Adopting the 2-week challenge in practice: making the case for silver dressings

KEY WORDS
- Silver dressings
- Two-week challenge
- Wound care survey

Managing wound infection is costly for the patient and to the health economy, and a structured approach to assessment and management of the patient as well as correct use of antimicrobials is essential to ensure safe, effective and person-centred care. In recent years, a wide range of wound dressings that contain silver have become available for use in managing wound infection and silver dressing spend has become an area of concern for many organisations who are seeking to reduce costs and control healthcare budgets. Best practice recommendations for the appropriate use of silver dressings suggest a 'Two-week challenge' where the efficacy of silver dressings can be assessed (International Consensus, 2013). The aim of this publication is to demonstrate that a service wide approach and action plan to ensure appropriate use of antimicrobials will lead to a reduction in silver spend, improvement in patient outcomes and implementation of best practice recommendations in a community tissue viability service.

Clinicians and healthcare providers face increasing challenges to deliver safe, effective, efficient and personalised care in a timely manner within current economic constraints. These challenges include a growing elderly population with more complex needs resulting in an increased demand for healthcare services, a wide variety of dressing products and devices available for use, and a responsibility to ensure the right care is delivered at the right time for the right patient. For many clinicians, tension exists between delivering best practice and resource availability (International Consensus, 2013). One area of practice that has been the subject of debate and controversy in recent times is the subject of 'wound infection' and the appropriate use of antimicrobials (International Consensus, 2012; Wounds UK, 2013).

Wound infection can have a significant impact on a patient's quality of life causing pain, malodour, a loss of appetite, malaise and deterioration of their wound ([World Union of Wound Healing Societies] WUWHS, 2008). Additionally, when a wound becomes infected it is costly to the healthcare system particularly if patients are admitted to hospital. The prevalence of people with at least one chronic or acute wound is 3.7 per 1,000 of the population in Europe with estimated treatment cost of £2.5–3.1 million and approximately 79% of these are treated in the community (Posnett et al, 2009). Developing a surgical site infection (SSI) can double the length of hospital stay, while healthcare interventions for SSI, such as the use of antibiotics, can cost between £814 and £6,626 ([National Institute for Health and Care Excellence], NICE, 2008). Effective prevention, control and management of infection is therefore in the best interest of the patient and the health economy and there is an increasing need to demonstrate that a health intervention provides value in relation to the patient benefit it provides is best. Demonstrating value for money is reliant on having data to show that the treatment modality or pathway is both clinically and cost effective (International Consensus, 2013).

Managing wound complications such as infection is one of the major contributors to the cost of treating a wound. A survey on healthcare-associated infections and antimicrobial use estimated the total number of antimicrobials prescribed as 25,942 for 18,219 patients, with the prevalence of antimicrobial drugs and device use being 34.7% in the UK (Health Protection Agency, 2011). It is critical that clinicians are able to identify those patients at risk

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Table 1. Silver dressing usage action plan.

Action	Silver dressing usage action plan
1	Reduce the number of silver dressings on wound formulary: Nanocrystalline silver selected
2	No more than one box of dressings to be prescribed at any one time
3	Set up script switch for non-formulary products
4	Poster campaign to raise awareness of the 2-week challenge
5	Development of a pathway for wound infection management (*Table 2* and *Figure 1*)
6	Provide education and training to disseminate best practice recommendations

of developing a wound infection on assessment and have the knowledge and skills to diagnose infection and choose the correct topical antimicrobial or systemic antibiotic to prevent unnecessary complications that may result in hospital admission. Wound dressings represent a relatively small proportion of the total cost and yet have the potential to improve outcomes (Stephen-Haynes et al, 2011). Selecting a wound dressing should be a part of the holistic care of the patient, which includes treatment of the underlying cause, wound-bed preparation and addressing patient concerns.

SILVER DRESSINGS

In recent years, a wide range of wound dressings that contain silver have become available for use in managing wound infection and silver dressing spend has become an area of concern for many organisations who are seeking to reduce costs and control healthcare budgets. The challenges to the use of silver dressings have been a perceived lack of efficacy and cost effectiveness, as well as questions about safety (Michaels et al, 2009). This has led to many clinicians not being able to access silver dressings in practice or to defend their use for individual patients from a limited formulary. The East London Foundation Trust in London has taken a proactive approach to ensuring that silver dressings remain available to patients by developing an action plan to ensure appropriate use and to demonstrate a reduction in our silver spend. This action plan was developed in response to data that showed the costs for silver dressings had increased and that dressing usage was at times inappropriate with prolonged and unnecessary usage, resulting in pressure from our commissioners to reduce our spend. The action plan consisted of a number of measures outlined in *Table 1*.

The choice of which silver dressing remained on wound formulary was based on a number of positive product evaluations (Dowsett, 2003), patient and clinician feedback and evidence to support the efficacy of the product in resolving clinical signs and local infection at two weeks following commencing treatment (Gago et al, 2008) as well as evidence on its cost effectiveness (Leaper et al, 2010).

One of the critical factors to successfully implement the action plan was to ensure clinicians had the knowledge and skills to accurately diagnose infection and to differentiate between local and systemic infection. The development and dissemination of an infection pathway that included a checklist on signs and symptoms of infection (*Table 2*) and an algorithm for infection management was a key enabler to successful implementation (*Figure 1*).

MANAGEMENT

Treatment aims should address:

- The underlying cause of the wound
- The microorganism causing the infection
- Removal of the microorganisms that have invaded the tissue
- Removal of dead tissue
- Providing support for the patient's immune system.

A review of the Trust's silver dressing spend following the implementation of the action plan showed that cost had reduced by more than 50% from £152,000 in 2009 to £69,000 in 2011 based on a population of approximately 300,000 (*Figure 2*). However, towards the end of 2011 silver dressing costs started to rise and our silver spend for 2012 was £78,000. In an attempt to understand why our costs were rising and what types of wounds we were managing, we undertook a wound survey. It is known that around 50% of chronic wounds can be infected at any one time (European Wound Management Association [EWMA], 2005) and evidence suggests that biofilms play an important role in wound chronicity with one study showing that 60% of chronic wound biopsies contained biofilm structures (James et al, 2008). One of the terms of reference for the survey was to investigate

Table 2. Checklist of signs and symptoms of infection.

A full and detailed patient assessment should be carried out and signs and symptoms of wound infection identified in acute and chronic wounds (WUWHS, 2008).

	Signs and symptoms	Acute	Chronic
Local infection	Abscess formation	✓	
	Unexpected new, increased or altered pain or tenderness	✓	✓
	Delayed healing	✓	✓
	Periwound oedema and swelling	✓	✓
	Redness (erythema)	✓	✓
	Localised warmth/heat	✓	✓
	Malodour	✓	✓
	Purulent discharge	✓	✓
	Fragile and/or bleeding granulation tissue		✓
	Wound bed discolouration		✓
	Induration		✓
	Pocketing		✓
	Bridging		✓
Spreading infection	Spreading erythema	✓	✓
	Wound breakdown/dehiscence	✓	✓
	Crepitus in soft tissue	✓	✓
	Malaise and non-specific deterioration in patient's condition	✓	✓

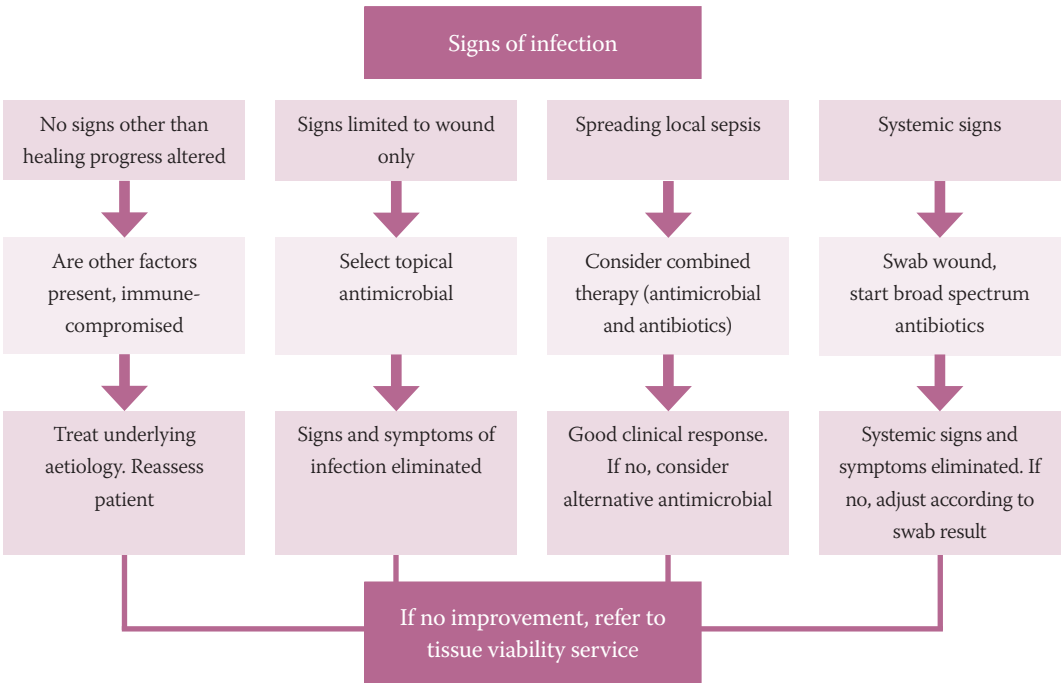

Figure 1. Algorithm for infection management.

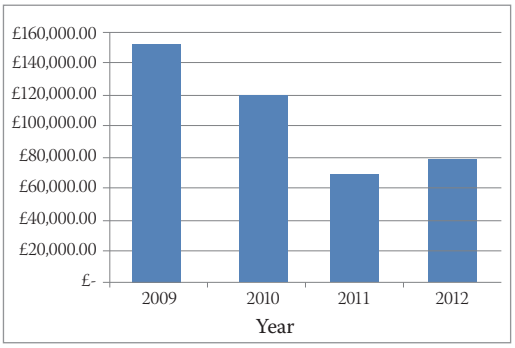

Figure 2. Silver spend.

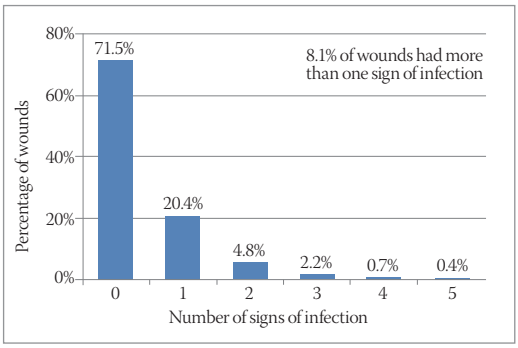

Figure 3. Number of signs of wound infection.

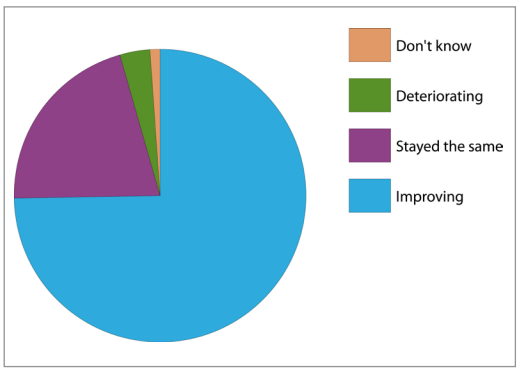

Figure 4. Description of wound progress over the past four weeks.

the number of patients on the caseload with a wound infection and the correlation between infection and the use of antimicrobial dressings.

WOUND CARE SURVEY

The aim of the survey — a questionnaire completed by all community nurses treating wounds over a week period — was to understand the types of wounds treated and wound management practices, particularly in relation to wound infection management and antimicrobial dressing usage. A total of 270 wounds were included in the data analysis from community nursing teams. The majority of the wounds were managed either in the patient's home (48%) and in wound clinics (41%) by a registered nurse (90%). The most common wound type treated were leg ulceration (36%), surgical wounds (23%) and pressure ulcers (16%).

Over 50% of the wounds had been present for 3 months or less and some wounds had been present for more than 12 months (20%). Chronicity and longer wound duration are factors that predispose the patient to wound infection and can influence the use of silver dressings (Wounds UK, 2013). The survey, however, showed that 71.5% of wounds did not have evidence of wound infection and only 8.1% (*n=20*) wounds had more than one clinical sign of infection (*Figure 3*).

The survey then compared antimicrobial use to the number of wounds that were considered to be infected and the results showed that 20 out of 270 wounds were classified by clinicians as infected (7.4%) and 25 wounds (9.2%) were being treated with an antimicrobial dressing. This showed a close correlation between infected wounds and antimicrobial dressing usage. The duration of antimicrobial dressing usage was also considered based on the recommendation from the action plan of a 2-week challenge. Analysis showed that of the 25 wounds treated with an antimicrobial dressing in 22 cases (88%) this dressing had been in use for two weeks or less. Of the remainder, in two cases (8%) the dressing had been used for between two and four weeks.

In 96% (925/25) of cases, clinicians were demonstrating a 'best practice' approach (Wounds UK, 2013) to treating wound infection with antimicrobial dressings. These data were powerful when challenging the misperception that clinicians were using too many silver dressings. The results of the survey also demonstrated that patient outcomes were improving with correct intervention, as 75% of patients had wounds that were described as 'improving' over the past 4 weeks (*Figure 4*).

In addition to the survey results and in the interests of involving our patients and service users, we were able to use patient stories and case studies (*Box 1*) to demonstrate improved patient reported outcome measures (PROMS) and patient reported experience measures PREMS by implementing the infection pathway and the two week challenge

for silver dressing usage. Reporting the patient experience has become increasingly important in healthcare delivery (NICE, 2013). Patients may well receive evidence-based care, but if it is not delivered in a way that is caring and compassionate then they will not have a good experience. A good outcome for the patient is one that includes a plan to eradicate the wound infection, facilitates faster healing and treats them with dignity and respect (NICE, 2013).

CONCLUSION

Wound infection has a significant impact on patient wellbeing and on the health economy. We have a responsibility to ensure patients receive care that is safe, effective and patient-centred. Antimicrobials including silver dressings should be used in an appropriate and structured manner for limited periods with clear clinical treatment objectives. Their use should be based on an accurate and detailed initial patient assessment and ongoing re-assessment for the duration of treatment. Usage should be monitored and controlled with services being able to clearly demonstrate the positive impact they make both to patients and to the delivery of cost-efficiency measures. WUK

Box 1. Case studies.

CASE STUDY 1

Patient: Mr P presented at the leg ulcer clinic on referral from his GP with a traumatic injury to his right leg. On assessment, he had evidence of underlying venous disease, oedema, pain and inflammation. The wound bed was 100% sloughy tissue. **Treatment pathway:** Diagnosis of local wound infection. Treated with nanocrystalline silver sustained release for 2 weeks. Non-compression bandage for the first 4 days until pain subsided and Doppler performed. Reduced compression for 1 week and then full compression at the end of second week of treatment. **Outcome:** Reduced pain, reduced oedema, wound-bed debridement, wound size reduction and a positive patient-reported outcome with treatment and experience.

CASE STUDY 2

Patient: Mr J has been attending the leg ulcer clinic for treatment of a venous leg ulcer. The wound was not healing, painful and malodorus. Wound exudate levels had increased and the wound bed was 50% sloughy. **Treatment pathway:** Diagnosis of local wound infection was made. Treated with nanocrystalline silver sustained release for 7 days. Appropriate use – 2-week challenge. **Outcome:** Reduced pain, decrease in exudate levels, improved wound bed. Free from infection. Positive patient reported experience and outcome with treatment and experience. Cost-effective wound care as patient had previous hospital admissions with infection.

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