

# National Healthcare Safety Network (NHSN)

## Reporting for Inpatient Acute Care Hospitals

In a time when clinical data are being used for research, development of care guidelines, identification of trends, and reimbursement, the quality of data is vitally important. Data quality refers to the accuracy, completeness, validity, and consistency of the information collected and entered into the database. To ensure data quality, you must develop and follow a framework of procedures and processes. Use this guide as a quick reference resource to help improve the quality of your NHSN data. For some hospital types, data reporting to NHSN may not be a regulatory requirement, however, there are many benefits to utilizing NHSN as a means for quality improvement and decision making in your facility. Reporting of healthcare associated infection data to NHSN has many benefits such as benchmarking and setting improvement targets because your facility's data can be compared to similar hospitals and units across the country. As data reporting becomes more robust among under represented facility types throughout the country, these comparisons gain power and reliability, giving you better data and information to support critical decision making in your facility. If you are not currently reporting HAI data to NHSN, please consider this a standard infection prevention practice to be included in your facility's infection prevention plan.

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## Data Quality Basics

**Standardized Definitions:** The Centers for Disease Control and Prevention (CDC) provides standardized definitions for each of the healthcare-associated infection (HAI) elements. It is imperative that you, and all staff members involved with the data collection process, are familiar with the definitions and adhere to them. Additionally, perform a periodic review of these definitions to ensure that you are compliant and up to date with any changes for all HAI modules.

**Interrater Reliability:** This is defined as the degree of agreement among two or more persons independently abstracting data elements from the same chart. Typically, interrater reliability should be assessed on approximately 10 percent of charts abstracted per quarter.

**Accuracy:** Ensure that abstracted data align with standardized definitions and specifications. This is measured by interrater reliability.

- Interpretation errors—definitions are not applied accurately.
- Documentation errors—clinical data does not correlate with documentation in the chart.
- Coding error—clinical data do not match coding data.

**Completeness:** Each month and prior to data deadlines, run reports to ensure that data are complete. To have complete data means that no records are incomplete and NHSN alerts are completed; and every patient, procedure, and event have been entered into the database. Develop an internal, facility-specific process to track all cases qualifying for HAI public reporting. Cross-reference what has been coded, collected by the individual care plan, and entered into NHSN.

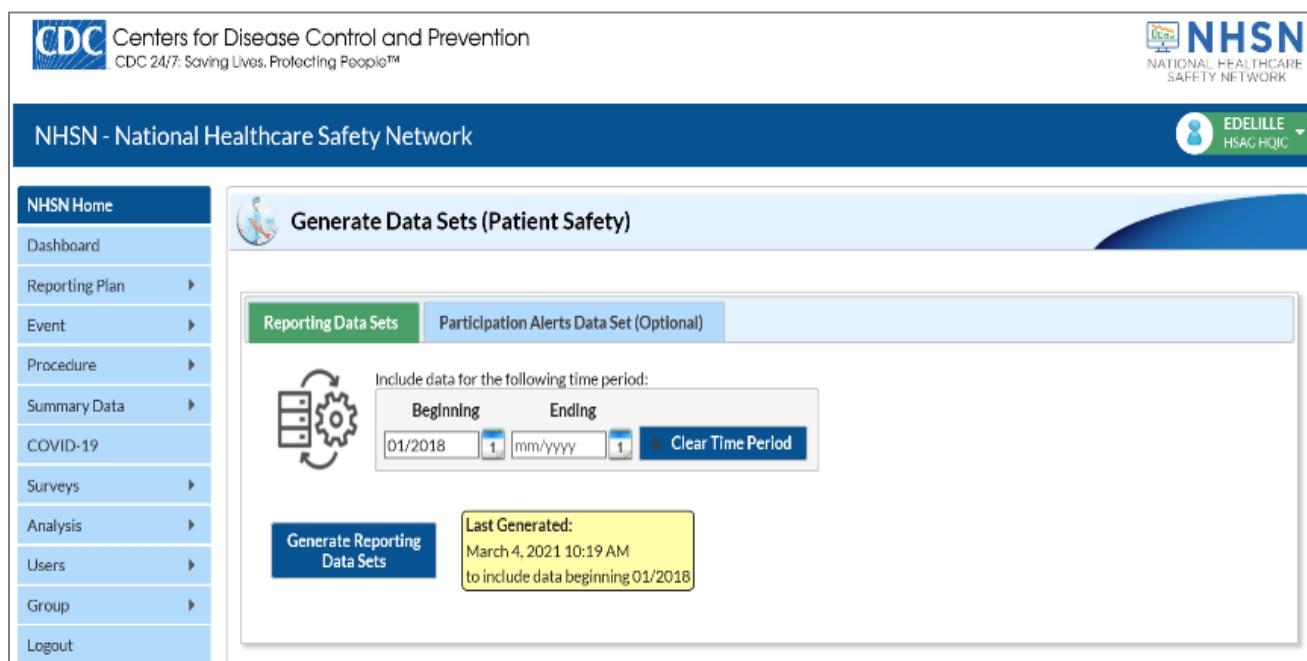
## Quality Tips

### Review your reports with enough time to make necessary adjustments prior to NHSN data submission deadlines.

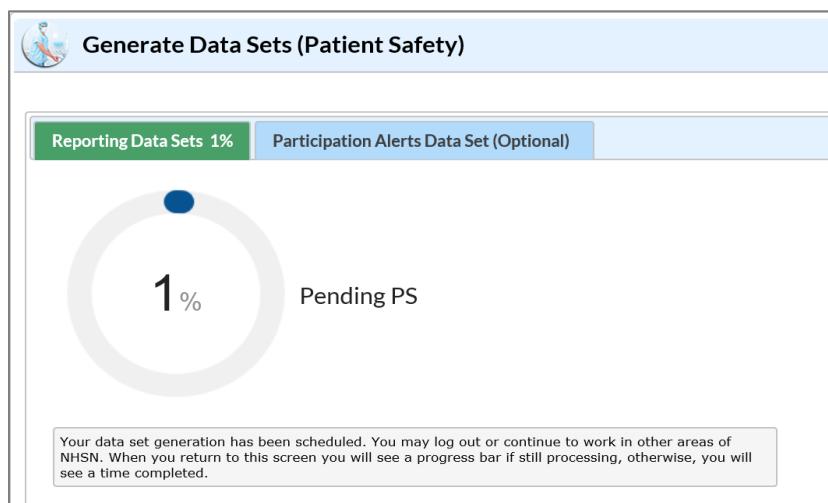
Print out the HAI checklist (on pages 4–6) and keep it handy for monthly reporting. Validation reports should be run monthly, after data entry is complete, and a couple of weeks before the quarterly data submission deadlines. Planning around these timelines provides you the opportunity to identify issues and make corrections before NHSN takes the “final snapshot” of the data for CMS. Note: Failure to enter accurate data in a timely manner may result in annual payment update failure and lead to decreased reimbursement.

### Always generate a new dataset before running reports.

\*File Path: Analysis→Generate Data Sets→Generate New



The screenshot shows the NHSN interface. At the top, there are logos for CDC and NHSN. The main title is "NHSN - National Healthcare Safety Network". On the left, a sidebar menu includes "NHSN Home", "Dashboard", "Reporting Plan", "Event", "Procedure", "Summary Data", "COVID-19", "Surveys", "Analysis", "Users", "Group", and "Logout". The main content area is titled "Generate Data Sets (Patient Safety)". It has two tabs: "Reporting Data Sets" (selected) and "Participation Alerts Data Set (Optional)". Below the tabs, there is a section to "Include data for the following time period:" with "Beginning" set to "01/2018" and "Ending" set to "1 mm/yyyy". A "Clear Time Period" button is also present. To the right of this is a "Generate Reporting Data Sets" button and a message box stating "Last Generated: March 4, 2021 10:19 AM to include data beginning 01/2018".

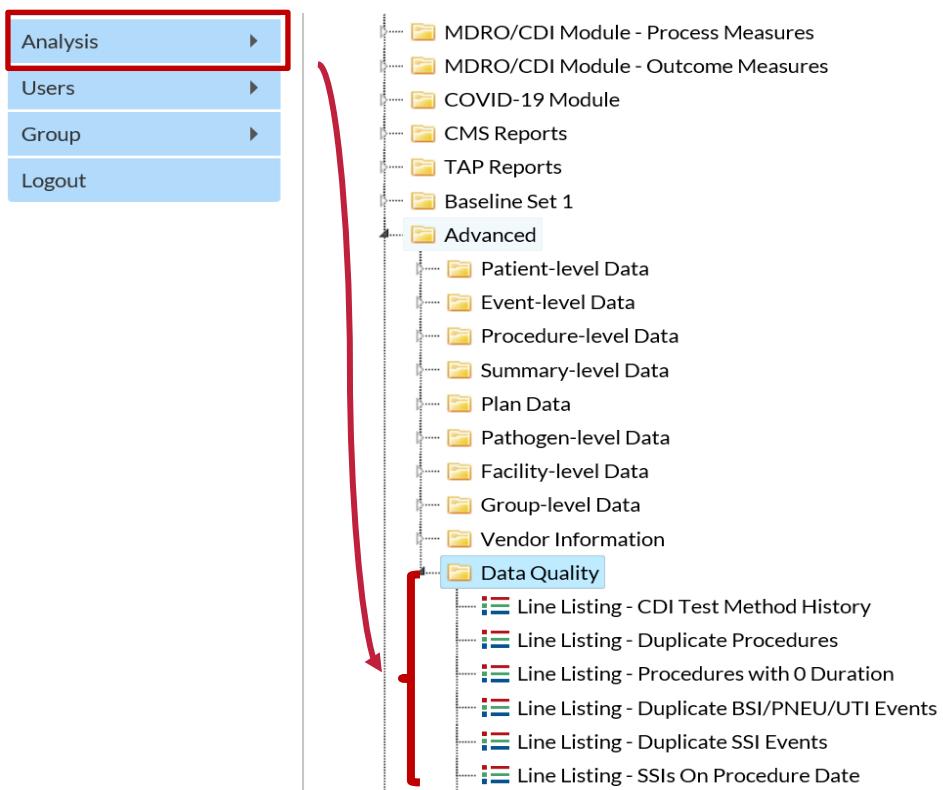


The screenshot shows the "Generate Data Sets (Patient Safety)" page again. The "Reporting Data Sets 1%" tab is selected. A large circular progress bar is at 1%, with the text "Pending PS" next to it. A message box at the bottom states: "Your data set generation has been scheduled. You may log out or continue to work in other areas of NHSN. When you return to this screen you will see a progress bar if still processing, otherwise, you will see a time completed."

## Download troubleshooting reports on the NHSN site.

Log in to your NHSN Secure Access Management Services (SAMS) database and access the NHSN data quality troubleshooting reports at <http://www.cdc.gov/nhsn>. Locate NHSN Data Quality Reports to assist with troubleshooting data quality issues:

\*File Path: Analysis→Reports→Advanced→Data Quality



## CMS HAI Data Quality Checklist

Complete the following review steps several weeks prior to the quarterly CMS reporting deadlines. For reporting deadlines, visit: <https://www.cdc.gov/nhsn/pdfs/cms/cms-reporting-requirements.pdf>

**Check the monthly reporting plan.**

Although most hospitals copy the data reporting plan from month to month, it is important to closely review what is included. Visit: <https://www.cdc.gov/nhsn/pdfs/training/general/PS-Data-Entry.pdf>

- Mandated reporting units with a complete list and guidance available at:  
<https://www.cdc.gov/nhsn/pdfs/cms/cms-reporting-requirements.pdf>
- Facility-wide inpatient lab ID MDRO and CDI events with guidance available at:  
<https://www.cdc.gov/nhsn/pdfs/training/general/PS-Data-Entry.pdf>

**Important:** CDC NHSN will only submit data to CMS for measures included in the monthly reporting plan.

**Enter and review the summary data.**

Verify that all denominator data are included:

- Total Patient Days
- Total Patient Admissions
- ED Encounters
- Central Line Days
- Urinary Catheter Days
- MDRO (MRSA) Days and CDI Days

**Important:** High errors with MDRO denominator entry! Visit:

<https://www.cdc.gov/nhsn/pdfs/cms/acute-care-mrsa-cdi-labiddenominator-reporting.pdf>

(Include summary data for all adult and pediatric units per the CMS requirement).

**Validate number of SSI cases** (denominator) for hysterectomy and colon surgeries.

\*File Path: Analysis→Reports→Procedure Associated (PA) Module→SSI→Line Listing—All SSI Events.  
This can be easily accomplished by running a line list.

**Enter “No Infections”/“No Events” properly for CLABSI, CAUTI, and MDRO (MRSA/CDI).**

If your facility did not have infections for the month, you must select “Report No Events” on the Summary page. Failure to do so will result in those data not being submitted to CMS. Visit:

- <https://www.cdc.gov/nhsn/PDFs/CMS/how-to-report-No-Events-CLAB-CAU.pdf>
- <https://www.cdc.gov/nhsn/pdfs/cms/how-to-set-up-and-report-mrsa-cdi.pdf>

**Report “No Procedures.”**

If your facility did not have any SSI colon or SSI hysterectomy procedures for the month, you must report “No Procedures Performed” on the “Missing Procedures” tab on the “Alerts Screen.” Visit:

<https://www.cdc.gov/nhsn/PDFs/CMS/How-to-Report-No-Events-SSI.pdf>

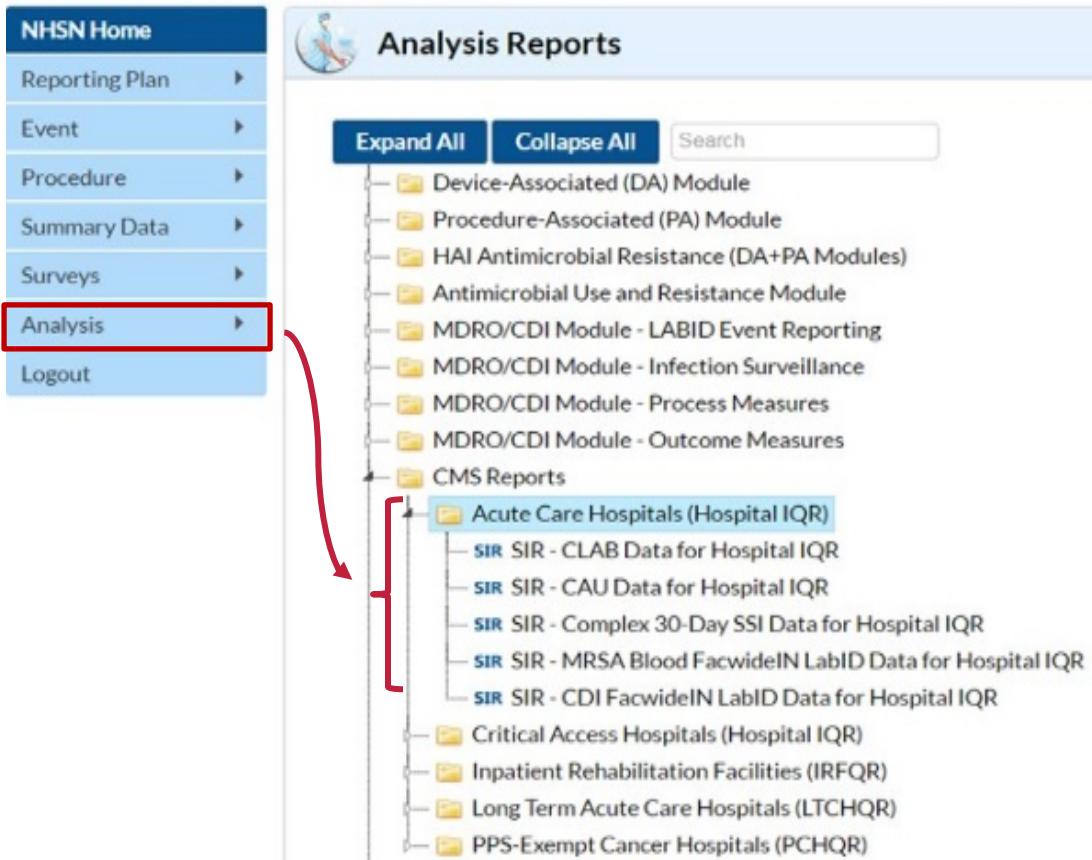
**Enter “No Infections”/“No Events” for SSI properly.**

If your facility did not have infections for the month, you must report “Report No Events” on the “Missing PA Events” tab on the on the “Alerts Screen.” Failure to do so result in those data not being submitted to CMS. Visit: <https://www.cdc.gov/nhsn/PDFs/CMS/How-to-Report-No-Events-SSI.pdf>

Use the following reports to validate data quality for CMS IPPS NHSN submissions.

**CMS Analysis Reports in NHSN.**

\*File Path: Analysis→Reports→CMS Reports→Acute Care Hospitals



The screenshot shows the NHSN Analysis Reports interface. On the left, a sidebar menu includes 'NHSN Home', 'Reporting Plan', 'Event', 'Procedure', 'Summary Data', 'Surveys', 'Analysis' (which is highlighted with a red box), and 'Logout'. A red arrow points from the 'Analysis' box to the main content area. The main content area has a header 'Analysis Reports' with 'Expand All', 'Collapse All', and 'Search' buttons. It lists several modules: 'Device-Associated (DA) Module', 'Procedure-Associated (PA) Module', 'HAI Antimicrobial Resistance (DA+PA Modules)', 'Antimicrobial Use and Resistance Module', 'MDRO/CDI Module - LABID Event Reporting', 'MDRO/CDI Module - Infection Surveillance', 'MDRO/CDI Module - Process Measures', 'MDRO/CDI Module - Outcome Measures', and 'CMS Reports'. Under 'CMS Reports', there is a blue-highlighted folder 'Acute Care Hospitals (Hospital IQR)' containing five SIR reports: 'SIR SIR - CLAB Data for Hospital IQR', 'SIR SIR - CAU Data for Hospital IQR', 'SIR SIR - Complex 30-Day SSI Data for Hospital IQR', 'SIR SIR - MRSA Blood FacwideIN LabID Data for Hospital IQR', and 'SIR SIR - CDI FacwideIN LabID Data for Hospital IQR'. Below this are three more categories: 'Critical Access Hospitals (Hospital IQR)', 'Inpatient Rehabilitation Facilities (IRFQR)', and 'Long Term Acute Care Hospitals (LTCHQR)'. Another red arrow points from the 'Acute Care Hospitals (Hospital IQR)' folder to the list of SIR reports.

- SIR-CLAB data for Hospital IQR  
<https://www.cdc.gov/nhsn/PDFs/CMS/CMS-IPPS-CLABSI-SIR.pdf>
- SIR-CAUTI data for Hospital IQR  
<https://www.cdc.gov/nhsn/PDFs/CMS/CMS-IPPS-CAUTI-SIR.pdf>
- SIR-CDI FacwideIN LabID data for Hospital IQR  
<https://www.cdc.gov/nhsn/PDFs/CMS/CMS-IPPS-CDI-SIR.pdf>
- SIR-MRSA Blood FacwideIN LabID data for Hospital IQR <https://www.cdc.gov/nhsn/PDFs/CMS/CMS-IPPS-MRSA-SIR.pdf>
- SIR-Complex 30-day SSI data for Hospital IQR  
<https://www.cdc.gov/nhsn/pdfs/cms/ssi/cms-ipps-ssi-sir.pdf>

**Important:** These reports show exactly what data will be submitted to CMS by NHSN and should be checked against facility-specific data to validate accuracy of information sent to CMS.

- Select “**Modify Report**” to open the Report Variable Screen→Select "Time Period" in the "Date Variable" box, use the dropdown box to select Summary YQ, enter beginning/ending quarter

Title/Format	Time Period	Filters	Display Options												
<b>Time Period:</b> <table border="1"> <tr> <td>Date Variable</td> <td>Beginning</td> <td>Ending</td> <td><input type="button" value="Clear Time Period"/></td> </tr> <tr> <td>summaryYQ</td> <td>2020Q4</td> <td>2021Q1</td> <td><input type="button" value="X"/></td> </tr> <tr> <td colspan="4"><input type="checkbox"/> Enter Date variable/Time period at the time you click the Run button</td> </tr> </table>				Date Variable	Beginning	Ending	<input type="button" value="Clear Time Period"/>	summaryYQ	2020Q4	2021Q1	<input type="button" value="X"/>	<input type="checkbox"/> Enter Date variable/Time period at the time you click the Run button			
Date Variable	Beginning	Ending	<input type="button" value="Clear Time Period"/>												
summaryYQ	2020Q4	2021Q1	<input type="button" value="X"/>												
<input type="checkbox"/> Enter Date variable/Time period at the time you click the Run button															

- Select "Display Options" in the “Group by” box, use the dropdown box to select “summaryYM”—Run Report

**Modify "SIR - CLAB Data for Hospital IQR"**

Show descriptive variable names ([Print List](#))

Title/Format	Time Period	Filters	Display Options
<b>SIR Options:</b> Group by: <b>summaryYM</b>			

### Additional Recommended Analysis Reports

Analysis→Reports→Advanced→Event-level Data

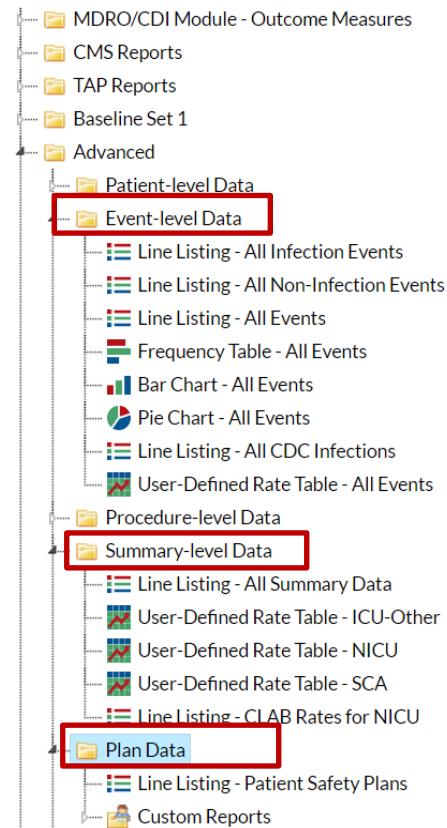
- Line Listing—All Infection Events

Analysis→Reports→Advanced→Summary-level Data

- Line Listing—All Summary Data

Analysis→Reports→Advanced→Plan Data→

- Line Listing—Patient Safety Plans



## Glossary of Acronyms

Abbreviation	Description
CAUTI	catheter-associated urinary tract infection
CDC	Centers for Disease Control and Prevention
CDI	Clostridioides difficile infection
CLABSI	central line-associated bloodstream infection
CMS	The Centers for Medicare & Medicaid Services
ICP	infection control practitioner
ED	emergency department
IPPS	Inpatient Prospective Payment System
IQR	Inpatient Quality Reporting program
MDRO	Multi-drug resistant organisms
MRSA	Methicillin-resistant Staphylococcus aureus
NHSN	National Healthcare Safety Network
OPPS	Outpatient Prospective Payment System
PA	Procedure Associated
OQR	Outpatient Quality Reporting
SIR	standardized infection ratio
SSI	surgical site infection

## Data Reporting Resources

- QualityNet HAI Webpage  
<https://www.qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier2&cid=1228760487021>
- QualityNet Specifications Manual  
<https://www.qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetHomepage&cid=1120143435363>
- CDC NHSN Tracking Infections in Acute Care Hospitals/Facilities <https://www.cdc.gov/nhsn/acute-care-hospital/index.html>
- CMS guidance for NHSN Users <https://www.cdc.gov/nhsn/cms/index.html>
- Operational Guidance for Acute Care Hospitals to Report Central Line-Associated Bloodstream Infection (CLABSI) Data to CDC's NHSN for the Purpose of Fulfilling CMS's Hospital Inpatient Quality Reporting (IQR) Program Requirements <https://www.cdc.gov/nhsn/pdfs/cms/Final-ACH-CLABSI-Guidance-508.pdf>
- Operational Guidance for Acute Care Hospitals to Report Catheter Associated Urinary Tract Infection (CAUTI) Data to CDC's NHSN for the Purpose of Fulfilling CMS's Hospital Inpatient Quality Reporting (IQR) Program Requirements <https://www.cdc.gov/nhsn/pdfs/cms/Final-ACH-CAUTI-Guidance-508.pdf>
- Operational Guidance for Acute Care Hospitals to Report Facility-Wide Inpatient (FacWideIN) *Clostridioides difficile* Infection (CDI) Laboratory-Identified (LabID) Event Data to CDC's NHSN for the Purpose of Fulfilling CMS's Hospital Inpatient Quality Reporting (IQR) Requirements <https://www.cdc.gov/nhsn/pdfs/cms/final-ach-cdi-guidance.pdf>
- Operational Guidance for Acute Care Hospitals to Report Facility-Wide Inpatient (FacWideIN) Methicillin-Resistant *Staphylococcus aureus* (MRSA) Blood Specimen (Bacteremia) Laboratory-Identified (LabID) Event Data to CDC's NHSN for the Purpose of Fulfilling CMS's Hospital Inpatient Quality Reporting (IQR) Requirements <https://www.cdc.gov/nhsn/pdfs/cms/FINAL-ACH-MRSA-Bacteremia-Guidance.pdf>
- Operational Guidance for Reporting Surgical Site Infection (SSI) Data to CDC's NHSN for the Purpose of Fulfilling CMS's Hospital Inpatient Quality Reporting (IQR) Program Requirements <https://www.cdc.gov/nhsn/pdfs/cms/ssi/Final-ACH-SSI-Guidance.pdf>

## References

Centers for Disease Control and Prevention (CDC) National Healthcare Safety Network (NHSN). Tracking infections in acute care hospitals/facilities. Available at: <https://www.cdc.gov/nhsn/acute-care-hospital/index.html> Accessed on: January 25, 2022.

CDC NHSN. Operational guidance for acute care hospitals. Available at: <https://www.cdc.gov/nhsn/cms/ach.html>. Accessed on: January 25, 2022.

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