

## SCALE: Skin Changes at Life's End

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**Editor's note:** *This version of the SCALE consensus document has been condensed from its original version. To access the full SCALE document, please visit [www.woundsresearch.com](http://www.woundsresearch.com) or [www.gaymar.com](http://www.gaymar.com).*

*The content of this document is based on the results of a 2-day roundtable discussion held on April 4–6, 2008 in Chicago, IL, and was made possible by an unrestricted educational grant from Gaymar Industries, Inc. Additional input was received from international panels of 49 and 52 distinguished reviewers using a modified Delphi Method process. The information contained herein does not necessarily represent the opinions of all panel members, distinguished reviewers, or Gaymar Industries, Inc.*

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**Abstract:** An expert panel was established to formulate a consensus statement on Skin Changes At Life's End (SCALE). The panel consists of 18 internationally recognized key opinion leaders including clinicians, caregivers, medical researchers, legal experts, academicians, a medical writer, and leaders of professional organizations. The inaugural forum was held on April 4–6, 2008 in Chicago, IL, and was made possible by an unrestricted educational grant from Gaymar Industries, Inc. The panel discussed the nature of SCALE, including the proposed concepts of skin failure along with other end of life skin changes. The final consensus document and statements were edited and reviewed by the panel after the meeting. The document and statements were initially externally reviewed by 49 international distinguished reviewers. A modified Delphi process was used to determine the final statements and 52 international distinguished reviewers reached consensus on the final statements.

**T**he skin is the body's largest organ and like any other organ is subject to a loss of integrity. It has an increased risk for injury due to both internal and external insults. The panel concluded that: our current comprehension of skin changes that can occur at life's end is limited; that SCALE process is insidious and difficult to prospectively determine; additional research and expert consensus is necessary; and contrary to popular myth, not all pressure ulcers are avoidable.

Specific areas requiring research and consensus include: 1) the identification of critical etiological and pathophysiological factors involved in SCALE, 2) clinical and diagnostic criteria for describing conditions identified with SCALE, and 3) recommendations for evidence-informed pathways of care.

The statements from this consensus document are designed to facilitate the implementation of knowledge-transfer-into-practice techniques for quality patient outcomes. This implementation process should include interprofessional teams (clinicians, lay people, and policy makers) concerned with the care of individuals at life's end to adequately address the medical, social, legal, and financial ramifications of SCALE.

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**Panel Statements**

As a result of the 2-day panel discussion and subsequent panel revisions, and with input from 69 noted wound care experts in a modified Delphi Method approach, the following 10 statements are proposed by the SCALE Expert Panel:

**Statement 1: *Physiologic changes that occur as a result of the dying process may affect the skin and soft tissues and may manifest as observable (objective) changes in skin color, turgor, or integrity, or as subjective symptoms such as localized pain. These changes can be unavoidable and may occur with the application of appropriate interventions that meet or exceed the standard of care.***

When the dying process compromises the homeostatic mechanisms of the body, a number of vital organs may become compromised. The body may react by shunting blood away from the skin to these vital organs, resulting in decreased skin and soft tissue perfusion and a reduction of the normal cutaneous metabolic processes. Minor insults can lead to major complications such as skin hemorrhage, gangrene, infection, skin tears, and pressure ulcers that may be markers of SCALE. See Statement 6 for further discussion.

**Statement 2: *The plan of care and patient response should be clearly documented and reflected in the entire medical record. Charting by exception is an appropriate method of documentation.***

The record should document the patient's clinical condition including comorbidities, pressure ulcer risk factors, significant changes, and clinical interventions that are consistent with the patient's wishes and recognized guidelines for care.<sup>1</sup> Facility policies and guidelines for record keeping should be followed and facilities should update these policies and guidelines as appropriate. The impact of the interventions should be assessed and revised as appropriate. This documentation may take many forms. Specific approaches to documentation of care should be consistent with professional, legal, and regulatory guidelines, and may involve narrative documentation, the use of flow sheets, or other documentation systems/tools.

If a patient is to be treated as palliative, it should be stated in the medical record, ideally with a reference to a family/caregiver meeting, and that consensus was reached. If specific palliative scales such as the Palliative Performance Scale,<sup>2</sup> or other palliative tools were uti-

lized,<sup>3</sup> they should be included in the medical record. Palliative care must be patient-centered, with skin and wound care being only a part of the total plan of care.

It is not reasonable to expect that the medical record will be an all-inclusive account of the individual's care. Charting by exception is an appropriate method of documentation. This form of documentation should allow the recording of unusual findings and pertinent patient risk factors. Some methods of clinical documentation are antiquated in light of today's complexity of patient care and rapidly changing interprofessional healthcare environment; many current documentation systems need to be revised and streamlined.

**Statement 3: Patient centered concerns should be addressed including pain and activities of daily living.**

A comprehensive, individualized plan of care should not only address the patient's skin changes and comorbidities, but any patient concerns that impact quality of life including psychological and emotional issues. Research suggests that for wound patients, health-related quality of life is especially impacted by pain, change in body image, odors and mobility issues. It is not uncommon for these factors to have an effect on aspects of daily living, nutrition, mobility, psychological factors, sleep patterns and socialization.<sup>4,5</sup> Addressing these patient-centered concerns optimizes activities of daily living and enhance a patient's dignity.

**Statement 4: Skin changes at life's end are a reflection of compromised skin (reduced soft tissue perfusion, decreased tolerance to external insults, and impaired removal of metabolic wastes).**

When a patient experiences SCALE, tolerance to external insults (such as pressure) decreases to such an extent that it may become clinically and logistically impossible to prevent skin breakdown and the possible invasion of the skin by microorganisms. Compromised immune response may also play an important role, especially with advanced cancer patients and with the administration of corticosteroids and other immunosuppressant agents.

Skin changes may develop at life's end despite optimal care, as it may be impossible to protect the skin from environmental insults in its compromised state. These changes are often related to other cofactors including aging, coexisting diseases, and drug adverse events. SCALE, by definition occurs at life's end, but skin com-

promise may not be limited to end of life situations; it may also occur with acute or chronic illnesses, and in the context of multiple organ failure that is not limited to the end of life.<sup>6,7</sup> However, these situations are beyond the scope of this panel's goals and objectives.

**Statement 5: Expectations around the patient's end of life goals and concerns should be communicated among the members of the interprofessional team and the patient's circle of care. The discussion should include the potential for SCALE including other skin changes, skin breakdown and pressure ulcers.**

It is important that the provider(s) communicate and document goals of care, interventions, and outcomes related to specific interventions (See Statement 2). The patient's circle of care includes the members of the patient unit including family, significant others, caregivers, and other healthcare professionals that may be external to the current interprofessional team. Communication with the interprofessional team and the patient's circle of care should be documented. The education plan should include realistic expectations surrounding end of life issues with input from the patient if possible. Communication of what to expect during end of life is important and this should include changes in skin integrity.

Being mindful of local protected health information disclosure regulations (eg, USA: HIPAA, 1996),<sup>8</sup> the patient's circle of care needs to be aware that an individual at the end of life may develop skin breakdown, even when care is appropriate. They need to understand that skin function may be compromised to a point where there is diminished reserve to tolerate even minimal pressure or external insult. Educating the patient's circle of care up front may help reduce the chances of shock and emotional reactions if end of life skin conditions occur.

This education includes information that as one nears end of life, mobility decreases. The individual frequently has a "position of comfort" that the patient may choose to maintain, resulting in a greater potential for skin breakdown. Some patients elect to continue to lie on the pressure ulcer, stating it is the most comfortable position for them. Respecting the coherent patient's wishes is important.

With the recognition that these skin conditions are sometimes a normal part of the dying process, there is less potential for assigning blame, and a greater under-

standing that skin organ compromise may be an unavoidable part of the dying process.

Discussions regarding specific trade-offs in skin care should be documented in the medical record. For example, patients may develop pressure ulcers when they cannot be (or do not want to be) turned due to pain or the existence of other medical conditions. Pressure ulcers may also occur in states of critical hypoperfusion due to underlying physical factors such as severe anemia, hypoxia, hypotension, peripheral arterial disease, or severe malnutrition. Care decisions must be made with the total goals of the patient in mind, and may be dependent on the setting of care, trajectory of the illness, and priorities for the patient and family. Comfort may be the overriding and acceptable goal, even though it may be in conflict with best skin care practice. In summary, the patient and family should have a greater understanding that skin organ compromise may be an unavoidable part of the dying process.

**Statement 6: Risk factors, symptoms, and signs associated with SCALE have not been fully elucidated, but may include:**

- Weakness and progressive limitation of mobility.
- Suboptimal nutrition including loss of appetite, weight loss, cachexia and wasting, low serum albumin/pre-albumin, and low hemoglobin as well as dehydration.
- Diminished tissue perfusion, impaired skin oxygenation, decreased local skin temperature, mottled discoloration, and skin necrosis.
- Loss of skin integrity from any of a number of factors including equipment or devices, incontinence, chemical irritants, chronic exposure to body fluids, skin tears, pressure, shear, friction, and infections.
- Impaired immune function.

Diminished tissue perfusion is the most significant risk factor for SCALE and generally occurs in areas of the body with end arteries, such as the fingers, toes, ears, and nose. These areas may exhibit early signs of vascular compromise and ultimate collapse, such as dusky erythema, mottled discoloration, local cooling, and eventually infarcts and gangrene.

As the body faces a critical illness or disease state, a normal protective function may be to shunt a larger percentage of cardiac output from the skin to more vital internal organs, thus averting immediate death. Chronic shunting of blood to the vital organs may also occur as a result of limited fluid intake over a long period of time.

Most of the skin has collateral vascular supply but distal locations such as the fingers, toes, ears, and nose have a single vascular route and are more susceptible to a critical decrease in tissue oxygenation due to vasoconstriction. Furthermore, the ability to tolerate pressure is limited in poorly perfused body areas.

Additional literature reviews and clinical research are needed to more thoroughly comprehend and document all of the potential risk factors associated with SCALE and their clinical manifestations.

**Statement 7: A total skin assessment should be performed regularly and document all areas of concern consistent with the wishes and condition of the patient. Pay special attention to bony prominences and skin areas with underlying cartilage. Areas of special concern include the sacrum, coccyx, ischial tuberosities, trochanters, scapulae, occiput, heels, digits, nose and ears. Describe the skin or wound abnormality exactly as assessed.**

It is important to assess the whole body because there may be signs that relate to skin compromise. Table 1 provides a limited list of dermatologic terms that may be useful when describing areas of concern. Table 2 provides descriptive terms for lesions based on characteristics and size.

**Statement 8: Consultation with a qualified health care professional is recommended for any skin changes associated with increased pain, signs of infection, skin breakdown (when the goal may be healing), and whenever the patient's circle of care expresses a significant concern.**

There are very definite descriptive terms for skin changes that can be used to facilitate communication between healthcare professionals (see Statement 7). Until more is known about SCALE, subjective symptoms need to be reported and objective skin changes described. This will allow for identification and characterization of potential end of life skin changes.

An accurate diagnosis can lead to decisions about the area of concern and whether it is related to end of life care and/or other factors. The diagnosis will help determine appropriate treatment and establish realistic outcomes for skin changes. For pressure ulcers, it is important to determine if the ulcer may be (i) healable within an individual's life expectancy, (ii) maintained, or (iii) nonhealable or palliative.<sup>9</sup> The treatment plan will depend on an accurate diagnosis, the individual's life

**Table 1.** Useful dermatologic terms for describing areas of concern. Additional terms can be found in the Glossary included at the end of this document.

Term	Description
Bruise	An injury producing a hematoma or diffuse extravasation of blood without rupture of the skin. <sup>10</sup> Often presents as a reddish, purple, black discoloration of the skin.
Crust	A hard outer layer or covering; cutaneous crusts are often formed by dried serum, pus or blood on the surface of a ruptured blister or pustule. <sup>10</sup>
Erosion (denudation)	A loss of surface skin with an epidermal base.
Eschar	Thick adherent, necrotic tissue that is typically dry and brown, black or gray in color.
Fissure	A thin linear loss of skin with a dermal or deeper base.
Hematoma	A collection of blood in the soft tissues.
Lesion	Any change in the skin that may be a normal or abnormal variant including a wound or injury. <sup>9</sup> It encompasses everything from macular lesions (color changes without elevation or depression of the skin) through total skin breakdown.
Mottling of skin due to vascular stasis	An area of skin composed of macular lesions of varying shades or colors over the smaller or medium sized blood vessels. <sup>10</sup>
Scale	Surface keratin that may be thick or thin, resembling a fish scale, cast off (desquamating) from the skin. <sup>10</sup>
Skin Tear	A traumatic wound occurring principally on the extremities of older adults as a result of friction alone or with shearing and frictional forces, that separate the epidermis from the dermis (partial-thickness wound) or which separate both the epidermis and the dermis from the underlying structures (full-thickness wound). <sup>11</sup>
Slough	Yellow, green, tan, or white putrefied debris often partly separated from the surface of the wound bed. <sup>10</sup>
Ulcer	A loss of surface skin with a dermal or deeper base.

**Table 2.** Dermatological descriptions of lesions based on characteristics and size.

Lesion Characteristic	Lesion Size	
	< 1 cm	> 1 cm
Flat	<i>Macule</i>	<i>Patch</i>
Elevated	<i>Papule</i>	<i>Plaque</i>
Blister	<i>Vesicle</i>	<i>Bulla</i>

expectancy and wishes, family members' expectations, institutional policies, and the availability of an interprofessional team to optimize care.<sup>12</sup> Remember that patient status can change and appropriate reassessments with determination of likely outcomes may be necessary.

It is important to remember that a maintenance or nonhealable wound classification does not necessarily

equate to withholding treatment. For example, the patient may benefit with improved quality of life from surgical debridement and/or the use of advanced support surfaces.

**Statement 9:** *The probable skin change etiology and goals of care should be determined. Consider the 5 Ps for determining appropriate intervention strategies:*

- Prevention
- Prescription (may heal with appropriate treatment)
- Preservation (maintenance without deterioration)
- Palliation (provide comfort and care)
- Preference (patient desires)

**Prevention** is important for well being, enhanced quality of life, potential reimbursement, and to avoid

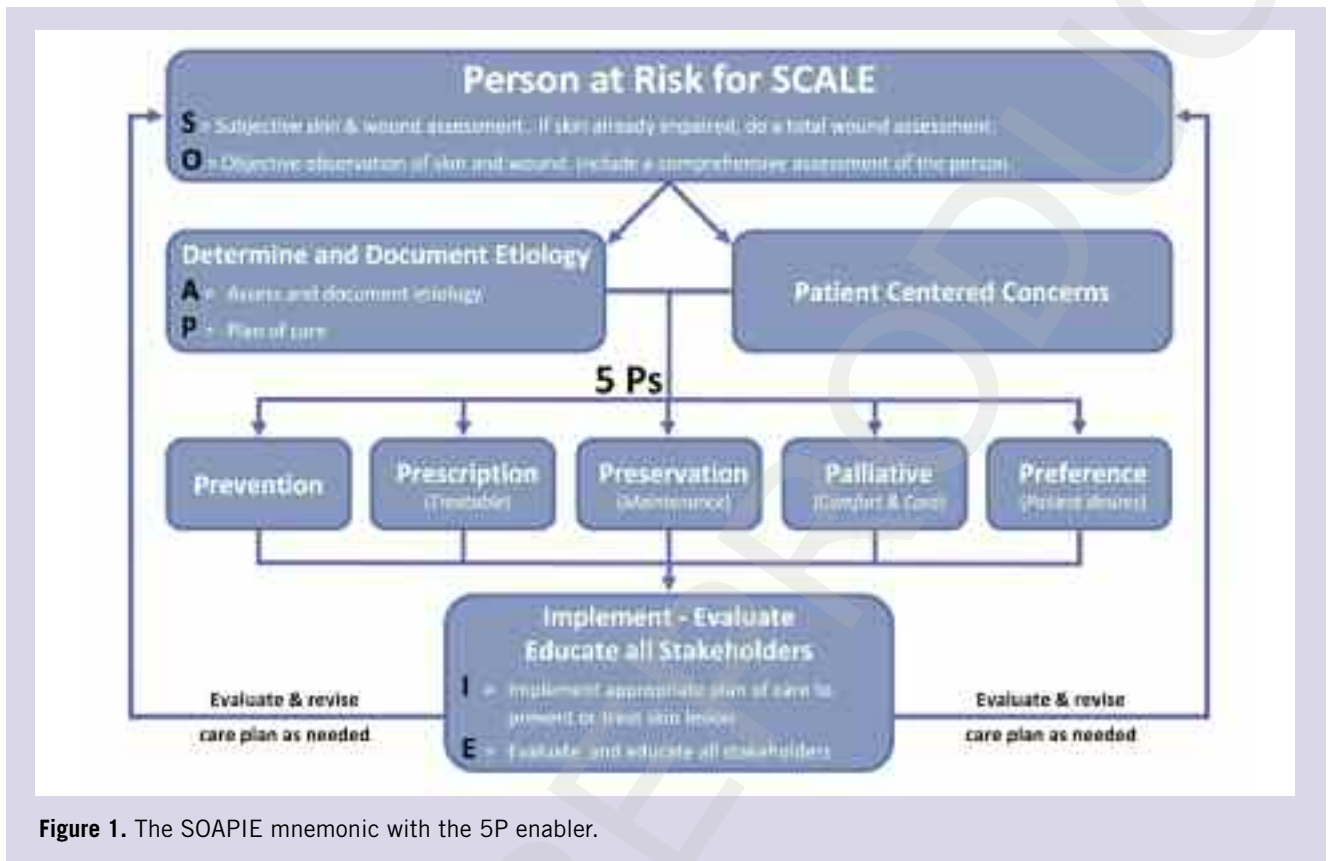


Figure 1. The SOAPIE mnemonic with the 5P enabler.

unplanned medical consequences for end of life care. The skin becomes fragile when stressed with decreased oxygen availability associated with the end of life. The plan of care needs to address excessive pressure, friction, shear, moisture, suboptimal nutrition, and immobilization.

**Prescription** refers to the interventions for a treatable lesion. Even with the stress of dying, some lesions are healable after appropriate treatment. Interventions must be aimed at treating the cause and at patient centered concerns (pain, quality of life), before addressing the components of local wound care as consistent with the patient's goals and wishes.

**Preservation** refers to situations where the opportunity for wound healing or improvement is limited, so maintenance of the wound in its present clinical state is the desired outcome. A maintenance wound may have the potential to heal, but there may be other overriding medical factors that could direct the interprofessional team to maintain the status quo. For example, there may be limited access to care, or the patient may simply refuse treatment.

**Palliation** refers to those situations in which the goal of treatment is comfort and care, not healing. A palliative

or nonhealable wound may deteriorate due to a general decline in the health of the patient as part of the dying process, or due to hypoperfusion associated with non-correctable critical ischemia.<sup>13,14</sup> In some situations, palliative wounds may also benefit from some treatment interventions such as surgical debridement or support surfaces, even when the goal is not to heal the wound.<sup>15</sup>

**Preference** includes taking into account the preferences of the patient and the patient's circle of care.

The 5P enabler can be used in combination with the SOAPIE mnemonic to help explain the process of translating this recommendation into practice (Figure 1).<sup>16</sup> Realistic outcomes can be derived from appropriate SOAPIE processes with the 5Ps becoming the guide to the realistic outcomes for each individual.

**S = Subjective skin & wound assessment:** The person at the end of life needs to be assessed by history, including an assessment of the risk for developing a skin change or pressure ulcer (Braden Scale or other valid and reliable risk assessment scale).<sup>17</sup>

**O = Objective observation of skin & wound:** A physical exam should identify and document skin

changes that may be associated with the end of life or other etiologies including any existing pressure ulcers.

**A = Assess and document etiology:** An assessment should then be made of the general condition of the patient and a care plan.

**P = Plan of care:** A care plan should be developed that includes a decision on skin care considering the 5Ps as outlined in the Figure 1. This plan of care should also consider input and wishes from the patient and the patient's circle of care.

**I = Implement appropriate plan of care:** For successful implementation, the plan of care must be matched with the healthcare system resources (availability of equipment and personnel) along with appropriate education and feedback from the patient's circle of care and as consistent with the patient's goals and wishes.

**E = Evaluate and educate all stakeholders:** The inter-professional team also needs to facilitate appropriate education, management, and periodic reevaluation of the care plan as the patient's health status changes.

**Statement 10: Patients and concerned individuals should be educated regarding SCALE and the plan of care.**

Education needs to be directed not only to the patient but also the patient's circle of care. Within the confines allowed by local protected health information regulations (eg, HIPAA 1996, USA),<sup>8</sup> the patient's circle of care needs to be included in decision making processes regarding goals of care and the communication of the meaning and method of accomplishing those decisions. Collaboration and communication should be ongoing with designated representatives from the patient's circle of care and the clinical team connecting at regular intervals. Documentation of decision making, educational efforts, and the patient's circle of care perspective is recommended. If adherence to the plan of care cannot be achieved, this should be documented in the medical record (including the reasons), and alternative plans proposed if available and feasible.

Education also extends beyond the patient's circle of care, to other involved healthcare professionals, healthcare administrators, policy makers, and to the payers. Healthcare professionals need to facilitate communication and collaboration across care settings and disciplines; organizations need to prepare staff to identify and

manage SCALE. Ongoing discussions with key stakeholders will additionally provide a stimulus for additional evidence based research and education regarding all aspects of SCALE.

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