

Impact of the introduction of a nanocrystalline silver dressing for wound infection across a clinical commissioning group in the UK

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Introduction

It is estimated that around 8.9% of wounds are considered infected at time of treatment¹ and with wound volumes estimated to be increasing by 12% each year² clinicians are dealing with an ever increasing volume of infected wounds.

The Identification and treatment of infection is a key driver of wound care efficiencies³ and the use of a recognised, effective antimicrobial in treatment pathways is a key part in realising this efficiency. ACTICOAT[®] Antimicrobial Barrier Dressing with nanocrystalline (Smith+Nephew, UK) has been shown to resolve infections faster and promote faster wound healing when compared to other silver dressings.⁴

Methods

Following evaluation of infection management practice, the nanocrystalline dressing was introduced as first line silver dressing, to be used where local or spreading infection has been formally identified.

The introduction of this dressing was supported through a new silver pathway and training support from the tissue viability team and local Smith+Nephew team.

Following its introduction, prescribing data⁵ was analysed to measure financial and unit impact of the change between two consecutive calendar years. Analysis was performed using SAS 9.4 with comparators made for silver spend, silver volume usage, absorbent dressing volume usage and overall wound care spend. An estimate of nursing time release was made by applying 31 minutes per absorbent dressing change.⁶ Throughout the implementation of the pathway, feedback from clinicians and patients were collated to ensure clinical outcomes were also positive.

Results

Feedback from clinical teams and patients noted that, when compared to dressings used pre-implementation, a reduction in wounds with signs of infection was seen. Less wounds presented as malodorous or painful and their were overall improvements in healing rate - clinicians noted healing improvements within days of the introduction of ACTICOAT Dressing, including in some patients who had used alternative silvers for extended durations with no noted improvements. Clinicians also noted a decrease in moderately and heavily exuding infected wounds with the use of the ACTICOAT FLEX 3 Dressing, leading to a reduced change frequency of absorbent dressings than had been seen prior to implementation.⁷

This is reflected in the data by a 9% reduction in volume of dressings used for absorbency (Fig 1, p=0.0185). It is estimated that this reduction alone released 909 nursing hours associated with dressing changes over the 12 month period (Fig 2). For the CCG, the combination of these factors contributed significantly to an overall dressing spend reduction of £156,177 (9.4% reduction, P = 0.0126, Fig 3)

Figures show that over the 12 months analysed, spend on the nanocrystalline dressings increased 281.9% (p<0.001) compared to the prior year. Despite the nanocrystalline dressing having a higher unit cost than the average price of previously used dressings within the category (£10.28, £4.67 respectively), total overall spend on silvers including Acticoat Flex 3 Dressing decreased 1.5% over the same period (Fig 4). Significant volume decreases were seen on wounds being treated with these dressings, with an overall 14% reduction in silver dressings volumes used (p=0.041, Fig 1.), volumes of other antimicrobials reduced by 21%.

Category	2018/19 volume	2019/20 volume	Change	p value
Silver dressings	2,792	2,410	-14.00%	p=0.041
Absorbents including foams	19,654	17,894	-9.00%	p=0.0185

Fig 1: Dressing volumes used

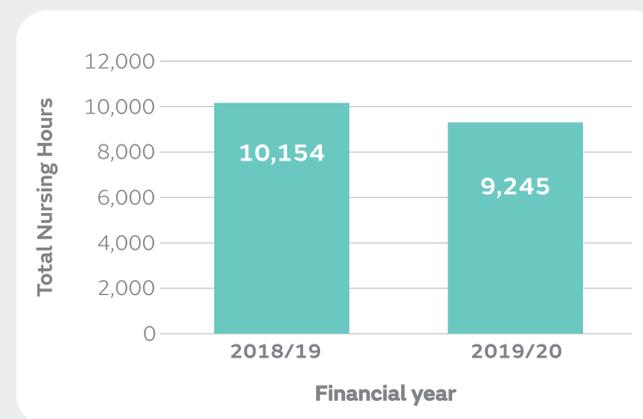


Fig 2: Nursing time hours released through implementation of nanocrystalline dressing

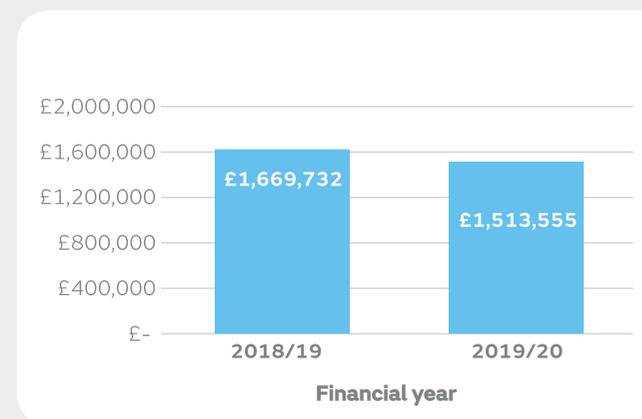


Fig 3: Year on year dressing spend reduction

Dressing	FY 2018/2019	FY 2019/2020	Change	Mean monthly 2018/2019 £	Mean monthly 2019/2020 £	P
All Infection management Dressings	£266,982	£248,382	-7.00%	£22,249	£20,699	P = 0.0815
Total silvers	£160,032	£157,552	-1.50%	£13,336	£13,129	P = 0.7384
Nanocrystalline silver dressing	£9,878	£37,727	281.90%	£ 823	£3,144	P < 0.0001
Other silver dressings	£150,154	£119,825	-20.20%	£12,513	£9,985	P = 0.0002
Honey dressings	£61,830	£58,216	-5.80%	£5,153	£4,851	P = 0.3594
Other infection management dressings	£ 45,120	£32,614	-27.70%	£3,760	£ 2,718	P = 0.0001

Fig 4: Dressing spend analysis

Discussion

Increasing numbers of infected wounds do not necessarily result in similar increases to dressing budgets. Subsequently, the need to realise wound care efficiencies is of huge pertinence. Implementation of clear pathways, which support the identification and treatment of wounds using the infection continuum and appropriate dressings is key. Whilst unit price of dressings can vary greatly, selection of dressings in treatment should consider efficacy to reduce signs and symptoms of infections and therefore the holistic cost of wounds.

When considering these factors and transitioning silver usage to the nanocrystalline dressing, the local area were able to provide improved outcomes amongst patients suffering with local wound infection, whilst also reducing the number of patient visits needed to meet these patients need. Alongside this an overall reduction in silver spend, infection management spend and total wound care spend were also achieved.

Conclusion

Implementing a new infection management pathway with ACTICOAT Dressings saw improved patient outcomes for the trust with a significant reduction in nursing time required and the spend and volumes of silver dressings used.

References

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