Catheter-related infections – The statistics

3 in every 1000

The approximate number of patients admitted to hospital in the UK acquires a bloodstream infection(1)

Catheter-related bloodstream infections (CR-BSI) associated with the insertion and maintenance of CVC are potentially among the most dangerous complications associated with healthcare(1)

21%

of patients with a Central Venous Catheter acquire at least one (HCAI) Health Care Acquired Infection(2)

1 infection acquired in hospital

Costs at least £3,000 to treat (could cost significantly more)

and results in the patient spending 3x longer in hospital(4)

near 1/3

The amount of infections related to central venous access devices(3)
The risks

Effective prevention and control of infection must be part of everyday practice and be applied consistently by everyone.

There is a legal requirement to ensure infection prevention is a priority.

Risk of infection increases when one or more elements of a procedure are excluded or not performed.

Risk of infection reduces when all elements within the clinical process are performed every time and for every patient.

Actively REDUCE HCAI’s by using the care bundle and adopting care guidelines.

Effective prevention and control of infection must be part of everyday practice and be applied consistently by everyone.
It is essential that everyone involved in caring for patients with intravascular catheters is educated about infection prevention.

**Recommendation**

3M can help you to identify your requirements and training needs from staff training to educational programmes. Our team of clinical specialists has first hand experience of the demands of the NHS and can help with trouble shooting and disseminating best practice.

**3M Solution**

Evidence reviewed by Healthcare Infection Control Practices Advisory Committee (HICPAC) consistently demonstrated that the risk of infection declines following the standardisation of aseptic care\(^8\) and increases when the maintenance of intravascular catheters is undertaken by inexperienced healthcare workers.\(^9\)
Selection of catheter and insertion site

Selection of catheter

Use the minimum number of ports or lumen required for patients therapy

Selection of catheter site

Consideration should be given to catheter site selection, weighing up the risks and benefits of both infectious and mechanical complications

EVIDENCE – Multi-lumen catheters may be particularly prone to infection because of increased trauma at the insertion site or increased frequency for CVC manipulation
WHO recommends that there are 5 crucial moments for hand hygiene. 

**Recommendation**

1. Before patient contact
2. Before aseptic task
3. After body fluid exposure risk
4. After patient contact
5. After contact with patient surroundings

**EVIDENCE** – There are extensive studies about hand hygiene especially when to undertake and which product to use.\(^{(11,12)}\)

This recommendation is based on WHO Hand Hygiene guidance\(^{(13)}\)
Skin preparation

Decontaminate skin with a single use application of 2% CHG in 70% isopropyl alcohol\(^5\)

Skin flora at the catheter insertion site is a major risk factor for catheter-related blood stream infections (CR-BSIs) and the majority of CR-BSIs originate from the patient’s own skin flora\(^{14}\)

65% Skin\(^{15}\)
30% Catheter hub\(^{15}\)
5% Other pathways\(^{15}\)

Vein

EVIDENCE – CHG Preparation reduces the risk of catheter related infection by 49% compared with preparation using povidone iodine (PI)\(^1\)
EVIDENCE – Compliance with maximum sterile barrier precautions significantly minimises catheter contaminations and related infections (17).

*Laboratory testing has proven that the intact film provides a barrier against HIV-1 and HBV whilst the dressing remains intact without leakage.
Catheter site care

Dressings
A sterile, transparent, semi-permeable dressing to allow observation of insertion site\(^5\)

Site inspection
Site to be inspected daily for signs of infection and recorded daily in patient notes\(^5\)

Documentation
Details of insertion to be documented:
- Date
- Location
- Type
- Catheter lot number
- Operator\(^5\)

EVERY DAY

3M solution

Dressings containing 2\% CHG may also reduce the incident of catheter site infection\(^6\)

3M\textsuperscript{TM} Tegaderm\textsuperscript{TM} CHG I.V. Securement Dressing combines the powerful antimicrobial effectiveness of CHG with the ease-of-use and transparency of Tegaderm dressing, to further protect the I.V. site, reduce risks associated with CR-BSI and improve outcomes.

Handles for application reduces the risk of touch contamination of the skin side of the dressing, facilitating a non-touch technique and easy and accurate positioning of the dressing. The transparent window permits regular and easy visual monitoring.
Catheter management

Don’t touch
Aseptic Non Touch Technique (ANTT®) Precautions should be taken with any interaction with a CVC.

Scrub the hub
Use 2% CHG in 70% isopropyl alcohol to decontaminate port or hub.

Lumen should be flushed with 0.9% Sodium Chloride for lines in frequent use, the use of heparin or antimicrobial locking solutions as designated by local policy.

Remove the catheter
as soon as no longer required or in line with local guidelines
Document removal details in patient records.


(16) Bashir MH et al; Suppression of regrowth of normal skin flora under chlorhexidine gluconate dressings applied to chlorhexidine gluconate-prepped skin, American Journal of Infection Control, Volume 40, Issue 4, May 2012, Pages 344-348