



# MRSA Bacteremia and *C. difficile* LabID Events – Case Scenarios

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# Case 1 – MRSA LabID Event

# Case 1

Hello NHSN Team!

Our facility had a septic patient present to the emergency department (ED) on 2/1. The patient was admitted as an inpatient to the ICU, but due to bed availability was held in the ED until 2/3. Blood cultures collected in the ED on 2/2 were positive for MRSA. The patient transferred to an ICU bed on 2/3. Blood cultures collected in the ICU are positive for MRSA on 2/4, 2/7, 2/8. The patient improves and is transferred to a step-down unit on 2/10. Blood cultures collected in the step down on 2/11 are positive for MRSA.

I have a few questions...

## Is the positive MRSA blood specimen on 2/2 a LabID event?

- No, this is not a LabID event since it POA
- Yes, this is a LabID event

### Case Summary:

- Patient presents to ED on 2/1.
- Admitted as an inpatient to the ICU, but due bed availability was held in the ED until 2/3.
- Blood cultures collected in the ED on 2/2 were positive for MRSA.
- Transfers to an ICU bed on 2/3.
- Blood cultures collected in the ICU are positive for MRSA on 2/4, 2/7, 2/8.
- Transfers to a step-down unit on 2/10.
- Blood cultures collected in the step down on 2/11 are positive for MRSA.

## Is the positive MRSA blood specimen on 2/2 a LabID event?

- No, this is not a LabID event since it POA
- **Yes, this is a LabID event**

**Rationale:** POA (and other Chapter 2 NHSN definitions) does not apply to LabID event reporting. This the first MRSA positive for the patient and location, therefore a MRSA LabID event is reported.

## The positive MRSA blood specimen on 2/2 is reported as a LabID event – but for which location?

- ED
- ICU
- I still think this is POA

### Case Summary:

- Patient presents to ED on 2/1.
- Admitted as an inpatient to the ICU, but due bed availability was held in the ED until 2/3.
- Blood cultures collected in the ED on 2/2 were positive for MRSA.
- Transfers to an ICU bed on 2/3.
- Blood cultures collected in the ICU are positive for MRSA on 2/4, 2/7, 2/8.
- Transfers to a step-down unit on 2/10.
- Blood cultures collected in the step down on 2/11 are positive for MRSA.

## The positive MRSA blood specimen on 2/2 is reported as a LabID event – but for which location?

- ED
- ICU
- I still think this is POA

**Rationale:** NHSN LabID events are attributed to the location where the patient is physically located when the specimen is collected– although the patient “admitted” to the ICU on 2/1, the patient is still physically located in the ED when the MRSA+BC was collected on 2/2. The MRSA event would be reported for the ED.

## The positive MRSA blood specimen on 2/2 is reported as a LabID event for the ED – how will NHSN categorize this event?

- Community-onset (CO)
- Healthcare-onset (HO)
- \*Raises hand\* still sticking with POA

### Case Summary:

- Patient presents to ED on 2/1.
- Admitted as an inpatient to the ICU, but due bed availability was held in the ED until 2/3.
- Blood cultures collected in the ED on 2/2 were positive for MRSA.
- Transfers to an ICU bed on 2/3.
- Blood cultures collected in the ICU are positive for MRSA on 2/4, 2/7, 2/8.
- Transfers to a step-down unit on 2/10.
- Blood cultures collected in the step down on 2/11 are positive for MRSA.



## The positive MRSA blood specimen on 2/2 is reported as a LabID event for the ED – how will NHSN categorize this event?

- CO
- HO
- \*Raises hand\* still sticking with POA

**Rationale:** Events occurring in outpatient locations (such as the ED) are always categorized as community onset (CO). This is automated within the NHSN application.

# Let's review the important teaching points:

*Our facility had a patient present to the emergency department (ED) on 2/1. The patient was admitted as an inpatient to the ICU, but due bed availability was held in the ED until 2/3. Blood cultures collected in the ED on 2/2 were positive for MRSA.*

## **MRSA community onset LabID event is reported for the ED.**

- POA (and other Chapter 2 NMSN definitions) does not apply to LabID event reporting. This the first MRSA positive for the patient and location, therefore a MRSA LabID event is reported.
- NMSN does not use status within the electronic system but where the patient is physically located – although the patient “admitted” to the ICU on 2/1, the patient is still physically located in the ED when the MRSA+BC was collected, so the MRSA event would be reported for the ED.
- Events occurring in outpatient locations (such as the ED) are assigned as community onset (CO).

## Revisiting the original case email:

Hello NHSN Team!

Our facility had a septic patient present to the emergency department (ED) on 2/1. The patient was admitted as an inpatient to the ICU, but due to bed availability was held in the ED until 2/3. Blood cultures collected in the ED on 2/2 were positive for MRSA. The patient transferred to an ICU bed on 2/3. Blood cultures collected in the ICU are positive for MRSA on 2/4, 2/7, 2/8. The patient improves and is transferred to a step-down unit on 2/10. Blood cultures collected in the step down on 2/11 are positive for MRSA.

## Is the positive MRSA blood specimen on 2/4 a LabID event?

- No
- Yes

### Case Summary:

- Patient presents to ED on 2/1.
- Admitted as an inpatient to the ICU, but due bed availability was held in the ED until 2/3.
- Blood cultures collected in the ED on 2/2 were positive for MRSA.
- Transfers to an ICU bed on 2/3.
- Blood cultures collected in the ICU are positive for MRSA on 2/4, 2/7, 2/8.
- Transfers to a step-down unit on 2/10.
- Blood cultures collected in the step down on 2/11 are positive for MRSA.

## Is the positive MRSA blood specimen on 2/4 a LabID event?

- No
- Yes

**Rationale:** This the first MRSA positive for the patient and location (ICU), therefore a MRSA LabID event is reported.

**The 2/4 event would be categorized as healthcare onset (HO) since the patient presented to the ED on 2/1:**

- True
- False

**Case Summary:**

- Patient presents to ED on 2/1.
- Admitted as an inpatient to the ICU, but due bed availability was held in the ED until 2/3.
- Blood cultures collected in the ED on 2/2 were positive for MRSA.
- Transfers to an ICU bed on 2/3.
- Blood cultures collected in the ICU are positive for MRSA on 2/4, 2/7, 2/8.
- Transfers to a step-down unit on 2/10.
- Blood cultures collected in the step down on 2/11 are positive for MRSA.

The 2/4 event would be categorized as healthcare onset (HO) since the patient presented to the ED on 2/1:

- True
- **False**

**Rationale:** The 2/4 LabID event would be categorized as community onset (CO) for the ICU – hospital day 2 since the patient was admitted to the ICU 2/3.

# Case Explanation

*Our facility had a patient present to the emergency department (ED) on 2/1. The patient was admitted as an inpatient to the ICU, but due bed availability was held in the ED until 2/3. Blood cultures collected in the ED on 2/2 were positive for MRSA. **The patient was transferred to an ICU bed on 2/3. Blood cultures collected in the ICU are positive for MRSA on 2/4, 2/7, 2/8.** The patient improves and is transferred to a step-down unit on 2/10. Blood cultures collected in the step down on 2/11 are positive for MRSA.*

## **The 2/4 event would be categorized as community onset (CO) – hospital day 2**

For NHSN reporting purposes, the date admitted to the facility is the calendar date that the patient physically locates to an inpatient location – the ICU on 2/3. Events occurring on the day of admission (hospital day 1), hospital day 2, and hospital day 3 are categorized as community onset (CO). The 2/4 MRSA+BC occurred on hospital day 2.



## The 2/11 MRSA+BC is reported (first for the patient and the location [step-down unit]) – how will this event be categorized?

- CO
- HO
- Wait, we are reporting the 2/11 event??

### Case Summary:

- Patient presents to ED on 2/1.
- Admitted as an inpatient to the ICU, but due bed availability was held in the ED until 2/3.
- Blood cultures collected in the ED on 2/2 were positive for MRSA.
- Transfers to an ICU bed on 2/3.
- Blood cultures collected in the ICU are positive for MRSA on 2/4, 2/7, 2/8.
- Transfers to a step-down unit on 2/10.
- Blood cultures collected in the step down on 2/11 are positive for MRSA.

The 2/11 MRSA+BC is reported (first for the patient and the location [step-down unit]) – how will this event be categorized?

- CO
- **HO**
- Wait, we are reporting the 2/11 event??

## Case Explanation - let's discuss:

- Events are automatically categorized as community onset (CO) or healthcare onset (HO) by the NHSN application based on the date of occurrence.
- This “onset” variable is assigned strictly based on the date of event occurrence – there is no “look back” at prior positive for CO or HO categorization.
- The 2/11 MRSA +BC would be submitted into NHSN since it was the first for the patient and the location (step-down unit) and would be categorized as HO since it was HD 9.
- Assignment of an event as “HO” indicates the event occurs in a timeframe consistent with internal risk (hospital factors) rather than external risk (community factors).

## How many MRSA LabID events should be reported to NHSN for this case?

- One
- Two
- Three
- Four
- Five

### Case Summary:

- Patient presents to ED on 2/1.
- Admitted as an inpatient to the ICU, but due bed availability was held in the ED until 2/3.
- Blood cultures collected in the ED on 2/2 were positive for MRSA.
- Transfers to an ICU bed on 2/3.
- Blood cultures collected in the ICU are positive for MRSA on 2/4, 2/7, 2/8.
- Transfers to a step-down unit on 2/10.
- Blood cultures collected in the step down on 2/11 are positive for MRSA.

## How many MRSA LabID events should be reported to NHSN?

- One
- Two
- **Three**
- Four
- Five

Remember the previous teaching point – the first positive for the patient and the location is reported as a LabID event!

# Case Explanation

*Our facility had a patient present to the emergency department (ED) on 2/1. The patient was admitted as an inpatient to the ICU, but due bed availability was held in the ED until 2/3. **Blood cultures collected in the ED on 2/2 were positive for MRSA.** The patient was transferred to an ICU bed on 2/3. **Blood cultures collected in the ICU are positive for MRSA on 2/4, 2/7, 2/8.** The patient improves and is transferred to a step-down unit on 2/10. **Blood cultures collected in the step down on 2/11 are positive for MRSA.***

## Three MRSA LabID events should be reported to NHSN

For LabID event reporting, the first positive blood specimen for the patient and the location is reported to NHSN:

- 2/2 ED
- 2/4 ICU
- 2/11 step down

# Case Explanation

*Our facility had a patient present to the emergency department (ED) on 2/1. The patient was admitted as an inpatient to the ICU, but due bed availability was held in the ED until 2/3. **Blood cultures collected in the ED on 2/2 were positive for MRSA.** The patient was transferred to an ICU bed on 2/3. **Blood cultures collected in the ICU are positive for MRSA on 2/4, 2/7, 2/8.** The patient improves and is transferred to a step-down unit on 2/10. **Blood cultures collected in the step down on 2/11 are positive for MRSA.***

## Three MRSA LabID events should be reported to NHSN

For LabID event reporting, the first positive blood specimen for the patient and the location is reported to NHSN:

- 2/2 ED
- 2/4 ICU
- 2/11 step down

# Case 2 – *C. difficile* LabID Event



## Case 2

Dear NHSN LabID Event Team Member,

We have a patient who was admitted our sister hospital, House Community Hospital (HCH) on 2/1/2024 with a head injury. A few days into their stay, the patient develops loose stools and a PCR test for *C. difficile* is positive. The patient is then transferred to our facility, Scrubs Memorial Hospital (SMH), on 2/5/2024 for a higher level of care and admitted to an inpatient unit.

House Community Hospital and Scrubs Memorial Hospital share a medical record system, so we are able to view all records from the patient's stay at HCH.

The patient is tested again for *C. difficile* on 2/6/2024 at SMH. SMH uses PCR testing for *C. difficile* detection, and the laboratory result is positive.

## We know that the 2/6 *C. diff* event is reported (first for the patient and location), but how will it be categorized?

- Using the NHSN transfer rule, this event would be HO for HCH
- CO and Recurrent for SMH due to the prior positive at the HCH
- CO and Incident for SMH since this is the first positive for SMH

### Case Summary:

- Patient admitted our sister hospital, HCH on 2/1/2024.
- PCR test for *C. difficile* is positive.
- Patient is transferred to our facility, SMH, on 2/5/2024 and admitted to an inpatient unit.
- HCH and SMH share a medical record system, so we are able to view all records from the patient's stay at HCH.
- Patient tested positive for *C. diff* on 2/6/2024 at SMH.

## We know that the 2/6 *C. diff* event is reported (first for the patient and location), but how will it be categorized?

- Using the NHSN transfer rule, this event would be HO for HCH
- CO and Recurrent for SMH due to the prior positive at the HCH
- **CO and Incident for SMH since this is the first positive for SMH**

# Case Explanation

*Patient admitted our sister hospital, House Community Hospital (HCH) on 2/1/2024 with a head injury. A few days into their stay, the patient develops loose stools and a PCR test for C. difficile is positive. **The patient is then transferred to our facility, Scrubs Memorial Hospital (SMH), on 2/5/2024** for a higher level of care and admitted to an inpatient unit. HCH and SMH share a medical record system, so we are able to view all records from the patient's stay at HCH. **The patient is tested again for C. diff on 2/6/2024 at SMH.** SMH uses PCR testing for C. diff detection, and the laboratory result is positive.*

## The 2/6 C. diff event is reported (first for the patient and location) and is CO and Incident for SMH.

- Transfer Rule does not apply to LabID event reporting.
- NHSN reporting is by single facility - a previous positive at another facility would not be taken into consideration for reporting or categorization.
- 2/6 C. diff event was the first positive for the patient and the facility (**Incident**) and occurred on hospital day 2 (**CO**).

## Case 2 continued

Hello! We have a question related to a case sent in a few weeks ago....

This patient is admitted to our facility, Scrubs Memorial Hospital (SMH), on 2/5/2024 and PCR test was positive for *C. diff* on 2/6/2024.

The patient is discharged on 2/11/2024 but declines and is readmitted to SMH on 2/13/2024. They have an extended stay but continue to improve and are ready for discharge on 2/27/2024 when a single loose stool is noted. The attending physician wants to ensure the patient's CDI is not recurring and orders a new test on the 2/27 specimen. SMH uses PCR testing for *C. diff* detection, and the laboratory result is positive.

## How is the 2/27 *C. diff* event categorized?

- HO and Incident
- HO and Recurrent
- No event is reported due to colonization

### Case Summary:

- Patient is admitted to our facility, Scrubs Memorial Hospital (SMH), on 2/5/2024 and PCR test was positive for *C. diff* on 2/6/2024.
- Patient is discharged on 2/11/2024 but declines and is readmitted to SMH on 2/13/2024.
- Ready for discharge on 2/27/2024 when a single loose stool is noted.
- PCR test on 2/27 is positive for *C. diff*.

## How is the 2/27 *C. diff* event reported?

- HO and Incident
- **HO and Recurrent**
- No event is reported due to colonization

# Case Explanation

*This patient is admitted to our facility, Scrubs Memorial Hospital (SMH), on 2/5/2024 and **PCR test was positive for C. diff on 2/6/2024.***

*The patient is discharged on 2/11/2024 but declines and is **readmitted to SMH on 2/13/2024.** They have an extended stay but continue to improve and are ready for discharge on 2/27/2024 when a single loose stool is noted. The attending physician wants to ensure the patient's CDI is not recurring and orders a **new test on the 2/27 specimen.** SMH uses PCR testing for C. diff detection, and the laboratory result is positive.*

## The 2/27 C. diff event is reported and is categorized as HO and Recurrent.

- *C. difficile* LabID event reporting is based on the proxy measure of a positive laboratory finding without clinical consideration. Patient history, diagnosis, and/or, clinical judgement as to whether the finding represents colonization won't impact reporting.
- Reported as HO *C. diff* LabID: greater than 14 days since previous positive on 2/6; occurred on hospital day 15 (**HO**).
- **Recurrent** - *C. diff* LabID Event from a specimen obtained more than 14 days and less than or equal to 56 days after the most recent *C. diff* LabID Event (2/6) for that patient and the facility.
- Discharge/ readmission does not factor in to an Incident or Recurrent categorization.



## Case 2 Bonus Question

- Do either the 2/6 or 2/27 *C. diff* LabID events impact the FacWideIN SIR for SMH?
  - Yes
  - No

## Case 2 Bonus Question

- Do either the 2/6 or 2/27 *C. diff* LabID event impact the FacWideIN SIR for SMH?
  - Yes
  - **No**

# Bonus Question Explanation

*This patient is admitted to our facility, Scrubs Memorial Hospital (SMH), on 2/5/2024 and **PCR test was positive for C. diff on 2/6/2024.***

*The patient is discharged on 2/11/2024 but declines and is **readmitted to SMH on 2/13/2024.** They have an extended stay but continue to improve and are ready for discharge on 2/27/2024 when a single loose stool is noted. The attending physician wants to ensure the patient's CDI is not recurring and orders a **new test on the 2/27 specimen.** SMH uses PCR testing for C. diff detection, and the laboratory result is positive.*

## The FacWideIN SIR includes only those events assigned as HO and Incident.

- 2/6 C. diff positive – **Community onset** (hospital day 2); Incident event (first for the admission)
- 2/27 C. diff positive – Healthcare onset (hospital day 15); **Recurrent** (greater than 14 days and less than 56 days from the 2/6 event)

# Cases 3 and 4 – Lightning Round!

## Case 3

Hello NHSN Team,

We had a patient admitted to our facility after a motor vehicle accident. A week after admission, they were taken into surgery for reconstruction of a broken hand. Blood cultures taken in the operating room (OR) were positive for MRSA. Since NHSN patient days and admissions are not reported for the OR, can we exclude this MRSA positive blood culture from LabID event reporting?

- Yes
- No

## Case 3

Hello NHSN Team,

We had a patient admitted to our facility after a motor vehicle accident. A week after admission, they were taken into surgery for reconstruction of a broken hand. Blood cultures taken in the operating room (OR) were positive for MRSA. Since NHSN patient days and admissions are not reported for the OR, can we exclude this MRSA positive blood culture from LabID event reporting?

- Yes
- **No**

**Rationale:** The OR (and PACU, Cath lab, IR) is considered an inpatient location within NHSN. These units are not “bedded” inpatient locations (no patient days or admission), and therefore not an eligible location for event attribution.

The LabID event would be reported for the last eligible inpatient location where the patient is housed immediately prior to the transfer to the OR.

## Case 4

Our facility is updating the standard testing algorithm for *C. difficile* to PCR reflexing to toxin-EIA if positive. I know we have to report our standard testing method, how should we inform NHSN of this change?

- Send an email to the NHSN helpdesk so that NHSN can record this change.
- When completing the MDRO and CDI Monthly Denominator Form for the last month of each quarter for the calendar year (March, June, September, and December), select your facility's standard testing algorithm used to perform *C. difficile* testing.
- When completing the Monthly Reporting Plan, select your facility's standard testing algorithm used to perform *C. difficile* testing.

## Case 4

Our facility is updating the standard testing algorithm for *C. difficile* to PCR reflexing to toxin-EIA if positive. I know we have to report our standard testing method, how should we inform NHSN of this change?

- Send an email to the NHSN helpdesk so that NHSN can record this change.
- **When completing the MDRO and CDI Monthly Denominator Form for last month of each calendar-year quarter (March, June, September, and December), select your facility's standard testing algorithm used to perform *C. difficile* testing.**
- When completing the Monthly Reporting Plan, select your facility's standard testing algorithm used to perform *C. difficile* testing.



# Case 4



## MDRO and CDI Monthly Denominator Form

Mandatory fields marked with \*

Facility ID \*:

Location Code \*: FACWIDEIN - Facility-wide Inpatient (FacWIDEIn)

Month \*: December

Year \*: 2023

### General

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

Line 2: If your facility has a CMS-certified rehab unit (RF) or CMS-certified psych unit (PF), 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.  
Counter: [Total Facility - (RF + PF)]

Patient Days \*  Admissions \*

Line 3: If your facility has a CMS-certified IRF, CMS-certified IPF, NICU, or Well Baby Unit, 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.  
Counter: [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 \*

- EIA - Enzyme immunoassay (EIA) for toxin
- Cyto - Cell cytotoxicity neutralization assay
- NAAT - Nucleic acid amplification test (NAAT)
- NAATEIA - NAAT plus EIA, if NAAT positive (2-step algorithm)
- GDH - Glutamate dehydrogenase (GDH) antigen plus EIA for toxin
- GDHNAAT - GDH plus NAAT
- GDHEIA - GDH plus EIA for toxin, followed by NAAT for discrepant results
- ToxiCul - Toxigenic culture
- OTH - Other (specify)

(All specimens)

Orga

CDIF	Report No Events	MSSA	Report No Events	CephR-Kleb	Report No Events	CRE-Ecoli	Report No Events	CRE-Entero	Report No Events
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* <input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Our facility is updating the standard testing algorithm for *C. difficile* to PCR reflexing to toxin-EIA if positive. I know we have to report our standard testing method, how should we inform NHSN of this change?

# Contact the NHSN Helpdesk with any questions

**NHSN-ServiceNow** to submit questions to the NHSN Help Desk.

The new portal can be accessed at <https://servicedesk.cdc.gov/nhsncsp>

Users will be authenticated using CDC's Secure Access Management Services (SAMS) the same way you access NHSN. 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](mailto:nhsn@cdc.gov)

**For more information please contact Centers for Disease Control and Prevention**

1600 Clifton Road NE, Atlanta, GA 30333

Telephone, 1-800-CDC-INFO (232-4636)/TTY: 1-888-232-6348

E-mail: [cdcinfo@cdc.gov](mailto:cdcinfo@cdc.gov) Web: [www.cdc.gov](http://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.

