HEALTHCARE-ASSOCIATED INFECTION (HAI) MODULE
Part One

Laboratory-identified Event (LabID) Module for Long-Term Care Facilities (LTCFs): *Clostridioides difficile* Infection (CDI) Overview

Date: October 2022

Presenter: Ti McCray, BSHA, MPH,
Leidos, Inc (Contractor)
Infection Preventionist
NCEZID, Division of Healthcare Quality Promotion (DHQP)/Surveillance Branch
Centers for Disease Control and Prevention

Learning Objectives

- Demonstrate an understanding of Laboratory-identified (LabID) Event surveillance and reporting requirements for NHSN.
- Explain *Clostridioides difficile* infection (CDI) definitions and protocols.
- Define required monthly summary data for CDI reporting.
- Describe how to manually enter CDI LabID event data and monthly summary data into the NHSN application.

Surveillance and Reporting Rules for LabID Event Module

- Surveillance must occur for **all** resident care locations in the facility—referred to as facility-wide inpatient or **FacWideIN.**
- Must Submit ALL MDRO LabID events for **all Specimen sources**.

AND

- Specimens collected during a brief outpatient (OP) visit to an emergency department (ED) or clinic/physician's office **if:**
  - The resident returns to your facility on same calendar day of the OP visit or the following calendar day.

    Note: *There should be* ***no*** *change in* ***current*** *admission date.*

Surveillance and Reporting Rules for LabID Event Module

- When submitting a LabID event for a specimen collected in an OP setting, the *Resident Care Location* and *Primary Resident Service Type* should reflect the resident's primary LTCF location and service type on the day of the outpatient visit.
- Do **NOT** report a LabID event for a specimen collected prior to the resident's admission to your facility.
- Results from positive isolates collected as part of active surveillance are **excluded**.
- There is not an option to perform surveillance on select or individual units/pods within the facility.

Monthly Participation Requirements

- A **NHSN Monthly Reporting Plan** must be completed for each calendar month in which a facility plans to enter data into the NHSN.
  - For MDRO surveillance, one or more MDROs must be selected from the Specific Organism Type drop-down menu.
  - LabID event surveillance must occur for the entire calendar month for the selected events/organisms.

- **Submit** ALL MDRO LabID events for **all** specimen sources to NHSN (numerator data).

- **Summary Data** For each participating month, the facility must report the required denominator data.

- **Resolve** "Alerts," if applicable.

Reporting Options Available in LabID Event Module

I. *Clostridioides difficile* infection (CDI; *C. difficile*)

II. Multi-drug Resistant Organism (MDRO)

- A facility can choose to monitor one or more of the following organisms:
  - *Staphylococcus aureus,* methicillin-resistant (MRSA)
  - *Staphylococcus aureus,* methicillin-susceptible (MSSA) **with** MRSA surveillance
  - Vancomycin-Resistant *Enterococcus* spp. (VRE)
  - Cephalosporin-Resistant *Klebsiella* spp.(CephR-*Klebsiella)*
  - Carbapenem-Resistant *Enterobacteriaceae (CRE)*
    - *Klebsiella* spp. (CRE-*Klebsiella*)
    - *E coli*. (CRE-*E coli*)
    - *Enterobacter* (CRE-*Enterobacter*)
  - Multidrug-Resistant *Acinetobacter* spp. (MDR-*Acinetobacter*)

Clostridioides difficile infection (CDI) Key Terms and Definitions

Common Terms and Definitions used in LabID Event Module

- ***C. difficile* positive laboratory assay**: (1) An unformed/loose stool that tests positive for *C. difficile* toxin A and/or B, (includes molecular assays [PCR] and/or toxin assays); OR (2) A toxin-producing *C. difficile* organism detected in an unformed/loose stool by culture or other laboratory means.
- **CDI Laboratory-identified (LabID) Event:** *C. Difficile* positive laboratory assay collected while resident is under the care of the reporting LTCF. Includes residents physically housed and cared for in the reporting LTCF and residents being cared for during a brief outpatient visit in which the resident returns to the reporting LTCF on the day of the OP visit or the following calendar day.
- **Facility-wide Inpatient (FacWideIN):** All resident care locations in the facility.
- **LabID Event Date:** Specimen collection date.

What specimens should NOT be submitted to NHSN as a CDI LabID Event?

- Negative *C. difficile* laboratory assay lab results.
- Specimens collected during an admission in another healthcare facility.

Categorization of CDI LabID Events

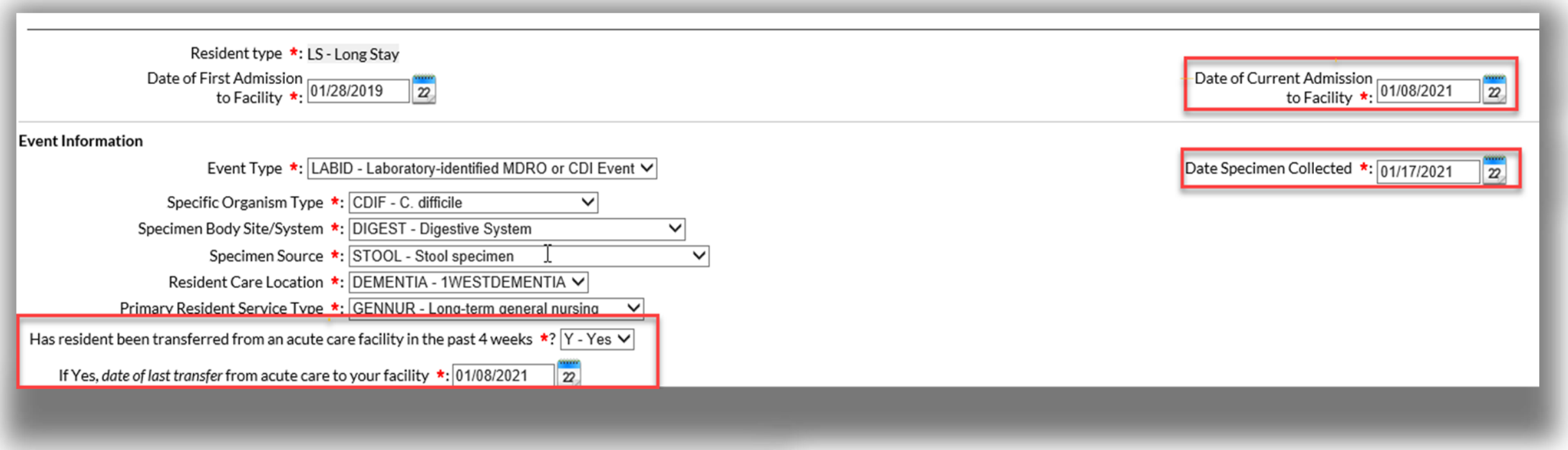
- NHSN will analyze data that have been entered into the application.
- Categorization applied by NHSN to CDI LabID events are based on the specimen collection date of the most recent CDI LabID event:
  - Duplicate CDI LabID event
  - Incident CDI LabID event
  - Recurrent CDI LabID event

Incident and Recurrent CDI LabID Events are further categorized based on:

1. **Reported date of current admission to facility,**
2. **Reported specimen collection date (also referred to as date of event),**
3. **Reported date of last transfer from acute care to the reporting LTCF.**

- Community-onset (CO) LabID events: Date specimen collected 3 calendar days or less after current admission to the facility (i.e., days 1, 2, or 3 of admission).
- Long-term Care Facility-onset (LO) LabID event: Date specimen collected greater than 3 calendar days after current admission date (i.e., on or after day 4).
  - LO Events are further sub-classified:
    - **Acute Care Transfer-Long-term Care Facility-onset (ACT-LO):** LTCF-onset (LO) LabID event with a specimen collection date of **4 weeks or less** following date of last transfer from an acute care facility to the LTCF.

Categorization of CDI LabID Events is Dependent on Accurate Event Information



NHSN will Further Categorize CDI LabID Events Based on: date specimen collected and specimen collection date of the most recent CDI LabID Event entered into NHSN

- Duplicate CDI LabID event: Any CDI LabID event submitted for the same resident following a previous CDI LabID event within the past 2 weeks.
- Incident CDI LabID Event: Either the first CDI LabID event ever submitted for an individual resident in the facility, or a subsequent CDI LabID event submitted more than 56 days (8 weeks) after the most recent CDI LabID event reported for the individual resident.
- Recurrent CDI LabID Event: Any CDI LabID Event entered more than 14 days (2 weeks) and less that 57 days (8 weeks) after the most recent CDI LabID event submitted to NHSN for an individual resident.

National Healthcare Safety Network
Line Listing - All CDI LabID Events
As of: January 25, 2021 at 9:34 AM
Date Range: All LTCLABID_EVENTS

8

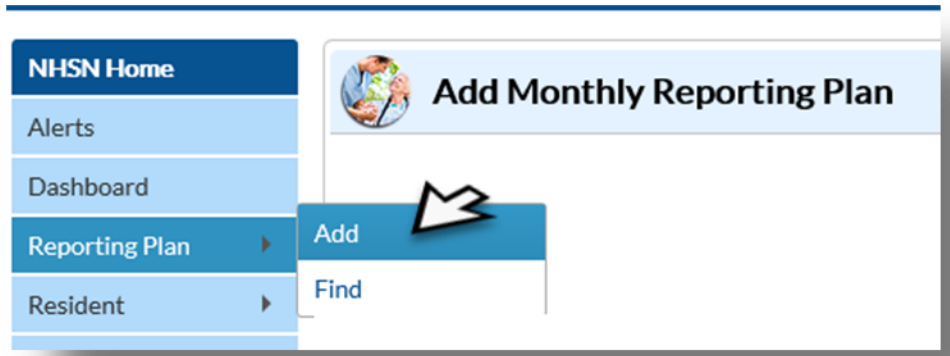
Facility Org ID	Resident ID	Date of Current Admission	Event ID	Event Date	Specific Organism	Specimen Source	Location	Transferred from Acute Care Facility in Past 4 Weeks?	CDI Assay	Onset	Onset Description	Days: Admit to Event	LabID Duplicate?
11106	RP34567	06/01/2019	2240	11/04/2019	CDIF	STOOL	DEM	N	DUPLICATE	LO	LO - Long-term Care Facility-Onset	157	Y
11106	2222	01/02/2019	2301	11/05/2019	CDIF	STOOL	GEN	N	DUPLICATE	LO	LO - Long-term Care Facility-Onset	308	Y
11106	007894	09/03/2019	2288	11/05/2019	CDIF	STOOL	SKN	N	DUPLICATE	LO	LO - Long-term Care Facility-Onset	64	Y
11106	007894	09/03/2019	2255	11/06/2019	CDIF	STOOL	100 EAST	Y	DUPLICATE	LO	LO - Long-term Care Facility-Onset	65	Y
11106	007894	09/03/2019	2289	11/12/2019	CDIF	STOOL	SKN	N	DUPLICATE	LO	LO - Long-term Care Facility-Onset	71	Y
11106	TST1	12/02/2019	2429	12/10/2019	CDIF	STOOL	BAR	N	INCIDENT	LO	LO - Long-term Care Facility-Onset	9	Y
11106	TST1	12/02/2019	2430	12/10/2019	CDIF	STOOL	BAR	N	DUPLICATE	LO	LO - Long-term Care Facility-Onset	9	
11106	TST1	12/01/2019	2431	12/10/2019	CDIF	STOOL	BAR	N	DUPLICATE	LO	LO - Long-term Care Facility-Onset	10	Y
11106	TEST3	12/02/2019	2427	12/12/2019	CDIF	STOOL	BAR	N	INCIDENT	LO	LO - Long-term Care Facility-Onset	11	Y
11106	TEST3	12/02/2019	2428	12/12/2019	CDIF	STOOL	BAR	N	DUPLICATE	LO	LO - Long-term Care Facility-Onset	11	
11106	TEST2	12/02/2019	2425	12/25/2019	CDIF	STOOL	BAR	N	INCIDENT	LO	LO - Long-term Care Facility-Onset	24	
11106	TEST2	12/02/2019	2426	12/30/2019	CDIF	STOOL	BAR	N	DUPLICATE	LO	LO - Long-term Care Facility-Onset	29	Y
11106	101005	01/20/2020	2485	01/21/2020	CDIF	STOOL	GEN	Y	INCIDENT	CO	CO - Community-Onset	2	
11106	NT123123	02/19/2020	2540	02/20/2020	CDIF	STOOL	HOSP	N	INCIDENT	CO	CO - Community-Onset	2	
11106	123456	03/07/2018	2656	08/12/2020	CDIF	STOOL	GEN	N	INCIDENT	LO	LO - Long-term Care Facility-Onset	890	

Let's Review!

Example: NHSN Classification of CDI Lab ID Events as **Incident or Recurrent**			
Resident ID	**Current Admit Date**	**CDI Event Date (specimen collection date)**	**NHSN Categorization**
1111	09/01/2022	09/02/2022	Incident
1111	09/01/2022	09/10/2022	Duplicate -no further categorization
1111	09/01/2022	09/25/2022	Recurrent
1111	09/01/2022	11/28/2022	Incident

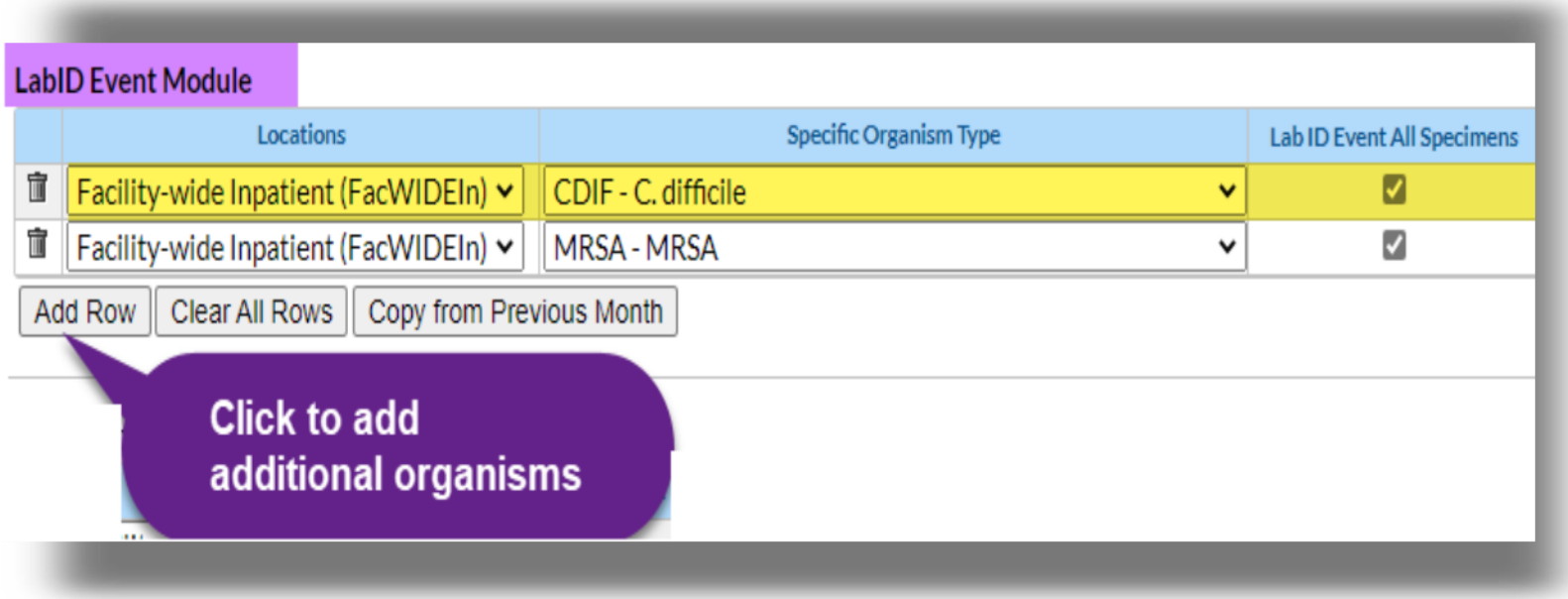
Submit CDI Monthly Reporting Plan for Every Month of Participation to NHSN

Add Monthly Reporting Plan for CDI LabID Event Module Participation

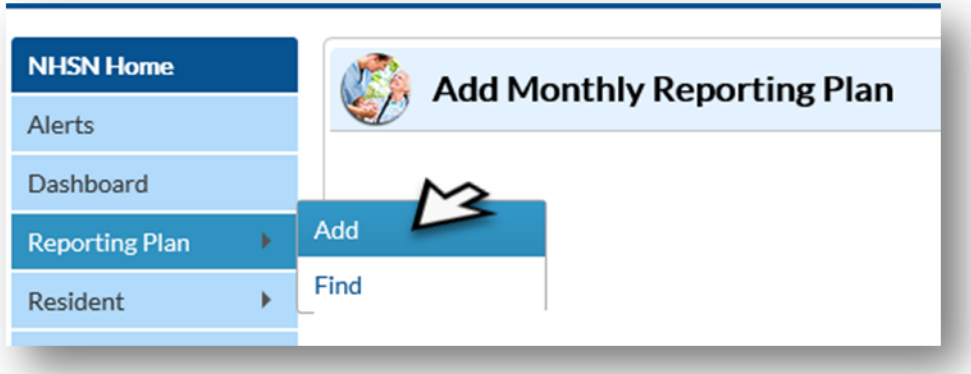


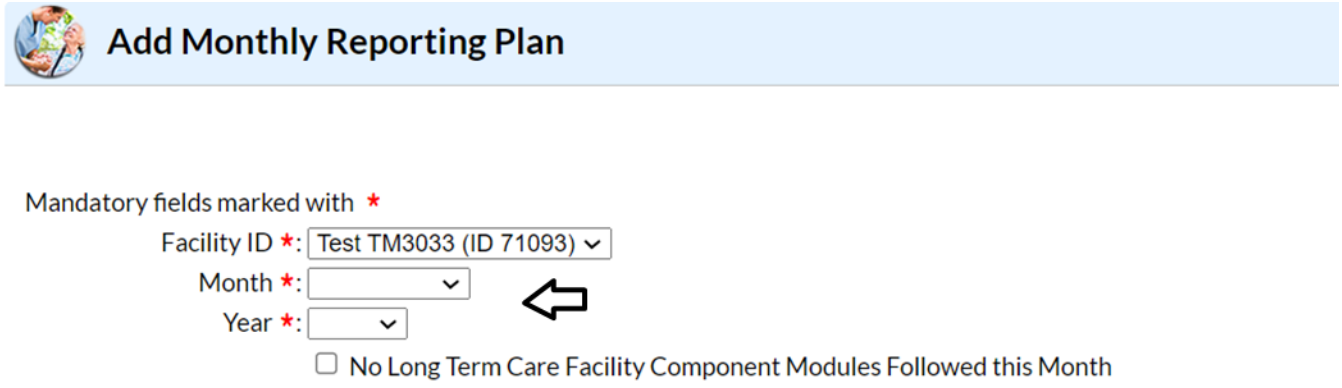
- Informs CDC-NHSN which module(s) and events a facility is following during a given month.
- A facility must enter a plan for every month in which surveillance and data submissions will occur.
- Plans may be entered for up to one year in advance.

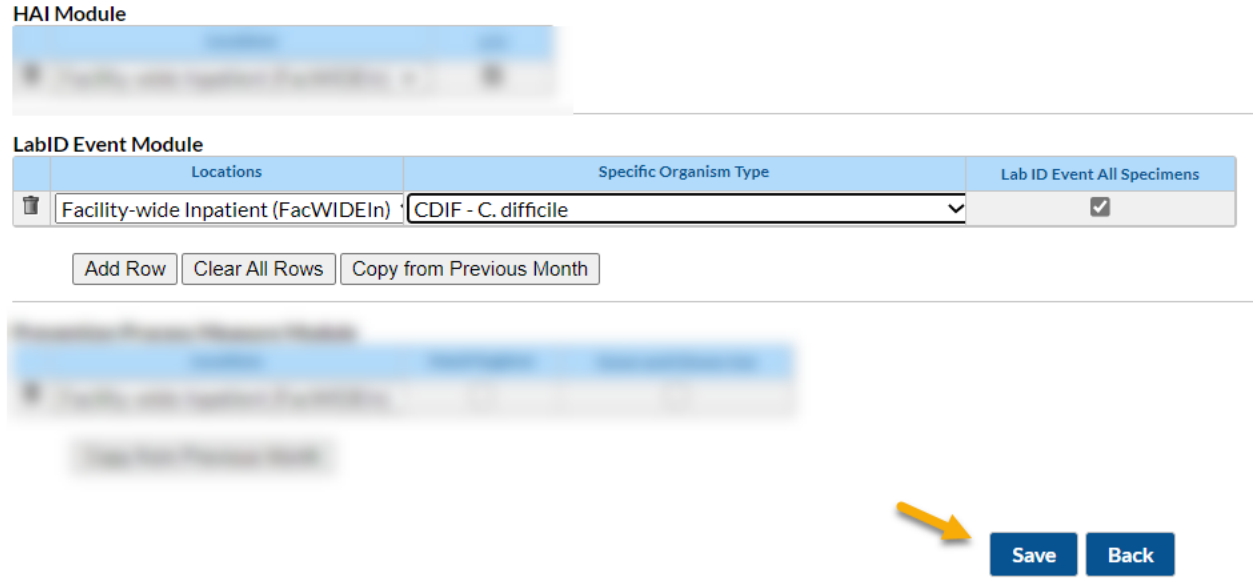
- **Facility-wide Inpatient (FACWIDEIN)** is default location
- Select **CDIF-C. difficile** as the
  - *Specific Organism Type*
- LabID Event All Specimens is default



Add Monthly Reporting Plan for CDI LabID Event Module Participation







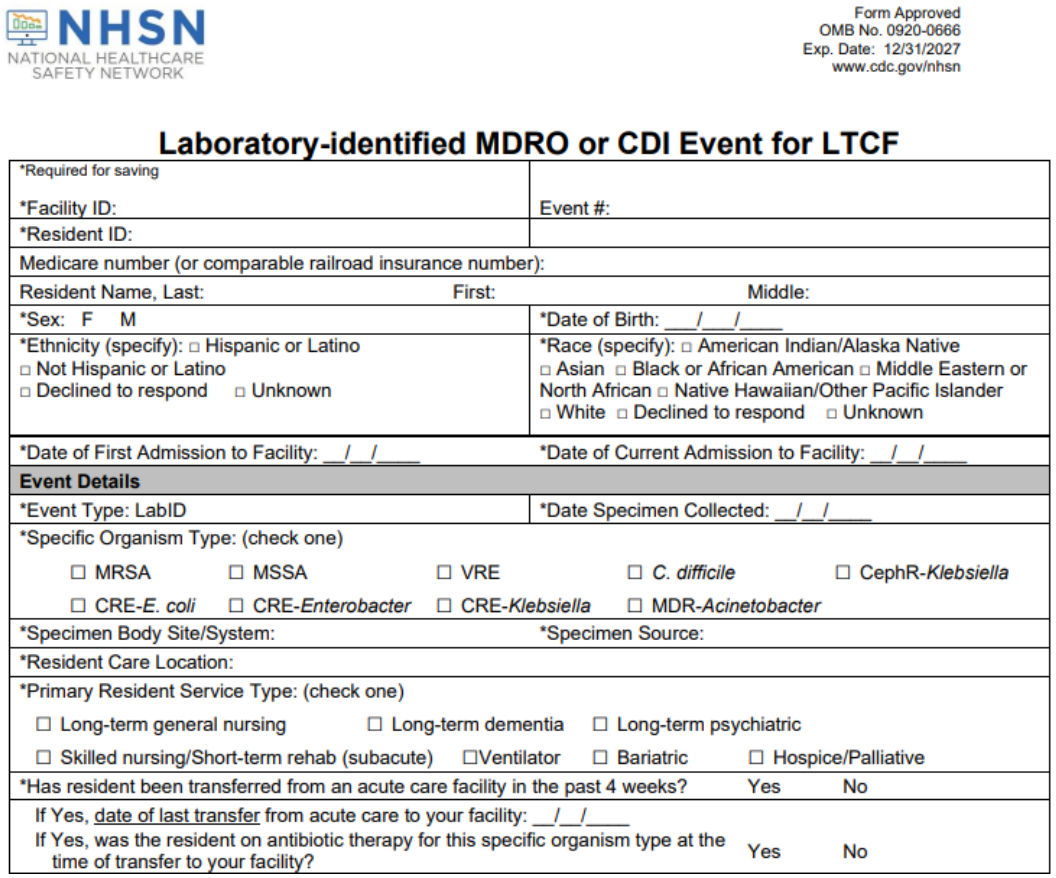
- **Red** asterisk = required to save page
- Click **ADD ROW** to add additional event options for the LabID Event Module
- **SAVE**

Submit CDI Event to NHSN

Reporting CDI LabID Event:

Customizable NHSN LabID Event form available for data collection

- Optional form
- Allows users to collect required information prior to submitting NHSN event
- Use one form for each LabID event
- Form may be customized for each facility
- Use accompanying *Table of Instructions* for helpful guidance



NHSN
NATIONAL HEALTHCARE SAFETY NETWORK

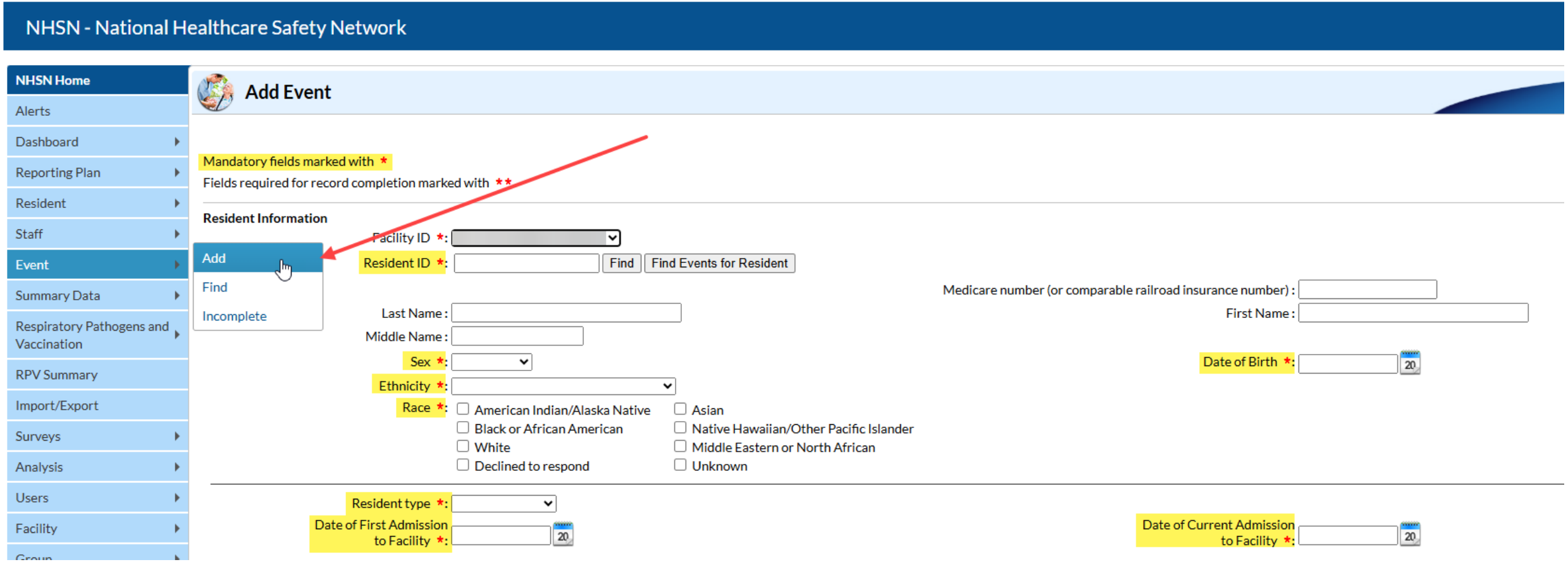
Form Approved
OMB No. 0920-0666
Exp. Date: 12/31/2027
www.cdc.gov/nhsn

Laboratory-identified MDRO or CDI Event for LTCF

*Required for saving *Facility ID:	Event #:
*Resident ID:	
Medicare number (or comparable railroad insurance number):	
Resident Name, Last: First: Middle:	
*Sex: F M	*Date of Birth: ___/___/____
*Ethnicity (specify): □ Hispanic or Latino □ Not Hispanic or Latino □ Declined to respond □ Unknown	*Race (specify): □ American Indian/Alaska Native □ Asian □ Black or African American □ Middle Eastern or North African □ Native Hawaiian/Other Pacific Islander □ White □ Declined to respond □ Unknown
*Date of First Admission to Facility: __/__/____	*Date of Current Admission to Facility: __/__/____
Event Details	
*Event Type: LabID	*Date Specimen Collected: __/__/____
*Specific Organism Type: (check one) ☐ MRSA ☐ MSSA ☐ VRE ☐ *C. difficile* ☐ CephR-*Klebsiella* ☐ CRE-*E. coli* ☐ CRE-*Enterobacter* ☐ CRE-*Klebsiella* ☐ MDR-*Acinetobacter*	
*Specimen Body Site/System:	*Specimen Source:
*Resident Care Location:	
*Primary Resident Service Type: (check one) ☐ Long-term general nursing ☐ Long-term dementia ☐ Long-term psychiatric ☐ Skilled nursing/Short-term rehab (subacute) ☐Ventilator ☐ Bariatric ☐ Hospice/Palliative	
*Has resident been transferred from an acute care facility in the past 4 weeks? Yes No	
If Yes, date of last transfer from acute care to your facility: __/__/____ If Yes, was the resident on antibiotic therapy for this specific organism type at the time of transfer to your facility? Yes No	

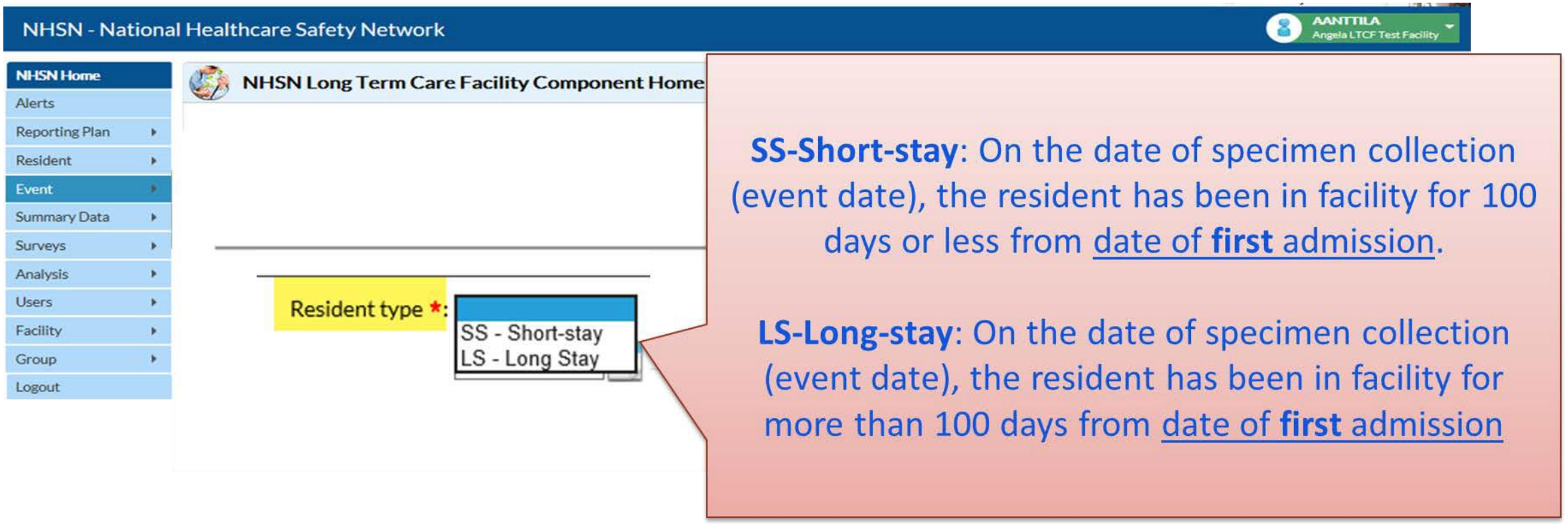
Laboratory-identified MDRO or CDI Event for LTCF Form 57.138 (cdc.gov)

Submitting a CDI LabID Event to NHSN

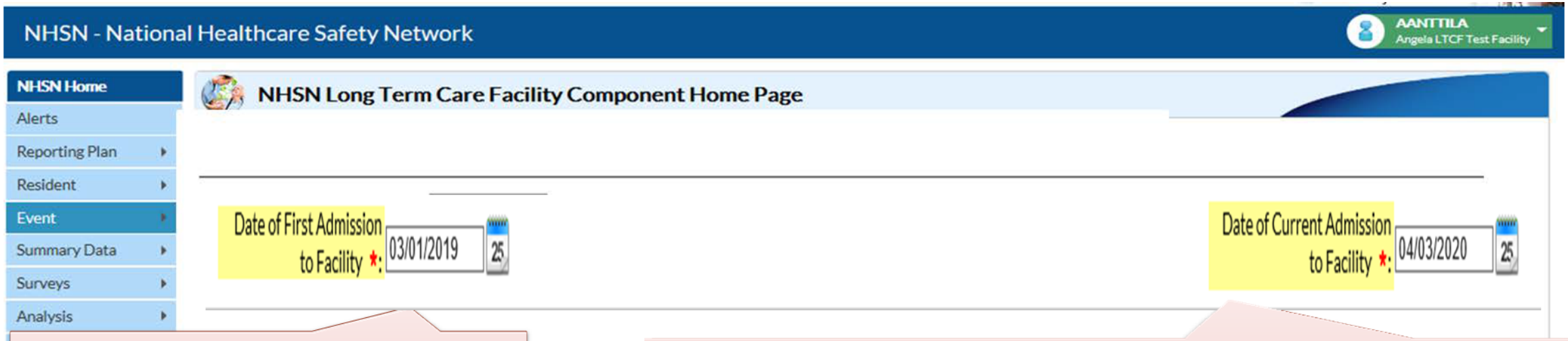


Submitting a CDI LabID Event to NHSN:
Resident Type

Auto-populated by NHSN as short stay or long-stay after user enters the *Date of First Admission to the Facility* and the *Date Specimen Collected* (specifically for LabID events).



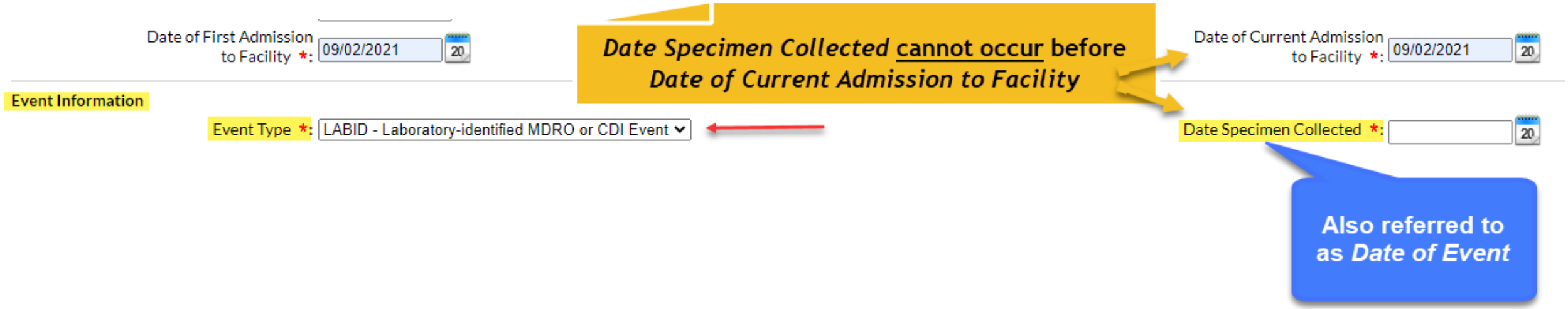
Submitting a CDI LabID Event to NHSN:
Date of First and Current Admission to Facility



Date resident first entered the facility. This date remains the same even if the resident leaves the facility (transfers to another facility) for short periods of time (**<30 consecutive days**).

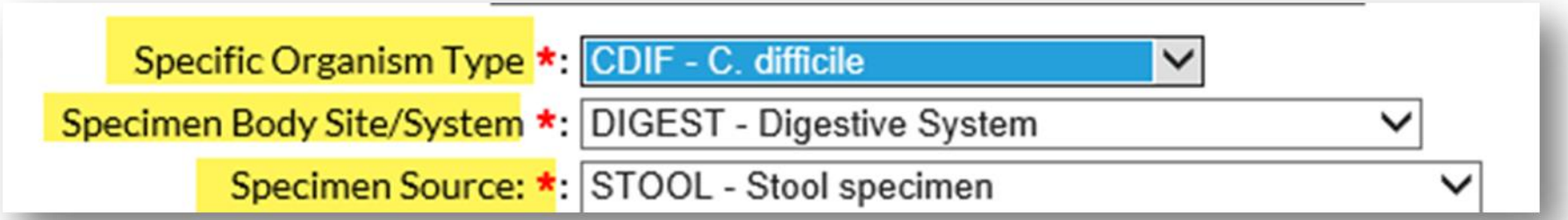
Most recent date resident entered the facility. If the resident enters the facility for the first time and has not left for more than 2 calendar days, then the date of current admission will be the same as the date of first admission. If the resident leaves the facility for more than 2 calendar days (the day the resident left the facility = day 1) and returns, the date of current admission should be updated to the date of return to the facility.

Submitting a CDI LabID Event to NHSN:
Event Type and Date Specimen Collected



Submitting a CDI LabID Event to NHSN:
Specific Organism Type

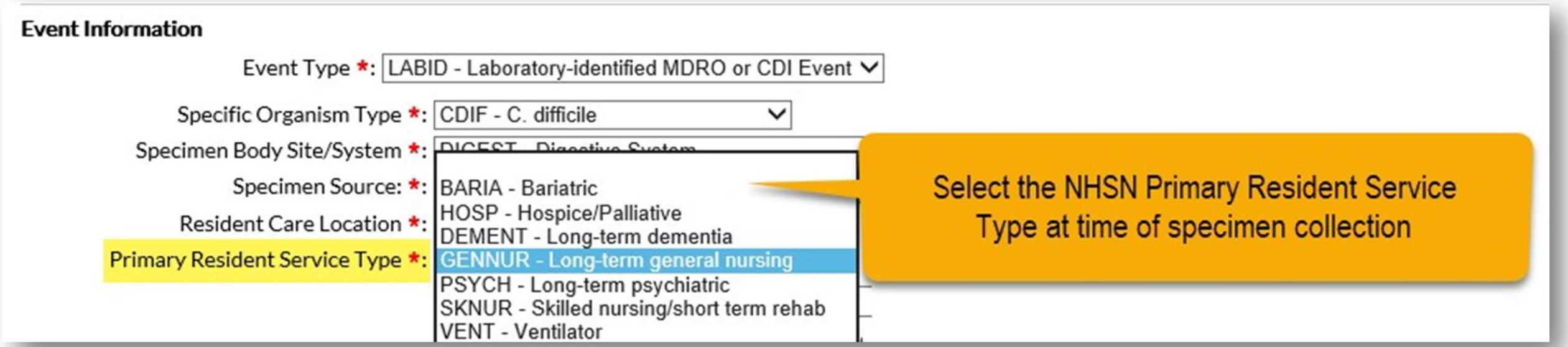
Submitting a CDI LabID Event to NHSN:
Specific Organism Type: CDIF- C. difficile



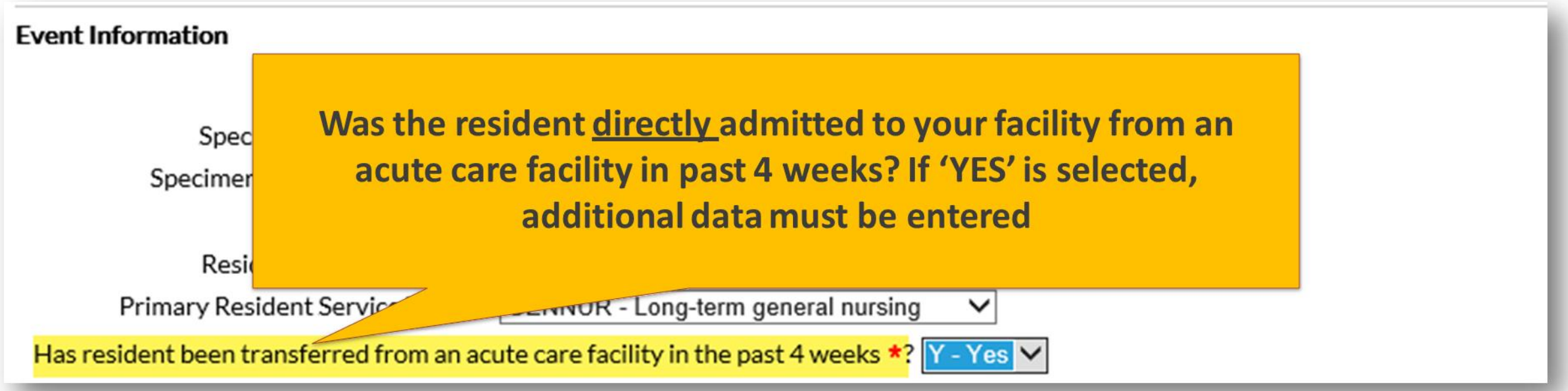
Submitting a CDI LabID Event to NHSN:
Resident Care Location

Resident care locations must be set-up (mapped) in the NHSN application before reporting events since the event location will be selected during event reporting.

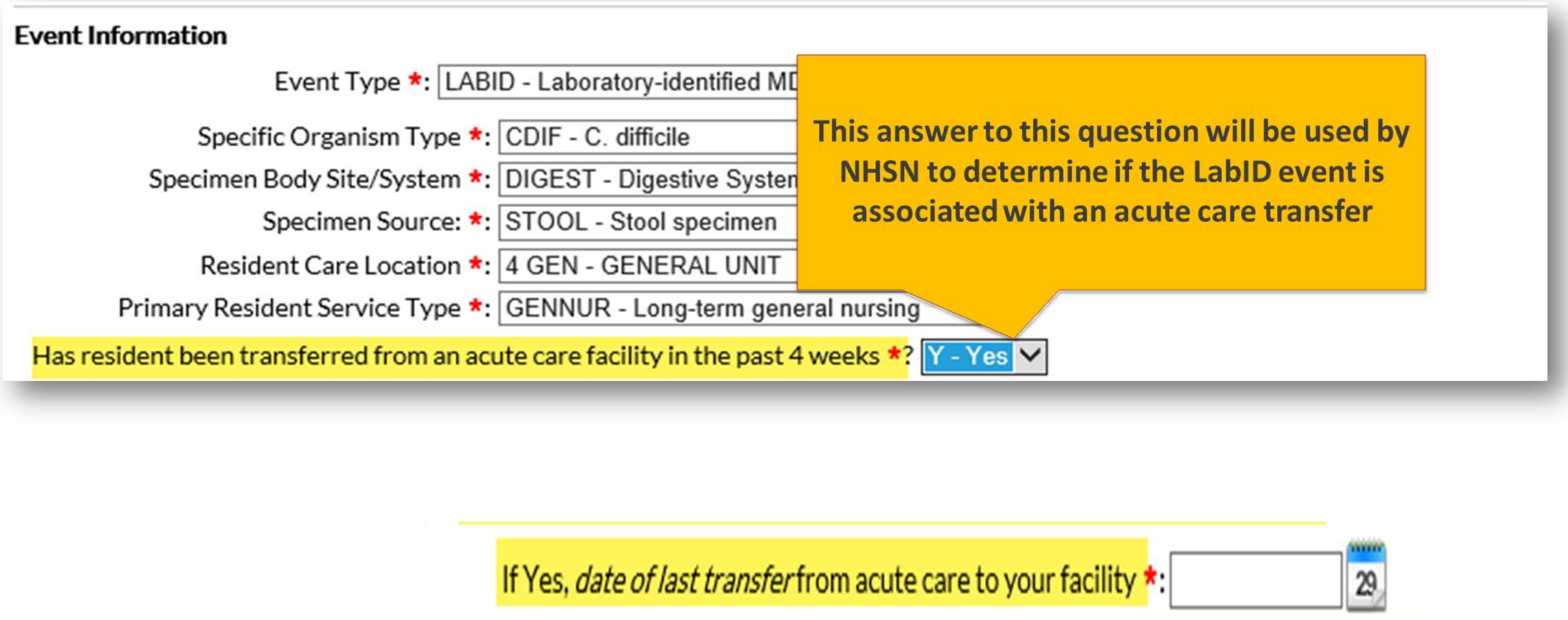
Submitting a CDI LabID Event to NHSN:
Primary Service Type



Submitting a CDI LabID Event to NHSN:
Transfer from Acute Care Facility



Submitting a CDI LabID Event to NHSN:
Transfer from Acute Care Facility, continued



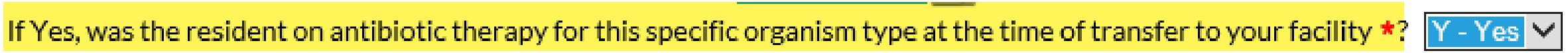
Submitting a CDI LabID Event to NHSN:
Transfer from Acute Care Facility, continued

If Yes, was the resident on antibiotic therapy for this specific organism type at the time of transfer to your facility *?

Informs burden of CDI coming into facility

If YES to this question, this resident should also be included in the monthly summary count for. *Number of Admissions on C. diff Treatment*

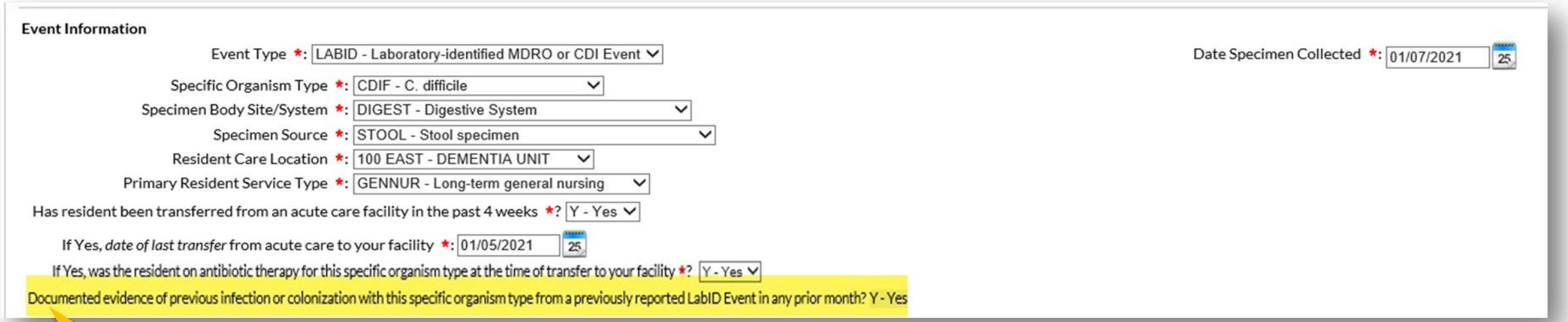
Common Medications Used to Treat *C. difficile*



If resident is admitted on treatment for CDI, you may see one of the below medications in the admission records:

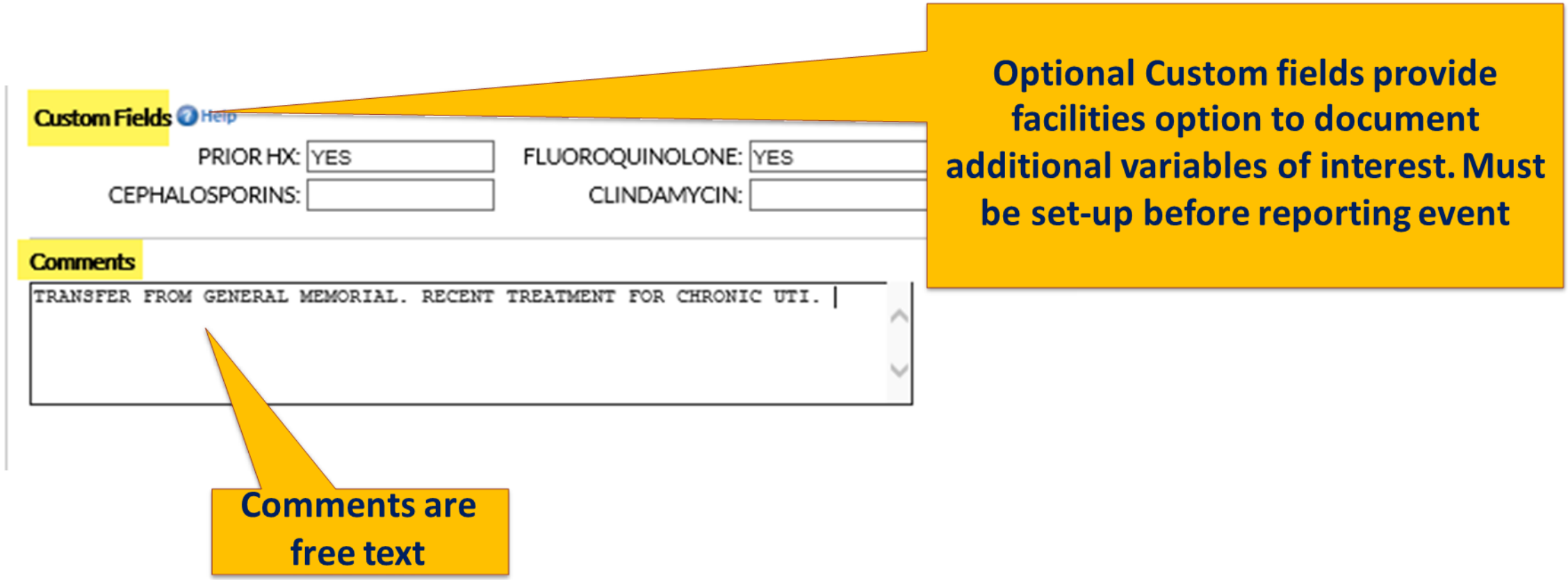
- Vancomycin
- Fidaxomicin
- Metronidazole (Flagyl)

Submitting a CDI LabID Event to NHSN:
Documented Evidence of Previous infection……



Auto-populated by the NHSN.
Non-editable by users

Submitting a CDI LabID Event to NHSN Optional:
Custom Fields and Comments



Add Event

Mandatory fields marked with *
Fields required for record completion marked with **

Resident Information

Facility ID *:
Resident ID *: 1234 Find Find Events for Resident
Social Security #: 111-11-1111
Medicare number (or comparable railroad insurance number) :
Last Name : BETTY
First Name : BOOP
Middle Name :
Sex *: F - Female
Date of Birth *: 01/10/1939
Ethnicity *: HISP - Hispanic or Latino
Race *:
- [ ] American Indian/Alaska Native
- [ ] Asian
- [ ] Black or African American
- [ ] Native Hawaiian/Other Pacific Islander
- [x] White
- [ ] Middle Eastern or North African
- [ ] Declined to respond
- [ ] Unknown

Resident type *: LS - Long Stay
Date of First Admission to Facility *: 12/28/2016
Date of Current Admission to Facility *: 01/05/2021

Event Information

Event Type *: LABID - Laboratory-identified MDRO or CDI Event
Date Specimen Collected *: 01/07/2021
Specific Organism Type *: CDIF - C. difficile
Specimen Body Site/System *: DIGEST - Digestive System
Specimen Source *: STOOL - Stool specimen
Resident Care Location *: 100 EAST - DEMENTIA UNIT
Primary Resident Service Type *: GENNUR - Long-term general nursing
Has resident been transferred from an acute care facility in the past 4 weeks *? Y - Yes
If Yes, *date of last transfer* from acute care to your facility *: 01/05/2021
If Yes, was the resident on antibiotic therapy for this specific organism type at the time of transfer to your facility *? Y - Yes
Documented evidence of previous infection or colonization with this specific organism type from a previously reported LabID Event in any prior month? Y - Yes

Custom Fields Help

PRIOR HX:
FLUOROQUINOLONE:
CEPHALOSPORINS:
CLINDAMYCIN:

Comments

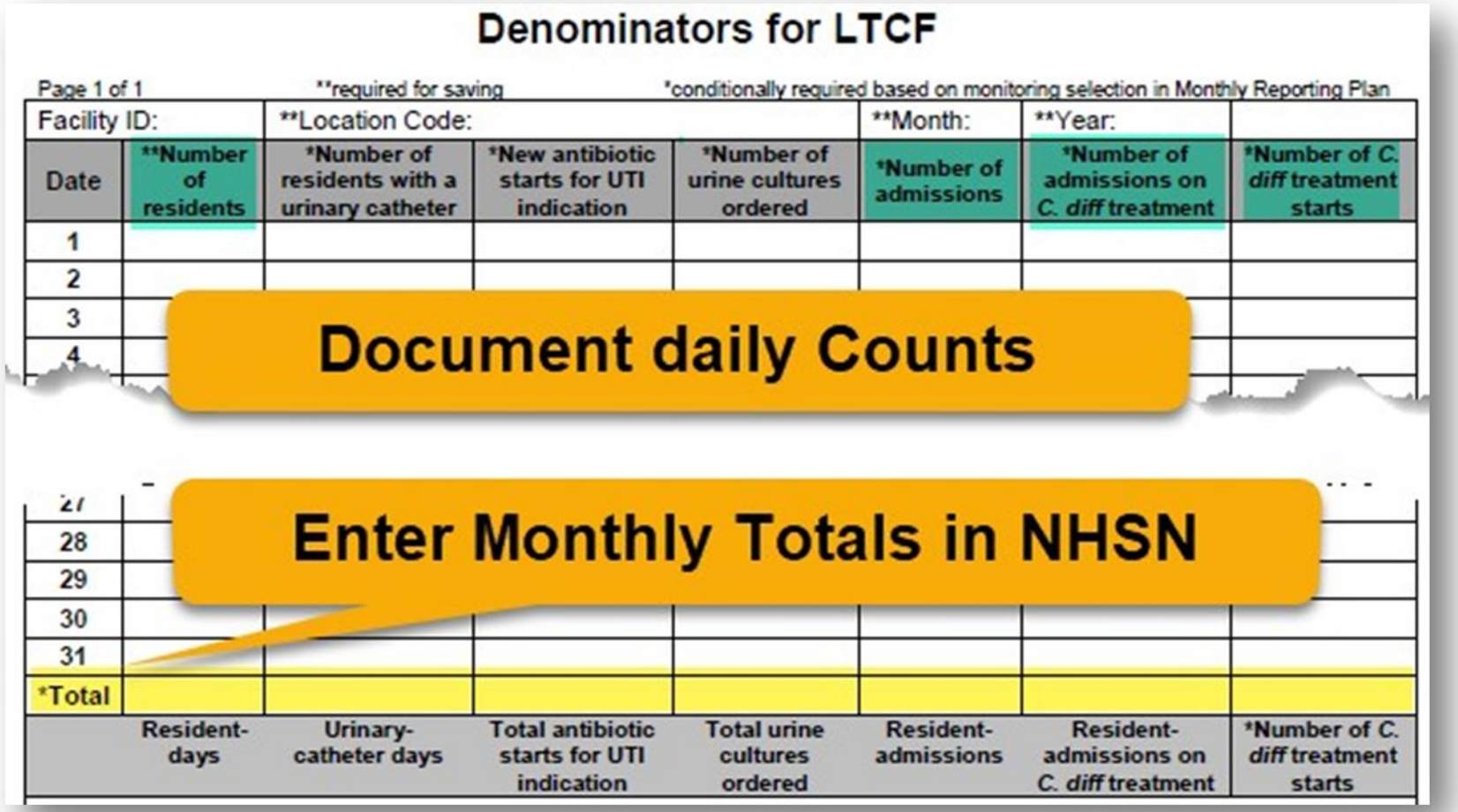
Event 109926 created successfully.

Save Back

Collect and Submit CDI Monthly Summary Data to NHSN

Monthly Summary Reporting for CDI (Denominator)

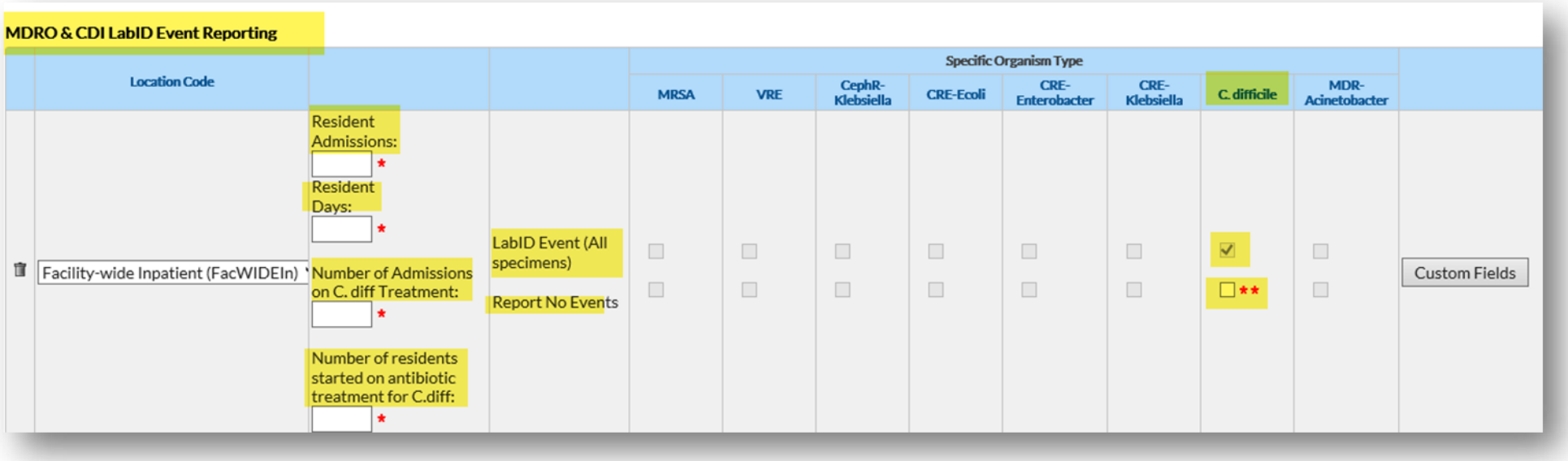
- Optional NHSN worksheet may be used to document daily counts for selected columns.
- Only the **monthly totals** should be entered into the NHSN application.



Monthly Summary Requirements for CDI LabID Event Participation

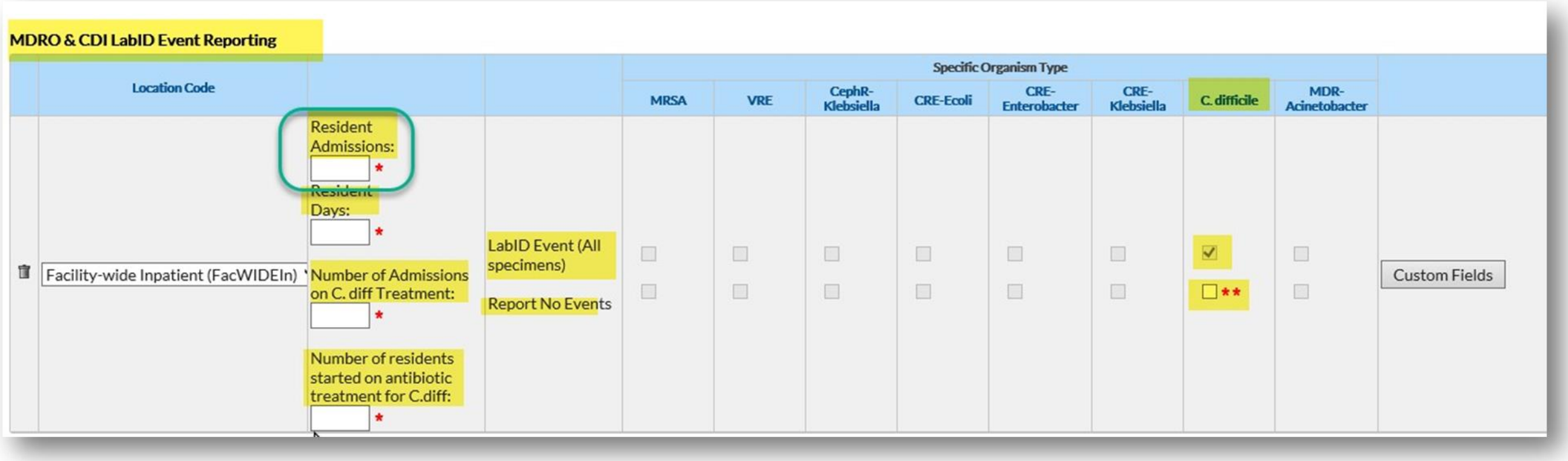
For each month of participation, the facility must report the following:

- Resident Admissions
- Resident Days
- Number of Admissions on C. diff Treatment
- Number of Residents Started on antibiotic Treatment for *C. difficile*
- Report No Events, if applicable



Submitting Monthly Summary Data in NHSN for CDI LabID Event Reporting

Resident Admissions: The **total** number of residents admitted to the LTCF during the selected calendar month. Includes new admissions and re-admissions.



Submitting Monthly Summary Data in NHSN for CDI LabID Event Reporting

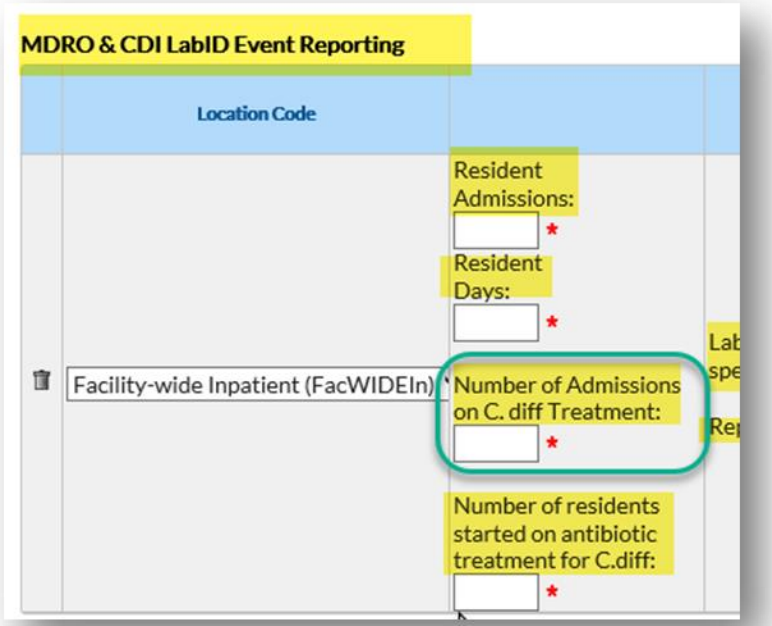
Resident Days: To calculate resident days, for each day of the month, record the total number of residents in the facility. At the end of the month, add the daily counts and enter the total as Resident Days.

- Data may come from electronic medical record, if available.
- Users may also calculate based on facility occupancy.
  - 100 bed facility at 100% occupancy for June: 100 residents x 30 days = 3,000 total resident days
  - 100 bed facility at 90% occupancy for June: 90 residents x 30 days = 2,700 total resident days

Submitting Monthly Summary Data in NHSN for CDI LabID Event Reporting

Number of Admissions on C. diff Treatment:

- Informs burden of CDI coming into the facility (CDI treatment prevalence).
- Total number of residents who were receiving antibiotic treatment for CDI at the time of admission to the LTCF.
  - Includes new and readmissions.
- This count is independent of CDI LabID Event reporting.
  - A resident may be included in this count, but not have a CDI LabID Event reported by the LTCF.



National Healthcare Safety Network
Rate Tables for CDI LabID Event Data
CDI Treatment Prevalence on Admission
As of: January 26, 2021 at 10:40 AM
Date Range: LTCLABID_RATESCDIF summaryYM 2019M01 to 2020M12

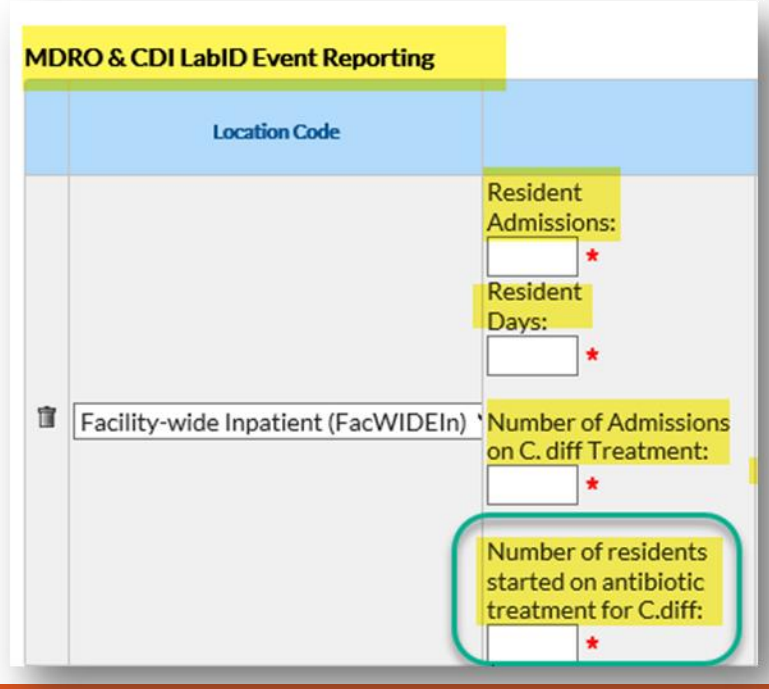
Facility Org ID=11106

Summary Year/Month	Location	Admissions on C. diff Treatment	Number of Resident Admissions	CDI Treatment Prevalence
2019M01	FACWIDEIN	30	50	60
2019M02	FACWIDEIN	0	100	0
2019M03	FACWIDEIN	0	20	0
2019M04	FACWIDEIN	3	22	13.636
2019M05	FACWIDEIN	1	1	100
2019M06	FACWIDEIN	2	25	8
2019M07	FACWIDEIN	1	33	3.03
2019M08	FACWIDEIN	1	10	10
2019M09	FACWIDEIN	4	22	18.182
2019M10	FACWIDEIN	3	22	13.636
2019M11	FACWIDEIN	0	22	0
2019M12	FACWIDEIN	0	0	.
2020M02	FACWIDEIN	3	6	50
2020M08	FACWIDEIN	4	25	16

Submitting Monthly Summary Data in NHSN for CDI LabID Event Reporting

Number of Residents Started on Antibiotic Treatment for C. diff:

- Informs understanding of CDI management practices (CDI treatment ratio)
- Can inform burden of CDI in the facility
- Captures number of residents started on treatment for CDI that month based on clinical decisions; specifically, residents without a positive *C. difficile* test.
- This count is independent of testing
  - Includes **ALL** residents with an order for treatment, including those not tested and those who were tested, but had negative results. Also includes orders for empiric treatment.



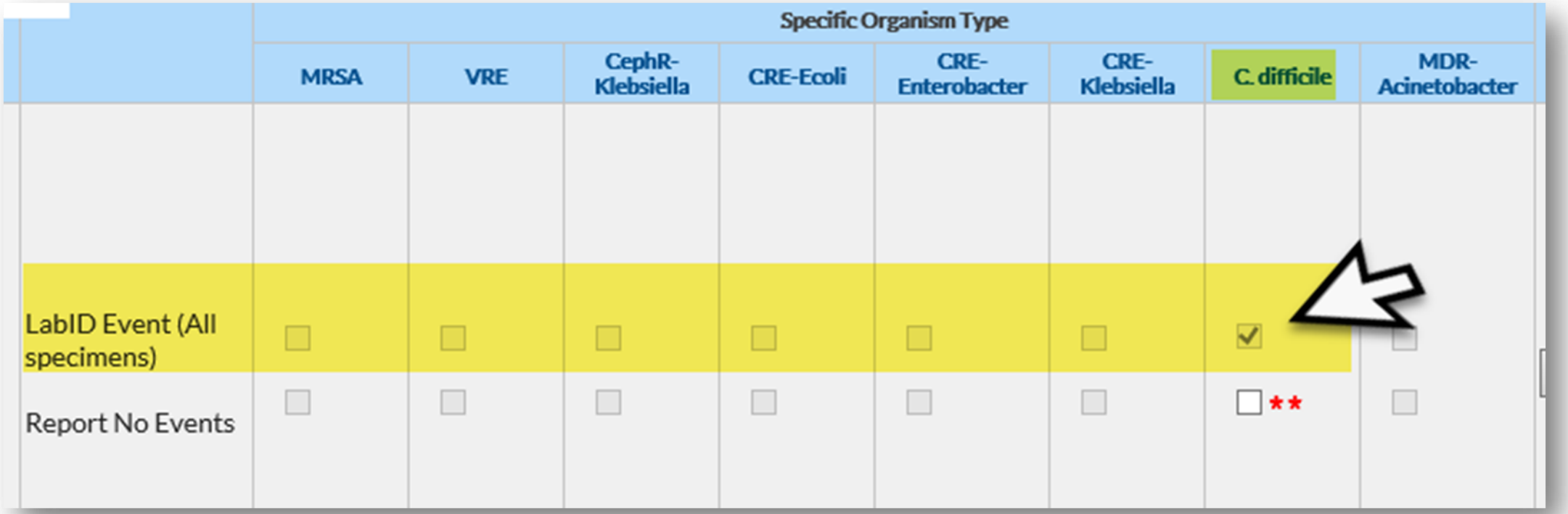
National Healthcare Safety Network
Rate Tables for CDI LabID Event Data
CDI Treatment Ratio
As of: January 26, 2021 at 9:55 AM
Date Range: LTCLABID_RATESCDIF summaryYM 2019M01 to 2020M12

Facility Org ID=11106

Summary Year/Month	Location	Number of residents started on antibiotic treatment for C.diff	Total CDI Count	CDI Treatment Ratio
2019M01	FACWIDEIN	30	4	7.5
2019M02	FACWIDEIN	0	7	.
2019M03	FACWIDEIN	0	1	.
2019M04	FACWIDEIN	2	2	1
2019M05	FACWIDEIN	1	7	0.14
2019M06	FACWIDEIN	3	3	1
2019M07	FACWIDEIN	3	3	1
2019M08	FACWIDEIN	1	4	0.25
2019M09	FACWIDEIN	2	4	0.5
2019M10	FACWIDEIN	5	10	0.5
2019M11	FACWIDEIN	0	1	.
2019M12	FACWIDEIN	0	3	.
2020M02	FACWIDEIN	3	1	3
2020M08	FACWIDEIN	1	1	1

Submitting Monthly Summary Data in NHSN for CDI LabID Event Reporting

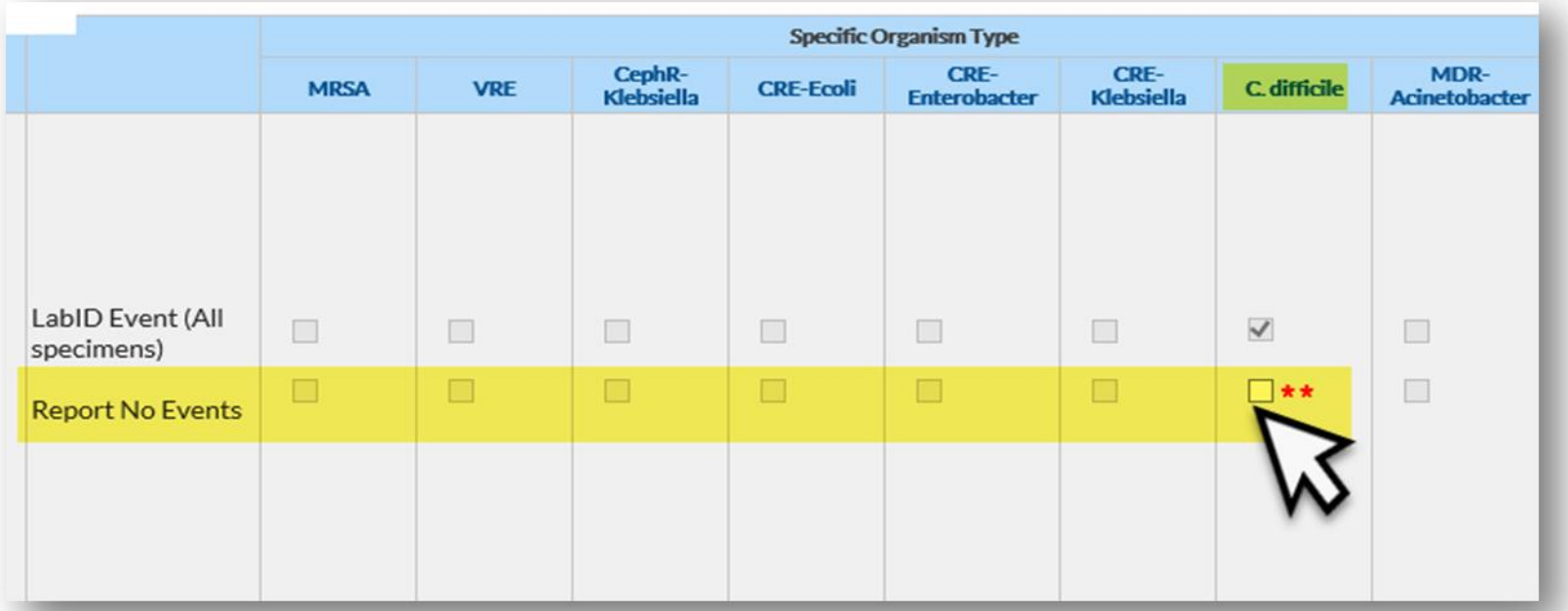
LabID Events (All specimens): A grayed out check-mark will appear for each specific organism type selected for surveillance in the facility's Monthly Reporting Plan.



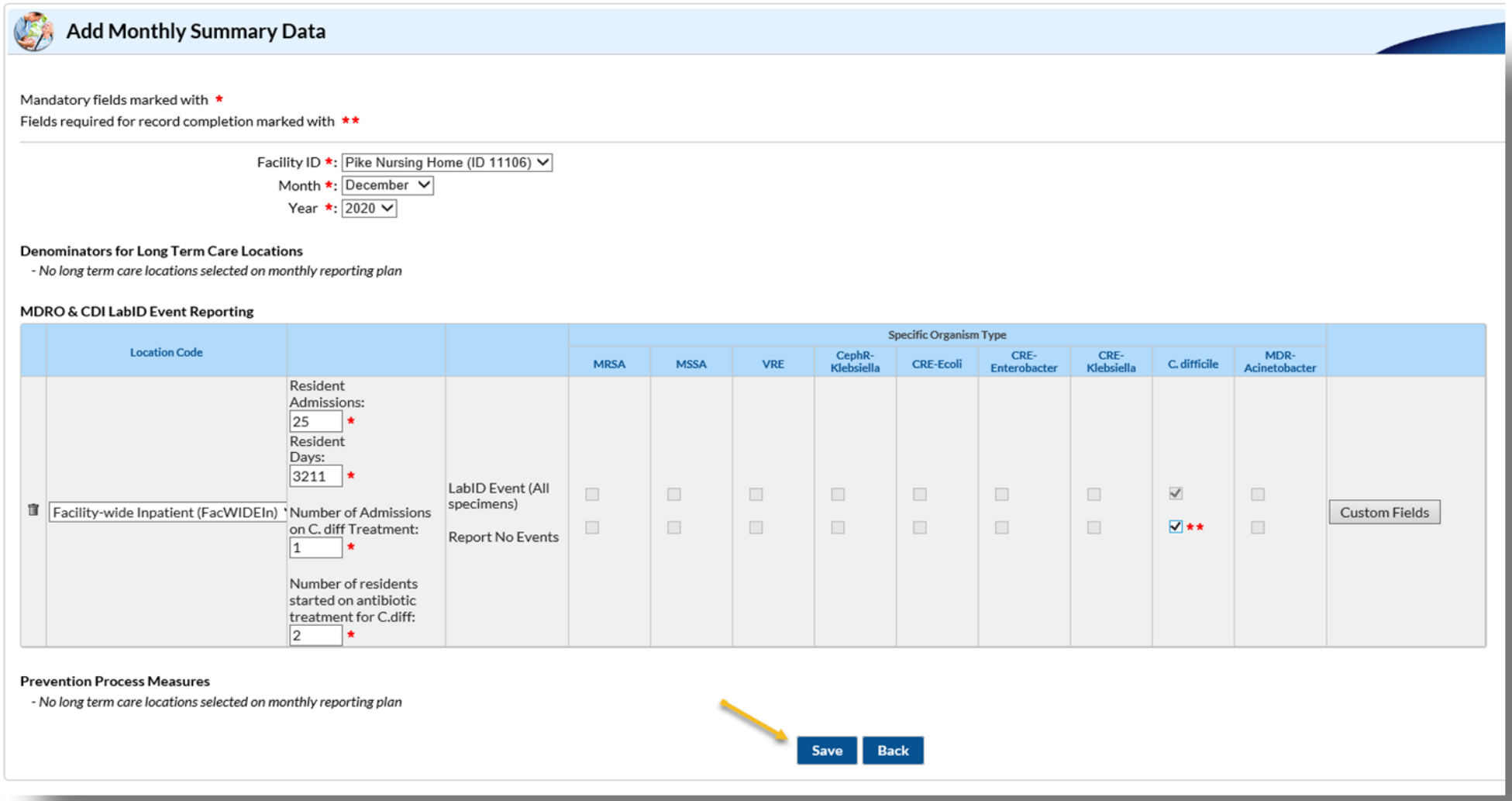
	Specific Organism Type							
	MRSA	VRE	CephR-Klebsiella	CRE-Ecoli	CRE-Enterobacter	CRE-Klebsiella	C. difficile	MDR-Acinetobacter
LabID Event (All specimens)	☐	☐	☐	☐	☐	☐	☑	☐
Report No Events	☐	☐	☐	☐	☐	☐	☐ **	☐

Submitting Monthly Summary Data in NHSN for CDI LabID Event Reporting

- **Report No Events**: A red asterisk will appear next to boxes that require attention.
- The user must put a check-mark in the box to validate that no LabID events were identified for the specified organism and that surveillance was performed for the calendar month.
- The box will be grayed out and without red asterisks if at least one event was submitted for that organism during the calendar month.
- If a LabID event is entered for the organism after summary data submitted, the application will auto-update by unselecting the “Report no Events” box.



Complete Monthly Summary for CDI



Add Monthly Summary Data

Mandatory fields marked with *
Fields required for record completion marked with **

Facility ID *: Pike Nursing Home (ID 11106)
Month *: December
Year *: 2020

Denominators for Long Term Care Locations

- No long term care locations selected on monthly reporting plan

MDRO & CDI LabID Event Reporting

Location Code			Specific Organism Type									
			MRSA	MSSA	VRE	CephR-Klebsiella	CRE-Ecoli	CRE-Enterobacter	CRE-Klebsiella	C. difficile	MDR-Acinetobacter	
Facility-wide Inpatient (FacWIDEIn)	Resident Admissions: 25 * Resident Days: 3211 * Number of Admissions on C. diff Treatment: 1 * Number of residents started on antibiotic treatment for C.diff: 2 *	LabID Event (All specimens)	☐	☐	☐	☐	☐	☐	☐	☑	☐	Custom Fields
		Report No Events	☐	☐	☐	☐	☐	☐	☐	☑ **	☐	

Prevention Process Measures

- No long term care locations selected on monthly reporting plan

Save Back

Summary data created successfully.

FACWIDE In surveillance and reporting is required for LabID event participation

THANK YOU

Questions?

nhsn@cdc.gov

Add "LabID Reporting" to the subject line in order to have your inquiry routed to the appropriate subject matter expert

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: NHSN@cdc.gov
Web: http://www.cdc.gov/nhsn

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.