

# A Product Evaluation to Determine User's Feedback and Efficacy using the 3M Tegaderm CHG Dressing

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## Aim

To compare the rate of skin colonisation at the puncture site before and after the use of Tegaderm CHG dressing.  
To assess the adhesiveness, application and durability of the Tegaderm CHG dressing compared to the standard dressing utilised on the unit (IV3000).  
To determine if there is a difference in the colonisation rates of the catheter tips and skin swabs between the Tegaderm CHG dressing and the default dressing.

## Background

Catheter-associated line sepsis is one of the most serious complications of intravenous therapy (Maki 1977), (Glynn1977), (Pratt 2004). It is possible to reduce these infections by reducing the skin surface bacterial counts using antiseptic agents (Raad 2007). The growth of micro-organisms on the skin is so critical to the pathogenesis of catheter-associated infection, it comes as no surprise to find that many new products and techniques have been designed either to reduce microbial burden at the insertion site or to prevent migration of micro-organisms into the catheter wound.



## Methods

The evaluation was undertaken at the critical care unit at Doncaster & Bassetlaw Hospitals within patients requiring a short-term central venous catheter (CVC). Patients requiring a CVC (jugular or subclavian sites) were pursued. A data collection form, swabs and dressing was attached to the CVC insertion pack to assist with compliance. A skin culture was taken prior to cannulation and skin prepping to establish baseline skin counts. Application, visibility, skin condition and security of fixation were all monitored on a daily basis. If a dressing change was planned after 48 hours a further skin swab was taken from the skin directly under the CHG gel pad or 2cm around the insertion site (IV3000). The evaluation ran for 8 weeks.

Dressing	Colonisation, Pre	Colonisation, Post
CHG	CNS	Nil
CHG	Nil	Nil
CHG	CNS	CNS
CHG	Nil	Nil
CHG	S.HOM	Nil
CHG	CNS	Nil
CHG	Nil	Nil
CHG	MRSA	Nil
CHG	Nil	Nil
CHG	Nil	Nil
CHG	Nil	Nil
IV3000	Nil	CNS
IV3000	CNS	Nil
IV3000	CNS	CNS
IV3000	CNS	Nil
IV3000	CNS	Nil
IV3000	CNS	CNS
IV3000	CNS	CNS
IV3000	CNS	Nil
IV3000	CNS	CNS
IV3000	Nil	Nil
IV3000	CNS	Nil

Table 1. Bacterial colonisation by type pre and post dressing application

## Results

In total 25 patients took part in the evaluation. There were 8 females and 17 males. The mean age of the patient was 59 years of age (39-82 range) with no significant difference between the CHG group (58 years) and the baseline dressing (60 years). In total 14 patients (4 females) were recruited in the CHG dressing and 11 for the baseline dressing (5 females). The majority of the CVC lines were inserted in the Internal Jugular Vein (92%) and 8 in the Subclavian vein (8%).

Comparison of the bacteria colonisation rates between the two groups using a 2 tailed "t" test suggests a significant difference (p<0.001) (Table 1). The majority of the bacteria identified were coagulase negative staphylococci. These bacteria are known to contribute significantly to the development of catheter related blood stream infections due to their ability to attach and produce polysaccharide substances on foreign materials (i.e. biofilm).

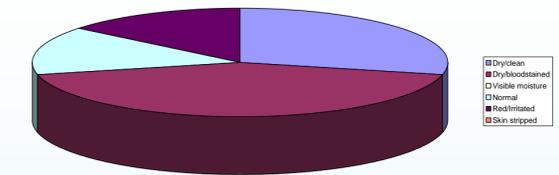
There were only 8 catheter tips submitted for culture, 5 showing no bacterial growth, 2 CNS and 1 coliform.

Most applications and removals were rated as Very Easy/Easy (Table 2). Skin condition at the site was not adversely effected by the CHG dressing (Fig 1). 85% of dressings were rated as in perfect condition on removal (Fig. 2).

	Dressing application	Removal of dressing	Removal from catheter
Very difficult	0	0	0
Difficult	0	0	0
Acceptable	1	1	0
Easy	1	1	4
Very easy	5	5	3

Table 2. Application and removal of dressing.

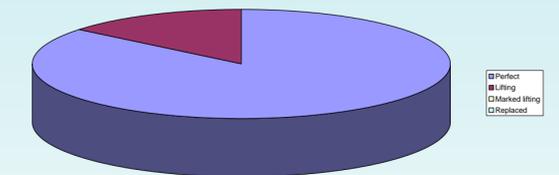
Fig.1 Condition of Skin on dressing removal.



## Conclusion

The results of the product evaluation suggests the use of the Tegaderm CHG dressing is well tolerated by the patient and shows a good level of adhesiveness and longevity compared to the baseline dressing. The dressing also appears to offer antimicrobial protection which is consistent with the manufacturers publications. Although the dressing is more expensive than the current dressing adopted, because of its longevity and antimicrobial protection, this may be a cost effective replacement for long term care.

Fig.2 Condition of dressing



## References

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