

Impact of Wound Hygiene Incorporating an Advanced Antimicrobial Gelling Fiber Dressing On Hard-to-Heal Wounds Treated With Antibiotics

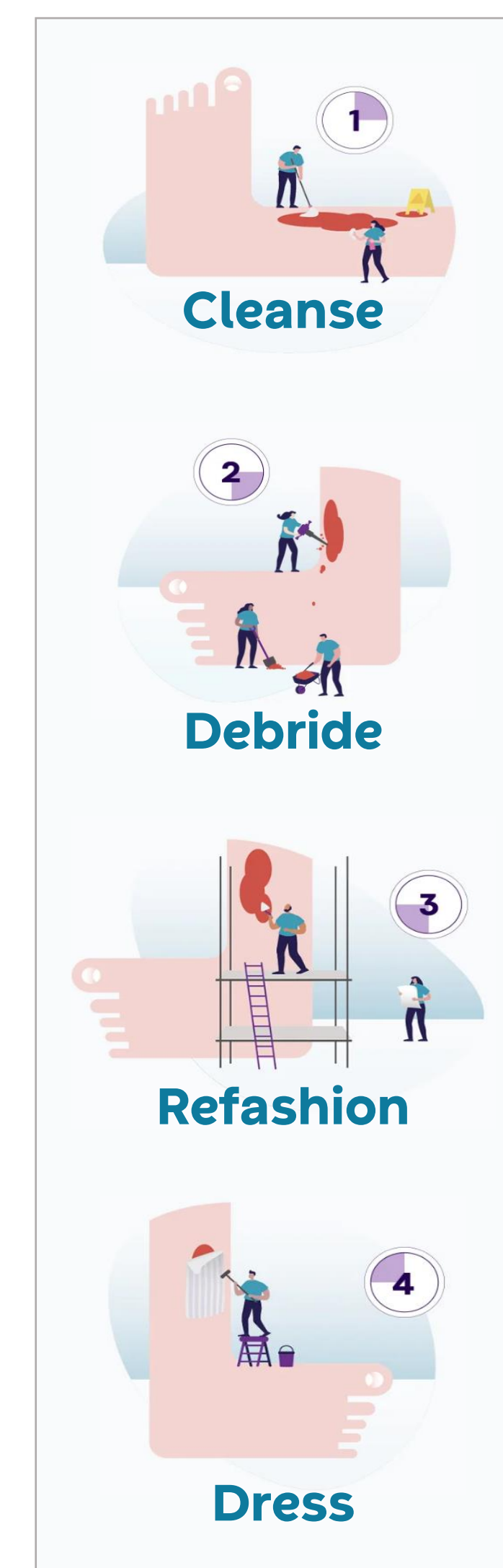
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Introduction

- Hard-to-heal wounds are a major challenge to healthcare systems globally¹
 - Estimated prevalence of 2.21 per 1000 population²
 - Associated with reduced patient health-related quality of life and substantial economic burden^{3,4}
- Bioburden has long been implicated in hard-to-heal wounds⁵
 - At least 78% of hard-to-heal wounds estimated to have biofilm⁶
 - Biofilm can protect microorganisms from antibiotics, antiseptics and host immunity⁵
- Wound Hygiene is 4-step standardized approach to biofilm management and wound care (Figure 1)⁷⁻⁹
 - Developed by an international panel of wound care specialists
 - Allows biofilm-based wound care to administered early, safely, and consistently in any clinical setting

Figure 1. Wound Hygiene protocol



STUDY OBJECTIVE

To evaluate the impact of Wound Hygiene (incorporating an advanced antimicrobial gelling fiber dressing *) on hard-to-heal wounds treated with antibiotics

Methods

- A subgroup analysis of patients treated with antibiotics in a prospective, real-world analysis of hard-to-heal wounds managed with Wound Hygiene
- Patients were enrolled from different wound care settings across Spain, Italy, the United Kingdom, Poland, the Netherlands, and Portugal
- Between April 01, 2021 and 31 December 31, 2022, patients were managed with Wound Hygiene (incorporating a CMC dressing containing ionic silver, EDTA and BEC*) for approximately 4 weeks or as deemed clinically appropriate
- The primary endpoint was change in wound volume from baseline to final assessment
- Secondary endpoints were qualitative changes in exudate levels, suspected biofilm, and signs of local infection
- Only patients who had received antibiotics before the Wound Hygiene evaluation were included

Results

- A total of 230 patients had received antibiotics before the Wound Hygiene (median treatment duration 33 days)
- Of 190 patients with baseline and final wound volume assessments, 78 (41%) had complete wound closure (Figure 2)
- Mean wound volume reduced from 113.2 cm³ at baseline to 23.0 cm³ (80% reduction) at final assessment (p<0.001)
- Exudate levels shifted from predominantly moderate (42%) to predominantly low (41%; Figure 3); this change was significant (p<0.001 in McNemar's test)
- Suspected biofilm was 81% at baseline and 17% at final assessment (Figure 4); p<0.001 in McNemar's test
- Signs of clinical infection were present in 73% at baseline and reduced to 3% at final assessment (Figure 5); p<0.001 in McNemar's test
- At the final assessment, most wounds had improved (74%) or healed (24%), and only a small proportion were deteriorating (26% → 1%) or static (37% → 1%) (Figure 6)

Figure 2. Percentage reduction in wound volume

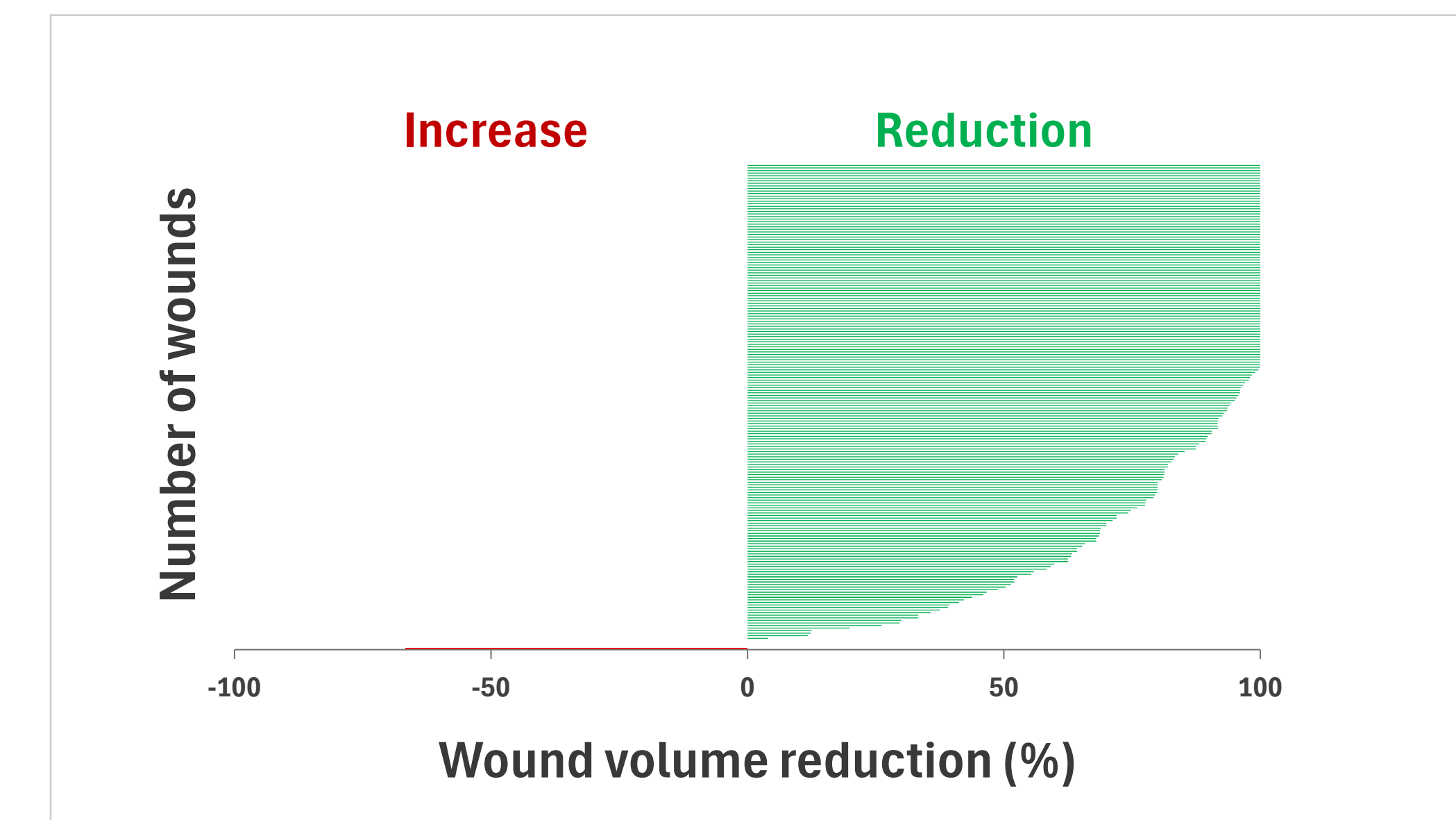


Figure 3. Wound exudate

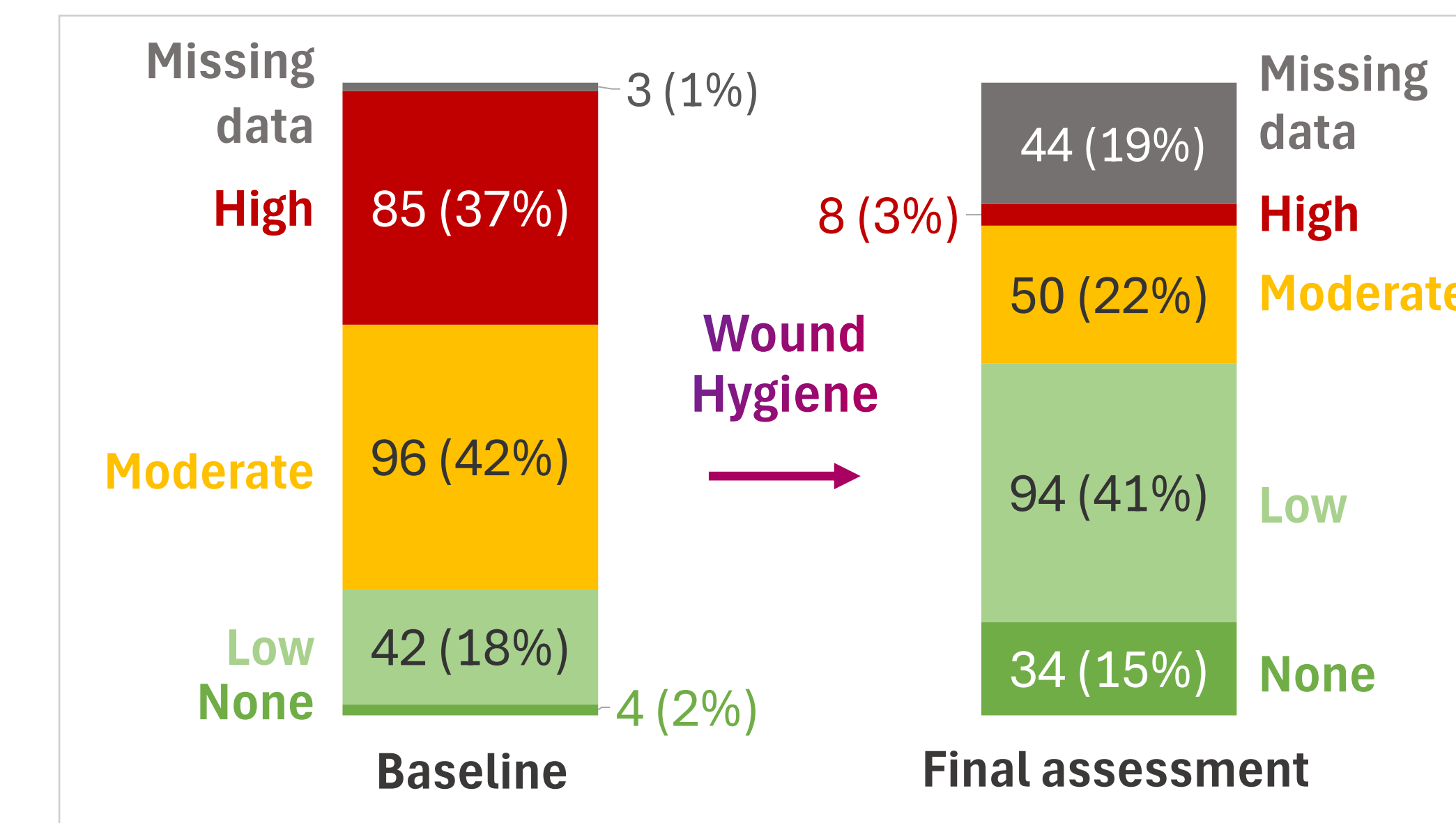


Figure 4. Suspected biofilm

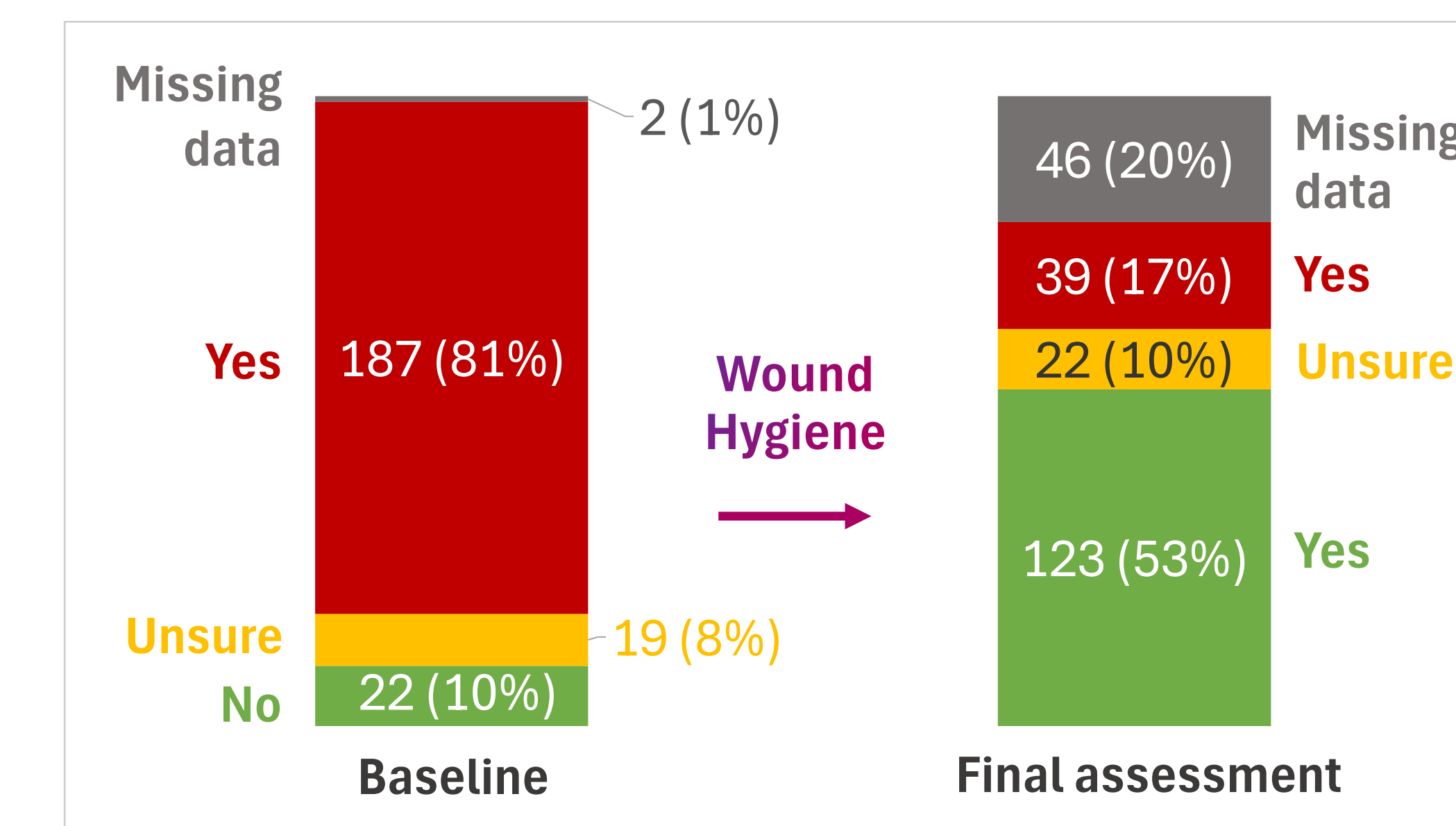


Figure 5. Local infection

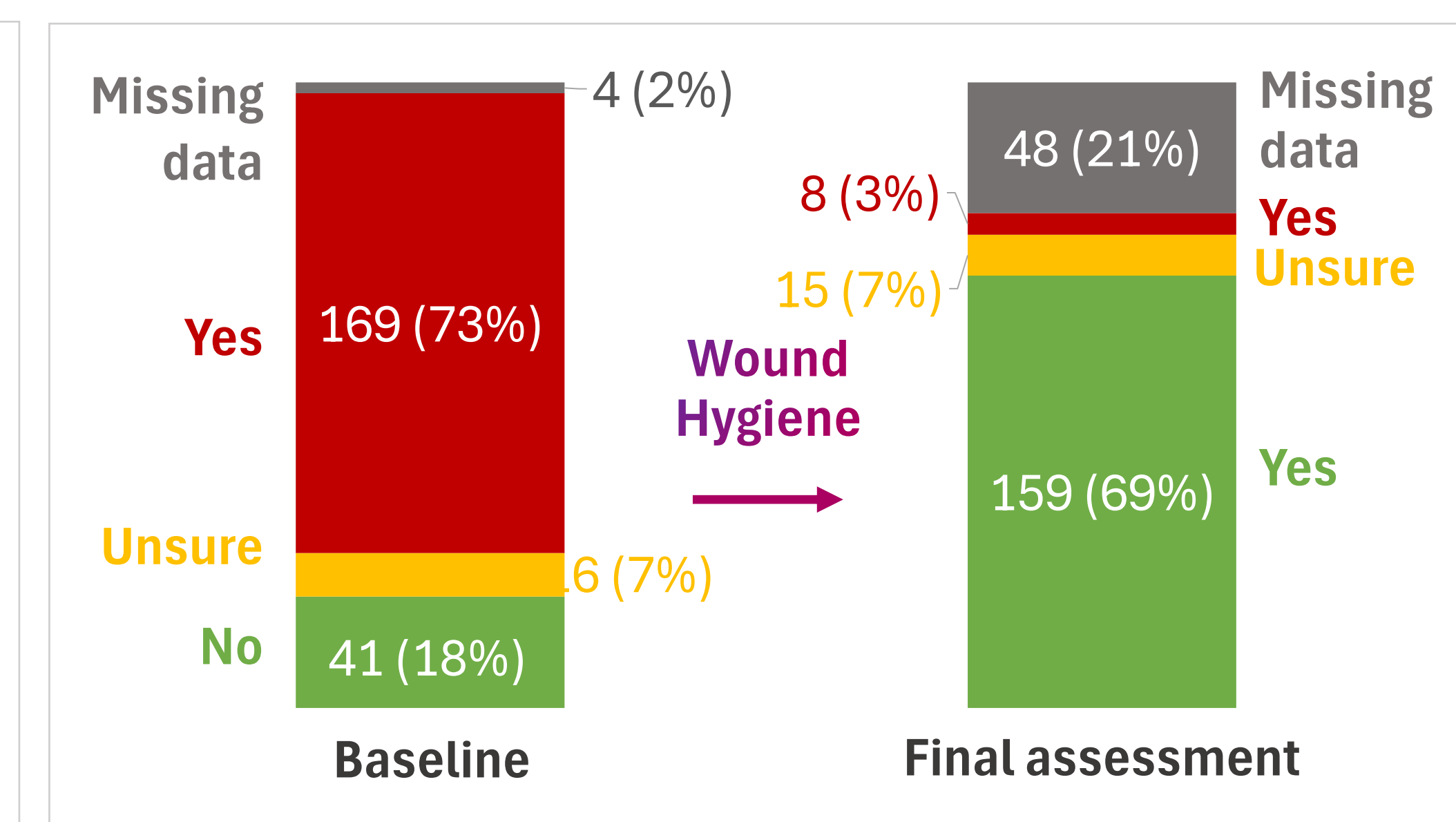
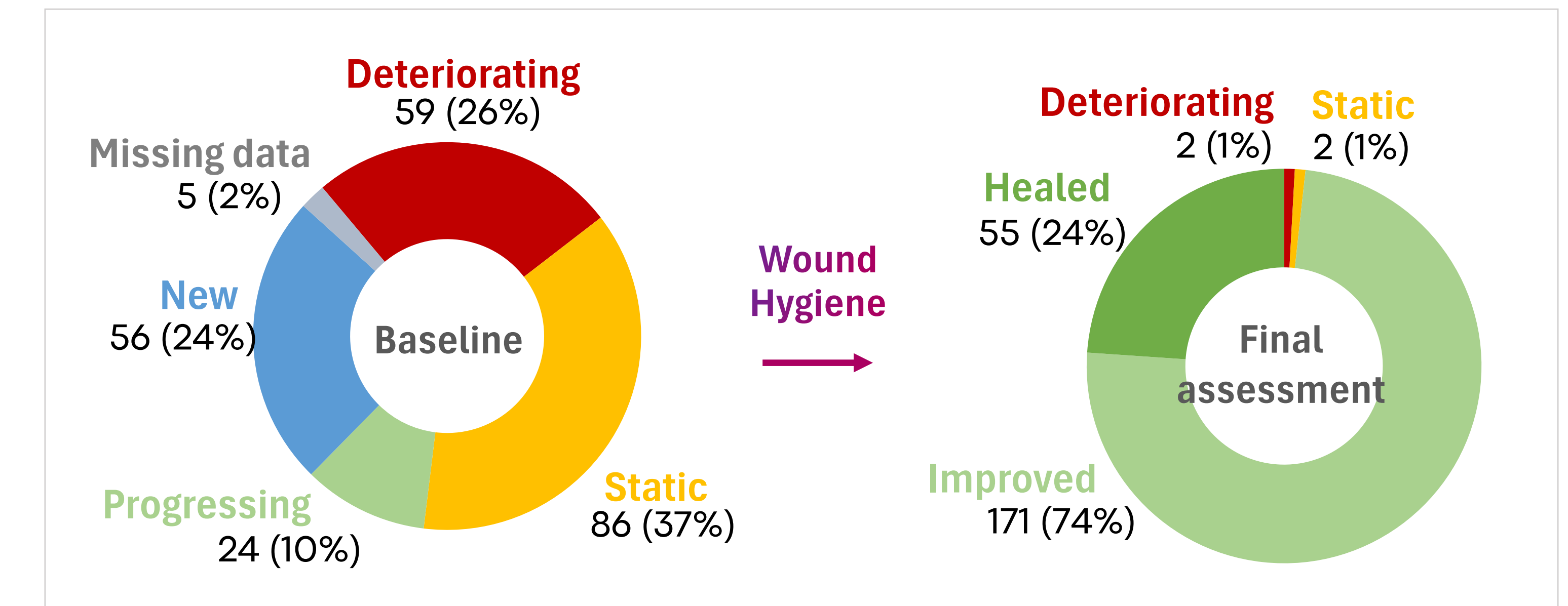


Figure 6. Wound status



Discussion

- Among patients with hard-to-heal wounds receiving antibiotics, Wound Hygiene resulted in healing or improvement in most wounds, and a statistically significant decrease in wound volume, exudate level, suspected biofilm, and local infection
- Wound Hygiene addresses the local barriers to healing (i.e., biofilm) and can help minimize variation in biofilm-based wound care across different clinical settings
- Incorporation of an advanced antimicrobial gelling fiber dressing* may further facilitate wound healing by helping to reduce overall bioburden
- Further research to help guide best practice for antimicrobial stewardship is warranted

CONCLUSION

Our findings suggest Wound Hygiene (incorporating an advanced antimicrobial gelling fiber dressing*) is an effective complement to existing antibiotic therapy

References & Footnotes

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*Aquacel® Ag+ Extra™ (Aquacel Ag Advantage in the United States).

Abbreviations: CMC: carboxymethylcellulose; BEC: benzethonium chloride; HCP: healthcare professional; EDTA: ethylenediaminetetraacetic acid.