

Recommendations for the prevention of infection in intra-vascular devices Appendix 7

December 2019

## Staphylococcus aureus bloodstream investigation checklist

### Investigation Process:

An investigation should be undertaken of all episodes of Healthcare Associated Intravascular Device (IVD)-Related Staphylococcus aureus Bloodstream Infection (BSI)

This involves:

1. Establish the S. aureus BSI meets the criteria for investigation.

2. Investigate the episode using an Investigation Checklist to identify factors that may have contributed to the BSI.

3. Undertake an Event Analysis.

4. Develop an Action Plan and report outcomes in accordance with the local governance arrangement.

The relevant Department of Health Guidelines for Recommendations for the prevention of infection in IVD should be used as a reference point for the investigation.

Ensure that immediate actions and controls to manage risk are implemented.

### *Staphylococcus* aureus bloodstream investigation checklist

#### STEP 1

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| CRITERIA FOR INVESTIGATION OF A HEALTHCARE ASSOCIATED INTRAVASCULAR DEVICE-RELATED Staphylococcus aureus BLOODSTREAM INFECTION | INVESTIGATION REQUIRED? |
| Causative organism Staphylococcus aureus (including methicillin resistant strains)? | Yes |
| Meets criteria for diagnosis of a bloodstream infection (BSI)? | Yes |
| Healthcare associated? | Yes |
| BSI acquired in this healthcare facility? | Yes |
| Patient has or had an IV device in situ in the 48 hours prior to collection of the positive blood culture(s)? | Yes |
| If yes recorded for all the above criteria, proceed to Step 2 |

#### STEP 2

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| INTRAVASCULAR DEVICE RELATED BLOOD STREAM INFECTION |
| PATIENT DETAILS |
| Patient Identification (or affix label)MRN:Hosp Name:Surname:Given Name:Address:Suburb:Post Code:Phone:DOB: \_\_\_/\_\_\_/\_\_\_ Sex: [ ]  M [ ]  F | Date of completion of audit: \_\_\_/\_\_\_/\_\_\_Name of person completing audit: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Approximate time taken to complete all steps of the investigation: \_\_\_\_\_\_\_ |
| Date Admitted: \_\_\_/\_\_\_/\_\_\_ | Attributable Ward: \_\_\_\_\_\_\_\_\_\_Attributable Unit: \_\_\_\_\_\_\_\_\_\_\_ | Date of Separation or Death: \_\_\_/\_\_\_/\_\_\_ |
| Transfers/movements after admission: |

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| SPECIMEN (BLOOD CULTURE) DETAILS |
| Date of Collection: \_\_\_/\_\_\_/\_\_\_\_\_ Specimen Lab No: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (NB: The isolation of *S. aureus* from a blood culture collected through a line does not necessarily indicate a catheter was infected if peripheral blood cultures were also collected and were positive) |
| Was *S. aureus* also isolated from: [ ]  Exit site swab [ ]  Catheter distal tip [ ]  Other focus of infection - if yes, does this truly fit the criteria of an IVD-related infection in the presence of another source? (refer Step 1) |
| Is the patient known to be colonised with *S. aureus*? [ ]  Yes [ ]  NoNote:If specimen is collected within 48 hours of insertion, please complete Step 3 section AIf specimen is collected >48 hours after insertion, please complete Step 3 section B |
| PATIENT OUTCOME |
| Outcome at time investigation |
| [ ]  Death due to other cause |
| [ ]  Full recovery or full recovery expected |
| [ ]  Infection caused death |
| [ ]  Infection contributed to death |
| [ ]  Ongoing sepsis |
| DEVICE OUTCOME |
| Removed (Please circle) Yes / No Date/ Time: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_If not removed provide reason: |

#### Step 3

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| SECTION A – WITHIN 48 HOURS OF INSERTION |
| INSERTION DETAILS Batch/Brand/Type | YES | NO | N/A• |
| Insertion date: \_\_\_/\_\_\_/\_\_\_ Time inserted: \_\_\_: \_\_\_ |  |  |  |
| Was the insertion a guide-wire exchange? |  |  |  |
| Batch: Brand:[ ]  PICC [ ]  PORT [ ]  Percutaneous CVC [ ]  Tunnelled CVC [ ]  Haemodialysis Catheter [ ]  PIVC |  |  |  |
| Were prophylactic antibiotics administered to prevent catheter colonisation or bloodstream infection? |  |  |  |
| If the catheter was inserted in an emergency, was the catheter replaced within 48 hours?  |  |  |  |
| Was an Insertion checklist used? (If no, conduct an observation using it) |  |  |  |
| Who inserted the catheter? | Location of catheter insertion | Catheter gauge & lumen number | Site of insertion (also refer Appendix 1) |
| [ ]  Consultant | [ ]  Ward \_\_\_\_\_\_\_\_\_ | \_\_\_\_\_\_\_\_\_\_ g | [ ]  Right[ ]  Left[ ]  Internal jugular vein[ ]  Femoral vein[ ]  Internal Jugular Vein[ ]  Subclavian Vein[ ]  Cephalic Vein[ ]  Basilic Vein[ ]  Dorsum[ ]  Antecubital Fossa[ ]  Other (specify): |
| [ ]  Anaesthetist | [ ]  Emergency Department |
| [ ]  Registrar | [ ]  Radiology | \_\_\_\_\_\_\_\_\_\_lumen/s |
| [ ]  Resident | [ ]  Anaesthetic Unit /Operating Theatre |
| [ ]  Medical Student | [ ]  Other hospital | [ ]  Antimicrobial? |
| [ ]  Registered Nurse | [ ]  Emergency Services |
| [ ]  IV Service | [ ]  Other |  |  |
| [ ]  Other |  |
| SECTION B – GREATER THAN 48 HOURS AFTER INSERTION |
| MAINTENANCE | YES | NO | N/A |
| Has the catheter site been inspected each shift and the condition documented? |  |  |  |
| Was the need for the device reviewed on a daily basis? |  |  |  |
| Was post infusion phlebitis observed? |  |  |  |
| Are continuous infusions routinely disconnected? If so Why? |  |  |  |
| Are administration sets discarded when disconnected? |  |  |  |
| If TPN is being administered, is one lumen used exclusively for that use? |  |  |  |
| What is the hand hygiene compliance rate in this ward/area? |  |  |  |

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| EVENT ANALYSIS |
| Have previous similar events been identified in this facility in the last six (6) months (see previous Investigation Checklists)? [ ]  Yes [ ]  No  |
| What were the critical problems or issues identified in the investigation? For example:[ ]  The condition of the patient \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_[ ]  The environment \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_[ ]  Staff knowledge and competency \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_[ ]  Any treatment \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_[ ]  Contamination of equipment \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_[ ]  Procedures or protocols \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_[ ]  Equipment and supplies \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_[ ]  Compliance with Standard and Protocols \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_[ ]  Other \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| What were the main contributory factors?* For each of the most significant critical problems/issues consider: what has contributed to, influenced or caused that problem/issue?
* Identify the main contributory factors which have had the greatest impact on the infection and would help reduce the chances of it happening again.
 |
| Use the attached action plan to outline your response:* Using the checklist note any areas and examples of good practice.
* Develop a list of targeted recommendations/solutions to address each main contributory factor – what control and changes will be implemented to reduce the chances of the infection occurring in the future?
* Communicate and record the results of this investigation through the relevant reporting body(s) in the facility.
* Feedback the examples and areas of good practice to staff.
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| ACTION PLAN |
| Recommendations/solutions(what changes need to be made?) | Actions and steps(how will changes be made?) | Person responsible for change(who will be the lead person responsible for ensuring that each step or action happens?) | Milestones(what is the due date for completion of each step or action?) | Date completed |
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| Direct above issues/action to relevant reporting body. Utilise when reviewing Infection Control Management Plan |

 (National Patient Safety Agency (NHS). Learning through action to reduce infection. <http://www.npsa.nhs.uk> – Internet access required)

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| Outcomes achieved | Reported to |
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Utilise outcomes during evaluation of Infection Control Management Plan or during accreditation process.