



Wound management in patients with advanced illness

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Purpose of review

To emphasize that the management of wounds represents a significant component within the overall supportive and palliative care of patients with advanced illness. It is also intended to clarify the linguistics that are commonly used around patients with wounds.

Recent findings

New paradigms for wound management, wound outcomes, and goal setting have been defined and graphically depicted. Recent studies show that wounds may be used as prognostic factors for patients with advanced illness. Data from recent studies also demonstrate that marginal levels of wound healing are possible for all wound classes affecting patients with advanced illness. When indicated, time-limited trials of wound healing strategies should be facilitated by the Wound Bed Preparation Paradigm. Wound palliation may be guided through the use of the Toronto Symptom Assessment System for Wounds (TSAS-W).

Summary

Wound management must continue to evolve as a tenet within the overall supportive and palliative care of patients with advanced illness.

Keywords

advanced illness, TSAS-W, wound maintenance, wound management, wound palliation

INTRODUCTION

Patients with advanced illness are individuals diagnosed with incurable illness, cancer, and/or noncancer, whose life expectancy is generally thought to be less than 6 months [1[¶]]. As these patients traverse their respective illness trajectories, goals of care, guided by the principles of patient-centered care and patient empowerment, generally transition from those achieved by active and aggressive medical management (AAMM – curative and potentially life-prolonging treatments) to those achieved by conservative palliative management (CPM, treatments aimed at improving comfort, dignity, and quality of life) [2,3]. Worldwide, such patients are increasingly being referred for supportive and palliative care.

Patients with advanced illness are particularly predisposed to developing wounds, as they are usually elderly, and commonly present with poor and declining performance status, multiple medical comorbidities, and iatrogenic factors [4–7]. This predisposition is theorized to be largely on the basis of ‘skin failure’. In 2006, Langemo and Brown defined ‘skin failure’ as an event in which the skin

and underlying tissue die due to hypoperfusion that occurs concurrent with severe dysfunction or failure of other organ systems [7]. Thus, not surprisingly, patients with advanced illness represent the cohort within healthcare experiencing the highest overall prevalence and incidence of all wound classes [1[¶],7–9]. A recent prospective study reported that almost two-thirds of patients presented with at least one wound and an average of 1.8 wounds per patient, upon referral to a regional tertiary palliative care program [1[¶]]. In addition, patients developed an average of 1.5 wounds between referral and death [1[¶]]. The most prevalent wound class is pressure ulcers, affecting about one-fifth of advanced cancer patients and about two-thirds of advanced noncancer patients [1[¶]]. Malignant wounds affect

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KEY POINTS

- Wounds from multiple classes and stages affect patients with advanced illness referred for supportive and palliative care.
- Wound management is a holistic (macro) approach to dealing with wound issues that is built upon the foundation of patient-centered care, interprofessional collaboration, and integration.
- Comprehensive wound management comprises clinical assessment, diagnostics, therapeutics, prognosis, and prevention.
- Goals of care transition during life's continuum.
- When wound healing is not achievable, clinicians must pursue optimal wound maintenance, wound palliation, and wound prevention.

up to 15% of advanced cancer patients [1^o]. Other wound classes include skin tears, venous leg ulcers, arterial leg/foot ulcers, diabetic foot ulcers, iatrogenic wounds, and inflammatory ulcers [1^o]. With the exception of malignant wounds, inflammatory wounds, and iatrogenic wounds, noncancer patients have a greater propensity to develop all other wound classes [1^o].

Patients with wounds experience and epitomize multidimensional suffering that has the capacity to severely compromise comfort, dignity, and quality of life. Moreover, wounds afflict suffering to the entire person, not just to the body given that they affect not only the physical domain, but also the psychological, spiritual, social, and existential domains. Wounds commonly lead to the development of several physical symptoms, most notably, pain, exudation, odor, pruritus, and bleeding [10–15]. They may also be associated with secondary sequelae such as anxiety, depression, anguish, social isolation, disfigurement, and disability [10–15]. Given that wounds, metaphorically, represent 'windows' into the global health of patients, it is not surprising that they have been demonstrated to be associated with reduced survival [16–18]. Recent data suggest that wounds, especially pressure ulcers, are markers and prognostic factors portending a reduced life expectancy rather than representing direct causes of death [16,17]. In other words, patients with advanced illness tend to die with their wounds rather than die as a consequence of their wounds.

Worldwide, the management of wounds is one of the most rapidly rising sectors for healthcare financial expenditure. It has been estimated that the USA spends more than US\$25 billion on the

management of chronic wounds, of which US\$11 billion are directed to pressure ulcers [19]. As populations become progressively aged, overall wound prevalence is expected to rise, together with proportionate increases in resource allocation and financial expenditure. In addition, wounds are becoming a burgeoning source of concern from a healthcare legal and litigation perspective [19,20].

DEFINING THE DISCIPLINE OF WOUND MANAGEMENT

Wound management is a rapidly evolving discipline within healthcare. It is of paramount importance to recognize that wound management extends far beyond simply the 'wound dressing' and encompasses the 'whole patient', not merely the 'hole in the patient'. Whereas the term 'wound management' implies a 'macro' approach, the term 'wound care' remains vague and generally carries the connotation of dealing only with the local/topical ('micro') aspects of dealing with a given wound. Comprehensive wound management, conceptually, may be defined as comprising the following components: clinical assessment, diagnostics, therapeutics, prognosis, and prevention [21]. Furthermore, wound management is ideally built upon the foundational principles of patient-centered care and patient empowerment, interprofessional education and interprofessional collaboration, and integration (vertically and horizontally) within the healthcare system [21]. In addition, wound management must also be guided by evidence-based practice. Thus, comprehensive wound management may be conceptualized through a graphic paradigm created by Maida in 2011 (Fig. 1) [21]. The component elements within each 'pillar' of the wound management paradigm are summarized by Fig. 2 [22]. Whenever a wound is encountered, a comprehensive and systematic approach must be undertaken that begins with a complete clinical assessment, progresses through appropriate and indicated diagnostic and therapeutic interventions, and culminates with conclusions related to prognosis (*quoad sanationem* and *quoad vitam*), together with recommendations for preventive strategies (primary prevention and secondary prevention).

WOUND OUTCOMES

Any given wound may experience a range of outcomes. Although the most desired outcome is complete wound healing, one must acknowledge that with or without appropriate treatments, wounds may also deteriorate, especially in the setting of patients with advanced illness. An intermediate

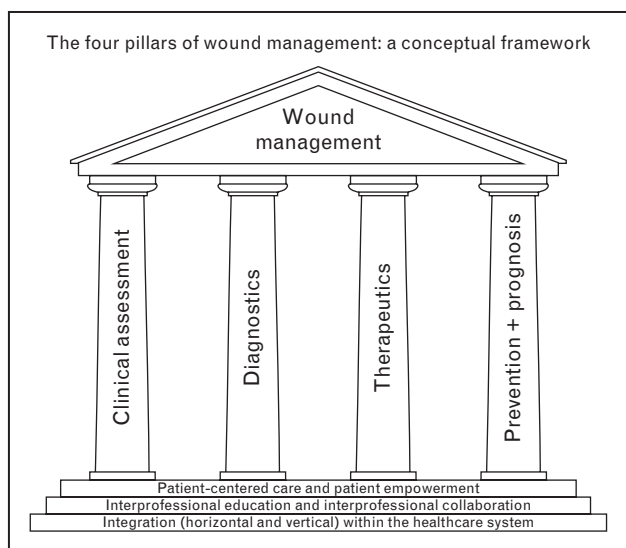


FIGURE 1. A conceptual framework for comprehensive wound management.

outcome, that is in-between complete wound healing and wound deterioration, has been dubbed ‘wound maintenance’ [23] or ‘wound stabilization’ [10]. The term ‘wound maintenance’ was originally

defined to describe potentially healable wounds that were static or stalled owing to noncompliance/nonadherence by patients, and/or nonavailability of necessary therapies [24]. A revised definition encompasses the latter together with those wounds, occurring in the setting of compromised patients (patients with advanced illness), where deterioration is likely to occur and where optimized wound management, including a time-limited trial of healing strategies, achieves ‘wound maintenance’ (stabilization) [10,23]. In the context of patients with advanced illness, wound maintenance should be regarded as a successful outcome. This revised and more fulsome definition has been depicted graphically by Maida in 2011 (Fig. 3) [23].

GOALS OF WOUND MANAGEMENT

Wound management encompasses multiple goals including wound healing, wound palliation (palliative wound care or wound-related pain and symptom management), wound prevention (primary and secondary of wounds, as well as prevention of wound-related complications such as wound

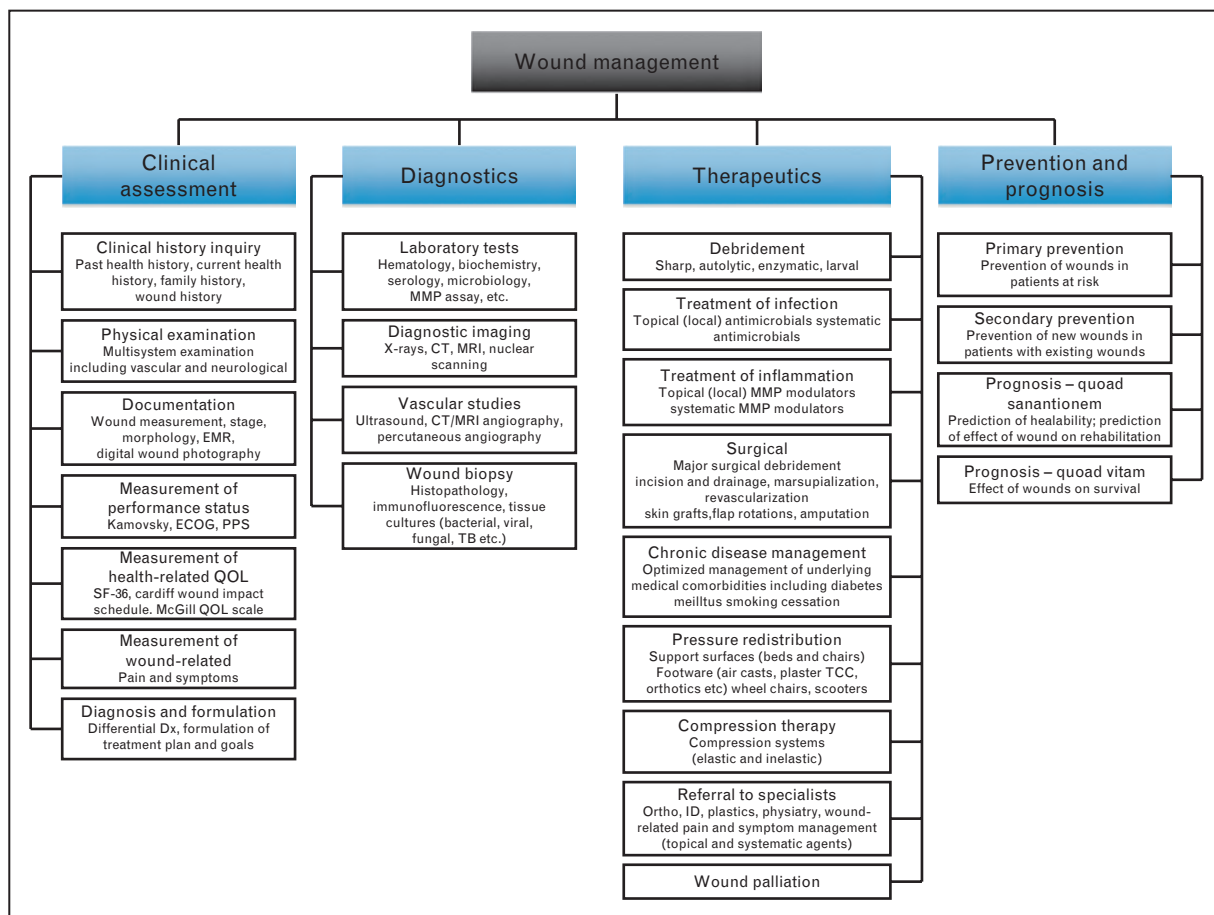


FIGURE 2. Components of the four domains (pillars) of wound management.

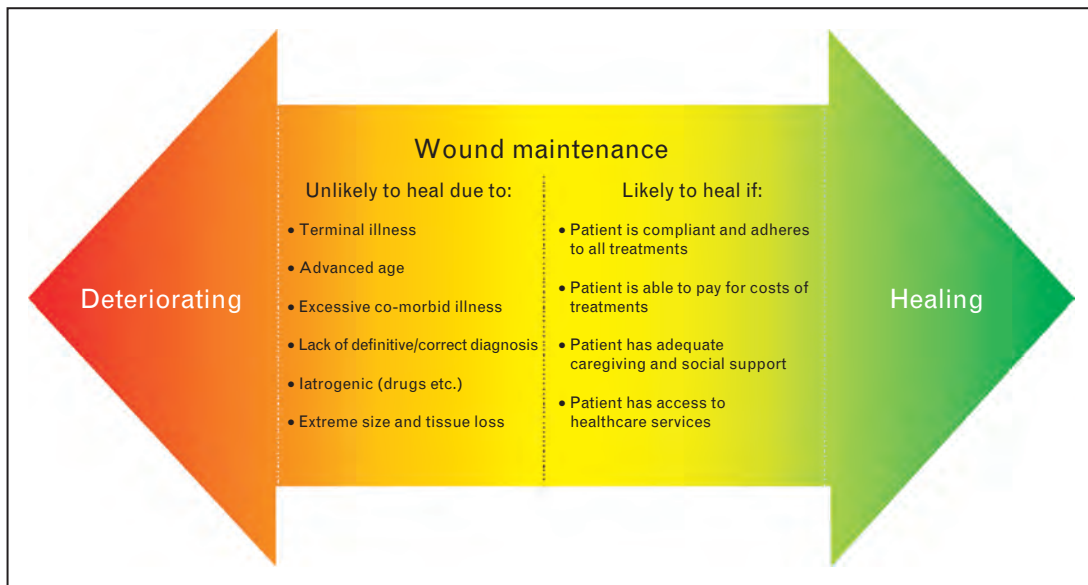


FIGURE 3. Range of outcomes in wound management.

infection). [5,10,21–23]. Although the prime and most fundamental goal is complete wound healing, this is not always possible, given their shortened life expectancies [10,21–27]. Goals of wound management change over a patient’s lifespan [5,10,21–28]. This has been depicted graphically by Maida in 2010 (Fig. 4) [29]. When a patient is young and healthy, wounds have the greatest potential and likelihood to completely heal. However, as a patient becomes increasingly elderly, acquires advanced illness, and

approaches end of life, complete healing becomes less likely. Therefore, realistic goals of care must be developed, discussed, and negotiated with the patient, along with the development of appropriate treatment plans. Goals are not mutually exclusive, as wound healing strategies may achieve wound palliation and *vice versa* [5,10,28]. A widely used approach for wound healing may be guided by the Wound Bed Preparation Paradigm (Fig. 5), forwarded by Sibbald *et al.* [30] that is enabled

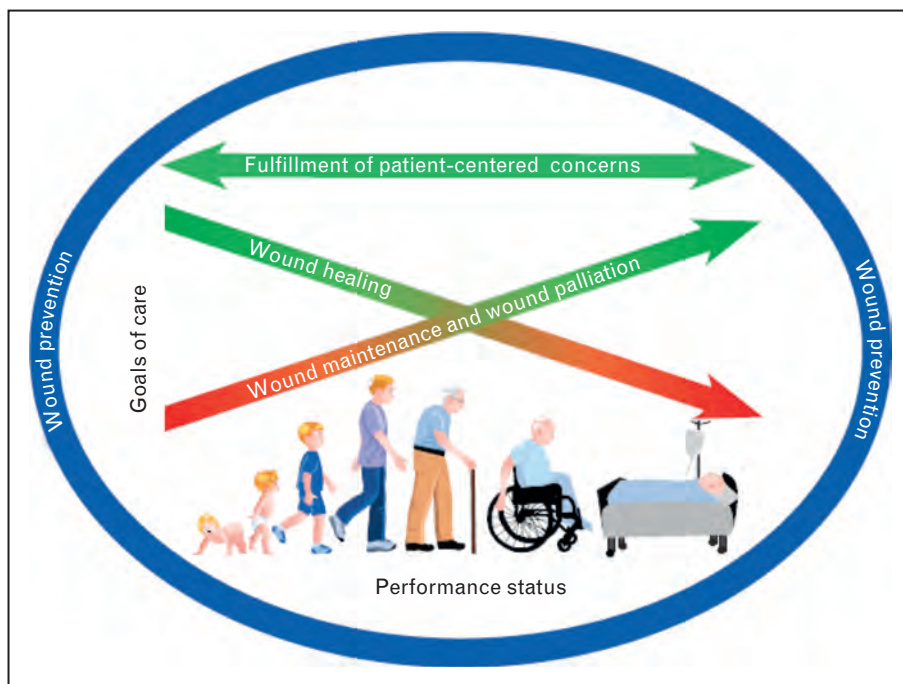


FIGURE 4. Wound management across life’s continuum.

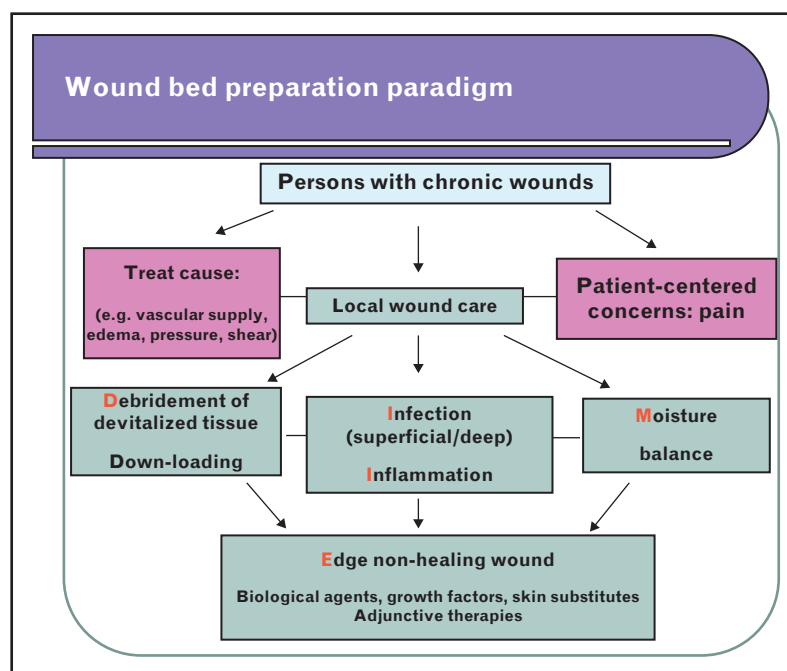


FIGURE 5. Wound Bed Preparation Paradigm. Adapted from [30**].

by the 'DIME' mnemonic acronym. Intrinsic to the Wound Bed Preparation Paradigm is the treatment of the underlying cause(s) of the wound together with attention to the most important local factors summarized through the acronym 'DIME'. In this paradigm, 'D' represents debridement of necrotic tissue. 'D' also denotes downloading (pressure redistribution), which is a key aspect of healing and preventing pressure ulcers. 'I' refers to the treatment of Infection and modulation of inflammatory factors, 'M' represents achieving appropriate moisture balance for a given wound, and 'E' refers to methods that promote epithelial edge migration [30**].

A recent study reported healing rates of multiple wound classes among patients with advanced illness referred for supportive and palliative care [31]. Patients with less than 6 months' survival demonstrated complete healing rates among the following wound classes: venous leg ulcers 56%, diabetic foot ulcers 27.3%, stage I pressure ulcers 18.9%, skin tears 14.5%, and stage II pressure ulcers 10.4% [31]. Proportions of patients with complete healing of at least one wound were positively correlated with survival length [31]. In this study, there was zero complete healing of advanced pressure ulcers (III, IV, US), Arterial leg/foot ulcers, and malignant wounds [31]. A follow-up study looking only at pressure ulcers showed that 92.87% of pressure ulcers achieved either wound maintenance or some degree of wound healing, and overall, wound healing occurred 3.42 times more often than wound

deterioration, when patients with advanced illness were afforded comprehensive wound management that included a time-limited trial of healing therapies [32*].

WOUND PALLIATION

Although the term 'palliative' is derived from the Latin, 'palliare', which means 'to cloak', wound palliation must not be regarded as merely 'cloaking' the wound with dressing materials. Rather, wound palliation (wound-related pain and symptom management or palliative wound care) is the targeted pain and symptom management of wound-related physical symptoms using judicious, and often creative, combinations of local and systemic measures, and guided by impeccable serial clinical assessment. Of all wound classes, malignant wounds generate the highest levels of physical symptom burden, with pain being the most prevalent and severe symptom [12,13]. Wound-related pain may be stratified into baseline (background) pain, and pain associated with procedures such as dressing changes (removal of old dressings and application of new materials), wound cleansing, and debridement [13]. The latter type of pain is a subtype of 'breakthrough pain' referred to as volitional incident pain [33]. Wound-related symptoms and distress generated by all wound classes may be assessed, quantified, and documented through the use of the Toronto Symptom Assessment System for Wounds (TSAS-W) [13]. Based upon the Edmonton

Symptom Assessment (ESAS), TSAS-W comprises ten 11-point numeric rating scales that assess the commonest wound-related symptoms. Within TSAS-W are individual scales for baseline wound-related pain and wound-related procedural pain. The summation of applicable scales equates to a 'Global Wound Symptom Distress Score' (GWSDS) [13]. TSAS-W may be useful as a guide to assess and evaluate wound palliation in the clinical setting as well as being useful as a research and audit instrument.

REFORMING THE LINGUISTICS OF WOUND MANAGEMENT

The term 'palliative wound' should be avoided as it is vague, imprecise, and euphemistic. Generally speaking, the term 'palliative', as an adjective, should not be used to define neither a patient nor a wound. Instead, it should only be used as an adjective to define the goals and philosophy of care that is being pursued. In other words, it is more descriptive and less confounding, to define the patient or wound with more precise terms. For example, a stage IV lung cancer patient with a PPSv2 30% and a nonhealable stage IV sacral pressure ulcer who has accepted to adopt an overall conservative palliative philosophy and mode of care is a more precise description rather than curtly stating, 'A palliative patient with a palliative wound'.

CONCLUSION

Patients with advanced illness have a high prevalence and incidence of wounds from multiple wound classes. Wounds represent a major source of suffering and reduced quality of life owing to their multidimensional nature. They are also an increasing concern from a healthcare economic standpoint. Given that wounds are, metaphorically, 'windows into the health of the patient', they may be used as prognostic factors with the potential to enhance the accuracy of currently available prognostic instruments and models. Successful wound management is predicated upon realistic goal setting in conjunction with robust wound prevention strategies. Comprehensive wound management requires a 'macro' and holistic approach that may be facilitated through interprofessional collaboration and integration between all components within healthcare systems. When wound healing is not feasible, maximal attention must be directed to optimizing wound palliation and wound prevention. Wound management must continue to evolve as a tenet within palliative care.

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Conflicts of interest

The author declares no financial conflicts of interest associated with the creation of this manuscript.

REFERENCES AND RECOMMENDED READING

Papers of particular interest, published within the annual period of review, have been highlighted as:

- of special interest
- of outstanding interest

Additional references related to this topic can also be found in the Current World Literature section in this issue (pp. 122–123).

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