives of care, the care plan and the date for wound reassessment (Wounds UK, 2018). Missing one element of a holistic assessment can have negative long-lasting effects to the patient and the likelihood of their wound healing. It is important that documentation reflects actual care given rather than simply ticking off the steps in the care plan as only a 'tick box' exercise. Accurate documentation is also important to ensure continuity of care across the healthcare community and all registered practitioners comply within their professional body.

Digital support systems specific to wound management must be more effective in allowing seamless collaborative working — the data collection should be meaningful to inform and improve clinical practice and offer an alert/red flag for at-risk patients.

The ideal digital system in wound care would be an active, live dashboard that uses a Red, Amber, Green (RAG) rating process and shows useful current statistics (e.g. the number of patients with ulcers), time spent on caseload, wound type, volume reduction, when the patient was last seen, date of next visit and follow-up, if the wound has healed and if the patient is in hosiery. A functional specification for wound management digital systems is available for use in the NHS (National Wound Care Strategy Programme [NWCSP], 2021).

Aetiology-specific wound and patient care

The assessment will direct the necessary treatment for the patient to support wound healing or symptom management. Treatment will involve management of the underlying wound aetiology (e.g. diabetes, venous disease, arterial disease, plus local wound management).

Local wound management will include wound bed preparation (e.g. cleansing and debriding), management of infection and wound biofilm, essential skin care and appropriate dressing selection and, where required, adjunct interventions such as offloading and compression therapy. Lifestyle referrals for the patient, such as smoking cessation, dietary advice and mental health services may also be useful.

Scan the QR code to see the aetiology-specific T.I.M.E. clinical decision support tool (CDST; Schultz et al, 2003; Leaper et al, 2012; Blackburn et al, 2022).

Understanding healing rates and collaborative working

Access to such statistics would allow an immediate snapshot of overall healing rates and should include measures such as patient satisfaction, improved quality of life, reduction in pain and reduction in exudate. Age and deprivation factors that impact healing should also be included in the data.

These metrics and local healing rates should be shared locally and may be benchmarked nationally. The overall healing rates need to be monitored by specialist clinicans and service providers in order to identify negative changes in rates. This should prompt further audits to identify themes and causes, enabling changes to be made to service provision, protocols and education as required through Quality Improvement (QI) programmes.

While it is the responsibility of the specialist to oversee the healing rates, it is equally as important for the generalist nurses to have an awareness too so that they feel empowered to escalate treatment before referral to a specialist. The more involved and knowledgeable clinicians are of the local healing rates, the more likely they are to be engaged in the process. Sharing local healing rates with clinical teams in the area can develop a healthy sense of competition, ownership of patient outcomes and garner collaborative working more seamlessly.

Complex health care delivery across primary and community care can be improved through a focused QI approach (Ivins et al, 2018). Within wound care, common QI programmes identify the number and type of wounds treated in primary and community care and compare current wound care practice against local policy and best practice (e.g. Ivins et al, 2018).

Scan the QR code to see Ivins et al (2018) Wounds UK. A good example of a QI programme.

QI programmes can help identify an area that needs improvement, implement the solution and ensure that the intervention is sustained as part of standard practice, and monitor and continuously improve the quality of care provided (see Box 2 for examples of how to improve care during a QI programme).

Specific wound management digital systems should be accessible to and work for all healthcare staff — whether they are permanent or temporary staff, such as agency or bank staff.

Best Practice Statement

Documentation should clearly reflect the care delivered (i.e. include details of documentation of findings from all wound assessments).

Best Practice Statement

Specialist clinicians should monitor overall healing rates, and local healing rates should be shared with all clinicians.

Best Practice Statement

Box 2. Examples of ways to improve practice identified during a QI programme in wound care (Ivins et al, 2018)

1. Develop a wound improvement group that meets monthly, with representation from community and practice nursing and specialist tissue viability services and/or podiatry
2. Review and standardise local wound policies
3. Improve access to study days and training, including payment for wound care study leave for practice nurses
4. Deliver education focussed on areas of weakness/greatest need for learning
5. Provision of ongoing wound management training that incorporates competency assessments
6. Update process/system for assessing and reviewing patients. For example, new patients are assessed by a suitably qualified nurse. Follow-up visits can be undertaken by the healthcare support workers Band 3 or 4 or a Band 5 qualified nurse. On every third patient visit, a qualified member of the team can attend and re-assess the patient according to local policy
7. Keep notes in the patients' home* including a communication and treatment document — every entry should be dated and signed at each visit. Information documented should identify the team leader and who to contact in an emergency
8. Improve access to the tissue viability services or podiatry services for advice and guidance
9. Increase provision of cameras and equipment to measure a wound
10. Develop first management systems

Other learnings

11. Monitor and review healing rates.

**notes should be provided in a digital format where appropriate and possible*

Implementing a QI programme can sometimes be met with resistance by clinical staff due to changes in practice, having to do something differently, or having to do new or additional tasks; however, being involved in a QI programme can be beneficial for all involved (Table 2).

For the clinician, a QI programme offers the opportunity to learn new skills and improve patient outcomes, whether that is wound healing or improved quality of life.

Table 2. Benefits of a QI programme

Benefit to the patient	Benefit to the community clinician	Benefit to the organisation
Improved clinical outcomes • Wound healing • Quality of life • Reduced pain • Reduced exudate levels • Improved social/economic outcomes.	• Understanding local healing rates and a sense of competition and pride in their clinical team • New and increased knowledge and skills • Greater job satisfaction with the knowledge that they can give better care for patients.	• Improved understanding of healing rates • Standardised and evidence-based wound care • Potential to reduce costs • Potential to release clinician time to reinvest in effective patient care.
Benefit to all Greater collaborative working between community and specialist staff with the patient at the centre of care		

Likelihood of non-healing spectrum

The likelihood of wound healing occurring within an expected trajectory is dependent on multiple factors and could be viewed as a spectrum. Table 3 provides clinical scenarios and expectation of wound healing progress assuming that essential and evidence-based standardised care is being delivered.

In some cases, the wound might be slow to heal because there have been other priorities that were more important to the patient — e.g. managing pain, improving mobility or nutritional intake. There are some scenarios where the wound is unlikely to heal despite best standardised evidence-based care. In these cases, clinical staff should talk to the patient and their advocates about the true expectations and reality of healing.

If a wound is unlikely to heal, it does not mean that standard wound care should cease. Ensuring symptom management and addressing patient quality of life issues are important to achieving wound healing.

Before and during care, review what care has been delivered, how the non-healing factors have been managed previously, and whether standard care has been delivered consistently.

Best Practice Statement

Table 3. Examples of clinical scenarios that demonstrate how probability of healing, when standardised evidence-based care is delivered, depends on wound and patient factors

Expected to heal in normal time frame	Expected to be slow to heal	Expected to be non-healing
A person with a type 3 skin tear/total flap loss sustained when leg was caught on a shopping trolley. He is 70 years old, well nourished, mobile, BMI of 24 kg/m^2, ABPI of 1.1, no comorbidities.	*A person with a type 3 skin tear/total flap loss sustained when leg was caught on a shopping trolley. He is over 65 years, poorly nourished, non-mobile, has diabetes, ABPI of 0.7, BMI of 28 kg/m^2.*	*A person with a type 3 skin tear/total flap loss sustained when leg was caught on bed frame. The person is in their 80s, poorly nourished, non-mobile, has diabetes, bowel cancer and existing non-healing pressure ulcers.*
A woman in her 30s with a surgical dehisced wound following a caesarean. She has a BMI of 26 kg/m^2.	*A man in his 60s with a surgical dehisced wound following spinal surgery. He is non-mobile, has type 1 diabetes and has a history of not tolerating wound care well.*	*A woman over the age of 80 with a surgical dehisced wound following a CABG. She has type 2 diabetes, obesity and sepsis.*
A woman in her late 20s who developed a category 2 pressure ulcer during childbirth following an epidural.	*A woman in her 70s who developed a category 4 pressure ulcer on her left hip when she fell whilst having a CVA, she lay on the floor in her bathroom for 16 hours before being discovered by her warden. She has weakness on the right side of her body so prefers to lie on her left, her nutritional intake is poor, and she has developed incontinence.*	*A woman in her 70s who developed a category 4 pressure ulcer over her left heel when she fell and broke her hip. She is malnourished, has pneumonia and is not fit for surgery. She has documented arterial disease and the left leg ABPI is 0.4.*
For these individuals, the care for these patients is usually under the guidance of a community nurse. **Standard wound management and dressings as first-line management and review if progress is not expected.** **If the wound fails to heal in a normal time frame then escalate treatment as described in the columns on the right (i.e. may benefit from active therapy and/or further review).**	**For these individuals, the care for these patients is usually under the guidance of a team leader.** **May benefit from active therapy and review from a senior colleague or a clinican with additional knowledge, skills or experience in wound management.**	**For these individuals, symptom management is likely to be the initial goal. The care for these patients is usually under the guidance or in partnership with a wound care clinician.** **May benefit from active therapy and may require referral to a specialist following review from a senior colleague or a clinican with additional knowledge, skills or experience in wound management.**

Identifying people with wounds at risk of non-healing

All patients with a wound should be reviewed by a registered healthcare practitioner who has the appropriate competence and capability every 2–4 weeks, depending on the wound aetiology and patient status.

Best Practice Statement

If you are a cognitive, capable patient or have someone to speak up for you (advocate) and have not noticed improvement in your wound in 2–4 weeks, you should ask why and alert your clinician. Be encouraged to challenge the caregiver and seek specialist review.

Patient expectation

Changes in wound size should not be the sole measure of wound improvement and healing. Alongside clinical observation of the composition of the wound bed and periwound skin, patient comorbidities and risk factors of non-healing, talking, and listening to the patient can provide help to gauge wound progression and implement appropriate actions.

Best Practice Statement

The clinician should ask you if you have noticed any progress or deterioration in your wound and in your general health and wellbeing.

Patient expectation

There are many opportunities for the clinician to identify that the wound is non-healing (i.e. during assessment, review, reassessment and any interaction with the patient and their advocates). Practitioners should consider what each finding and piece of information means, what implications it may have for management, and how the care plan should address issues that require intervention (Box 3). Documentation should enable quick review of previous metrics to allow detection/assessment of deterioration or progress to aid continuity.

Box 3. Questions practitioners should ask themselves during holistic wound assessment and review

Being a non-healing wound detective

- What have I found?
- What does it mean?
- What should I be doing about it?
- What am I looking for?
- Do I need to escalate to more active treatment?
- Do I need to refer?
- When should I next review?
- What feedback/advice should I give the patient?

Effective and thorough reassessment is critical for patients with wounds that fail to achieve sufficient healing after 4 weeks of standard care, considering underlying pathology (Frykberg and Banks, 2015). If improved clinical and health economic outcomes are to be realised, then early identification and early intervention should be at the forefront for patients with non-healing wounds. However, potential changes in treatment following reassessment, such as the introduction of advanced therapies that could help kick start healing, are often not considered (Guest et al, 2018). If started sooner, it could be argued that these changes in treatment may work better.

Measuring wound healing

Changes in wound size are often used to monitor wound healing progress. The percentage reduction in wound area after 4 weeks of optimal treatment may provide useful information on the likelihood of healing. A venous leg ulcer or pressure ulcer that has not reduced in area by 40% (or by 50% for a diabetic foot ulcer) after 4 weeks of optimal treatment is unlikely to heal (Kantor and Margolis, 2000; Phillips et al, 2000; Flanagan, 2003; Sheehan et al, 2003; Coerper et al, 2009; Günes, 2009; Snyder et al, 2010; Gwilym et al, 2022).

Consequently, if a venous leg ulcer or pressure ulcer has not reduced in area by at least 40% or a diabetic foot ulcer by at least 50%, over the previous 4 weeks, it is important to determine the reasons for non-healing and to ensure that management and tolerance are optimised. If necessary, the patient should be referred for confirmation of diagnosis of wound cause.

While there are a wide range of wound measurement techniques available (Khoo and Jansen, 2016), the method used should at least include measurement of the maximum length, width, and depth of the wound. However, it is very difficult to consistently measure a wound by size or area, especially in soft tissue. Therefore, at the bedside and in every day clinical practice, wound size should not be the sole measure of wound improvement and healing. Alongside clinical observation of the composition of the wound bed and periwound skin, talking and listening to the patient can provide help to gauge wound progression (Box 4).

Box 4. Questions to ask the patient and/or advocate — do you think your wound has improved?

- How has the wound pain been?
- Have you noticed any new, different or increased smell(s)?
- Have you noticed any changes in sensation (e.g. heat and/or itching)?
- Have you noticed any changes in your skin, including colour?
- Have the dressings stayed on?
- Have you been able to socialise?
- Have you been able to go to work? Is the dressing comfortable?
- Have you been able to get dressed?
- Have you been able to go outside?
- How have you slept?
- What is the worst thing about the wound for you?
- How can we help to address this?

Listening to the patient with a non-healing wound

Listening to the patient and their advocates

Practitioners should use the most effective type and style of communication for the patient (NICE, 2012). Communication type and style should consider any visual, hearing, cognitive, language and cultural needs.

Listen to the patient when they talk about their history, previous experiences of wound care and what factors might be leading to non-healing. Ask the patient what is most important to them from your first encounter on 'day 1' to begin to build trust and engage and activate the patient in their care. The clinical expectations should be realistic from the start focusing on what matters most to the patient, what is achievable, and what are realistic goals. It is important to prepare the patient for potentially more difficult conversations later about additional ways they can support healing (e.g. weight loss, smoking cessation, boosting nutritional/fluid intake).

Good verbal communication can help to identify the factors that require intervention and indicate the objectives for management to the patient. Good verbal communication:

- Involves listening, as well as talking
- Uses clear language and content at a level of detail appropriate for the listener
- Uses positive collaborative language to avoid creating stress and a negative spiral risking disengagement with care
- Uses open-ended questions to encourage discussion
- Uses repetition
- Checks understanding and summarises (Wounds UK, 2018).

Consider the use of patient information leaflets and allow for follow-up questions. Not all information that is given to patients is taken on board during the first discussions. The use of open-ended questions during assessment will help to determine patient priorities, need for information and preferred level of, and capacity for, patient activation (Box 5).

Box 5. Examples of open-ended questions to use during wound assessment (adapted from Moore et al, 2016)

- What worries you about your wound?
- How does your wound affect daily living and your personal relationships?
- What issue or problem do you want to address first?
- What is a priority for you and your wound in the next couple of weeks/longer-term?
- How do you feel about doing some of the care for your wound yourself?
- What do you want to know about doing some of the care yourself?
- Who else can be involved to help you manage caring for your wound?

The patient's level of engagement and involvement in their care can vary on any given day depending on what else is going on in their life. The goals of treatment need to be reviewed and updated periodically in conjunction with the patient, so that indicators for delayed wound healing are established and the patient is aware of what to do if they see these signs.

Documenting patient-reported wound symptoms

Patients with non-healing wounds can report a wide range of symptoms. Some symptoms may be easily expressed by the patient, but the practitioner may need to question the patient to reveal others. Symptoms should be recorded verbatim using the patient's words, e.g. "My slippers keep getting wet"; "I can't walk because my leg is too painful".

Symptoms can range from pain, odour, leakage, itching, bleeding and disturbed sleep. Patients also report difficulties with maintaining activities of daily living and/

Patients should be invited to give feedback on their treatment.

Best Practice Statement

The clinician will ask you to give feedback on how comfortable/easy/difficult you find your treatment.

Patient expectation

or working, finding suitable clothing and footwear and may be reluctant to socialise and/or have symptoms of depression. Documentation should also include actions taken to address each specific concern raised.

Assessment of pain should include where and when pain occurs and pain levels and triggers and relievers of pain. Any changes in recent days or weeks should be explored, as well as the effectiveness of the current analgesic regimen and pain-relieving measures. The level of pain can be assessed using verbal scales (e.g. using a list of phrases ranging from 'no pain' to 'severe pain') or numerical scales (e.g. on a scale of 0 to 10, where 0 = no pain and 10 = the worst pain imaginable; Solowiej and Upton, 2010).

The method used to assess pain level should be documented and then the same tool should be used consistently for reassessment. A recent change in the nature and/or increase in level of pain may indicate wound infection or ischaemic (vascular) changes. Other symptoms should similarly be explored to determine severity, timing, triggers/relievers and changes over time (Wounds UK, 2018).

Documentation should also include specific actions/interventions taken to reduce pain. If there is increased pain along with additional factors, such as local or systemic infection, this should be escalated to a senior nurse/GP, or an emergency department depending on severity and the patient's wishes.

Factors affecting non-healing wounds and the uptake of shared care

It is important to consider the following factors to set appropriate objectives for the treatment of a patient with a wound and to devise and deliver an effective plan of care:

- Classifying the wound according to aetiology
- Identifying any factors that may hinder healing
- Determining the need for management of conditions other than the wound(s), e.g. diabetes
- Establishing the patient's risk for the development of further wounds
- Ascertaining the impact of the wound(s) on the patient, their socioeconomic situation, and their lifestyle
- Establishing the patient's chosen goal of care.

Impediments to healing and risk factors for further wounds

Identifying any potential hindrances to healing and risk factors for further wound development will aid understanding of the patient's potential healing capacity and indicate interventions to aid healing or prevent further wounds. It will also allow a more realistic discussion of outcomes with patients. Local policy may require more formal risk assessment, e.g. pressure ulcer risk assessment. If a patient does not tolerate treatment, the practitioner should explore the reasons with the patient and document the findings in their notes.

Supported shared care for non-healing wounds

As part of the assessment and goal setting, it should also be established what supported shared care the patient is already undertaking/has undertaken previously, and their current willingness and ability to be active in their care (Moore et al, 2021).

If a patient is a suitable candidate to be involved in shared wound care, they should be provided with the information in the appropriate style and/or language (e.g. patient information leaflets or weblinks), as this can help to reinforce or provide a reminder about verbal communication and highlight additional sources available for further reading. A patient or carer undertaking wound care and dressing changes will need sufficient visual acuity, physical flexibility and dexterity.

Information should include the following:

- A personalised care plan with supporting resources and precise detail that can be used to reinforce instructions and guidance
- Resources that are suitable/accessible to cater for all — e.g. those who are blind, deaf or whose first language is not English
- Clear guidance for 'red flags' that require immediate attention and how to get help when needed
- Importance of ongoing regular re-assessment by a clinican/practitioner
- Signs of improvement
- Who to call/contact.

The patient should be offered the opportunity to provide pertinent, timely and regular feedback on whether they have understood the resources and found them useful, and whether they have made an impact on treatment.

The COVID-19 pandemic accelerated the uptake of supported shared care, but it is important to note that patients who are the most enthusiastic may be the least appropriate and not all patients with a non-healing wound are suitable for shared wound care (Moore and Coggins, 2021).

There may be patient, wound or care setting reasons that make it necessary for more regular clinical reviews and interaction with healthcare professionals.

Holistic wound assessment should identify whether any of the wide range of factors that may hinder healing or increase risk of further wound development are present.

Best Practice Statement

Every patient should have a patient agreed measurable outcome of care with an established review date. Realistic goals can be reviewed and updated or changed. Every 2 weeks consider any changes for patient risk factors including medication, physical/medical conditions and psychological/emotional wellbeing and environment.

Best Practice Statement

Your assessment will involve you finding out what type of wound you have, the likely cause, whether you have any other conditions or issues that might delay healing of your wound(s) or increase your risk for another wound, the effect of the wound on your day-to-day life and how involved you would like to be in the care of your wound(s).

Patient expectation

Active treatment

Active treatment should also be considered for symptom management, such as patients at the end of life.

Best Practice Statement

Locally adapted clinical decision tools, e.g. validated pathways, are enablers of consistent care.

Best Practice Statement

If your wound is healing slower than expected, your care plan should be reviewed, and you may be offered a change of treatment.

Patient expectation

Escalation of care

Escalation of care can mean stepping up treatment or referring to a specialist clinician. Before escalation, all staff should be equipped with pointers or red flags that help them identify when they need to escalate and what they should do before escalating (see Box 6 for when to Stop and Think before escalating).

Active treatment

Active treatment, as opposed to passive therapy, assumes that the differential diagnosis is correct and standard care (including cleansing and debriding) has been thoroughly undertaken. Local formularies often have some products that are available under specialist prescription only. Box 7 includes some examples of active treatments.

There is growing evidence that in some cases better outcomes can be achieved by using these active treatments earlier in the patient's care plan, rather than waiting for the wound to potentially deteriorate and become more difficult to treat and heal (Dowsett et al, 2017; Edmonds et al, 2018; Hampton et al, 2022). However, there are misconceptions that hamper the use of active treatments (see Box 8).

It is also important to recognise that active treatments are not always easy to access in the community where most of these patients are cared for and, as a result of this, the patient may need to be referred to gain access.

Box 6. Stop and Think before escalating

Short-term

- Talk to your colleague/peer/link nurse/team leader/caseload holder
- Reflect and evaluate your care so far — review the essential standards of wound care, e.g. cleansing and debriding, offloading, compression, infection and bioburden management
- Review the assessment, was a full holistic assessment undertaken — has anything changed locally with the wound or systemically with the patient?
- Think back to conversations with the patient and their advocates, have you listened to and managed their concerns and expectations?
- Use a structured tool to review what required information is needed for referral, e.g. your referral form or SBAR (https://woundcareadvisor.com/wp-content/uploads/2016/07/SBAR.pdf).

Long-term

- Review the evidence
- Review your educational resources.

Box 7. Examples of active treatments

- MMP-modulator dressing
- Negative pressure wound therapy (NPWT, traditional and single-use)
- Topical oxygen therapy
- Electrical therapy
- Larval therapy
- Ultrasound therapy
- Antimicrobials
- Systemic treatments
- Topical steroids
- Enzymatic debridement.

Box 8. Active treatment: misconceptions busted

- **Active treatment cannot be used for symptom management:** If it is not possible to modify non-healing factors, active treatment can be used for palliative symptom management, such as for patients receiving end of life care
- **Active treatment is expensive:** The truth is that active treatment can have an initial higher cost but, if used correctly, may reduce healing time with potential cost savings (Edmonds et al, 2018)
- **Active treatments are difficult to use:** Sometimes active treatments can require extra training or competency assessment; however, free education can be found online or from talking to peers. Some active treatments are easy to use, and patients can often manage them as part of a shared care plan
- **Active treatments are only accessible to specialists:** Depending on local protocol, active treatments may be accessible after certain criteria are met, such as 4 weeks of standard care or after specialist assessment.

These misconceptions and other operational barriers can make it difficult for some staff to access or initiate active treatment, e.g. staff shortages, over-cautious referrals, lack of confidence, ongoing impact of the COVID-19 pandemic.

Finding solutions to these barriers can empower clinicians and achieve better clinical and economic benefits. The following strategies can be considered to improve early initiation of active treatments:

- Have pathways and strategies available that guide the use of active treatment and are evidence-based
- Make active treatment available at point of contact
- Reframe active treatment to make it more accessible to more clinicians
- Provide access to free videos available on online video libraries
- Develop a culture of collaboration and communication among colleagues
- Acquire good feedback on healing rates.

Escalation to a specialist

Wounds that appear to be moving away from a normal healing trajectory despite receiving optimal care including active treatment should be, as part of best practice, referred to a healthcare practitioner with specialist skills to allow for the best clinical outcomes for the patient (Shamsian, 2021).

Figure 1 provides an overview of improving treatment of non-healing wounds in the community through collaborative working.

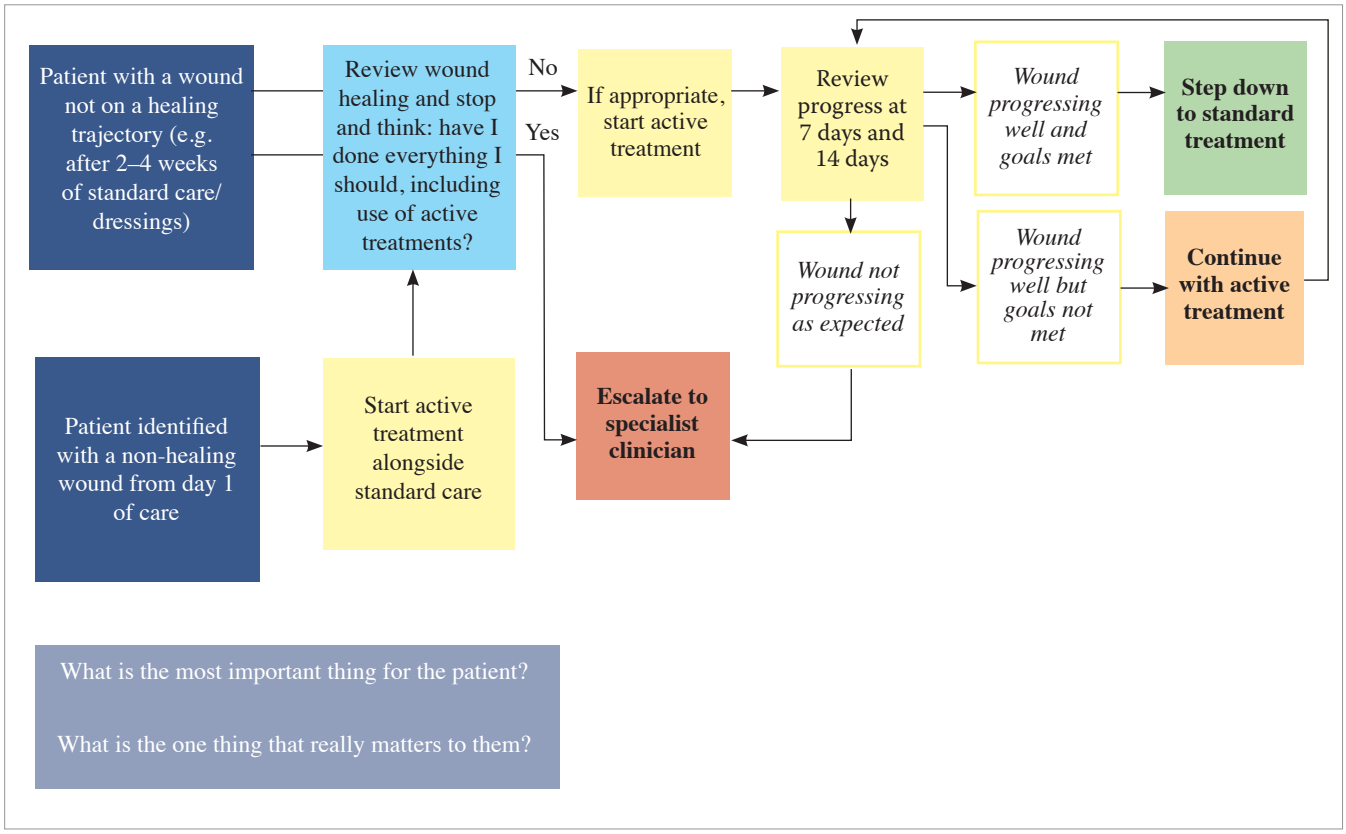


Figure 1. Overview of improving treatment of non-healing wounds in the community

Escalating treatment with single-use NPWT

There is a growing body of evidence that suggests the use of single-use negative pressure wound therapy (sNPWT) can potentially help improve healing rates of wounds that are deemed as not healing and, therefore, reduce associated nursing resources and costs (Hampton et al, 2022).

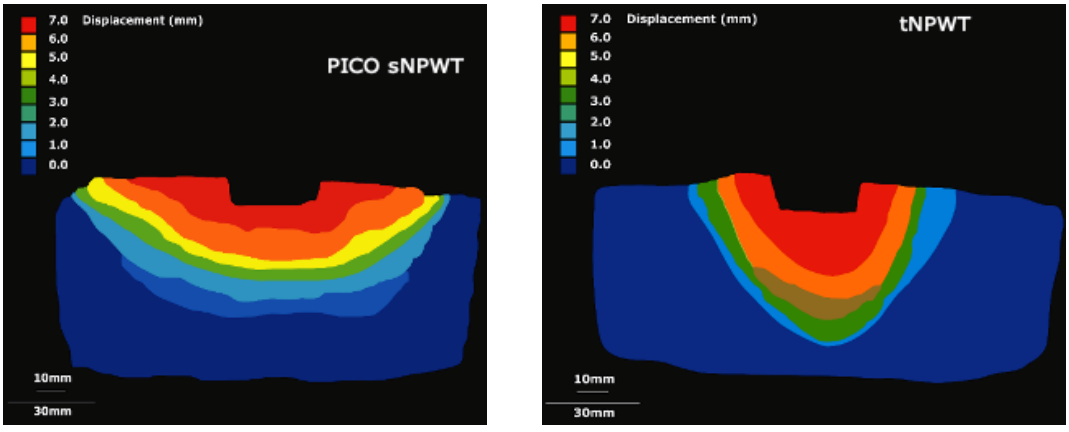
The mode of action for sNPWT on wounds is reported as an increase in blood flow to the wound, reduction of local tissue oedema, and removal of fluid and bacteria from the wound bed (Schwartz et al, 2015). It has the potential, therefore, to actively treat the wound rather than simply manage the symptoms (Schwartz et al, 2015).

NPWT involves the controlled application of sub-atmospheric pressure to a wound, using a sealed wound dressing connected to a vacuum pump. sNPWT systems are portable, lightweight, and more discreet devices than traditional NPWT (tNPWT) devices. sNPWT is battery operated and does not require access to the mains electricity supply, unlike tNPWT; this may be a growing economic consideration for patients. sNPWT (e.g. PICO™ sNPWT consistently delivers NPWT across the whole surface of the dressing to the wound and extended area [the wound and extended area is sometimes referred to as the zone of therapy]; Figure 2) compared to tNPWT which delivers localised therapy to the wound itself (Watkins et al, 2019).

Despite the reported health economic and clinical benefits, the view that sNPWT is a costly treatment remains one of the key barriers to use. Reported improved healing rates and total cost to heal and a release in clinician time are starting to change the perception of sNPWT (Dowsett et al, 2017; McCluskey et al, 2020; Hughes et al, 2021).

An evaluation of the impact of PICO™ sNPWT using a defined pathway showed that implementing the PICO™ pathway resulted in statistically significant improvements in the healing trajectory of stalled wounds, both during and after use (over a 26 week period; Dowsett et al, 2017). It resulted in estimated cost savings of 33.1% versus predicted standard care. Nursing costs fell 49.7% in the pathway versus predicted standard care. This

Computed tomography imaging of *ex vivo* porcine tissue



24 hour post-application

PICO™ sNPWT delivers compressive forces **across and beyond the wound spanning the entire area covered by the dressing** (within 60mm of wound centre line)

24 hour post-application

tNPWT delivers localised therapy **to the wound itself** (within 35mm of wound centre line)

*a benchtop model using metallic markers inserted into porcine tissue at 10mm intervals (total 150mm). Tissue displacement was analysed at the wound bed, edge of dressing and outside the dressing using computed tomography

Figure 2. Zone of therapy with PICO™ *sNPWT and tNPWT (biomechanics*; Watkins et al, 2019)*

equated to the release of 897 hours of nursing time versus predicted standard care (Dowsett et al, 2017).

Tips for practice with sNPWT

Patient and wound selection for sNPWT:

- Low to moderate exudate
- Non-healing wound — <40% wound reduction over 4 weeks
- None of the standard contraindications for negative pressure apply*
- The wound size will fit under the sNPWT dressing.

**if there is significant infection this must be managed alongside the treatment; if the wound has malignant cells, do not use unless for palliation or diagnostic results have been determined*

Preparation:

- If wound is >2cm deep, then consider using a NPWT filler
- Remember to talk to the patient about how long the treatment duration is likely to be and how often the sNPWT dressing will need changing. This conversation should be had before treatment is commenced
- Do not be intimidated by sNPWT, think about sNPWT as a dressing with an attachment
- Watch application videos for practical advice on applying the dressing (e.g. make sure there are no creases in the dressing)
- Osteomyelitis treatment should commence before starting sNPWT.

Use:

- It can be used under compression (Wang et al, 2017; Kirsner et al, 2019)
- Even if the pump is switched off, the dressing will still absorb some exudate
- Check safety. This includes assessing whether the patient can tolerate and manage the device safely. Stop and think whether sNPWT is safe to use if the patient has dementia, is at risk of falls, has mental health challenges such as self-harm to themselves or others. Consider covering the tubes, distracting the patient during application and covering access to the batteries to prevent potential safety concerns of harm points. Disposing of the device and batteries should always follow local protocol. The PICO™ 7 pump must be positioned at least 10cm (4 inches) away from other medical devices that could be affected by magnetic interference (Smith+Nephew, 2022)
- It can be used in the shower, just disconnect the pump first.

Figure 3 is a pathway for the use of sNPWT in the community adapted from Dowsett et al (2017) and has been adapted for use in other evaluations (Hampton et al, 2022). It is currently undergoing real world validation, and further modifications may be made. This pathway can be used by clinicians for patients with non-healing wounds when the decision has been made to start active treatment and sNPWT is considered an appropriate choice of treatment.

The decision to use Smith+Nephew products should be made by a healthcare professional, in line with applicable local protocols. Smith+Nephew products should always be used for the indications set out in the applicable Instructions for Use (IFU).

For detailed product information, including indications for use, contraindications, precautions and warnings, please consult the product's applicable IFU prior to use.

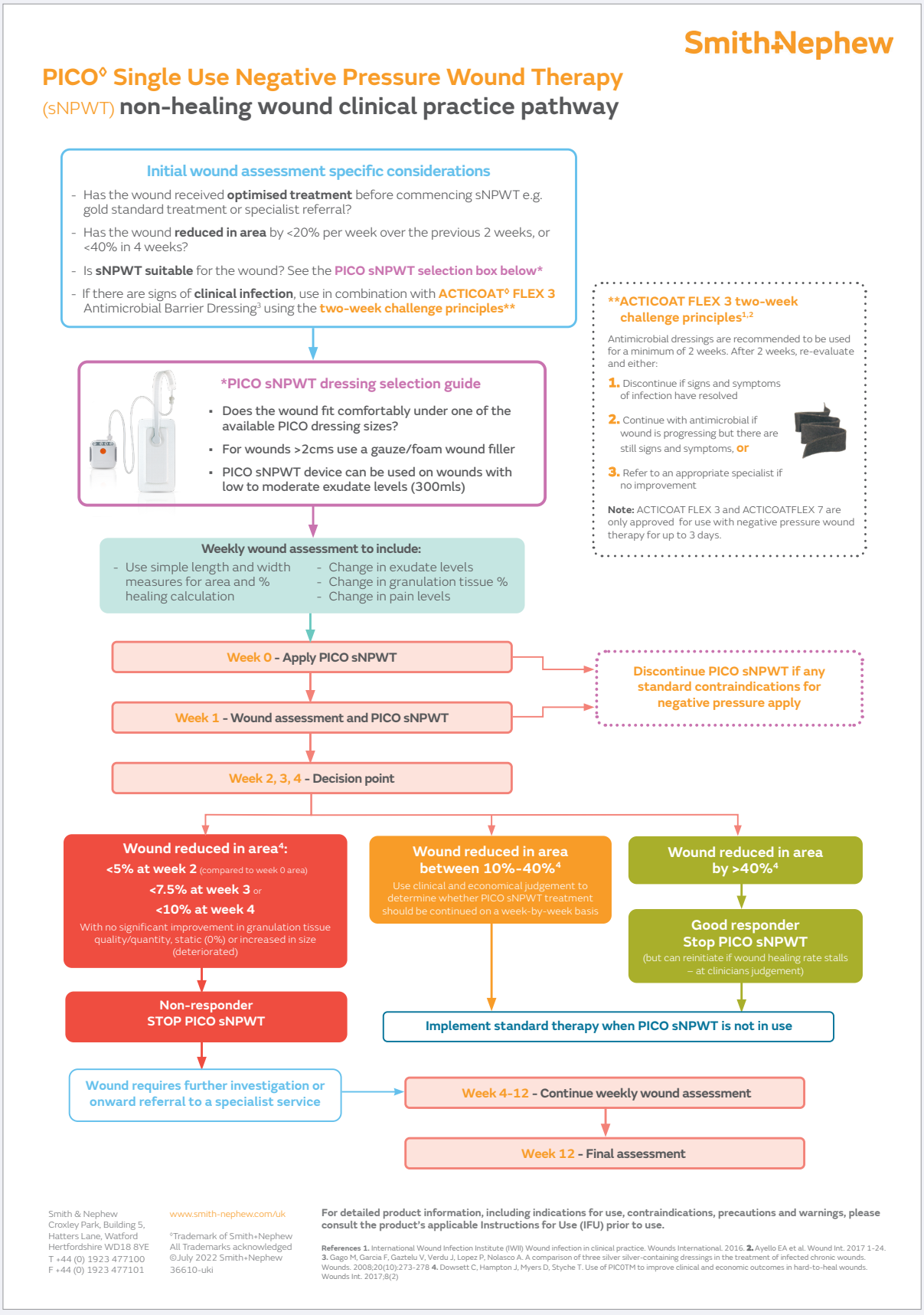
See if sNPWT is available in your area and how can you access it. What patients on your case load do you think would benefit from sNPWT?

ACTION POINT

Scan the QR code to see Smith+Nephew Education Site.

Scan the QR code to see PICO™ sNPWT application and removal videos for open wounds.

Figure 3. Non-healing wound pathway with PICO™ sNPWT



REFERENCES

Armstrong DG, Wrobel J, Robbins JM (2007) Guest Editorial: are diabetes-related wounds and amputations worse than cancer? *Int Wound J* 4(4): 286–7

Blackburn J, Ousey K, Stephenson J (2022) Reviewing the use the aetiology-specific T.I.M.E. Clinical Decision Support Tools to promote consistent holistic wound management and eliminate variation in practice. *Wounds International* 13(1): 48–55

Coerper S, Beckert S, Küper MA et al (2009) Fifty percent area reduction after 4 weeks of treatment is a reliable indicator for healing--analysis of a single-center cohort of 704 diabetic patients. *J Diabetes Complications* 23(1): 49–53

Coleman S, Nelson EA, Vowden P et al (2017) Development of a generic wound care assessment minimum data set. *J Tissue Viability* 26(4): 226–40

Dowsett C, Hampton J, Myers D, Styche T (2017) Use of PICO™ to improve clinical and economic outcomes in hard-to-heal wounds. *Wounds International* 8(2): 52–9

European Wound Management Association (2008) Position Document: Hard-to-heal wounds: a holistic approach. London: MEP Ltd

Flanagan M (2003) Improving accurage of wound measurement in clinical practice. *Ostomy Wound Manage* 49(10): 28–40

Frykberg RG, Banks J (2015) Challenges in the Treatment of Chronic Wounds. *Adv Wound Care (New Rochelle)* 4(9): 560–82

Gethin G, Touriany E, van Netten JJ et al (2022) The impact of patient health and lifestyle factors on wound healing, Part 1: Stress, sleep, smoking, alcohol, common medications and illicit drug use. *J Wound Management* 23(1 Suppl 1, pt 1): S1–41

Gethin G, van Netten JJ, Probst S, Touri-any E, Sobotka L (2022) The impact of patient health and lifestyle factors on wound healing, Part 2: Physical activity and nutrition. *J Wound Management* 23(1 Suppl 1, pt 2): S1–24

Green J, Jester R (2009) Health-related quality of life and chronic venous leg ulceration: part 1. *Br J Community Nurs* 14(12): S12, S14, S16–7

Guest JF, Ayoub N, McIlwraith T et al (2015) Health economic burden that wounds impose on the National Health Service in the UK. *BMJ Open* 5(12): e009283

Guest JF, Fuller GW, Vowden P (2020) Cohort study evaluating the burden of wounds to the UK's National Health Service in 2017/2018: update from 2012/2013. *BMJ Open* 10(12): e045253

Günes UY (2009) A prospective study evaluation pressure ulcer stage for healing to assess stage II, stage III, and stage IV pressure ulcers. *Ostomy Wound Manage* 55(5): 48–52

Gwilym BL, Mazumdar E, Naik G et al (2022) Initial Reduction in Ulcer Size As a Prognostic Indicator for Complete Wound Healing: A Systematic Review of Diabetic Foot and Venous Leg Ulcers. *Adv Wound Care (New Rochelle)* Apr 26. doi: 10.1089/wound.2021.0203

Hampton J, Meagher H, Sharpe A et al (2022) Multi-centre, international practice-based evidence using PICOTM single-use negative pressure wound therapy: challenging current behaviours in wound care practice. *Wounds International* 13(2): 46–53

Hughes J, Costello M, Belshaw M et al (2021) The burden of dehisced wounds in the community: Using early results from a multi-centre service evaluation to propose a standard of care to improve patient outcomes and safeguard woundcare budgets. *Br J Health Care Manage* 27(1): 16–25

Ivins N, Clark M, Fallon M (2018) An initiative to improve wound management within community services across one Clinical Commissioning Group in England. *Wounds UK* 14(5): 45–55

Kantor J, Margolis DJ (2000) A multicentre study of percentage change in venous leg ulcer area as a prognostic index of healing at 24 weeks. *Br J Dermatol* 142(5): 960–4

Kirsner R, Dove C, Reyzelman A et al (2019) A Prospective, Randomised, Controlled Clinical Trial on the Efficacy of a single-use Negative Pressure Wound Therapy System, compared to Traditional Negative Pressure Wound Therapy in the Treatment of Chronic Ulcers of the Lower Extremities. *Wound Repair Regen* 27(5): 519–29

Leaper DJ, Durani P (2008) Topical antimicrobial therapy of chronic wounds healing by secondary intention using iodine products. *Intern Wound J* 5(2): 361–8

Leaper DJ, Schultz G, Carville K et al (2012) Extending the TIME concept: what have we learned in the past 10 years? *Int Wound J* 9 Suppl 2(Suppl 2): 1-19

McCluskey P, Brennan K, Mullan J et al (2020) Impact of a single-use negative pressure wound therapy system on healing. *J Community Nurs* 34(1): 36–43

Moore Z, Bell T, Carville K et al (2016) *International Best Practice Statement: Optimising patient involvement in wound management*. London, Wounds International. Available at: www.woundsinternational.com

Moore Z, Coggins T (2021) Clinician attitudes to shared care and perceptions on the current extent of patient engagement in wound care: Results of a clinician survey. *Wounds International* 12(1): 48–53

Moore Z, Kapp S, Loney A et al (2021) A tool to promote patient and informal carer involvement for shared wound care. *Wounds International* 12(3): 86–92

National Institute for Health and Care Excellence (2012) *Patient experience in adult NHS services: improving the experience of care for people using adult NHS services*. Available at: www.nice.org.uk/guidance/cg138

National Wound Care Strategy Programme: (2021) *Wound Management Digital Systems - Functional Overview*. Available at: www.nationalwoundcarestrategy.net/wp-content/uploads/2021/08/Wound-Management-Digital-Systems-18Aug21.pdf

Olsson M, Järbrink K, Divakar U et al (2019) The humanistic and economic burden of chronic wounds: A systematic review. *Wound Repair Regen* 27(1): 114–25

Phillips TJ, Machado F, Trout R et al (2000) Prognostic indicators in venous ulcers. *J Am Acad Dermatol* 43(4): 627–30

Schultz GS, Sibbald RG, Falanga V et al (2003) Wound bed preparation: a systematic approach to wound management. *Wound Repair Regen* 11 Suppl 1: S1-28

Schwartz JA, Goss SG, Facchin F et al (2015) Single-use negative pressure wound therapy for the treatment of chronic lower leg wounds. *J Wound Care* 24 Suppl 2: S4–S9

Shamsian N (2021) Wound bed preparation: An overview. *Br J Community Nurs* 26(Sup9): S6–S11

Sheehan P, Jones P, Caselli A et al (2003) Percent change in wound area of diabetic foot ulcers over a 4-week period is a robust predictor of complete healing in a 12-week prospective trial. *Diabetes Care* 26(6): 1879–82

Smith+Nephew (2022) PICO: Instructions for use

Snyder RJ, Cardinal M, Dauphinée DM, Stavosky J (2010) A post-hoc analysis of reduction in diabetic foot ulcer size at 4 weeks as a predictor of healing by 12 weeks. *Ostomy Wound Manage* 56(3): 44–50

Solowiej K, Upton D (2010) The assessment and management of pain and stress in wound care. *Br J Comm Nurs* (sup 4): S26–33

Vowden P (2011) *Hard-to-heal wounds Made Easy*. London: Wounds International 2(4). Available at: www.woundsinternational.com

Vowden P, Vowden K (2016) The economic impact of hard-to-heal wounds promoting practice change to address passivity in wound management. *Wounds International* 7(2): 10–5

Wang E, Tang R, Walsh N et al (2017) Topical negative pressure therapy and compression in the management of venous leg ulcers: a pilot study. *Wound Practice and Research* 25(1): 36–40

Watkins H, Brownhill R, Huddleston E (2019) Unlocking the mode of action: why might a no-canister, ultra-portable, single use negative pressure wound therapy (sNPWT) device be clinically superior to traditional negative pressure wound therapy (tNPWT)? Poster presented at the Wounds UK Annual Conference. Harrogate, UK

Werdin F, Tennenhaus M, Schaller HE et al (2009) Evidence-based Management Strategies for Treatment of Chronic Wounds. *Eplasty* 9: e19

Wounds UK (2017) *Meeting CQUIN targets: improving the assessment of wounds. How to Guide*. London: Wounds UK. Available at: www.wounds-uk.com

Wounds UK (2018) *Best Practice Statement Improving holistic assessment of chronic wounds*. Wounds UK, London. Available at: www.wounds-uk.com

Wounds UK