Wound infection

***Wounds International's* clinical innovations section presents recent developments in wound care. This issue, we focus on innovations in wound infection.**

TIME for an update? Potential changes to wound assessment

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The concept of TIME has been discussed for 10 years and is widely accepted in clinical practice. However, since it was originally proposed in 2003, much has changed in both the fields of research and clinical practice. Therefore, it was felt necessary by the International Wound Infection Institute to provide an update to the TIME framework (Schultz et al, 2004).

A review was carried out of each of the core concepts: *tissue* (nonviable); *infection/inflammation*; *moisture balance*; and *edge/epithelial advancement*, to determine whether any significant changes had occurred since the original publication. Where differences were identified, they were investigated and the findings included in the updated version of the framework (Leaper et al, 2012).

The most important differences are in four key areas:

- **The role of biofilms**
- **The use of negative pressure wound therapy (NPWT)**
- **The use of topical antimicrobials**
- **The increased understanding of molecular biological processes, particularly in relation to the use of specific diagnostic tools.**

The management of infection and biofilms – an area where it was evident that a considerable amount of literature had been published over the past 10 years – has undergone major changes. Central to this was the suggestion that biofilm management may be crucial in wound healing, particularly in chronic wounds.

Attention to biofilm management heralds a step change in what has been considered the norm in wound care for the past 30 years. Whereas care used to be taken by clinicians not to disturb the wound bed and fragile new cells, how biofilm management advocates regular and aggressive debridement, and the more frequent use of topical antimicrobials. This fits with the current ethos seen in many areas of wound management and health care in general, where the focus has shifted to preventative action.

The review identified a range of ways of carrying out debridement, including the use of hydrotherapy, but also more familiar options, such as debridement pads. It also advocates the use of a range of antimicrobials, including silver and iodine, and some less well known, such as polyhexamethylene biguanide. Certain new products combine debridement and antimicrobial activities by including a surfactant in the liquid, which helps disperse and loosen debris (e.g. Prontosan®; B. Braun; octenilin®; schülke).

The role of NPWT in the treatment of highly exuding wounds has increased significantly during the period in question. Enhanced understanding of the biological components of wound exudate has highlighted the importance of removing exudate as quickly as possible and thus controlling bioburden at the wound surface and removing corrosive matrix metalloproteinases (MMPs), which may perpetuate the inflammatory process and delay healing.

The range of wounds in which NPWT is being used has increased exponentially as clinicians continue to gain in confidence with this modality. As greater understanding is achieved, more clinical scenarios are tested. Recently, this has included the prophylactic use of NPWT in post-operative wounds to splint the suture line and reduce the frequency of post-surgical wound breakdown.

The most recent development to be included (Leaper et al, 2012) is the use of point-of-care diagnostics, which allow clinicians to target and individualise treatment by identifying factors such as elevated levels of MMPs. This encourages the cost-effective use of more expensive products.

The original TIME framework (Leaper et al, 2012) is firmly focused on assessment; the identification of what is preventing wound healing. The second TIME model introduces a new concept: consideration of the importance of controlled and systematic wound management that identifies the correct *treatment*, ensures consistent *implementation* of that treatment, which is regularly *monitored,* and then *evaluated* against the treatment goal.

This TIME update should be of interest to all clinicians involved in wound management. For those undertaking wound management on a daily basis, it provides a clear and precise summary of new assessment and treatment modalities. For those organising services, it identifies how wound care can be undertaken in a cost-effective manner. ■

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Leaper DJ et al (2012) *Int Wound J* 9(Suppl 2): 1–19
Schultz GS et al (2004) *Int Wound J* 1(1): 19–32

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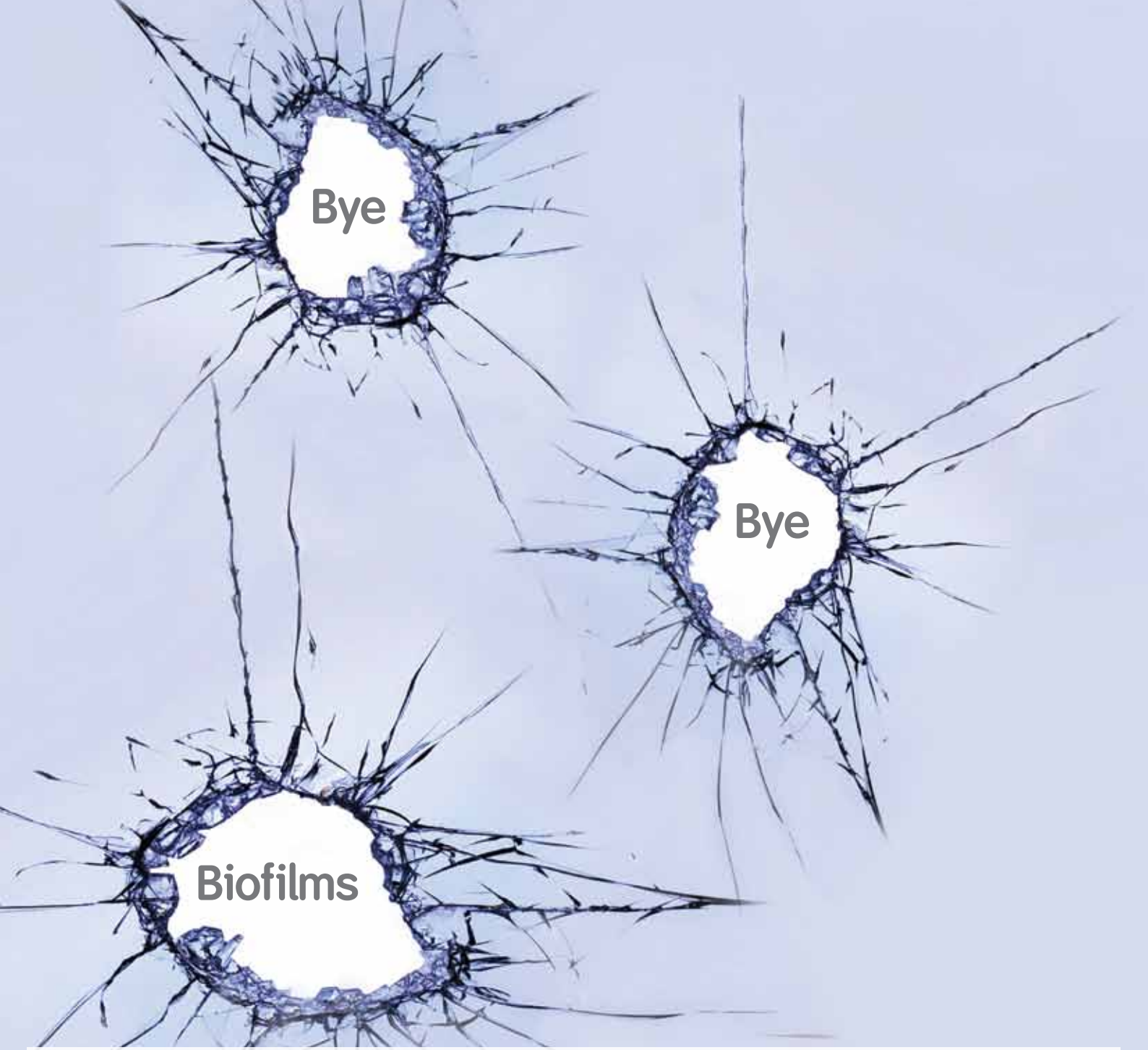

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