CLABSI Event Report Tool: Data for Event Analysis

This event report template is designed to be used as a guide through the initial investigation for a defects analysis where the primary goal is to learn what happened and factors that may have contributed to the central line-associated bloodstream infection (CLABSI). It is not a stand-alone tool. Refer to the defect analysis process outlined in the Agency for Healthcare Research and Quality’s (AHRQ’s) Comprehensive Unit-based Safety Program (CUSP) model. Specifically consult the [Identify Defects Through Sensemaking](https://www.ahrq.gov/professionals/education/curriculum-tools/cusptoolkit/modules/identify/index.html) module and the [Learn from Defects Tool](https://www.ahrq.gov/professionals/education/curriculum-tools/cusptoolkit/toolkit/learndefects.html) for a description and instructions in how to perform a full defects analysis on a healthcare-associated infection such as CLABSI.

This tool is also a template, which means it can and should be adapted to each organization. Please manage this documentation according to your hospital’s patient confidentiality policy.

The questions listed below are to assist teams in getting started, not limit what is examined. This list of questions is a compilation of initial questions commonly asked during a CLABSI defect analysis/root cause analysis process and does not represent an exhaustive list of all questions that may need to be addressed. Indeed, the questions listed here may very well drive additional questions to understand active and latent issues more thoroughly. The goal is to learn as much as possible about potential latent and active errors contributing to the development of CLABSI in an individual patient. In addition, the data gathered from multiple CLABSI event investigations can and should be aggregated to look for trends and common denominators within a facility or unit, which furthers understanding to reduce risks. Lastly, do not wait too far out to complete the event report tool as it may be difficult to fill in the details.

Demographics

*(Please manage this documentation according to your hospital’s patient confidentiality policy)*

1 Patient’s medical record number:

2 Patient’s date of birth:

3 Patient’s sex:  Male  Female

4 Hospital admission date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Day of week: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

5 Diagnoses:

6 Patient locations from time central line inserted through time central line removed (include dates, locations/room numbers and staffing ratios):

Location of insertion:

Emergency department  Operating room  Cardiac catheterization lab  Radiology  Intensive care unit  Other: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Room #\_\_\_\_\_\_\_ from \_\_\_\_\_\_\_\_to\_\_\_\_\_\_\_\_  
Was your nurse–patient staff ratio out of range from the usual numbers?  YES  NO

Room #\_\_\_\_\_\_\_ from \_\_\_\_\_\_\_\_to\_\_\_\_\_\_\_\_  
Was your nurse–patient staff ratio out of range from the usual numbers?  YES  NO

Room #\_\_\_\_\_\_\_ from \_\_\_\_\_\_\_\_to\_\_\_\_\_\_\_\_\_  
Was your nurse–patient staff ratio out of range from the usual numbers?  YES  NO

Room #\_\_\_\_\_\_\_ from \_\_\_\_\_\_\_\_to\_\_\_\_\_\_\_\_\_  
Was your nurse–patient staff ratio out of range from the usual numbers?  YES  NO

Room #\_\_\_\_\_\_\_from \_\_\_\_\_\_\_\_ to\_\_\_\_\_\_\_\_\_  
Was your nurse–patient staff ratio out of range from the usual numbers?  YES  NO

Notes:

CLABSI Information

7 Infection date (date of onset of symptoms or culture date):

8 Criteria met for infection:

9 Microorganism(s) cultured:

What are common or general modes of transmission for this organism?

(This question is designed to stimulate discussion about the chain of infection for this type of organism, which has implications for prevention. For example, if the patient’s organism is a Gram-negative, colonic type, assessing patient and environmental hygiene may be indicated, particularly if there is diarrhea or other bodily fluid contamination.)

10 Did the patient occupying the room prior to this patient with CLABSI have an infection with this organism(s)?

YES  NO

Any patients in the intensive care unit (ICU) with this organism(s) prior to this patient’s CLABSI?

YES  NO

Note: Correlate with hand hygiene compliance rates. See Question 31.

11 Were blood cultures obtained per current Centers for Disease Control and Prevention (CDC) recommendations?  YES  NO

Central Line Insertion Information

12 Date central line inserted: \_\_\_\_\_\_\_\_\_\_ Date central line removed: \_\_\_\_\_\_\_\_\_\_\_\_

Total number of days central line in: \_\_\_\_\_\_\_\_\_\_\_\_

Total number of days between insertion and onset of CLABSI: \_\_\_\_\_\_\_\_\_\_\_

13 Type of catheter inserted:

Nontunneled central line  Tunneled central line  Peripherally inserted central catheter  Pulmonary artery catheter  Hemodialysis catheter  Implanted port

Other (describe): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

14 How many lumens did the central line have?

Single lumen  Double lumen  Triple lumen  Pulmonary artery catheter

Other (describe): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Note: The higher the number of lumens, the higher the risk for thrombus and infection.

15 Insertion site:  Subclavian  Internal jugular  Femoral  Left arm

Right arm  Other (describe): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

16 Who inserted the central line?

Attending physician  Resident  Intern  Surgeon  Nurse  Vascular team

Interventional radiologist  Other (describe): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

17 Why was a central line placed?

Administration of irritants such as vasopressors, chemotherapy or total parenteral nutrition

Extended course of intravenous antibiotics

Support of high-volume flow for therapy such as hemodialysis

Hemodynamic monitoring in critically ill patient

Providing venous access for placement of a device, such as a pacemaker

Inadequate peripheral venous access

Other (describe): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Note: If indications were for administration of irritants, involve a pharmacist in evaluating medications the patient was receiving via the central line to validate use of indication.

18 Could an alternative device have been used? (e.g., an ultrasound peripheral or mid-line catheter instead of a central line)  YES  NO

19 Is there a standard central line insertion kit, tray, or cart with all needed materials available on the insertion unit to support compliance to insertion bundle?  YES  NO

If YES, was it used for this insertion?  YES  NO

If NO, why not?

Note: If the hospital has a standard kit, do not assume it was used. Due to perceived lack of quality or “hassle factor,” lack of accessibility, or desire to save money, some providers will forgo using such kits. It is important to understand why the kit is not used as this can provide insight into possible issues and help target interventions. Is it not user friendly? Is it stored so far away from patient care to make it time consuming to obtain? Are there back order issues?

20 The hospital’s insertion protocol is based on most current evidence.  YES  NO

Date of last policy review/revision: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

21 Was there compliance with all insertion bundle elements when the line was inserted? (Hospital may wish to revise this tool to include the list of insertion bundle elements from their own bundle, if evidence-based.)  YES  NO

22 The procedure was stopped if any bundle elements were not followed, until corrected.

YES  NO  N/A (bundle was followed so no intervention necessary)

If no, why not?

If there were other qualified staff present, did anyone in the room during insertion speak up to stop the process if nonadherence was detected?

YES  NO  N/A (bundle was followed so no intervention necessary)

If no, why not?

23 Were any uncorrected deviations from the insertion bundle reported through the appropriate chain-of-command per policy?  YES  NO

If YES, what were the outcomes from this report? (e.g., medical director discussed with person responsible for insertion, letter describing issue sent to inserter by medical staff, staff coached in communication techniques to stop the process)

If NO, why?

24 Were there any difficulties encountered during line insertion? (e.g., difficulty threading the line, issues with equipment or supplies)  YES  NO

If YES, please describe.

Were multiple sticks required for this insertion?  YES  NO

If so, how many? \_\_\_\_\_\_\_\_\_

Central Line Maintenance Bundle Practices

*(Data from recent audits or direct observations of current practices through walk-throughs may be required as some of the following information may not be available for this specific patient.)*

25 The hospital’s central line maintenance bundle is based on current evidence.  YES  NO Date of last review/revision: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

26 Was there a daily assessment to evaluate the continued need for a central line?  YES  NO

If not, why?

27 Were daily criteria met for keeping the central line in place? (Refer to Question 19 above for criteria.)  YES  NO

If no, was the line removed on the same day the determination was made that it was not needed?  YES  NO

If no, why not?

28 What are the compliance rates for daily assessment of need for central lines in each nursing unit where this patient received care for the month in which the CLABSI occurred?

29 What are the compliance rates for hand hygiene in each unit where this patient received care for the month in which the CLABSI occurred, including radiology, operating room, emergency department, physical therapy/occupational therapy, etc.?

30 Is there a standardized dressing change kit available for use for central line dressing changes?  YES  NO

If so, is it effective? (e.g., organized so needed materials are in the order required and an aseptic technique can be maintained? Are materials present in adequate amounts? Are materials of adequate quality and volume to avoid add-ons to sterile field?)  YES  NO

Do staff use it consistently?  YES  NO

If not, why?

Note: If the hospital has a standard kit, do not assume it was used. Due to perceived lack of quality or “hassle factor,” lack of accessibility, or desire to save money, some providers will forgo using such kits.

31 Was the dressing secure?  YES  NO

How many times did it need to be changed prior to the 7 days (usual time frame)?

What are the results from the dressing compliance audit?

32 “Scrub the hub” practices: A 70% alcohol or 2% chlorhexidine/70% mixture followed by air drying is used prior to accessing the central venous catheter (CVC) hub/port (use facility policy if evidence-based).  YES  NO

What are the compliance rates for this in each unit during month in which this patient sustained CLABSI?

Is passive disinfection used in the unit/hospital?  YES  NO

If YES, did all central lines have caps on?

33 What are the compliance rates for the central line maintenance bundle for each unit on which the patient received care during the month the CLABSI occurred?

34 For the 72 hours before the infection date, who accessed the CVC system? (Check all that apply)

Unit nurse  Nurse from other unit  Attending physician  Resident/fellow

Intern/student  Anesthesia  Lab  Radiology personnel

Others (describe): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Do all of these people have competencies documented in accessing and using central lines?

YES  NO

If NO, which ones do not?

35 Is the presence of a central line and date of insertion included on all transfer/shift report checklists/protocols?  YES  NO

36 If patient was transported to a non-nursing unit such as radiology, anesthesia, or the cardiac catheter lab, do these departments have policies in place for use of central lines in patients to whom they provide care?  YES  NO  N/A (patient did not travel to a non-nursing unit or they did not access central line)

If YES, are these policies based on current guidelines and consistent with other central line policies in the organization?  YES  NO

What are compliance rates in these areas for these policies? \_\_\_\_\_\_\_\_\_

Note: Compliance may be unknown for this particular patient, but observations in these units where this patient received care can illuminate common practices that may contribute to CLABSI. It is especially important to ensure compliance to injection safety practices and consideration of practices when there are back-orders and/or shortages with drugs or intravenous fluids – refer to responses to Question 41.6

Other Potential Contributing Factors for CLABSI

37 Were there any problems with the central line, related equipment, or supplies at any point during the time this patient had a central line?  YES  NO

If YES, describe:

38 During the time the patient had the central line in, were there any intravenous fluid or medication issues such as shortages or back orders that could have affected this patient?

YES  NO

If YES, describe:

Note: Engage materials/resource management and pharmacy personnel in this assessment as they will have/can obtain the information related to back orders and shortages. Such issues may pressure clinicians to use fluids or medications in ways inconsistent with policy and routine practice, which may increase risks of contamination and transmission of disease.

39 Are best practice injection safety protocols in place in all units/departments performing patient care such as:

Injections are prepared using an aseptic technique in a clean area free from contamination or contact with blood, body fluids, or contaminated equipment

Needles and syringes are used for only one patient (this includes manufactured prefilled syringes and cartridge devices such as insulin pens)

The rubber septum on a medication vial is disinfected with alcohol prior to piercing

Medication vials are entered with a new needle and a new syringe, even when obtaining additional doses for the same patient

Single-dose (single-use) medication vials, ampules, and bags or bottles of intravenous solution are used for only one patient

Medication administration tubing and connectors are used for only one patient

Multidose vials are dated by healthcare personnel when they are first opened and discarded within 28 days unless the manufacturer specifies a different (shorter or longer) date for that opened vial (Note: This is different from the expiration date printed on the vial)

Multidose vials are dedicated to individual patients whenever possible

Multidose vials to be used for more than one patient are kept in a centralized medication area and do not enter the immediate patient treatment area (e.g., operating room, patient room/cubicle) (Note: If multidose vials enter the immediate patient treatment area they should be dedicated for single-patient use and discarded immediately after use)

How are such practices monitored?

Note: Refer to the CDC One-and-Only Campaign materials, [Injection Safety Checklist](https://www.cdc.gov/injectionsafety/pdf/Safe-Injection-Checklist-P.pdf)

40 Did the patient and/or family receive education on the central line and things they could do to prevent infection?  YES  NO

If so, describe the type of education used. (e.g., verbal or in person, written flier/brochure, etc.)

If education was provided, does the team feel it was effective?  YES  NO

41 Did this patient have a similar microorganism to the patient previously occupying the room?

YES  NO

42 How well is daily cleaning performed by Environmental Services (gather this information informally by questioning nursing staff)?

43 Are unit nursing staff also cleaning high-touch surfaces daily?  YES  NO

44 Did the patient received a daily chlorhexidine (CHG) bath?  YES  NO

If not: Why?

What type of CHG bathing was used?

Impregnated CHG cloth  CHG poured on a sponge/non-cotton cloth

CHG poured into bath water

In general, who bathed patient daily while central line was in? (Patient, nurses, certified nursing assistants, family) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Were bath basins used for bathing?  YES  NO

If so, how were they cleaned and disinfected after each use? (If they were disposable basins, were they thrown away after use?)

Was tap water used for bathing?  YES  NO

How were the bath basins dried before storing?

How were the bath basins stored?

45 Were there any staffing variations happening on any of the units where the patient was located during the month in which the CLABSI occurred such as high turnover, high use of pool or travel nurses, high numbers of new staff coming on board, influx of students, etc.?  YES  NO

If YES, describe:

Note: Observational studies suggest that a higher proportion of "pool nurses" or an elevated patient–nurse ratio is associated with CLABSI in ICUs where nurses are managing patients with CVCs. Because of real need, it may not be feasible to avoid using pool nurses at times. Therefore, it is essential to evaluate their orientation and oversight when they are used for staffing to ensure they have the competencies required to help prevent CLABSI.

46 What was the impact of this CLABSI on this patient? (e.g., longer length of stay in ICU or hospital? Transfer back to an ICU? Additional antibiotics? Delay in treatment of other diseases, such as stopping chemotherapy to treat the CLABSI? Infections at other sites such as surgical site infection or endocarditis? (associated with some types of organisms such as *Staphylococcus aureus*)?

Note: When sharing findings of the defect analysis with staff, other clinicians, and departments once the process is completed, include this information. It is an important way to underscore the significant impact of such infections.

47 **From the information collected and team discussion, was this this CLABSI potentially avoidable? Why or why not?**

(This is a question for team discussion and debate, based on what has been learned through gathering the information above. No definitive answer is required. Discussion needs to include what opportunities for improvement there may be not only in the direct aspects of care but also in more latent, upstream areas such as staffing, competency evaluation, patient hygiene, environmental hygiene, etc. It is important to remember that many clinicians were taught that infections “were the price of doing business” and do not truly believe they can be prevented. Through this process as well as education in the science of safety, these clinicians can have a change of mind. From this point, an evaluation of what the proximate probable cause(s) of the CLABSI were and development of an action plan to address any identified gaps is indicated, following the AHRQ CUSP Defect Analysis process.)

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