

# Introducing the ChloraSolv® Wound Debridement Gel White Paper

Improving outcomes for patients with hard-to-heal leg ulcers (LUs) and diabetic foot ulcers (DFUs)



**Hard-to-heal wounds impose a substantial burden for individuals and society**

- 1-2% of people at some point in their lives,<sup>1,2</sup> with this figure expected to rise in the future<sup>3</sup>
- The most frequent aetiologies are LUs and DFUs<sup>1</sup>

**For society, costs for managing hard-to-heal wounds are a major healthcare burden:**



**£5.6 billion**

National Health Service costs for unhealed wounds in 2017/18 were estimated at **£5.6 billion** per year<sup>7</sup>



**£3.1 billion**

In 2019, there were an estimated **739,000** leg ulcers in England, with estimated healthcare costs of **£3.1 billion** per year<sup>8</sup>

**For affected individuals, hard-to-heal wounds, such as LUs and DFUs, have a profound impact:<sup>4,5</sup>**



**Severe pain**



**Emotional and physical distress**



**Reduced mobility**



**Impaired quality of life**



**Detriment to finances**



**Emotional trauma to caregivers**



DFUs can lead to lower limb amputations, which are associated with a potential reduction in life expectancy of up to **5 years**<sup>6</sup>

## Responding to the clinical challenge of hard-to-heal wounds

**Why don't some wounds heal properly?**



### **Age-related factors**

Individuals aged >60 years may have delayed wound healing<sup>9,10</sup>



### **Inflammation**

Infiltration of inflammatory cells and mediators as well as changes in immune cell function contribute to poor healing<sup>11</sup>



### **Chronic disease - diabetes**

Reduced capacity for wound healing in people with diabetes can lead to DFUs<sup>12</sup>



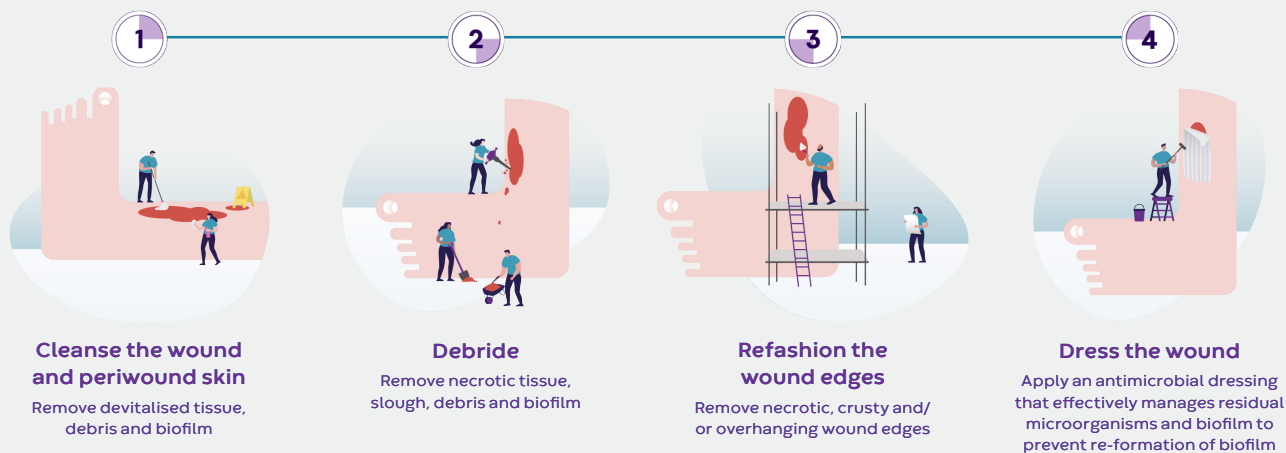
### **Biofilm and local infection**

Extensive microbial colonisation that cannot be cleared by the innate immune system leads to the formation of a biofilm - a polymicrobial community of microorganisms in a protective matrix<sup>11,13,14</sup>

## The concept of Wound Hygiene

Wound Hygiene is a biofilm-based wound-care strategy, highlighting the importance of regularly removing biofilm to facilitate wound healing<sup>15</sup>

### Wound Hygiene comprises four key steps<sup>16</sup>



You can learn more about implementing Wound Hygiene at: <https://www.woundhygiene.com>

### The importance of frequent debridement



Biofilms can re-form in as little as 24 hours<sup>17</sup>



- More frequent debridement results in better healing outcomes;<sup>18,19</sup> however, specialist training is needed to perform some debridement techniques (i.e. sharp), so bottlenecks can occur in accessing the most appropriate care
- There remains an unmet need for effective and easy debridement methods that can be undertaken by non-specialists and can be used frequently

## ChloraSolv® Wound Debridement Gel enables rapid and effective debridement of hard-to-heal wounds

### ChloraSolv® improves the healing of DFUs

- In 34 patients with diabetes and a DFU infected for >4 weeks, ChloraSolv® provided a significantly greater relative reduction in DFU area compared with standard treatment ( $p=0.016$ )<sup>20</sup>
- ChloraSolv® in conjunction with weekly dressing changes improved absolute and relative DFU area and time to healing of DFUs compared with standard treatment<sup>20</sup>



### ChloraSolv® effectively softens and removes devitalised tissue in hard-to-heal LUs

After 5 weeks in 57 patients with hard-to-heal lower LUs:<sup>21</sup>

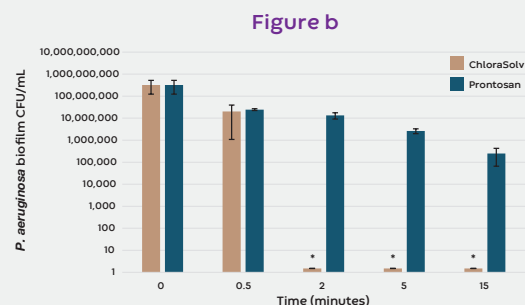
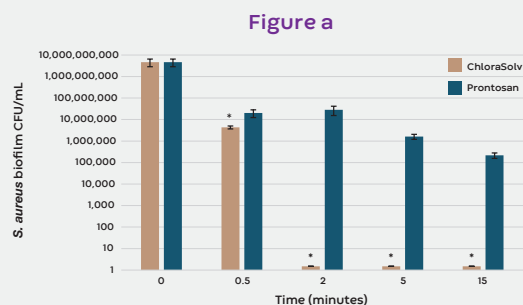
72.7% decrease in devitalised tissue ( $p<0.0001$ )

Complete debridement in 23.2% of wounds

## ChloraSolv® eradicates biofilm rapidly

Biofilms grown on plates for 48 hours were exposed to treatment with ChloraSolv® or Prontosan® Wound Irrigation Solution. After 2 minutes of exposure to ChloraSolv®, both *Staphylococcus aureus* (Figure a) and *Pseudomonas aeruginosa* (Figure b) biofilms were completely eradicated to below the limit of detection with ChloraSolv® but not with Prontosan®<sup>22</sup>

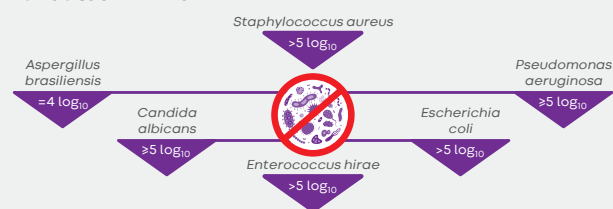
Mean biofilm cell counts (CFU/mL) (±SD) following treatment with ChloraSolv® and Prontosan®



\*Statistically significant compared with Prontosan® (p=0.011 and p=0.004 with *S. aureus* and *P. aeruginosa*, respectively). CFU, colony-forming unit.

## ChloraSolv® has broad-spectrum antimicrobial activity

Antimicrobial effects of ChloraSolv® have been validated *in vitro*<sup>21</sup>



## ChloraSolv® is effective against antibiotic-resistant bacteria

ChloraSolv® kills antibiotic-resistant biofilm bacteria (methicillin-resistant *Staphylococcus aureus* and resistant *Pseudomonas aeruginosa*) more effectively than antimicrobial solution soaks or debridement pads/wipes in a challenging, validated gauze biofilm model<sup>22</sup>



## ChloraSolv® is convenient and easy to use

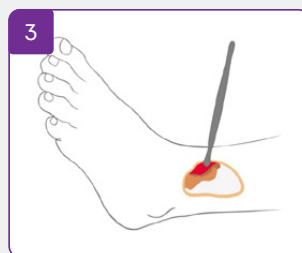
- ChloraSolv does not require any special training or qualifications, avoiding the need for specialist skills for effective debridement<sup>23</sup>
- ChloraSolv® can be deployed in patients' homes or in a clinic/hospital setting<sup>23</sup>, using the steps below<sup>24</sup>:



Press the plunger downwards and apply a thin layer of the mixed gel directly to the wound bed. The gel should cover the wound completely when applied.



Leave the gel on the wound for 2-5 minutes.



Remove loosened necrotic tissue, using a gentle scraping action with a blunt instrument.



Rinse the wound area with water or isotonic saline solution and wipe dry. Complete the treatment by repeating steps 1-4 and then protecting the wound with a bandage or dressing appropriate for the state of the wound

## ChloraSolv® is highly rated by patients and clinical staff

### Patients



**90%**

ChloraSolv® rated as 'good' or 'very good' with regard to pain<sup>21</sup>

### Clinical staff



**94%**

ChloraSolv® rated as 'easy' or 'very easy' to apply<sup>21</sup>

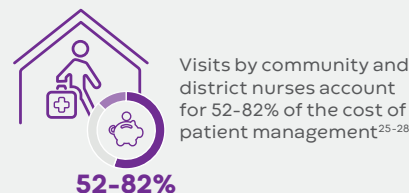
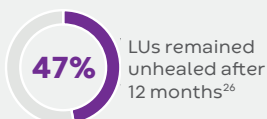
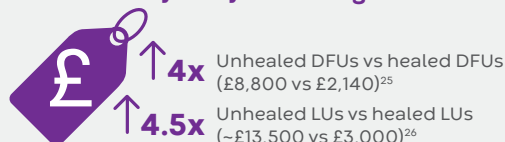
**70%**

ChloraSolv® made the debridement process easier<sup>21</sup>

## ChloraSolv® Wound Debridement Gel has the potential to reduce costs in hard-to-heal wound management

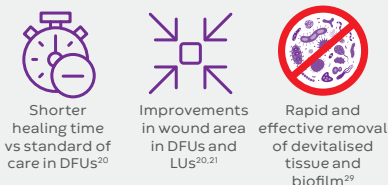
### Hard-to-heal wounds are costly to manage

#### UK community analyses: management costs



#### ChloraSolv® improves outcomes in hard-to-heal wounds

Debridement of hard-to-heal wounds with ChloraSolv® results in:

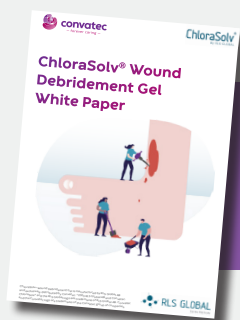


#### ChloraSolv® offers the potential to reduce the overall costs of managing hard-to-heal wounds



#### What impact could ChloraSolv® have in your wound care team?

- Mitigate the risk of biofilm and reduce the risk of complications of wound infection
- Promote faster healing in patients with DFUs and LUs, reducing the need for visits to patients and patient visits to clinics<sup>29</sup>
- Offer a convenient, easy-to-use option for patients and clinical staff
- Avoid patient delays in accessing specialist care for sharp debridement
- Reduce the need for specialist staff training in sharp debridement



Read our new White Paper highlighting the potential of ChloraSolv® Wound Debridement Gel in managing hard-to-heal LUs and DFUs

#### References

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