



Troubleshooting the LabID Event SIR

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NHSN Acute Care Analytics Team
September 2024

Objectives

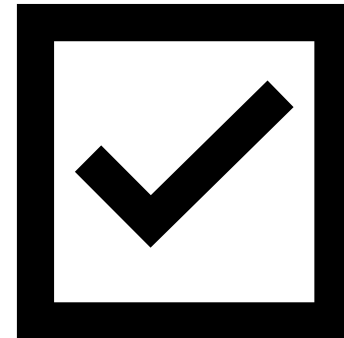
- **At the end of the presentation, participants will be able to**
 - Identify best practices before running analysis reports
 - Define SIR exclusions
 - Locate the risk adjustment factors used in the LabID SIRs (Acute Care Hospitals)
 - Understand which LabID events contribute to the SIR numerator

Prior to running the SIR report

Monthly reporting plans (MRPs)

Alerts dashboard


Dataset generation



MRP Reminders

- Only in-plan data receives NHSN alerts on the homepage
- Only in-plan data is included in CMS Reports

Multi-Drug Resistant Organism Module

| Locations | | Specific Organism Type | | | | | | |
|--|---|------------------------|--------------------------|--------------------------|-------------------------------------|-----------------------------------|--------------------------|--------------------------|
|  | FACWIDEIN - Facility-wide Inpatient (FacWIDEIn) ▼ | CDIF - C. difficile ▼ | | | | | | |
| Process and Outcome Measures | | | | | | | | |
| Infection Surveillance | AST-Timing | AST-Eligible | Incidence | Prevalence | Lab ID Event All Specimens | Lab ID Event Blood Specimens Only | HH | GG |
| <input type="checkbox"/> | ▼ | ▼ | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Read more about MRPs: https://www.cdc.gov/nhsn/pdfs/pscmanual/3psc_monthlyreportingplancurrent.pdf

MRP: Common DQ Issues for LabID

- Required locations (FacWideIN, ED, OBS, CMS IRF*) for LabID event reporting are missing from the MRP
- MRPs are not complete for all 3 months in the quarter
- **Resolution:** Users can run an MRP Line Listing Report or manually check each month to ensure completeness^.

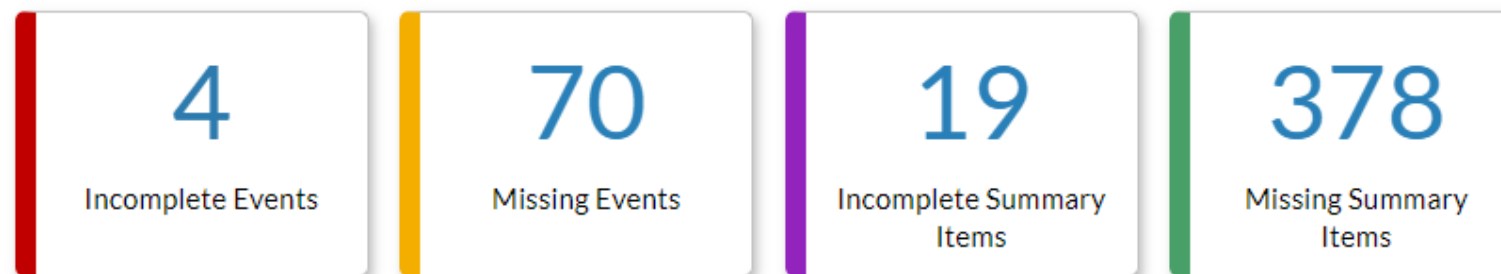
*Current requirement is only applicable to CDI LabID for IRFQR: <https://www.cdc.gov/nhsn/cms/index.html>

^How to set up LabID Reporting: <https://www.cdc.gov/nhsn/pdfs/cms/how-to-set-up-and-report-mrsa-cdi.pdf>

Alerts Dashboard Reminders

- Alerts are created for in-plan data only
- In-plan data will be included in SIRs only if the month is considered “complete” by reporting all required data and resolving most applicable alerts
- Alerts are interactive icons that you can click on to resolve

ALERTS



Read more about resolving alerts: <https://www.cdc.gov/nhsn/pdfs/gen-support/nhsn-alerts.pdf>

Alerts: Common DQ Issues for LabID

- Incomplete or Missing Events
- Incomplete or Missing Summary Data
- Confirm CDI Test Type*

| | | | | | | | | | |
|-------------------|----------------|-------------------------|-----------------------------|-----------------------|--------------------|-------------------------------------|--------------------------------|-----------------------|-----------------|
| Incomplete Events | Missing Events | Incomplete Summary Data | Missing Summary Data | Incomplete Procedures | Missing Procedures | Missing Procedure-associated Events | Unusual Susceptibility Profile | Confirm CDI Test Type | Acknowledge CCN |
|-------------------|----------------|-------------------------|-----------------------------|-----------------------|--------------------|-------------------------------------|--------------------------------|-----------------------|-----------------|

In-plan locations with no associated summary data.

| Page 54 of 54 | | | | | | 10 | View 531 - 531 of 531 |
|---------------|----------|----------------|------------|---|------------|----|-----------------------|
| Module | Location | CDC Location | Month/Year | Alert Type | Event Type | | |
| MDRO | OBS | OUT:ACUTE:WARD | 03/2024 | No summary form Add Summary | | | |
| Page 54 of 54 | | | | | | 10 | View 531 - 531 of 531 |

*SIR will still display in the report even if there is an unresolved Confirm CDI Test Type alert, assuming all other requirements are met

Read more about resolving alerts: <https://www.cdc.gov/nhsn/pdfs/gen-support/nhsn-alerts.pdf>

Dataset Generation

- Verify “Beginning” and “Ending” time period
- Verify “Last Generated” timestamp
- Note: the dataset generation process will include all LabID events (necessary for accurate event categorization)

Generate Data Sets (Patient Safety)

Reporting Data Sets

Include data for the following time period:

Beginning Ending

01/2021 1 mm/yyyy 1 Clear Time Period

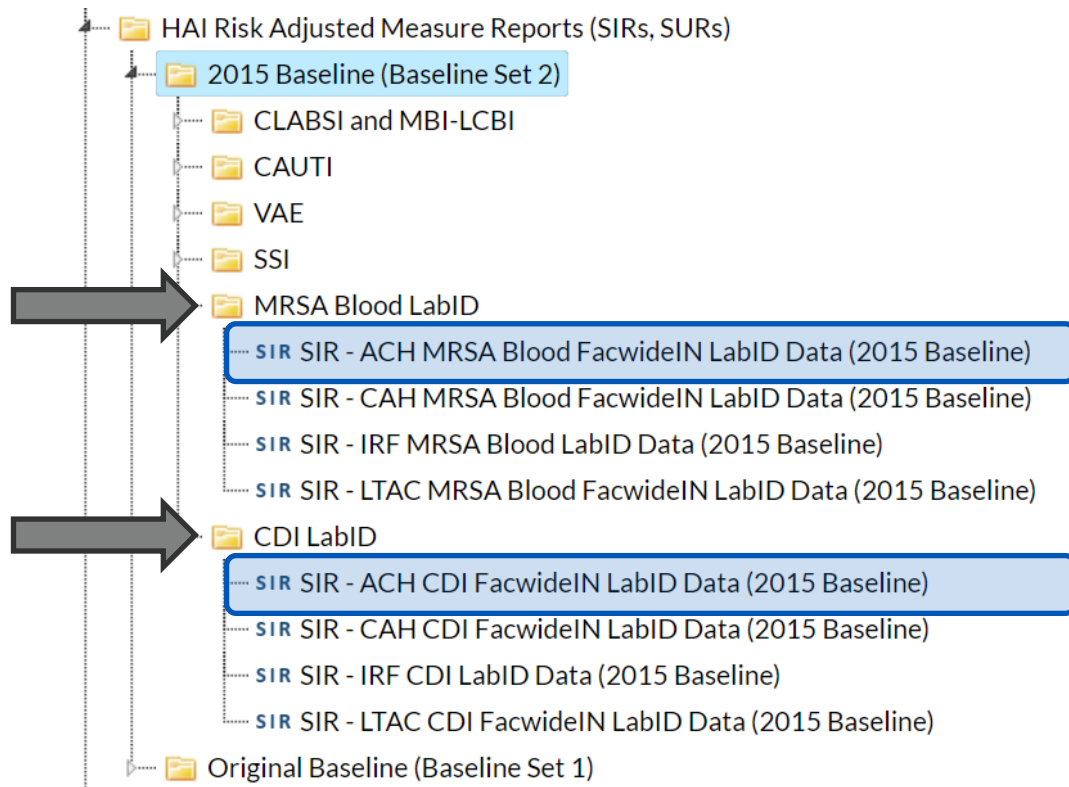
Generate Reporting Data Sets

Last Generated: February 28, 2023 8:57 AM to include data beginning 01/2021

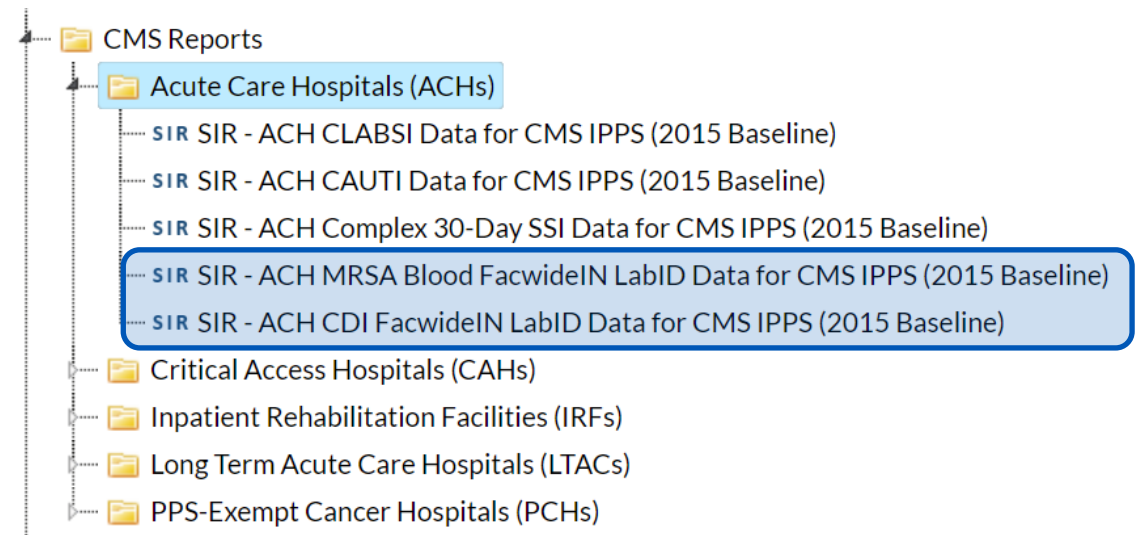
Analysis Reports

SIR Reports (Non-CMS and CMS)

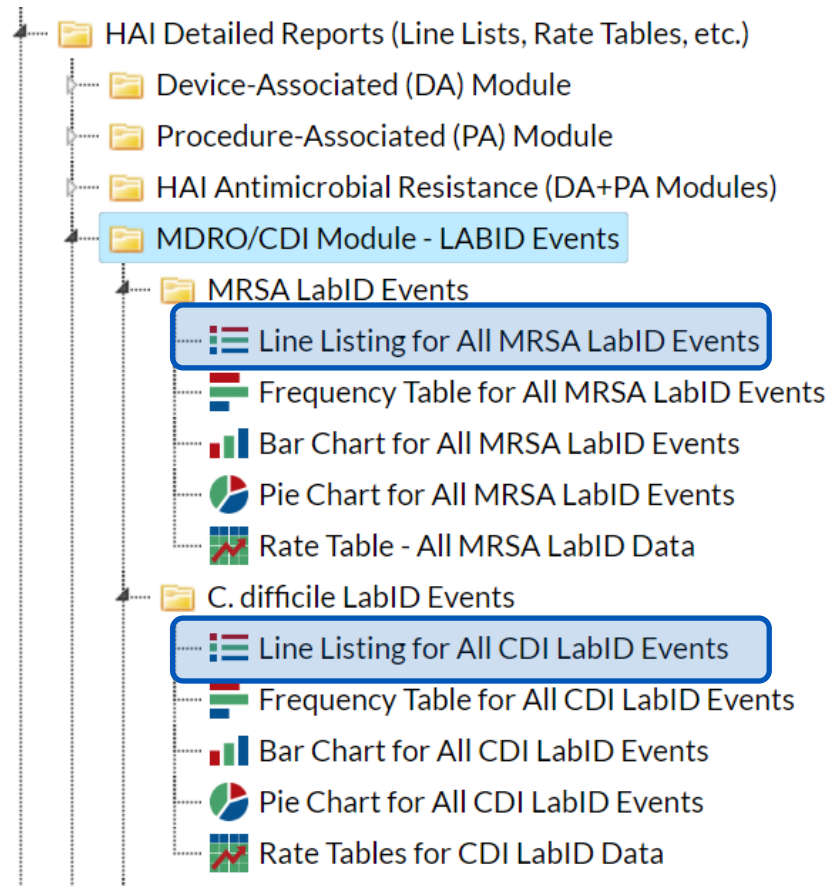
- SIR reports under HAI Risk Adjusted Measure Reports folder include all data



- SIR reports under CMS Reports folder only include in-plan data



Line Listings



- Provides event level details
- Contains all LabID events reported for the organism
- Use to review NHSN event categorizations
- Identify which events are counted in the SIR
- Easy to modify and customize

SIR Report

CDI LabID Example

Example CDI SIR Report: 2022 Q1

SIR for CDI FacwideIN LabID in Acute Care Hospital (2015 baseline)

As of: February 28, 2023 at 7:14 PM

Date Range: BS2_LABID_RATE\$CDIF summaryYr After and Including 2015

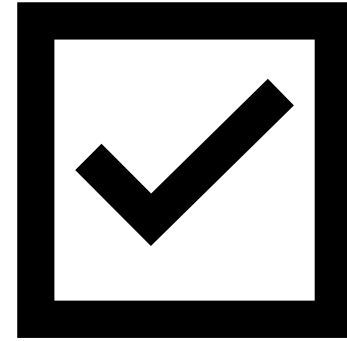
orgID=10401 medType=M

| orgID | ccn | location | summaryYQ | months | CDIF_facIncHOCCount | numPred | numpatdays | SIR | SIR_pval | sir95ci | SIR_pctl |
|-------|--------|-----------|-----------|--------|---------------------|---------|------------|-------|----------|--------------|----------|
| 10401 | 999999 | FACWIDEIN | 2022Q1 | 3 | 1 | 1.227 | 1341 | 0.815 | 0.9460 | 0.041, 4.019 | 83 |

- **Months: 3**
- **SIR numerator (CDIF_facIncHOCCount): 1**
- **SIR denominator (numPred): 1.227**
- **Total CDI patient days for the quarter (numpatdays): 1,341**
- **SIR: $1 / 1.227 = 0.815$**

Fictitious data used for illustrative purposes only.

After running the SIR report



- Consider SIR exclusions
- Review risk adjustment factors
- Check line listing events report and indicator variables
- Visit the [SIR Troubleshooting](#) document if needed

[Troubleshooting the MRSA Bacteremia and CDI LabID Event SIR](#)

We suggest that you review the [General Tips for NHSN Analysis](#) document before reviewing this troubleshooting guide any further. **This guide assumes recent dataset generation and no 'Alerts' on the home screen.**

SIR Exclusions: What if SIR is missing?

- **SIR is not calculated if number of predicted events (SIR denominator; numpred) < 1**
 - NHSN does not calculate SIRs and accompanying statistics when the number of predicted events is less than 1
 - SIR, p-value, and 95% CI would be blank in the table
 - Statistically imprecise SIRs, which typically have extreme values
- **Most LabID SIRs are calculated at the quarter-level or higher**
 - CDI exclusions: missing CDI test method for the quarter, outlier inpatient community-onset prevalence rate

Troubleshooting the SIR Denominator

CDI LabID Example (Acute Care Hospital)

How is the predicted # of CDI events calculated?

- **CDI Example: 7 different risk factors & total patient days**
- **Review data table beneath the SIR report**
 - Inaccurate risk adjustment factors will lead to inaccurate # of predicted events
 - Review this table when you run your SIR reports

Risk Adjustment Factors for FacwideIN CDI SIR

As of: February 28, 2023 at 7:14 PM

Date Range: BS2_LABID_RATESCDIF summaryYr After and Including 2015

| orgID | ccn | summaryYQ | CDI_COprevRate | cdiTestType | numICUBeds | facType | numBeds | CDIF_EDOBSindicator | medType | numpatdays |
|-------|--------|-----------|----------------|-------------|------------|----------|---------|---------------------|---------|------------|
| 10401 | 999999 | 2022Q1 | 0.662 | NAAT | 75 | HOSP-GEN | 225 | 1 | M | 1341 |

Fictitious data used for illustrative purposes only.

Common DQ Question: CDI Test Type

Risk Adjustment Factors for FacwideIN CDI SIR

As of: February 28, 2023 at 7:14 PM

Date Range: BS2_LABID_RATE\$CDIF summaryYr After and Including 2015

orgID=10401 medType=M

| orgID | ccn | summaryYQ | CDI_COprevRate | cdiTestType | numICUBeds | facType | numBeds | CDIF_EDOBSindicator | medType | numpatdays |
|-------|---------|-----------|----------------|-------------|------------|----------|---------|---------------------|---------|------------|
| 10401 | 9999999 | 2022Q1 | 0.662 | NAAT | 75 | HOSP-GEN | 225 | 1 | M | 1341 |

- **CDI test method is collected on the FacWideIN denominator form on the 3rd month of the quarter and categorized into CDI test type for risk adjustment* (cdiTestType)**
- **This is NOT the CDI test method from the annual hospital survey**

*Extra slide at the end shows the CDI test categorizations for the 2015 baseline models

Fictitious data used for illustrative purposes only.

Common DQ Question: Missing CDI Test Type

CDI Data - Months Excluded from SIR Due to Missing CDI Test Type

As of: September 13, 2024 at 1:10 PM UTC

Date Range: BS2_LABID_RATESCDIF summaryYr After and Including 2015

orgID=10315 medType=G

| orgID | ccn | location | summaryYM | CDIF_facIncHOCcount | numPatDays | numAdms | cdiTestType |
|-------|-----|-----------|-----------|---------------------|------------|---------|-------------|
| 10315 | | FACWIDEIN | 2023M07 | 0 | 500 | 90 | |
| 10315 | | FACWIDEIN | 2023M08 | 0 | 505 | 95 | |

1. This table displays months that are excluded from the SIR report. These months will be included in the SIR once reporting for the entire quarter has been completed and CDI test type has been reported.

Data contained in this report were last generated on July 16, 2024 at 5:53 PM UTC to include data beginning January 2023 .

- **If a row that you were expecting to show up in the SIR table is missing, scroll down to the end of the CDI LabID SIR report to see if there is an additional table for “Months Excluded from SIR Due to Missing CDI Test Type”**

Fictitious data used for illustrative purposes only.

Troubleshooting the SIR Numerator

CDI LabID Example (Acute Care Hospital)

How do I know which LabID Events are Counted in the SIR Numerator?

- **C. difficile (CDI) FacWideIN:**
 - Inpatient units only, *excluding* Rehab & Psych units with unique CCN
 - Healthcare Facility-Onset (HO)
 - Incident
- **MRSA Blood FacWideIN:**
 - Blood specimens from inpatient units, *excluding* Rehab & Psych units with unique CCN
 - Healthcare Facility-Onset (HO)
 - No positive MRSA bacteremia event in the previous 14 days in any location

CDI Line Listing Report- ACH, CAH, LTAC, HOSP-REHAB

| patID | eventID | spcOrgType | location | onset | cdiAssay | admitDate | locationAdmitDate | specimenDate | FWCDIF_facIncHOCCount | FWCDIF_admPrevCOCCount |
|-------|---------|------------|----------|-------|----------|------------|-------------------|--------------|-----------------------|------------------------|
| 2323 | 110902 | CDIF | ICU | CO | INCIDENT | 03/03/2022 | 03/03/2022 | 03/04/2022 | 0 | 1 |
| 3425 | 110903 | CDIF | MED | CO | INCIDENT | 03/07/2022 | 03/07/2022 | 03/08/2022 | 0 | 1 |
| 870 | 110900 | CDIF | ICU | HO | INCIDENT | 03/13/2022 | 03/13/2022 | 03/16/2022 | 1 | 0 |
| 8787 | 110901 | CDIF | MED | CO | INCIDENT | 03/30/2022 | 03/30/2022 | 03/30/2022 | 0 | 1 |

- **Indicator variables**

- **FWCDIF_facIncHOCCount**

- 1 = event is counted in the numerator of the CDI SIR

- **FWCDIF_admPrevCOCCount**

- 1 = event is counted in the numerator of the CDI inpatient CO prevalence rate

Additional Resources

- MRSA/CDI Troubleshooting guide: https://www.cdc.gov/nhsn/pdfs/ps-analysis-resources/mrsacdi_tips.pdf
- SIR guide: <https://www.cdc.gov/nhsn/pdfs/ps-analysis-resources/nhsn-sir-guide.pdf>
- CMS MRSA SIR report guide (ACH):
<https://www.cdc.gov/nhsn/pdfs/cms/cms-ipps-mrsa-sir.pdf>
- CMS CDI SIR report guide (ACH):
<https://www.cdc.gov/nhsn/pdfs/cms/cms-ipps-cdi-sir.pdf>

Extra Slides: CDI Test Type

NAAT-level risk adjustment:

- NAAT (nucleic acid amplification test, including PCR)
- GDH plus NAAT (2-step algorithm)
- GDH plus EIA for toxin, followed by NAAT for discrepant results

EIA-level risk adjustment:

- Enzyme immunoassay (EIA) for toxin
- GDH antigen plus EIA for toxin (2-step algorithm)
- NAAT plus EIA, if NAAT positive*

OTHER- level risk adjustment:

- Cell cytotoxicity neutralization assay
- Toxigenic culture (CDI culture followed by detection of toxins)
- "Other"

*Prior to 2018, the CDI test method of "NAAT plus EIA, if NAAT positive" was included in the NAAT-level risk adjustment category. Due to a 2018 NHSN protocol change, the CDI test method of "NAAT plus EIA, if NAAT positive" is now included in the EIA-level risk adjustment category for 2018 data and forward. More information is available in the December 2017 NHSN Newsletter.

Read more: https://www.cdc.gov/nhsn/pdfs/ps-analysis-resources/mrsacdi_tips.pdf

Extra Slides: ACH CDI model from SIR guide (2015 baseline)

Table 1. CDI in Acute Care Hospitals

| Parameter | Parameter Estimate | Standard Error | P-value |
|---|---------------------------|-----------------------|----------------|
| <i>Intercept</i> | -8.9463 | 0.0523 | <0.0001 |
| Inpatient community-onset prevalence rate* | 0.7339 | 0.0181 | <0.0001 |
| CDI test type [†] : EIA | -0.1579 | 0.0246 | <0.0001 |
| CDI test type [†] : NAAT | 0.1307 | 0.0219 | <0.0001 |
| CDI test type [†] : OTHER | REFERENT | - | - |
| Medical school affiliation [‡] : Major, graduate, or undergraduate | 0.0331 | 0.0111 | 0.0028 |
| Medical school affiliation [‡] : Non-teaching | REFERENT | - | - |
| Number of ICU beds [‡] : ≥ 43 | 0.7465 | 0.0412 | <0.0001 |
| Number of ICU beds [‡] : 20- 42 | 0.7145 | 0.0395 | <0.0001 |
| Number of ICU beds [‡] : 10-19 | 0.6261 | 0.0396 | <0.0001 |
| Number of ICU beds [‡] : 5-9 | 0.4394 | 0.0420 | <0.0001 |
| Number of ICU beds [‡] : 0-4 | REFERENT | - | - |
| Facility type: Oncology Hospital (<i>HOSP-ONC</i>) | 1.2420 | 0.0765 | <0.0001 |
| Facility type: General Acute Care Hospital (<i>HOSP-GEN</i>) | 0.3740 | 0.0342 | <0.0001 |
| Facility type: Other Specialty Hospital | REFERENT | - | - |
| Facility bed size [‡] | 0.0003 | 0.0000 | <0.0001 |
| Reporting from ED or 24-hour observation unit [^] : YES | 0.1119 | 0.0179 | <0.0001 |
| Reporting from ED or 24-hour observation unit [^] : NO | REFERENT | - | - |

Read more: <https://www.cdc.gov/nhsn/pdfs/ps-analysis-resources/nhsn-sir-guide.pdf>

Questions or Need Help?

- **Use subject line: “September DQ Webinar”**
- **NHSN-ServiceNow to submit questions to the NHSN Help Desk.**
- **Access new portal at <https://servicedesk.cdc.gov/nhsncsp>.**
- **If you do not have a SAMS login, or are unable to access ServiceNow, you can still email the NHSN Help Desk at nhsn@cdc.gov**

For more information, contact CDC
1-800-CDC-INFO (232-4636)
TTY: 1-888-232-6348 www.cdc.gov

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





Common LabID DQ Outreach: “Other” CDI Test Type

Katie Brousseau, MPH

NHSN Acute Care Analytics Team

NHSN Data Quality Webinar – September 2024

CDI Test Type

- Required field on FacWideIN and CMS-certified IRF unit MDRO and CDI monthly denominator forms entered for the 3rd month of each quarter (i.e., March, June, September, December)

General

Line 1: Setting: Inpatient Total Facility Patient Days *: Total Facility Admissions *:

Line 2: If your facility has a CMS-certified rehab unit (IRF) or CMS-certified psych unit (IPF), please subtract these counts from "Total Facility Patient Days" and "Total Facility Admissions" (Line 1).
If you do not have these units, enter the same values you entered on Line 1.
Counts= [Total Facility - (IRF + IPF)]

Patient Days *: Admissions *:

Line 3: If your facility has a CMS-certified IRF, CMS-certified IPF, NICU, or Well Baby Unit, please subtract those counts from "Total Facility Patient Days" and "Total Facility Admissions" (Line 1).
If you do not have these units, enter the same values you entered on Line 1.
Counts= [Total Facility - (IRF + IPF + NICU + Well Baby Unit)]

Patient Days *: Admissions *:

For this quarter, what is the primary testing method for *C. difficile* used most often by your facility's laboratory or the outside laboratory where your facility's testing is performed?
Note: PCR testing should be indicated by selecting NAAT *



CDI Test Type (cont.)

- Select test type from dropdown menu. Options include:
 - Enzyme immunoassay (EIA) for toxin
 - Cell cytotoxicity neutralization assay
 - Nucleic acid amplification test (NAAT) [includes PCR]
 - NAAT plus EIA, if NAAT positive (2-step algorithm)
 - Glutamate dehydrogenase (GDH) antigen plus EIA for toxin
 - GDH plus EIA for toxin, followed by NAAT for discrepant results
 - Toxigenic culture
 - Other (specify)
- Selecting incorrect CDI test type from the drop-down menu may cause inaccurate risk adjustment
- All 3 months of data entry must be complete before generating SIR for the quarter

Reporting “Other” CDI Test Type

- Use pre-populated drop-down options whenever possible
- Majority of facilities should **not** select “Other”
- When selecting “Other” in the drop-down menu, use text box to specify CDI test type
- Reminder: PCR = NAAT (Nucleic Acid Amplification Test)
- Consult with lab if needed!

For this quarter, what is the primary testing method for *C. difficile* used most often by your facility's laboratory or the outside laboratory where your facility's testing is performed?

Note: PCR testing should be indicated by selecting NAAT *

OTH - Other (specify)



Other (specify) *:

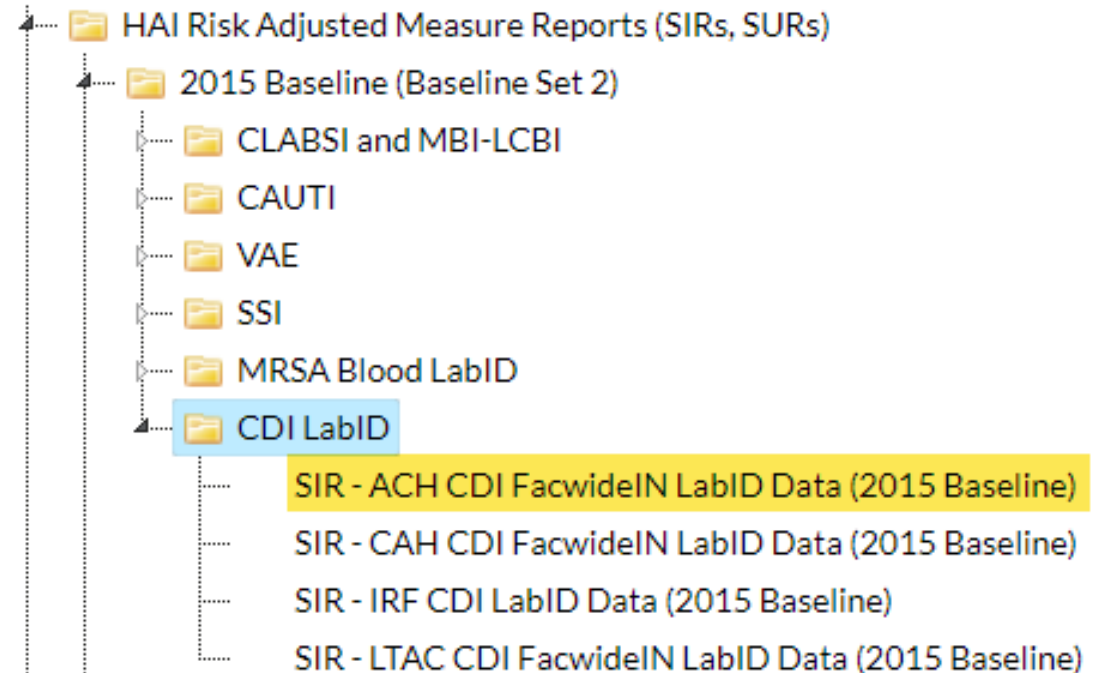


“Other” CDI Test Type Outreach

- NHSN sends email outreach to facilities who have selected “Other” CDI test type in advance of a CMS reporting deadline.
 - Subject line: “NHSN Data Quality Alert: CDI Test Type Other”
- Email will include suggested correction based on CDI test type free-text entry field, when possible.
- Please respond with your questions, or to confirm that your testing algorithm is not listed in the dropdown menu. We are here to help!

Review Facility's CDI Test Type

- Review the CDI test type category used in risk adjustment of a facility's SIR:
 - "HAI Risk Adjusted Measure Reports (SIRs, SURs)" > "2015 Baseline (Baseline Set 2)" > "CDI LabID"
 - Choose appropriate SIR report for your facility type



Review Facility's CDI Test Type (cont.)

- Scroll to table: “Risk Adjustment Factors for FacwideIN CDI SIR”
- Find CDI test type (“cdiTestType”) risk adjustment for each quarter

National Healthcare Safety Network Risk Adjustment Factors for FacwideIN CDI SIR

As of: September 9, 2024 at 3:02 PM UTC

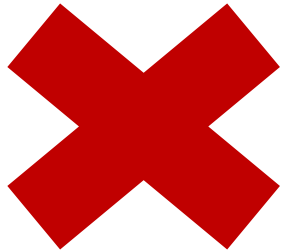
Date Range: BS2_LABID_RATE SCDIF summaryYr 2023 to 2023

orgID=15328 medType=M

| orgID | ccn | summaryYQ | CDI_COprevRate | cdiTestType | numICUBeds | facType | numBeds | CDIF_EDOBSindicator | medType | numpatdays |
|-------|-----|-----------|----------------|-------------|------------|----------|---------|---------------------|---------|------------|
| 15328 | | 2023Q1 | 0.000 | EIA | 0 | HOSP-GEN | 66 | 1 | M | 34615 |
| 15328 | | 2023Q2 | 0.000 | NAAT | 0 | HOSP-GEN | 66 | 1 | M | 34415 |
| 15328 | | 2023Q3 | 0.036 | NAAT | 0 | HOSP-GEN | 66 | 1 | M | 36425 |
| 15328 | | 2023Q4 | 0.000 | NAAT | 0 | HOSP-GEN | 66 | 1 | M | 37235 |

Fictitious data used for illustrative purposes only.

Correcting “Other” CDI Test Type



For this quarter, what is the primary testing method for *C. difficile* used most often by your facility's laboratory or the outside laboratory where your facility's testing is performed?

Note: PCR testing should be indicated by selecting NAAT *

OTH - Other (specify)

Other (specify) *: DNA Amplification/PCR

Facility's SIR will adjust for the incorrect CDI test type and will be inaccurate.

For this quarter, what is the primary testing method for *C. difficile* used most often by your facility's laboratory or the outside laboratory where your facility's testing is performed?

Note: PCR testing should be indicated by selecting NAAT *

NAAT - Nucleic acid amplification test (NAAT)

Facility's SIR will account for the appropriate CDI test type and will be risk-adjusted accordingly.

Questions or Need Help?

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Demo of common Pediatric Ventilator-Associated Event (PedVAE) Data Quality (DQ) issues

Emma X. Yu, PhD, MHS, MPH

NHSN Acute Care Analytics Team (ACAT)

September 2024 – DQ Webinar



Overview

- Common PedVAE data quality issue #1
- Common PedVAE data quality issue #2
- Other data quality issues regarding event dates

Disclaimer: The screenshots and data presented during this presentation are for illustrative purposes only and do not represent an actual NHSN facility or NHSN data.

What is a Pediatric Ventilator-associated Event (PedVAE)?

- A PedVAE is identified by deterioration in respiratory status after a period of stability or improvement on the ventilator
- Assessed by monitoring two key parameters that reflect oxygenation status in neonatal and pediatric ventilated patients:
 - Fraction of Inspired Oxygen (FiO_2)
 - Mean Airway Pressure (MAP)

Where are PedVAE data collected?

- Neonatal and pediatric locations in acute care hospitals, long term acute care hospitals, and inpatient rehabilitation facilities where denominator data (ventilator and patient days) can be collected for patients.
- Such locations may include critical/intensive care units (ICU), specialty care areas (SCA), step-down units, and wards.

Whose data are collected?

- All patients in the neonatal and pediatric inpatient locations, regardless of patient's age
- Patients on a ventilator who are receiving a conventional mode of mechanical ventilation or high-frequency oscillatory or jet ventilation

Issue #1: Device days <3 for PedVAE ≥ 1

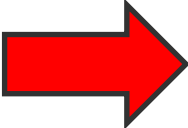
Issue #1: Device days <3 for PedVAE ≥1

| | Month |
|--------------|------------|
| Patient | |
| Event | Add |
| Procedure | Find |
| Summary Data | Incomplete |

Disclaimer: The screenshots and data presented during this presentation are for illustrative purposes only and do not represent an actual NHSN facility or NHSN data.

Issue #1: Device days <3 for PedVAE ≥1

| | Month |
|--------------|------------|
| Patient | |
| Event | Add |
| Procedure | Find |
| Summary Data | Incomplete |



Event Information

Facility ID:

Event #:

Event Type:

Location:

Date of Event: To:

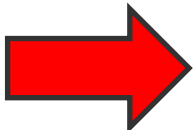
Issue #1: Device days <3 for PedVAE ≥1

Patient ▶ | Month

Event ▶ | Add

Procedure ▶ | Find

Summary Data ▶ | Incomplete



Event Information

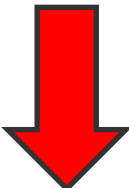
Facility ID:

Event #:

Event Type: PedVAE - Pediatric Ventilator-Associated Event ▼

Location:

Date of Event: 07/01/2024 9 To: 07/31/2024 9



Event Information

Event Type *: PedVAE - Pediatric Ventilator-Associated Event

Date of Event *: 07/ /2024

Post-procedure:

MDRO Infection Surveillance *: No, this infection's pathogen/location are not in-plan for Infection Surveillance in the MDRO/CDI Module

Location *:

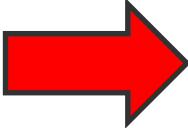
Date Admitted to Facility *: 07/ /2024

Issue #1: Device days <3 for PedVAE ≥1

| | | |
|---------------|---|-----------------|
| Summary Data | ▶ | Add |
| COVID-19 | ▶ | Find |
| Import/Export | | Incomplete |
| Surveys | ▶ | Delete AUR Data |

Issue #1: Device days <3 for PedVAE ≥1

| | | |
|---------------|---|-----------------|
| Summary Data | ▶ | Add |
| COVID-19 | ▶ | Find |
| Import/Export | | Incomplete |
| Surveys | ▶ | Delete AUR Data |



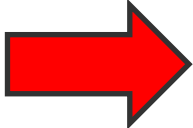
Patient Safety Summary Data

Enter search criteria

Summary Data Type: ▼
Location Code: ▼
Month: ▼
Year: ▼

Issue #1: Device days <3 for PedVAE ≥1

- Summary Data ▶ Add
- COVID-19 ▶ Find
- Import/Export ▶ Incomplete
- Surveys ▶ Delete AUR Data



Patient Safety Summary Data

Enter search criteria

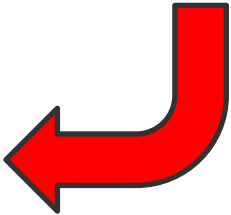
Summary Data Type:

Location Code:

Month:

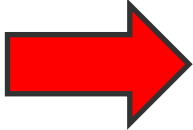
Year:

| Denominator Data | | |
|-------------------------------------|--------------------------------|---|
| | | Report No Events |
| Total Patient Days * | <input type="text"/> | |
| Central Line Days * | <input type="text"/> | CLABSI: <input checked="" type="checkbox"/> |
| Urinary Catheter Days: | <input type="text"/> | CAUTI: <input checked="" type="checkbox"/> |
| Ventilator Days * | <input type="text" value="1"/> | VAE: <input type="checkbox"/> |
| | | PedVAE: <input type="checkbox"/> |
| | | PedVAP: <input type="checkbox"/> |
| APRV Days: | <input type="text"/> | |
| Episodes of Mechanical Ventilation: | <input type="text"/> | |



Issue #1: Device days <3 for PedVAE ≥1

- Summary Data ▶ Add
- COVID-19 ▶ Find
- Import/Export ▶ Incomplete
- Surveys ▶ Delete AUR Data



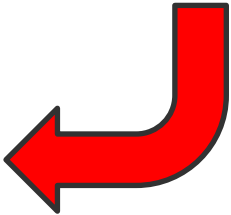
Patient Safety Summary Data

Enter search criteria

Summary Data Type: Device Associated - Intensive Care Unit / Other Locations ▼
 Location Code:
 Month: July ▼
 Year: 2024 ▼

Find Clear Back

| Denominator Data | | |
|--------------------------------------|----------------------|---|
| | | Report No Events |
| Total Patient Days * | <input type="text"/> | |
| Central Line Days * | <input type="text"/> | CLABSI: <input checked="" type="checkbox"/> |
| Urinary Catheter Days : | <input type="text"/> | CAUTI: <input checked="" type="checkbox"/> |
| Ventilator Days * | 1 | |
| APRV Days : | <input type="text"/> | |
| Episodes of Mechanical Ventilation : | <input type="text"/> | |



The number of device days should be ≥3 since the earliest date of event for PedVAE is day 3 of mechanical ventilation.

Issue #1: Solutions

1. Under the first table "Denominator Data", change the cell right to the "Ventilator Days" to a number that is ≥ 3 .


Issue #1: Solutions (cont.)

1. Under the first table "Denominator Data", change the cell right to the "Ventilator Days" to a number that is ≥ 3 .
2. Alternatively, you can remove the event from your plan.

Issue #2: Zero patient days for PedVAE ≥ 1

Issue #2: Zero patient days for PedVAE ≥ 1

- Hypothetical example:
 - 2 PedVAEs reported
 - Patient days = 0



Neonatal Intensive Care Unit

Mandatory fields marked with *

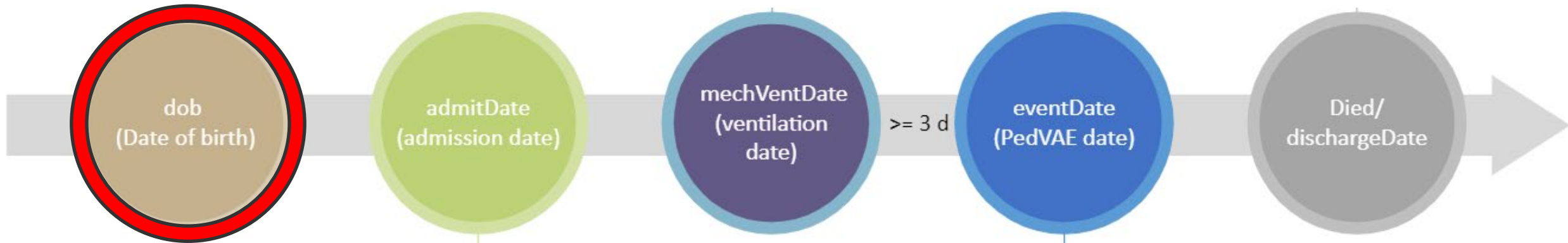
Facility ID *:
Location Code *: NICU - NICU
Month *: January
Year *: 2024

| Birth Weights | | | | | | | | |
|---------------|----------------|-----------|-------------------------------------|-------------|--------------------------|--------------------------|-----|----------|
| Birth Weight | Patient Days * | CL Days * | No CLABSI | Vent Days * | No PedVAE | No PedVAP | EMV | UrC Days |
| <=750 | | | | | | | | |
| 751-1000 | 0 | 27 | <input checked="" type="checkbox"/> | 31 | <input type="checkbox"/> | <input type="checkbox"/> | 0 | 0 |
| 1001-1500 | | | | | | | | |
| 1501-2500 | | | | | | | | |
| >2500 | | | | | | | | |

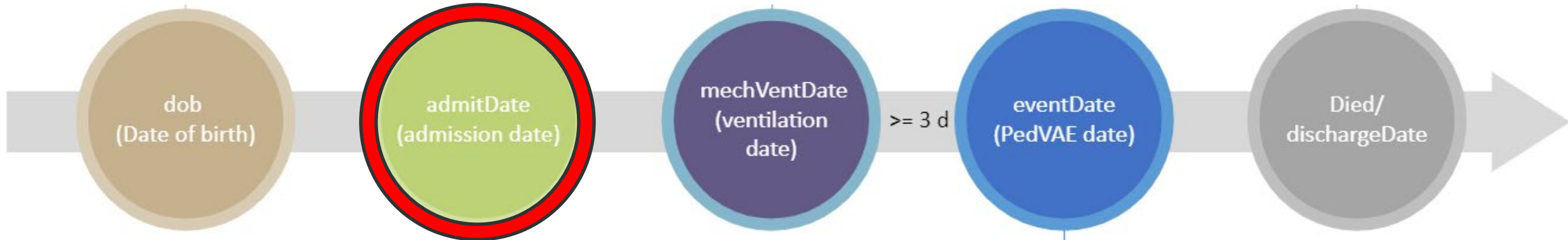
Issue #2: Solutions

1. Re-enter the number of patient days.
2. Alternatively, you can remove the events from your plan.

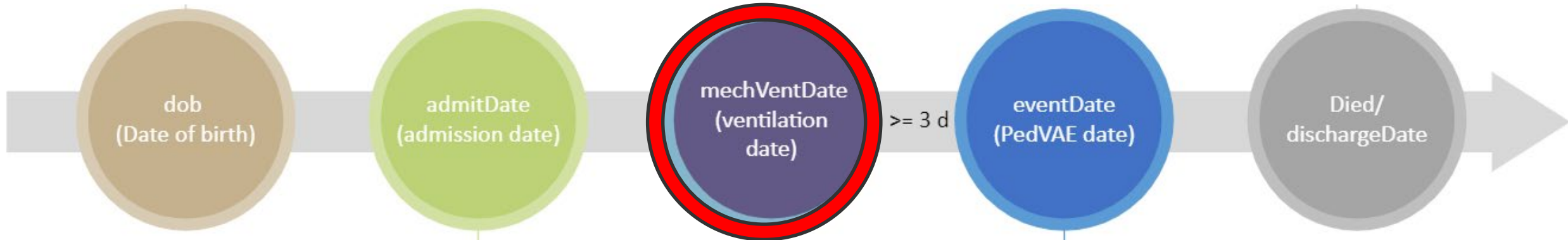
Events datasets dates and DQ issues



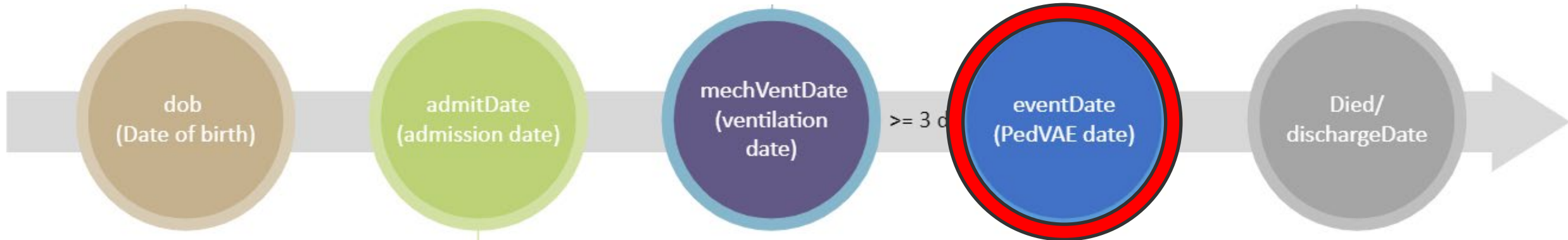
Events datasets dates and DQ issues



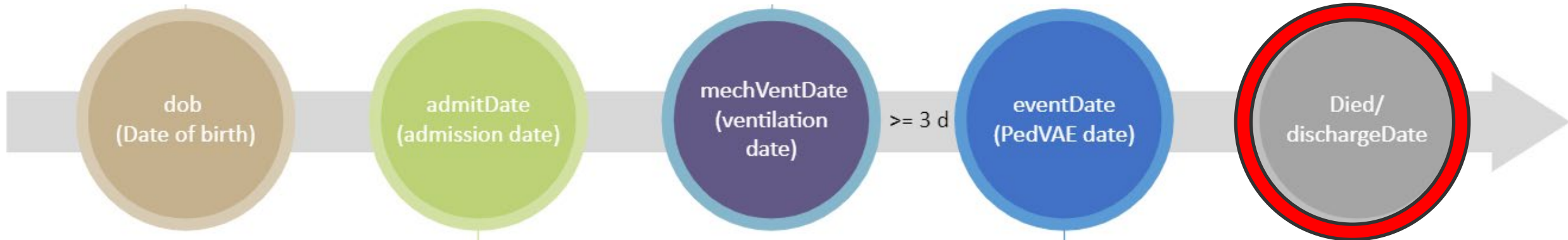
Events datasets dates and DQ issues



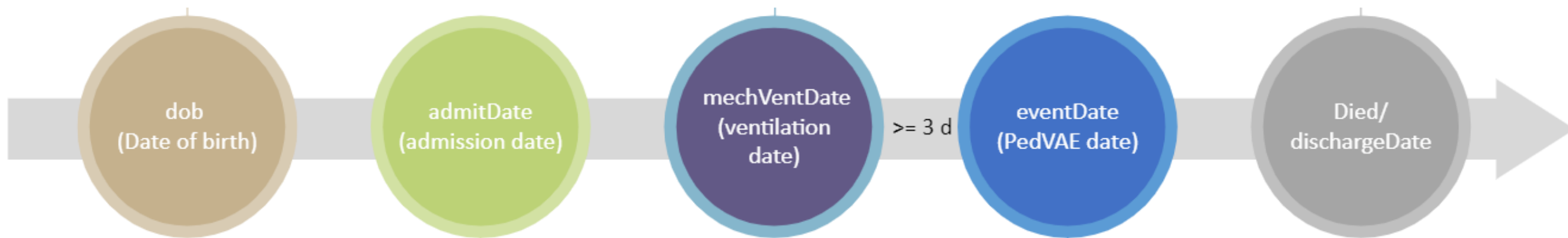
Events datasets dates and DQ issues



Events datasets dates and DQ issues



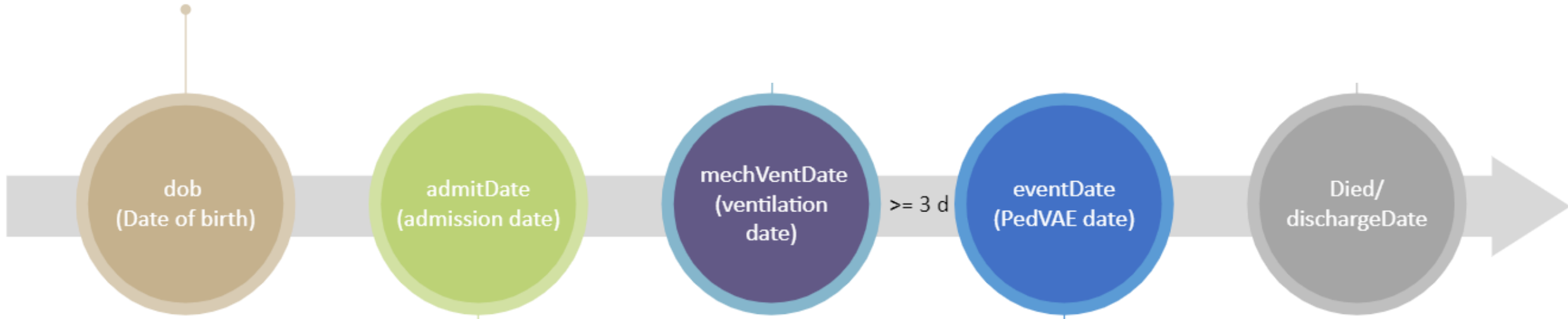
Events datasets dates and DQ issues



DQ Issue #1: Event date is <3 days after ventilation date.

Events datasets dates and DQ issues

DQ Issue #2: Admission/
ventilation/PedVAE date is
before DoB.

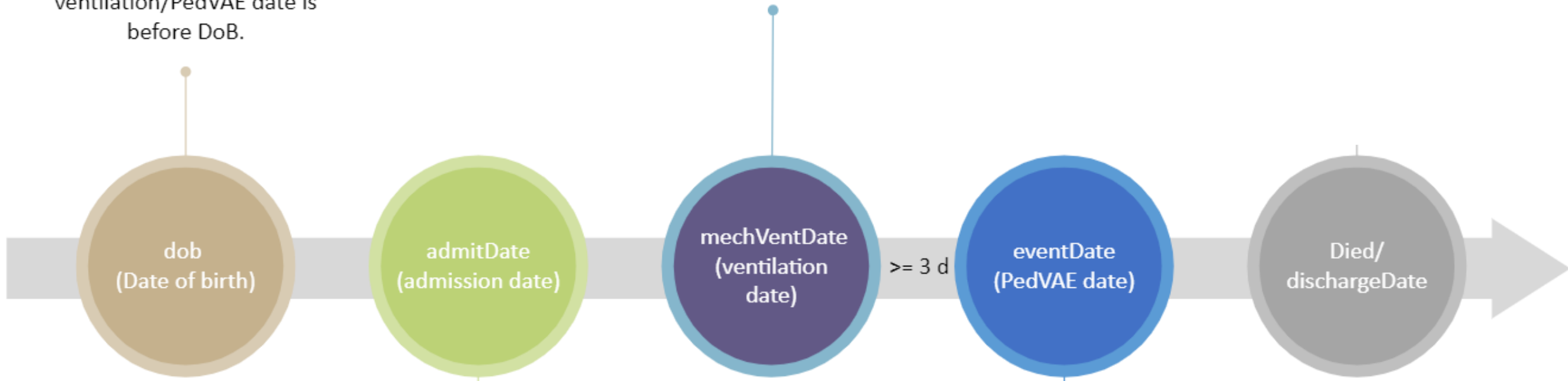


DQ Issue #1: Event date is <3
days after ventilation date.

Events datasets dates and DQ issues

DQ Issue #2: Admission/
ventilation/PedVAE date is
before DoB.

DQ Issue #3: Ventilation date
is after event date.



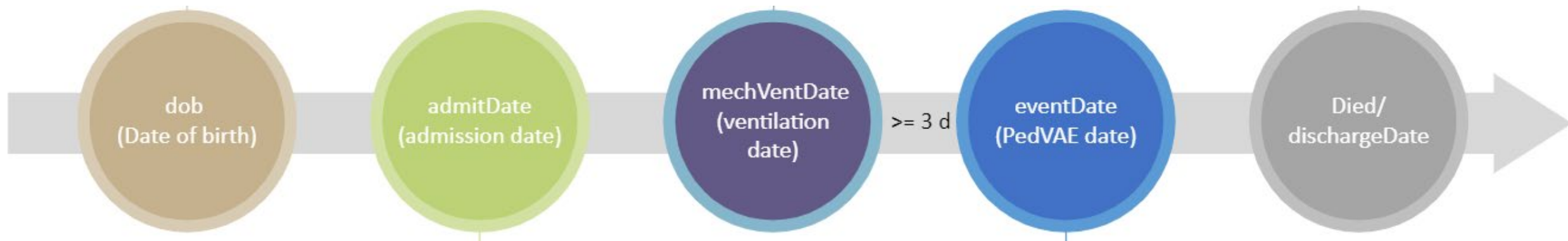
DQ Issue #1: Event date is <3
days after ventilation date.

Summary: Whenever at least one PedVAE is reported...

1. Patient days should not be zero or missing.
2. Device days should be ≥ 3 .

Summary: Whenever at least one PedVAE is reported....

1. Patient days should not be zero or missing.
2. Device days should be ≥ 3 .



Thank you for your attention.

For more information, contact CDC
1-800-CDC-INFO (232-4636)
TTY: 1-888-232-6348 www.cdc.gov

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



Data Quality Example: Annual Survey

Beth Bouwkamp, MPH

NHSN Acute Care Analytics Team (ACAT)

Learning Objectives

- Define the importance of NHSN and Annual Survey Data Quality (DQ)
- Describe the impact of incorrect or missing Annual Survey data
- List types of Annual Survey DQ checks
- Outline steps for the Annual Survey DQ process
- Summarize an Annual Survey DQ example
- Identify steps for addressing Annual Survey DQ

NHSN and Annual Survey Data Quality (DQ) Overview

- Addressing NHSN Data Quality (DQ) concerns is key to identifying prevention needs and tracking progress
- Annual Survey Team reviews data and contacts facilities to resolve DQ concerns
- DQ checks and outreach occur routinely and ad-hoc
 - Routine outreach: monthly or quarterly
 - Urgent outreach: before CMS HAI Reporting or other deadlines
- **Important:** Annual Survey DQ is designed to complement, not replace, facilities' DQ checks

Impact of Incorrect or Missing Annual Survey Data

- **Facility-related impacts**
 - Standardized Infection Ratios (SIR) may be inaccurate or not calculated
 - Facility data may be excluded from CDC analytic reports
- **CMS HAI Quality Reporting Programs impacts**
 - Inaccurate SIRs may be sent to CMS if Annual Survey data are incorrect
 - Facility HAI data may not be sent to CMS if Annual Survey data are missing

Type of Data Quality Checks for Annual Surveys

- **Consistency Check:** Data is consistent across variables
- **Range Verification:** Numeric values fall within expected ranges
- **Completeness Check:** Required data are complete and not missing
 - Includes facility reporting a “non-operational” status
- **Year-to-Year Comparison:** Evaluate difference between values
 - Current survey is flagged if value is greater than 100% different than the prior value
- **Outlier Detection:** Extreme values

Annual Survey Data Quality (DQ) Process



Annual Survey DQ Check

| Number of Admissions 2023 | Number of Admissions 2022 | Number of Patient Days 2023 | Number of Patient Days 2022 | Number of Beds 2023 | Number of Beds 2022 |
|---------------------------|---------------------------|-----------------------------|-----------------------------|---------------------|---------------------|
| 98 | 4 | 1123 | 17 | 50 | 50 |

DQ Check: Year-to-Year Comparison identified DQ concern

Annual Survey DQ Email Outreach

Hello Jane Doe at NHSN orgid 1000,

Addressing NHSN data quality issues is integral to NHSN's ability to help facilities collect the data needed to identify problem areas, measure progress of prevention efforts, and push toward HAI (Healthcare Associated Infection) elimination.

The NHSN team is committed to the improvement and validation of data submitted to the system and is continuously conducting routine data quality checks of facility-level data. During a recent data quality analysis, we identified a potential matter that needs your attention with your facility's NHSN 2023 Patient safety Hospital Annual Survey.

Recent analysis shows that this facility reported at least one value for a variable on the 2023 Hospital annual survey that significantly changed from the prior 2022 survey, and we wanted to bring this to your attention. The variable(s) are listed in the attachment.

Review the attachment for applicable variables for your facility (or facilities). A difference of this magnitude on a facility's reported annual survey can impact a facility's risk adjustment calculations for the standardized infection ratio (SIR). Many healthcare-associated infections (HAIs) use the variables reported on the annual survey to generate a SIR. Reporting an incorrect number for this variable(s) may lead to an inaccurate calculation of the SIR.

Please review your facility's survey and confirm that this field(s) is accurate. If you identify an error in this field, please edit your survey and save the changes. We appreciate your help to ensure the quality and integrity of data reported to NHSN.

Please let us know if you have any questions or concerns at nhsn@cdc.gov.

————— PSC Contact and NHSN orgID

————— Background about NHSN DQ

————— Potential DQ Concern identified by the Annual Survey Team

————— Action items for the facility

————— Additional support

Annual Survey DQ Email Outreach Facility Data Report

NHSN Data Quality Alert - Annual Survey

There are two tables below. The first table is a variable key that includes variable descriptions. The second table is on page two and includes data reported on the 2023 Survey by your facility. Please ensure that the value for your 2023 Survey is correct. The value for your 2022 Survey is provided for comparison. If 'No action needed' is listed under the variable, then your data is ok, and no additional action is needed.

Variable Key

| Variable | Description |
|-----------------|---|
| OrgID | Organization identification number |
| numbeds_2023 | Number of beds on the 2023 Survey |
| numbeds_2022 | Number of beds on the 2022 Survey |
| numAdmits_2023 | Number of admissions on the 2023 Survey |
| numAdmits_2022 | Number of admissions on the 2022 Survey |
| numPatDays_2023 | Number of patient days on the 2023 Survey |
| numPatDays_2022 | Number of patient days on the 2022 Survey |
| numicubeds_2023 | Number of ICU beds on the 2023 Survey |
| numicubeds_2022 | Number of ICU beds on the 2022 Survey |

Survey Data Reported by Your Facility

| orgid | numbeds_2023 | numbeds_2022 | numAdmits_2023 | numAdmits_2022 | numPatDays_2023 |
|-------|------------------|------------------|----------------|----------------|-----------------|
| 1000 | No Action Needed | No Action Needed | 98 | 4 | 1123 |

| numPatDays_2022 | numicubeds_2023 | numicubeds_2022 |
|-----------------|------------------|------------------|
| 17 | No Action Needed | No Action Needed |

Instructions for reading the data table

Variable key displaying the descriptive variable name for variables in the table

Facility data reported on the Annual Survey that needs review by the facility. "No Action Needed" is listed for variables that were not flagged for a DQ concern.

Action Steps for Facilities to address Annual Survey DQ

1. Read the Annual Survey DQ Outreach email to understand the:
 - DQ issue
 - Timeline to review and correct the data or reply to the email
 - Action items
2. Review the Facility Data Report attached to the Annual Survey DQ Outreach email
3. Determine whether the data are correct or incorrect, and perform one of the following:
 - a) If data are **correct** – reply to the email with facility operational information that led to the unexpected value
 - b) If data are **incorrect** – obtain the correct data and edit the Annual Survey. Reply to the email if requested

Annual Survey and Data Quality Resources

- **Annual Survey:**

- [PSC Annual Survey webpage](#)

- <https://www.cdc.gov/nhsn/psc/locations.html>

- [Find and Edit the NHSN Patient Safety Component Annual Survey](#)

- <https://www.cdc.gov/nhsn/pdfs/surveys/find-edit-survey-508.pdf>

- [Run and Export Annual Facility Survey Reports](#)

- <https://www.cdc.gov/nhsn/pdfs/surveys/run-survey-report-508.pdf>

- [Frequently Asked Questions \(FAQ\)](#)

- <https://www.cdc.gov/nhsn/faqs/faq-annual-survey.html>

- **Data Quality:**

- [NHSN Data Quality webpage](#)

- <https://www.cdc.gov/nhsn/ps-analysis-resources/data-quality/index.html>

Questions or Need Help?

- **Use subject line: “September DQ Webinar”**
- **NHSN-ServiceNow to submit questions to the NHSN Help Desk.**
- **Access new portal at <https://servicedesk.cdc.gov/nhsncsp>.**
- **If you do not have a SAMS login, or are unable to access ServiceNow, you can still email the NHSN Help Desk at nhsn@cdc.gov**

For more information, contact CDC
1-800-CDC-INFO (232-4636)
TTY: 1-888-232-6348 www.cdc.gov

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