



The Most Popular

Wound Care Tips

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Contents

About the Author	3
Signs & Symptoms along the Wound Infection Continuum	4
Signs Biofilm may be Present	5
5 Tips for Taking a Wound Swab	6
Wound Exudate Reminders	7
7 Types of Wound Debridement	8
8 Tips for Applying Silver Nitrate to Wounds	10
Epibole – Causes and Tips for Prevention	11
Key Differences between Venous & Arterial Leg Ulcers	12
Wound Care: Topical Antimicrobial Therapy	13
Wound Care – Two Types of Aseptic Technique	14
Storage & Use of Open Unused Wound Dressings	16
Contact Details	18



About the Author

Cheryl Dezotti is a Director, a Nurse Education Consultant, and a Wound Care Specialist at the Nurses for Nurses Network. Cheryl co-created and administers this Network to provide an online platform for Nurses to meet their continuing professional development requirements. She is also the editor, and major contributor, of the Nursing News Blog associated with this Network.

Cheryl has worked extensively in the field of wound care management over the last 30 years. This passion for wound care has seen her lecture widely on the topic both in Australia and internationally, and has led her to author a wound assessment book, multiple wound management documents, as well as creating a post graduate wound care course.



30 years Wound Care Management Experience

Recently Cheryl has launched the Nurses for Nurses Wound Assessment Tool that was created based on her extensive experience in the field and her continued interaction with nursing colleagues, mentoring and assisting them to achieve the best possible wound management outcome for their clients. Cheryl continues her research into best practice wound assessment by overseeing a trial of the assessment tool in multiple clinical settings.

As an author, Cheryl's aim is to provide the reader information that can be easily and practically applied in the clinical setting. As a presenter, Cheryl is known for her ability to deliver the complexities of wound management in a straight forward and easily understood format that allows attendees to easily apply the content to their individual clinical practice.

Cheryl's aim is to make a difference to the recipients of health care and she believes that a positive outcome for the patient can only be achieved if Nurses keep up to date with best practice guidelines and their practical application in the workplace.

Signs & Symptoms along the Wound Infection Continuum

'A wound infection is the presence of microbes in sufficient numbers or virulence to cause a host response locally or systemically'.¹ Nurses can gain valuable information to discern the infected wound stage by becoming familiar with the signs and symptoms that present along the wound infection continuum.

Signs and Symptoms along the Wound Infection Continuum

Contamination:

All wounds may contain microorganisms. If suitable conditions are not available for each microbial group or if the microbes can't evade the person's host defences, they will not multiply or persist and wound healing is not delayed.

Colonisation:

Microbial species successfully grow and divide in the wound, but don't cause damage to the person or commence a wound infection.

Local Infection:

Covert (Subtle) signs of local infection

- Hypergranulation (excessive 'vascular' tissue)
- Bleeding, friable granulation
- Epithelial bridging and pocketing in granulation tissue
- Wound breakdown and enlargement
- Delayed wound healing beyond expectations
- New or increasing pain
- Increasing malodour

Overt (Classic) Signs of local Infection

- Erythema
- Local warmth
- Swelling
- Purulent discharge
- Delayed wound healing beyond expectations
- New or increasing pain
- Increasing malodour

Spreading Infection:

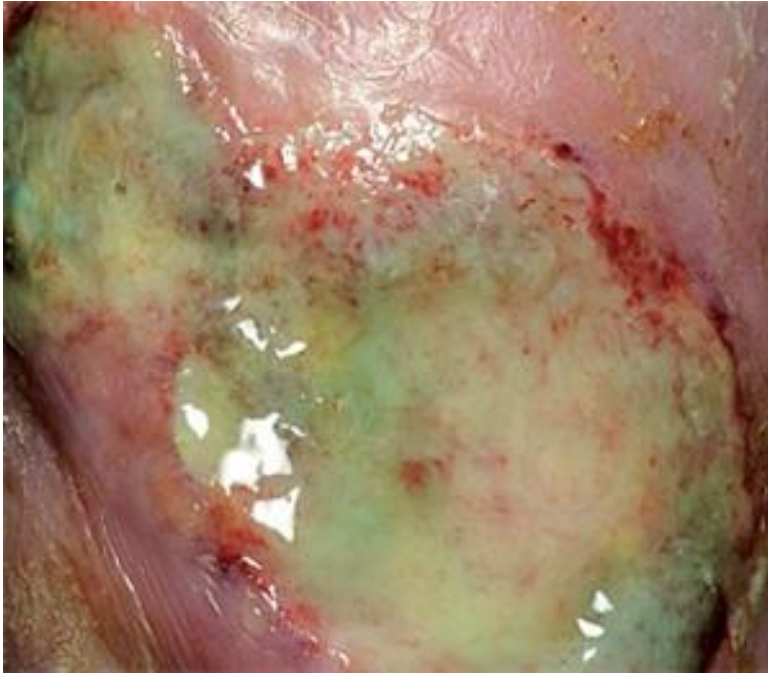
- Extending in duration
- +/-erythema
- Lymphangitis
- Crepitus
- Wound breakdown with/ without satellite lesions

- Lethargy/ general deterioration
- Loss of appetite
- Inflammation, swelling of lymph glands

Systemic Infection:

Can result in severe sepsis, shock, organ failure and death

Source: i. International Wound Infection Institute (IWII) Wound Infection in Clinical Practice, Wound international 2016.p.6. (Accessed 01.12.2017)



Signs Biofilm may be Present

Biofilm has the potential to delay healing in all types of wounds. Did you know wounds do not always display overt signs that Biofilm is present? Chronic wounds with Biofilm may present with subtle signs of consistent non-progression with healing. Perhaps a wound that you are caring for and is not healing has Biofilm present.

The reduction and prevention of recurrence of Biofilm in wounds can be facilitated by very regular wound cleansing via irrigation and the debriding of devitalised tissue, along with consideration regarding the use of topical antimicrobials

Wounds with Biofilm may display these characteristics:

- Failure to heal even with appropriate antibiotic treatment
- Recalcitrance to antimicrobial treatment
- Delayed healing recurs when antibiotics are ceased
- Delayed healing despite appropriate wound management
- Increased moisture / exudate
- Low level chronic inflammation
- Low level erythema
- Poor granulation / friable Hypergranulation
- Secondary signs of infection

Source: Wounds International 'Biofilm Made Easy' Vol 1, Issue 3,2010 www.woundinternational.com (Accessed 02.01.2018)

5 Tips for Taking a Wound Swab



TIP	Description
1. Clean the wound First	Get rid of excessive debris and dressing product residue without unduly disturbing the wound surface by using a gentle stream of normal saline.
2. Wait	Wait for 1 -2 minutes before taking the wound swab. This allows pathogenic organisms to rise to the surface of the wound.
3. Prior	Take the wound swab before antiseptic solutions have been used on the wound & prior to oral antibiotics being commenced.
4. Tissue	Take a wound swab from an area of viable tissue where the clinical signs of infection are present. Don't culture pooled exudate or wound dressings. The risk of non-wound contaminants is high.
5. Technique	Use the Levine technique! A swab is rotated over at least 1cm ² area of the wound surface with sufficient pressure to express fluid from within the wound tissue.

Source https://journals.lww.com/nursing/Citation/2014/07000/Obtaining_a_wound_swab_culture_specimen.22.aspx
Nursing2014: July 2014 - Volume 44 - Issue 7 - p 68-69 (Accessed 01.12.2017)

Wound Exudate Reminders

Effective wound management includes minimising the detrimental effects and maximising the positive effects of wound exudate. The following summary information is provided to assist Nurses to discern the type of exudate observed in a wound to facilitate effective management. Exudate contains a variety of substances including water, electrolytes, nutrients, inflammatory mediators, white cells, protein-digesting enzymes (e.g. matrix metalloproteinases – MMPs), growth factors and waste products.ⁱ



Types of Exudate

Serous: Clear Straw Coloured | **Haemoserous:** Slightly blood stained
Sanguineous: Heavily blood stained | **Purulent:** Contains pus

Wound Viscosity

HIGH

Thick & may be sticky
High Levels of protein
Infection
Inflammation
Necrotic tissue
Enteric fistula
Residue from old dressings

LOW

Thin & may be runny
Low Levels of Protein
Venous or Congestive Cardiac Failure
Malnutrition
Urinary fistula
Lymphatic fistula
Joint space fistula

Source: i. World Union of Wound Healing Societies (WUWHS). Principles of best practice: Wound exudate and the role of dressings. A consensus document. London (2007) [www.http://www.woundsinternational.com/media/issues/82/files/content_42.pdf](http://www.woundsinternational.com/media/issues/82/files/content_42.pdf)
(Accessed 01.12.2017)

7 Types of Wound Debridement

Wound debridement is the removal of non-viable tissue from the wound bed to promote wound healing.

Non-viable Tissue:

Colour may be yellow, grey, blue, brown or black and be soft or slimy or present as hard eschar.

Types of Non-viable Tissue:

Necrotic, sloughy, fibrinous and compromised tissue which at times may also contain dressing residue.



Sharp Debridement

Uses a scalpel, scissors & forceps and removes tissue to just above the viable tissue level. It is selective and quick and can be performed at the bedside.

The person performing this must be authorised and competent and be able to distinguish different tissue types.



Mechanical Debridement

Uses wet to dry gauze that dries and adheres to the top layer of the wound bed which is removed when the dressing is changed.

More modern methods are now available that cause less discomfort and are more tissue selective.



Surgical Debridement

Excision of non viable tissue until a healthy tissue wound bed is achieved including wound margins.

This method is often used for large areas that require rapid removal and anaesthetic is often administered.

7 Types of Wound Debridement

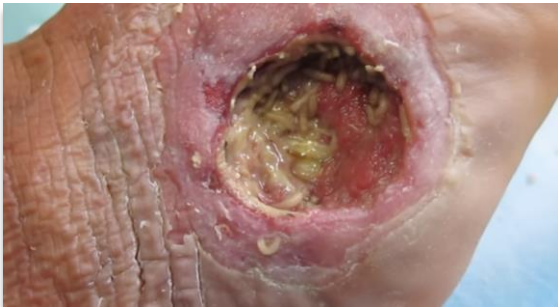
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Autolytic Debridement

Uses the body's own enzymes and moisture to rehydrate, soften and liquefy hard eschar and slough. This method uses occlusive or semi occlusive dressings and/ or antimicrobial products.

It is a slow process in comparison to other debridement methods. Can be used when there is just a small area that requires debriding.



Biosurgical Debridement

Maggot therapy using the larvae of the green bottle fly. It is a highly selective and rapid mode of debridement. Not suitable for all patients or wounds.

The closed bag method reduces the skill level required of the practitioner applying the treatment and can be left insitu for 4 - 5 days.



Hydrosurgical Debridement

Removal of dead tissue using a high energy saline beam as a cutting tool.

This requires specialist training, is completed rapidly, and is more expensive than other modes of debridement available.



Ultrasonic Debridement

Debridement takes place via ultrasound either in direct contact with the wound bed or via an atomised solution known as a mist. Most devices contain a built in irrigation system. This type of debridement is immediate and can be selective. Must be completed by a specialist with training. Expensive when compared to other methods of debridement.

Source: Wounds UK 'Debridement Made Easy. 2011 Vol 7 Issue 1 <http://www.wounds-uk.com/made-easy/debridement-made-easy> (Accessed 31.05.17)



8 Tips for Applying Silver Nitrate to Wounds

Silver nitrate is regularly used in wound care. Silver nitrate is available in the form of firm wooden sticks with 75% silver nitrate and 25% potassium nitrate impregnated on the tip. Did you know that moistening the tip sparks a chemical reaction that burns organic matter (skin), coagulates tissue, and destroys bacteria? Silver nitrate is used to remove hyper-granulation tissue, calloused rolled edges in wounds and works well to cauterize bleeding in wounds.ⁱ

- Silver nitrate is very caustic to skin. Wear PPE as required.
- Be careful and only apply to the area to be treated. Use a barrier on the adjacent good skin e.g. petroleum jelly. Do **NOT** allow the silver nitrate to drip onto healthy skin.
- Slightly moisten the caustic tip of the silver nitrate applicator stick by dipping the tip in distilled or deionized water prior to use.
- Run the tip of the silver nitrate stick along the tissue to be treated for 2 minutes (or as directed by the Medical Officer).
- The action of the silver nitrate is heightened by the strength of the silver nitrate and the duration it is left in contact with the tissue to be treated.
- **Analgesia including topical anesthetic agents may be required prior to this treatment. STOP immediately if the patient indicates PAIN.**
- Use moistened saline gauze to clean the area after the treatment. **DO NOT** rub or cause friction to the treated area.
- Excess **silver nitrate can be neutralized with 0.9% saline & then removed with water.**

*Always adhere
to Medical
Officer
Instructions
and your
Organisations
related Policies*

Source: i. Morgan N 'How to apply silver nitrate' Wound Care Advisor March/April 2016 Volume 5, Number 2, www.WoundCareAdvisor.com (Accessed 06.07.17)

Epibole – Causes and Tips for Prevention



If you have a wound epithelial edge that is not closing in a timely manner it may be due to Epibole. Epibole are rolled or curled-under closed wound edges. Epibole occurs when the higher epidermal cells roll down over the lower epidermal cells and travel down the sides of the wound instead of across the wound.

Wound edges that roll over stop migrating due to contact inhibition once the epithelial cells of the leading wound edge come in contact with other wound epithelial cells.

Common Causes:

Hypoxia
Trauma from Dressings
Infection
Overpacking a wound bed
Desiccation
Unhealthy wound bed

Tips to Prevent Epibole:

1. Pack dead or empty space in the wound bed. This promotes healing from the wound base upwards. Don't pack the wound tightly, as this will cause unnecessary pressure. Wound fillers, hydrogel impregnated gauze, alginates, or plain moistened gauze can be packed loosely into the space.
2. Protect periwound skin with a skin sealant, moisture barrier ointment, or barrier wafer.
3. Prevent epidermal stripping by using silicone border dressings or silicone tape; consider tape-free securement strategies.
4. Protect the wound from pressure.

Management:

The Epibole has to be opened up to re stimulate the wound healing process. Debridement and the use of silver nitrate are common methods used to reinitiate the wound healing process.

Source:

<https://woundcareadvisor.com/causes-prevention-treatment-epibole/> (Accessed 01.01.2018)

<http://blog.wcei.net/2017/05/wound-care-and-epibole-its-all-about-the-edge> (Accessed 01.01.2018)

Key Differences between Venous & Arterial Leg Ulcers



Venous	Arterial
Location	Location
<ul style="list-style-type: none"> • Lower 1/3 of leg • Pretibial Area • Anterior to medial malleolus 	<ul style="list-style-type: none"> • At tips or between toes • Over phalangeal heads • Above lateral malleolus • Over the metatarsal head • The side or sole of feet
Ulcer Appearance	Ulcer Appearance
<ul style="list-style-type: none"> • Ulcer has uneven edges • Ruddy granulation tissue • No dead tissue • Moderate to no pain • Pain if present is eased by raising the leg 	<ul style="list-style-type: none"> • Well defined edges • Deep pale base • Black / necrotic tissue • Very painful • Pain reduces when the leg is lowered to dependent position
The Leg	The Leg
<ul style="list-style-type: none"> • Reddish brown pigment - Haemosiderin • Scars from healed ulcers • Legs may be warm • Oedema -may leak & cause maceration, varicose eczema • Hair on legs • Dilated superficial veins • Normal leg and foot pulses 	<ul style="list-style-type: none"> • Thin, dry & shiny skin • Thickened toe nails • Leg may be cool • Leg becomes pale when elevated • May have neuropathy • Minimal/ no hair • Diminished leg / foot pulses

Source: Carville,K.,(2012). Wound Care Manual (6th Ed.) Silver Chain Foundation, Osborne Park, Australia, 137

Wound Care:

Topical Antimicrobial Therapy

The word 'Antimicrobial' refers to antibiotics, antiseptics and disinfectants. Topical antimicrobials are regularly used in wound management. Whilst Nurses adhere to specific organisational policies and medical officer directives, the following key points should be considered when caring for a patient who is requiring topical antimicrobial therapy.

Topical Antiseptics

Topical antiseptics are non selective and can be cytotoxic which means they can kill skin and neutrophils, macrophages, keratinocytes and fibroblasts if not applied appropriately to the wound

Antiseptics should be used at the lowest effective concentration to reduce harm to skin and tissue

It is recommended to use topical antiseptic for a period of two weeks and then review its effectiveness NOTE: Topical antibiotics are not recommended for the general management of wound infections

Consider rotating the topical wound therapies in a two or four week rotation as it may assist in the restoration of microbial balance

Recommended use of Topical Antiseptic

Topical metronidazole gel for malodour in fungating wounds

Silver sulphadiazine for the treatment of burns and wounds

Mupirocin

Not 'Of concern is the topical use of chloramphenicol by plastic surgeons as a post operative topical surgical prophylaxis'

Source: International Wound Infection Institute Wound infection in clinical practice, Wounds International 2016



Wound Care – Two Types of Aseptic Technique

Nurses understand that using an aseptic technique minimises the risk of pathogenic organisms entering a wound that might lead to infection. The 'old terms' sterile technique' and 'clean technique' are 'no longer supported, and aseptic procedures are described and performed according to the principles of surgical or standard aseptic technique.

Surgical Aseptic Wound Dressing Technique

Surgical Aseptic Technique (Complex Procedure):

- Required for technically complex procedures (involving large open key sites or large or numerous key parts) and longer procedures
- Sterile gloves and sterile equipment are required and a critical aseptic field is used
- A non-touch technique is used wherever possible
- Use when there is direct contact with the wound
- There will be more than 20 minutes of wound exposure
- There is packing of wound surfaces unable to be visualised

Standard Aseptic Wound Dressing Technique

Standard Aseptic Technique (Simple Procedure):

- Required for technically simple procedures (involves relatively few and small key sites and key parts)
- There will be less than **20 minutes of wound exposure**
- Use non-sterile gloves
- Use a general aseptic field and non-touch technique
- **Most standard wound dressing procedures will be suitable for this technique**

Wound Care – Two Types of Aseptic Technique Continued

Wound Cleansing Potable Water & Sterile Solutions

Potable (drinkable tap) Water – this can include the washing of the wound under the shower:

1. Do NOT use potable tap water when a surgical aseptic technique is required
2. Tap water declared not potable (unsuitable for drinking) is not to be used for wound cleansing or cleansing of scissors
3. Ensure the cloths/linen used for washing the wound are clean or disposable and used only on the wound
4. Keep cleansing the wound separate from the action of washing the intact peri-wound and surrounding skin
5. Run the potable tap water for 30 seconds prior to its use for wound cleansing or you can use water boiled for three minutes and left to cool
6. Avoid immersion or soaking of wounds in water

Cleansing a Wound in the Shower:

1. Cleaning the wound in the shower must be separated from washing the rest of the body
2. It is not acceptable to clean a wound in a shared shower space (e.g. a multi-patient use shower in a residential facility or hospital)
3. It is not acceptable to clean a foot wound in a shower or bath

Sterilised Solutions:

1. 'Use a sterilised solution where possible
2. When the use of a sterilised solution is not possible or practical, potable tap water can be used as a wound cleansing solution when a risk assessment of the patient, the wound and the environment is assessed to be low risk
3. Asepsis remains the aim when potable tap water is used for wound cleansing—avoid using it if there is any concern that the procedure will not meet this standard'

Storage & Use of Open Unused Wound Dressings

Nurses should adhere to organisational policies regarding the management of dressing products. The enclosed information identifies key considerations when determining the use of open but unused dressing products.

Product Management

- Cutting and handling procedures for open-but-unused dressing portions must be managed aseptically to minimise the risk of contamination.
- Open-but-unused wound dressing can only be used for the same patient.

Product Storage

- Open-but-unused portion of dressing must be contained in its original packaging.
- Discard any remaining dressing if the original packaging is damaged, torn, or unable to be adequately secured.
- **Do NOT Decant** dressings into alternative containers or non-original packaging.
- Packets containing open-but-unused dressings have the opened end turned over twice and sealed with a tape that can be easily removed without damaging the packaging - use paper tape.
- The secured, original packaging containing the open unused piece of dressing is stored in a clean, resealable plastic bag by itself.
- Any open unused dressing and the resealable plastic bag is **kept no longer than four weeks** unless the manufacturer states otherwise.
- The patient's name, date of birth, medical record number and date of first use is written on the original packaging of the dressing or the resealable plastic bag.
- If there are resealable plastic bags for multiple patients stored in the same area, the patient's name, date of birth and identification number is visible on the outside of the plastic bag to avoid opening the bag except during a wound dressing.
- The patient is provided with information regarding the use and storage of open-but-unused dressings as required
- If there are multiple resealable plastic bags containing open unused dressings for different patients, keep them in a separate area, away from other un-opened wound dressing products and equipment.

Storage & Use of Open Unused Wound Dressings Continued

Product Suitability

- The dressing cannot be managed as open-but-unused if cutting it will alter its performance or structural integrity. Any opened wound dressing product remaining at the end of the procedure is discarded. Refer to the manufacturer's recommendations for guidance.
- Collect all equipment and supplies prior to commencing the wound dressing.
- Select the most appropriate dressing size to match the wound size to avoid using open-but-unused dressings.
- If larger dressing sizes only are available, and all the other criteria are met, then consider the use of an open-but-unused dressing.

Caution using Open but Unused Wound Dressing Products

- Use with caution if your patient is **significantly immunocompromised** by disease, medicines, treatment or nutritional deficits eg:
 - Repeated wound infections
 - Treatment with immunosuppressive medication or cytotoxics
 - Current radiation or chemotherapy treatment
 - Poorly controlled diabetes
 - Leucopenia
 - Underlying immunosuppressive auto-immune condition
- Use with caution if the **Wound is compromised** e.g.
 - If bone, tendon, muscle, ligament or joint is visible or palpable in the wound
 - If the Wound is a cavity with significant depth and/or sinus, tunneling or undermining
 - If a split skin graft was applied less than two weeks prior

NOTE: 'Newly opened sterile dressings to be used and any remaining dressing discarded at the end of the procedure when dressing vascular access device sites & using Negative Pressure Wound Therapy (NPWT)/ Topical Negative Pressure Therapy (TNPT) dressings'

Source: Wounds Australia. Application of aseptic technique in wound dressing procedure A consensus document Cambridge Media: Osborne Park, WA; 2017



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