Introduction to NHSN Dialysis Event Analysis and Reports

Ami Shah, MPH
April 16, 2014

Disclaimer: The findings and conclusions in this report/presentation are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.
NHSN Reports

- NHSN includes reports that you can run at any time to review your surveillance data

- Different reports are available to choose from
  - NHSN can summarize what has been reported to date and display infection rates for you

- Use reports to:
  - Track infections
  - Inform prevention
  - Evaluate and improve performance
    - Evaluate specific infection prevention interventions
    - Identify other areas for improved performance
Objectives

- Describe the report options available
- Demonstrate the 3 steps to create a report
  - Show 2 simple report modifications (optional)
- Define the components of NHSN DE rates
- Explain how to interpret two NHSN reports
  - Bloodstream Infection Rate Table
  - CMS ESRD QIP Line Listing
**Target Audience**

- Any Dialysis Event user with analysis rights
DATA EXPLORATION: NHSN REPORTS
Creating Reports in NHSN

- Experiment with the analysis function – you can’t break anything!

- NHSN does the work for you!
NHSN Reports

- There are a variety of “CDC Defined Output” options to choose from
  - Standard reports that can be run as they are or modified to better suit your needs

- Disregard reports for other types of NHSN surveillance (e.g., hospitals)
  - Dialysis Event surveillance is categorized under the “Device-Associated Module”
The report type determines how data are displayed

Report types include:
- Line Listings
- Frequency Tables
- Pie Charts
- Rate Tables
- Run Charts
CREATE A REPORT IN 3 STEPS
Create a Report in 3 Steps

1. Generate Data Sets

2. Select a Report
   - Modifying the report is optional

3. ‘Run’ the Report
Step 1 - Generate Data Sets

- Data sets are the files NHSN uses to run reports

- Generating new data sets captures all of your facility’s NHSN data so that reports are created using complete, up-to-date information

- Each user has their own analysis data sets

- May take several minutes to generate
Step 1 - Generate Data Sets

- From the navigation bar, select ‘Analysis’, then ‘Generate Data Sets’
- If data sets exist, the date generated is shown

Only information in NHSN before the “Date Last Generated” will be included in the reports.
Step 1 - Generate Data Sets

- If data sets already exists, click ‘OK’ to replace existing data sets
- Wait for update
Step 2 – Select a Report

- Once data sets are generated, select ‘Output Options’ from the navigation bar

- Open folders to find dialysis event templates
  1. “Device-Associated Module” folder
  2. “Dialysis Events” folder
  3. “CDC Defined Output” folder
Step 3 – ‘Run’ the Report

- Press “Run” button next to the report you want
Step 3 – ‘Run’ the Report

- Report will open in a separate window
2 SIMPLE REPORT MODIFICATIONS (OPTIONAL)
Modifying Reports - Optional

- Simple, useful modify suggestions:
  1. Use variable labels to better describe the data and make the report easier to read
  2. Restrict the report to a certain time period

- Click the ‘Modify’ button next to the template you’d like to change
Modify Screen (optional)

i. Use Variable Labels

ii. Filter by Date
Modify Suggestions – 1. Use Variable Labels (optional)

<table>
<thead>
<tr>
<th>pbcCount</th>
<th>numPats</th>
<th>PBCRate</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>86</td>
<td>0.000</td>
</tr>
<tr>
<td>0</td>
<td>329</td>
<td>0.000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Number Bloodstream Infections</th>
<th>Patient-months</th>
<th>Bloodstream Infection Rate/100 patient-months</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>86</td>
<td>0.000</td>
</tr>
<tr>
<td>0</td>
<td>329</td>
<td>0.000</td>
</tr>
</tbody>
</table>
Modify Suggestions – 2. Filter by Date (optional)

- **Filter by time period**
  - Several date variables to choose from
  - Try “eventDate” for a report that includes all dialysis events during a specific time interval
Modify Suggestions – 2. Filter by Date (optional)

- Filter by “eventDate”
  - Use MM/DD/YYYY date format

- In the example below, the report will include all dialysis events reported on or between October 1, 2011 and October 31, 2011
Modify Suggestions – 2. Filter by Date (optional)

- Common date variable is SummaryYM

- SummaryYM = Summary of data by Year and Month
- Enter date(s) in MM/YYYY format

- E.g., the report will include data from Oct 1, 2013 to Dec 31, 2013
HOW TO READ NHSN REPORTS

Example 1: Bloodstream Infection (BSI) Rate Table
Components of a Rate

- **Numerator** = number of dialysis events
  - Information from “Dialysis Event” form
  - Numerator = 0 if the “Report No Events” box is checked on the Denominators for Outpatient Dialysis form

- **Denominator** = number of at-risk patient-months
  - Information from “Denominators for Outpatient Dialysis” form

- **Rate (per 100 patient-months)** = \( \frac{\text{Dialysis Events (numerator)}}{\text{Patient-Months (denominator)}} \times 100 \)
  - NHSN dialysis event rates are calculated per 100 patient-months
  - Typically rates are stratified by vascular access type
Dialysis Event Metrics

- Data entered into NHSN are used to calculate specific metrics including rates for:
  - **Bloodstream infection (BSI)**
    - Any positive blood culture
  - **Access-related bloodstream infection (ARB)**
    - Positive blood culture with the suspected source identified as the vascular access site or uncertain
  - **Local access site infection (LASI)**
    - Pus, redness, or swelling of the vascular access site and access-related bloodstream infection is not present
  - **Vascular access infection (VAI)**
    - Either a local access site infection or an access-related bloodstream infection
Example Report: Bloodstream Infection Data Rate Table

- Aim of the report is to provide the rate of bloodstream infections over time for the facility and provide NHSN aggregate data for comparison

- Bloodstream Infection
  - Any positive blood culture

Note: this example has been modified to use variable labels
Rate Table – Bloodstream Infection Report

- Generate data sets
- Locate the report under Output Options:
  1. ‘Device-Associated Module’ folder
  2. ‘Dialysis Events’ folder
  3. ‘CDC Defined Output’ folder
     - Rate Table – Bloodstream Infection data
- Click “Run”
## Bloodstream Infection Rate Table

<table>
<thead>
<tr>
<th>Location</th>
<th>Access Type</th>
<th>Summary Yr/Qtr</th>
<th>Months</th>
<th>Number Positive Blood Cultures</th>
<th>Patient Months</th>
<th>Bloodstream Infection Rate/100 patient-months</th>
</tr>
</thead>
<tbody>
<tr>
<td>123456</td>
<td>All</td>
<td>2012Q2</td>
<td>3</td>
<td>2</td>
<td>211</td>
<td>0.948</td>
</tr>
<tr>
<td>123456</td>
<td>Fistula</td>
<td>2012Q2</td>
<td>3</td>
<td>0</td>
<td>97</td>
<td>0</td>
</tr>
<tr>
<td>123456</td>
<td>Graft</td>
<td>2012Q2</td>
<td>3</td>
<td>0</td>
<td>63</td>
<td>0</td>
</tr>
<tr>
<td>123456</td>
<td>Other Access</td>
<td>2012Q2</td>
<td>3</td>
<td>0</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>123456</td>
<td>Tunneled</td>
<td>2012Q2</td>
<td>3</td>
<td>1</td>
<td>45</td>
<td>2.222</td>
</tr>
<tr>
<td>123456</td>
<td>Nontunneled</td>
<td>2012Q2</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>33.333</td>
</tr>
<tr>
<td>123456</td>
<td>Any CVC</td>
<td>2012Q2</td>
<td>3</td>
<td>2</td>
<td>48</td>
<td>4.167</td>
</tr>
</tbody>
</table>

### NHSN Bloodstream Infection Rate/100 patient-months

<table>
<thead>
<tr>
<th>Incidence Density p-value</th>
<th>Incidence Density Percentile</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.27</td>
<td>.</td>
</tr>
<tr>
<td>0.48</td>
<td>25</td>
</tr>
<tr>
<td>0.88</td>
<td>50</td>
</tr>
<tr>
<td>.</td>
<td>.</td>
</tr>
<tr>
<td>3.24</td>
<td>46</td>
</tr>
<tr>
<td>2.78</td>
<td>100</td>
</tr>
<tr>
<td>3.21</td>
<td>69</td>
</tr>
</tbody>
</table>

Non-shaded (white) area is the facility data. Shaded (yellow) area is aggregate data from all of NHSN. Use this information to compare each facility to the rest of NHSN.
### Bloodstream Infection Rate Table

<table>
<thead>
<tr>
<th>Location</th>
<th>Access Type</th>
<th>Summary Yr/Qtr</th>
<th>Months</th>
<th>Number Positive Blood Cultures</th>
<th>Patient Months</th>
<th>Bloodstream Infection Rate/100 patient-months</th>
<th>NHSN Bloodstream Infection Rate/100 patient-months</th>
<th>Incidence Density p-value</th>
<th>Incidence Density Percentile</th>
</tr>
</thead>
<tbody>
<tr>
<td>123456</td>
<td>All</td>
<td>2012Q2</td>
<td>3</td>
<td>2</td>
<td>211</td>
<td>0.948</td>
<td>1.27</td>
<td>0.4998</td>
<td>.</td>
</tr>
<tr>
<td>123456</td>
<td>Fistula</td>
<td>2012Q2</td>
<td>3</td>
<td>0</td>
<td>97</td>
<td>0</td>
<td>0.48</td>
<td>0.6271</td>
<td>25</td>
</tr>
<tr>
<td>123456</td>
<td>Graft</td>
<td>2012Q2</td>
<td>3</td>
<td>0</td>
<td>63</td>
<td>0</td>
<td>0.88</td>
<td>0.5750</td>
<td>50</td>
</tr>
<tr>
<td>123456</td>
<td>Other Access</td>
<td>2012Q2</td>
<td>3</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>.</td>
<td>.</td>
<td>.</td>
</tr>
<tr>
<td>123456</td>
<td>Tunneled</td>
<td>2012Q2</td>
<td>3</td>
<td>1</td>
<td>45</td>
<td>2.222</td>
<td>3.24</td>
<td>0.0572</td>
<td>46</td>
</tr>
<tr>
<td>123456</td>
<td>Nontunneled</td>
<td>2012Q2</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>33.333</td>
<td>2.78</td>
<td>0.0799</td>
<td>100</td>
</tr>
<tr>
<td>123456</td>
<td>Any CVC</td>
<td>2012Q2</td>
<td>3</td>
<td>2</td>
<td>48</td>
<td>4.167</td>
<td>3.21</td>
<td>0.4551</td>
<td>69</td>
</tr>
</tbody>
</table>

**Rate Calculation**

\[
\text{Rate} = \frac{1}{\text{Denominator}} \times 100 = 2.222 \text{ BSI/100 patient-months}
\]
### Bloodstream Infection Rate Table

This column shows the mean or average RATE (per 100 patient-months) for all dialysis facilities reporting to NHSN.
## Bloodstream Infection Rate Table

<table>
<thead>
<tr>
<th>Location</th>
<th>Access Type</th>
<th>Summary Yr/Qtr</th>
<th>Months</th>
<th>Number Positive Blood Cultures</th>
<th>Patient Months</th>
<th>Bloodstream Infection Rate/100 patient-months</th>
<th>NHSN Bloodstream Infection Rate/100 patient-months</th>
<th>Incidence Density p-value</th>
<th>Incidence Density Percentile</th>
</tr>
</thead>
<tbody>
<tr>
<td>123456</td>
<td>All</td>
<td>2012Q2</td>
<td>3</td>
<td>2</td>
<td>211</td>
<td>0.948</td>
<td>1.27</td>
<td>0.4998</td>
<td>.</td>
</tr>
<tr>
<td>123456</td>
<td>Fistula</td>
<td>2012Q2</td>
<td>3</td>
<td>0</td>
<td>97</td>
<td>0</td>
<td>0.48</td>
<td>0.6271</td>
<td>25</td>
</tr>
<tr>
<td>123456</td>
<td>Graft</td>
<td>2012Q2</td>
<td>3</td>
<td>0</td>
<td>63</td>
<td>0.48</td>
<td>0.5750</td>
<td>50</td>
<td>.</td>
</tr>
<tr>
<td>123456</td>
<td>Other Access</td>
<td>2012Q2</td>
<td>3</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>0.88</td>
<td>0.5750</td>
<td>.</td>
</tr>
<tr>
<td>123456</td>
<td>Tunneled</td>
<td>2012Q2</td>
<td>3</td>
<td>1</td>
<td>45</td>
<td>2.222</td>
<td>3.24</td>
<td>0.0572</td>
<td>46</td>
</tr>
<tr>
<td>123456</td>
<td>Nontunneled</td>
<td>2012Q2</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>33.333</td>
<td>2.78</td>
<td>0.0799</td>
<td>100</td>
</tr>
<tr>
<td>123456</td>
<td>Any CVC</td>
<td>2012Q2</td>
<td>3</td>
<td>2</td>
<td>48</td>
<td>4.167</td>
<td>3.21</td>
<td>0.4551</td>
<td>69</td>
</tr>
</tbody>
</table>
### Bloodstream Infection Rate Table

<table>
<thead>
<tr>
<th>Location</th>
<th>Access Type</th>
<th>Summary Yr/Qtr</th>
<th>Months</th>
<th>Number Positive Blood Cultures</th>
<th>Patient Months</th>
<th>Bloodstream Infection Rate/100 patient-months</th>
<th>NHSN Bloodstream Infection Rate/100 patient-months</th>
<th>Incidence Density p-value</th>
<th>Incidence Density Percentile</th>
</tr>
</thead>
<tbody>
<tr>
<td>123456</td>
<td>All</td>
<td>2012Q2</td>
<td>3</td>
<td>2</td>
<td>211</td>
<td>0.948</td>
<td>1.27</td>
<td>0.4998</td>
<td>.</td>
</tr>
<tr>
<td>123456</td>
<td>Fistula</td>
<td>2012Q2</td>
<td>3</td>
<td>0</td>
<td>97</td>
<td>0</td>
<td>0.48</td>
<td>0.6271</td>
<td>25</td>
</tr>
<tr>
<td>123456</td>
<td>Graft</td>
<td>2012Q2</td>
<td>3</td>
<td>0</td>
<td>63</td>
<td>0.48</td>
<td>0.5750</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>123456</td>
<td>Other Access</td>
<td>2012Q2</td>
<td>3</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>0.88</td>
<td>0.5750</td>
<td>50</td>
</tr>
<tr>
<td>123456</td>
<td>Tunneled</td>
<td>2012Q2</td>
<td>3</td>
<td>1</td>
<td>45</td>
<td>2.222</td>
<td>3.24</td>
<td>0.0572</td>
<td>46</td>
</tr>
<tr>
<td>123456</td>
<td>Nontunneled</td>
<td>2012Q2</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>33.333</td>
<td>2.78</td>
<td>0.0799</td>
<td>100</td>
</tr>
<tr>
<td>123456</td>
<td>Any CVC</td>
<td>2012Q2</td>
<td>3</td>
<td>2</td>
<td>48</td>
<td>4.167</td>
<td>3.21</td>
<td>0.4551</td>
<td>69</td>
</tr>
</tbody>
</table>

P-value and Percentile are provided to assist with interpretation of rate comparison

- Typically, a p-value of <0.05 is considered a statistically significant difference between rates
- The lower the percentile, the better the facility is performing relative to the others in NHSN
Comparing Rates Using Percentiles

- The percentile indicates how a facility ranks for the event among all NHSN facilities
  - A lower the percentile indicates a lower rate of infection.

<table>
<thead>
<tr>
<th>Location</th>
<th>Access Type</th>
<th>Summary Yr/Qtr</th>
<th>Months</th>
<th>Number Positive Blood Cultures</th>
<th>Patient Months</th>
<th>Bloodstream Infection Rate/100 patient-months</th>
<th>NHSN Bloodstream Infection Rate/100 patient-months</th>
<th>Incidence Density p-value</th>
<th>Incidence Density Percentile</th>
</tr>
</thead>
<tbody>
<tr>
<td>123456</td>
<td>Other Access</td>
<td>2012Q2</td>
<td>3</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>.</td>
<td>.</td>
<td>.</td>
</tr>
<tr>
<td>123456</td>
<td>Tunneled</td>
<td>2012Q2</td>
<td>3</td>
<td>1</td>
<td>45</td>
<td>2.222</td>
<td>3.24</td>
<td>0.0572</td>
<td>100</td>
</tr>
<tr>
<td>123456</td>
<td>Not tunneled</td>
<td>2012Q2</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>33.333</td>
<td>2.78</td>
<td>0.0709</td>
<td>100</td>
</tr>
</tbody>
</table>

Only 46% of facilities reported lower BSI rates among patients with tunneled central lines than facility 123456.
Interpreting Data

- Please keep in mind that data quality is essential for meaningful rates, comparisons, and conclusions
  - Verify: Is the Protocol being followed correctly?
  - Verify: Are all Dialysis Events being captured?
  - Verify: Has all event information been reported to NHSN?

- Use all the information available to you, including percentile rank, to interpret your rates
  - Combine data interpretation with investigative work in the unit and common sense

- For evaluation, examining data over longer timeframes is more informative
  - e.g., draw conclusions based on ≥1 data quarter, versus a single month of data
Data Quality and Quantity

- When reviewing your facility’s rates, remember the importance of data quality:
  - High rates may = high event occurrence OR over-reporting
  - Low rates may = low event occurrence OR under-reporting
  - NHSN rates could increase if facilities improve the accuracy and completeness of reporting

- And data quantity:
  - Rates may fluctuate over short periods of time
  - Assessing rates over greater time intervals can increase confidence in the values
Review Your Data

- Monthly to:
  - Ensure all data have been accurately reported

- Quarterly to:
  - Detect problems in your facility
  - Provide feedback to your staff
  - Get staff engaged in quality improvement
  - Prepare for CMS quarterly reporting deadlines

- Better understand your facility’s performance by comparing your facility’s rates against NHSN aggregate rates
All Dialysis Rate Tables are Interpreted Similarly

- Rate Table - IV Antimicrobial Start Data
- Rate Table - IV Vancomycin Start Data
- Rate Table - Local Access Site Infection Data
- Rate Table - Positive Blood Culture Data
- Rate Table - Access Related Bloodstream Infection
- Rate Table - Vascular Access Infection Data
- Rate Table - Hosp Incident Data (old)
- Rate Table - Local Access Infection Data (old)
- Rate Table - Vascular Access Infection Data (old)

“(old)” refers to data reported prior to June 2011
HOW TO READ NHSN REPORTS

Example 2: CMS ESRD QIP Line Listing
Line Listing - CMS ESRD QIP Rule Report

- Aim of the report is to show if minimum QIP NHSN reporting requirements have been met for a given month
  - E.g., plan, numerator, denominator

- Located in the “Advanced” folder
  - Analysis → Output Options → Advanced → CMS Reports → CDC Defined Output → Line Listing - CMS ESRD QIP Rule
Line Listing - CMS ESRD QIP Rule Report

- Generate Data Sets
- Locate the report under Output Options:
  - “Advanced” folder
  - “CMS Reports” folder
  - “CDC Defined Output” folder
    - Line Listing-CMS ESRD QIP Rule
### Example: Line Listing - CMS ESRD QIP Rule

<table>
<thead>
<tr>
<th>Org ID</th>
<th>CMS Certification Number</th>
<th>Facility Name</th>
<th>Location</th>
<th>Summary Year/Month</th>
<th>DE on Reporting Plan</th>
<th>Dialysis Event Numerator Reported</th>
<th>Dialysis Event Denominator Reported</th>
<th>Criteria Met this Month</th>
</tr>
</thead>
<tbody>
<tr>
<td>10856</td>
<td>123456</td>
<td>Dialysis Test Facility</td>
<td>OPDIAL</td>
<td>2014M01</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>10856</td>
<td>123456</td>
<td>Dialysis Test Facility</td>
<td>OPDIAL</td>
<td>2014M02</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>10856</td>
<td>123456</td>
<td>Dialysis Test Facility</td>
<td>OPDIAL</td>
<td>2014M03</td>
<td>Y</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>10856</td>
<td>123456</td>
<td>Dialysis Test Facility</td>
<td>OPDIAL</td>
<td>2014M04</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
<td>N</td>
</tr>
</tbody>
</table>

Data are reported to CMS by CCN. Verify that a CCN is listed and that it is correct.

- **CCN** = CMS Certification Number
- CCN can be added or edited on the Facility Info screen
### Example: Line Listing - CMS ESRD QIP Rule

<table>
<thead>
<tr>
<th>Org ID</th>
<th>CMS Certification Number</th>
<th>Facility Name</th>
<th>Location</th>
<th>Summary Year/Month</th>
<th>DE on Reporting Plan</th>
<th>Dialysis Event Numerator Reported</th>
<th>Dialysis Event Denominator Reported</th>
<th>Criteria Met this Month</th>
</tr>
</thead>
<tbody>
<tr>
<td>10856</td>
<td>123456</td>
<td>Dialysis Test Facility</td>
<td>OPDIAL</td>
<td>2014M01</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>10856</td>
<td>123456</td>
<td>Dialysis Test Facility</td>
<td>OPDIAL</td>
<td>2014M02</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>10856</td>
<td>123456</td>
<td>Dialysis Test Facility</td>
<td>OPDIAL</td>
<td>2014M03</td>
<td>Y</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>10856</td>
<td>123456</td>
<td>Dialysis Test Facility</td>
<td>OPDIAL</td>
<td>2014M04</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
<td>N</td>
</tr>
</tbody>
</table>

- **Summary Year/Month column indicates which month is represented by the row**
  - Looking down the column, you can determine if consecutive months are represented
### Example: Line Listing - CMS ESRD QIP Rule

<table>
<thead>
<tr>
<th>Org ID</th>
<th>CMS Certification Number</th>
<th>Facility Name</th>
<th>Location</th>
<th>Summary Year/Month</th>
<th>DE on Reporting Plan</th>
<th>Dialysis Event Numerator Reported</th>
<th>Dialysis Event Denominator Reported</th>
<th>Criteria Met this Month</th>
</tr>
</thead>
<tbody>
<tr>
<td>10856</td>
<td>123456</td>
<td>Dialysis Test Facility</td>
<td>OPDIAL</td>
<td>2014M01</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>10856</td>
<td>123456</td>
<td>Dialysis Test Facility</td>
<td>OPDIAL</td>
<td>2014M02</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>10856</td>
<td>123456</td>
<td>Dialysis Test Facility</td>
<td>OPDIAL</td>
<td>2014M03</td>
<td>Y</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>10856</td>
<td>123456</td>
<td>Dialysis Test Facility</td>
<td>OPDIAL</td>
<td>2014M04</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
<td>N</td>
</tr>
</tbody>
</table>

**Y = Reporting Plan saved with “DE” selected for the month**
Example: Line Listing - CMS ESRD QIP Rule

<table>
<thead>
<tr>
<th>Org ID</th>
<th>CMS Certification Number</th>
<th>Facility Name</th>
<th>Location</th>
<th>Summary Year/Month</th>
<th>DE on Reporting Plan</th>
<th>Dialysis Event Numerator Reported</th>
<th>Dialysis Event Denominator Reported</th>
<th>Criteria Met this Month</th>
</tr>
</thead>
<tbody>
<tr>
<td>10856</td>
<td>123456</td>
<td>Dialysis Test Facility</td>
<td>OPDIAL</td>
<td>2014M01</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>10856</td>
<td>123456</td>
<td>Dialysis Test Facility</td>
<td>OPDIAL</td>
<td>2014M02</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>10856</td>
<td>123456</td>
<td>Dialysis Test Facility</td>
<td>OPDIAL</td>
<td>2014M03</td>
<td>Y</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>10856</td>
<td>123456</td>
<td>Dialysis Test Facility</td>
<td>OPDIAL</td>
<td>2014M04</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
<td>N</td>
</tr>
</tbody>
</table>

Y = Denominators for Outpatient Dialysis form was completed for the month
### Example: Line Listing - CMS ESRD QIP Rule

<table>
<thead>
<tr>
<th>Org ID</th>
<th>CMS Certification Number</th>
<th>Facility Name</th>
<th>Location</th>
<th>Summary Year/Month</th>
<th>DE on Reporting Plan</th>
<th>Dialysis Event Numerator Reported</th>
<th>Dialysis Event Denominator Reported</th>
<th>Criteria Met this Month</th>
</tr>
</thead>
<tbody>
<tr>
<td>10856</td>
<td>123456</td>
<td>Dialysis Test Facility</td>
<td>OPDIAL</td>
<td>2014M01</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>10856</td>
<td>123456</td>
<td>Dialysis Test Facility</td>
<td>OPDIAL</td>
<td>2014M02</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>10856</td>
<td>123456</td>
<td>Dialysis Test Facility</td>
<td>OPDIAL</td>
<td>2014M03</td>
<td>Y</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>10856</td>
<td>123456</td>
<td>Dialysis Test Facility</td>
<td>OPDIAL</td>
<td>2014M04</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
<td>N</td>
</tr>
</tbody>
</table>

Verify NHSN reporting requirements are met for the month, reflected by a “Y” (Yes) on each line:

- To meet CMS criteria, all other Yes/No fields in the same row must be “Y”
- “N” indicates that action is needed
### Example: Line Listing - CMS ESRD QIP Rule

<table>
<thead>
<tr>
<th>Org ID</th>
<th>CMS Certification Number</th>
<th>Facility Name</th>
<th>Location</th>
<th>Summary Year/ Month</th>
<th>DE on Reporting Plan</th>
<th>Dialysis Event Numerator Reported</th>
<th>Dialysis Event Denominator Reported</th>
<th>Criteria Met this Month</th>
</tr>
</thead>
<tbody>
<tr>
<td>10856</td>
<td>123456</td>
<td>Dialysis Test Facility</td>
<td>OPDIAL</td>
<td>2014M01</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>10856</td>
<td>123456</td>
<td>Dialysis Test Facility</td>
<td>OPDIAL</td>
<td>2014M02</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>10856</td>
<td>123456</td>
<td>Dialysis Test Facility</td>
<td>OPDIAL</td>
<td>2014M03</td>
<td>Y</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>10856</td>
<td>123456</td>
<td>Dialysis Test Facility</td>
<td>OPDIAL</td>
<td>2014M04</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
<td>N</td>
</tr>
</tbody>
</table>

The “Report No Events” checkboxes are found on the Denominators Form.

Y = No events reported, report no events boxes **appropriately checked**

N = No events reported, report no events boxes have **NOT** been **appropriately checked**
Example: Linking DE Numerator Reported and Report No Events

<table>
<thead>
<tr>
<th>Summary Year/ Month</th>
<th>DE on Reporting Plan</th>
<th>Dialysis Event Numerator Reported</th>
<th>Dialysis Event Denominator Reported</th>
<th>Criteria Met this Month</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012M01</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>2012M02</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
</tbody>
</table>

January 2012:
- Numerator Reported = “N – NO” because no IV antimicrobial start events were reported, AND the “Report No Events: No IV Antimicrobial Start Events” was NOT checked off on the Denominator form.

February 2012:
- Numerator Reported = “Y – YES” because no IV antimicrobial start events were reported, AND the “Report No Events: No IV Antimicrobial Start Events” WAS checked off on the Denominator form.

---

Event Details

Specify Event (check one or more)*:
- IV antimicrobial start
  - Was vancomycin the antimicrobial used for this start?:  
- Positive blood culture
  - Suspected source of positive blood culture: Vascular access
- Pus, redness, or increased swelling at vascular access site
  - Check the access site(s) with pus, redness, or increased swelling:
    - Fistula
    - Graft
    - Tunneled Central Line
    - Nontunneled Central Line
    - Other Access Device
One page reference guide for creating & reading the CMS ESRD QIP Rule report available on NHSN Dialysis Event Surveillance website

http://www.cdc.gov/nhsn/dialysis/dialysis-event.html
ACTING ON THE DATA
Acting on the Data

- Get the most benefit by acting on the data

- Recognize areas for improvement
  - Suggestion: look at your rates for BSI, do any vascular access types have higher rates than expected?
  - Set measurable goals

- Provide feedback to frontline staff
  - Inspire staff engagement in preventing dialysis events

- Continue NHSN surveillance, monitor for changes in rates
SUMMARY
Summary

- Interpreting and understanding data is an important part of surveillance

- NHSN offers a variety of reports to choose from
  - Data are presented in different ways depending on the report type (e.g. line listings, rate tables, run charts)

- Experiment with the reports to learn – you won’t break anything!
Summary

- **Steps to use the analysis function:**
  1. Generate data sets
  2. Select output type(s) and modify as desired
  3. Run analysis

- **Suggestion for the “Modify” screen:**
  - Use variable labels to make the reports easier to read
  - Filter data by date to refine output

- **Act to benefit from the data:**
  - Identify areas of improvement
  - Engage your staff
  - Continue surveillance to monitor for changes in performance
Questions?

Contact the NHSN Help Desk: nhsn@cdc.gov
Include “Dialysis Event” in the subject line.

Thank you!