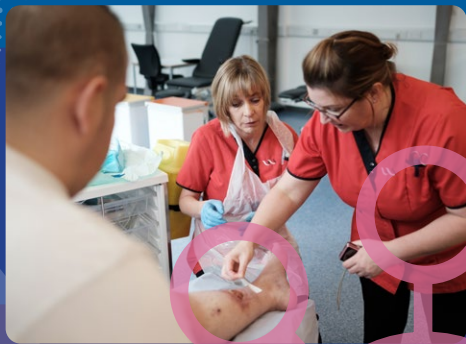


# ➤ QUICKGUIDE



## The Infection Management Pathway



# WOUND BIOFILM AND LOCAL INFECTION I

## CLINICAL SIGNS AND SYMPTOMS OF THE I

More than 50% of clinicians differentiate between **biofilm** and **local infection** in diagnosis, but only 40% manage the wounds differently in practice.<sup>1</sup>

Correct, prompt initial dia  
of infection can...<sup>1,2</sup>

### CLINICAL SIGNS AND SYMPTOMS TH

#### Biofilm<sup>3-6</sup>

- Antibiotic/antimicrobial treatment failure
- Recurrence of delayed healing on cessation of antibiotic treatment
- Delayed healing despite optimal wound/patient management
- Low level chronic inflammation
- Low level erythema
- Friable granulation
- Covert (subtle) signs of infection

#### Covert (subtle)<sup>3-4</sup>

- Delayed wound healing
- Serous drainage with concurrent inflammation
- Hypergranulation
- Bleeding, friable granulation
- Epithelial bridging and pocketing in granulation tissue
- Wound breakdown & enlargement
- New or increasing pain
- Increasing malodour

- Biofilm are caused by poly-microbial organisms embedded in a protective extracellular matrix
- They are invisible to the naked eye
- Topical antimicrobials have varied ability to kill microorganisms
- Systemic antibiotics may not reach poorly vascularised areas and may be ineffective against biofilm.



Therefore, clinicians need to employ an integrated biofilm-based wound care approach:<sup>6</sup> repeated, aggressive, sharp debridement and an antimicrobial that has evidence to support its use against biofilm, such as cadexomer iodine.<sup>7</sup>

# AS IDENTIFIED BY ASSESSING THE PATIENT AND WOUND

Diagnosis

- Save time
- Reduce infection escalation
- Prevent incorrect treatment and costly interventions
- Provide a consistent treatment approach and boost confidence in decision-making within teams.

## FACTORS THAT DRIVE DIAGNOSIS OF INFECTION

### Overt (classic)<sup>3-4</sup>

- Erythema
- Warmth
- Oedema/swelling
- Purulent discharge
- Pain
- Increasing malodour
- Delayed wound healing

### Spreading or systemic infection<sup>3-4</sup>

- Spreading erythema, warmth
- May include cellulitis, crepitus
- Wound breakdown/dehiscence with or without satellite lesions
- Malaise/lethargy
- Loss of appetite
- Systemic inflammatory response
- Sepsis
- Organ dysfunction

- Local infection is caused by free-floating planktonic bacteria
- Bacteria can spread quickly from the wound bed
- Bacteria need to be removed from the wound bed
- Appropriate use of an effective antimicrobial is required.



**Therefore, clinicians need to manage local bioburden by cleansing and debriding the wound, and using a topical, fast-acting, effective antimicrobial product, such as a silver dressing.<sup>3,8</sup>**

# GLOSSARY OF KEY TERMINOLOGY



**HYPERGRANULATION/OVERGRANULATION TISSUE:** An excess of granulation tissue that rises above the surface in the wound bed and is spongy, friable and deep red in colour.



**FRIABLE TISSUE:** Fragile, delicate tissue that bleeds easily.



**INFLAMMATION:** The first stage of wound healing and is part of the innate immune response. Inflammation has similar clinical signs to infection (e.g. local swelling, redness, pain, warmth, oedema), but the symptoms have been present for over 6 weeks.



**INFECTION:** The multiplication of microorganisms in tissue and body and the reaction of host tissues to the infectious agents.



**TWO-WEEK CHALLENGE:** Antimicrobial dressings are recommended to be used initially for 2 weeks.<sup>8</sup> After 2 weeks, the patient is re-evaluated to decide whether to:

- Discontinue
- Continue
- Change to a different antimicrobial.

This helps to ensure antimicrobial dressings are used appropriately.



**REPEATED, AGGRESSIVE, SHARP DEBRIDEMENT:**

Sharp debridement of the wound helps remove necrotic, devitalised tissue and planktonic or sessile microorganisms, reducing the biofilm burden. Debridement is one of the most important treatment strategies against biofilm, but it does not remove all biofilm.

# DIFFERENTIAL TREATMENT

Suspected biofilm



Biofilm-based wound care<sup>6</sup> + cadexomer iodine  
(IODOSORB<sup>®</sup>)

IODOSORB<sup>®</sup> contains cadexomer beads that absorb exudate and provide a sustained release of iodine. This dual action provides broad spectrum antimicrobial activity *in vitro* and helps disrupt and kill mature biofilm *in vitro* and in the clinic<sup>7,9</sup>. IODOSORB<sup>®</sup> is the only antimicrobial to show such evidence<sup>7</sup>.



Local infection



Nanocrystalline silver (ACTICOAT<sup>®</sup>)

ACTICOAT<sup>®</sup> dressing has a nanocrystalline silver structure with a large surface area of available silver, resulting in levels of silver high enough to kill bacteria in 30 minutes *in vitro* and sustained antimicrobial action for up to 7 days\*<sup>10</sup>. As a result ACTICOAT<sup>®</sup> is clinically proven to resolve infection faster than other silver dressings<sup>11</sup>.



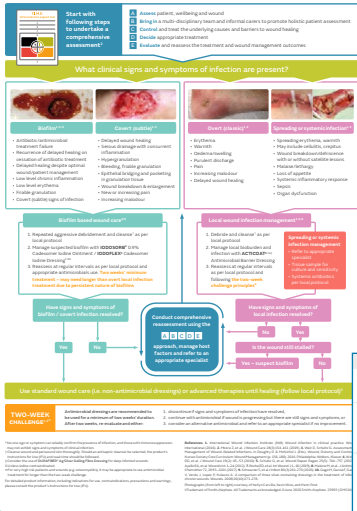
\*ACTICOAT<sup>®</sup> 7 and Flex 7

# THE INFECTION MANAGEMENT PATHWAY

## Aims of the Infection Management Pathway

### A route to more effective infection management

Improve patient outcomes\* with accurate decision making, a fast response and effective treatment choices



- Guides diagnosis of biofilm and local wound infection<sup>1,12</sup>
- Illustrates the evidence-based different management approaches that are required for local infection and biofilm<sup>1</sup>
- Increases the confidence in decision-making within teams.<sup>12</sup>

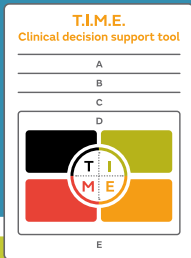
Read more on the infection management pathway into clinical practice<sup>12</sup>

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3. International Wound Infection Institute. *Wound infection in clinical practice*. Wounds International, London, 2016
4. Weir D, Schultz G. Assessment and Management of Wound-Related Infections. In: Doughty D & McNichol L (Eds.). *Wound, Ostomy and Continence Nurses Society Core Curriculum: Wound Management* (p. 156-180). 2016. Philadelphia: Wolters-Kluwer.
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# A route to more effective infection management

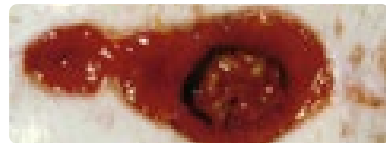
Improve patient outcomes<sup>1</sup> with accurate decision making, a fast response and effective treatment choices



Start with following steps to undertake a comprehensive assessment<sup>2</sup>

- A** Assess patient, wellbeing and wound
- B** Bring in a multi-disciplinary team and informal carers to promote holistic patient assessment
- C** Control and treat the underlying causes and barriers to wound healing
- D** Decide appropriate treatment
- E** Evaluate and reassess the treatment and wound management outcomes

## What clinical signs and symptoms of infection are present?



Biofilm<sup>1,3-5</sup>

- Antibiotic/antimicrobial treatment failure
- Recurrence of delayed healing on cessation of antibiotic treatment
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Covert (subtle)<sup>1,3</sup>

- Delayed wound healing
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Overt (classic)<sup>1,3</sup>

- Erythema
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Spreading or systemic infection<sup>1,3</sup>

- Spreading erythema, warmth
- May include cellulitis, crepitus
- Wound breakdown/dehiscence with or without satellite lesions
- Malaise/lethargy
- Loss of appetite
- Systemic inflammatory response
- Sepsis
- Organ dysfunction

### Biofilm based wound care<sup>4,5</sup>

1. Repeated aggressive debridement and cleanse<sup>†</sup> as per local protocol
2. Manage suspected biofilm with **IODOSORB**<sup>®</sup> 0.9% Cadexomer Iodine Ointment / **IODOFLEX**<sup>®</sup> Cadexomer Iodine Dressing<sup>7-9∞</sup>
3. Reassess at regular intervals as per local protocol and appropriate antimicrobials use. **Two weeks' minimum treatment – may need longer than overt local infection treatment due to persistent nature of biofilms**

### Local wound infection management<sup>1,3,6</sup>

1. Debride and cleanse<sup>†</sup> as per local protocol
2. Manage local bioburden and infection with **ACTICOAT**<sup>™ 10‡</sup> Antimicrobial Barrier Dressing
3. Reassess at regular intervals as per local protocol and following **the two-week challenge principles**<sup>6</sup>

### Spreading or systemic infection management

- Refer to appropriate specialist
- Tissue sample for culture and sensitivity
- Systemic antibiotics per local protocol

Have signs and symptoms of biofilm / covert infection resolved?

Yes No

Conduct comprehensive reassessment using the **A B C D E** approach, manage host factors and refer to an appropriate specialist

Have signs and symptoms of local infection resolved?

No Yes

Is the wound still stalled?

Yes – suspect biofilm No

Use standard wound care (i.e. non-antimicrobial dressings) or advanced therapies until healing (follow local protocol)<sup>5</sup>

### TWO-WEEK CHALLENGE<sup>1,6∞</sup>

Antimicrobial dressings are recommended to be used for a minimum of two weeks' duration. After two weeks, re-evaluate and either:

1. discontinue if signs and symptoms of infection have resolved,
2. continue with antimicrobial if wound is progressing but there are still signs and symptoms, or
3. consider an alternative antimicrobial and refer to an appropriate specialist if no improvement.

### References

1. International Wound Infection Institute (IWII) Wound infection in clinical practice. Wounds International (2016). 2. Moore Z, et al. Wound Care 28(3):154-161 (2019). 3. Weir D, Schultz G. Assessment and Management of Wound-Related Infections. In Doughty D & McNichol L (Eds.), Wound, Ostomy and Continence Nurses Society Core Curriculum: Wound Management (p. 156-180). 2016. Philadelphia: Wolters-Kluwer. 4. Wolcott RD, et al. J Wound Care 19(2): 45-53 (2010). 5. Schultz G, et al. Wound Repair Regen 25(5): 744-757 (2017). 6. Ayello EA, et al. Wounds Int 1-24 (2012). 7. Roche ED, et al. Int Wound J 1-10 (2019). 8. Malone M, et al. J Antimicrob Chemother 72, 2093-2101 (2017). 9. Schwarzer S, et al. J Infect 80(3):261-270 (2020). 10. Gago M, Garcia F, Gaztelu V, Verdú J, Lopez P, Nolasco A. A comparison of three silver-containing dressings in the treatment of infected, chronic wounds. Wounds. 2008;20(10):273-278.

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\* No one sign or symptom can reliably confirm the presence of infection, and those with immunosuppression may not exhibit signs and symptoms of clinical infection.  
 † Cleanse wound and periwound skin thoroughly. Should an antiseptic cleanser be selected, the product's instructions for use (IFU) and soak time should be followed.  
 ‡ Consider the use of DURAFLIBER<sup>®</sup> Ag Silver Gelling Fibre Dressing for deep infected wounds.  
 ∞ Unless iodine contraindicated.  
 ∞ For very-high risk patients and wounds (e.g. osteomyelitis), it may be appropriate to use antimicrobial treatment for longer than the two-week challenge.  
 For detailed product information, including indications for use, contraindications, precautions and warnings, please consult the product's instructions for use (IFU).