Understanding Basics:
NHSN MRSA Bacteremia & CDI LabID Event Reporting

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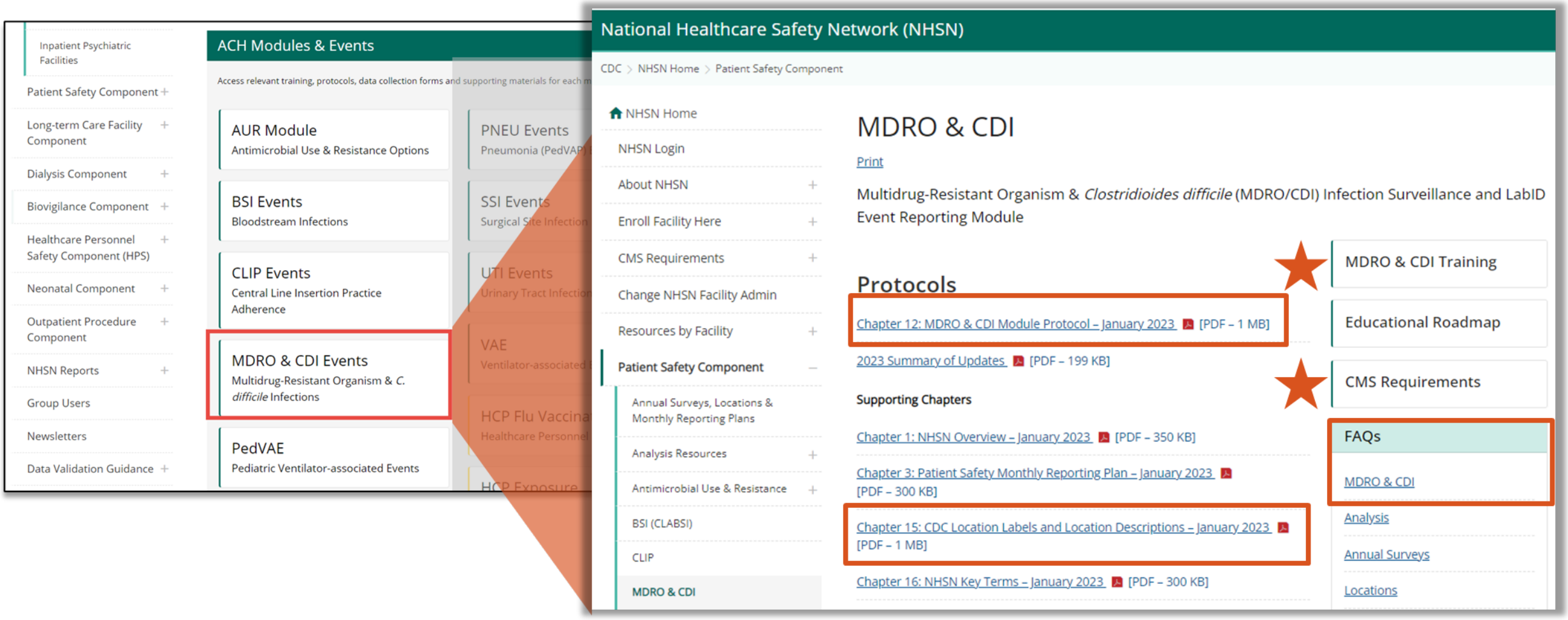
NHSN Training 2023

OBJECTIVES

- *Apply LabID event reporting concepts as outlined in the NHSN PSC MDRO Chapter 12*
- *Recognize MRSA bacteremia and C. difficile events using NHSN definitions to provide events for reporting*
- *Correctly Report LabID Events and FacWideIN summary denominator data*

MDRO & CDI Events Webpage

https://www.cdc.gov/nhsn/acute-care-hospital/index.html



Key Concepts to LabID Event Reporting:

- FacWideIN LabID event reporting is based on patient and location. Include All inpatient units as well as ED/Observation locations in LabID event surveillance with an exception for *C. difficile* surveillance in baby-based locations {NICU, Nursery, et.al}.

- NHSN does NOT use patient 'status' for reporting. An 'inpatient' is a patient housed on an inpatient location. An 'outpatient' is a patient housed on an outpatient unit such as the ED or a dedicated 24-hour observation unit. Facility specific status designations such as 'observation', 'inpatient', 'outpatient', 'swing bed patient' or 'short stay patient' are not used for in NHSN reporting.

Key Concepts to LabID Event Reporting:

- For NHSN reporting purposes, the ‘date admitted to facility’ is the calendar day the patient locates to an inpatient location. Time spent in the ED or on a dedicated 24-hour observation unit is outpatient hours.

- LabID event reporting includes a ‘14-day’ rule which prohibits a ‘new’ LabID event to be submitted for the patient in the SAME location until 15 days has passed between positive specimens. This rule is organism and location specific. Reporting resets each time the patient moves to a ‘new’ location.

Key Concepts to LabID Event Reporting:

- 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. Symptoms are NOT used in LabID event reporting. No clinical determination is included in LabID event reporting. *The first positive specimen for the patient in the location meeting definition is submitted as a LabID event*.

- These provide proxy infection measures of healthcare acquisition, exposure burden, and infection burden are based primarily on laboratory and limited admission data.

Key Concepts to LabID Event Reporting:

- LabID Event reporting is by single facility; prior positives identified at a different facility will not influence reporting at your facility and are not considered in event categorization.

- The '*Transfer Rule*' does **NOT** apply to LabID event reporting

- LabID Events are attributable to the location where the positive specimen is collected. There is no time requirement for 'how long' the patient must be housed on the unit to be eligible for reporting.

Knowledge Check 1

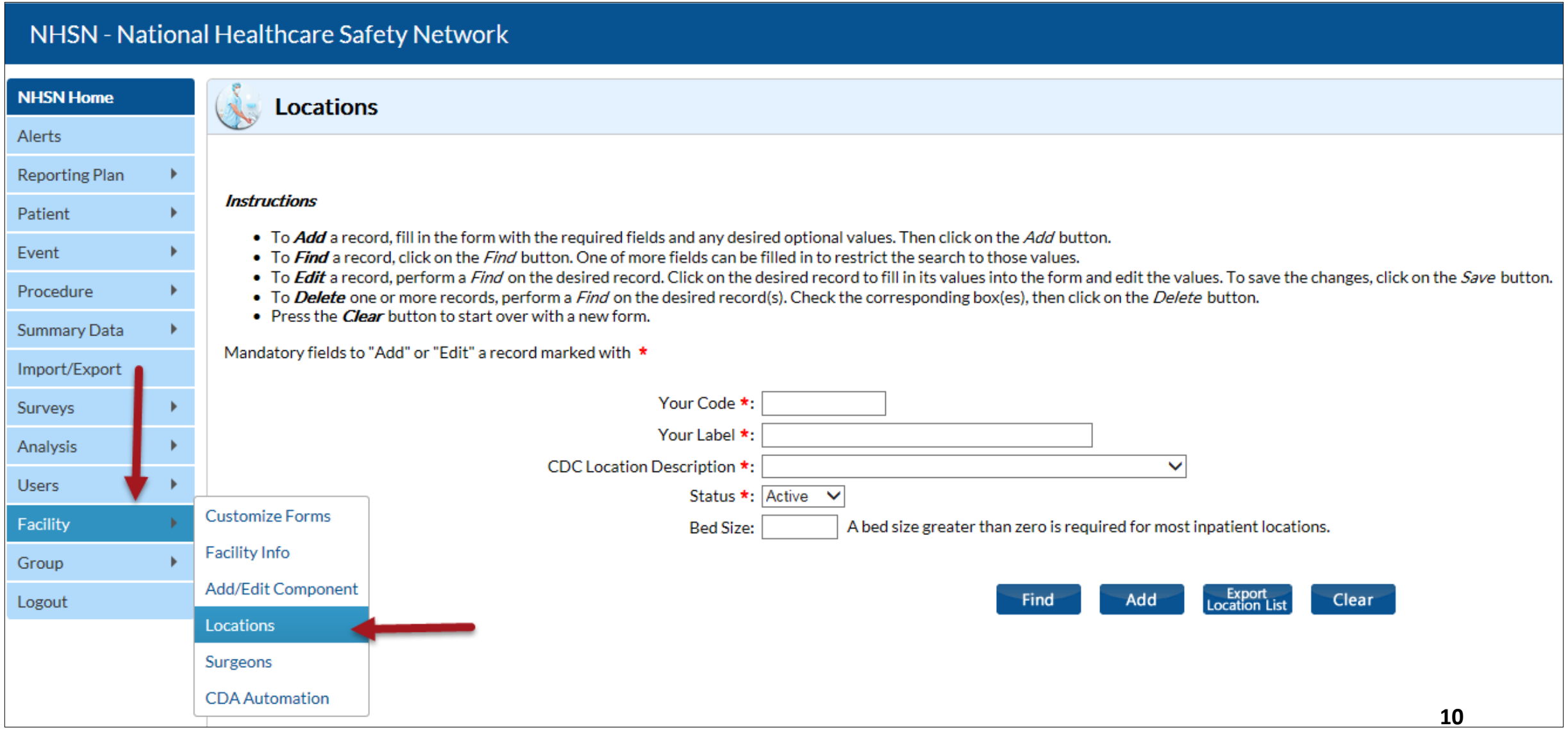
This patient presents to ED with sepsis and subsequently admits to ICU. Blood cultures collected in ICU are MRSA+. Which unit does the MRSA LabID event belong to?

- ED
- ICU
- Neither location, MRSA is present on admission and not an event

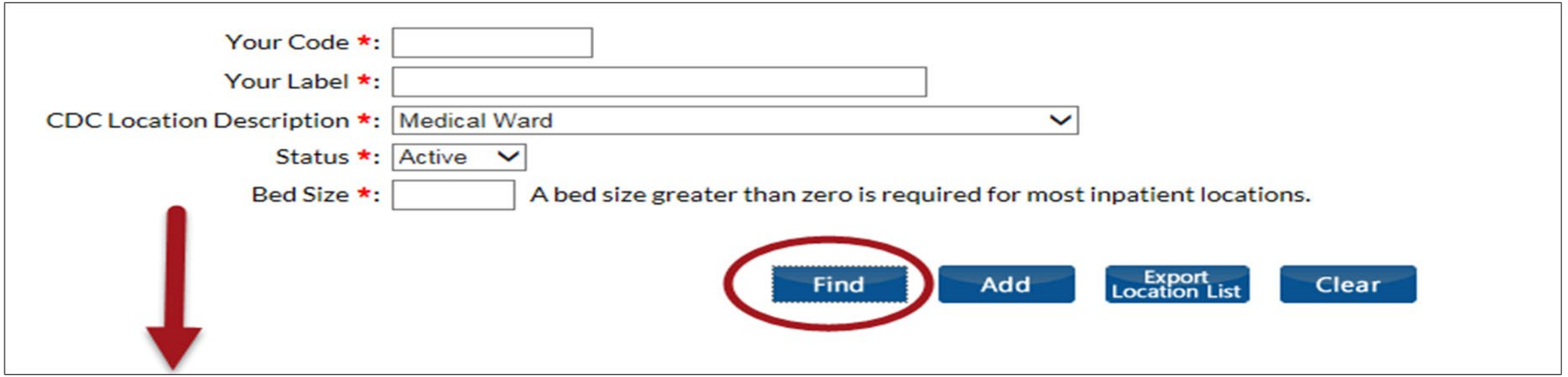
CHECKLIST:
Facility-wide {FacWideIN} LabID Event Reporting

- Review location options and map locations in NHSN as necessary.
- Review Monthly Reporting Plan(s) and update as necessary.
- Identify and enter all LabID events into NHSN by location.
- Enter denominator data for each month under surveillance.
- Resolve “Alerts”, if applicable.

FacWideIN requires mapping of bedded inpatient locations for the facility, all EDs and dedicated 24-hour Observation units



Find Locations:



Delete	Status	Your Code	Your Label	CDC Description	CDC Code	NHSN HL7 Code	Bed Size
	Active	ED	ED	Emergency Department	OUT:ACUTE:ED	1108-0	
	[redacted]						
	Active	M-SWARD	MED-SURG WARD	Medical/Surgical Ward	IN:ACUTE:WARD:MS	1061-1	15

https://www.cdc.gov/nhsn/pdfs/pscmanual/15locationsdescriptions_current.pdf

Knowledge Check 2

A swing bed patient is admitted as observation to an inpatient medical ward. Is this patient eligible for a LabID event?

- Yes
- No
- Maybe?

CHECKLIST: FacWideIN LabID Event Reporting

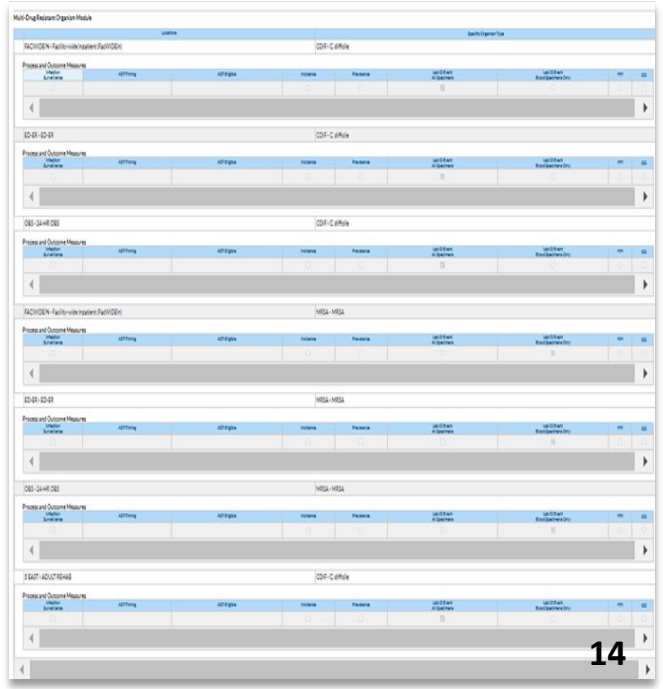
- ✓ **Review location options and map locations in NHSN as necessary.**
- **Review Monthly Reporting Plan(s) and update as necessary.**
- **Identify and enter all *C. difficile* LabID events into NHSN by location.**
- **Enter denominator data for each month under surveillance.**
- **Resolve "Alerts", if applicable.**

Monthly Reporting Plan

The Monthly Reporting Plan informs CDC which modules a facility is participating in during a given month.

- Referred to as “In-Plan” data

- **A facility must enter a Plan for every month of the year.**
- Add facility-wide inpatient reporting for MRSA Bacteremia and *C. difficile* LabID events to your monthly reporting plan (MRP) using the “**FACWIDEIN**” location.
- Emergency departments and 24-hour observation locations **are** included in FacWideIN reporting. **NOTE:** These locations will ‘automatically’ be added to your monthly reporting plan if mapped in NHSN. Newly mapped EDs or OBS locations may require adding manually.

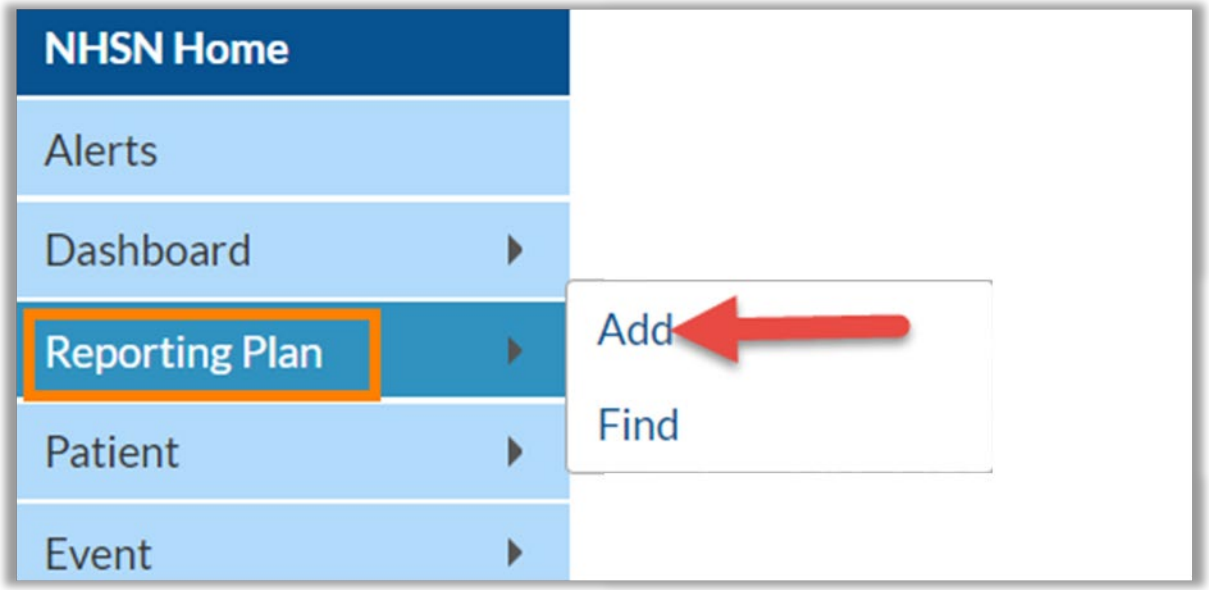


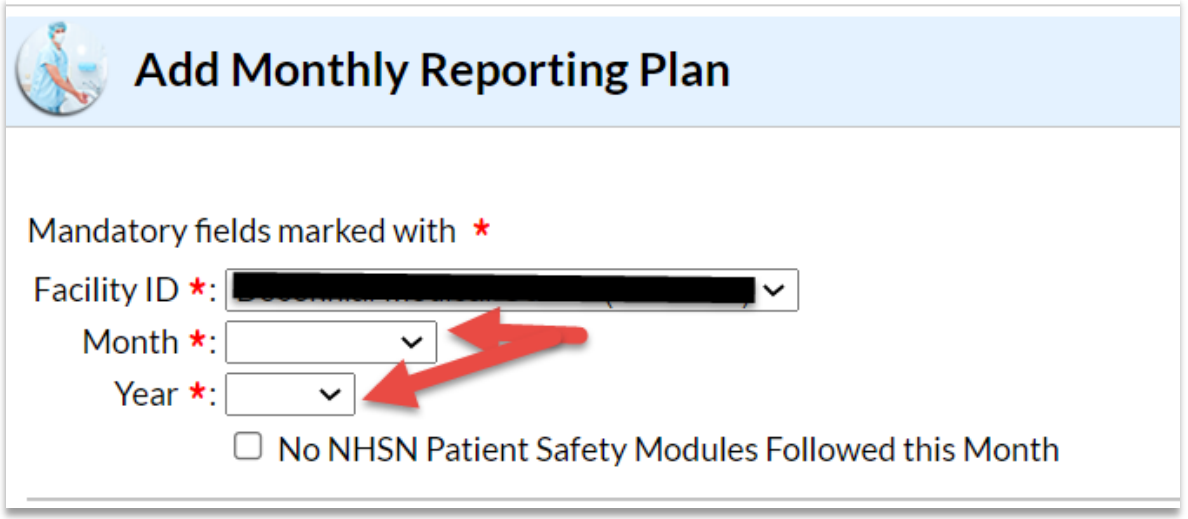
Creating a Monthly Reporting Plan

- On the left navigation bar, click on '**Reporting Plan**' and then select '**Add**'

- On the Add Monthly Reporting Plan page, select the Month and Year from each drop-down.'

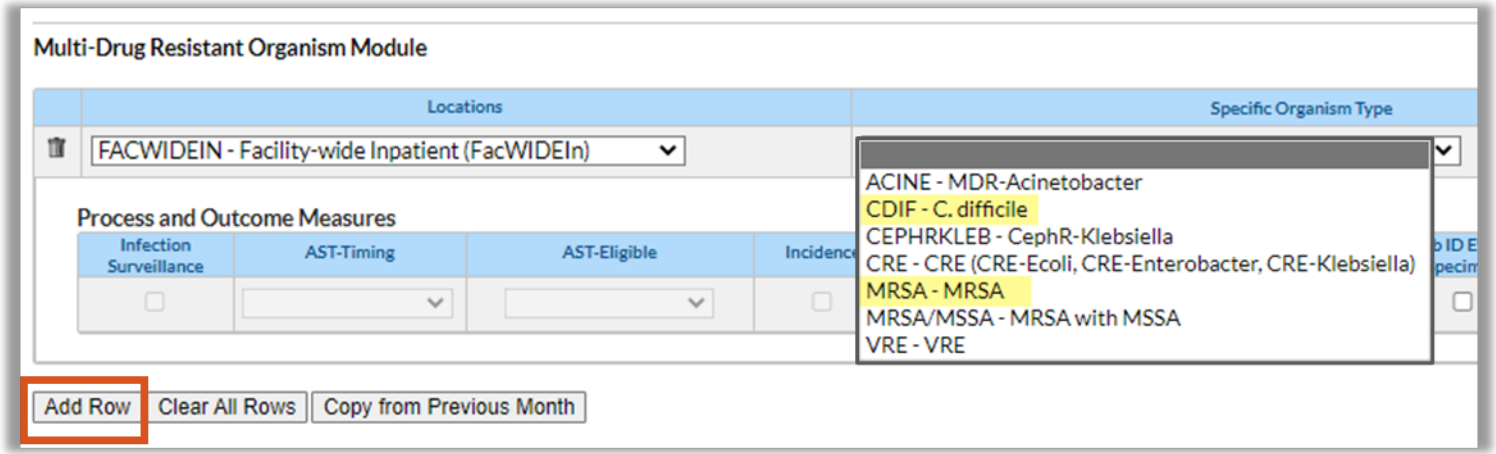
Note: These drop-downs are required.

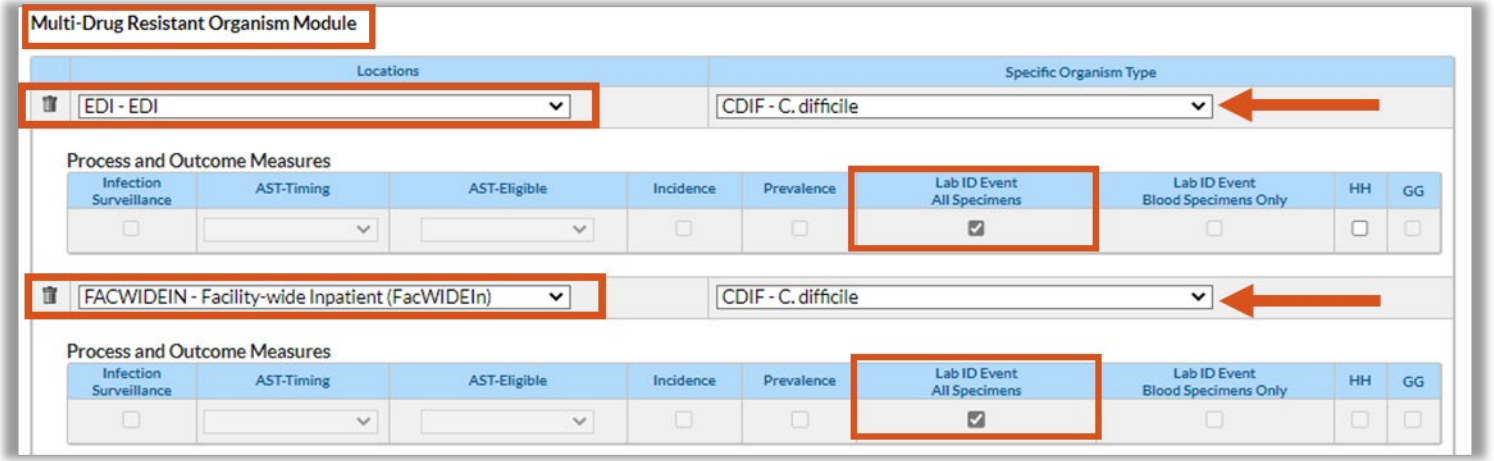




Creating a Monthly Reporting Plan

- Select FacWideIN as the ‘location’ and specific organism by type {such as C. Difficile or MRSA}
- Repeat for individual locations {rehab, psych, ICU} as desired
- Add rows for each different organism monitored



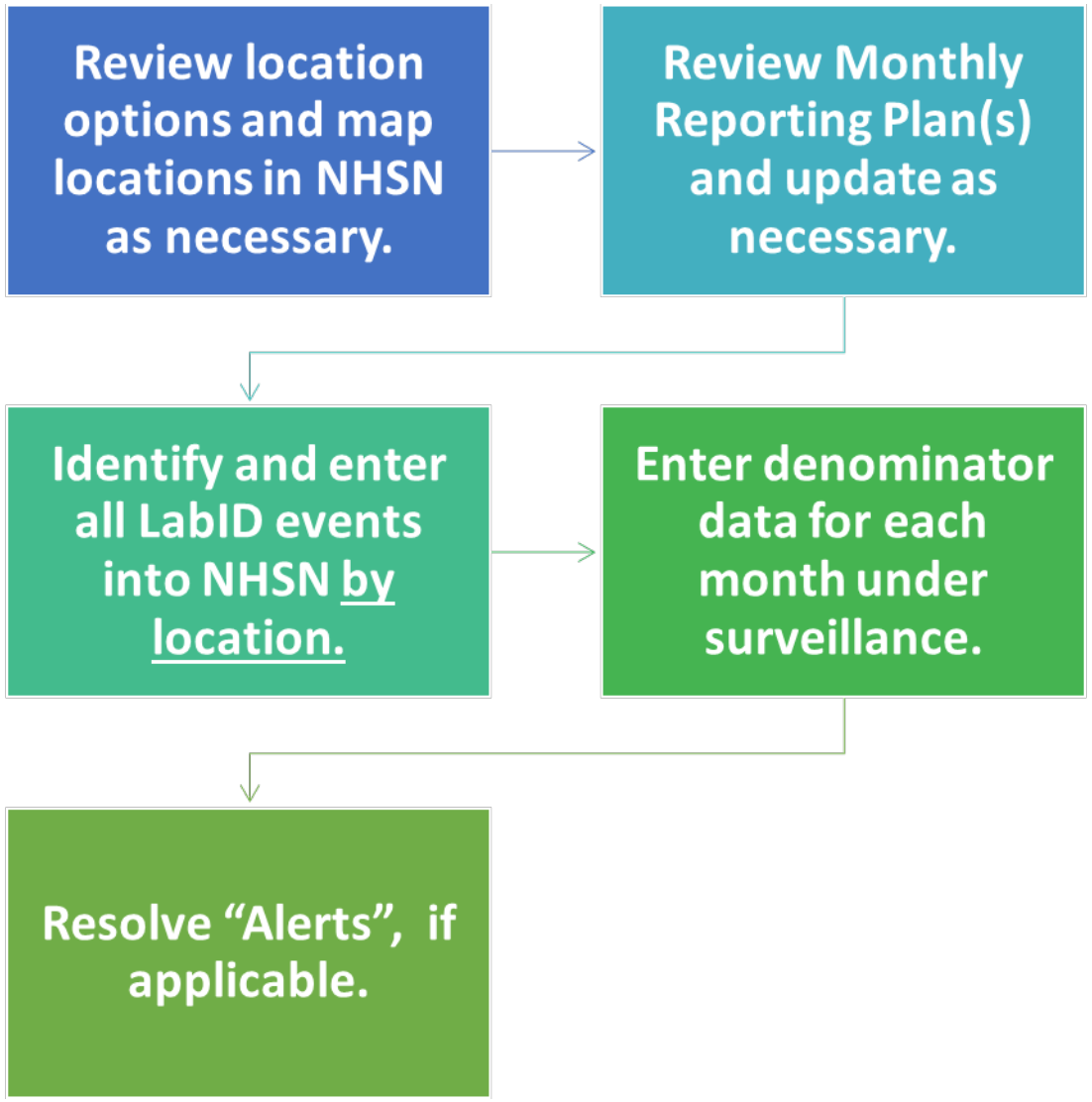


Knowledge Check 3

Do I conduct both *C. difficile* LabID event monitoring and MRSA bacteremia LabID event monitoring for my facility?

- Yes
- No
- It depends on the selections noted on the monthly reporting plan

CHECKLIST: FacWideIN LabID Event Reporting



LabID Event Protocol Standard Guidance

- LabID Events are identified using the proxy measure of a positive lab finding [without clinical consideration].

- The first lab positive finding for the patient in a location qualifies as a LabID event. Following this submission, no additional LabID events are submitted into NHSN for this location until there is a > 14-day gap in positive findings.

- Events are reported by patient AND location. Each location change for the patient resets reporting.

- LabID Events are attributable to the location where the positive specimen is collected.

Definition: *C. difficile* LabID Event

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

C. Difficile-positive laboratory assay

- A positive laboratory test result for *C. difficile* toxin A and/or B, (includes molecular assays[PCR] and/or toxin assays) tested on an unformed stool specimen (must conform to the container).
- A toxin-producing C. difficile organism detected by culture or other laboratory means performed on an unformed stool sample (must conform to the container).

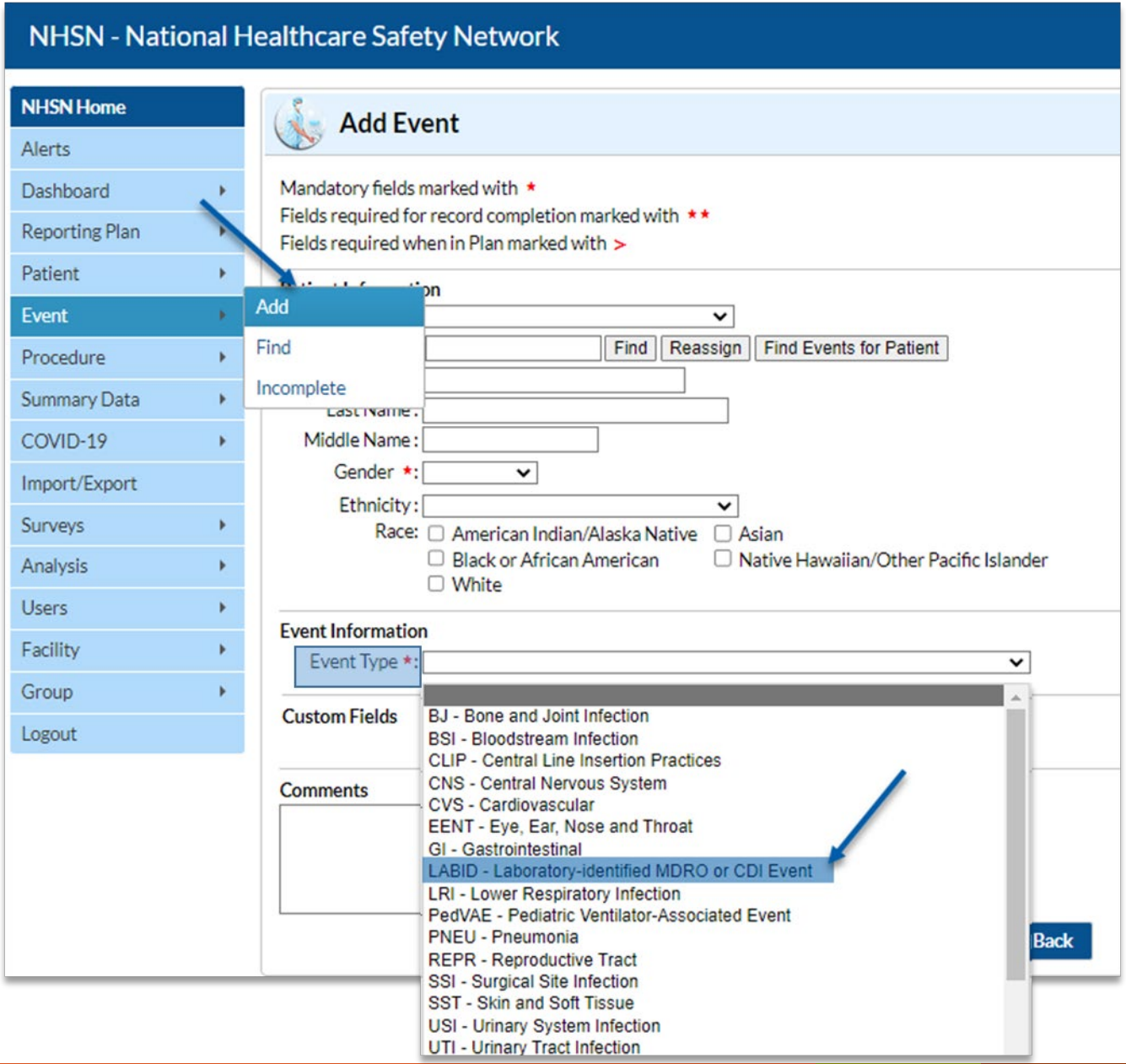
NOTE:

When using a multi-step testing algorithm for CDI on the same unformed stool specimen, the finding of the last test performed will determine if the CD(+) lab assay definition is met.

Only when the final report has specific test times attached to each of the individual testing methods (for example, antigen/toxin and PCR) can one make a valid determination of which test is performed first and which is performed last.

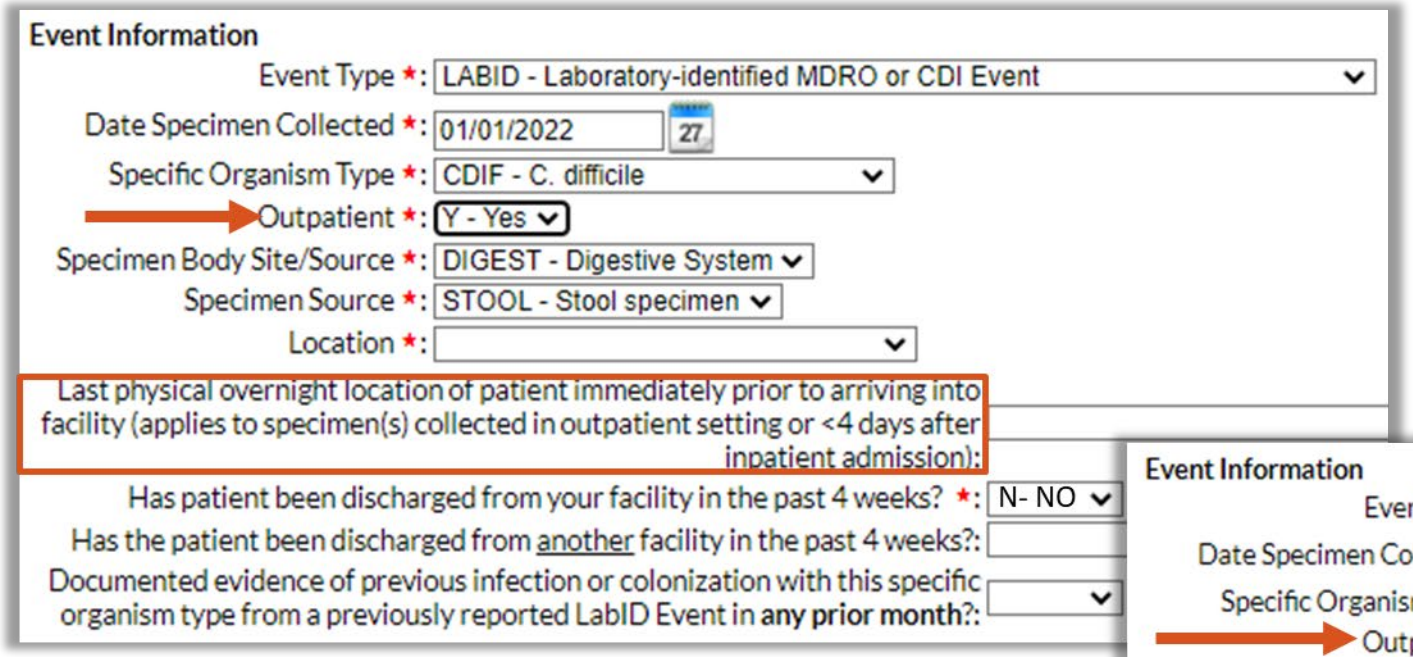
If there are no specific test times/ time stamps attached to each individual testing method on the final lab report, consider the tests as performed simultaneously and any positive finding is eligible for use.

Event - Patient Information



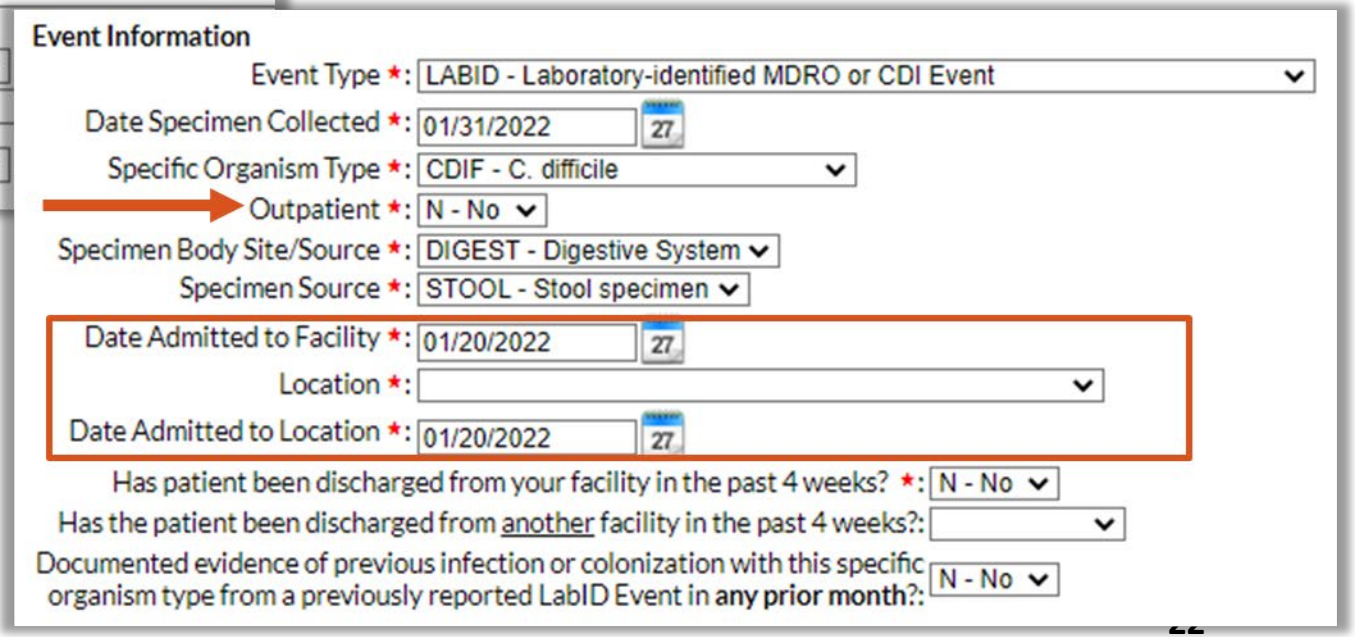
Event Information- Specimens Collected from

Outpatient Location



vs.

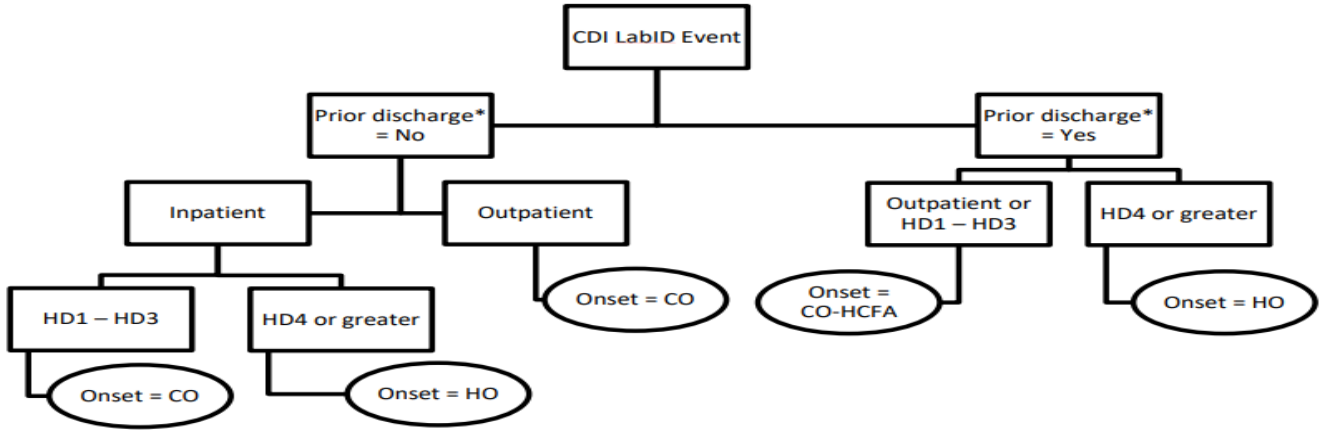
Inpatient Location



*** Required Fields**

NHSN will Categorize *C. difficile* LabID Events Based on Location & Specimen Collection Date:

- **Community-Onset (CO)**: LabID Event meeting one of the following criteria: A) collected in an outpatient location in which the patient was not previously discharged from an inpatient location within the same facility less than or equal to 28 days prior to current date of specimen collection - B) collected in an inpatient location on HD 1 [day of admission], HD 2 or HD 3.
- **Community-Onset Healthcare Facility-Associated (CO-HCFA)**: CO LabID Event collected from an inpatient or an outpatient location from a patient who was discharged from the facility less than or equal to 28 days prior to current date of stool specimen collection. The previous discharge must have been from an inpatient location within the same facility (in other words, an outpatient visit does not qualify as "admitted", and therefore is not used to set the timeline for CO-HCFA).
- **Healthcare Facility-Onset (HO)**: LabID Event collected from an inpatient location on or after HD 4 where HD 1 is day of admission.



* Patient discharged from inpatient location within the same facility less than or equal to 28 days prior current event

NHSN will Categorize *C. difficile* LabID Events Based on Location & Specimen Collection Date:

CDI LabID Events are further categorized by NHSN as **Incident** or **Recurrent**. Refer to the 'cdiAssay' variable in the NHSN Line List.

- **Incident** CDI LabID Event: Any CDI LabID Event from a specimen obtained more than 56 days after the most recent CDI LabID Event (or with no previous CDI LabID Event documented) for that patient. Note: the date of first specimen collection is considered day 1.
- **Recurrent** CDI LabID Event: Any CDI LabID Event from a specimen obtained more than 14 days and less than or equal to 56 days after the most recent CDI LabID Event for that patient. Note: the date of first specimen collection is considered day 1.
- **CdiAssay** will be unassigned, or "blank", for any CDI LabID event collected less than or equal to 14 days after the most recent CDI LabID event for that patient.

Let's Review *C. difficile* LabID Event Reporting

For FacWideIN, *C. difficile* toxin-positive specimens MUST be monitored for all inpatient locations within a facility (includes ED and 24-hour OBS locations) but not for predominately baby locations {Nursery, NICU, etal}.

All LabID Event(s) MUST be entered without regard to date of occurrence. Community-Onset (CO) or Healthcare facility-onset (HO).

Only unformed stools should be tested for *C. difficile*. Internal 'rejection' policies should be used to ensure appropriate testing.

A positive CD finding from unformed stool specimen qualifies as a LabID Event if there has not been a previous positive laboratory result for the patient in the location **within the previous 14 days.**

Knowledge Check 4

Community Onset *C. difficile* LabID events are not required to be reported into NHSN?

- True
- False
- It depends on the selections noted on the monthly reporting plan

Definition: MRSA bacteremia LabID Event

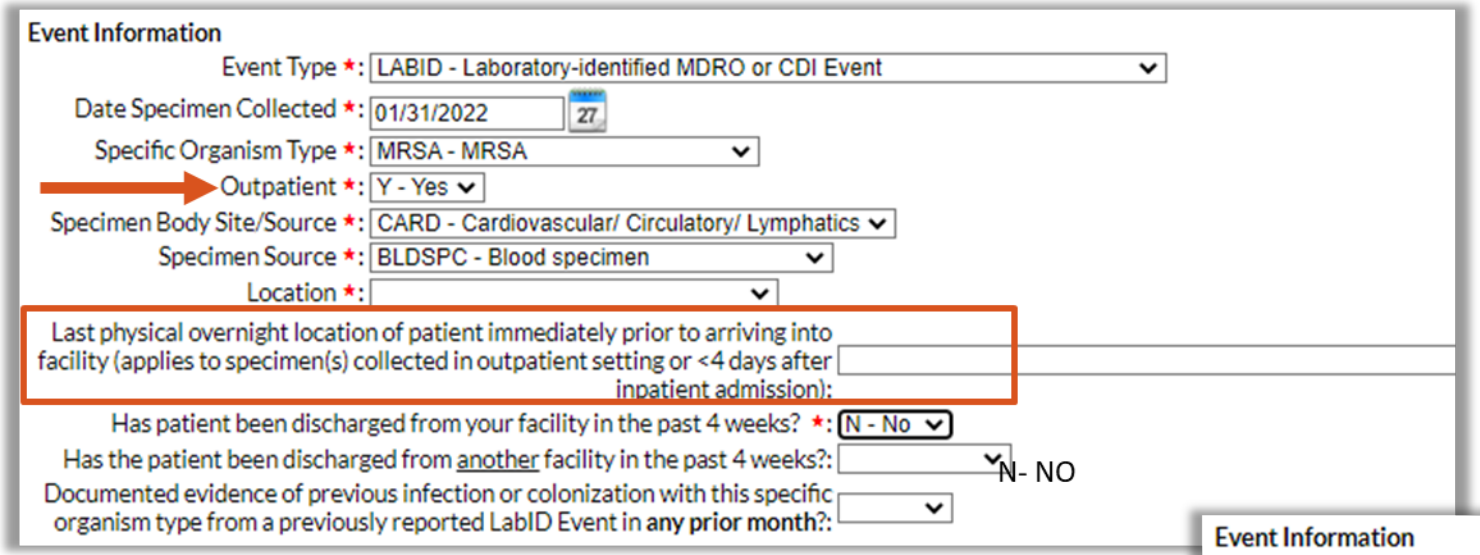
MRSA identified from blood culture:

- Includes *S. aureus* cultured from a blood culture specimen that tests oxacillin-resistant, cefoxitin resistant, or methicillin-resistant by standard susceptibility testing methods, OR
- Any lab finding where MRSA is specifically identified (includes but not limited to PCR or other molecular based detection methods). Example: MRSA isolated

- NOTE: Applies to ALL inpatient locations [including locations known to predominately house babies] and Emergency Departments and 24-hour Observation locations.

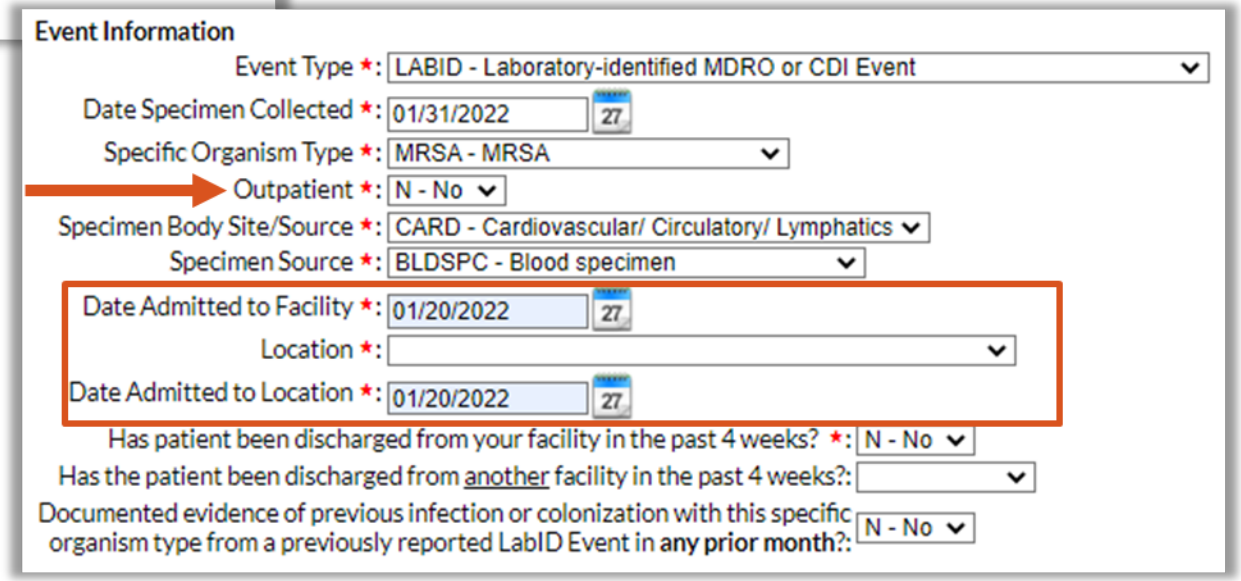
Event Information- Specimens Collected from

Outpatient Location



vs.

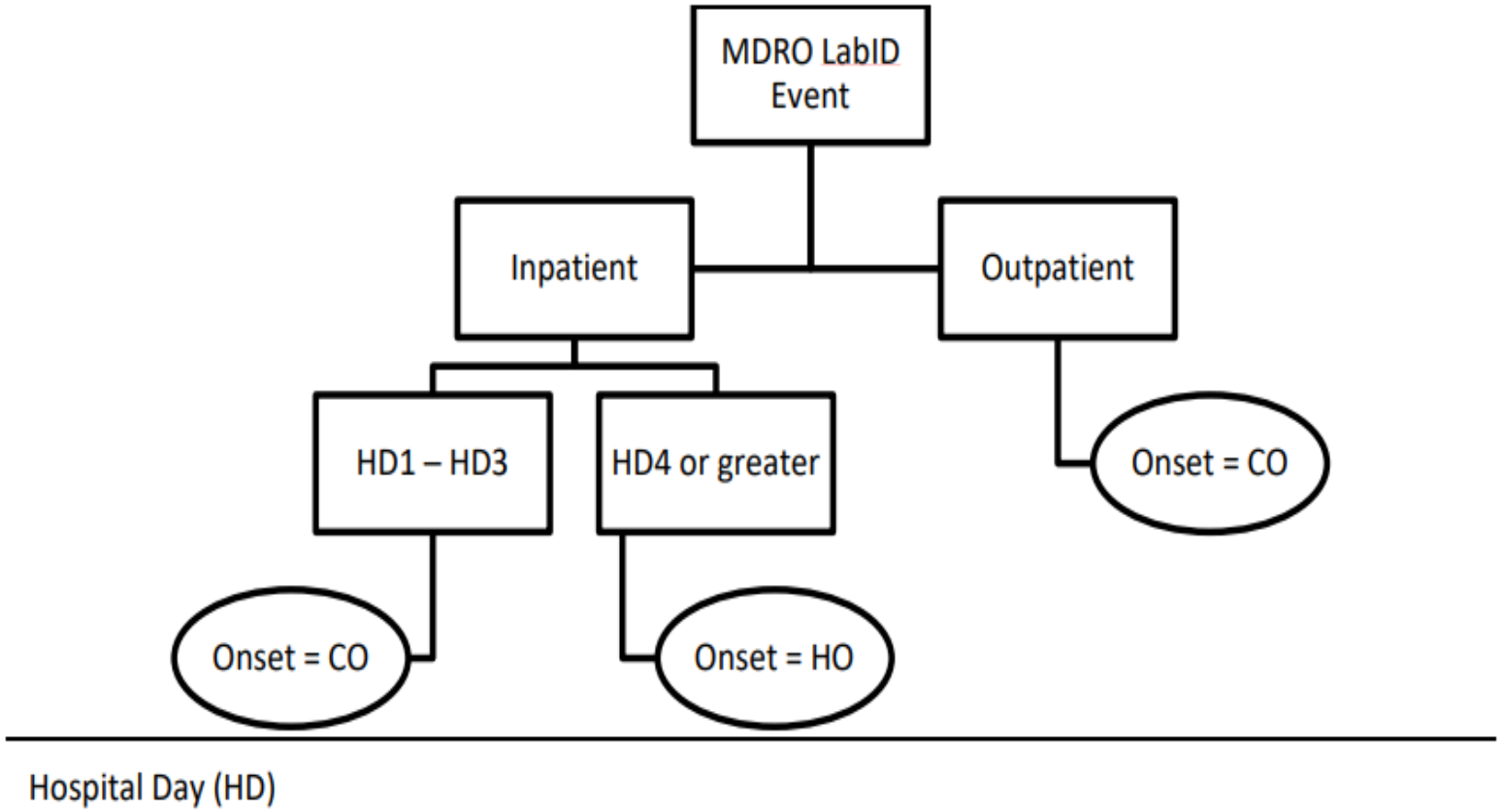
Inpatient Location



*** Required Fields**

NHSN will Categorize MRSA bacteremia LabID Events Based on Location & Specimen Collection Dates

- Community-Onset (CO): LabID Event specimen collected in an outpatient location or an inpatient location on Hospital Day 1 [day of admission], HD 2 or HD 3.
- Healthcare Facility-Onset (HO): LabID Event specimen collected on or after Hospital Day 4 where HD 1 is day of admission. Thus, all HO LabID Events will have occurred more than 3 calendar days after admission.



Let's Review MRSA bacteremia LabID Event Reporting

- For FacWideIN, MRSA + blood cultures are monitored for all inpatient locations within a facility , including ED and 24-hour OBS locations as well as predominately baby locations {Nursery, NICU, et.al}.
- All LabID Event(s) MUST be entered without regard to date of occurrence. Community-Onset (CO) or Healthcare facility-onset (HO).
- The first MRSA+ BC for the patient and the location qualifies as a LabID event. No additional MRSA LabID events are submitted for the patient in the location until there has been > 14 days from prior MRSA+ BC. This is a 'rolling' 14-day timeframe not specifically based on a previously submitted MRSA LabID event(s).
- Each location change resets reporting.

Knowledge Check 5

The same MRSA+ BC can be used to identify a BSI event and a MRSA bacteremia LabID event?

- True
- False
- It depends on the selections noted on the monthly reporting plan

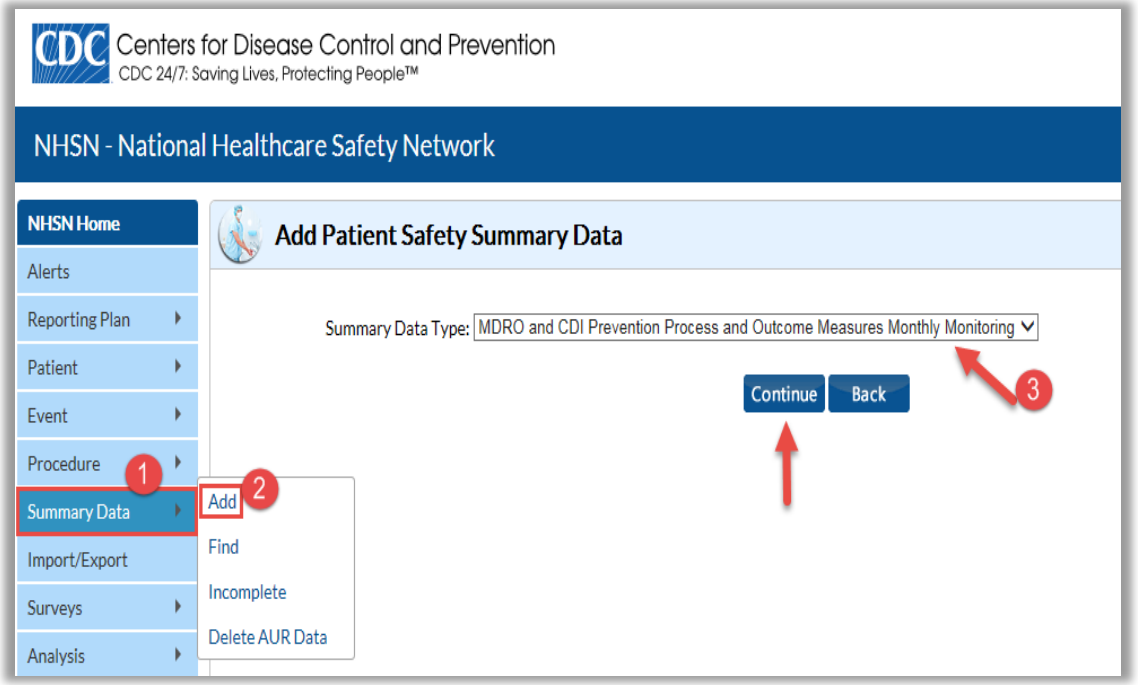
CHECKLIST:
FacWideIN LabID Event Reporting

1. Review location options and map locations within NHSN as necessary.
2. Review Monthly Reporting Plan(s) and update as necessary.
3. Identify and enter all LabID events into NHSN by location.
4. Enter denominator data for each month under surveillance.
5. Resolve "Alerts", if applicable.

Entering Denominator Data in NHSN Application

- On the left navigation bar, click on '**Summary Data**' and then select '**Add**'
- On the Add Patient Safety Summary Data page, from the Summary Data Type dropdown menu (see screenshot), select '**MDRO and CDI Monthly Denominator –All Locations**'.

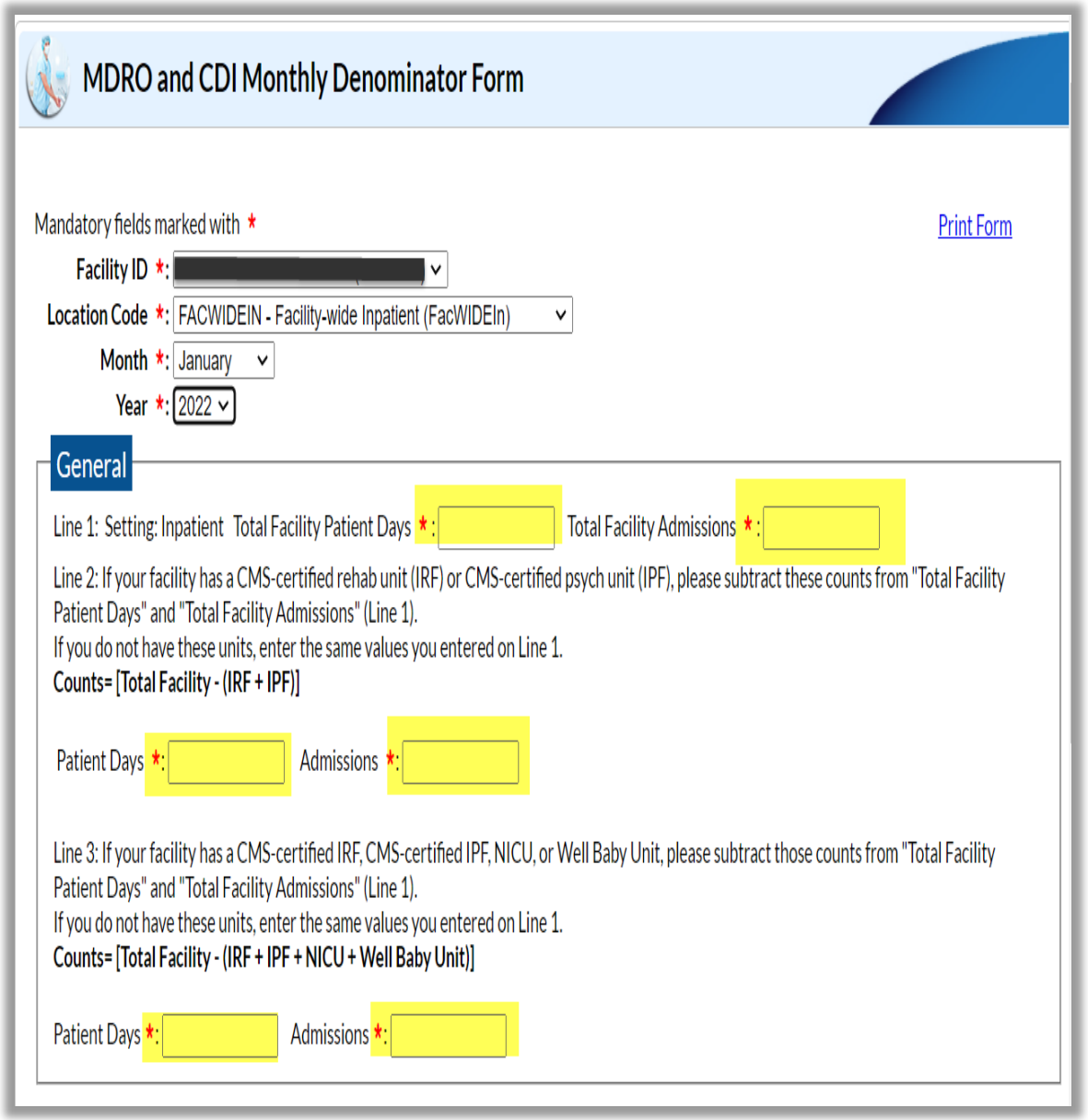
Note: This is a different form than the one you use to report summary data for CLABSI and CAUTI.



Denominator Data: FacWideIN

On the summary data entry screen, select **FACWIDEIN** as the location for which you are entering the summary data.

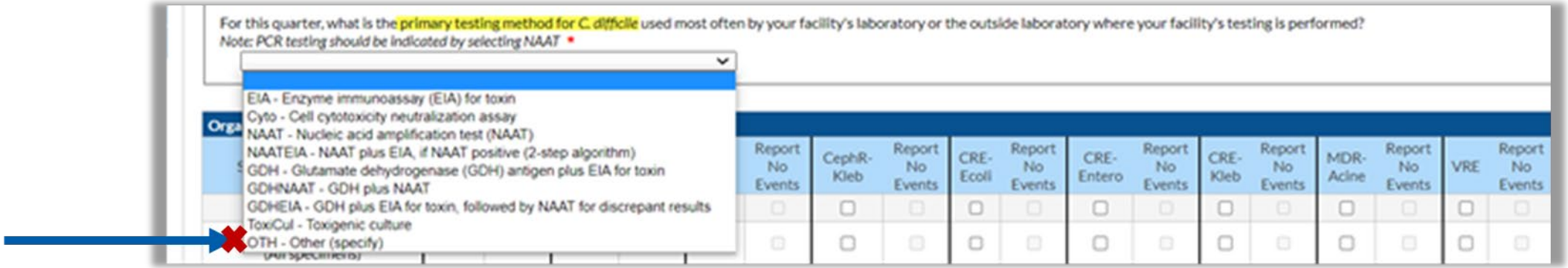
After selecting the FACWIDEIN Location Code, **Month**, **Year**, and the **six summary data fields** will become required.



Denominator Data

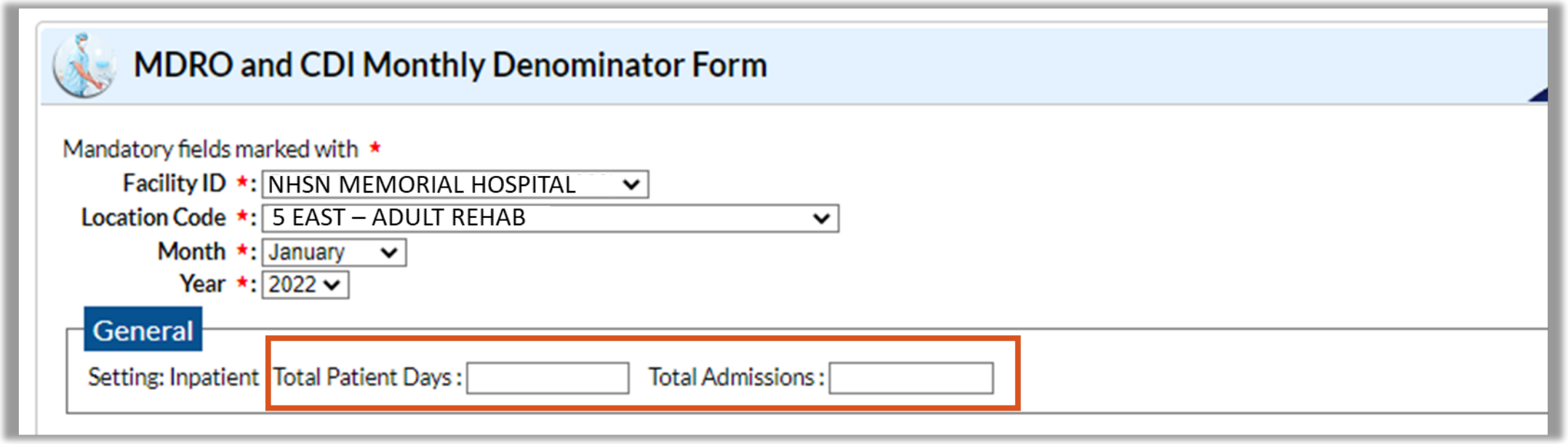
Select **CDI Test type quarterly** (last month of each calendar-year quarter – March; June; September; December)

NOTE: ‘Other’ **should not be used** to name specific laboratories, reference laboratories, or the brand names of *C. difficile* tests; most methods can be categorized accurately by selecting from the options provided



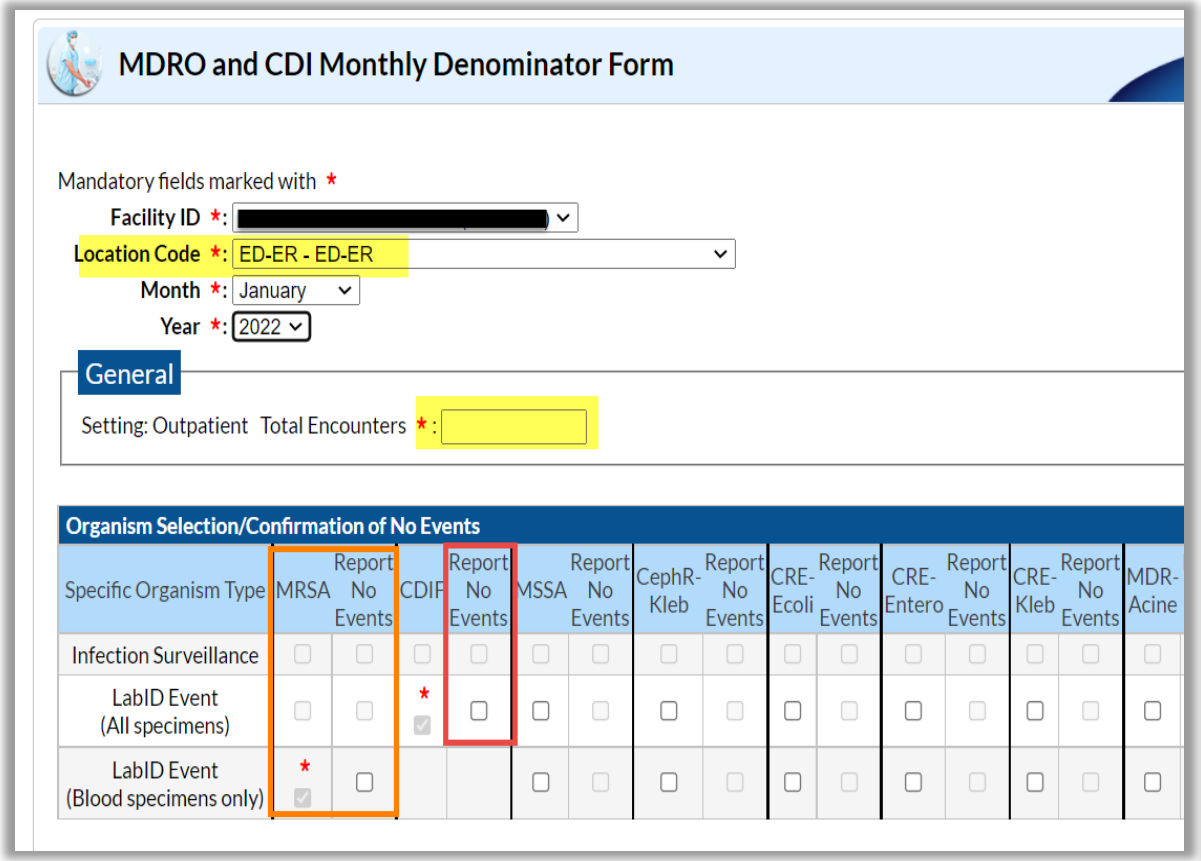
Denominator Data: Inpatient Rehab or Inpatient Psych units

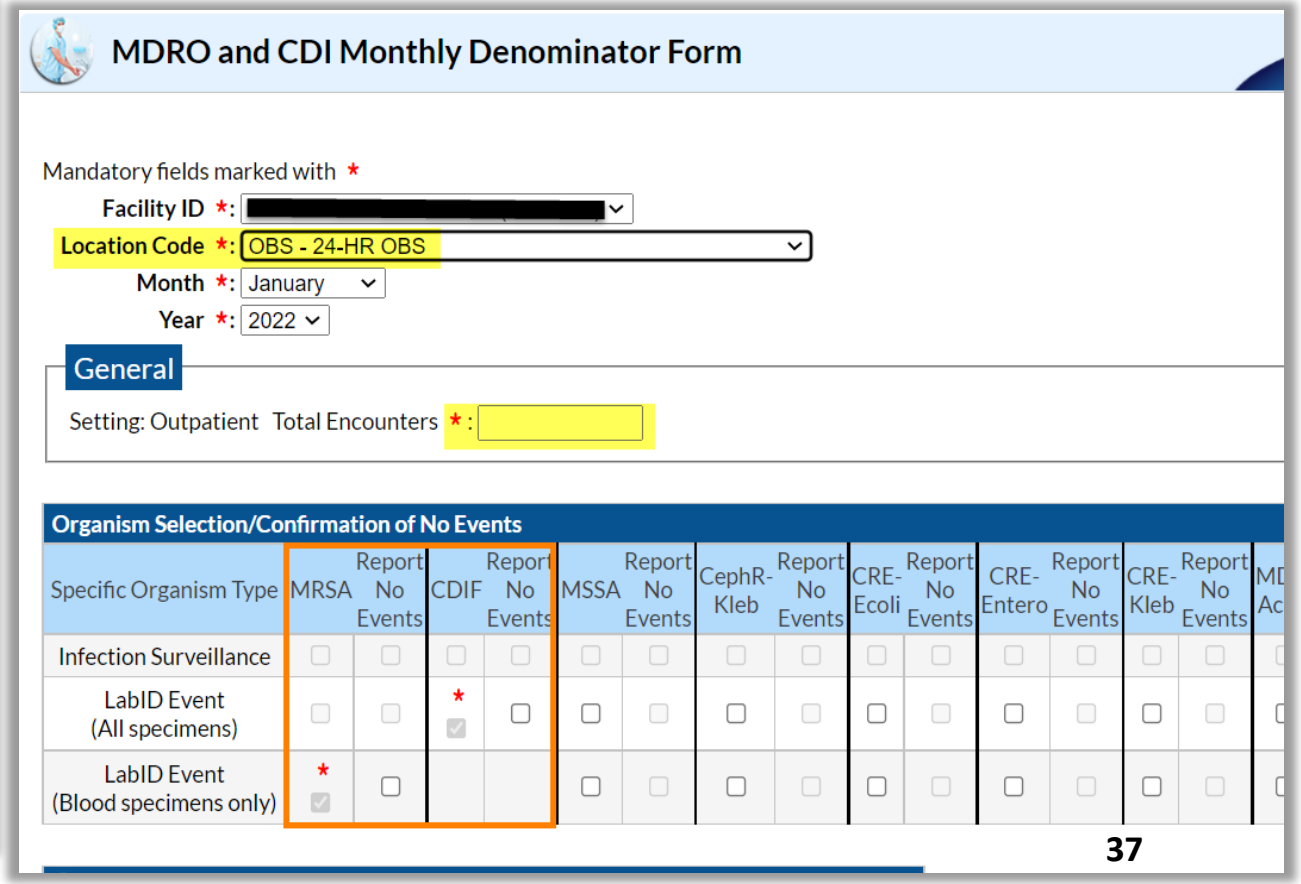
- On the summary data entry screen, use the 'Location Code" drop down menu to select the Rehab or Psych unit included as separate row on your monthly reporting plan {in addition to FacWideIN}.
- After selecting the appropriate unit, month, and year, complete **2** required fields



Denominator Data: Emergency Department / 24-hour observation

- On the summary data entry screen, use the 'Location Code" drop down menu to select ED or 24-hour observation as the location for which you are entering the summary data.
- After selecting the appropriate unit, month, and year, one summary data field will become required (Total Encounters). Repeat steps for 24-hour observation locations. **1 visit = 1 encounter**



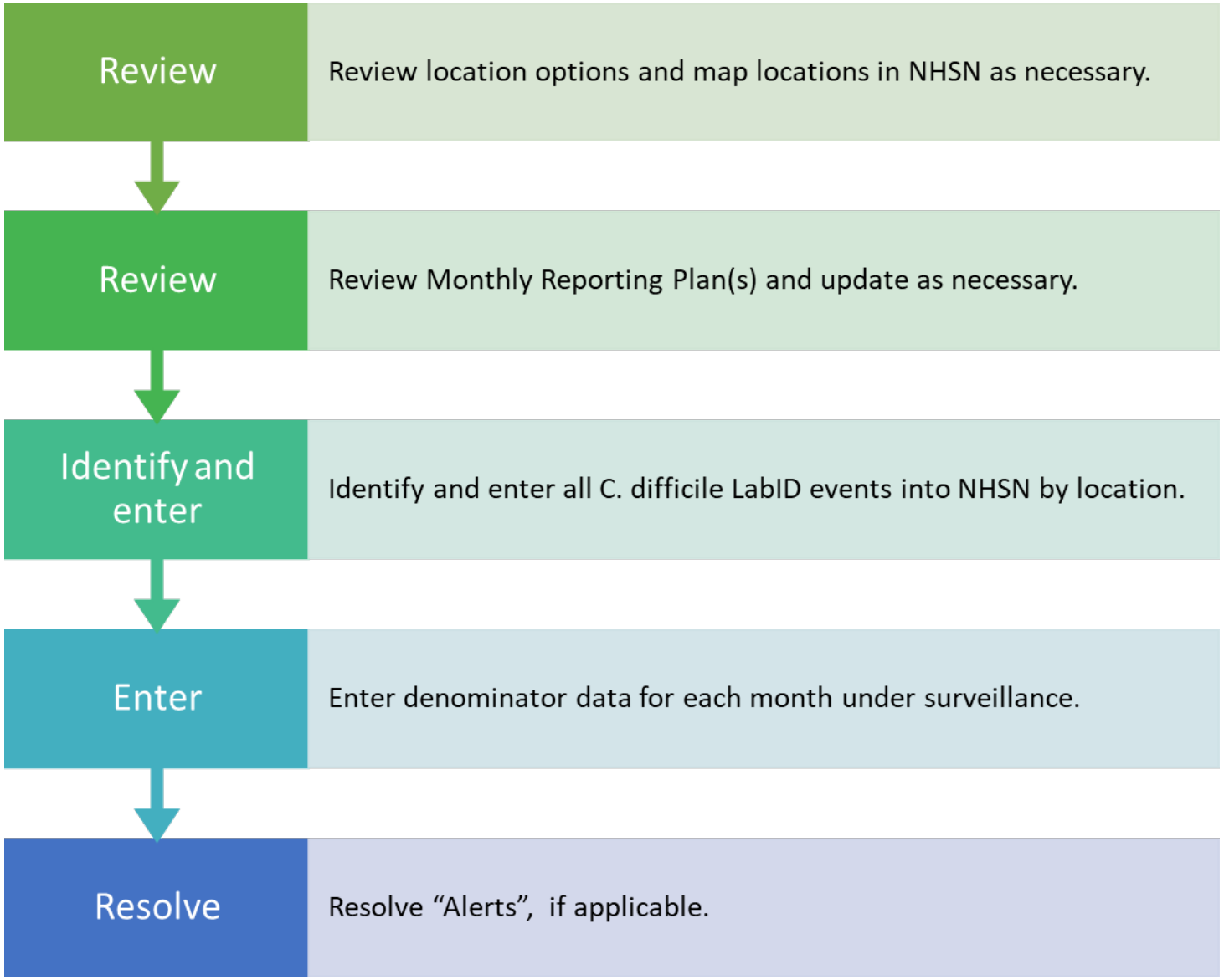


Knowledge Check 6

The C. difficile testing method used by the facility is required to be provided by the facility on the FacWideIN denominator field on the last month of each quarter?

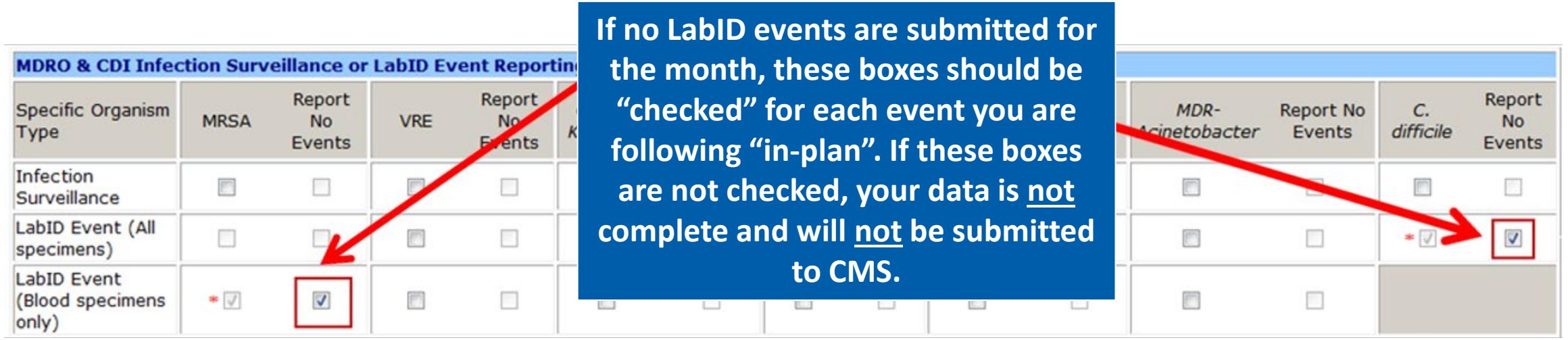
- True
- False
- Once per year is good enough

CHECKLIST: FacWideIN LabID Event Reporting



Denominator Data: Report No Events

- If you have reported any LabID events during the month, you are **finished** with your reporting for the month and can skip this step.
- If you have no LabID events for the specific month of reporting, you must indicate this on the summary data record to complete your reporting efforts.
- On the MDRO and CDI Module summary data form, checkboxes for "Report No Events" are found underneath the patient day and admission count fields, as seen in the screenshot below.

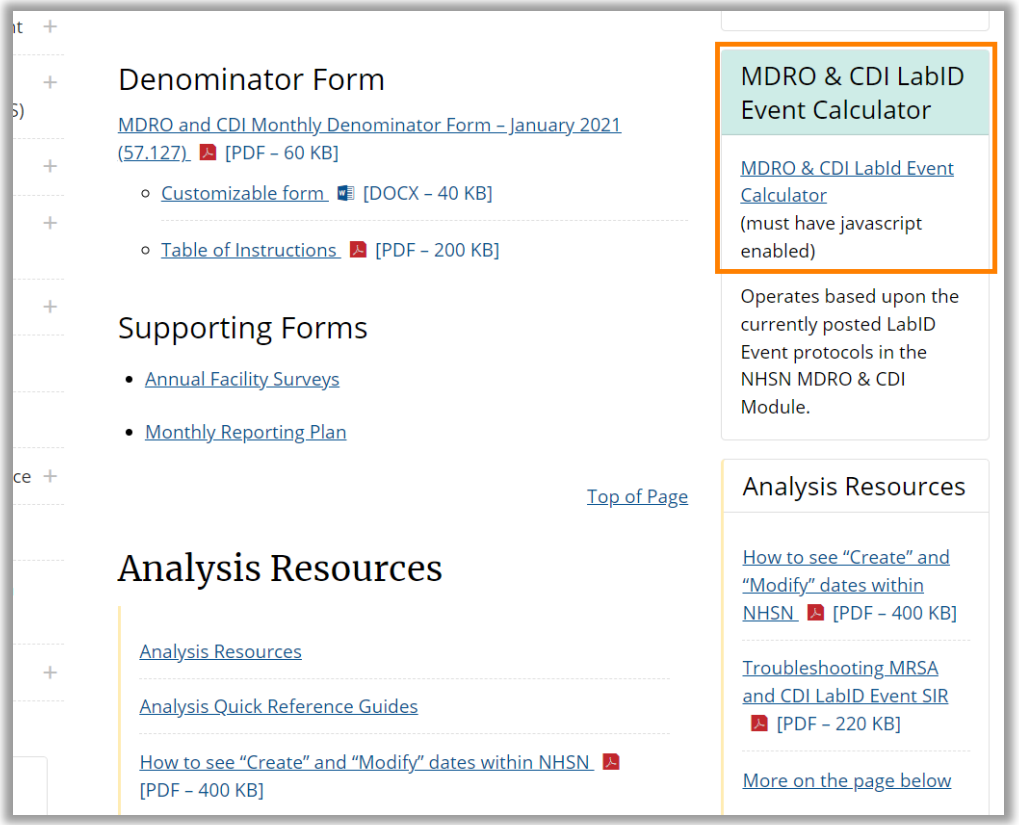


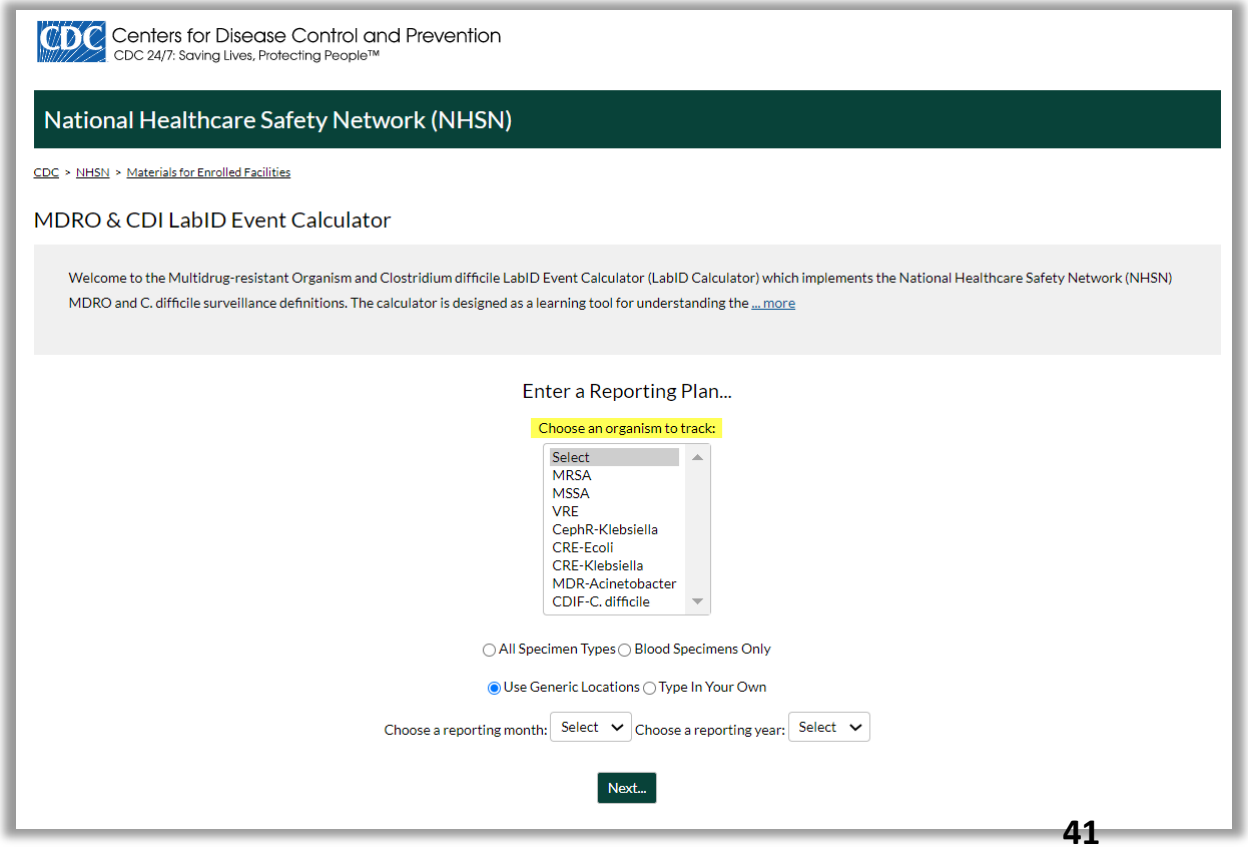
If you identify and enter LabID events for an organism after you've already checked the "Report No Events" box, the "Report No Events" check will automatically be removed in the NHSN database.

LabID Event Calculator:

https://www.cdc.gov/nhsn/labid-calculator/index.html.

- Available for use with *C. difficile* and MRSA LabID Event reporting
- Aids in decision making around the 14-day rule
- External calculator





Links to Analysis:

- SIR Guide, to learn more about the SIR & how it's calculated [updated 2/21]:
  https://www.cdc.gov/nhsn/pdfs/ps-analysis-resources/nhsn-sir-guide.pdf

- Introduction to NHSN Analysis:
  https://www.cdc.gov/nhsn/pdfs/training/2019/intro-nhsn-analysis-508.pdf.

- Analyzing LabID Event Data in NHSN:
  https://www.cdc.gov/nhsn/pdfs/training/2020/labid-update-508.pdf

Checkpoint – Case Study learning assessment:

- 2/1: Pt. to ED from home unresponsive with significant low BP, fluid resuscitation initiated. Blood cultures collected in ED. Intubated and transferred to ICU. Antibiotics, TPN and Lipids are started.
- 2/4: 2/1 BC result as MRSA. New BC collected to document 'clearance'.
- 2/4: Diarrhea noted - temp to 104^0 F.
- 2/5: Diarrhea continues, Rectal Tube inserted.
- 2/6: Diarrhea worsens per documentation. Liquid stool from rectal bag submitted for *C. difficile* testing with 'Toxin positive' finding noted.
- 2/7: Temp to 105 F, BC collected, pt. has cardiac arrest & expires.
- 2/8: BC from 2/7 reported as MRSA+

Learning Assessment

This facility has selected FacWideIN MRSA bacteremia and C. difficile LabID event monitoring on the monthly reporting plan, are there events for reporting?

- A)Yes
- B) No
- C) I'm not Sure

- *How many events are reportable?*
    - A) 1
    - B) 2
    - C) 3

Checkpoint – learning assessment:

- 2/1: Pt. to ED from home unresponsive with significant low BP, fluid resuscitation initiated. **Blood cultures collected in ED**. Intubated and transferred to ICU. Antibiotics, TPN and Lipids are started.
- 2/4: 2/1 BC result as MRSA. **ICU collects 'new' BC** to document 'clearance'.
- 2/4: Diarrhea noted - temp to 104 F. Rectal Tube inserted.
- 2/5: Lab calls with MRSA+ BC result for 2/4 BC.
- 2/6: Diarrhea worsens per documentation. Liquid stool from rectal bag submitted **for *C. difficile* testing** with 'Toxin positive' finding noted.
- 2/7: Temp to 105 F, **BC collected**, pt. has cardiac arrest & expires.
- 2/8: BC from 2/7 reported as MRSA+

What are the dates of each event?

- LabID events:

(1) 2/1 MRSA LabID event for ED

(2) 2/4 MRSA LabID event for ICU

(3) 2/6 CD LabID event for ICU

(4) All of the above

** HINT:

There must be > 14 days between MRSA+ BC in a location before a second event can be submitted for the patient in the same location.

BONUS

How are these events categorized - CO or HO?

(1) 2/1 MRSA LabID event is **CO** as the +BC are collected in the ED – an outpatient location for the facility

(2) 2/4 MRSA LabID event in ICU is **HO** as it occurs on HD 4 [2/1 is HD1 day of admission]

(3) 2/6 CD LabID event in ICU is **HO** as the event occurs on HD 6

Thank you for your time and attention!

For questions,

contact the NHSN Helpdesk at nhsn@cdc.gov

For more information please contact Centers for Disease Control and Prevention
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