

**LABORATORY-IDENTIFIED (LABID)
EVENT REPORTING
MRSA BACTEREMIA AND
*C. DIFFICILE***

National Healthcare Safety
Network (NHSN)

CMS PARTICIPATION

Acute care hospitals, Long Term Acute Care (LTACs), IP Rehabilitation Units, (with a unique CMS #),
Emergency Departments and
Observation Units are

required

to report Facility-wide Inpatient
(FacWideIN)

MRSA Bacteremia and *C. difficile* LabID
Event

IMPORTANT

- ▶ LabID event reporting is based strictly on laboratory testing data without clinical evaluation of the patient, allowing for a much less labor intensive method to track C. difficile and MDROs, such as MRSA
- ▶ These provide proxy infection measures of healthcare acquisition, exposure burden, and infection burden based primarily on laboratory and limited admission data

MRSA BACTEREMIA AND *C. DIFFICILE* LABID EVENT REPORTING *ADVANTAGES*

- ▶ Objective laboratory-based metrics that do not require extensive chart review to:
 - ▶ Identify vulnerable patient populations
 - ▶ Estimate infection burden
 - ▶ Estimate exposure burden
 - ▶ Assess need for an effectiveness of interventions
- ▶ Standardized case definitions for surveillance
- ▶ Increases comparability between clinical settings

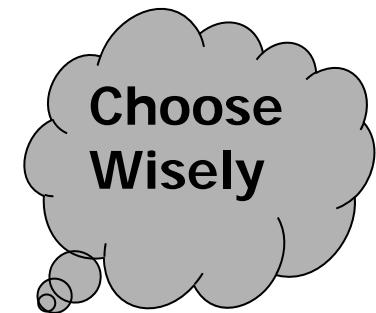
WHAT IS BEING REPORTED TO CMS

- ▶ All in-plan FacWideIN healthcare facility-onset (HO) MRSA bacteremia and *C. difficile* LabID Event aggregate data from participating facilities.
- ▶ CDC will provide a standardized infection ratio (SIR) for each hospitals' FacWideIN HO MRSA bacteremia and *C. difficile* .
- ▶ Although the metric reported to CMS will be a HO SIR, the community-onset (CO) events and the admission prevalence of a hospital will play an important role in risk adjustment, and so both HO and CO LabID events must be reported into NHSN.

REPORTING METHOD



- ▶ Facility-wide by location
- ▶ Selected locations within the facility
- ▶ Overall facility-wide
 - ▶ Overall Facility-wide Inpatient (FacWideIN)
 - ▶ Overall Facility-wide Outpatient (FacWideOUT)
- ▶ Overall facility-wide: Blood Specimens Only (MRSA LabID events)



Important

FACILITY-WIDE INPATIENT *FACWIDEIN*

- ▶ Option for LabID Event reporting only!
- ▶ Includes inpatient locations*, including observation patients housed in an inpatient location

* See *C. difficile* LabID Event protocol for location exclusions

IMPORTANT

- ▶ To ensure accurate categorizations of LabID events (e.g., incident, recurrent, healthcare facility-onset), facilities should continue to report LabID Events from all inpatient locations in the facility, including those locations with a different CMS Certification Number (CCN) even though these data will be removed during FacWideIN analysis for the acute care hospital and not shared with CMS for IQR.
- ▶ Locations that may have a different CCN include inpatient rehabilitation facility (IRF), and inpatient psychiatric facility (IPF).



- ▶ Includes inpatient locations* PLUS location specific reporting for the same organism and LabID Event type (i.e., All Specimens or Blood Specimens only) from each outpatient emergency department (ED) and 24-hour observation location

THIS MEANS.....

- ▶ LabID specimens collected in ED and 24-hour observation locations must be entered in the NHSN application and assigned to the outpatient location in which the specimen was collected, regardless of subsequent inpatient admission of patient.



SETTING UP AND REPORTING LABID EVENTS

	Acute Care	Hospital IRF	Free-standing IRF
Enrollment		No separate enrollment (already enrolled under the hospital)	Enroll as separate facility-HOSP-REHAB Will have a unique NHSN orgID
Location	All inpatient locations must be mapped (see Locations guidance in Ch. 15). Additionally, outpatient ED and 24-hour observation locations must be mapped	Map each CMS-IRF unit to Inpatient Rehabilitation Ward location within enrolled hospital. Must indicate the unit is a CMS IRF on the Location screen and enter the CCN for the IRF unit	Map each inpatient location to CDC-defined location type (Rehabilitation Ward or Rehabilitation Pediatric Ward)
Monthly Reporting Plan	FacWideIN and outpatient ED and 24 locations for same organism and LabID event	Location specific for each CMS-IRF unit in hospital	Facility-wide Inpatient (FacWideIN)
Numerator	Report LabID events separately for each inpatient unit and ED and 24-hour observation	Report LabID Events separately for each IRF unit	Report LabID Events separately for each location
Denominator	FacWideIN and again excluding locations with separate CCNs . Location specific counts for each ED and 24-hour observation	Location specific counts	FacWideIN

BEGINNING 2016, THESE TWO QUESTIONS
ARE REQUIRED

- Last physical overnight location of patient immediately prior to arriving into facility (if + in ED or \leq 3 days)
 - Nursing Home,
 - Other IP HC setting
 - Personal Residence/Residential Care
- Has patient been discharged from another facility in the past four (4) weeks? If yes select all that apply from the provided list:
 - Nursing Home/SNF
 - Other Inpatient HC Setting (hospital, IRF, LTAC etc.,)
Can use the response option “Unknown” if identifying the required information present undue burden

Lab ID Event and

HAI Surveillance

Reporting

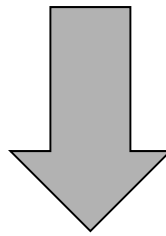
ARE

Not the Same!!!!!!

	LabID Event	HAI Surveillance
Signs and Symptoms	NONE: Laboratory and admission data, with out clinical evaluation of patient	Combination of laboratory data and clinical evaluation of patient
Surveillance Rules	<p>HAI and POA do NOT apply</p> <ul style="list-style-type: none"> • Transfer Rule does NOT apply • Location = location of patient at time of specimen collection • Event date = specimen collection 	<p>HAI and POA do apply</p> <ul style="list-style-type: none"> • Transfer Rule applies • See NHSN protocol for details regarding location and date of event
Denominator Reporting	<ul style="list-style-type: none"> • Number of patient days and patient admissions • Can be reported by specific location or facility-wide 	<ul style="list-style-type: none"> • Device days/patient days • Collected separately for specific location • Inpatient only
Categorization of Infections	<ul style="list-style-type: none"> • Healthcare Facility Onset (HO) collected > 3 days after admission • Community Onset (CO) \leq 3 days after admission 	<ul style="list-style-type: none"> • HAI protocols used events are either HAI or not • LabID Event categorizations do NOT apply • Only HAIs are reported to NHSN

KEY POINTS TO REMEMBER

- ▶ Always report the LabID event for the specific unit where specimen was collected. If date of specimen collection = physical inpatient admission calendar date or an ED/24 hour observation encounter



- ▶ Report as LabID Event for specific location

******the “Transfer Rule” does NOT apply to LabID event reporting*

IMPORTANT

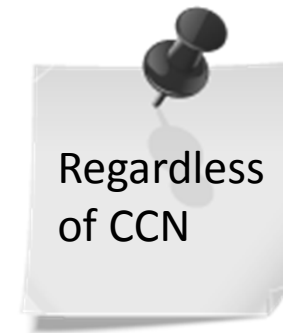
- ▶ Specimens collected from any other affiliated outpatient location (excluding ED and 24-hour observation locations) can be reported for the inpatient admitting location IF collected on the same calendar day as inpatient admission
- ▶ In this circumstance, the admitting inpatient location should be assigned.
- ▶ This is the ONLY exception to the LabID attribution rule

KEY POINTS TO REMEMBER

- ▶ The admission date should reflect the date the patient was physically admitted to an inpatient location.
- ▶ Time spent in the ED or other outpatient location (observation unit) should not contribute towards inpatient counts

KEY POINTS TO REMEMBER

- ▶ NHSN considers transfers to inpatient rehabs (IRFs) and inpatient psychiatric locations (IPFs) a continuous stay for NHSN reporting purposes.
- ▶ Facility admission date for a LabID event should reflect the date the patient was physically admitted into either the inpatient location for the acute care hospital or the IRF location whichever comes first during that patient stay.



MRSA BACTEREMIA LABID EVENT

- **Organism:** Methicillin-Resistant *Staphylococcus aureus* (MRSA)
- **Specimen Source:** Blood isolates only
- **Data Collection:** CDC NHSN - MDRO/CDI Module (LabID Event)
- **Required Locations:** All inpatient locations, ED and 24 Observation Unit. Referred to as facility-wide inpatient (FacWideIN)
- **Required Data:** Community-Onset (CO) and Healthcare-Onset (HO) MRSA Bacteremia LabID Events

DEFINITION MRSA BACTEREMIA LABID EVENT

- MRSA positive blood specimen for a patient in a location with no prior MRSA positive blood specimen result collected within 14 days for the PATIENT and the LOCATION (includes across calendar months)

Referred to as all non-duplicate LABID Events



DUPLICATE MRSA BACTEREMIA LABID EVENT



- Definition:

Any MRSA blood isolate from the **same patient** and **same location**, following a previous positive MRSA blood laboratory result within the past 14 days (*including across calendar months*).

NHSN removes ALL duplicates within 14 days even when it's obtained in a new unit

CATEGORIZATION OF MRSA BLOOD LABID EVENTS



- Community-Onset (CO):
 - LabID Event specimen collected as an inpatient ≤ 3 days after admission to the facility (i.e., days 1 (admission), 2 or 3)
- Healthcare Facility-Onset (HO):
 - LabID Event specimen collected > 3 days after admission to the facility (i.e., on or after day 4)



EXAMPLE 1

- ▶ On July 4th, Mr. Jones is admitted to ICU with fever, hypotension and severe cough. Patient requires intubation and placement of central line. Initial work up after admission is positive for infiltrate on chest x-ray, blood cultures positive for MRSA and urine cultures positive for E. coli.
- ▶ Patient improves on therapy and is transferred from ICU to a medical unit on July 10th. Physician orders a follow up blood culture which continues to be positive for MRSA.



What Should
We Do

This would be Reported as a
MRSA LabID Event for July 4th
and July 10th.

EXAMPLE 2

- On July 4th, Mr. Jones is admitted to ICU with fever, hypotension and severe cough. Patient requires intubation and placement of central line. Initial work up after admission is positive for infiltrate on chest x-ray, blood cultures positive for MRSA and urine cultures positive for E. coli.
- Patient does not improve and continues to have fevers and remains in ICU. Blood cultures drawn on July 7th, 10th and again on the 25th all remain positive for MRSA.



What Should We Do

Blood specimens drawn on the 7th and 10th
are considered “duplicates”.

Blood specimens drawn on July 4th and July
25th would be entered as MRSA LabID
events.



When calculating the “14 day” rule the LAST positive blood specimen for MRSA is your starting point.

EXAMPLE 3

- Dialysis patient seen in ED on June 1st with history of not feeling well for 3 days.
- Seen for dialysis today but noted to be febrile and hypotensive and referred to the ED for evaluation.
- Blood cultures, in the ED, drawn at 11:45 pm are positive for MRSA.
- Patient is admitted on June 2nd at 12:15 am.

EXAMPLE 3 CONT'D

- On July 7th patient continues to be febrile and another blood culture is sent.
- Blood culture returns positive for MRSA.

Blood culture drawn on July 1st is reported as a LabID event for the ED and the positive MRSA blood culture collected on July 7th, is reported as a MRSA LabID event for the inpatient location.

BEWARE THE PITS

- ▶ LabID Events and HAI Events are two reporting pathways
 - ▶ An Event that is both a LabID Event and an HAI should be reported (if in plan)



EXAMPLE 4



- Patient admitted to ICU and had a central line placed on day of admission.
- Central line remains in place and on day 4 of ICU stay, patient spikes a fever and blood cultures are positive for MRSA.

This would be reported to NHSN as a MRSA CLABSI and a LabID Event.

BEWARE THE PITS



- ▶ MRSA bacteremia that is secondary to another HAI will still need to be reported as a LabID event

EXAMPLE 5

- Patient 45 days S/P Total Knee Replacement.
- Patient readmitted to the hospital with fever, swelling and pain at site of surgery. Taken back to the OR and deep cultures positive for MRSA.
- Patient also had blood cultures drawn times two and both were positive for MRSA.



This would be reported to NHSN as a MRSA LabID Event.

DENOMINATORS FOR MRSA LABID EVENT

Denominators = Patient Days, admissions (for inpatient locations) and encounters for emergency department, and observation units.

Patient Days:

- At the same time each day, the number of patients on the inpatient units should be recorded. This procedure should be followed regardless of the patient's status as an observation patient or an inpatient (based on IP location).
- **Patient Admissions:**
 - Include any **new** patients that are assigned to a bed in any inpatient location within the facility at the time of the facility-wide admission count (i.e., was not present on the previous calendar day at the time of patient count).
- **Encounter:**
 - A Patient visit to an outpatient location

MRSA BACTEREMIA LABID EVENT: REVIEW

- ▶ MRSA blood specimens MUST be monitored throughout all inpatient locations, ED and Observation units
- ▶ All MUST be entered whether community-onset or healthcare facility-onset
- ▶ A blood specimen qualifies if there has not been a previous + result for the patient and location within the previous 14 days.

C. DIFFICILE LABID EVENT

- **Organism:**
 - *Clostridium difficile* (*C. difficile*)
- **Specimen:**
 - Loose stools only (conform to shape of container)
- **Required Locations:**
 - ▶ All inpatient locations minus NICU, SCN, or other Well Baby Locations (e.g. Nurseries, babies in Labor, Delivery, Recovery, & Post-partum {LDRP}) and ED and 24 observation units
- **Location of Attribution:**
 - Location where LabID event was collected
- **Required Data:**
 - Community-Onset (CO), and Healthcare Facility-Onset (HO) *C. difficile* LabID events

C. DIFFICILE POSITIVE LABORATORY ASSAY

- A Positive lab test result for *C. difficile* toxin A and/or B (e.g., enzyme immunoassay or EIA test)

OR

- A toxin-producing *C. difficile* organism detected in the stool specimen by culture or other laboratory means (e.g., nucleic acid amplification testing by polymerase-chain reaction, or PCR).

***C. difficile* testing only on
UNFORMED stool samples!!
Stool should conform to shape
of container**

NEW CLARIFICATION FOR MULTI-STEP CDI TESTING



- ▶ When using a multi-testing methodology for CDI identification, the final result of the last test finding will determine if the CDI positive laboratory assay definition is met.

DIFFERENT ALGORITHMS FOR C DIFF TESTING

▶ Example 1:

- ▶ EIA GDH Antigen (+), toxin (-) followed by PCR (+) for discrepant results. Report as a LabID event determined by final test finding of PCR(+).

▶ Example 2:

- ▶ PCR (+) followed by EIA GDH Antigen (+), toxin (-) for toxin confirmation. NOT a LabID event as final test finding is toxin (-).

DEFINITION *C. DIFFICILE* LABID EVENT

- A toxin-positive *C. difficile* stool specimen for a patient in a location with no prior *C. difficile* specimen result reported within 14 days for the PATIENT and the LOCATION (includes across calendar months)



DUPLICATE *C. DIFFICILE* LABID EVENT

- Definition:

Any *C. difficile* toxin-positive laboratory result from the **same patient** and **same location**, following a previous *C. difficile* toxin-positive laboratory result within the past 14 days (*including across calendar months*).

CATEGORIZATION OF *C. DIFFICILE* LABID EVENTS

- **Healthcare-Associated**

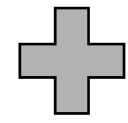
- LabID Event specimen collected from a patient who was admitted to the facility 3 days after admission to the facility

- **Community-Associated**

- LabID Event specimen collected from a patient who was discharged from the facility < 4 weeks prior to the date current stool specimen was collected

- **Community-Associated (CO-HCFA)**

- CO LabID Event specimen collected from a patient who was discharged from the facility < 4 weeks prior to the date current stool specimen was collected.



ADDITIONAL CATEGORIZATION OF C. DIFFICILE LABID EVENTS

- ▶ Incident CDI Assay: Any CDI LabID Event from a specimen obtained > 56 day (day 57) after the most recent CDI LabID event (or with no previous CDI LabID Event documented) for that patient
- ▶ Recurrent CDI Assay: Any CDI LabID Event from a specimen obtained > 14 days (day 15) and ≤ 56 days after the most recent CDI LabID event for that patient

Events are facility specific

BEWARE THE PITS



- Specimens for *C. difficile* collected in the outpatient setting (*hospital affiliated outpatient location...physician clinic etc*) should be included ONLY if collected on the same calendar day as patient admission

EXAMPLE 6

- Patient seen at hospital owned physician practice with history of diarrhea for 3 days.
- Stool specimen collected at the office and sent to hospital lab for *C. difficile*
- The next day patient is febrile and c/o severe abdominal cramping. Patient is notified that he had a + *C. difficile* test and would need to be admitted.
- Patient continued to do well in the hospital and on day 6 diarrhea had resolved.
- Physician ordered another *C. difficile* “test of cure” which returned positive.

This would be entered into NHSN and categorized as Healthcare Facility-onset (HO)

DENOMINATORS FOR *C. DIFFICILE* LABID EVENT

Denominators = Patient Days and Admissions for Inpatient Locations – newborn locations; and Encounters for ED/24 observation

- **Patient Days:**
 - At the same time each day, the number of patients on the inpatient units should be recorded. This procedure should be followed regardless of the patient's status as an observation patient or an inpatient (based on location)
- **Patient Admissions:**
 - Include any new patients that are assigned to a bed in any inpatient location within the facility at the time of the facility-wide admission count (i.e., was not present on the previous calendar day at the time of patient count.)
- **Encounters:** A patient visit to an outpatient location (ED or OBS)

CDI SURVEILLANCE AND DENOMINATOR EXCLUSION

▶ Locations known to predominantly house babies.

▶ Neonatal intensive care unit (NICU) specialty

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▶ If

When retrieving your denominator information ensure that the reports you are using are separating baby days and admissions when they room in with the mom.



C. DIFFICILE LABID EVENT: REVIEW

- ▶ *C. difficile* toxin-positive specimens MUST be monitored throughout all inpatient locations, the ED and 24 observation units....with the exception of NICU, SCN, Well baby Nurseries and babies in LDRP units.
- ▶ All *C. difficile* LabID events MUST be entered whether community-onset, or healthcare facility-onset.
- ▶ Only loose stools should be tested for *C. difficile*.
- ▶ A toxin positive loose stool specimen qualifies if there has not been a previous + result for the patient and location within the previous 14 days.

CASE STUDY 1

- ▶ 54 year old male admitted to the ICU on June 15th with a MI.
- ▶ Central line inserted at time of admission
- ▶ On June 17th patient becomes febrile with a temperature of 102 F.
- ▶ Patient is pan cultured (blood, sputum and urine) and blood culture is positive for MRSA.

CASE STUDY QUESTION: 1



- How should this event be reported:
 - A. This event will be reported in NHSN as an ICU CLABSI
 - B. This event will be reported in NHSN as a MRSA Bacteremia LabID Event
 - C. This event will be reported as a LabID event and a CLABSI



CASE STUDY # 2

MAN VS DOG



- ▶ 3/1: 22 year old male admitted to 5 W medical unit after a panic attack following a dog bite from the family Yorkie.
- ▶ Pt. has history of frequent antibiotic use for chronic UTIs.
- ▶ 3/2: Wound draining small amounts of clear drainage. Pt. complains of lower abdominal cramps, relieved with medication. Panic attacks decreased to 3-4 per day.
- ▶ 3/3: Later that day, pt. has fever of 38.2C and complains of worsening lower abdominal pain. BM with loose unformed stool.
- ▶ Pt. moved to 3 E to accommodate frequent bathroom visits.



CASE STUDY # 2 CONT' *MAN VS DOG*



- ▶ 3/4: While on 3E, pt. continues to complain of lower abdominal pain and loose stools. Over the course of the day, the pt. had several loose stools.
- ▶ 3/5: Unformed stool tested positive for *C. difficile* toxin.

CASE STUDY QUESTION 2

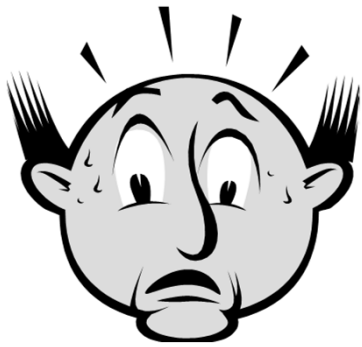


- Should this be reported as a *C. difficile* LabID event?
 - A. No. His symptoms started on admission to the hospital.
 - B. Yes. This is the first toxin positive *C. difficile* isolate collected for this patient and location (*no previous positive within 14 days for location*).
 - c. No. Enter this as a GI Event for this event

QUESTION 2 CONT'



- How will this event be categorized?
 - A. Community-Onset (CO)
 - B. Healthcare Facility-Onset (HO)
 - C. Community-Onset Healthcare Facility-Associated (CO-HCFA)
 - D. As funny



CASE STUDY 3 *MAN VS BUFFET*



- ▶ 3/1: Pt. presents to the emergency department (ED) with complaints of diarrhea and lower abdominal pain for the past two days. Pt. states that he has been on antibiotics for 5 days for treatment of an UTI, but he also ate fresh fruit from a buffet 3 days ago and believes that he has food poisoning.
- ▶ Pt. is hypotensive and has poor skin turgor. A stool specimen collected in the ED tests toxin positive for *C. difficile*; negative for Salmonella and other enteric pathogens.
- ▶ 3/1: Patient admitted to 2S medical unit for intravenous hydration and medical management

CASE STUDY QUESTION 3



- Can this result be entered as a labID and if so for what location?
 - A. No. ED is an outpatient location and I am only monitoring inpatient locations.
 - B. Yes, Location would be the ED since specimen was collected there.
 - C. Yes, Location would be 2S, the admitting location.
 - D. Yes, Location would be FacWideIN.

CASE STUDY 4



- ▶ 2/15: 85 year old patient admitted to inpatient unit, 3E, from rehab facility. The patient was discharged from your facility 2-weeks ago after spending 3 weeks in the ICU after a skiing incident.
- ▶ Upon admission to 3E, patient is noted to have foul loose stools.
- ▶ 2/16: After three episodes of loose stools over the course of 24 hours, an unformed specimen was collected and tested positive for *C. difficile*

CASE STUDY QUESTION 4



- How will NHSN categorize this LabID event?
 - A. Community-onset (CO)
 - B. Healthcare-Facility onset(HO)
 - C. Community-Onset Healthcare Facility-Associated (CO-HCFA)
 - D. NHSN will not categorize the event, the user will need to make the decision



CASE STUDY 5



- 6/15: 90 year old patient admitted from the emergency department (ED) to ICU following a pogo stick accident. A Foley and central line inserted and patient scheduled for emergent surgery for pelvic fracture. Pt. with multiple lacerations.
- 6/16: Pt. spikes a fever of 101F and urine draining cloudy drainage in bedside bag. A urine culture is collected.
- 6/18: Urine culture results are positive for *E. coli* and MRSA. Antibiotic treatment begun.



- ▶ 6/21: Patient continues to have fever of 101.40F. Blood cultures collected from peripheral IV site.
- ▶ 6/22: Two of two blood cultures are positive for MRSA

CASE STUDY QUESTION 5



- Would this be reported to NHSN as a LabID event?
 - A. No. Since the patient already had a positive urine culture with MRSA for this month and location, the MRSA blood is considered a duplicate.
 - B. Yes. This is considered a unique blood source.
 - C. No. This is a CLABSI!!



CASE STUDY 6



- ▶ 6/1: Mr. Nasal, a local nursing home resident, is admitted to the ICU with a stage 4 sacral ulcer. Upon admission into the ICU, an active nasal screen tested positive for MRSA. Blood cultures were also collected upon admission to the ICU.

CASE STUDY QUESTION 6



- Should this positive MRSA nasal screen be entered into NHSN as a MRSA LabID Event?
 - A. Yes
 - B. No

CASE STUDY QUESTION 6



- What if the blood culture is also positive for MRSA?
 - A. NO. I would not consider this to be a MDRO LabID Event since the patient had a MRSA positive nasal screen.
 - B. YES. Since the blood culture was obtained for clinical decision making, I would report this as a MRSA bacteremia LabID Event

TIPS FOR SURVIVING MANDATORY REPORTING

- Decide if your surveillance plan is changing
 - Surveillance for LabID *C. difficile* only or HAIs as well
- Decide what metrics you are going to report to IPC, Board, Administration, Score Cards.
- Decide what metrics you are going to benchmark and with whom.
- Provide an explanation of what you are reporting and how rates/numbers might be different (higher or lower).

ONLINE RESOURCES-NHSN

[HTTP://WWW.CDC.GOV](http://www.cdc.gov)

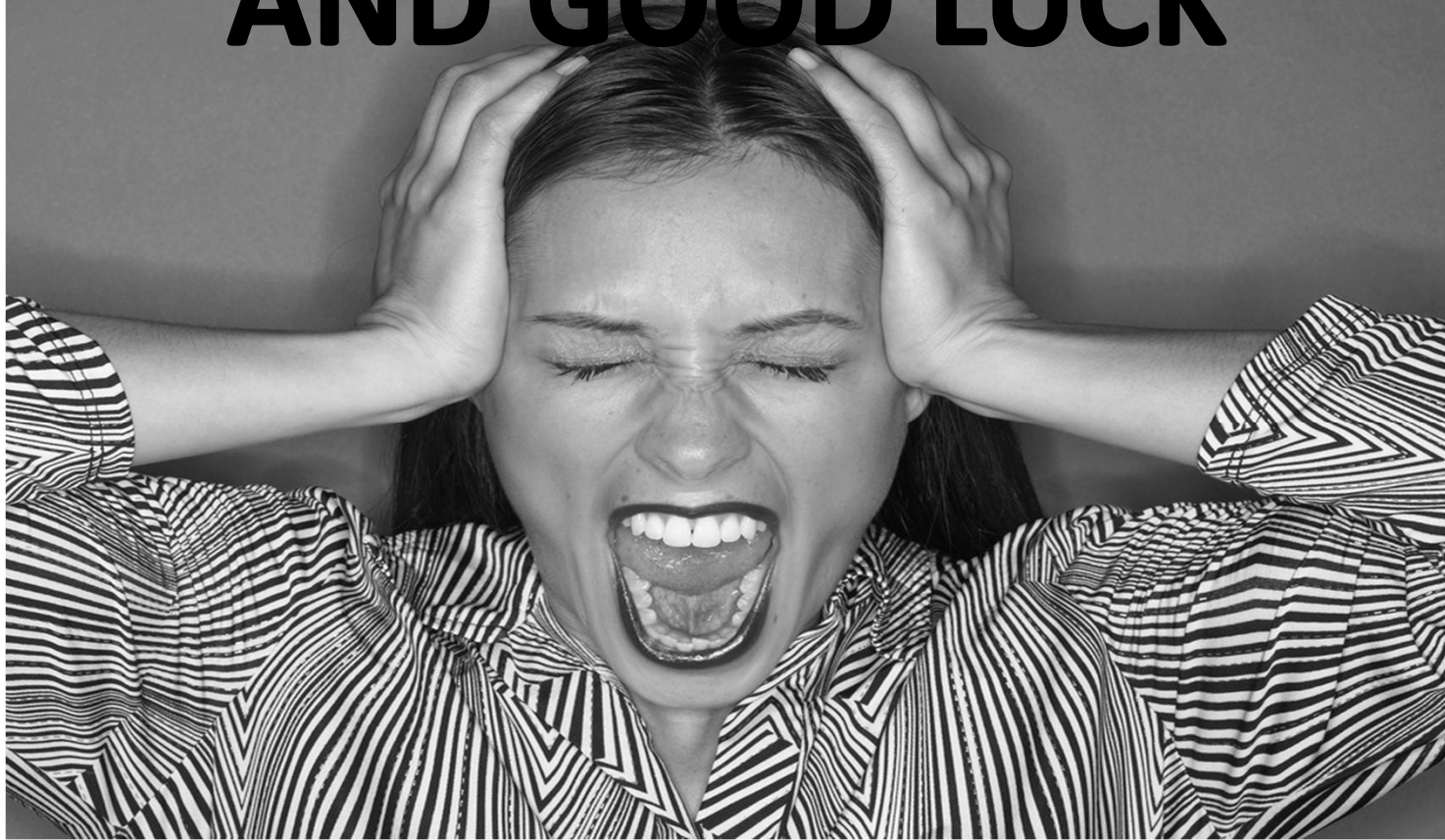
- On-Demand trainings
- NHSN Manual & Errata
- Data Collection Forms & Instructions
- CDC Location descriptions and guidance
- CMS-related documents
- Analysis guides
- FAQs

ONLINE RESOURCES-CMS RELATED

[HTTP://WWW.CDC.GOV/NHSN/CMS/INDEX.HTML](http://www.cdc.gov/nhsn/cms/index.html)

- ▶ Operational Guidance
- ▶ “How to Set Up NHSN Reporting for Facility-Wide Inpatient MRSA Bacteremia and C. difficile LabID events for the CMS Inpatient Quality Reporting Program”
- ▶ Helpful Tips
- ▶ Using the SIRs

**THANK YOU
AND GOOD LUCK**



QUESTIONS DISCUSSION