Povidone-iodine dressings in practice: Focus on Inadine

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WOUNDS UK

Introduction

Povidone-iodine (PVP-I) remains one of the most widely used topical antimicrobials in wound care. Its long history of use, broad antimicrobial activity and low risk of resistance support its place in clinical practice (Gryson et al, 2025). The availability of newer antimicrobial dressings, combined with evolving guidance and updates to product information, has increased variability in practice and uncertainty around appropriate use. Updates to the Instructions for Use (IFU) for Inadine (Solventum) have introduced supplementary considerations for specific patient groups. This Made Easy provides an updated overview of when, why and how Inadine should be used in current practice, focussing on clinical decision-making, safety considerations and its continued relevance.

Iodine is an essential trace element required for normal thyroid hormone production and metabolic function. As the body cannot synthesise iodine, it must be obtained through dietary sources such as seafood, dairy products and fortified foods (Köhrle, 2023). In wound management, iodine-based products have been used for decades and continue to be valued for their broad-spectrum antimicrobial activity, low risk of resistance and established role in infection control (Nurudeen et al, 2025).

The role of povidone-iodine in modern wound care

PVP-I is an iodophor that enables the gradual, sustained release of free iodine into the wound environment, in contrast to the bolus release associated with earlier iodine formulations (Ibragimova et al, 2025; Sibbald et al, 2011). This provides sustained antimicrobial activity while reducing the toxicity associated with previous iodine preparations.

PVP-I acts across multiple microbial targets, including in the absence of wound fluid, making it suitable for use across a range of wound environments.

These characteristics make PVP-I a practical option for infection management and align with the principles of antimicrobial stewardship (AMS).

Inadine in wound care

Inadine is a non-adherent dressing impregnated with PVP-I, designed to deliver antimicrobial activity directly to the wound surface while protecting newly formed tissue (Solventum, 2025). Its role is to reduce bacterial burden in superficial wounds where infection is present or likely (Gryson et al, 2025). Inadine's colour-change indicator shows when iodine is depleted and the dressing requires changing (Boothman et al, 2015). This supports appropriate dressing changes and helps avoid under- and over-treatment.

Inadine is most appropriately used in superficial wounds at risk of or showing early signs of infection, including:

- Minor burns
- Acute traumatic wounds
- Post-surgical wounds
- Superficial skin loss
- Some chronic wounds (Harun et al, 2024).

Early intervention can help prevent infection progression and support healing (Hurlow and Bowler, 2022). Inadine is not intended for indiscriminate or prolonged use. It should be used as part of a targeted, time-limited antimicrobial strategy, aligned with current principles of wound bed preparation and AMS (Nair et al, 2023).

The use of antimicrobial dressings on a 'just in case' basis, in the absence of clinical signs of infection, is generally

How povidone-iodine works

PVP-I exerts its antimicrobial effect through the controlled release of free iodine, which rapidly penetrates microbial cells. Iodine disrupts multiple essential cellular components, including proteins, nucleotides and fatty acids, leading to irreversible cell damage and death (Meehan, 2025). This multi-target mechanism provides important clinical benefits:

- **Broad-spectrum antimicrobial activity:** Effective against gram-positive and gram-negative bacteria, including many antibiotic-resistant strains, as well as fungi, viruses and protozoa
- **Rapid reduction in microbial load:** Supporting timely infection control
- **Low risk of resistance development:** Due to its multiple modes of action (Petkani et al, 2025)

In the context of rising AMR, this non-selective mechanism is advantageous compared with agents that act on a single cellular target (Cristea et al, 2025).

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not recommended and may contribute to unnecessary antimicrobial exposure. However, their use may be appropriate in wounds that are at increased risk of infection. Inappropriate or excessive use of antimicrobials and antibiotics is a key driver of antimicrobial resistance (AMR) and should be avoided (Fletcher et al, 2025). AMS principles emphasise the need for careful assessment, accurate diagnosis and regular review to ensure that antimicrobial interventions are used only when clinically indicated and discontinued when no longer required (Fletcher et al, 2025). This supports optimal wound healing while helping to preserve the effectiveness of antimicrobial therapies.

Patient selection and safety for Inadine

Current guidance emphasises selecting the right patient, product and timing for antimicrobial intervention based on holistic wound and patient assessment. **Figure 1** provides a decision pathway for appropriate short-term use. Assessment should consider wound aetiology, signs of local or spreading infection, comorbidities, concurrent medications and overall patient wellbeing (Tickle, 2023). Recent updates to the IFU for Inadine reinforce the importance of appropriate patient selection, particularly where systemic absorption of iodine may be a consideration (Solventum, 2025). Although absorption from small wounds over short treatment periods is generally minimal, it may increase with larger wound areas, prolonged use and impaired renal function (Sibbald et al, 2011).

The updated IFU distinguishes between contraindications and situations requiring medical supervision:

- **Contraindications:** Iodine hypersensitivity, thyroid disorders, pregnancy, breastfeeding, patients undergoing radioiodine procedures and severe renal impairment (e.g. stage 4 or 5 chronic kidney disease)
- **Situations requiring medical supervision:** Patients receiving thyroxine replacement following thyroidectomy or thyroid ablation should be treated based on an individual risk–benefit assessment. Where clinically indicated, renal and thyroid function can be monitored using routine blood tests. Use in newborns and infants up to 6 months of age should be under medical supervision.

Recent updates to the IFU have strengthened guidance regarding the use of PVP-I in patients with severe renal impairment, where systemic absorption of iodine may be a consideration (Solventum, 2025). This includes patients with stage 4 or 5 chronic kidney disease (CKD), corresponding to an estimated glomerular filtration rate (eGFR) of 15–29mL/min/1.73m² and <15mL/min/1.73m², respectively.

Caution is also advised in patients with thyroid disorders because iodine may be absorbed through the skin. In some patients, such as those receiving thyroxine replacement following thyroidectomy or thyroid ablation, or those with treated hypothyroidism, a clinical risk–benefit assessment may be appropriate. Where there are concerns regarding systemic iodine exposure, renal and thyroid function can be monitored using routine blood tests. Additional caution is advised when using PVP-I in infants up to 6 months of age (Boothman et al, 2015). Use in this age group is a precaution requiring

Antimicrobial resistance and stewardship

- AMR occurs when microorganisms no longer respond to antimicrobial treatment, making infections harder to manage
- In wound care, inappropriate antimicrobial use can contribute to AMR, delayed healing and increased healthcare burden
- AMS promotes appropriate antimicrobial use through accurate assessment, targeted treatment and regular review
- Topical antimicrobials should be used only when clinically indicated and discontinued when no longer required, in line with AMS principles (Fletcher et al, 2025).

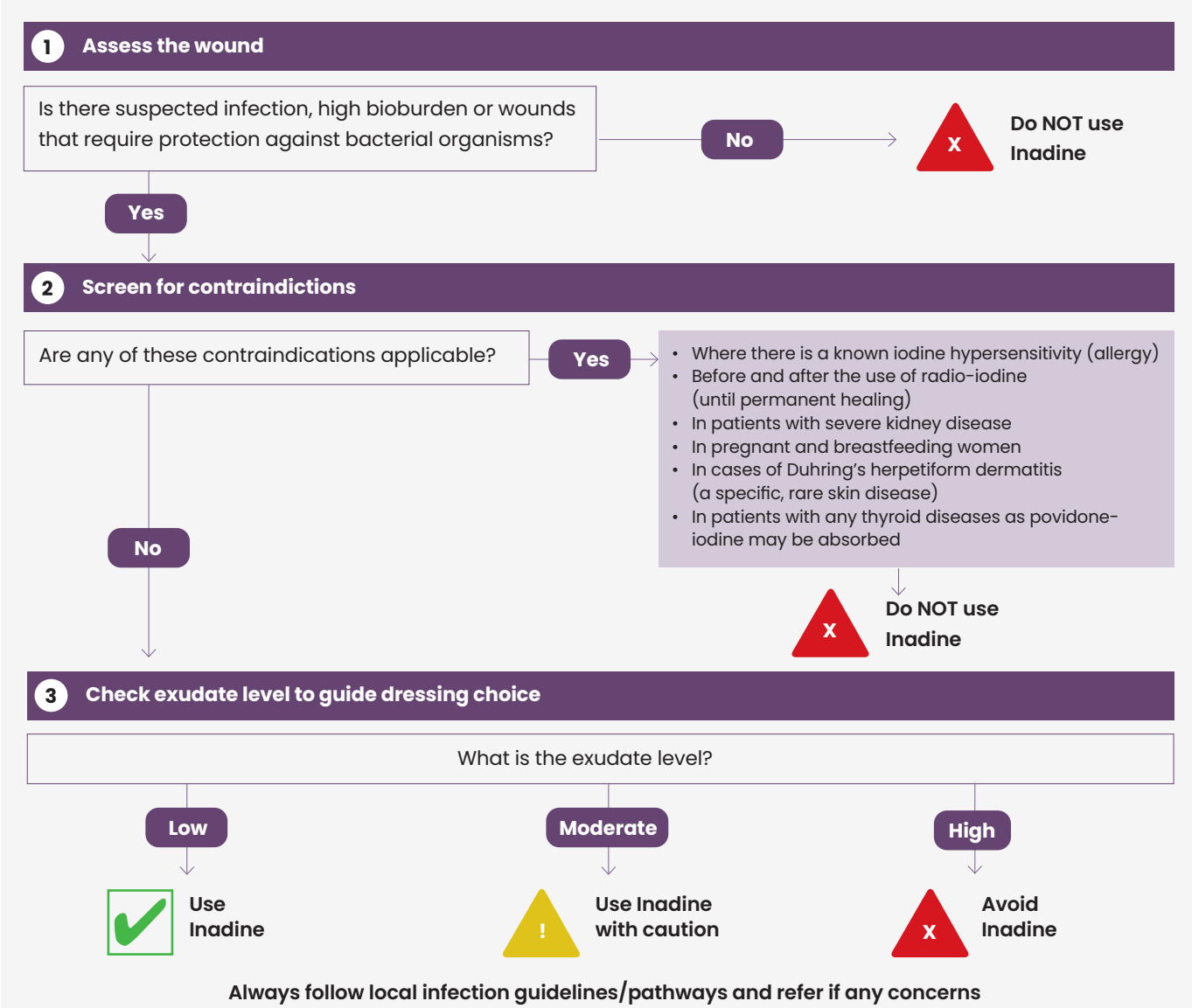
Choosing Inadine

Choose Inadine when the wound is:

- Low exudate or dry
- Sloughy or necrotic
- Ischaemic or gangrenous
- Requiring a non-adherent antimicrobial dressing.

Why?

PVP-I remains active in low-exudate wounds and the non-adherent dressing helps minimise trauma to sloughy or fragile tissue. Consider silver dressings for wounds with moderate-to-high exudate.



Warnings/Precautions

Inadine dressing must be used under medical supervision

- In newborn babies and infants up to the age of 6 months as PVP-I may be absorbed through unbroken skin
- To treat deep ulcerative wounds, burns or large injuries

Medical supervision should be sought if using Inadine for more than one week. Do not reuse. Reuse may result in infection or cross contamination

Figure 1. Solventum Inadine (PVP-I) Non-Adherent Dressing Wound Care Decision Pathway; This pathway guides you how to select Solventum Inadine (PVP-I) Non-Adherent Dressing based on wound assessment, contraindications and exudate level.

appropriate medical supervision rather than an absolute contraindication. As recommendations may vary between PVP-I formulations, clinicians should always refer to the IFU for the specific product.

Povidone-iodine: Addressing common concerns

Concerns around iodine, particularly regarding toxicity and delayed healing, continue to influence clinical decision-making (da Silva Lopes et al, 2024). However, these concerns are often based on historical or non-clinical data.

Current evidence indicates that PVP-I can reduce bioburden without impairing healing and that slow-

release formulations are well tolerated in vivo. Despite more than 150 years of clinical use, no acquired bacterial resistance or cross-resistance to iodine has been reported, in contrast to many other antiseptic and antimicrobial agents (Eggers, 2019).

Using Inadine in wound care

Inadine should be applied directly to the wound and covered with a suitable secondary dressing to manage exudate (Sibbald and Elliott, 2017).

Unlike some antimicrobial dressings that require wound fluid to support antimicrobial activity, PVP-I remains active in low-exudate wounds. Consequently, Inadine may be particularly useful for low-exudate, sloughy, necrotic, ischaemic or dry gangrenous wounds, where antimicrobial activity is required but wound fluid is limited (Sibbald and Elliott, 2017). The non-adherent knitted viscose carrier helps minimise dressing trauma and is suitable for fragile, sloughy, necrotic and gangrenous wounds. Inadine is easy to apply and remove, with well-established antimicrobial efficacy in vitro, in vivo and in clinical practice (Schwarzer et al, 2024).

Dressing change frequency should be guided by:

- Exudate levels
- Infection status
- The colour-change indicator (Sibbald and Elliott, 2017).

In more heavily exuding or infected wounds, more frequent dressing changes may be required. As with all antimicrobial dressings, treatment should be regularly reviewed, time-limited and stepped down once infection is controlled (Pozniak et al, 2025).

Ongoing monitoring should include reassessment of wound characteristics, exudate, infection and patient tolerance, with treatment adjusted as needed to avoid unnecessary antimicrobial use (Clemett, 2025). Failure to progress within 10–14 days should prompt reassessment of the wound and management plan (Sibbald et al, 2011).

The role of Inadine in wound care

Despite the availability of newer antimicrobial technologies, Inadine continues to offer advantages:

- Broad-spectrum efficacy with low resistance risk
- Simplicity across care settings
- A clear visual indicator to guide dressing changes
- Good patient tolerability
- Cost-effectiveness compared with many alternatives (Bigliardi et al, 2017).

There is a growing need for reliable, easy-to-use and cost-effective wound care products as wound prevalence, healthcare costs and resource pressures increase (Schneider and Himmelsbach, 2024). Products that are simple to apply and monitor help support efficient care delivery.

Conclusion

Inadine remains an effective option for managing local infection in superficial wounds. Updated IFU guidance reinforces appropriate patient selection rather than avoidance of iodine-based dressings. Although the IFU has evolved, the formulation is unchanged and has an established efficacy and safety profile following more than 30 years of clinical use. Used appropriately, Inadine remains a simple, cost-effective antimicrobial dressing with an important role in modern wound care.

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