

NON-MEDICATED WOUND DRESSINGS

Everything you
need to know
about but were
afraid to ask

EXPLAINED

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Glossary

AMR: Antimicrobial resistance, an umbrella term for the effects of overuse of antibiotics, antiseptics and antimicrobials, including medicated wound dressings

AMS: Antimicrobial stewardship, the supervised and organised use of antimicrobials in order to decrease the spread of infections that are caused by multidrug-resistant organisms and to improve clinical outcomes by encouraging appropriate and optimised use of antimicrobials

INFECTION MANAGEMENT: Refers to the diagnosis, treatment, and long-term management of any kind of infection, which could be caused by a wound, bacteria, virus, fungi, or a serious infectious disease

NMWD: Non-medicated wound dressing, a wound dressing that does not contain any active/ pharmaceutical component, but reduces bacterial load via alternative methods

SAPs: Super-absorbent polymers, a dressing designed to absorb and retain the exudate containing wound healing inhibitors and bacteria by a physical mode of action, while not inducing bacterial resistance

International consensus update 2022

The third edition of 'Wound Infection in Clinical Practice' (International Wound Infection Institute [IWII], 2022) was recently launched as an update of the first edition (World Union of Wound Healing Societies [WUWHS], 2008) and second edition (IWII, 2016).

The update incorporates advances in research and clinical practice relating to the wound environment, risk factors for infection, biofilm, antimicrobial resistance (AMR), and new technologies for identification and management of wound infection.

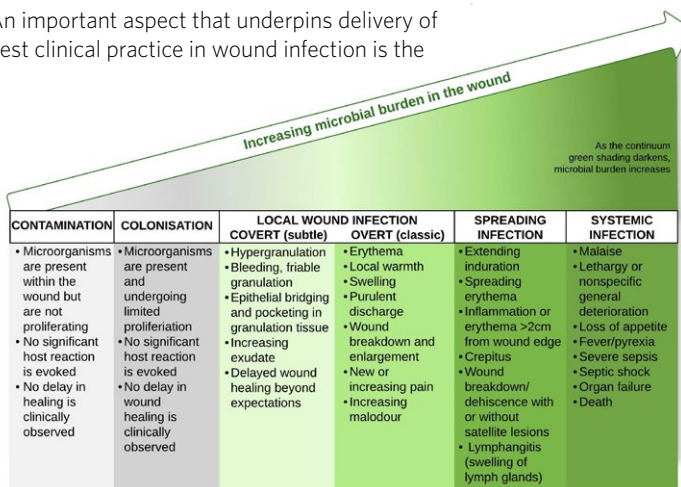
Integral to this document is an updated version of the IWII Wound Infection Continuum (IWII-WIC) for use by health professionals in their clinical practice and by educators and researchers. Other versions of the IWII-WIC are available from the IWII website, including simplified versions for patient and/or student teaching.

An important aspect that underpins delivery of best clinical practice in wound infection is the

language used by clinicians. Consensus was reached that the term 'local wound infection' more accurately represented the phase of infection in which covert (subtle) local clinical indicators of infection (e.g. pocketing, epithelial bridging and hypergranulation) can be identified by expert wound clinicians.

These clinical indicators are primarily observed in the hard-to-heal wound or before the wound exhibits overt (classic) signs and symptoms of infection such as erythema, warmth, swelling, purulent discharge, delayed wound healing beyond expectations, new or increasing pain, and increasing malodour.

The IWII provides this consensus document free to download via Wounds International (www.woundsinternational.com), and from www.woundinfectioninstitute.com, and the document is available in multiple languages.



Scan the QR code to see IWII (2022) Wound Infection in Clinical Practice. To facilitate its use, the IWII-WIC is presented as a removable poster on page 57.

Antimicrobial stewardship

The United Nations and other international agencies estimate that, if no action is taken, antimicrobial drug-resistant diseases could cause 10 million deaths each year by 2050, costing £66 trillion (Interagency Coordinating Group on Antimicrobial Resistance, 2019).

Non-medicated wound dressings (NMWDs) do not incorporate an antimicrobial agent in the dressing but use properties of the dressing material to reduce microorganisms, either through retention of the organism in the

dressing away from the wound bed (thus removing organisms when the dressing is changed) or by killing microorganisms through biochemical interaction within the dressing (WUWHS, 2020).

This approach supports the principles of antimicrobial stewardship (AMS) programmes and avoids the misuse and overuse of medicated treatments to preserve their future effectiveness and reduce the threat of AMR (WUWHS, 2020; Rippon et al, 2021).

| Antimicrobial stewardship initiatives (IWII, 2022) |
|---|
| Government level antimicrobial stewardship initiatives |
| <ul style="list-style-type: none">■ Promote global regulation of prescription and supply of antimicrobials■ Support global initiatives focused on reducing AMR■ Promote awareness of AMR in the health and animal sectors and the general public■ Support and stimulate ongoing research on AMR and development of new antimicrobial agents |
| Organisational level antimicrobial stewardship initiatives |
| <ul style="list-style-type: none">■ Provide adequate funding and resources to support AMS■ Convene an AMS committee responsible for guiding and monitoring the use of antimicrobial agents in the facility■ Develop institutional policies and procedures on the use of antimicrobial agents based on global guidance■ Implement best clinical practice in wound infection prevention and treatment■ Facilitate accurate diagnosis of wound infection with appropriate policies, resources and care pathways■ Monitor trends in microbial sensitivity in the facility■ Audit antimicrobial prescribing and patterns of use■ Monitor and publish incidence of wound infection, types of wounds being managed with antimicrobial agents and their effectiveness■ Provide regular education to all stakeholders on AMR and AMS |
| Clinical level antimicrobial stewardship initiatives |
| <ul style="list-style-type: none">■ Educate patients, their families and healthcare professionals regarding AMR and responsible use of antimicrobial agents■ Avoid use of antimicrobials as a prophylactic therapy, except for wounds identified at high risk of infection■ Use non-medicated options (e.g. non-medicated wound dressings) to manage infection when possible■ Only use antimicrobials when a wound has been clinically identified as infected■ Base antimicrobial selection on identification of the infecting organisms■ Select antimicrobial agents with narrow-spectrum activity where possible■ Reserve broad-spectrum agents for more resistant bacterial infections where possible■ Continue the use of antimicrobial therapy for an appropriate duration to prevent development of resistance■ Monitor therapeutic response to guide ongoing selection and use of antimicrobials |

Wound infection

Accurate and timely identification of the signs and symptoms of wound infection are critical to achieving effective management of wound infection. All open wounds are contaminated or colonised with microorganisms; however, not all contaminated wounds become infected.

Wound infection is the invasion of a wound by proliferating microorganisms to a level that invokes a local, spreading and/or systemic response in the host. Microorganisms multiply within the wound, developing a range of virulence factors to overcome the host defences leading to local tissue damage and impeding wound healing (Eberlein, 2009; Siddiqui and Bernstein, 2010).

Stages of infection

The IWII-WIC details the signs and symptoms commonly exhibited by the individual and the wound as infection develops and includes five conceptual stages:

- **Contamination:** Presence within the wound of microorganisms that are presumed not to be proliferating
- **Colonisation:** Presence of microorganisms within the wound that are presumed to be undergoing limited proliferation
- **Local infection (covert and overt stages):** Stage of infection in which there is presence and proliferation of microorganisms within the wound that evoke a response from the host, often including a delay in wound healing
- **Spreading infection:** Stage of infection in which there is invasion of the surrounding tissue by infective microorganisms that have spread from a wound
- **Systemic infection:** Stage of infection in

which microorganisms spread throughout the body via the vascular or lymphatic systems, evoking a host response that affects the body as a whole.

Prevention of wound infection is focused on implementing strategies to reduce the patient's individual risk factors, such as promoting health, immunity and wellbeing (IWII, 2022).

The goal of holistic care to reduce infection should be to readjust the interaction between the individual and the infecting pathogen in favour of the individual by:

- Identifying factors that may contribute to development of, or prolong, infection
- Establishing clinical goals that are feasible and treatment options that are acceptable to the person and their family caregiver
- Developing a comprehensive wound infection prevention and management plan that is consistent with the person's preferences and goals of care (IWII, 2022).

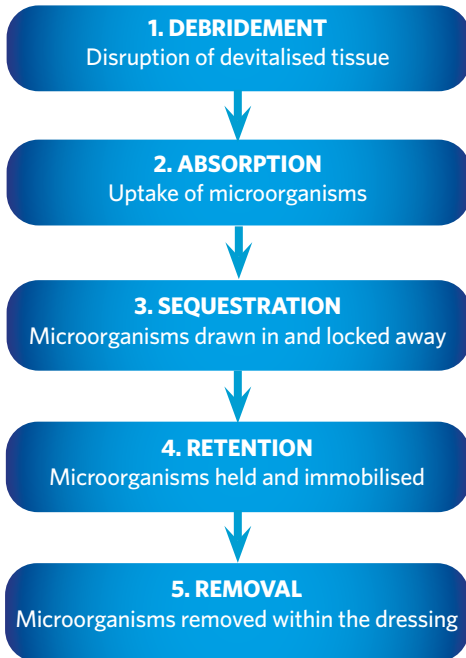
Criteria indicative of infection include increased exudate/moisture. Therefore, dressings that are able to effectively manage exudate and strikethrough are key to maintaining a wound balance to support the healing process and prevent the risk of infection.

NMWDs

NMWDs can be used for the management of excessive inflammation, wound infection and biofilm to help maintain a wound balance and prevent bacteria from multiplying, and are able to effectively reduce wound bioburden, without selecting for antimicrobial-resistant organisms.

Mechanism of action of NMWDs

Optimal antimicrobial mode of action involves multiple steps taking place in a coordinated manner, while each part individually is still able to reduce bacterial numbers. The mechanism of action of NMWDs for infection prevention and management can include (WUWHS, 2020):



Examples of NMWDs include (but are not limited to) hydrogels, hydrocolloids, hydro-responsive wound dressings (HRWDs), DACC-coated dressings, superabsorbent polymer (SAP) and carboxymethylcellulose (CMC) dressings (WUWHS, 2020).



Scan the QR code to see WUWHS (2020) **The role of non-medicated dressings for the management of wound infection.**

SAP dressings can be used as either a primary or secondary dressing and offer multiple benefits, such as (Probst, 2019):

- Absorbing and retaining excess exudate (preventing leakage and minimising the risk of maceration)
- Maintaining fluid retention capacity even under compression
- Providing cushioning to increase patient comfort.

Product selection and suitability

Zetuvit® Plus, Zetuvit® Plus Silicone and Zetuvit® Plus Silicone Border (HARTMANN), consist of a blend of cellulose fluff and fluid retaining SAP, meaning these dressings are particularly suitable for treating moderate to heavily exuding acute and chronic wounds.

Enhancing patient engagement and encouraging shared wound care

SAP dressings, such as Zetuvit Plus, Zetuvit Plus Silicone and Zetuvit Plus Silicone Border, offer patient comfort and improved patient quality of life and self-confidence through prevention of leakage and strikethrough (Probst, 2019). These dressings are simple and easy to use and therefore ideal superabsorbent dressing options for a shared care approach, allowing patients/carers who are able to participate and work in partnership with their healthcare professional to assist with wound-related care, such as dressing changes (Barrett et al, 2020).

It is important to engage with the patient/carer to understand their priorities, care goals and ability to be involved in managing the wound (Wounds International, 2012; Fletcher and Barrett, 2018). Patient engagement can be enhanced by using clear communication. Providing education tailored to the person can offset anxiety about wound infection and improve self-care skills and clinical outcomes (Wounds UK, 2018).

A patient/carer undertaking wound care and dressing changes will need sufficient visual acuity, physical flexibility and dexterity. They will need to be provided with information on issues such as appropriate hand hygiene, disposal of dressings, and on when and how to seek help (WUWHS, 2016; Wounds UK, 2018).



Managing wounds at risk of infection with SAPs

An appropriate dressing with greater fluid-handling capacity that can manage wound bed moisture levels should be selected for use, as excess exudate can increase risk of infection. Some bacteria can also produce odorous molecules from exudate, causing patients embarrassment and anxiety (Probst, 2019).

Zetuvit Plus Silicone Border sequesters and retains various bacteria, including *Pseudomonas aeruginosa*, methicillin-resistant *Staphylococcus aureus* and *Corynebacterium striatum* (which causes odour), as well as *Candida albicans* and odorous thiols (Davies et al, 2017a; 2017b).

Application of this dressing has the potential to reduce the risk of biofilm formation and infection, as well as the physical and psychosocial impact of wound infection (Probst, 2019).



Scan the QR code to see more information about Zetuvit Plus and the Zetuvit Plus Silicone range.

References

- Barrett S et al (2020) *Br J Community Nurs* 25(Sup6): 528-36
- Davies LO et al (2017a) Poster presented at Wounds UK, 13-15 November 2017, Harrogate, UK
- Davies LO et al (2017b) Poster presented at Wounds UK, 13-15 November 2017, Harrogate, UK
- Eberlein T (2009) *Critical colonisation and local infection - current therapy by use of polihexanide*. Available at: <https://tinyurl.com/3ktvz3xj>
- Fletcher J, Barrett S (2018) *Wounds UK* 14(5): 92-5
- International Wound Infection Institute (2016) *Wound Infection in Clinical Practice*. Wounds International, London
- International Wound Infection Institute (2022) *Wound Infection in Clinical Practice*. Wounds International, London
- Interagency Coordinating Group on Antimicrobial Resistance (2019) *No Time To Wait: Securing The Future From Drug-Resistant Infections. Report to the Secretary-General of the United Nations*. Available at: <https://tinyurl.com/5c6c4dvc>
- Probst A (2019) *Made Easy: Zetuvit Plus Silicone Border*. Wounds International, London
- Rippon MG et al (2021) *J Wound Care* 30(4): 284-96
- Siddiqui AR, Bernstein JM (2010) *Clin Dermatol* 28(5): 519-26
- World Union of Wound Healing Societies (2008) *Principles of best practice: Wound infection in clinical practice. An international consensus*. MEP Ltd, London
- World Union of Wound Healing Societies (2016) *Position Document. Local management of diabetic foot ulcers*. Wounds International, London
- World Union of Wound Healing Societies (2020) *The role of non-medicated dressings for the management of wound infection*. Wounds International, London
- Wounds International (2012) *International consensus. Optimising wellbeing in people living with a wound. An expert working group review*. Wounds International, London
- Wounds UK (2018) *Best Practice Statement: Improving holistic assessment of chronic wounds*. Wounds UK, London