

Paving the way for effective wound care education for the non-specialist — developing five evidence-based wound type specific pathways

Authors:

Terry Swanson, Kimberly Bain, Caroline Dowsett, Jose Ramon March Garcia, Emily Greenstein, David Keast, Long Zhang, Mark Bain, Hester Colboc and Christoffer Hoffmann

The Wound Care Pathway was developed in 2020/21 to provide a practical, evidence-based step-by-step approach towards wound healing (Dowsett et al, 2021). Healthcare providers who use the pathway asked for more detailed guidance for specific wound types. A group of wound care experts, comprised of physicians, nurses and researchers, undertook a process to expand the international consensus on wound healing by developing wound type-specific pathways for diabetic foot ulcers, venous leg ulcers, skin tears, pressure injuries/pressure ulcers and surgical wound dehiscence. The objective was to take complex research evidence and translate it into simple and practical treatment guidance for the non-specialist, for the five most common wound types. The systematic approach to wound care provided in the wound care pathway and in the wound type specific pathways is designed with the goal of achieving a shorter way to wound healing by helping healthcare providers focus on healing wounds not just dressing wounds.

Terry Swanson is Nurse Practitioner Wound Management, Warrnambool, Vic. Australia; **Kimberly Bain** is Senior Partner - Consensus Building, BainGroup Consulting, Canada; **Caroline Dowsett** is Nurse Specialist Tissue Viability, East London NHS Foundation Trust London, UK; **Jose Ramon March Garcia** is Vascular Surgeon Getafe University Hospital (Madrid), Spain; **Emily Greenstein** is Certified Nurse Practitioner at Sanford Health in Fargo, USA; **David Keast** is Associate Scientist, Lawson Health Research Institute, Canada; **Long Zhang** is Vascular Surgeon, Wound Healing Center, Peking University Third Hospital, China; **Mark Bain** is Senior Partner, Data Strategy, BainGroup Consulting, Canada; **Hester Colboc** is Dermatologist & Gerontologist, Rothschild Hospital, Paris, France; **Christoffer Hoffmann** is Senior Medical Specialist, Coloplast A/S, Denmark

While chronic wounds have devastating consequences for patients and contribute significant costs to health care systems and society, health care professionals (HCPs) find assessing, treating and healing chronic wounds a challenge (Posnett and Franks, 2008; Patel et al, 2008; Frykberg and Banks, 2015; Guest et al, 2015, 2020; Olsson et al, 2019; Martinengo et al, 2019; Keast et al, 2020). In their 2019 study, Keilo et al concluded that healthcare providers who manage a variety of wounds require standardised treatment and referral guidance to effectively treat wounds within a multidisciplinary environment (Keilo et al, 2019). HCPs report the difficulties they experience are due to the prevalence of ritualistic practice, lack of overall wound-care knowledge, the fragmented linkages between evidence and practice and in the lack of structured wound-care education (Welsh, 2018; Keilo et al, 2019; Tayyib and Ramaiah, 2021).

In 2020/21, an international consensus project was undertaken to create a systematic approach to

healing chronic wounds. The result was the Wound Care Pathway developed by clinicians for clinicians (Dowsett et al, 2021; [Figure 1](#)). Incorporating feedback and input from over 2,200 healthcare professionals across more than 60 countries, the Wound Care Pathway offers a unique, step-by-step evidence-based approach to managing chronic wounds.

During conference symposiums and industry meetings, health care providers agreed that the Pathway will help lead to a shorter way to wound healing but asked for further guidance on specific wound types. A group of wound care experts, comprised of physicians, nurses and researchers, undertook a process to expand the international consensus on chronic wound care to focus on specific wound types. The objective was to utilise the mental model offered in the Wound Care Pathway to create a series of wound type specific pathways. Similar to the Wound Care Pathway, the wound type specific pathways took the latest complex research evidence and translated it into simple and practical treatment

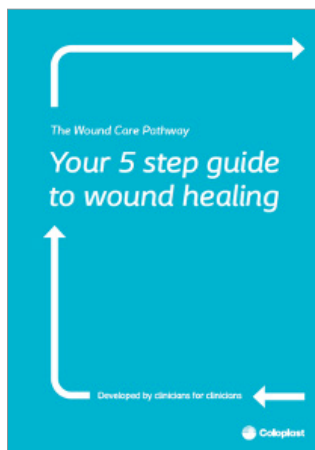


Figure 1. The Wound Care Pathway.

Download The Wound Care Pathway using the QR code



guidance for the non-specialist focused on wound healing, for the five most common wound types.

The most prevalent forms of wounds are diabetic foot ulcers, venous leg ulcers, pressure injuries/pressure ulcers, surgical wound dehiscence and skin tears (Frykberg and Banks, 2015; Guest et al, 2018; LeBlanc et al, 2018; Guest et al, 2020).

Diabetic foot ulcers (DFUs) are complex, chronic wounds (an example is shown in [Figure 2](#)), that have a major long-term impact on morbidity, mortality and quality of life. People with diabetes have a lifetime risk of foot ulceration of 19 to 34% with a yearly incidence rate of 2% (Bus et al, 2023). According to the International Diabetes Federation, persons with diabetes are up to 40 times more likely to require lower-extremity amputation compared to the general population. Approximately 85% of amputations are preceded by the development of a neuropathic foot ulcer (Wounds Canada, 2021). Unlike other chronic wounds, the development and progression of DFUs are often complicated by a wide range of changes related to the effects of diabetes mellitus, such as neuropathy and vascular disease (Wounds International, 2013).

The Scottish Intercollegiate Guidelines Network (SIGN, 2010) guide on the management of chronic venous leg ulcers (VLUs) describes VLUs as arising from venous valve incompetence and calf pump insufficiency, which leads to venous stasis and hypertension resulting in microcirculatory changes and localised tissue ischaemia. Chronic venous insufficiency leads to approximately 80% of lower leg ulcers (Evans et al, 2019). VLUs are common ([Figure 3](#)), often recurrent, painful and negatively affect quality of life. Unfortunately, VLUs have a long healing trajectory, with approximately 30% unhealed at 24 weeks (Evans et al, 2019).

The National Pressure Injury Advisory Panel (NPAIP, 2019) and the UK National Health Service (NHS, 2018) define pressure injuries/pressure ulcers (PI/PU) ([Figure 4](#)) as localised damage to the skin and underlying soft tissue usually over a bony prominence or related to a medical or other device. The injury can present as intact skin or an open ulcer. The injury usually occurs as a result of sustained pressure, or pressure in combination with shear. The tolerance of soft tissue for pressure and shear may be affected by issues such as moisture, nutrition, comorbidities and condition of the skin. PI/PUs are painful for patients, costly for healthcare systems, are often very hard to heal and are largely preventable (Norton et al, 2017).



Figure 2. Diabetic foot ulcer.



Figure 3. Venous leg ulcer.



Figure 4. Pressure injury.

Surgical wound complications are one of the leading global causes of morbidity following surgery and continue to challenge health care professionals (Sandy-Hodgetts et al, 2020). In the UK, surgical wounds healing by secondary intention are common and account for 26–28% of all surgical wounds that require continued nursing intervention (Guest et al, 2018). Data from large community-based organisations in Canada representing wound patients ($n=24,678$) have demonstrated that 43.9% of the wounds being managed are surgical wounds healing by secondary intention. Patients with these wounds required nursing care and clinical support for 6–69 weeks (World Union of Wound Healing Societies; WUWHS, 2018). Surgical wound Dehiscence (SWD) ([Figure 5](#)) is defined as



Figure 5. Surgical wound dehiscence.



Figure 6. Skin tear.

the rupture or splitting open of a previously closed surgical incision site and may be either superficial or deep, requiring healing by secondary intention (Mangram et al, 1999). SWD can occur at multiple regions, or involve the full length of the incision, may affect some or all tissue layers and may expose organs or implants (WUWHs, 2018).

The International Skin Tear Advisory Panel (ISTAP, 2018) defines a skin tear as a wound caused by shear, friction, and/or blunt force resulting in separation of skin layers. Skin Tears [Figure 6] often occur on patients with dermatoporosis, such as pathological skin aging (Bocheva et al, 2019). A skin tear can be partial-thickness (separation of the epidermis from the dermis) or full-thickness (separation of both the epidermis and dermis from underlying structures). Skin tears can be found on all areas of the body but are most often situated on the extremities. Skin tears are traditionally categorised as acute wounds, yet many reports indicate that skin tears fail to meet the expected wound healing milestones, resulting in the transition to chronic wounds, especially in older people, the very young and critically or chronically ill patients (LeBlanc et al, 2017).

The five Wound Type Specific Pathways provide step-by-step guidance tailored for the non-specialist on how to manage DFUs, VLUs, PI/PU, SWDs and skin tears that is evidence-based and practical and when followed, will help lead to a shorter way to wound healing.

Methodology

This project was built on the ratified consensus created through the Wound Care Pathway development process and the resulting step-by-step critical thinking pathway that improved the way we think about wound care, wound healing and the patients' involvement (Dowsett, 2019). The intent was to expand on the Wound Care Pathway by offering supplemental information specific to the five most common wound types — DFUs, VLUs, PI/PU, SWDs and skin tears.

A panel of seven wound care experts from around the world governed the project and combined the experiential knowledge of health care professionals (HCPs), both specialist and non-specialists, with the latest research evidence. Five separate literature reviews were conducted [Tables 1 and 2]. The research evidence was reviewed by the expert panel and knowledge gaps were identified for further investigation. A global survey was designed to gather experiential evidence from healthcare providers to augment the research data. The survey was anonymous and was completed by 2,200 respondents, from 31 countries, across six continents and in eight languages [Figure 7]. Respondents included physicians (3%), nurse specialists (35%), general practice nurses (37%), and other HCPs, such as dietitians, chiropodists, physical and occupational therapists (25%).

Respondents reported that the five wound types chosen were in fact the most often seen wound types in their practice. This was especially the case for non-specialist respondents (clinic, home care and long-term care nurses and other HCPs). The majority of respondents (67%) reported that they usually or always work as part of an integrated/multidisciplinary team. When asked what percentage of chronic wounds they

Figure 7. Global survey responses.

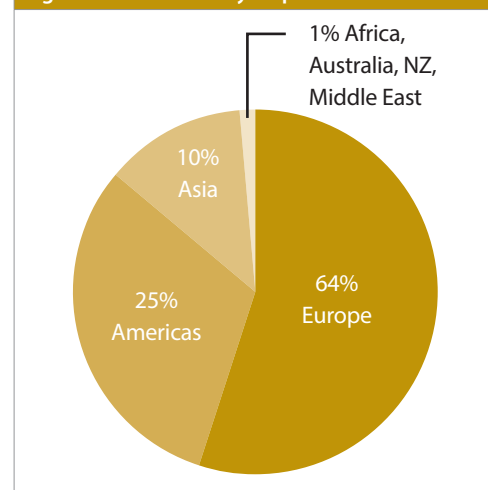


Table 1. Literature review criteria & search terms.			
Criteria	Description		
Inclusion	<ul style="list-style-type: none"> ■ All original research ■ All reviews ■ Multiple Case studies (if 2 or more on similar topic) ■ Quality statements ■ Guidelines & best practice documents produced by Societies 		
Exclusion	<ul style="list-style-type: none"> ■ Editorials ■ Letters to the Editor ■ Institutional guidelines or protocols 		
Time Period	2000-Current		
Search Engines	<ul style="list-style-type: none"> ■ PubMed ■ EmBase ■ CINAHL 		
DFU Search Terms	Diabetic Wound Care: <ul style="list-style-type: none"> ■ Wound* ■ Diabetes Mellitus* ■ Diabetes complications* ■ Diabetic neuropathies ■ Diabetic angiopathies 	Diabetic Foot Ulcers: <ul style="list-style-type: none"> ■ Diabetic Feet* ■ Foot, Diabetic* ■ Foot Ulcer, Diabetic* ■ Plantar pressure ■ Plantar pressure 	Other Terms: <ul style="list-style-type: none"> ■ Managing the Gap ■ Bandages* ■ Dressing* Arterial disease
VLU Search Terms	Venous Leg Ulcers <ul style="list-style-type: none"> ■ Wound* ■ Chronic ■ Ulcer, Varicose* ■ Ulcers, varicose* ■ Stasis Ulcers* ■ Stasis Ulcer* ■ Ulcer, Venous Stasis* ■ Venous Hypertension Ulcers* ■ Venous Ulcer* 	Other Terms: <ul style="list-style-type: none"> ■ Managing the Gap ■ CEAP classification - C6 ■ Postthrombotic syndrome ■ Lower limb wounds 	
PI/PU	Pressure Injury / Pressure Ulcers <ul style="list-style-type: none"> ■ Wound* ■ Ulcer, pressure* ■ Pressure ulcers* ■ Bedsores* ■ Bed Sores* ■ Decubitus ulcers* ■ Pressure sores* ■ Pressure injury 	Other Terms: <ul style="list-style-type: none"> ■ Managing the Gap ■ Dressing* ■ Bandage* ■ Kennedy Ulcers 	
SWD	Surgical Wound <ul style="list-style-type: none"> ■ Surgical Wound* ■ Dehiscence* ■ Surgical wound dehiscence* ■ Surgical wound Infection* ■ Surgical Wound infections* ■ Post operative wound infection* ■ Managing Gap 	Dehisced Wound <ul style="list-style-type: none"> ■ Surgical Wound Dressing ■ Surgical Wound breakdown ■ Surgical Wound disruption ■ Surgical Wound separation ■ Partial dehiscence ■ Complete dehiscence ■ evisceration 	Other Terms: <ul style="list-style-type: none"> ■ NPWT (negative pressure wound therapy)* ■ Bandage*
Skin Tears	Skin Avulsions: <ul style="list-style-type: none"> ■ Wound* ■ Chronic ■ Skin avulsion* ■ Skin avulsion injury* ■ Degloving wound* ■ Degloving wounds* ■ Degloving injury* 	Lacerations: <ul style="list-style-type: none"> ■ Dressing* ■ Bandage* ■ Lacerations 	Other Terms: <ul style="list-style-type: none"> ■ Managing the Gap ■ Skin Tear
*Denotes MeSH concepts and preferred terms.			

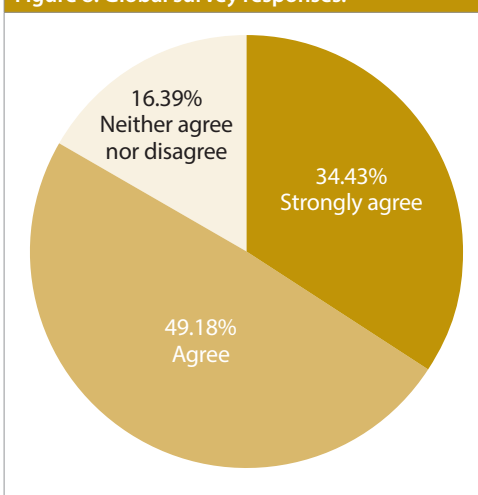
Table 2. Literature review results summary.

Topic	Total # of articles found	# of articles eliminated	# of article abstract screen	# of articles full text review	# articles included in study
DFU	237	94	143	119	40
VLU	47	4	47	43	36
PI/PU	356	244	114	56	15
SWD	197	73	124	56	31
Skin tears	90	46	44	25	13

are currently treating that are healing, non-healing or non-healable, respondents indicated that the majority of their patients had chronic wounds that were healing (52%). Approximately a quarter of respondents indicated that the majority of their patient's chronic wounds were non-healing (26%) and only 7% of respondents indicated that the majority of their patients' wounds were non-healable.

The final stage of the process was a presentation of the five Wound Type Specific Pathways to specialist and non-specialist HCPs in six countries (Italy, France, UK, Germany, USA, Brazil), to seek feedback and reach consensus. A total of 62 HCPs participated in the focus group sessions — 55 nurses, five physicians and six other HCPs (i.e. physical therapists). Of the focus group participants, 89% agreed that providing wound type-specific guidance as a supplement to the Wound Care Pathway will help HCPs treat the most common wound types with evidence-based practices. The majority of participants agreed that the pathways were built on a strong evidence base and 84% indicated that using the pathways will lead to a shorter way to wound healing and have the potential to decrease the burden of wound care on health systems, HCPs and patients around the world [Figures 8 and 9].

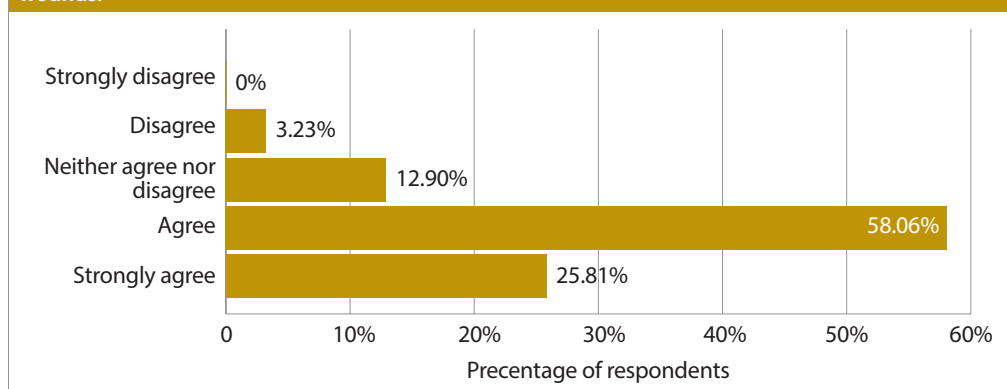
The strength of the process was in the robustness of the research and experiential evidence gathering, the inclusivity of experts,

Figure 8. Global survey responses.

specialists and non-specialists, and the global nature of the consensus reached. This depth and breadth of experience and input ensured that perspectives of the whole care team were considered and that those closest to the issue were included in the development of the guidance, a best practice common in the health quality improvement field (Jones et al, 2021).

Wound Type Specific Pathways

The purpose of the Wound Type Specific Pathways is to offer evidence-based guidance and solutions to non-specialist HCPs to help overcome the challenges often seen in DFUs,

Figure 9. Following the Pathways can help improve patient outcomes and lead to fewer days with wounds.

VLUs, PI/PUs, SWDs and Skin Tears. The Pathways can also be used by specialists to educate the non-specialist in evidence-based wound care practices. Each Pathway follows the Wound Care Pathway model to help HCPs assess, identify, understand, communicate and prevent/minimize risk factors that impede healing. Involvement of the patient as an active member of the integrated care team is emphasised throughout the Pathways and preventing complications and promoting wound healing are the focus for each wound type. Detailed guidance is also provided on when to refer patients.

Building on the Wound Care Pathway, the wound type specific pathways were developed to achieve the following objectives:

- Improve standards of care leading to a shorter way to wound healing
- Decrease inconsistencies of care, wound care costs and the time HCPs spend dealing with the most common types of chronic wounds.
- Provide evidence-based practice guidance to improve patient outcomes and quality of life for patients with DFUs, VLUs, PI/PUs, SWDs and skin tears
- Provide guidance to help HCPs focus on prevention of complications, further injuries and recurrence
- Provide clear, concise guidance to help non-specialist HCPs build confidence and implement best practice wound care at the bedside in a patient-centric manner.

Each Pathway defines the aetiology and features of the specific wound type, and then through a step-by-step approach provides guidance on:

- How to assess and diagnose the wound
- How to develop a treatment plan
- How to manage the wound
- How to choose a dressing and additional therapies
- How to monitor patients, wound progression and reduce complication and recurrence, and
- When to refer to a specialist.

Each pathway also offers reminders, tips and best practices for managing the specific wound types. Additional information and references are made available to the reader via QR Codes for deeper learning and for links to video demonstrations on techniques and procedures. Finally, each pathway includes clinical pictures and visual content to help guide the non-specialist through the process of identifying, assessing, treating and monitoring chronic wounds. All of this is provided in a

visually simple step-by-step approach to assist generalist practitioners to manage chronic wounds of specific aetiologies effectively and efficiently, in collaboration with the patient and their integrated care team.

Table 2 provides highlights from the five wound type specific pathways, which will be available in electronic format November 2023, and in paper format and in multiple languages in 2024.

Conclusion

The Wound Type Specific Pathways, in conjunction with the original Wound Care Pathway, provides non-specialist HCPs with a practical evidence-based step-by-step approach to wound healing. Through easy-to-understand text, images and links to evidence details and educational videos, the pathways guide providers from identification, to assessment, diagnosis, treatment and monitoring, as well as offering tips on how to prevent and mitigate risks and when to refer. The pathways provide a holistic approach to healing wounds while preventing complications and further occurrence, by understanding the wound is on the patient and the patient is in their environment.

The five pathways were developed through a robust process of empirical and experiential evidence gathering and consensus-building deliberation that included researchers, thought-leaders, specialists and generalist practitioners. Building on the global consensus on chronic wound management that emphasised the importance of exudate and gap management, these wound type specific pathways guide HCPs when dealing with the risks and complications associated with DFUs, VLUs, PI/PUs, SWDs and Skin Tears. Implementing these Pathways can help improve the quality of wound care and patient outcomes, by focusing on wound healing. A focus on wound healing will help alleviate the global challenge of wound care for patients, society, healthcare systems and HCPs. **WINT**

Declaration of interest

Ethics approval was not required for this research as no patient information was collected, reviewed or utilised. No identifiable information in any form was collected or utilised for this project.

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Table 3. Wound Type Specific Pathway Highlights.

	DFUs	VLUs	PI/PUs	SWD	Skin tears
Definition and features	Foot ulcer in person with diabetes usually accompanied by neuropathy and/or peripheral arterial disease.	An opening in the skin below the knee caused by venous hypertension and appears over an area of atrophic or pigmented skin.	Localised injury to skin and/or underlying tissue over a bony prominence as a result of pressure +/- shear or from a medical device or other object. Localised damage may present as intact skin or an open ulcer and may be painful.	Separation of a closed surgical incision, may occur at single or multiple regions and include some or all tissue layers.	Traumatic wound resulting in separation of skin layers. Can include partial thickness or full thickness.
In addition to a holistic patient & wound assessment ■ classify wound using a validated assessment tool and assess the following	<ul style="list-style-type: none"> ■ Skin and nail changes ■ Conduct sensory & musculoskeletal assessments ■ Conduct vascular assessment — check pulse and temperature at multiple locations along leg, ankle & foot ■ Conduct APBI and consider toe pressure 	<ul style="list-style-type: none"> ■ Assess for skin changes ■ Assess for venous disease, look for signs of varicose veins, changes in skin elasticity and pigmentation ■ If arterial disease suspected, conduct vascular assessment 	<ul style="list-style-type: none"> ■ Conduct comprehensive skin assessment, look for changes in colour/pigmentation, temperature, pain, consistency, edema ■ Determine causes & contributing factors ■ Conduct risk assessment and act on results 	<ul style="list-style-type: none"> ■ Assess incision & cause ■ Determine if infection is present ■ Assess risks to healing, including infection 	<ul style="list-style-type: none"> ■ Explore cause of skin tear and age of wound ■ Assess skin integrity ■ Assess & administer first aid for new wounds ■ Determine tetanus vaccination status
Conduct a differential diagnosis ■ assess wound bed characteristics ■ look for signs of infection and consider the following	<ul style="list-style-type: none"> ■ Determine underlying cause(s) ■ Classify wound using a validated classification system ■ Determine prognosis — healable, non-healing, non-healable ■ Consider mobility of ankle and big toe 	<ul style="list-style-type: none"> ■ Position of ulcer — malleolus or gaiter area ■ Exclude arterial insufficiency — APBI is gold standard at minimum pulse palpation is mandatory ■ Measure circumference of ankle for oedema ■ Consider calf muscle pump and gait 	<ul style="list-style-type: none"> ■ Classify using NPIAP/EPUAP 4-stage classification system ■ Consider location of injury ■ Assess depth and exposed structures ■ Look at all areas of potential pressure and/or shear 	<ul style="list-style-type: none"> ■ Classify wound using WUWHS Grading System ■ Diagnose severity (Grade 1-4) ■ Distinguish difference between inflammation and infection ■ When looking for signs of infection — assess both localised and body temperature changes 	<ul style="list-style-type: none"> ■ Classify wound using ISTAP 3-type classification system ■ Duration — is wound new/fresh, is skin flap viable ■ Wound size and location
Develop a treatment plan with a focus on ■ prevention ■ risk factors ■ effective wound bed preparation Always include the entire care team in the planning and consider the following:	<ul style="list-style-type: none"> ■ Consider factors that affect wound healing, such as glycaemic control ■ Offload to relieve pressure on foot ■ Consider lifestyle choices and functional capacity 	<ul style="list-style-type: none"> ■ Compression therapy is gold standard at 40mmHg if APBI is >0.8; if APBI is between 0.5 and 0.8 refer for advice regarding level of compression; if APBI is <0.5 do not compress and refer for vascular assessment 	<ul style="list-style-type: none"> ■ Relieve & redistribute pressure ■ Manage risk factors ■ Consider SSKINN (Surface, Skin, Keep moving, Incontinence, Nutrition and Self-Management) ■ Act to prevent further injury ■ Ensure continuity of patient care ■ Consider pain management 	<ul style="list-style-type: none"> ■ The treatment plan will be determined by the presence or absence of infection. If infection is present treat as priority. ■ Risk management ■ Review patient expectations & limitations ■ Consider nutrition, oxygenation and hydration ■ Continue to monitor wound after incision closure 	<ul style="list-style-type: none"> ■ Depends upon age of wound ■ Evacuate large or deep dissecting hematomas ■ Consider pain control ■ Risk management & prevention protocols — environmental hazards & infection risk ■ Consider patient limitations ■ Consider skin integrity, nutrition and hydration — moisturise twice daily
Managing wound healing ■ Assess for signs of infection at each dressing change and consider the following:	<ul style="list-style-type: none"> ■ Wound bed preparation — cleanse & debride ■ Exudate management ■ Integrated care team approach 	<ul style="list-style-type: none"> ■ Wound bed preparation — cleanse & debride ■ Appropriate compression therapy ■ Pain management 	<ul style="list-style-type: none"> ■ Wound bed preparation — cleanse & debride ■ Assess for infection ■ Manage skin micro-climate (moisture & heat) 	<ul style="list-style-type: none"> ■ Wound bed preparation — cleanse & debride ■ Regular reassessment ■ Monitor wound size — reduction of wound size is a key indicator of healing 	<p>New wound</p> <ul style="list-style-type: none"> ■ Administer first aid and stop bleeding ■ Cleanse ■ Re-approximate skin flap <p>Old wound</p> <ul style="list-style-type: none"> ■ Cleanse and debride ■ Watch for signs of infection ■ Pain management
Dressing & additional therapies ■ Consider dressings with antimicrobial properties to help manage infection and biofilm	<ul style="list-style-type: none"> ■ Ensure effective exudate management & protection of periwound skin ■ Manage the gap between the wound bed and the dressing ■ Manage infection & ischaemia ■ Relieve & redistribute the pressure ■ Debridement is mandatory 	<ul style="list-style-type: none"> ■ Ensure effective exudate management & protection of periwound skin ■ Manage the gap between the wound bed and the dressing ■ Most VLUs will heal with appropriate therapeutic compression ■ Use dressings that are atraumatic upon removal 	<ul style="list-style-type: none"> ■ Ensure effective exudate management & protection of periwound skin ■ Manage the gap between the wound bed and the dressing ■ Use a dressing that is atraumatic upon removal ■ Manage moisture of intact skin and micro-climates 	<ul style="list-style-type: none"> ■ Ensure effective exudate management & protection of periwound skin ■ Manage the gap between the wound bed and the dressing • Record number of dressings used, ensure all dressing parts are removed at each dressing change ■ NPWT can be considered for highly exuding SWDs categorised as 3 and 4 ■ As healing progresses step down advanced therapies 	<ul style="list-style-type: none"> ■ Ensure effective exudate management & protection of periwound skin ■ Manage the gap between the wound bed and the dressing ■ Mark dressing direction for atraumatic removal ■ Consider compression therapy for extremities ■ Use a dressing that is atraumatic upon removal ■ Avoid iodine-based & film/hydrocolloid dressings

Table 3. Wound Type Specific Pathway Highlights (continued).

	DFUs	VLUs	PI/PUs	SWD	Skin tears
Monitoring patient & wound progression, reduce complications & recurrence In addition to patient self care education, consider the following:	<ul style="list-style-type: none"> Educate about risks and early warning signs Encourage and monitor lifestyle changes Conduct regular foot inspections Emphasise importance of lifelong offloading 	<ul style="list-style-type: none"> Assess risk factors Measure & monitor every 4 weeks Discuss prevention strategies with patient, including: lifelong compression therapy, gait, calf muscle pump, ankle & dorsal reflection 	<ul style="list-style-type: none"> Regular assessment & reassessment of risk factors Relieve and redistribute the pressure Get the patient moving Include equipment specialists on care team 	<ul style="list-style-type: none"> Education patient on risk reduction Reassess at intervals appropriate for wound severity Scar tissue management Assess vascular status for lower extremity incisions 	<ul style="list-style-type: none"> Assess risk factors Put in place prevention protocols Moisturise twice a day Avoid medical adhesive related skin injuries (MARSIs) Continue to monitor and assess skin integrity
When to refer	<ul style="list-style-type: none"> Refer for diagnosis When bone on view, probe to bone, tunneling or significant undermining If ischaemia is suspected, refer for full vascular assessment If lack of progress or deterioration When infection is suspected If there is heat, swelling or pain in foot For lifelong offloading advice and footwear choices 	<ul style="list-style-type: none"> Suspected venous insufficiency Symptomatic patient with ABPI <0.8 Clinical signs & symptoms don't match Doppler Acute infection Acute ischemia Suspected deep vein thrombosis or skin cancer Unsure if venous or arterial ulcer or unknown aetiology Wounds with unusual appearance or location that fail to respond to appropriate care If ulcer reoccurs or unexplained lack of healing progression 	<ul style="list-style-type: none"> All deep Tissue Injuries (DTIs) and unstageable ulcers All Stage 4 ulcers Complex aetiologies Refer heel ulcers for vascular assessment If there are multiple contributing factors For specialised equipment 	<ul style="list-style-type: none"> When bone, organs or implants are visible When suspect spreading or systemic infection Abscesses, large seromas, large haematomas 	<ul style="list-style-type: none"> Large haematoma if evacuation outside scope of practice If wound is non-healing after 4 weeks

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