

NHSN Dialysis Event Surveillance & Reporting Data Quality Evaluation – Project Implementation Guide

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Introduction

Purpose

This first version of the NHSN Dialysis Event Surveillance & Reporting Data Quality Evaluation Implementation Guide provides recommended approaches to investigate and enhance the accuracy and completeness of NHSN Dialysis Event data.

Organizations beginning data quality evaluation activities are encouraged to use the methods and tools recommended in this document, which are intended to promote a robust national standard for evaluation of dialysis event data. While those with existing programs are encouraged to review the guidance and tools, and should consider incorporating any elements that may be missing from their current approach.

Intended Audience

This document is designed for use by nurses, infection preventionists, or quality professionals at outpatient dialysis facilities that report to NHSN, state health department or end-stage renal disease (ESRD) network personnel who work with facilities to assure high-quality, actionable surveillance data to enhance patient safety, and other groups seeking to enhance NHSN data quality for surveillance, reimbursement, quality improvement, research or public reporting purposes.

External Evaluation of NHSN Dialysis Event Surveillance Data

External evaluation of NHSN Dialysis Event Surveillance data is conducted by an agency outside the reporting facility, such as an ESRD Network or state or local health department. This Implementation Guide recommends an evaluation process that is conducted by trained staff, who go on-site to the facility, and use the [NHSN Dialysis Event Protocol](#) as the standard to make data evaluation determinations, with CDC input when necessary.

The onsite data quality evaluation activities include a survey of the facility staff's surveillance knowledge and practices, and review of medical records to assess concordance of facility reported data with evaluators' determinations of reportable NHSN data. These activities may be performed together or individually, depending on the scope and goals of your data quality evaluation project. All of the tools required to implement the evaluation project as outlined in this document are included in template form so they can be easily customized to your organization and your specific project parameters.

Completeness and accuracy of numerator data are evaluated through an on-site review of patient and facility medical records and documents and involves several key steps:

- Selection of facilities
- Selection of patient medical records within selected facilities
- Review and abstraction of data from patient and facility medical records
- Comparison of information reported to NHSN by the facility with information deemed reportable to NHSN during the on-site evaluation

Upon completion of each site visit, the evaluating entity develops a summary report for the facility, addressing recommendations for data correction, surveillance program improvements, and/ or additional surveillance program support when appropriate.

Goals of Evaluation of NHSN Dialysis Event Surveillance Data

Considering the early stage of data reporting and the data evaluation process, the current goals are:

Evaluate facility NHSN Dialysis Event surveillance practices:

- To assess staff understanding of the Dialysis Event Protocol
- To assess data collection and reporting methods
- To identify common barriers to complete and accurate data collection and reporting

Educate dialysis facility staff on NHSN Dialysis Event Surveillance:

- To improve staff understanding of the methods and definitions outlined in the Dialysis Event Protocol
- To improve staff data collection and reporting practices
- To increase staff awareness of reporting resources

Assess and improve the quality of Dialysis Event data reported to NHSN:

- By identifying under- and over-reported Dialysis Events and providing instructions for correcting those events in NHSN
- By identifying systematic and recurrent errors that may require correction to data beyond the specific feedback provided
- By suggesting strategies to improve facility data collection and reporting practices

Provide feedback to CDC to support continuous improvement of public resources:

- To improve this Implementation Guide and the corresponding evaluation tools
- To develop optimal and standardized data evaluation methods
- To improve existing NHSN Dialysis Event surveillance and reporting resources, such as training materials, reporting instructions, and frequently asked questions (FAQs) to address common areas of confusion

Feedback to CDC

Widespread reporting of NHSN Dialysis Event data and evaluation of these data are both relatively new. This Implementation Guide is intended to serve as a starting point for ESRD Networks, state health departments, and other organizations planning to conduct data evaluation and data quality improvement projects with NHSN Dialysis Event data. This Implementation Guide provides a standardized method that can be widely used, and field-tested data collection instruments to implement the project. Feedback from persons conducting evaluations, both during and after the process, is essential to CDC's further development and optimization of this guidance, the standardized methods, and data collection instruments. Your feedback and suggestions can be emailed directly to the [NHSN Helpdesk](#) at nhsn@cdc.gov

Descriptions of Instruments (located in the Appendix document)

Appendix	Name; brief description
1	Selection of facilities and patients for NHSN Dialysis Event data quality evaluation; Step-by-step guidance on selection of facilities and patient charts.
2a	Template Letter 1 – Introduction; Letter addressed to the facility manager to explain the NHSN Dialysis Event data evaluation project and solicit the facility’s participation.
2b	Template Letter 2 – Confirm Site Visit and Preparation; Letter addressed to the facility manager confirming the date of the site visit, description of the site visit, and a request for specific lists of patient information that will be used to select patients’ charts for review.
2c	Template Letter 3 – Post-Site Visit Summary; Letter addressed to the facility manager thanking him/her for participating, summary of data evaluation findings, instructions for data corrections (if necessary), and excerpts from the protocol to address issues identified (if necessary).
3	Survey to Evaluate of NHSN Dialysis Event Surveillance Practices; A multi-purpose evaluation of the facility’s surveillance practices. This form collects information about the facility’s surveillance methodology and understanding of the Dialysis Event Protocol and provides the interviewer with the information and opportunity to address questions and correct misunderstandings about NHSN Dialysis Event Surveillance requirements.
4	Patient Chart Abstraction Form; A form that structures the collection of NHSN Dialysis Event Surveillance data from a patient’s chart so that it can be compared to NHSN data that were reported.

Project Timeline

The duration of each step will depend upon the scope of your organization’s evaluation project and the number of participating facilities. Refer to the table below for the suggested duration of these steps; several activities may occur concurrently. Consider your project’s scope and available resources and use the right-hand column to create a timeline more specific to your project.

NHSN Dialysis Event Data Evaluation Project Steps Total estimated duration ~26 weeks	Project Duration
<p>1) Preparation (estimated duration 4 weeks)</p> <ul style="list-style-type: none"> <input type="checkbox"/> Read the Implementation Guide in its entirety <input type="checkbox"/> Determine the geographic area for site visits <input type="checkbox"/> Determine the number of facilities that will be included in the project <input type="checkbox"/> Determine the evaluation time period (which months of NHSN data will be evaluated) <input type="checkbox"/> Determine when the site visits will occur <input type="checkbox"/> Select facilities to be included in the evaluation project <input type="checkbox"/> Customize Template Letters 1 and 2 for your organization and project parameters <input type="checkbox"/> Train project staff on NHSN Dialysis Event Surveillance <input type="checkbox"/> Train project staff on use of the evaluation tools 	
<p>2) Solicit Facility Participation (estimated duration 2 weeks)</p> <ul style="list-style-type: none"> <input type="checkbox"/> Send Template Letter 1 to the Managers of the selected facilities <input type="checkbox"/> Follow-up with Facility Managers to provide a brief description of the project 	
<p>3) Schedule Site Visits (estimated duration 4 weeks)</p> <ul style="list-style-type: none"> <input type="checkbox"/> Schedule site visits and send Template Letter 2 to Facility Managers to confirm the details of each visit and request patient lists <input type="checkbox"/> Use patient lists to determine which patient charts will be selected for review <input type="checkbox"/> Inform Facility Manager of which patient charts will be reviewed, ask for these patient charts to be available on the day of the site visit 	
<p>4) Site Visits (estimated duration 6 - 12 weeks)</p> <ul style="list-style-type: none"> <input type="checkbox"/> Prepare for site visit: 1) print sufficient number of all the data collection instruments <input type="checkbox"/> Conduct site visits <input type="checkbox"/> Upon completion of each site visit, summarize findings and customize Template Letter 3 and send to the Facility Manager 	
<p>5) Post-site Visits: Facility follow-up and Data Summary and Dissemination (estimated duration 4 - 8 weeks)</p> <ul style="list-style-type: none"> <input type="checkbox"/> Follow-up 4 weeks post-site visit to ensure identified errors were corrected <input type="checkbox"/> Aggregate and summarize findings for all facilities that participated in the project <input type="checkbox"/> Share summary findings with CDC <input type="checkbox"/> Write a report, disseminate findings to key stakeholders 	

1) Pre-Site Visit Activities

Assure Project Staff Expertise

To effectively evaluate NHSN Dialysis Event Surveillance data, project staff should be very familiar with and understand the NHSN [Dialysis Event Protocol](#), especially the event definitions and application of the 21 day rule, the Dialysis Event form, and the method for correctly completing the Denominators for Outpatient Dialysis form.

Data evaluation staff should complete the required NHSN Dialysis Event Protocol training, which includes reading the [Dialysis Event Protocol](#) and completing the self-paced, computer-based [National Healthcare Safety Network \(NHSN\) Dialysis Event Surveillance](#) training. Staff conducting data evaluation activities are also strongly encouraged to read the [Frequently Asked Questions about Dialysis Event Reporting](#). Organizations may consider additional training on the application of the protocol to challenging situations. Contact the [NHSN Helpdesk](#) to request additional case studies for review and other content designed to assist data evaluators.

Evaluation Time Period

Determine the evaluation time period, which includes the months that NHSN Dialysis Event Surveillance data will be evaluated for this project. This period should be consistent across all participating facilities undergoing evaluation during this project. It is necessary to select an evaluation time period that will include a sufficient number of dialysis events to be evaluated. It is recommended that a period of no less than 6 consecutive months during the same calendar year be considered for the evaluation time period. Note that because of the 21 day rule, access to patient information for the month preceding the evaluation time period will also be required. For example, if the evaluation period is July through December 2013, then it would also be necessary to look at charts and records for the month of June 2013. Sufficient time should be given at the end of the evaluation time period to ensure that facility reporting to NHSN is corrected and complete ahead of any reporting deadlines.

Selection of Facilities

Selection of dialysis facilities for participation can be done in a variety of ways to meet different goals. It is typically not possible or necessary to visit every facility and review every patient record for Dialysis Events.

This first version of the NHSN Dialysis Event Surveillance Data Evaluation Implementation Guide primarily recommends the selection of 1) a convenience sample of facilities (e.g., a sample of volunteer facilities), or 2) a random sample of facilities. To make the most of available resources and project goals, organizations are encouraged to determine how many facilities can participate in the project, and to evaluate and discuss which of these two methods for the selection of facilities is most appropriate.

Because all facilities should be held accountable for accurate reporting of Dialysis Event data to NHSN, using a random sample to select facilities for participation is encouraged (Appendix 1).

Solicit Facility Participation and Schedule Site Visits

Customize Template Letter 1 (Appendix 2a) to be specific to your organization and project parameters and send to Facility Managers of the facilities identified during facility sampling. A follow-up phone call to answer questions and address concerns is encouraged. As Facility Managers agree to participate in the data evaluation project, customize Template Letter 2 (Appendix 2b) to confirm the details of the site visit and to request the patient lists required for patient chart sampling.

Selection of Patient Charts for Review

Establish a Mechanism for Secure Data Transfer between Facilities and Your Organization

To determine which patient charts will be reviewed, your organization will need to request specific patient lists from each participating facility, which will include protected health information (e.g., medical record numbers). Therefore, it is necessary for your organization to establish a mechanism for secure data transfer and determine how those data will be secured upon receipt.

Patient Chart Selection

To determine which patient charts to review during the site visit, each participating facility will need to provide the following separate lists of patients, as specified in Template Letter 2:

1. Received one or more in-center hemodialysis treatment during the evaluation period
2. Had any positive blood cultures during the evaluation period
3. Received any intravenous antimicrobials during the evaluation period
4. Had any pus, redness or swelling at the vascular access site during the evaluation period
5. Were hospitalized during the evaluation period

Appendix 1 provides step-by-step guidance on how to select patient charts.

Confirmation of Site Visit

A few days prior to the site visit, call the Facility Manager to remind them of the upcoming site visit. Verify that the staff involved in NHSN data collection and reporting will be available to be interviewed, the requested patient charts will be available, and any necessary arrangements for work space, and/or computer system access have been made.

Checklist for NHSN Dialysis Event Data Evaluation Site Visits

- Facility Manager's name and contact information
- Facility address and directions, if needed
- ESRD Network/state ID badge or other identification
- The 5 patient lists provided by the facility
- List of patient charts that will be reviewed
- The Dialysis Events the facility reported to NHSN during the evaluation time period
 - Can be obtained by printing out the dialysis event forms from NHSN
- Copies of NHSN Dialysis Event Protocol (one for each data evaluator and one for the facility)
- Facility Surveillance Practices Survey for the interviewer (and note-taker copies, if applicable)
- Multiple copies of Patient Chart Abstraction Tool (at minimum one/patient chart reviewed)
- Other helpful supplies:
 - Straight edge (e.g., a ruler) for reading data printouts
 - Stapler/binder clips
 - Pens/highlighters
 - Sticky notes/tape flags

2) Site Visits

Upon arrival at the facility, following introductions, evaluators should reiterate the project goals, stressing the educational nature of the evaluation. Reporting staff may be worried that an unfavorable evaluation may lead to sanctions by their supervisors which may bias answers to survey questions. Every effort should be made to make participating staff feel comfortable providing honest feedback. Evaluators can choose to begin by administering the Facility Surveillance Practices Survey or by initiating the patient chart review process. If multiple evaluators are present, these activities can occur concurrently.

Administration of the Evaluation of NHSN Dialysis Event Surveillance Practices Form

Identify those staff involved in NHSN data collection and reporting and administer the Evaluation of NHSN Dialysis Event Surveillance Practices Form (Appendix 3). The form is dual-purposed to assess understanding of the NHSN Dialysis Event Protocol and the facility's data collection and reporting methods, as well as to provide education to improve data quality going forward. **This educational feedback is an essential component of the data evaluation project, particularly at this early stage in NHSN Dialysis Event Reporting** and is the most valuable element to the participating facility.

Use errors as learning opportunities for reporters and validators. The surrounding discussions may provide insight into how robust the facility's surveillance processes and competencies are, and areas where additional training may be beneficial to all reporters.

Patient Chart Review Process

The patient charts to be reviewed should be specified prior to the site visit to ensure all records are available for review on the date of the site visit. Coordinate with the facility to gain access to the requested patient charts, electronic medical record, and any other sources of data that may be required.

Patient charts should be reviewed to identify Dialysis Events using the Chart Review Form (Appendix 4) to collect the essential data. When possible, it is a best practice to “blind” data evaluators to allow for an unbiased review of each medical chart. Therefore, the information that the facility reported to NHSN should not be referenced until the concordance check.

Look carefully for systematic reporting errors or misconceptions that could impact reporting beyond the medical records that are reviewed. If systematic errors are made, the facility should be asked to re-review and correct all numerators or denominators, not just those reviewed by auditors. These errors should be re-assessed during the next audit to assess improvement. Document all reporting errors that were identified.

Concordance Check

Once the review of patient charts is complete, conduct a concordance check to determine which events identified by the evaluators match with dialysis events the facility reported to NHSN. If any determinations are discordant, determine whether evaluators or reporters missed any documented information that would affect the correct result. Undocumented information cannot be considered. Use the NHSN [Dialysis Event Protocol](#) as the gold standard for making determinations of what is reportable. For difficult cases, seek additional input from CDC.

Once all pre-selected patient charts have been reviewed, briefly summarize the findings, with a focus on any common or repetitive errors.

Facility Debrief

Debrief the Facility Manager and any staff involved in NHSN of the findings. This provides an opportunity to discuss your findings in general terms, address any outstanding questions, commend staff for excellent processes and/or progress, and suggest improvements. It may also be necessary to develop a process improvement plan if serious deficiencies are found. Leave a copy of expected changes to NHSN data with the Facility Manager, and agree to a deadline for changes to be made. Thank the Facility Manager and staff for their participation.

3) Post-Site Visit

Facility Follow-up

Compile your evaluation findings using Template Letter 3 (Appendix 2c), and send the findings to the Facility Manager, thanking them and documenting results, necessary corrections, and recommendations. When appropriate, identify systematic strengths as well as problems with surveillance, data collection, and reporting, and potential underlying reasons. Identify resource and support issues that should be addressed.

If you have instructed the facility to change data in NHSN or to re-review information due to systematic errors, follow-up with the facility and assure corrections are made by the agreed upon deadline.

Aggregate, Summarize and Disseminate Findings

Following the completion of all facility site visits, data from the data quality evaluation should be aggregated and summarized in a written report. Contact CDC at nhsn@cdc.gov if you would like to discuss how to aggregate and summarize your data or write up your findings. Identify opportunities to share your findings with key stakeholders; this should include CDC and all of the participating facilities.

Data collected through the course of the evaluation will be used to inform future CDC data quality improvement efforts, including the development of:

- Training to address common reporting errors
- Frequently Asked Questions
- Updates to this document