NICE National Institute for Health and Care Excellence

Medical Technologies Evaluation Programme

MT 238 - 3M Tegaderm CHG IV Securement Dressing to provide transparent, antiseptic coverage at central venous and arterial catheter insertion sites

Expert Adviser Questionnaire Responses

Name of Expert Advisers	Job Title	Professional Organisation/ Specialist Society	Nominated by	Ratified
Mr Maurice Madeo	Deputy Director for Infection Prevention and Control	Infection Prevention Society	Sponsor	Y
Ms Annette Jeanes	Consultant Nurse, Infection Control	Royal College of Nursing	Sponsor	Y
Ms Jackie Nicholson	Consultant Nurse in Vascular Access	National Infusion & Vascular Access Society	Specialist Society	-
Ms Linda Kelly	Lecturer in Adult Health	National Infusion & Vascular Access Society	Specialist Society	-
Ms Lisa Dougherty	Consultant Nurse, Intravenous Therapy	National Infusion & Vascular Access Society	Specialist Society	-
Mr James Bitmead	IV Lead nurse Infection control	Royal College of Nursing	NICE	Y
Mr Andrew Barton	Advanced Nurse Practitioner Vascular Access and IV therapy	Nursing and Midwifery Council	NICE	TBC
Dr Justin Roberts	Consultant in Intensive Care Medicine and Anaesthesia	Royal College of Anaesthetists	NICE	TBC
Dr Roland Black	Consultant Intensive Care Physician	Royal College of Anaesthetists	NICE	TBC

YOUR PERSONAL EXPERIENCE (IF ANY) WITH THIS TECHNOLOGY

Question 2: Please indicate your experience with this technology?

Expert Advisers	I have had direct involvement with this	I have referred patients for its use	I manage patients on whom it is used in another part of their care pathway	I would like to use this technology but it is not currently available to me
Mr Maurice Madeo **Deputy Director for Infection Prevention and Control**	**Yes**	**Yes**	**Yes**	No
Ms Annette Jeanes **Consultant Nurse, Infection Control**	**Yes**	**Yes**	No	No
Ms Jackie Nicholson **Consultant Nurse in Vascular Access**	No	No	**Yes**	**Yes**
Ms Linda Kelly **Lecturer in Adult Health**	**Yes**	Blank	Blank	Blank
Ms Lisa Dougherty **Consultant Nurse, Intravenous Therapy**	**Yes**	No	No	No
Mr James Bitmead **IV Lead nurse Infection control**	**Yes**	**Yes**	**Yes**	No
Mr Andrew Barton **Nursing and Midwifery Council**	**Yes**	**Yes**	**Yes**	No
Dr Justin Roberts **Consultant in Intensive Care Medicine and Anaesthesia**	**Yes**	Blank	Blank	Blank

Dr Roland Black **Consultant Intensive Care Physician**	Blank	Blank	Blank	Blank
Any Comments?				

Mr Maurice Madeo **Deputy Director for Infection Prevention and Control**	Blank
Ms Annette Jeanes **Consultant Nurse, Infection Control**	**We have been using this product for more than two years**
Ms Jackie Nicholson **Consultant Nurse in Vascular Access**	**The main barrier for me to use this technology is the cost of the product in relation to the standard dressing and the work involved in demonstrating cost savings through its use**
Ms Linda Kelly **Lecturer in Adult Health**	**I now work in academia but teach vascular access so refer to different technologies available.**
Ms Lisa Dougherty **Consultant Nurse, Intravenous Therapy**	Blank
Mr James Bitmead **IV Lead nurse Infection control**	**i use CHG dressing on a daily basis**
Mr Andrew Barton **Nursing and Midwifery Council**	**I have undertaken a small trail of this product in the past.**
Dr Justin Roberts **Consultant in Intensive Care Medicine and Anaesthesia**	Blank
Dr Roland Black **Consultant Intensive Care Physician**	**The prevention of catheter related blood stream infections is an integral part of Intensive Care management. My experience relates to central lines which remain in situ for <10 days. Carole Boulanger is the lead for vascular access. Her remit covers the PICC service in the Royal Devon and Exeter hospital.**

Question 3: Have you been involved in any kind of research on this technology? If Yes, please describe?

Expert Advisers	Yes/No	Comment
Mr Maurice Madeo **Deputy Director for Infection Prevention and Control**	**Yes**	**We undertook a product evaluation to assess users acceptance of dressing and also whether it helped to decrease skin flora.**
Ms Annette Jeanes **Consultant Nurse, Infection Control**	**No**	**Blank**
Ms Jackie Nicholson **Consultant Nurse in Vascular Access**	**No**	**Blank**
Ms Linda Kelly **Lecturer in Adult Health**	**No**	**Blank**
Ms Lisa Dougherty **Consultant Nurse, Intravenous Therapy**	**No**	**Blank**
Mr James Bitmead **IV Lead nurse Infection control**	**No**	**Blank**
Mr Andrew Barton **Nursing and Midwifery Council**	**No**	**Blank**
Dr Justin Roberts **Consultant in Intensive Care Medicine and Anaesthesia**	**No**	**Blank**
Dr Roland Black **Consultant Intensive Care Physician**	**No**	**Blank**

THIS PRODUCT (TECHNOLOGY) AND ITS USE

Question 4: How would you best describe this technology?

Expert Advisers	It is a minor variation on existing technologies with little potential for different outcomes and impact	It is a significant modification of an existing technology with real potential for different outcomes and impact	It is thoroughly novel - different in concept and/ or design to any existing
Mr Maurice Madeo **Deputy Director for Infection Prevention and Control**	No	**Yes**	No
Ms Annette Jeanes **Consultant Nurse, Infection Control**	No	**Yes**	No
Ms Jackie Nicholson **Consultant Nurse in Vascular Access**	Blank	**Yes**	Blank
Ms Linda Kelly **Lecturer in Adult Health**	**Yes**	No	No
Ms Lisa Dougherty **Consultant Nurse, Intravenous Therapy**	Blank	Blank	**Yes**
Mr James Bitmead **IV Lead nurse Infection control**	No	No	**Yes**
Mr Andrew Barton **Nursing and Midwifery Council**	No	**Yes**	No
Dr Justin Roberts **Consultant in Intensive Care Medicine and Anaesthesia**	Blank	**Yes**	Blank
Dr Roland Black **Consultant Intensive Care Physician**	**Yes**	Blank	Blank

Any Comments?	
Mr Maurice Madeo **Deputy Director for Infection Prevention and Control**	Blank
Ms Annette Jeanes **Consultant Nurse, Infection Control**	Blank
Ms Jackie Nicholson **Consultant Nurse in Vascular Access**	**This technology is significantly different from the standard securement dressing but a minor variation on the use of a chlorhexidine impregnated sponge disc that could be used alongside a standard securement dressing. The minor variation relates to the visibility of the intravascular catheter insertion site. This technology allows visualisation of the insertion site.**
Ms Linda Kelly **Lecturer in Adult Health**	**Due to the ability to visualise the exit site makes this technology novel.**
Ms Lisa Dougherty **Consultant Nurse, Intravenous Therapy**	Blank
Mr James Bitmead **IV Lead nurse Infection control**	**Although other CHG dressings are on the market, none other enables you to check the line insertion site on a daily basis.**
Mr Andrew Barton **Nursing and Midwifery Council**	Blank
Dr Justin Roberts **Consultant in Intensive Care Medicine and Anaesthesia**	**Current standard dressing are produced by a range of manufacturers (eg. Tegaderm manufactured by 3M, IV3000 manufactured by Smith & Nephew). This dressing has the novel aspect of containing an antiseptic impregnated patch with the potential to reduce bacterial presence at the skin puncture site of vascular access devices. Theoretically this should reduce bacterial migration along the external surface of indwelling vascular catheters, reducing the risk of bacteraemia.**
Dr Roland Black **Consultant Intensive Care Physician**	**Chlorhexidine 2% skin preparation prior to line insertion has been shown to reduce the rate of CRBSI. Although theoretically attractive, I haven't seen large scale studies showing a patient benefit in the use of CHG dressings.**

Question 5: What is the most appropriate use (e.g. clinical indication) for the technology?

Expert Advisers	Comment
Mr Maurice Madeo **Deputy Director for Infection Prevention and Control**	**It is ideal for use on high risk individuals e.g. MRSA colonisation with a CVC insitu or those receiving TPN due to higher risk of infection.**
Ms Annette Jeanes **Consultant Nurse, Infection Control**	**We use it on central lines and peripheral IV lines as a standard dressing. The reason we selected it is that you can see the insertion site and it contains chlorhexidine which reduces the risk of infection. It also helped to secure the line.**
Ms Jackie Nicholson **Consultant Nurse in Vascular Access**	**As described by the manufacturers, this would be used on short term intravascular catheters - acute central venous catheters. It could however be used on longer term intravascular catheters such as peripherally inserted central catheters. It is likely that some centres do use the technology on long term devices.**
Ms Linda Kelly **Lecturer in Adult Health**	**I believe the technology would be appropriate with any CVC. I think particularly in the critical care areas where the patients are more at risk of infections (due to frequent manipulations etc.) this would be useful. It offers a 'belt and braces' approach to infection prevention.** **Catheters inserted in an emergency situation.** **Difficult insertions (mulitply attempts to puncture vein)** **Patients who are immunocompromised.**
Ms Lisa Dougherty **Consultant Nurse, Intravenous Therapy**	**A patient with a CVC where there is a need to reduce risk of infeciton and need to be able to inspect the site.**
Mr James Bitmead **IV Lead nurse Infection control**	**any patient who has a long term line i.e. PICC/Mid/Hickman lines**
Mr Andrew Barton **Nursing and Midwifery Council**	**To protect and maintain indwelling vascular access devices inorder to prevent infection and migration.**
Dr Justin Roberts **Consultant in Intensive Care Medicine and Anaesthesia**	**Dressing of short-term vascular access devices eg. central venous catheters, arterial catheters, PICC lines, temporary pacing wires. Similar dressings are also supplied for the dressing of other skin penetrating medical devices such as surgical drains and intercostal drains. To my knowledge the device is not recommended for very short-term use (<72 hours) and thus the majority of simple peripheral venous cannulae would not require this type of dressing.**

Expert Advisers	Comment
Dr Roland Black **Consultant Intensive Care Physician**	**Currently high risk patients. In our practice, the patients in whom we see most line infections are those whose lines are for community based Parenteral Nutrition, and in immunosuppressed patients.**

COMPARATORS (including both products in current routine use and also "competing products")

Question 6: ***Given what you stated is the appropriate indication (clinical scenario) for its use, what are the most appropriate "comparators" for this technology which are in routine current use in the NHS?***

Expert Advisers	Comment
Mr Maurice Madeo **Deputy Director for Infection Prevention and Control**	**There is no interactive dressing that is visible to the entry site at present**
Ms Annette Jeanes **Consultant Nurse, Infection Control**	**We previously used biopatch plus a standard IV dressing but this had a number of problems including inability to visualise the entry site, the two stage process of applying a dressing and potential dislodgement of line when the biopatch was changed - so currently there is not anything directly comparible that i am aware of.**
Ms Jackie Nicholson **Consultant Nurse in Vascular Access**	**The standard securement dressing with the chlorhexidine impregnated sponge disc**
Ms Linda Kelly **Lecturer in Adult Health**	**Biopatch (J & J)**
Ms Lisa Dougherty **Consultant Nurse, Intravenous Therapy**	**A patch - e.g. Biopatch or Zonis and a transparent dressing**
Mr James Bitmead **IV Lead nurse Infection control**	**Biopatch**
Mr Andrew Barton **Nursing and Midwifery Council**	**The chlorhexadine elemet of the dressing is unique, I am unaware of another IV dressing with this element**
Dr Justin Roberts **Consultant in Intensive Care Medicine and Anaesthesia**	**As stated above typical manufactured comparators are those dressings in very widespread use which do not have an antiseptic impregnated patch.**

Dr Roland Black **Consultant Intensive Care Physician**	Blank

Question 7: "Competing products": Are you aware of any other products which have been introduced with the same purpose as this one?

Expert Advisers	Comment
Mr Maurice Madeo **Deputy Director for Infection Prevention and Control**	**Biopatch is a similar product but may onscure the IV access site.**
Ms Annette Jeanes **Consultant Nurse, Infection Control**	**See above there are a number of impregnated dressings with a similar purpose but i am not aware of an IV version currently for IV lines.**
Ms Jackie Nicholson **Consultant Nurse in Vascular Access**	**The chlorhexidine impregnated sponge disc**
Ms Linda Kelly **Lecturer in Adult Health**	**Biopatch (J & J)**
Ms Lisa Dougherty **Consultant Nurse, Intravenous Therapy**	**Not one where the chlorhexidine is integral to the dressing**
Mr James Bitmead **IV Lead nurse Infection control**	**there are other products simular to biopatch, some use CHG or silver ions**
Mr Andrew Barton **Nursing and Midwifery Council**	**no**
Dr Justin Roberts **Consultant in Intensive Care Medicine and Anaesthesia**	**Biopatch manufactured by Ethicon (a disc impregnated with chlorhexadine which is placed underneath a standard dressing)** **IV Clear by Covalon - currently licenced in the USA only but recent presentations at UK conferences suggest they are seeking a licence for UK use.** **GuardIVa by Hemcon medical Technologies - similar disc impregnated with antiseptic only available in US markets currently to my knowledge.**
Dr Roland Black **Consultant Intensive Care Physician**	**Biopatch (Johnson and Johnson). We do not currently use this as the patch obscures the line insertion site. The line infection bundle highlights the importance both of visual inspection, and occlusive dressings which are minimally disturbed. Biopatch can allow either of these to happen, but not both.**

POSSIBLE BENEFITS FOR PATIENTS

Question 8: What are the likely additional benefits for patients of using this technology, compared with current practice/ comparators?

Expert Advisers	Comment
Mr Maurice Madeo **Deputy Director for Infection Prevention and Control**	**Reduce risk of CR-BSI**
Ms Annette Jeanes **Consultant Nurse, Infection Control**	**We tried (trial) it prior to introducing it and the patients found it very comfortable and that it wasn't painful. It also enables us to see if there is an issue at the insertion site or if there is any inflammation along the vien. We also found it was very sticky which helped stabalise the line**
Ms Jackie Nicholson **Consultant Nurse in Vascular Access**	**Reduced infection related to external contamination**
Ms Linda Kelly **Lecturer in Adult Health**	**The likely benifit could be a reduction in Catheter related blood stream infections(CRBSI)** **Less change of catheter removal due to infection.** **Reduced hospital stays**
Ms Lisa Dougherty **Consultant Nurse, Intravenous Therapy**	**It involves just one prodedure - applying the dressing. Others require application of a patch which means it has to be right side up, correct application and then application of the dressing, and you can't see the insertion site**
Mr James Bitmead **IV Lead nurse Infection control**	**reduced IV catheter related infections**
Mr Andrew Barton **Nursing and Midwifery Council**	**According to the manufactuers this product will reduce the likleyhood of catheter related blood stream infections and infections at the insertion site.**
Dr Justin Roberts **Consultant in Intensive Care Medicine and Anaesthesia**	**Additional benefit is the reduced incidence of catheter related blood stream infection (CRBSI).**
Dr Roland Black **Consultant Intensive Care Physician**	**Can observe the site daily as recommended by 'Matching Michigan', without the need to remove the dressing**

Question 8.1: Is each additional benefit likely to be realised in practice? What are the likely obstacles?

Expert Advisers	Comment
Mr Maurice Madeo **Deputy Director for Infection Prevention and Control**	**Cost may be a significant barrier at present**
Ms Annette Jeanes **Consultant Nurse, Infection Control**	**It has helped with visualisation and this influenced us to change our choice of general/surgical wound dressings so that we can see them as this deters staff from removing the dressing to see what is happening. Stopping staff interfere with dressings reduces the risk of dislodgement and of introducing pathogens. The increased stickness can make removing the dressing more difficult if its been in place for a long time but the majority of our lines are very short term and if you use an alcohol based swab for removal it comes off easily.**
Ms Jackie Nicholson **Consultant Nurse in Vascular Access**	**It could be realised in specific groups of high risk patients - i.e. patients at greatest risk of intravascular catheter related infection. The likely obstacles are the cost.**
Ms Linda Kelly **Lecturer in Adult Health**	**Yes, although there remains concerns regarding resistance to CHG in addition to allergic reactions to CHG .**
Ms Lisa Dougherty **Consultant Nurse, Intravenous Therapy**	**Yes only issue was removal.**
Mr James Bitmead **IV Lead nurse Infection control**	**cost and if the patient has a sensitivity to CHG**
Mr Andrew Barton **Nursing and Midwifery Council**	**Adhesion of the dressing, staff training in the use of the dressing and alleries to Chlorhexadine**
Dr Justin Roberts **Consultant in Intensive Care Medicine and Anaesthesia**	**The reduction in CRBSI is predicated on a baseline level which is not controlled with other methods. The incidence of CRBSI in the UK has fallen over the last few years due to significant changes to the care of central venous catheters. A specific NHS programme was devised to address this through the NPSA (Matching Michigan programme - summary paper attached). This demonstrates a pooled reducation in CRBSI rates from approximately 3.5/1000 catheter days to 1.5/1000 catheter days. Of note 17% of ICUs involved in this project utilised a chlorhexadine impreganted dressing.**

Expert Advisers	Comment
Dr Roland Black **Consultant Intensive Care Physician**	**Cost. Our hospital line infection rate for tunnelled lines is 0.2 infections per 1000 CVC days. Each line infection triggers a root cause analysis, which usually demonstrates poor adherence to the existing bundle, particularly asepsis during hub handling. Even if the product were 100% effective, this would still require 5000 days of dressings to prevent 1 infection according to our figures.**

Question 8.2: How might these benefits be measured? What specific outcome measures would enable assessment of whether additional benefits for patients are being realised?

Expert Advisers	Comment
Mr Maurice Madeo **Deputy Director for Infection Prevention and Control**	**Demonstrate a reduction in CR-BSI rates or similar data e.g. colonisation**
Ms Annette Jeanes **Consultant Nurse, Infection Control**	**We can ask patients what they think of the dressing and they are often keen to check the insertion site if they can see it too. We are now monitoring how frequently lines are checked and dressings changed or lines replaced and reasons for replacement - we really need a simple standardised method of monitoring and measuring this. We do use VIPs scores and are interested in monitoring dwell times. We already monitor for bacteraemia and do a root cause analysis on MRSA and MSSA cases and any other significant infections.**
Ms Jackie Nicholson **Consultant Nurse in Vascular Access**	**Benefits could be measured by collecting and analysing data related to intravascular catheter infection rates. Specific outcome measures would be the cost of the product compared to the cost of treating an intravascular catheter related infection. Another measure could be the length of hospital stay related to an accquired intravascular catheter related infection.**
Ms Linda Kelly **Lecturer in Adult Health**	**Through catheter surveillance** **Number of CRBSIs** **Reduction of CRBSIs**
Ms Lisa Dougherty **Consultant Nurse, Intravenous Therapy**	**We did a product evaluation but we did not measure infection rates.**
Mr James Bitmead **IV Lead nurse Infection control**	**reduced number of IV catheter related infection**
Mr Andrew Barton **Nursing and Midwifery Council**	**Monitoring of the dressings dwell time and monitoring for line infection reduction.**
Dr Justin Roberts **Consultant in Intensive Care Medicine and Anaesthesia**	**The internationally agreed outcome measure is number of CRBSI per 1000 catheter days. Individual studies have also examined the rate of skin colonisation at vascular catheter exit sites.**

Expert Advisers	Comment
Dr Roland Black **Consultant Intensive Care Physician**	**Infection rates. However, as shown by our root cause analyses, there are many variables involved in the prevention of line related infections. Dressings would be a very small part of that**

Question 8.3: How good is this evidence for each of these additional benefits?

Expert Advisers	Comment
Mr Maurice Madeo **Deputy Director for Infection Prevention and Control**	**There is a growing body of evidence**
Ms Annette Jeanes **Consultant Nurse, Infection Control**	**Its not robust currently but improving. The research trials and other evaluations are better than the data we collect rountinely. The published evidence for the CHG dressing isnt vast but the pracitce based feedback is very positive**
Ms Jackie Nicholson **Consultant Nurse in Vascular Access**	**There is good evidence that this product or similar could reduce infection rates for high risk groups of patients with short term (acute) vascular access devices. There is little evidence to show its use on lower risk patients or those with long term vascular access devices.**
Ms Linda Kelly **Lecturer in Adult Health**	**There is evidence to support the use of CHG dressing/ The studies are of high quality.**
Ms Lisa Dougherty **Consultant Nurse, Intravenous Therapy**	**Blank**
Mr James Bitmead **IV Lead nurse Infection control**	**there is evidance from random control trials involving >1000**
Mr Andrew Barton **Nursing and Midwifery Council**	**There is some evidenc for the use of theis dressing but the result vary, the last study to be completed was published in the American Journal of Respiratory Medicine. This was a bug study undertaken over a 12 month time period which concluded that the Chlorhexadine dressing did reduce the instances of CRBI's however from my own experience I had issues with this dressing sticking to the patients skin and local reactions to the cholorhexainde. In 2012 a Medical Device Alert was issues to encourage caution when using chlorhexadine impreganted devices bacasue of the potential risk of anaphalxyis. Other smaller studies have been published which showed no particulary sway for or against.**
Dr Justin Roberts **Consultant in Intensive Care Medicine and Anaesthesia**	**As above and see Matching Michigan paper.**
Dr Roland Black **Consultant Intensive Care Physician**	**I am not aware of any independent large studies documenting effects of CHG dressings on line infection rates.**

Question 8.4: Please add any further comment on the claimed benefits of the technology to patients, as you see applicable

Expert Advisers	Comment
Mr Maurice Madeo **Deputy Director for Infection Prevention and Control**	**Reduce burded of HCAI**
Ms Annette Jeanes **Consultant Nurse, Infection Control**	**Blank**
Ms Jackie Nicholson **Consultant Nurse in Vascular Access**	**Blank**
Ms Linda Kelly **Lecturer in Adult Health**	**Blank**
Ms Lisa Dougherty **Consultant Nurse, Intravenous Therapy**	**We evaluated the following aspects** **• ease of application** **• ease of visualising the insertion site** **• ease of using different sizes** **• ability to remain in situ** **• ease of removal** **Nurses found it easy to use and preferred it to the standard current dressing**
Mr James Bitmead **IV Lead nurse Infection control**	**Blank**
Mr Andrew Barton **Nursing and Midwifery Council**	**The claimed benefits for the patients is to reduce the risk of CRBIs**
Dr Justin Roberts **Consultant in Intensive Care Medicine and Anaesthesia**	**There is no doubt that root cause analyses can fail to demonstrate any deficiency in care as detailed in the catheter care bundles, and yet the patient develops a CRBSI. I believe that the use of these dressings has therefore increased to reflect these very small numbers, and is partially also driven by the political and financial pressures around reduction in MRSA bacteraemias.**

Expert Advisers	Comment
Dr Roland Black **Consultant Intensive Care Physician**	**The reduction of CRBSI rates requires a package of care extending from good aseptic technique at insertion, through to daily inspection, occlusive dressing and meticulous asepsis during hub handling post insertion. The introduction of such a dressing, while theoretically attractive, is unlikely to result in the elimination of CRBSI. In community patients receiving TPN, there may be a benefit, as adherence to the bundle may not be as rigorous.**

POSSIBLE BENEFITS FOR THE HEALTHCARE SYSTEM

Question 9: What are the likely additional benefits for the healthcare system of using this technology, compared with current practice/ comparators?

Expert Advisers	Comment
Mr Maurice Madeo **Deputy Director for Infection Prevention and Control**	**Lowers burden of HCAI especially as the MRSA tolerance is Zero avoidable**
Ms Annette Jeanes **Consultant Nurse, Infection Control**	**A reduction in healthcare associated infection, saving time on dressing application, reducing the risk of dislodgement, reducing pain, ability to monitor the site easily**
Ms Jackie Nicholson **Consultant Nurse in Vascular Access**	**Reduced cost of treating infection, reduced length of hospital stay**
Ms Linda Kelly **Lecturer in Adult Health**	**There is a substanial cost associated with CRBSIs. This is not only in money costs but in the quality of life and even loss of life associated with crbsis.** **There could be a reduction in cost with this device as opposed to the competitor as this is one dressing only whereas the other involves a 2nd dressing to cover the technology.**
Ms Lisa Dougherty **Consultant Nurse, Intravenous Therapy**	**To reduce CRBSI**
Mr James Bitmead **IV Lead nurse Infection control**	**one step dressing technique-simple to use, reduced number of infection**
Mr Andrew Barton **Nursing and Midwifery Council**	**reducing the instances of CRBIs is in the interest of every healthcare provider as this will directly effect a positve out come for the patients. There is an additional cost implication associated with a patient who has a CRBIs.**
Dr Justin Roberts **Consultant in Intensive Care Medicine and Anaesthesia**	**As above the likely benefit is in the patient population deficiencies in standard CVC care can be demonstrated.**

Expert Advisers	Comment
Dr Roland Black **Consultant Intensive Care Physician**	**Reduction in line infection rates. Please see above for the caveats**

Question 9.1: Is each additional benefit likely to be realised in practice? What are the likely obstacles?

Expert Advisers	Comment
Mr Maurice Madeo **Deputy Director for Infection Prevention and Control**	**Cost**
Ms Annette Jeanes **Consultant Nurse, Infection Control**	**Each of the above is realised currently**
Ms Jackie Nicholson **Consultant Nurse in Vascular Access**	**In high risk patients yes, not proven for low risk patients. Likely obstacle cost of the product**
Ms Linda Kelly **Lecturer in Adult Health**	**Yes** **Change in practice could be an obstacle** **Costs and possibly** **Training regarding useage**
Ms Lisa Dougherty **Consultant Nurse, Intravenous Therapy**	**We did not measure this**
Mr James Bitmead **IV Lead nurse Infection control**	**additional cost vs a non CHG dressing**
Mr Andrew Barton **Nursing and Midwifery Council**	**Blank**
Dr Justin Roberts **Consultant in Intensive Care Medicine and Anaesthesia**	**The greatest obstacle is cost as these dressings are substantailly more expensive than standard dressings. However this must be considered in the wider context of healthcare associated infection reduction, improved patient experience, the cost of treatment of each CRBSI and the the financial penalties for each MRSA bacteraemia demonstrated.**
Dr Roland Black **Consultant Intensive Care Physician**	**Blank**

Question 9.2: How might these benefits be measured? What specific outcome measures would enable assessment of whether additional benefits for the healthcare system are being realised?

Expert Advisers	Comment
Mr Maurice Madeo **Deputy Director for Infection Prevention and Control**	**Further evaluations in differing risk category of patients e.g. TPN, dialysis etc.**
Ms Annette Jeanes **Consultant Nurse, Infection Control**	**HCAI = measure VIPS, line failure, bacteraemia** **saving time = we could do a simple measurement and compare to other systems** **Reducing dislodgement - we could track this and measure how many lines are dislodged** **Reducing pain - we could ask patients** **Monitoring the site - we could ask staff to compare with other products**
Ms Jackie Nicholson **Consultant Nurse in Vascular Access**	**cost analysis of the treatment of intravascular catheter related infection, cost and operational analysis of length of hospital stay related to this type of infection.**
Ms Linda Kelly **Lecturer in Adult Health**	**Cost analysis**
Ms Lisa Dougherty **Consultant Nurse, Intravenous Therapy**	**Blank**
Mr James Bitmead **IV Lead nurse Infection control**	**reduced number of infection and reduced cost asscocated with infection**
Mr Andrew Barton **Nursing and Midwifery Council**	**Through Audit of CRBIs**
Dr Justin Roberts **Consultant in Intensive Care Medicine and Anaesthesia**	**Monitoring would be via the international standard of CRBSI per 1000 catheter days, and reduction in MRSA bacteraemias as these are currently reported figures.**
Dr Roland Black **Consultant Intensive Care Physician**	**Blank**

Question 9.3: How good is this evidence for each of these additional benefits?

Expert Advisers	Comment
Mr Maurice Madeo **Deputy Director for Infection Prevention and Control**	**Moderate**
Ms Annette Jeanes **Consultant Nurse, Infection Control**	**HCAI reduction there is published evidence for CHG but not as much as for other products** **Saving time - this is self evident when you see how easy application is** **Reducing dislodgement - we had previously had central lines falling out on cardiac ITU and this improved when we did the trial to the extent that the clinicians insisted that we continued to use CHG and not go back to the old product. The problem now is that we also use a Stat lock or other devices on these lines to ensure they don't fall out as an extra safety measure particulalry when they are moved and instead of suturing in the line so it would be difficult to measure now.** **Reducing pain - we had that fed back from patients** **Monitoring the site - the ease is self evident**
Ms Jackie Nicholson **Consultant Nurse in Vascular Access**	**There is evidence of reduction in infection which would be expected to reduce costs and length of stay but I am not sure that this has been quantified so far.**
Ms Linda Kelly **Lecturer in Adult Health**	**Good evidence to support the use of CHG and central venous catheters**
Ms Lisa Dougherty **Consultant Nurse, Intravenous Therapy**	**Blank**
Mr James Bitmead **IV Lead nurse Infection control**	**some cost analysis and random control studies**
Mr Andrew Barton **Nursing and Midwifery Council**	**as above**

Expert Advisers	Comment
Dr Justin Roberts **Consultant in Intensive Care Medicine and Anaesthesia**	**The use of chlorhexadine impreganted dressings has been tested in several small studies and subjected to meta-analysis (Antimicrob. Chemother. (2006) 58 (2): 281-287). The evidence suggests a reduction in exit site colonisation of intravascular devices, but does not demonstrate a reduction in CRBSI. However several small studies since this have suggested a significant improvement in CRBSI rates. What is not clear is whether the rates of CRBSI are significantly reduced when the baseline rate is low. Some of the quoted studies have a baseline rate substantially greater than the quoted rates achieved using the Matching Michigan bundles of care.**
Dr Roland Black **Consultant Intensive Care Physician**	**Blank**

Question 9.4: Please add any further comment on the claimed benefits of the technology to the healthcare system, as you see applicable

Expert Advisers	Comment
Mr Maurice Madeo **Deputy Director for Infection Prevention and Control**	**Reduce burden of HCAIs**
Ms Annette Jeanes **Consultant Nurse, Infection Control**	**Blank**
Ms Jackie Nicholson **Consultant Nurse in Vascular Access**	**Blank**
Ms Linda Kelly **Lecturer in Adult Health**	**Blank**
Ms Lisa Dougherty **Consultant Nurse, Intravenous Therapy**	**Blank**
Mr James Bitmead **IV Lead nurse Infection control**	**Blank**
Mr Andrew Barton **Nursing and Midwifery Council**	**Blank**
Dr Justin Roberts **Consultant in Intensive Care Medicine and Anaesthesia**	**Prior to the use of these dressings I belive it is imperative that the basic bundles of care for intra-vascular devices are formally introduced and embedded in practice. Monitoring of the rate of CRBSI is also essential to ensure that the realised benefits can be demonstrated at a unit level.**
Dr Roland Black **Consultant Intensive Care Physician**	**Blank**

FACILITIES, TRAINING AND FUNCTIONING

Question 10: Are there any particular facilities or infrastructure which needs to be in place for the safe and effective use of this technology?

Expert Advisers	Comment
Mr Maurice Madeo **Deputy Director for Infection Prevention and Control**	**No**
Ms Annette Jeanes **Consultant Nurse, Infection Control**	**Staff need to know how to apply it and remove it**
Ms Jackie Nicholson **Consultant Nurse in Vascular Access**	**No**
Ms Linda Kelly **Lecturer in Adult Health**	**Training should be in place to support clinicians using the technology. This could be part of ongoing CVC training already delievered in institutions.**
Ms Lisa Dougherty **Consultant Nurse, Intravenous Therapy**	**No**
Mr James Bitmead **IV Lead nurse Infection control**	**No**
Mr Andrew Barton **Nursing and Midwifery Council**	**No**
Dr Justin Roberts **Consultant in Intensive Care Medicine and Anaesthesia**	**No**
Dr Roland Black **Consultant Intensive Care Physician**	**No**

Question 11: Is special training required to use this technology safely and effectively?

Expert Advisers	Comment
Mr Maurice Madeo **Deputy Director for Infection Prevention and Control**	**Limited - check if patient has allergy to product.**
Ms Annette Jeanes **Consultant Nurse, Infection Control**	**Its basic training which we would use for any product we use to ensure staff are competent in its use**
Ms Jackie Nicholson **Consultant Nurse in Vascular Access**	**Minimal training would be required**
Ms Linda Kelly **Lecturer in Adult Health**	**This would be beneficial**
Ms Lisa Dougherty **Consultant Nurse, Intravenous Therapy**	**Initial training in correct application and removal**
Mr James Bitmead **IV Lead nurse Infection control**	**Minimal and less than other products**
Mr Andrew Barton **Nursing and Midwifery Council**	**YES - traing for the application and especially the removal of the device**
Dr Justin Roberts **Consultant in Intensive Care Medicine and Anaesthesia**	**The use of the dressings is straightforward and thus requires minimal change in practice from standard care.**
Dr Roland Black **Consultant Intensive Care Physician**	**No**

Question 12: Please comment on any issues relating to the functioning, reliability and maintenance of this technology which may be important to consider if it is introduced

Expert Advisers	Comment
Mr Maurice Madeo **Deputy Director for Infection Prevention and Control**	**How well adheres and absorbs moisture**
Ms Annette Jeanes **Consultant Nurse, Infection Control**	**Its not complicated - but staff do require an explanation about how CHG works**
Ms Jackie Nicholson **Consultant Nurse in Vascular Access**	**It would be important to monitor any allergic reaction to the dressing or the CHG component of the dressing**
Ms Linda Kelly **Lecturer in Adult Health**	**I believe that this technology can be in place for a number of days. The difficulties in dressing some areas of catheter insertion should be considered as this could lead to dressing dislodgement meaning the dressing requiring more frequent application (neck lines and femoral catheters.**
Ms Lisa Dougherty **Consultant Nurse, Intravenous Therapy**	**None**
Mr James Bitmead **IV Lead nurse Infection control**	**Needs to be changed every 7 days**
Mr Andrew Barton **Nursing and Midwifery Council**	**In my experience the dressing can be difficult to adhere to patients who are sweating or have hair on the skin.**
Dr Justin Roberts **Consultant in Intensive Care Medicine and Anaesthesia**	**Blank**
Dr Roland Black **Consultant Intensive Care Physician**	**N/A**

COSTS

Question 13: Please provide any comments on the likely cost consequences of introducing this technology. In particular, please comment on the implications of this technology replacing the comparator/s you have described above

Expert Advisers	Comment
Mr Maurice Madeo **Deputy Director for Infection Prevention and Control**	**The costs I believe are similar but we do not se biopatch so cannot confirm**
Ms Annette Jeanes **Consultant Nurse, Infection Control**	**We did not have an increase in cost when we introduced it as previously we were using biopatch and a standard IV dressing so the cost was the same**
Ms Jackie Nicholson **Consultant Nurse in Vascular Access**	**The cost depends on many factors including the amount of product that an organisation commits to buying over a period of time. I would estimate that this product would cost approximately 3 times as much as a standard (without CHG) dressing and approximately 25% more than an equivalent dressing with an alternative CHG application (which does not allow visualisation of the catheter insertion site)**
Ms Linda Kelly **Lecturer in Adult Health**	**This will always be difficult as there will be quite a big a cost implication. It would be necessary to be able to evidence the long term cost savings etc.to convince others of the overall benefits.**
Ms Lisa Dougherty **Consultant Nurse, Intravenous Therapy**	**Cost was the restricting factor - if you are already using a patch and dressing then not too much more but if not tten very expensive.**
Mr James Bitmead **IV Lead nurse Infection control**	**higher cost compaired to no CHG dressings**
Mr Andrew Barton **Nursing and Midwifery Council**	**potentially this dressing is more expensive.**
Dr Justin Roberts **Consultant in Intensive Care Medicine and Anaesthesia**	**The total cost of introducing these dressings is significant, due to their widespread use. In my own ICU the total cost averages at around £40k per year, but this must be offset against the cost of a single CRBSI (estimated at ~$30k in the USA).**
Dr Roland Black **Consultant Intensive Care Physician**	**Certainly more expensive on a per item basis. In addition, there is an unknown NNT**

GENERAL ADVICE BASED ON YOUR SPECIALIST KNOWLEDGE

Question 14: Is there controversy about any aspect of this technology or about the care pathway?

Expert Advisers	Comment
Mr Maurice Madeo **Deputy Director for Infection Prevention and Control**	**The use in high risk individuals has been well received within the trust but routine usage for all patients with a central vascular device may be cost prohibitive**
Ms Annette Jeanes **Consultant Nurse, Infection Control**	**The only issue is Chlorhexidne allergy or sensitivity. This applies to all chlorhexidine products**
Ms Jackie Nicholson **Consultant Nurse in Vascular Access**	**No**
Ms Linda Kelly **Lecturer in Adult Health**	**No**
Ms Lisa Dougherty **Consultant Nurse, Intravenous Therapy**	**No**
Mr James Bitmead **IV Lead nurse Infection control**	**No**
Mr Andrew Barton **Nursing and Midwifery Council**	**I have read in the research about a potential risk of allergic reation, in my practice I have undertaken a small trial of this product and local reaction of the skin (redness) did occur in a few of these patients, the biggest complication i notice during my small trial was these dressings did not adhere well to the neck. I used the dressing on a neck CVC line trial but had to stop the trial because the dressing kept coming off.**
Dr Justin Roberts **Consultant in Intensive Care Medicine and Anaesthesia**	**The controversies are around the benefit of the technology if other aspects of standard care are improved through care bundles and the population baseline rate is therefore low.**
Dr Roland Black **Consultant Intensive Care Physician**	**Blank**

Question 15: If NICE were to develop guidance on this technology, how useful would this be to you and your colleagues?

Expert Advisers	Comment
Mr Maurice Madeo **Deputy Director for Infection Prevention and Control**	**Very useful**
Ms Annette Jeanes **Consultant Nurse, Infection Control**	**This would be really helpful as it's a really useful product.**
Ms Jackie Nicholson **Consultant Nurse in Vascular Access**	**I think any guidance should be related to the use of CHG at the catheter insertion site as opposed to this particular product. This would be in line with national (epic3 2014) and international (Guidelines for the prevention of intravascular catheter-related infections 2011 - published by the CDC in the USA)**
Ms Linda Kelly **Lecturer in Adult Health**	**Very**
Ms Lisa Dougherty **Consultant Nurse, Intravenous Therapy**	**Very useful**
Mr James Bitmead **IV Lead nurse Infection control**	**Ver Usuful, it would encourage all parts of the NHS to ulterlise this technology**
Mr Andrew Barton **Nursing and Midwifery Council**	**I would see a benefit but i would not consider the use of these dressing in my organisation.**
Dr Justin Roberts **Consultant in Intensive Care Medicine and Anaesthesia**	**Given the widespread use of vascular access, clear guidance on the use of this technology as an addition to basic care would be useful, particularly given the costs involved.**
Dr Roland Black **Consultant Intensive Care Physician**	**Blank**

Question 16: ***Do any subgroups of patients need special consideration in relation to the technology (for example, because they have higher levels of ill health, poorer outcomes, problems accessing or using treatments or procedures)? Please explain why***

Expert Advisers	Comment
Mr Maurice Madeo **Deputy Director for Infection Prevention and Control**	**Patients with MRSA colonisation due to increased risk of infection.** **Those receiving TPN nutrition again as increased risk of blood stream infection**
Ms Annette Jeanes **Consultant Nurse, Infection Control**	**Some of the long term patients can get quite itchy under the dressing but this may not be anymore than with other comparible dressings which are on long term**
Ms Jackie Nicholson **Consultant Nurse in Vascular Access**	**I think the availability of a CHG product could vary depending on budget setting - this could limit patient access to the product.**
Ms Linda Kelly **Lecturer in Adult Health**	**Those in renal units - on renal dialysis via CVCs - usually of poor health, often with co morbidities** **Oncology patients with CVC insitu - often immunosuppressed** **Patients in the community with CVC insitu - useful when outwith the clinical area**
Ms Lisa Dougherty **Consultant Nurse, Intravenous Therapy**	**Very relevant to those at risk e.g. oncology and haematology patients**
Mr James Bitmead **IV Lead nurse Infection control**	**No**
Mr Andrew Barton **Nursing and Midwifery Council**	**No**
Dr Justin Roberts **Consultant in Intensive Care Medicine and Anaesthesia**	**The following groups have an increased risk of CRBSI: paediatric population, haematological or immunological deficiencies.**
Dr Roland Black **Consultant Intensive Care Physician**	**Community patients requiring TPN, or community patients with immunocompromise have been identified as high risk groups in our audit of line infection rates.**

CONFLICTS OF INTEREST

Question 18.1: Do you or a member of your family have a personal pecuniary interest? The main examples are as follows:

Expert Advisers	Consultancies or directorships	Fee-paid work	Shareholdings	Expenses and hospitality	Investments	Personal non-pecuniary interest
Mr Maurice Madeo **Deputy Director for Infection Prevention and Control**	No	No	No	No	No	No
Ms Annette Jeanes **Consultant Nurse, Infection Control**	**Yes**	**Yes**	No	No	No	No
Ms Jackie Nicholson **Consultant Nurse in Vascular Access**	No	No	No	No	No	No
Ms Linda Kelly **Lecturer in Adult Health**	**Yes**	No	No	No	No	No
Ms Lisa Dougherty **Consultant Nurse, Intravenous Therapy**	No	No	No	No	No	No
Mr James Bitmead **IV Lead nurse Infection control**	No	No	No	No	No	No
Mr Andrew Barton **Nursing and Midwifery Council**	No	No	No	No	No	**Yes**
Dr Justin Roberts **Consultant in Intensive Care Medicine and Anaesthesia**	No	No	No	No	No	No

Dr Roland Black **Consultant Intensive Care Physician**	No	No	No	No	No	No
If you have answered YES to any of the above statements please describe the nature of the conflict(s) below.						

Mr Maurice Madeo **Deputy Director for Infection Prevention and Control**	Blank
Ms Annette Jeanes **Consultant Nurse, Infection Control**	**I undertake paid external consultancy Infection control expert advisory work some of which is in private healthcare and recently set up a company to undertake more of such work though i havent been paid anything so far as a director. This is primarily about assuring organisations that they have the right strategic plans and competent people in place.**
Ms Jackie Nicholson **Consultant Nurse in Vascular Access**	Blank
Ms Linda Kelly **Lecturer in Adult Health**	**I am a member of the clinical faculty and participate in ultrasound workshops for Sonosite UK. I participated in a workshop in October 2013 and plan to participate in a workshop in October 2014.**
Ms Lisa Dougherty **Consultant Nurse, Intravenous Therapy**	Blank
Mr James Bitmead **IV Lead nurse Infection control**	Blank
Mr Andrew Barton **Nursing and Midwifery Council**	**I am a board member of NIVAS although this has no links to the product or company, it is a national society of vascular access and this product is intended to be used alongside vascular access.**
Dr Justin Roberts **Consultant in Intensive Care Medicine and Anaesthesia**	Blank

Dr Roland Black **Consultant Intensive Care Physician**	Blank

Question 18.2: Do you have a non-personal interest? The main examples are as follows:

Expert Advisers	Fellowships endowed by the healthcare industry	Support by the healthcare industry or NICE that benefits his/her position or department, e.g. grants, sponsorship of posts
Mr Maurice Madeo **Deputy Director for Infection Prevention and Control**	No	No
Ms Annette Jeanes **Consultant Nurse, Infection Control**	No	No
Ms Jackie Nicholson **Consultant Nurse in Vascular Access**	No	No
Ms Linda Kelly **Lecturer in Adult Health**	No	No
Ms Lisa Dougherty **Consultant Nurse, Intravenous Therapy**	No	No
Mr James Bitmead **IV Lead nurse Infection control**	No	No
Mr Andrew Barton **Nursing and Midwifery Council**	No	No
Dr Justin Roberts **Consultant in Intensive Care Medicine and Anaesthesia**	No	**Yes**
Dr Roland Black **Consultant Intensive Care Physician**	No	No

If you have answered YES to any of the above statements please describe the nature of the conflict(s) below.	
Mr Maurice Madeo **Deputy Director for Infection Prevention and Control**	**Blank**
Ms Annette Jeanes **Consultant Nurse, Infection Control**	**Blank**
Ms Jackie Nicholson **Consultant Nurse in Vascular Access**	**Blank**
Ms Linda Kelly **Lecturer in Adult Health**	**Blank**
Ms Lisa Dougherty **Consultant Nurse, Intravenous Therapy**	**Blank**
Mr James Bitmead **IV Lead nurse Infection control**	**Blank**
Mr Andrew Barton **Nursing and Midwifery Council**	**Blank**
Dr Justin Roberts **Consultant in Intensive Care Medicine and Anaesthesia**	**I am a local Principle Investigator for the LeoPARDS study into the use of Levosimendin for septic shock. This study receives financial support from the healthcare industry.**
Dr Roland Black **Consultant Intensive Care Physician**	**Blank**