Using NHSN Analysis Features for Prevention: CLIP

Monitoring central-line insertion practices (CLIP) is an important process measure for surveillance. CLIP is a frequently reported type of data entered into NHSN by California hospitals, yet many hospitals are not familiar with how to use CLIP data in their efforts to prevent CLABSI. The purpose of this guide is to introduce hospitals to some practical applications of CLIP data for assessing CLABSI and to challenge them to explore new infection prevention strategies through expanded use of NHSN’s Analysis functions.

Evaluating CLABSI’s Using CLIP Data

1) Generate a data set prior to running reports in Analysis to be sure all data are up to date

2) Run a line list of your CLABSI (in this example, we will use 2011 data): Click Analysis → Output Options→ Device Associated Events → Central Line Associated BSI → CDC Defined Output → Line Listing– All CLAB Events → Modify

Click in order:  
1. Analysis  
2. Output Options  
3. Device-Associated Module  
4. Central Line-Associated BSI  
5. CDC Defined Output  
6. Line Listing – All CLAB Events  
7. Modify
3) When you click Modify, the Line Listing screen will appear

1. Name your report if you wish to save it for the future (you may want run the same report or a similar report again). Not necessary for a quick look.

2. For Output Format, keep in HTML -OR- If you wish to export to Excel, change to CSV using the drop down

3. Always check the box, “Use Variable Labels”

4. Select a Date Variable – We are choosing the year 2011

5. Go to the bottom of the page and select RUN

4) A CLABSI line list is shown below. Our example hospital had 12 CLABSI during 2011. For this example, we are going to look at the 5 CLABSI in the unit name “1MICU. (You may wish to print this line list.)
Focusing on the 5 CLABSI in 1 MICU, now we are going look up the associated CLIP records by Patient ID or Event ID.

5) In the blue navigation bar, click: Event→Find. The Find Event screen will appear. In Event Type, use the drop down to select “CLIP.” For the first CLABSI that will be evaluated, enter the Patient ID number or Event Number in the appropriate field.

6) When the CLIP Event record is found, check to see if all clinical practice elements were followed during the insertion of the central line. This is an important evaluation that should be done for each CLABSI. It can help you understand why a CLABSI may have occurred.

(Remember, for unit-based analysis, another important method to understand why CLABSI may occur is overuse of central lines or not getting lines out as soon as possible. See “March Madness Week 1: CLABSI,” to learn to evaluate each of your hospital unit’s central line device utilization ratio or DUR.)
**Exploring Use of Femoral Lines with CLIP Data**

Central lines inserted in a femoral access site raises the risk for CLABSI. The central line bundle recommends avoiding femoral sites when other alternatives are possible. CLIP data can be used to monitor your hospital units’ use of femoral lines. This section will further explore how to modify NHSN reports to create custom reports to assist with your CLABSI prevention efforts.

1) Generate a data set prior to running NHSN Analysis reports to be sure all data are up to date. (NOTE: You not need to generate a new data set if you have not entered data since the last data set was generated.

2) Run a line list of your CLIP Events: Click Analysis→Output Options→Device Associated Events→Central Line Insertion Practices→CDC Defined Output→Line Listing-All CLIP Events→Modify

---

**Click in order:**
1. Analysis
2. Output Options
3. Device-Associated Module
4. Central Line Insertion Practices
5. CDC Defined Output
6. Line Listing – All CLIP Events
7. Modify
3) When you click Modify, the Line Listing screen will appear. To filter your CLIP data you can modify which variables and data are to be included (or excluded) from your report:

The table “Specify Other Selection Criteria” allows you to filter what you want to include or not include in your reports. You can

- request only certain data variables
- limit each data variable to specific responses

5. In the 1st box in the top row, use the drop down menu. Select the variable “insertSite”

6. After insertSite appears, click on the empty box right below to limit your choice of insertion site
7. Using both drop down boxes, create a report that only pulls data for Femoral insertion site. For this report, request data where
   \[ \text{insertSite} = \text{Femoral} \]
   Options to include or exclude data can be made using the “Operators”
   - Equal to
   - Greater then
   - Greater or equal than
   - Less than
   - Less than or equal to
   - NOT equal to (used to exclude data)
   - Include (such as from a list)
   - Do Not include
   - Used to select data between 2 values; e.g. dates, numbers, etc.

8. Remember to “Save.”

The gray box will close and you will have selected your inclusion criteria: insertion site limited to femoral.
4) You can select which variables to **show** in your report. Click on “Modify Variables to Display,” **Modify List**.

The screen appears as below. “Selected Variables” are the variables CDC built into this “canned” report. You don’t have to use all variables, and you can include other variables that CDC did not include.
To create what will appear in the Femoral line report, some variables should be changed.

- Some variables, pre-selected by CDC, do not need to be included in this Femoral report. Move from “Selected Variables” to “Available Variables:”
  - orgID, handHygiene, barrierDrape, skinPrepALC,
  - barrierMask, barrierGloves, othSkinPrep
  - barrierGown, barrierCap, skinPrepPI,

- A variable should be added to the report. Move from “Available Variables” to “Selected Variables:”:
  - occCDCDesc
Your list of Femoral site central lines is ready to run when it has the modified “Selected Variables” as below.

1. Re-order how the variables will be shown in the report. Move variables in the “Selected Variables” using the “Up” and “Down” keys to create the following variable order:

   - insertDate
   - location
   - occCDCDesc
   - reasonInsert
   - clipBundle
   - skinPrepCHG
   - insertSite
   - lineType
   - patID
   - eventID

2. After your variables are placed in order, scroll down and click “Save.”

3. Scroll to the bottom of the page and press “Run”. The report will show the variables you have chosen as the column headings (in same order as listed).

   This report will indicate in order: date of insertion, location, occupation of the inserter, reason for line, CLIP bundle adherence, skin prep, insertion site (to verify as Femoral), type of line, patient and Event ID.

   If you have entered the name of the inserter, you can add it to your report in the same manner (Add variable “insSurname”).
5) Review your line list of femoral insertions. Evaluate each to determine if no alternate insertion sites were possible, as well as check whether any of the femoral line insertions subsequently resulted in a CLABSI.
Using the sort function can help you review the line list. In our example above, we see that

- femoral lines were inserted in ICU East and Z-ICU
- femoral insertions were primarily done by attending physicians.

The data indicate that you may want to assess indications for femoral line use on these units, and consider collaborating with other departments (Medical Staff, Quality) to review the cases with the physicians to determine if there were alternative central line insertion site choices.
Central line insertion site monitoring can also be used as a process measure included in your hospital’s surveillance plan. You can review the distribution of central line insertion sites, and over time, monitor for decreases (or increases) in the use of femoral lines.

1) A good way to display the breakdown of central line insertion sites is to produce a Pie Chart for each location. Follow the steps as below.
2) After you click modify, the Pie Chart screen will appear. Make the following modifications.

- Change name if you plan to save this report for future use.
3) After you click run, a Pie chart showing the distribution of central lines by insertion site will be produced for each location monitored for CLIP within your hospital. Use data to assess the percentage of femoral line use compared to percentage of the other insertion sites, which are at lower risk for CLABSI.

In this example, femoral line use represents 21% of all lines inserted. Incorporate these data into your CLABSI prevention efforts. Can you decrease the percentage of femoral line use?

You have spent a considerable amount of time entering CLIP data into NHSN.

We encourage you to **USE the CLIP data** in your CLABSI prevention efforts!