

British Journal of Nursing

Wound Care: At a glance

--Manuscript Draft--

Manuscript Number:	bjon.2018.0199R1
Full Title:	Wound Care: At a glance
Short Title:	The importance of evidence based wound care as a nurse led skill
Article Type:	Clinical review
Keywords:	Wound care; nurse-led care; evidence-based practice.
Corresponding Author:	Sarah H Annesley, Ph.D, MSc, PgCert, BSc, RN, FHEA Northumbria University Newcastle-upon-Tyne, UNITED KINGDOM
Corresponding Author Secondary Information:	
Corresponding Author's Institution:	Northumbria University
Corresponding Author's Secondary Institution:	
First Author:	Sarah H Annesley, Ph.D, MSc, PgCert, BSc, RN, FHEA
First Author Secondary Information:	
Order of Authors:	Sarah H Annesley, Ph.D, MSc, PgCert, BSc, RN, FHEA
Order of Authors Secondary Information:	
Abstract:	<p>This article will:</p> <ul style="list-style-type: none">•Introduce the importance of wound care as nurse-led skill•Support the reader's understanding of different types and causes of wounds•Introduce the physiology of wound healing•Explore evidence-based wound assessment and treatment options•Explore the principles of dressing wounds•Discuss the importance of pain management when caring for a patient with a wound•Identify the signs of infection in acute and chronic wounds•Explore psychological support when caring for a patient with a wound•Use contemporary evidence-based practice to underpin wound care practice
Suggested Reviewers:	
Additional Information:	
Question	Response
Please enter the word count of your manuscript	3352

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Wound Care:

Patients requiring wound care can belong to any age group and are found across all areas of healthcare: in nursing homes, health centres, in-patient services or at home (Guest et al. 2015). Holistic wound care draws on the skills of a broad range of healthcare disciplines but depends most on nurse-led assessment and treatment (Guest et al., 2015). Nurses are central to ensure optimal patient outcomes, positive patient experience and best use of resources for people with wounds (NHS England, 2016). To deliver on these triple aims nurses are required to understand types and causes of wounds and their assessment (Alderley et al.,

2017), the evidence base which supports nursing care, and the physiology of wound healing (Fletcher and Anderson, 2013).

For nurses, wound management can be challenging: wound healing consists of a series of interrelated processes dependent on several factors which impact on the rate of healing. Wound care should be evidence-based but, as Chapman (2016) demonstrates, reliable clinical evidence to support best practice is lacking.

Healing of an open wound is defined as a “*process by which damaged tissue is restored to normal function*” (Worley, 2015 p.746). Three physiological processes are involved: primary intent, as in the excision and removal of a mole, where the skin margins are brought together aseptically and closed with sutures or skin adhesive; secondary intent, where there is no clear incision, the wound is open and the margins of the wound cannot be brought together (for example, a patient with leg ulceration); and tertiary intent, when a wound has resulted in a large amount of tissue loss and the skin margins cannot be brought together. In this case a skin graft is used to further wound healing (Worley, 2015).

Types and causes of wounds

A wound is defined as any injury or damage to the integrity of the skin (Dealey, 2012). This damage can be a consequence of traumatic injury by mechanical, physical and/or chemical impact, either intentional, as in a surgical incision, ischaemic due to a lack of sufficient blood supply (e.g. ischaemic diabetic foot ulcer) and/or pressure, as in a sacral pressure ulcer (Dealey, 2012). The nursing assessment of a wound should include identification of its underlying cause(s). Some wounds result from a combination of factors. For example, an arterial leg ulcer may start as a traumatic physical injury to the lower leg, which does not heal

due to mechanical damage that might include narrowing or occlusion of the peripheral femoral arteries. The reduced blood supply to the tissue means that the injured area receives inadequate oxygen and nutrients, so that the wound does not heal: a combination of physical trauma, mechanical issues and ischaemia has caused the wound. Wounds may, consequently, be classified as either acute or chronic (Worley, 2015). An acute wound is associated with trauma, immediate injury or surgery, with the resulting skin damage progressing through the healing phases. In a chronic wound the skin remains open and does not progress through the healing phases as expected.

Four interrelated phases in wound healing [see Box 1] commonly progress in a continuous rather than a discrete manner (Fletcher and Anderson 2013).

Box 1: The physiology of wound healing

Phase I: Haemostasis (minutes)

Phase II: Inflammation (1-5 days)

Phase III: Proliferation or reconstruction (3-24 days)

Phase IV: Maturation or remodelling (21 days onwards)

(Worley, 2015 pp. 747-748)

Awareness of the time periods associated with each phase is important, since they are dependent on a patient's overall state of health. If that is compromised by underlying morbidity, poor nutrition and/or infection the healing process will be prolonged and the individual healing stages may take longer.

Phase I: Haemostasis (lasts minutes).

At the time of injury, the wound bleeds and the cavity fills with blood. Plasma proteins initiate platelet aggregation and the formation of a platelet plug. The clotting cascade in turn initiates a fibrin clot which strengthens the platelets' clot formation to establish haemostasis (Worley 2015). If a patient is on anticoagulation therapy, such as Aspirin or low molecular weight Heparin, then bleeding may be prolonged and the first requirement is to stop bleeding by applying direct pressure.

Phase II: Inflammation phase (lasts 4-5 days)

Inflammation is an important part of the body's natural response to injury. It is characterised by symptoms that we all associate with acute injury, such as pain, swelling, heat and redness (Dealey 2012). Healing is delayed when there is a disruption to the inflammatory response, which may be caused by factors including, for example, ongoing foreign material in the wound, wound cleansing causing disruption to the wound bed and/or the presence of infection. In addition, poor nutritional status will delay healing because of the energy and nutritional resources needed to drive the inflammation phase on to the next healing stage. Effectively wounds can become stuck in the inflammatory phase: an acute wound may become chronic and disabling for patients, as in venous leg ulceration.

Phase III: Proliferation or reconstructive phase (lasts 3-24 days)

Phase III is marked by evidence of granulation tissue in the wound, which appears as visibly pink tissue, or by a change in wound shape. Often this phase can overlap with Phase II; or, different parts of the wound may display different phases, so that some parts show evidence of granulation tissue and others sloughy tissue. An example of this may be a patient with a sternal incision after Coronary Artery Bypass Graft (CABG) Surgery. Often, by day 10-14,

the proximal aspect of a wound will be showing signs of proliferation and reconstruction, whereas the distal portion can appear inflamed, red and exuding serous fluid – all signs of continued inflammation.

Phase IV: Maturation or remodelling phase (last from 21 days onwards)

Potentially lasting for more than a year, Phase IV marks the return of the skin to normal function. It is characterised by epithelialisation and maturation (Dealey 2012). For maturation to commence we have to see granulation tissue in the wound and in the case of a wound healing by secondary intent and this commonly happens from the wound bed upwards and may take a prolonged period, perhaps years. As epithelialisation is established the wound tissue is remodelled by the deposition of collagen fibres (Worley 2015).

The process of wound healing is not linear and, as illustrated in **Box 1: The physiology of wound healing**, different parts of a wound might be at different stages. A wound may progress from phase II to phase III only for an infection to result in the wound returning to phase II. Determining which phase of healing a wound has reached is an important aspect of its ongoing assessment.

[Please include picture/diagrams of 4 stages/phases of wound healing from BJN library?]

Wound care assessment

Wound assessment helps determine baseline wound information to support decision-making on the selection of appropriate dressings (Worley, 2015). However, currently there is no agreed approach to assessing wounds in the UK (Coleman et al., 2017) and consequently there is concern about unwarranted variation in chronic wound care (Adderley et al, 2017).

As part of NHS England's (2016) nursing and midwifery strategy *Leading Change, Adding Value* there is ongoing work to develop a wound assessment minimum data set (Coleman et al., 2017). Current thinking on the data needed for a wound assessment is a consideration of six domains:

1. Information on the patient's general health;
2. Baseline wound information, including wound location, duration and type;
3. Wound assessment, including size (maximum length, width and depth);
4. Wound symptoms, including pain, and amount of exudate,
5. Signs of local or systemic infection;
6. Further investigation or referral for specialist tissue viability support (Adderley et al 2017; Coleman et al., 2017).

Delivering evidence-based wound care

The real world of practice demonstrates that, commonly, wound care is a nurse-led discipline (Guest et al., 2015) so nurses need to make informed choices about treatments in partnership with their patients. In wound care this is not as straightforward as it at first may appear, with a plethora of available treatments and dressing options (Chapman 2018). When faced with this confusion it is good to reflect on a few basic principles and be aware that evidence-based practice (EBP) is not solely dependent on the best available research evidence. EBP in nursing includes patient experience and preferences, and the experience and knowledge of the nurse, to ensure delivery of the most effective care (Lindsay, 2007).

Cleansing the wound

The function of wound cleansing is to prepare the wound bed and create an optimum healing environment (Worley, 2015). It should not be assumed that cleaning a wound is always

required and, indeed, in certain circumstances it can be detrimental, damaging newly formed granulating tissue and precipitating a drop in wound bed temperature, both of which may set healing back (Dealey 2012; Worley, 2015). If a wound is to be cleansed the recommended products are 0.9% saline (common for surgical wounds) and tap water (common for chronic wounds). The use of topical antiseptics, such as Povidone Iodine in pressure ulcers and leg ulcers, is not supported by research evidence, with no benefit demonstrated despite the persistent use of these products in practice (Chapman, 2016).

A practical approach, therefore, is to advocate careful wound cleansing in acute wounds using sterile 0.9% saline, as part of a nurse's overall assessment of the wound; and, in chronic wounds, with body temperature tap-water providing an opportunity to assess the wound close-up and support patient comfort and relief (for example, if a patient is anxious about wound odour or exudate).

Dressing a wound

Deciding on what topical dressing to apply to a wound bed is another area of much debate and discussion in the nursing literature, with little research to support practice. The lack of EBP leads to wide variation in practice between individual nurses and to inconsistencies in wound dressing over the course of treatment. A recent review by Norman et al. (2018) was unable to demonstrate that dressings or topical agents offered any beneficial effect on healing, highlighting the challenges of clinical decision-making. Since the evidence base is so poor, some basic principles of wound dressing provide the best guidance on what to use, and when.

Table 1: Principles of dressing a wound act as a helpful guide to decision-making.

Table 1: Principles of dressing a wound

<p>Occlusive dressings form a barrier to bacteria, maintain consistent temperature and ensure stable wound pH, whilst allowing gaseous exchange.</p>
<p>A dressing must be able to stay in place for a sufficient period of time to avoid unnecessary disturbance to the wound bed, so absorbance is an important factor when caring for an exuding wound.</p>
<p>It is important to consider patient comfort when wearing, and on removal of, a dressing. On removal the dressing should not cause damage to the surrounding skin.</p>
<p>Dressings ought to be cost-effective: they should be chosen from those listed in an NHS Trust wound care formulary. Information on costs of dressings is included in the British National Formulary (BNF) (BNF/NICE 2018).</p>
<p>The wound care product should reflect the wound assessment and treatment plan and wound healing stage e.g. requirement for debridement, treatment of localised infection or not.</p> <p style="text-align: right;">(Adapted from Worley, 2015 p.752)</p>

For further information on different types/classifications of wound dressing please see BNF/Nice 2018 available at: <https://bnf.nice.org.uk/wound-management/>

Pain management

The presence (or absence) of wound pain should be assessed and recorded (Fletcher and Anderson, 2013). In addition, it is recommended that a record is kept of the frequency and severity of wound pain (Coleman et al. 2017). As nurses, we may be more aware of the association of an acute wound causing pain than we are with a chronic wound, but wound

pain and discomfort are also very much part of the patient experience of living with chronic leg ulceration (Xiaoli, 2017). Nurses should be sensitive to wound pain so that they can better anticipate patient problems.

Pain is an indication not only of patient comfort and wellbeing but also of what is happening in the wound. Pain is a symptom of infection which requires assessment and, if associated with other symptoms, such as an increase in exudate, change in exudate colour, odour, delay in healing and/or swelling to surrounding tissue, it requires that the wound should be swabbed (Dealey 2012). It is important to remember that, although all chronic wounds are colonised with bacteria, this is not the same as the wound being infected (Dealey 2012). Bacterial colonisation of chronic wounds is not associated with a delay in healing. In contrast, bacterial colonisation of an acute wound can initiate infection and this infection can be localised or systemic (Fletcher and Anderson 2013). **Table 2** outlines the signs of wound infection and the difference between acute and chronic wound infection signs.

Table 2: **Signs of infection in acute and chronic wounds**

Surgical wound, burn or traumatic injury – acute wounds	
Localised symptoms: confined to margins of the wound	Systemic symptoms: spreading to tissue or organs beyond the margins of the wound with erythema, swollen lymph nodes and/or wound breakdown
Pain is either new or an increase in the pain is experienced.	In addition to signs of localised infection you may observe: physiological changes including a drop in B.P ≤ 90 mmhg, heart rate > 130 and Respiratory rate ≥ 25 per minute.
Redness (erythema)	
Swelling	

Increase in discharge, quantity and/or change in colour	These are known as Sepsis Red Flags and should trigger early warning assessment (UKST EM, 2016).
Pyrexia	
Pressure ulcers, arterial or venous leg ulcers, diabetic foot ulcers – chronic wounds	
Localised symptoms: Pain either new or an increase in the pain experienced	Systemic symptoms: alongside localised symptoms the wound breaks down and redness extends beyond the wound margins.
Distinctive odour or change in wound odour (the patient might notice this)	Malaise and deterioration of the patient in terms of a high or low temperature, drowsiness or confusion. Wound exudate or blood evident through dressings or bandages.
A delay in healing or change in wound shape or size, perhaps with undermining of tissue at the wound margins.	
Discolouration of wound bed and/or bleeding of newly formed granulation tissue	
(Adapted from Fletcher and Anderson, 2013: 638; UKST EM, 2016; and UKST 2018)	

Knowing when to refer patients for specialist advice

Deciding when to seek specialist advice and support on managing patient with a wound, is an important aspect of clinical decision-making. Local NHS Trusts (England) and Health Boards in Scotland will have specialist services in Tissue Viability and or leg ulcer management (nurse lead leg ulcer clinics, or vascular services or dermatology led) and produce guidelines for referral and advice on how to refer and seek support. So being aware of local policy is part of the skill in deciding when to seek help for a patient. Specific criteria, or things to look

out for, which should promote referral, depend in part on the aetiology of the wound. **Table 3** explains different wounds and when referral is important.

Table 3: Criteria for specialist wound care referral.

Traumatic wounds	non-healing burns, or lacerations, including self-inflicted lacerations.
Leg ulcers	non-healing atypical distribution suspicion of malignancy medical history includes rheumatoid arthritis, diabetes mellitus increase pain, odour
Surgical incision	non-healing dehisced wounds or rupture of the wound along the line of surgical incision
Pressure ulcers	grade 3 and 4 pressure ulcer
Fungating wound	Associated with increasing pain, odour or bleeding
Diabetic foot ulcer	Podiatry services should be involved in the care of all diabetic foot ulcers but specialist tissue viability support may be need in addition if the diabetic foot ulcer is non-healing.

(Adapted from SIGN 2010; NICE/CKS 2015; NPUP/EPUAP 2014).

Case Study 1. further highlights the importance of seeking specialist tissue viability advice at the most appropriate time and when faced with a challenging situation which despite preventative measures results in ongoing skin breakdown; at the end of life.

Case Study 1: Wound care at the end of life.

Steve was an extremely frail 92 year-old with Parkinson's disease. He had been admitted 6-weeks previously having fallen at home and sustained a fractured neck of femur to his right hip. He had undergone a successful surgical repair of his fracture but in the intervening 5-weeks he never regained his mobility, he was catheterised for urinary retention, and the combination of dehydration and immobility resulted in him acquiring a severe chest infection. During his hospital admission Steve also developed a stage IV pressure ulcer on his right heel.

His pressure ulcer was large, odorous and exuding, requiring frequent dressing changes which caused him distress. A tissue viability referral was not made until 5-weeks following admission by which time he had been transferred to an elderly care ward. At the point of referral Steve was close to the end of his life and was no longer eating or drinking. Caring for a wound when a patient is close to death is complicated because, as the body's organs begin to fail, blood is diverted to key organs of brain, heart, lungs and this 'shutting down' of the peripheral circulation means that no intervention will promote wound healing and so nursing care is directed toward patient comfort and dignity.

Treatment of Steve's pressure ulcer was initiated and sought to provide relief from the pain, reduce odour and avoid frequent dressing changes. This involved combining alginate dressing with alginate rope to create a highly absorbent dressing and one that would also promote self-debridement of the wound bed. Although this did reduce the symptoms there was no change in Steve's wound and he died before the wound healed.

Providing wound care to a patient at the end of their life is complex and highlights when early referral to specialist tissue viability services would help promote patient comfort and dignity.

Psychological support for people with wounds

Wounds have a psychological as well as physical impact on people and as part of a patient-centred assessment we, as nurses, should consider the impact of living with a wound irrespective of the length of healing time. In turn, being aware of the psychological impact of a wound helps us to provide more sensitive care. Nurses should assess aspects of anxiety; any possible impact of the wound on body image; fear or fear of loss; grief, perhaps, for loss of function or because the wound causes disfigurement (Dealey 2012). Frustration and

depression have also been associated with the experience of living with leg ulceration (Xiaoli 2017). Overall, the negative impact of a wound on an individual's psychological well-being is significant and, potentially, as oppressive as the wound itself.

One positive approach to promoting awareness of psychological wellbeing in our daily practice is to consider flipping the conversations we have with our patients from '*what's the matter with you?*' to '*what matters to you?*' and '*who matters to you?*' (NHS England 2016). These questions help to support a patient-centred approach to decision-making; and patient involvement in care is an important element in evidence-based care (Byatt and Chapman 2018).

Conclusion

This *Wound care at a glance* article has highlighted some key considerations in the care and support needed for patients with wounds, both chronic and acute. Using an evidence- and practice- informed approach, it has drawn together current ideas that can inform our knowledge base. It has highlighted current research and gaps in evidence but also areas where new ideas, such as those promoting an agreed UK minimum data set on wound assessment, are being proposed. Finally, I argue that nurse-led wound care would benefit from asking, listening to and doing what matters to our patients, providing care sensitive to the priorities, hopes and fears of people living with a wound.

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[Please include picture/diagrams of 4 stages/phases of wound healing from BJN library?]

Wound care assessment

Wound assessment helps to determine baseline wound information to support decision-making on the selection of appropriate dressings (Worley, 2015). However, currently there is no agreed approach to assessing wounds in the UK (Coleman et al., 2017) and consequently there is concern about unwarranted variation in chronic wound care (Adderley et al, 2017). As part of NHS England's (2016) nursing and midwifery strategy *Leading Change, Adding Value* there is ongoing work to develop a wound assessment minimum data set (Coleman et al., 2017). Current thinking on the data needed for a wound assessment is a consideration of six domains:

1. information on the patient's general health;
2. baseline wound information, including wound location and duration type;
3. wound assessment, including size (maximum length, width and depth);
4. wound symptoms, including pain, exudate,
5. signs of local or systemic infection;
6. further investigation or referral for specialist tissue viability support (Adderley et al 2017; Coleman et al., 2017).

Delivering evidence-based wound care

The real world of practice demonstrates that, commonly, wound care is a nurse-led discipline (Guest et al., 2015) so nurses need to make informed choices about treatments in partnership with their patients. In wound care this is not as straightforward as it at first may appear, with a plethora of available treatments and dressing options (Chapman 2018). When faced with this confusion it is good to reflect on a few basic principles and be aware that evidence-based practice (EBP) is not solely dependent on the best available research evidence. EBP in nursing includes patient experience and preferences, and the experience and knowledge of the nurse, to ensure delivery of the most effective care (Lindsay, 2007).

Cleansing the wound

The function of wound cleansing is to prepare the wound bed and create an optimum healing environment (Worley, 2015). It should not be assumed that cleaning a wound is always required and, indeed, in certain circumstances it can be detrimental, damaging newly formed granulating tissue and precipitating a drop in wound bed temperature, both of which may set healing back (Dealey 2012; Worley, 2015). If a wound is to be cleansed the recommended products are 0.9% saline (common for surgical wounds) and tap water (common for chronic wounds). The use of topical antiseptics, such as Povidone Iodine in pressure sores and leg ulcers, is not supported by research evidence, with no benefit demonstrated despite the persistent use of these products in practice (Chapman, 2016).

A practical approach, therefore, is to advocate careful wound cleansing in acute wounds using sterile 0.9% saline, as part of a nurse's overall assessment of the wound; and, in chronic wounds, with body temperature tap-water providing an opportunity to assess the wound close-up and support patient comfort and relief (for example, if a patient is anxious about wound odour or exudate).

Dressing a wound

Deciding on what topical dressing to apply to a wound bed is another area of much debate and discussion in the nursing community, with little research to support practice. The lack of EBP leads to wide variation in practice between individual nurses and to inconsistencies in wound dressing over the course of treatment. A recent review by Norman et al. (2018) was unable to demonstrate that dressings or topical agents offered any beneficial effect on healing, highlighting the challenges of clinical decision-making. Since the evidence base is so poor,

some basic principles of wound dressing provide the best guidance on what to use, and when.

Table 1: Principles of dressing a wound act as a helpful guide to decision-making.

Table 1: Principles of dressing a wound

Occlusive dressings form a barrier to bacteria, maintain consistent temperature and ensure stable wound pH, whilst allowing gaseous exchange.
A dressing must be able to stay in place for a sufficient period of time to avoid unnecessary disturbance to the wound bed, so absorbance is an important factor when caring for an exuding wound.
It is important to consider patient comfort when wearing, and on removal of, a dressing. On removal the dressing should not cause damage to the surrounding skin.
Dressings ought to be cost-effective: they should be chosen from those listed in an NHS Trust wound care formulary. Information on costs of dressings is included in the British National Formulary (BNF) (BNF/NICE 2018).
The wound care product should reflect the wound assessment and treatment plan and wound healing stage e.g. requirement for debridement, treatment of localised infection or not.
(Adapted from Worley, 2015 p.752)

For further information on different types/classifications of wound dressing please see BNF/Nice 2018 available at: <https://bnf.nice.org.uk/wound-management/>

Pain management

The presence (or absence) of wound pain should be assessed and recorded (Fletcher and Anderson, 2013). In addition, it is recommended that a record is kept of the frequency and

severity of wound pain (Coleman et al. 2017). As nurses, we may be more aware of the association of an acute wound causing pain than we are with a chronic wound, but wound pain and discomfort are also very much part of the patient experience of living with chronic leg ulceration (Xiaoli, 2017). Nurses should be sensitive to wound pain so that they can better anticipate patient problems.

Pain is an indication not only of patient comfort and wellbeing but also of what is happening in the wound. Pain is a symptom of infection which requires assessment and, if associated with other symptoms, such as an increase in exudate, change in exudate colour, odour, delay in healing and/or swelling to surrounding tissue, it requires that the wound should be swabbed (Dealey 2012). It is important to remember that, although all chronic wounds are colonised with bacteria, this is not the same as the wound being infected (Dealey 2012). Bacterial colonisation of chronic wounds is not associated with a delay in healing. In contrast, bacterial colonisation of an acute wound can initiate infection and this infection can be localised or systemic (Fletcher and Anderson 2013). **Table 2** outlines the signs of wound infection and the difference between acute and chronic wound infection signs.

Table 2: Signs of infection in acute and chronic wounds

Surgical wound, burn or traumatic injury – acute wounds	
Localised symptoms: confined to margins of the wound	Systemic symptoms: spreading to tissue or organs beyond the margins of the wound with erythema, swollen lymph nodes and/or wound breakdown

Pain is either new or an increase in the pain is experienced.	In addition to signs of localised infection you may observe: physiological changes including a drop in B.P \leq 90mmhg, heart rate $>$ 130 and Respiratory rate \geq 25 per minute. These are known as Sepsis Red Flags and should trigger early warning assessment (UKST EM, 2016).
Redness (erythema)	
Swelling	
Increase in discharge, quantity and/or change in colour	
Pyrexia	
Pressure ulcers, arterial or venous leg ulcers, diabetic foot ulcers – chronic wounds	
Localised symptoms: Pain either new or an increase in the pain experienced	Systemic symptoms: alongside localised symptoms the wound breaks down and redness extends beyond the wound margins.
Distinctive odour or change in wound odour (the patient might notice this)	Malaise and deterioration of the patient in terms of a high or low temperature, drowsiness or confusion. Wound exudate or blood evident through dressings or bandages.
A delay in healing or change in wound shape or size, perhaps with undermining of tissue at the wound margins.	
Discolouration of wound bed and/or bleeding of newly formed granulation tissue	
(Adapted from Fletcher and Anderson, 2013: 638; UKST EM, 2016; and UKST 2018)	

Psychological support for people with wounds

Wounds have a psychological as well as physical impact on people and as part of a patient-centred assessment we, as nurses, should consider the impact of living with a wound irrespective of the length of healing time. In turn, being aware of the psychological impact of

a wound helps us to provide more sensitive care. Nurses should assess aspects of anxiety; any possible impact of the wound on body image; fear or fear of loss; grief, perhaps, for loss of function or because the wound causes disfigurement (Dealey 2012). Frustration and depression have also been associated with the experience of living with leg ulceration (Xiaoli 2017). Overall, the negative impact of a wound on an individual's psychological well-being is significant and, potentially, as oppressive as the wound itself.

One positive approach to promoting awareness of psychological wellbeing in our daily practice is to consider flipping the conversations we have with our patients from '*what's the matter with you?*' to '*what matters to you?*' and '*who matters to you?*' (NHS England's 2016). These questions help to support a patient-centred approach to decision-making; and patient involvement in care is an important element in evidence-based care (Byatt and Chapman 2018).

Conclusion

This wound care at a glance article has highlighted some key considerations in the care and support needed for patients with wounds, both chronic and acute. Using an evidence- and practice- informed approach, it has drawn together current ideas that can inform our knowledge base. It has highlighted current research and gaps in evidence but also areas where new ideas, such as those promoting an agreed UK minimum data set on wound assessment, are being proposed. Finally, I argue that nurse-led wound care would benefit from asking, listening to and doing what matters to our patients, providing care sensitive to the priorities, hopes and fears of people living with a wound.

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Table 2: **Signs of infection in acute and chronic wounds**

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Discolouration of wound bed and/or bleeding of newly formed granulation tissue	
(Adapted from Fletcher and Anderson, 2013: 638; UKST EM, 2016; and UKST 2018)	

Table 3: Criteria for specialist wound care referral.

Traumatic wounds	non-healing burns, or lacerations, including self-inflicted lacerations.
Leg ulcers	non-healing atypical distribution suspicion of malignancy medical history includes rheumatoid arthritis, diabetes mellitus increase pain, odour
Surgical incision	non-healing dehisced wounds or rupture of the wound along the line of surgical incision
Pressure ulcers	grade 3 and 4 pressure ulcer
Fungating wound	Associated with increasing pain, odour or bleeding
Diabetic foot ulcer	Podiatry services should be involved in the care of all diabetic foot ulcers but specialist tissue viability support may be need in addition if the diabetic foot ulcer is non-healing.

(Adapted from SIGN 2010; NICE/CKS 2015; NPUP/EPUAP 2014).

Case Study 1: Wound care at the end of life.

Steve was an extremely frail 92 year-old with Parkinson's disease. He had been admitted 6-weeks previously having fallen at home and sustained a fractured neck of femur to his right hip. He had undergone a successful surgical repair of his fracture but in the intervening 5-weeks he never regained his mobility, he was catheterised for urinary retention, and the combination of dehydration and immobility resulted in him acquiring a severe chest infection. During his hospital admission Steve also developed a stage IV pressure ulcer on his right heel.

His pressure ulcer was large, odorous and exuding, requiring frequent dressing changes which caused him distress. A tissue viability referral was not made until 5-weeks following admission by which time he had been transferred to an elderly care ward. At the point of referral Steve was close to the end of his life and was no longer eating or drinking. Caring for a wound when a patient is close to death is complicated because, as the body's organs begin to fail, blood is diverted to key organs of brain, heart, lungs and this 'shutting down' of the peripheral circulation means that no intervention will promote wound healing and so nursing care is directed toward patient comfort and dignity.

Treatment of Steve's pressure ulcer was initiated and sought to provide relief from the pain, reduce odour and avoid frequent dressing changes. This involved combining alginate dressing with alginate rope to create a highly absorbent dressing and one that would also promote self-debridement of the wound bed. Although this did reduce the symptoms there was no change in Steve's wound and he died before the wound healed.

Providing wound care to a patient at the end of their life is complex and highlights when early referral to specialist tissue viability services would help promote patient comfort and dignity.