IMPROVING THE QUALITY OF NATIONAL HEALTHCARE SAFETY NETWORK (NHSN)DATA: EXPERIENCE FROM THE FIELD

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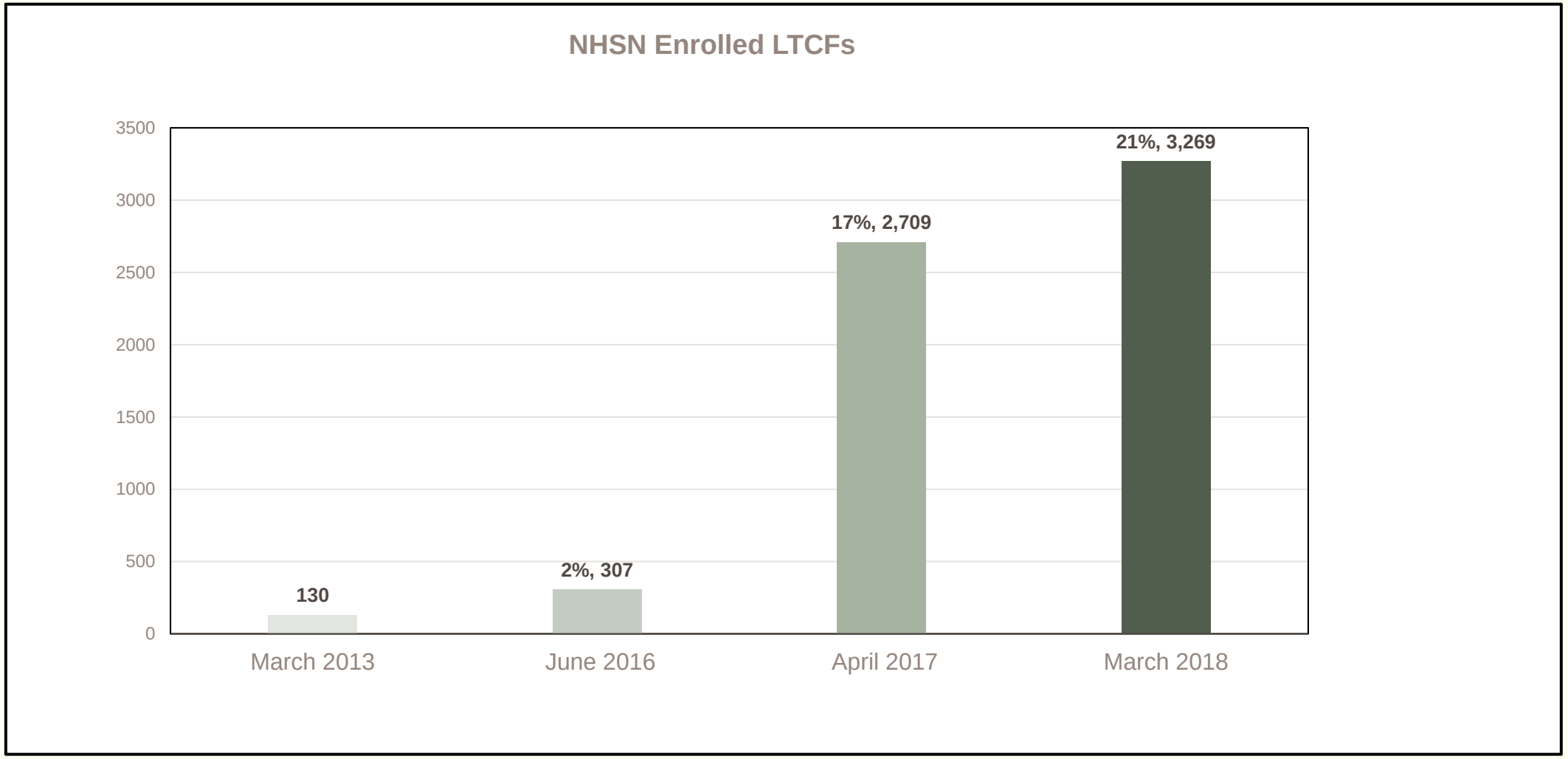
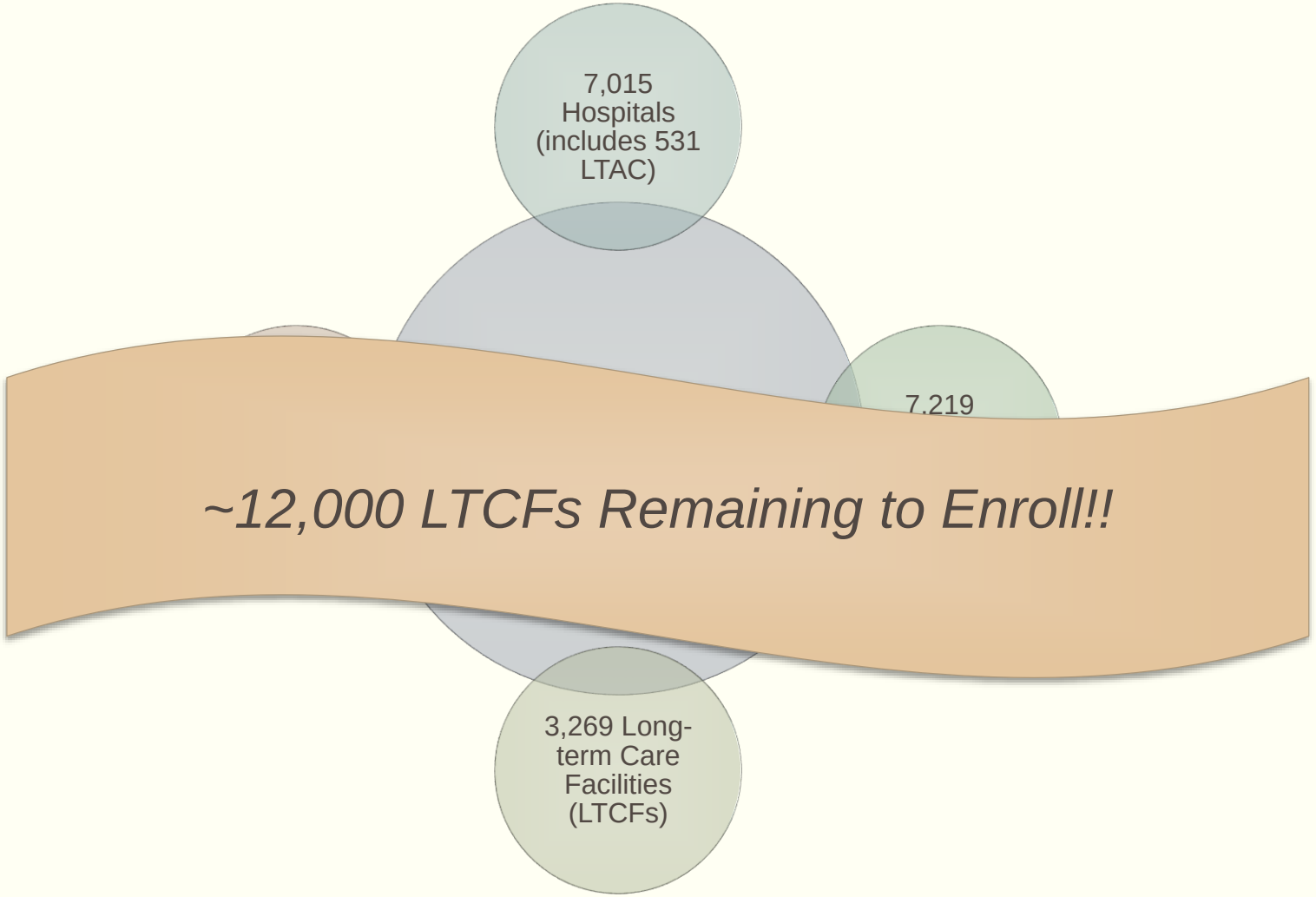
Objectives

- Apply knowledge learned from the Centers for Medicare & Medicaid Services (CMS), Centers for Disease Control and Prevention (CDC) pilot project to support accurate data reporting
- Describe common *Clostridium difficile* data reporting errors in NHSN
- Demonstrate long-term care facility (LTCF) data surveillance and collection strategies
- Share national educational resources

Clostridium difficile Infection (CDI) Initiative Impact on NHSN Enrollment



NHSN Enrollment as of March 23, 2018



Data Reporting

Lessons Learned

- There is a steep learning curve (be patient)
- **LTCF users are busy**
- One size does not fit all (training material)
- Utilize national, state and local resources

Experience From the Field

2016-2017 Enrollment into NHSN

- Secure Access Management Services (SAMS) Grid Card
- NHSN Annual Survey
- Set-up facility locations, add-users

2017

- 10-months data collection baseline
- Accurate CDI Data Surveillance

2018

- Post-Baseline-Intervention

NHSN Surveillance Table of Instructions

National Healthcare Safety Network (NHSN)

NHSN
- NHSN Login
- About NHSN +
- Enroll Here +
- Materials for Enrolled Facilities −
  - Ambulatory Surgery Centers +
  - Acute Care Hospitals/Facilities +
  - Long-term Acute Care Hospitals/Facilities +
  - Long-term Care Facilities −
    - **Surveillance for C. difficile and MRSA Infections**
    - Surveillance for Urinary Tract Infections
    - Surveillance for Process Measures – Hand Hygiene, Gloves and Gown Adherence
    - Surveillance for Healthcare Personnel Exposure
    - Surveillance for Healthcare Personnel Vaccination

CDC > NHSN > Materials for Enrolled Facilities > Long-term Care Facilities

Surveillance for C. difficile, MRSA, and other Drug-resistant Infections

Resources for NHSN Users Already Enrolled

- **Training**
- **Protocol**
- **Data Collection Forms**

All Data Collection Forms are Print-only

- 57.138 LabID Event Form for LTCF January 2018 [PDF – 49K]
  - Customizable form [DOCX – 28K]
  - Table of Instructions – LabID Event Form for LTCF [PDF – 280K]
- 57.139 MDRO and CDI Monthly Monitoring for LTCF January 2018 [PDF – 44K]
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- 57.142 Denominators for LTCF January 2018 [PDF – 40K]
  - Customizable form [DOCX – 29K]
  - Table of Instructions – Denominators for LTCF [PDF – 162K]
- 57.141 Monthly Reporting Plan for LTCF January 2018 [PDF – 42K]
  - Customizable form [DOCX – 27K]
  - Table of Instructions – Monthly Reporting Plan for LTCF [PDF – 112K]

New Users - Start Here

- Step 1: Enroll into NHSN
- Step 2: Set up NHSN
- Step 3: Report

Click here to enroll

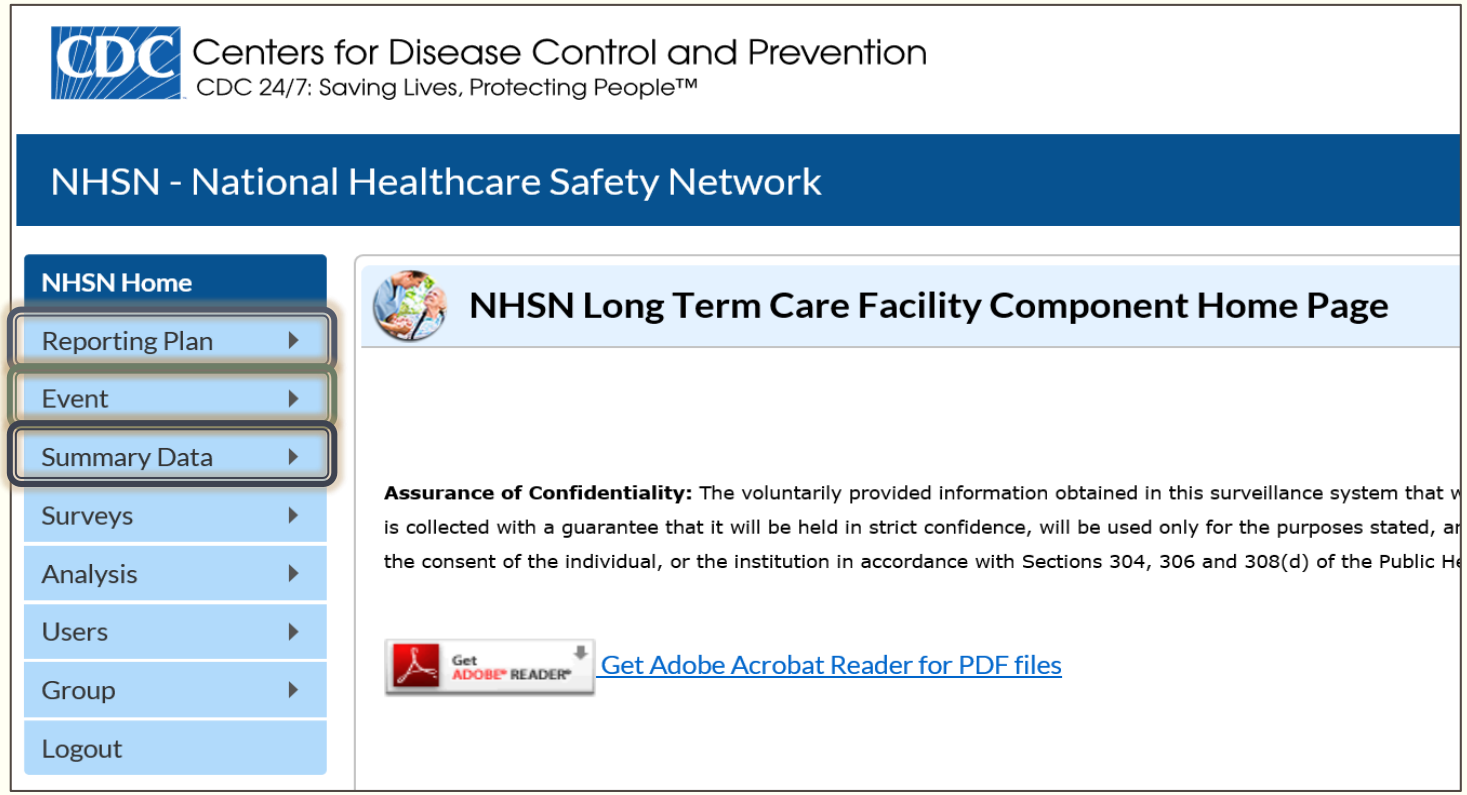
https://www.cdc.gov/nhsn/ltc/cdiff-mrsa/index.html

Reporting Quality Data: NHSN Training Videos

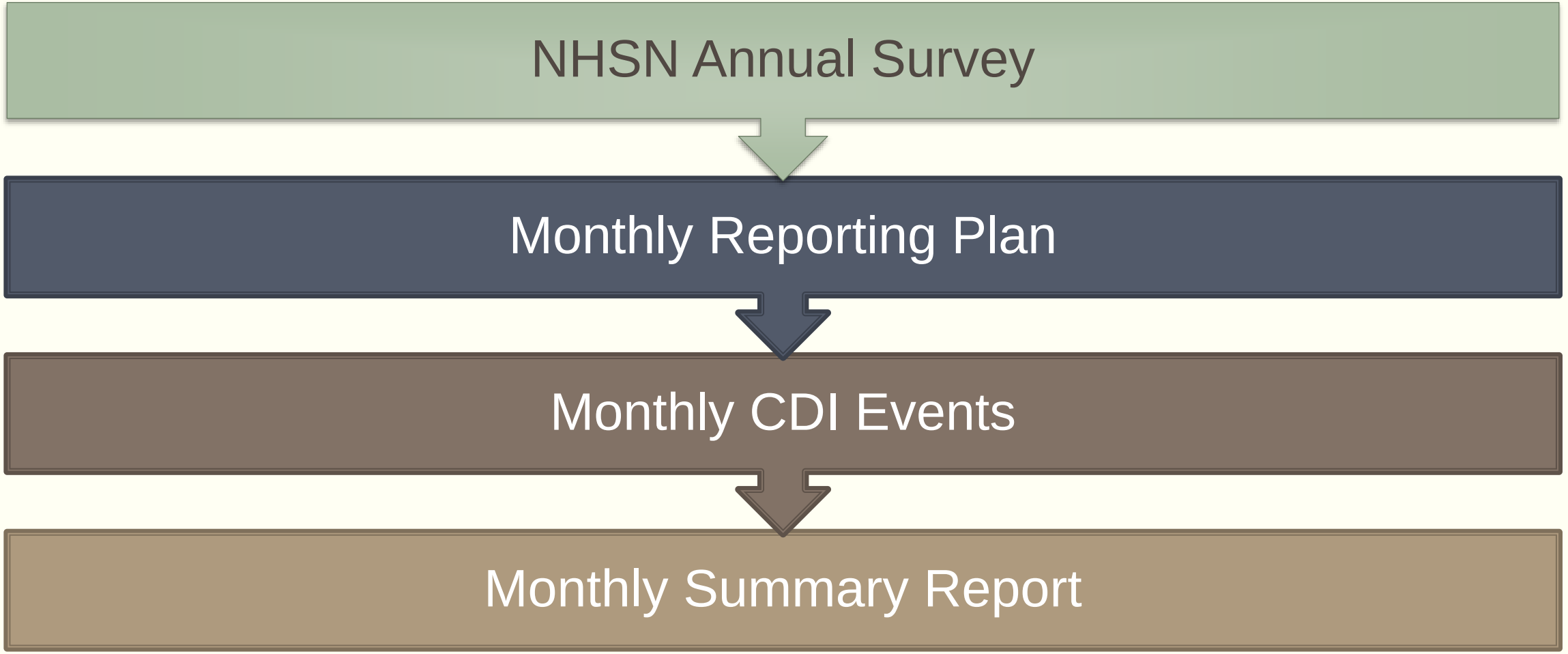
https://www.youtube.com/watch?v=EY1GQfv9tTg

NHSN Reporting Checklist: Best Practice

1. Review Monthly Reporting Plan (MRP) and update as necessary
2. Identify and enter all C.*difficile* LAB ID events
3. Enter monthly summary report data
4. Resolves “Alerts”, if applicable



NHSN Data Quality Checks



BEFORE WE DIVE INTO THE DATA…

Logging into SAMS…Quick Tip

SAMS
secure access management services

Warning: This warning banner provides privacy and security notices consistent with applicable federal laws, directives, and other federal guidance for accessing this Government system, which includes all devices/storage media attached to this system. This system is provided for Government-authorized use only. Unauthorized or improper use of this system is prohibited and may result in disciplinary action and/or civil and criminal penalties. At any time, and for any lawful Government purpose, the government may monitor, record, and audit your system usage and/or intercept, search and seize any communication or data transiting or stored on this system. Therefore, you have no reasonable expectation of privacy. Any communication or data transiting or stored on this system may be disclosed or used for any lawful Government purpose.

Choose a login option

External Partners

SAMS Credentials

SAMS Username

SAMS Password

Login

Forgot Your Password?

For External Partners who login with only a SAMS issued UserID and

OR

SAMS Grid Card

Click the Login button to sign on with a SAMS Grid Card

Login

For External Partners who have been issued a SAMS Grid Card.

HHS Staff

AMS Login

HHS.gov
iAM@HHS

How to use AMS

Login

For all HHS staff including Operating Divisions (CDC, NIH,

OR

AMS One Time Password

How to use OTP

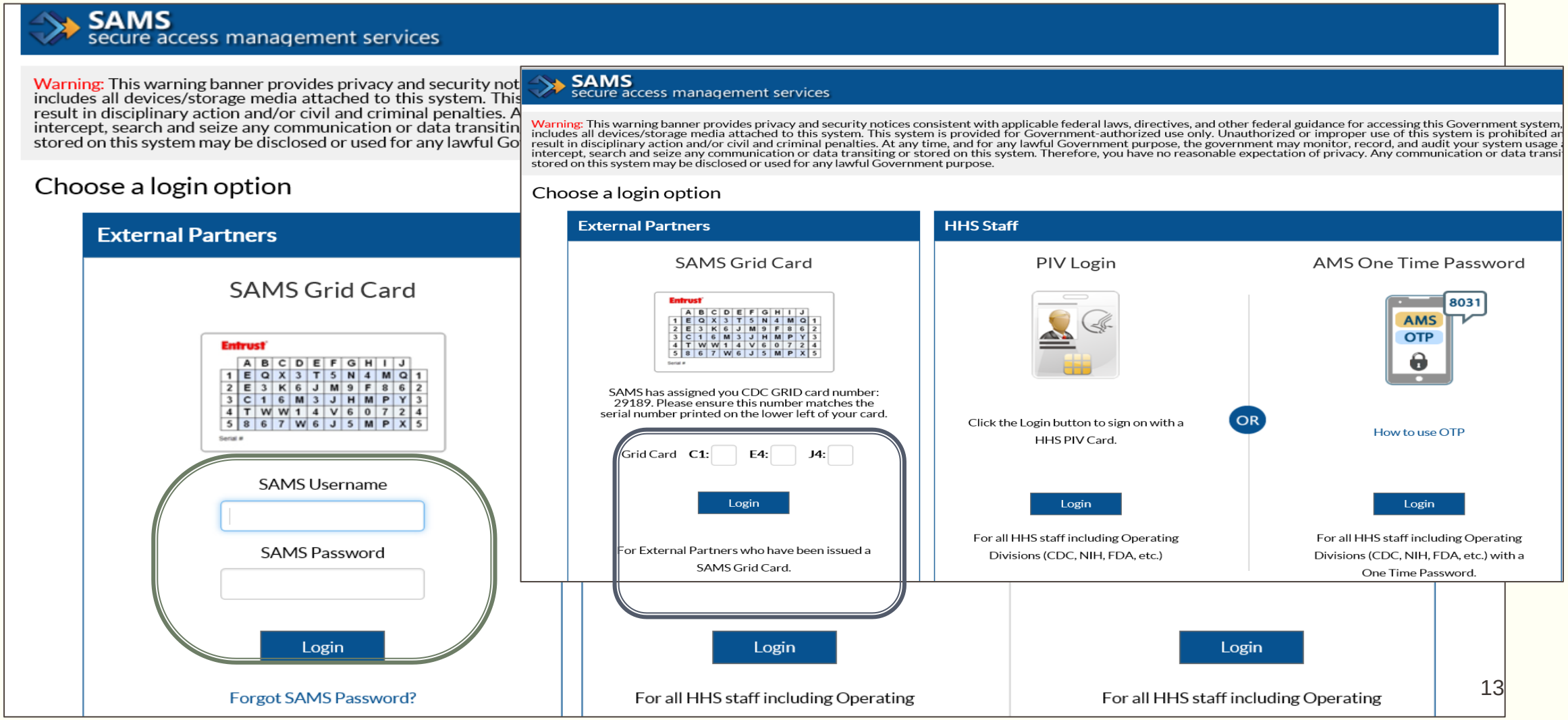
Login

For all HHS staff including Operating Divisions (CDC, NIH, FDA, etc.) with a One Time

https://sams.cdc.gov

1. Enter your Username and SAMS Password

2. Enter the SAMS Grid Card Criteria



NHSN ANNUAL SURVEY

NHSN Annual Survey: Primary Laboratory Testing Type

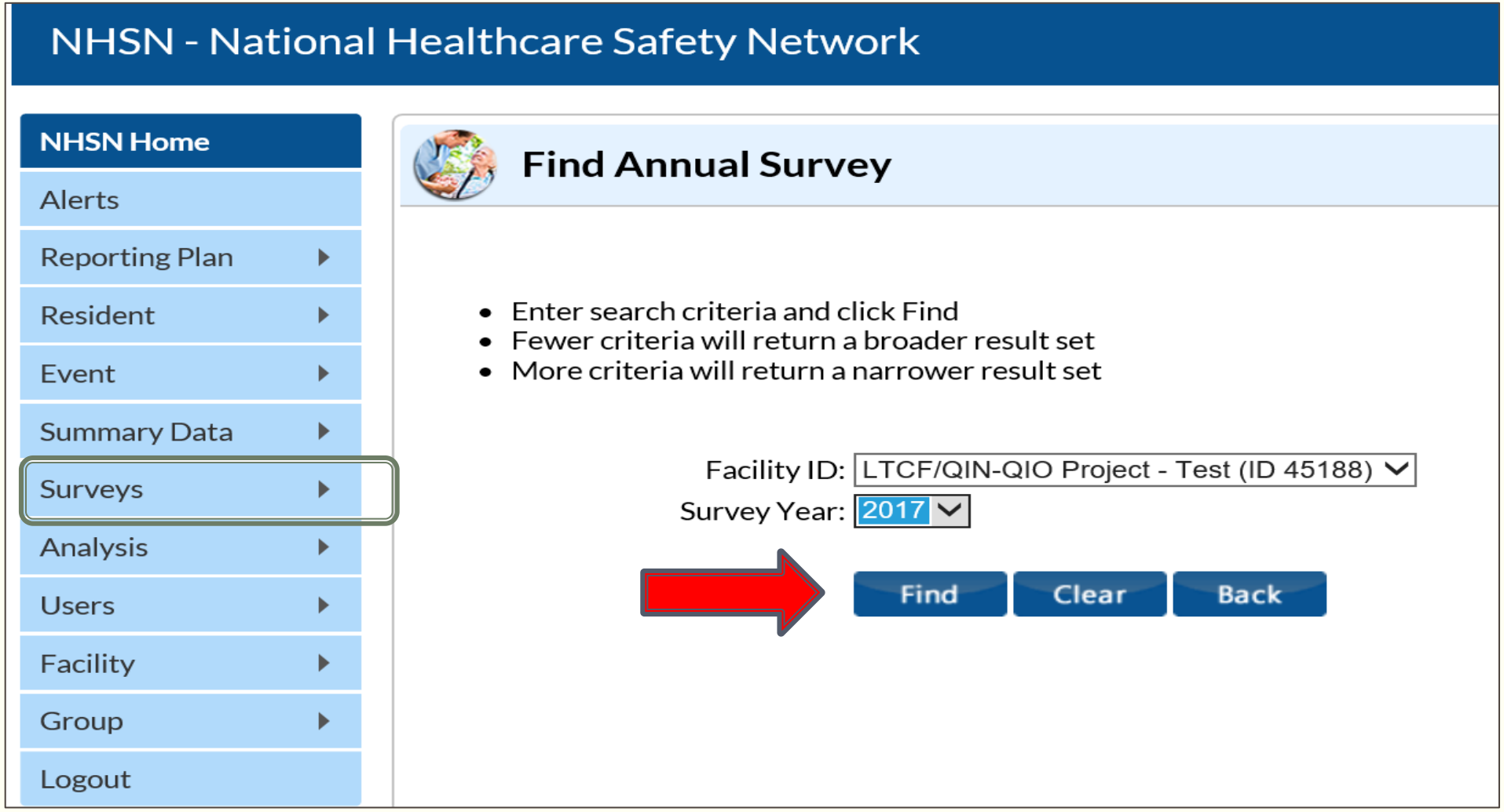
The Problem

- Primary testing method for *C. difficile* is not known or inaccurately reported.

Importance

- Accuracy is important as the response may be used for risk-adjustment of data.

NHSN Annual Survey: Primary Laboratory Testing Type



NHSN Annual Survey: Primary Laboratory Testing Type

3. 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? *

- ○ Enzyme immunoassay (EIA) for toxin
- ○ Cell cytotoxicity neutralization assay
- ○ Nucleic acid amplification test (NAAT) (e.g., PCR, LAMP)
- ○ NAAT plus EIA, if NAAT positive (2-step algorithm)
- ○ Glutamate dehydrogenase (GDH) antigen plus EIA for toxin (2-step algorithm)
- ○ GDH plus NAAT (2-step algorithm)
- ○ GDH plus EIA for toxin, followed by NAAT for discrepant results
- ○ Toxigenic culture (C. difficile culture followed by detection of toxins)
- ◉ Other (specify) [ ]

("Other" should not be used to name specific laboratories, reference laboratories, or the brand names of the C. difficile tests; most methods car selecting from the options provided. Please ask your laboratory, refer to the Tables of Instructions for this form, or conduct a search for further g option to report.)

4. Does your laboratory provide a report summarizing the percent of antibiotic resistance seen in common organisms identified in cultures sent from your facility (often called an antibiogram)? * [Y - Yes ▾]

Scroll to the bottom and click 'Edit'

NHSN Annual Survey: Edit

Facility Microbiology Laboratory Practices

1. Does your facility have its own laboratory that performs microbiology/antimicrobial susceptibility testing? * N - No

   If No, where is your facilitys antimicrobial susceptibility testing performed? * REFLAB - Commercial referral laboratory

2. Indicate whether your facility screens new admissions for any of the following multidrug-resistant organisms: (check all that apply) *

   ☑ We do not screen new admissions for MDROs

3. 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? *

   - ○ Enzyme immunoassay (EIA) for toxin
   - ○ Cell cytotoxicity neutralization assay
   - ○ Nucleic acid amplification test (NAAT) (e.g., PCR, LAMP)
   - ◉ NAAT plus EIA, if NAAT positive (2-step algorithm)
   - ○ Glutamate dehydrogenase (GDH) antigen plus EIA for toxin (2-step algorithm)
   - ○ GDH plus NAAT (2-step algorithm)
   - ○ GDH plus EIA for toxin, followed by NAAT for discrepant results
   - ○ Toxigenic culture (C. difficile culture followed by detection of toxins)
   - ○ Other (specify)

4. Does your laboratory provide a report summarizing the percent of antibiotic resistance seen in common organisms identified in cultures sent from your facility (often called an antibiogram)? * Y - Yes

   If Yes, how often is this summary report or antibiogram provided to your facility? * YR - Once a year

Scroll to the bottom and click 'Save'

Annual Survey saved successfully.

NHSN Monthly Reporting Plan

https://www.youtube.com/watch?v=nN0Jw-jxFco

NHSN Monthly Reporting Plan

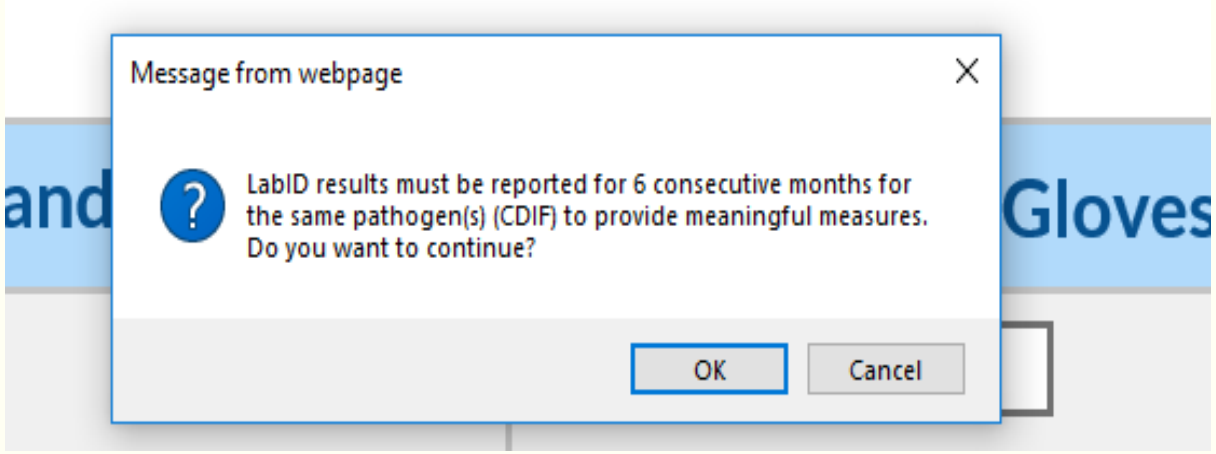
The Problem

- Extra reporting modules are selected

Importance

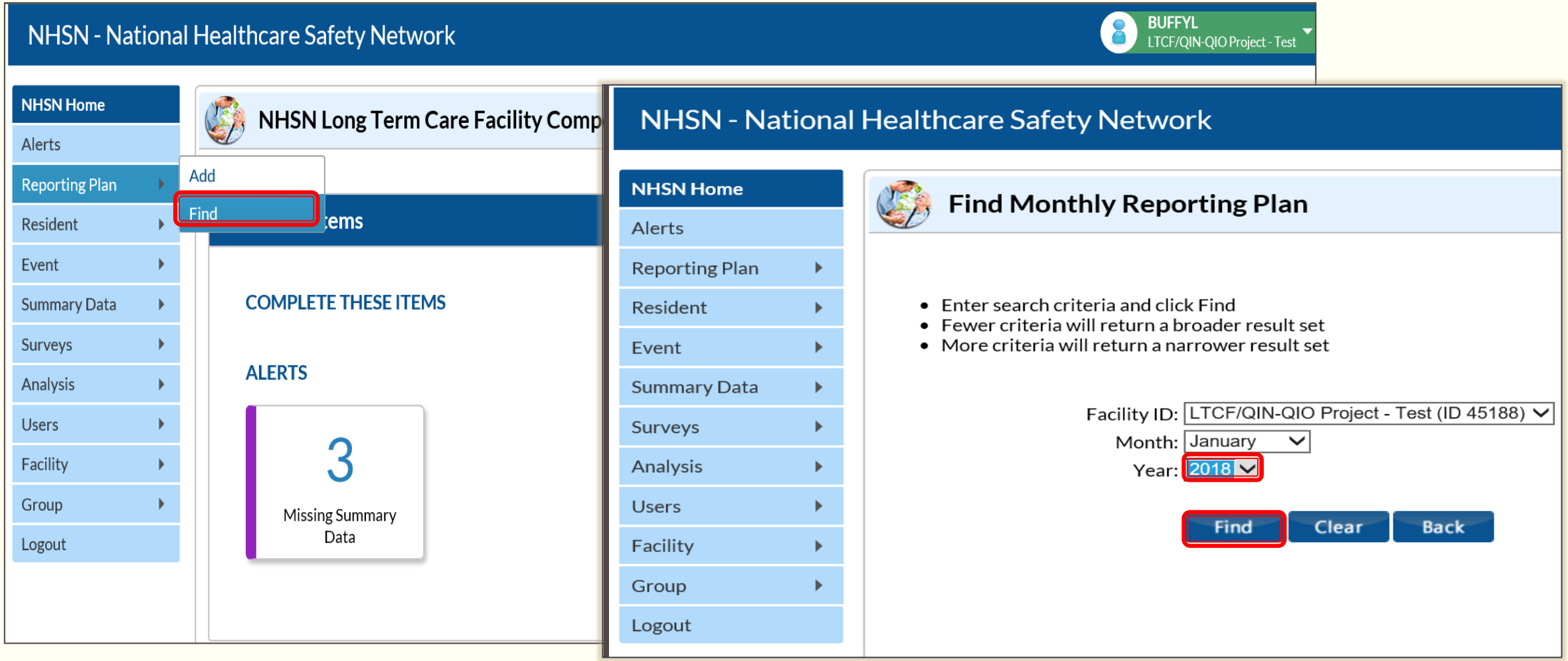
- Will be required to complete summary data for modules that you are not conducting surveillance for
- May result in inaccurate reporting to the NHSN

Remember!

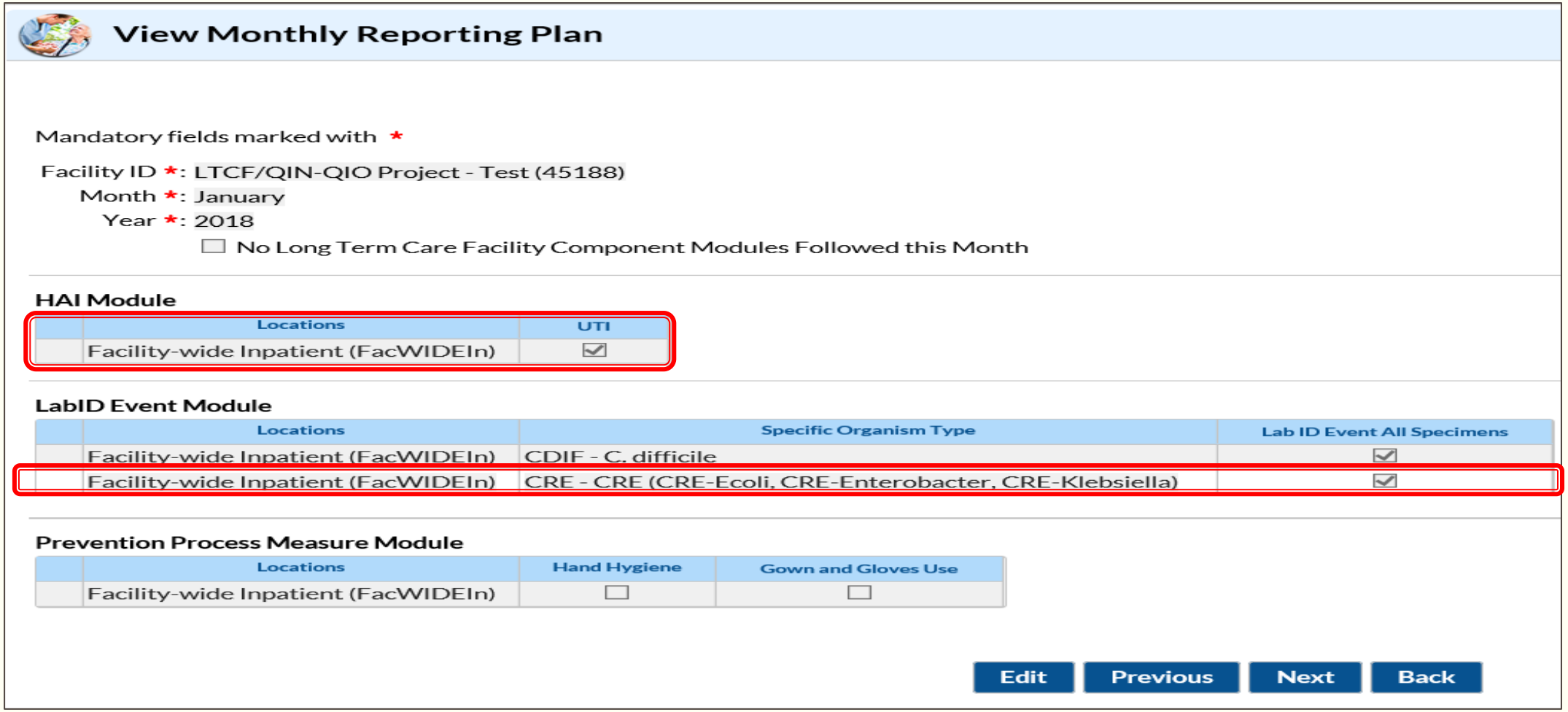


Monthly Reporting Plan: Identify the Problem and Action Steps

***Identify the Problem*:** Find Monthly Reporting Plan



Monthly Reporting Plan: Current Plan

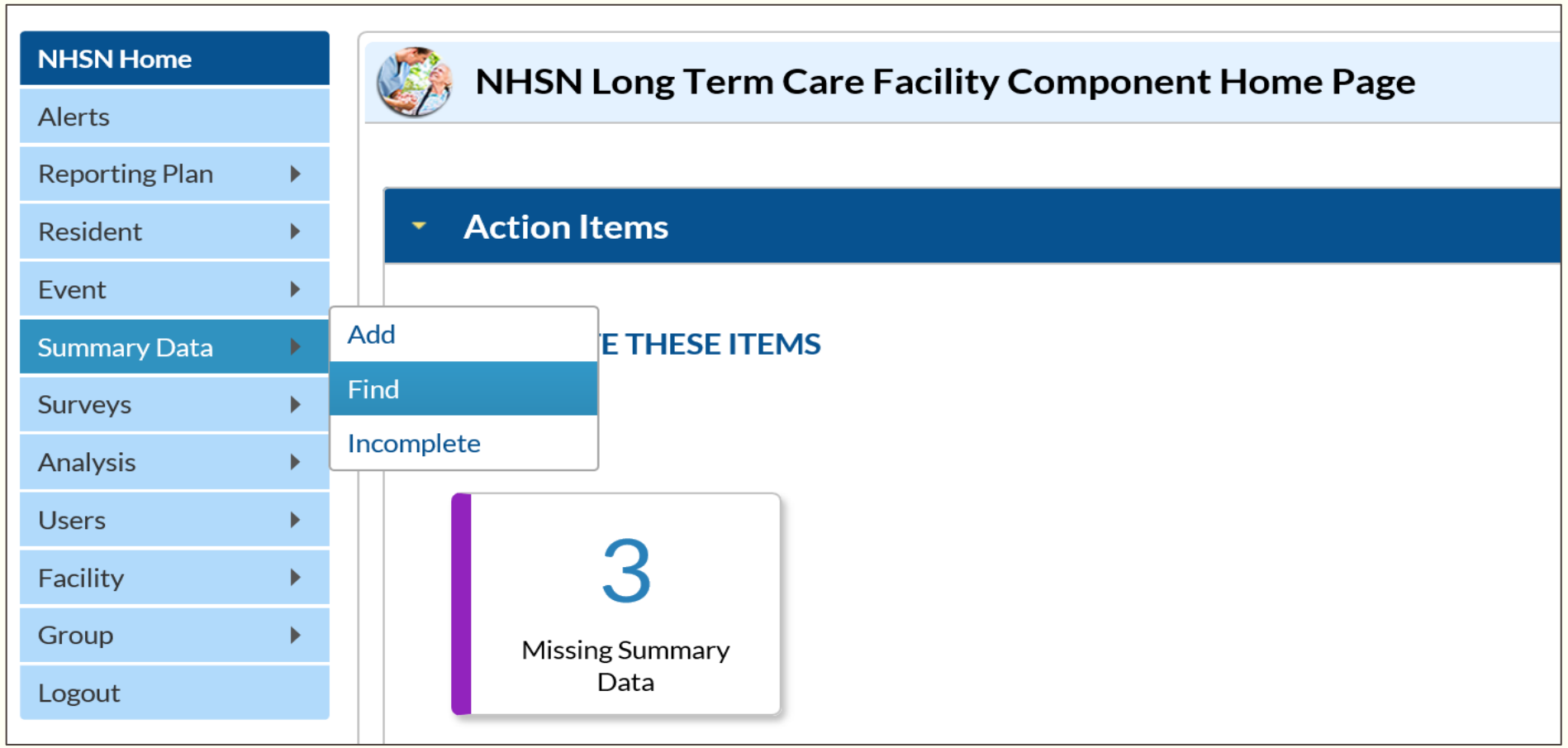


Action: If an LTCF needs to change an inaccurately created MRP, they can **"Find"**, **"Edit"** and **"Save"** the changes.

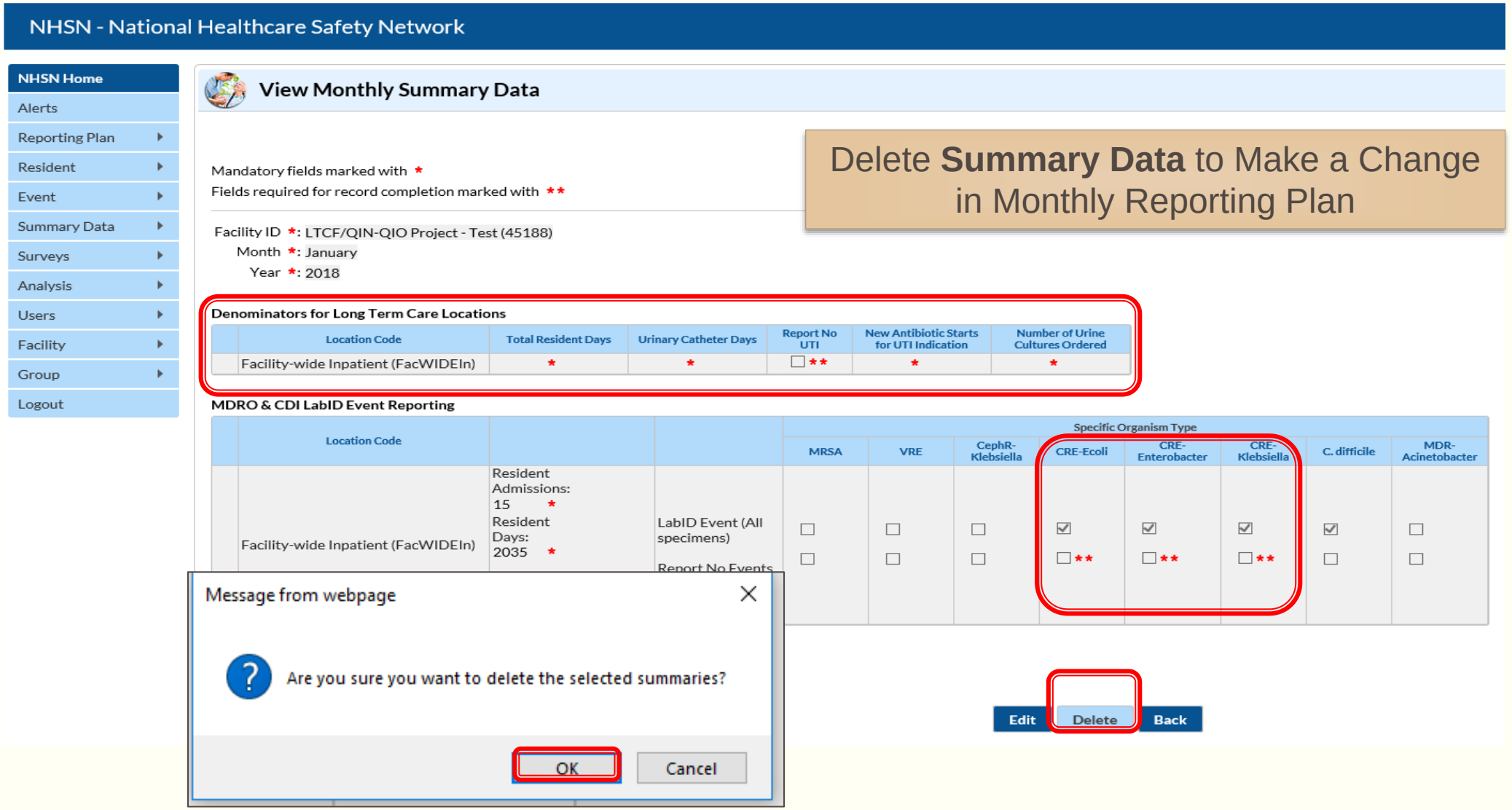
***This is not an option **if the LTCF has already created a Summary Report for that month**. The LTCF will need to *delete* the Summary Report first, then go in and edit the MRP.

Monthly Reporting Plan: Editing Error

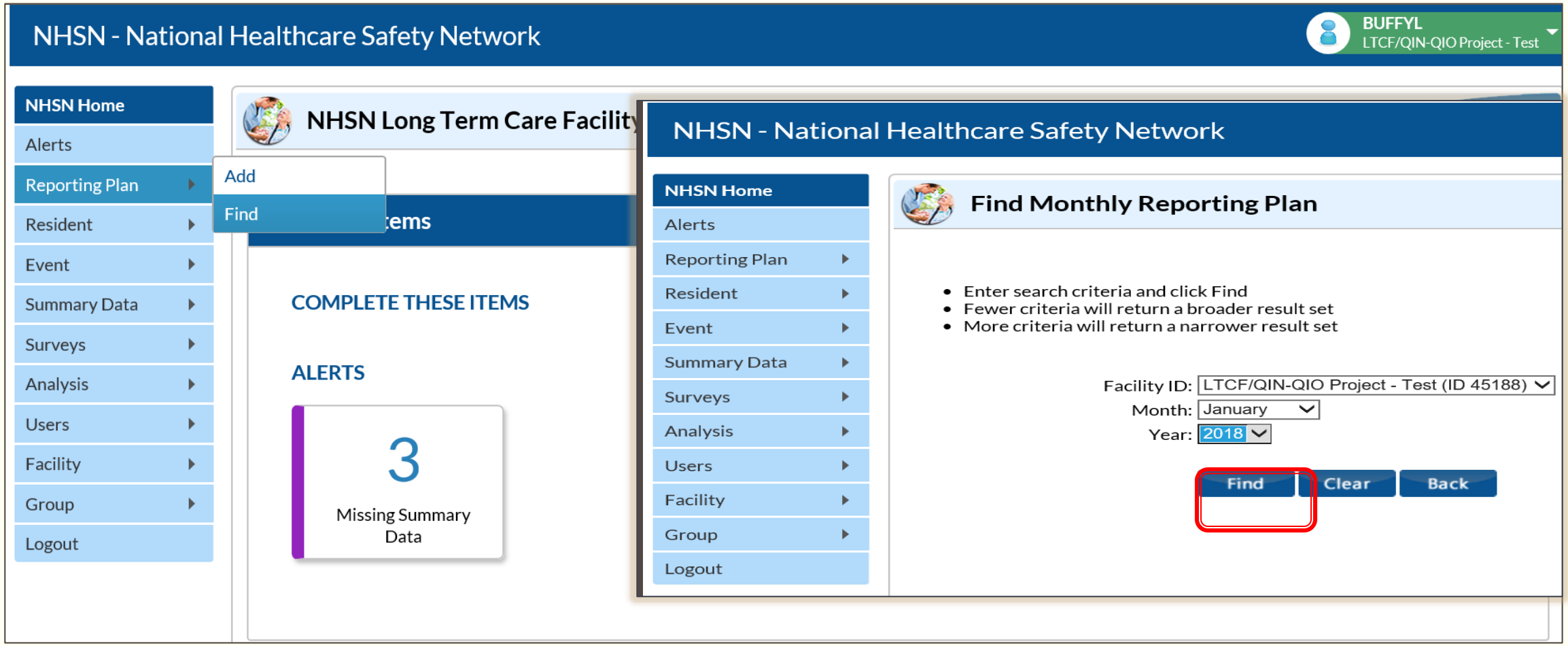
MDRO & CDI LabID summary data exist for 1/2018, you cannot remove CREECOLI from plan. MDRO & CDI LabID summary data exist for 1/2018, you cannot remove CREENTERO from plan. MDRO & CDI LabID summary data exist for 1/2018, you cannot remove CREKLEB from plan.



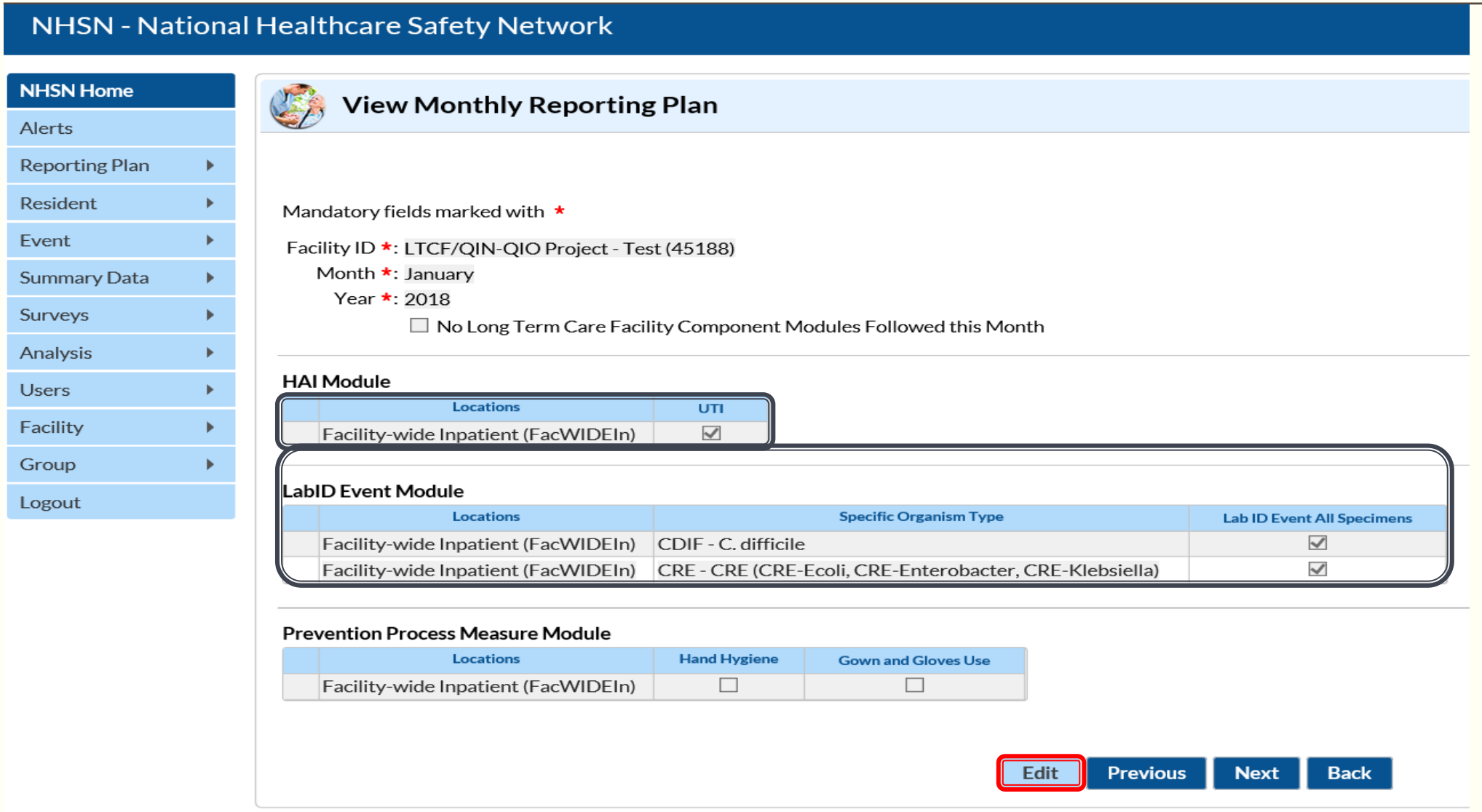
Monthly Reporting Plan: Action to Edit a Plan Once the Summary Data has Been Entered



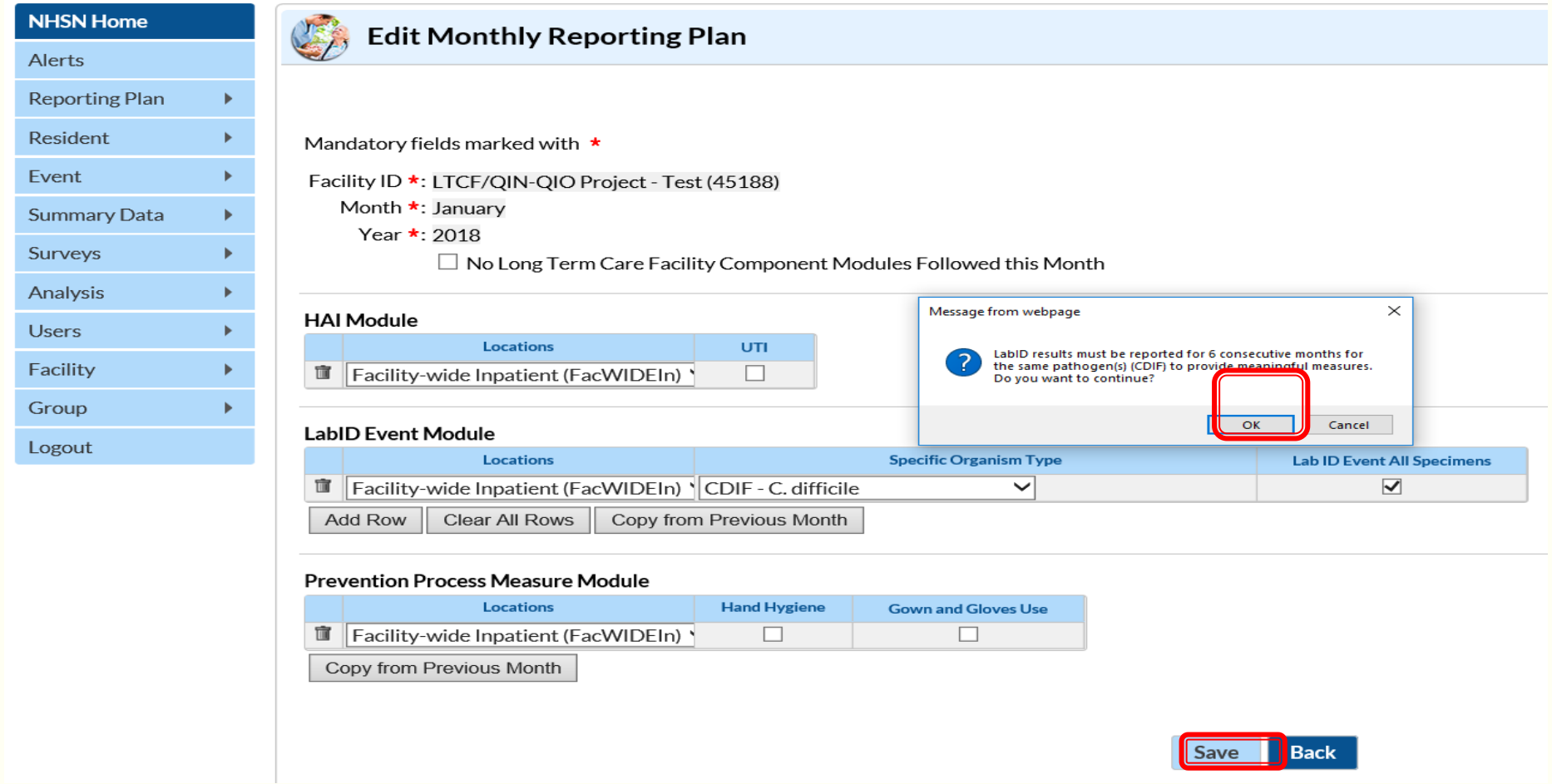
Monthly Reporting Plan:
Identify the Problem and Action Steps



Monthly Reporting Plan:
Identify the Problem and Action Steps

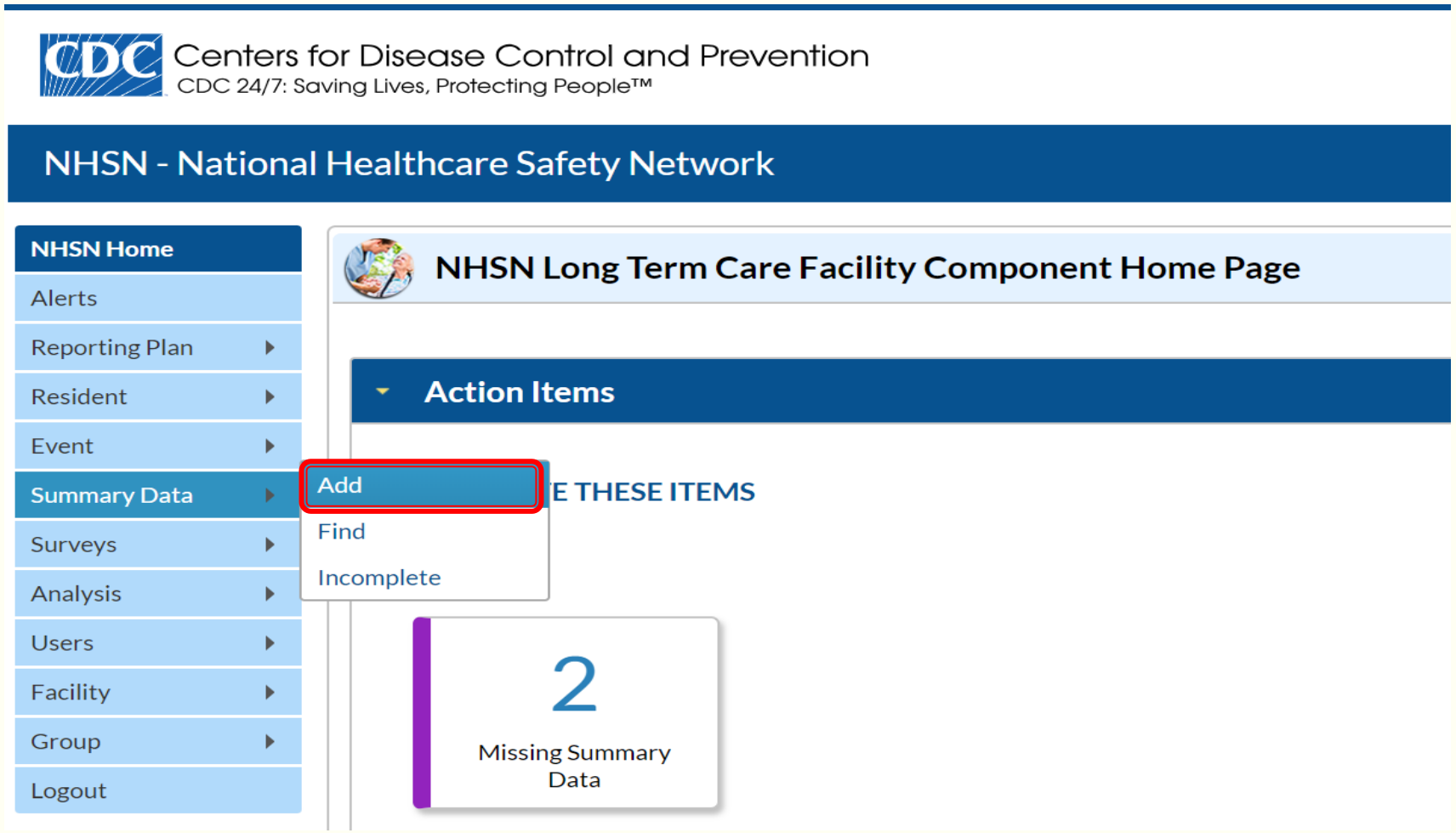


Edit Current Reporting Plan

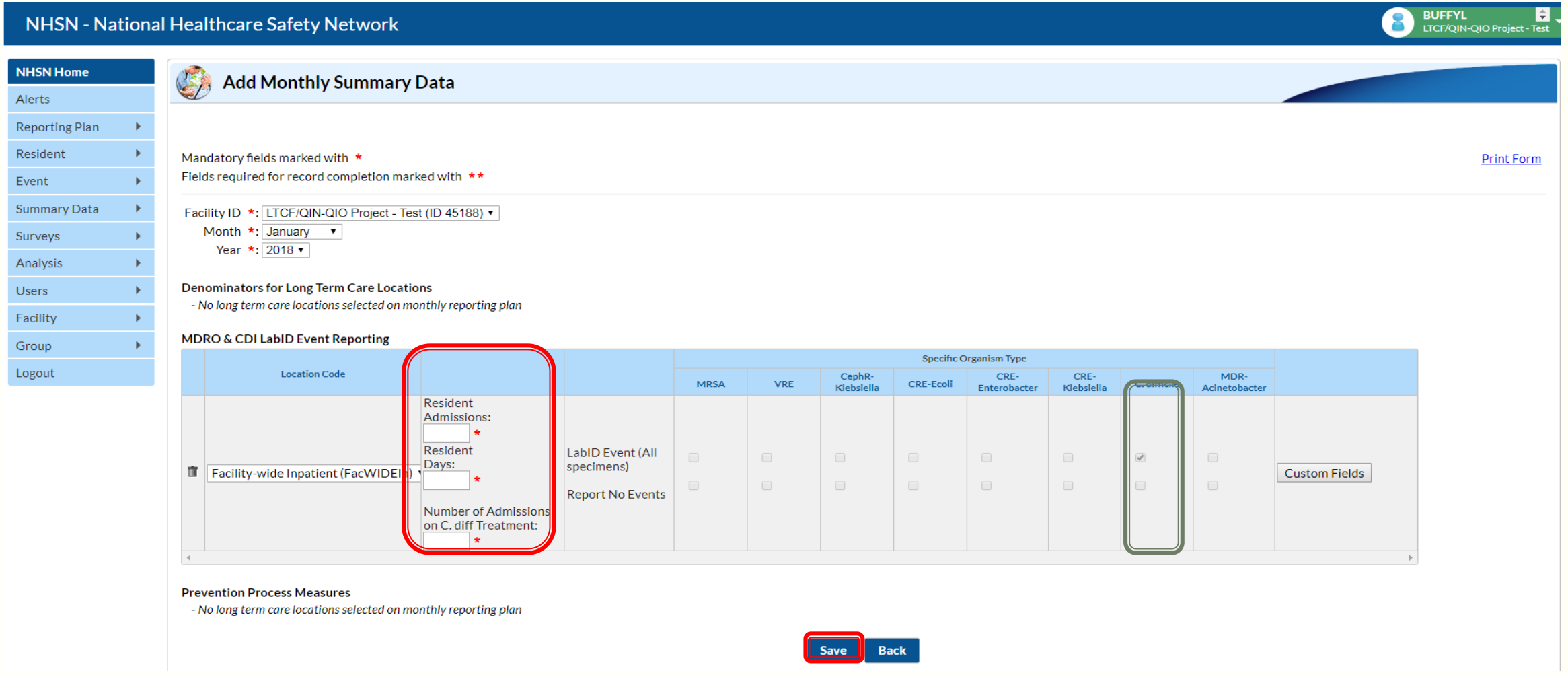


Plan saved successfully.

Enter Summary Data That Was Deleted

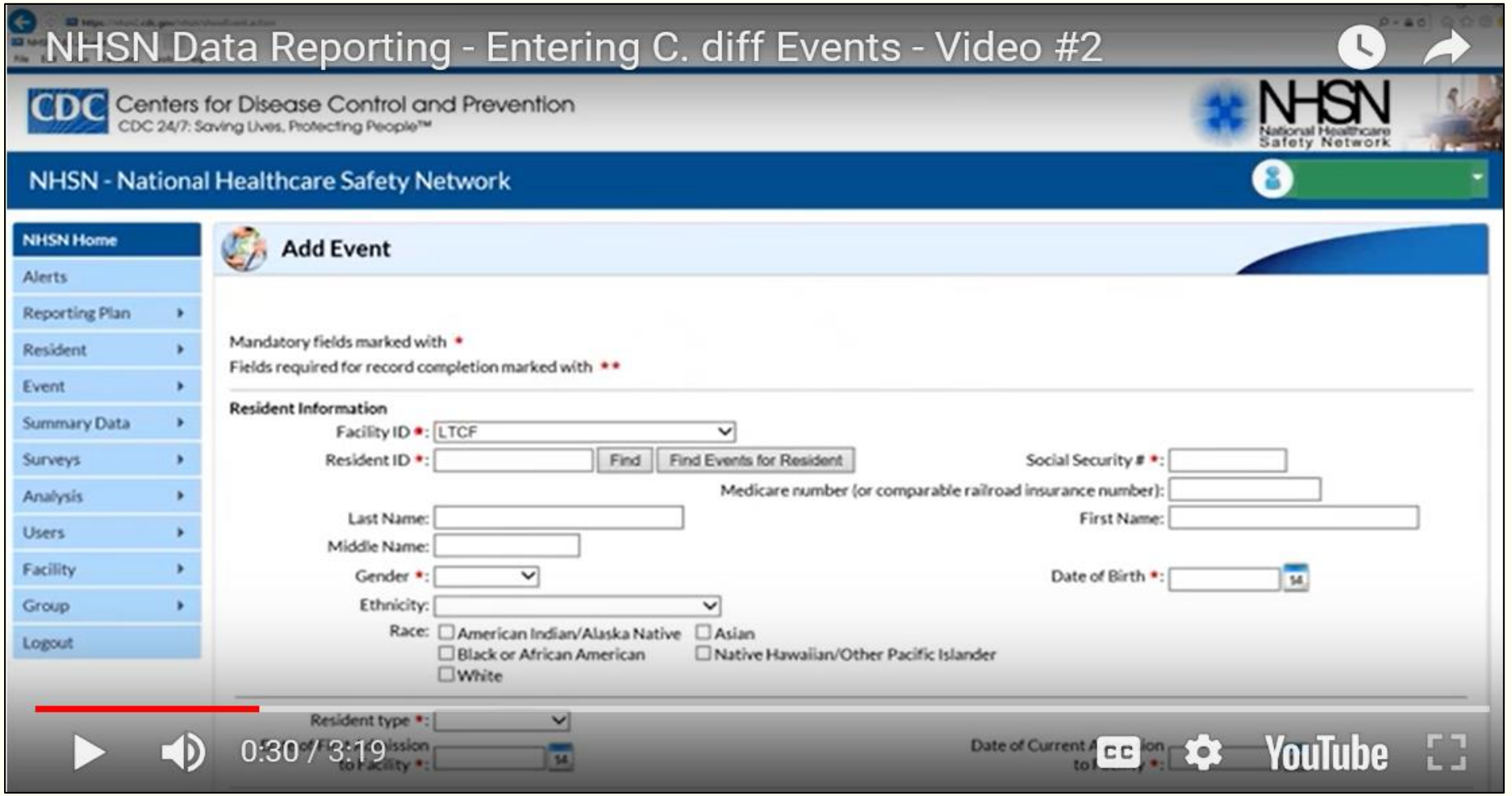


Enter Summary Data That Was Deleted



*Notice UTI and CRE are now removed

Monthly CDI Event



https://www.youtube.com/watch?v=EFAxtiT3zCk

Monthly CDI Events

National Healthcare Safety Network (NHSN)

NHSN
NHSN Login
About NHSN +
Enroll Here
Materials fo Facilities
Ambul
Acute Care Hospitals/Facilities +
Long-term Acute Care Hospitals/Facilities +
Long-term Care Facilities −
Surveillance for C. difficile and MRSA Infections
Surveillance for Urinary Tract Infections
Surveillance for Process Measures – Hand Hygiene, Gloves and Gown

CDC > NHSN > Materials for Enrolled Facilities > Long-term Care Facilities

Surveillance for C. difficile, MRSA, and other Drug-resistant Infections

Remember: Only results from unformed/loose stool specimens, conforming to the shape of the container should be included in CDI LabID event surveillance and reporting.

› **Training**

› **Protocol**

⌄ **Data Collection Forms**

All Data Collection Forms are Print-only

- 57.138 LabID Event Form for LTCF January 2018 [PDF – 49K]
  - Customizable form [DOCX – 28K]
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- 57.142 Denominators for LTCF January 2018 [PDF – 40K]

Here

- Step 1: Enroll into NHSN
- Step 2: Set up NHSN
- Step 3: Report

Click here to enroll

https://www.cdc.gov/nhsn/ltc/cdiff-mrsa/index.html

Monthly CDI Events: Reporting Error # 1

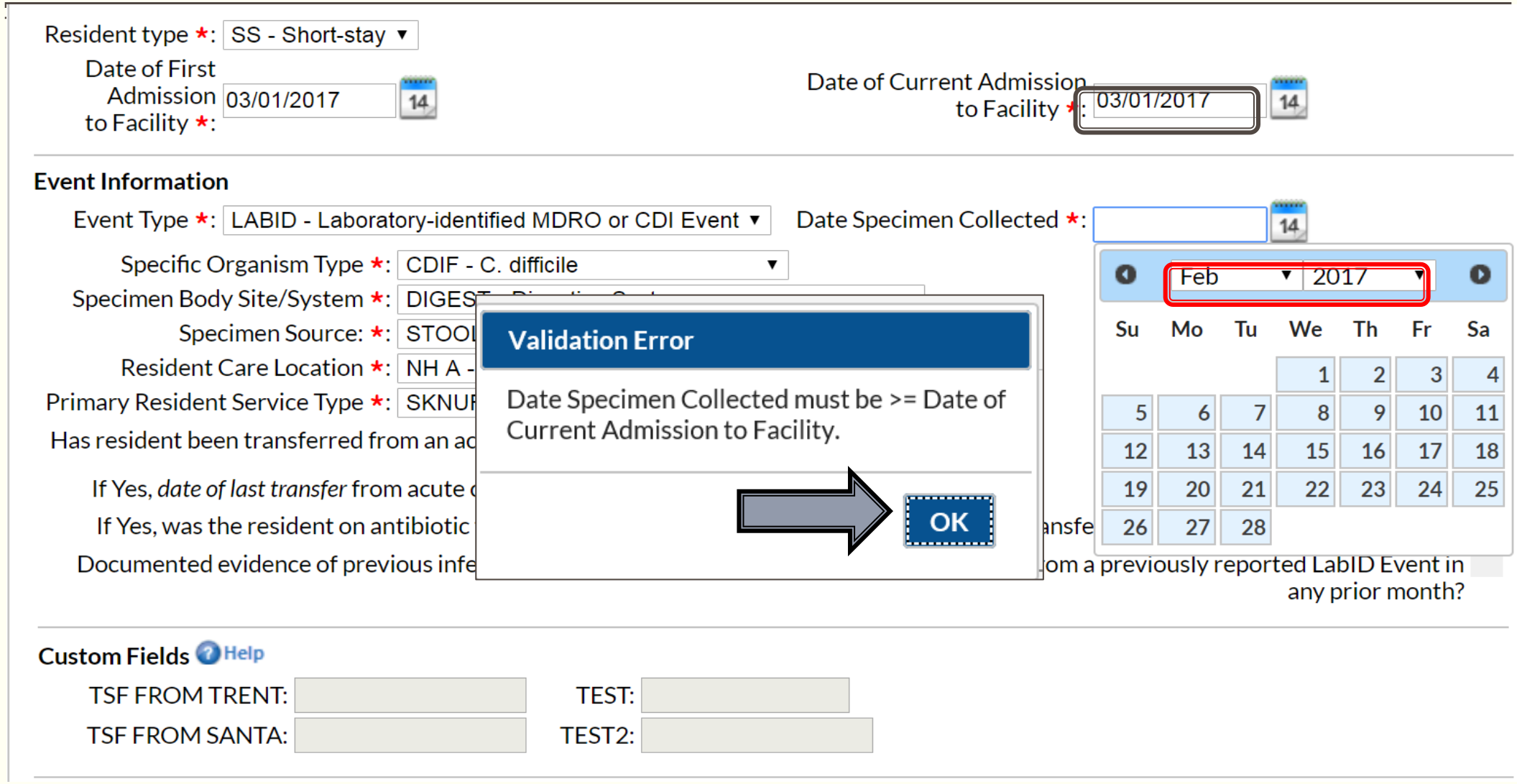
Problem

- LTCFs create a CDI Event for residents admitted **on** CDI treatment

Importance

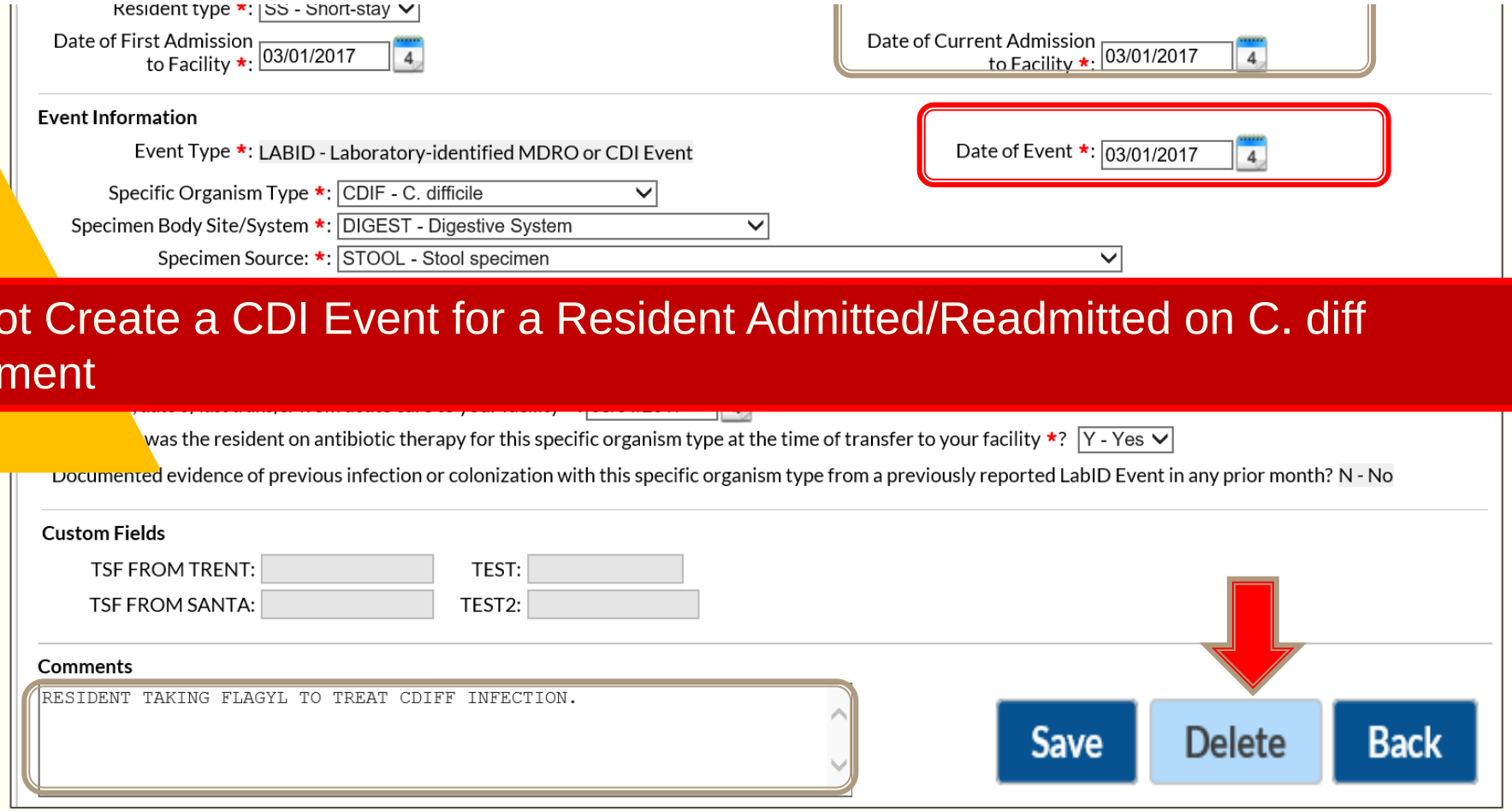
- Duplication
- Inflate CDI incident-onset
- Affect national, state and facility-level CDI rates

CDI Event Error # 1: Creating a *C. diff* Event When the Resident Was **Admitted** on *C. diff* Treatment



CDI Event Error # 1: Action

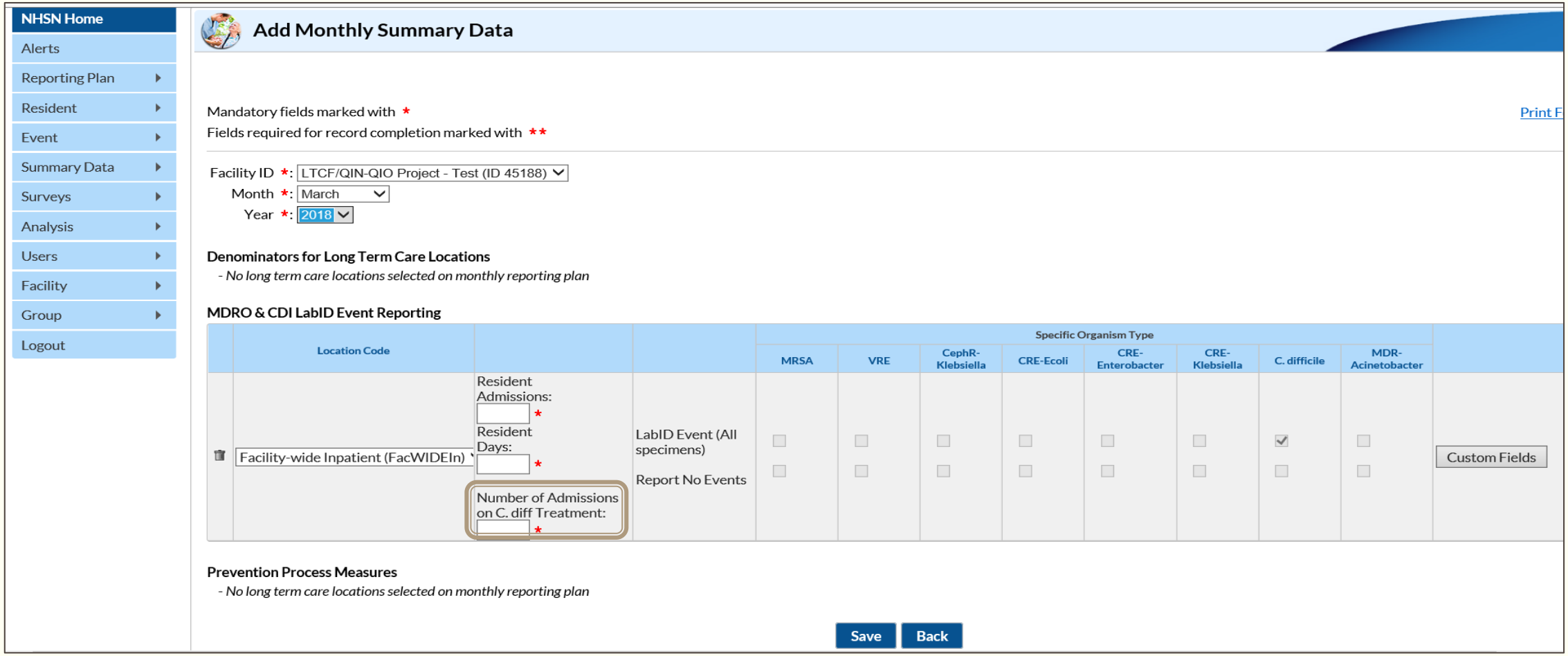
If the resident was admitted on C. diff treatment and CDI Event was created, find the event and delete.



Do Not Create a CDI Event for a Resident Admitted/Readmitted on C. diff Treatment

CDI Event Error # 1: Action

If the date of event is before the admission to your facility add to your **summary data**.



Monthly CDI Events: Reporting Error # 2

Problem

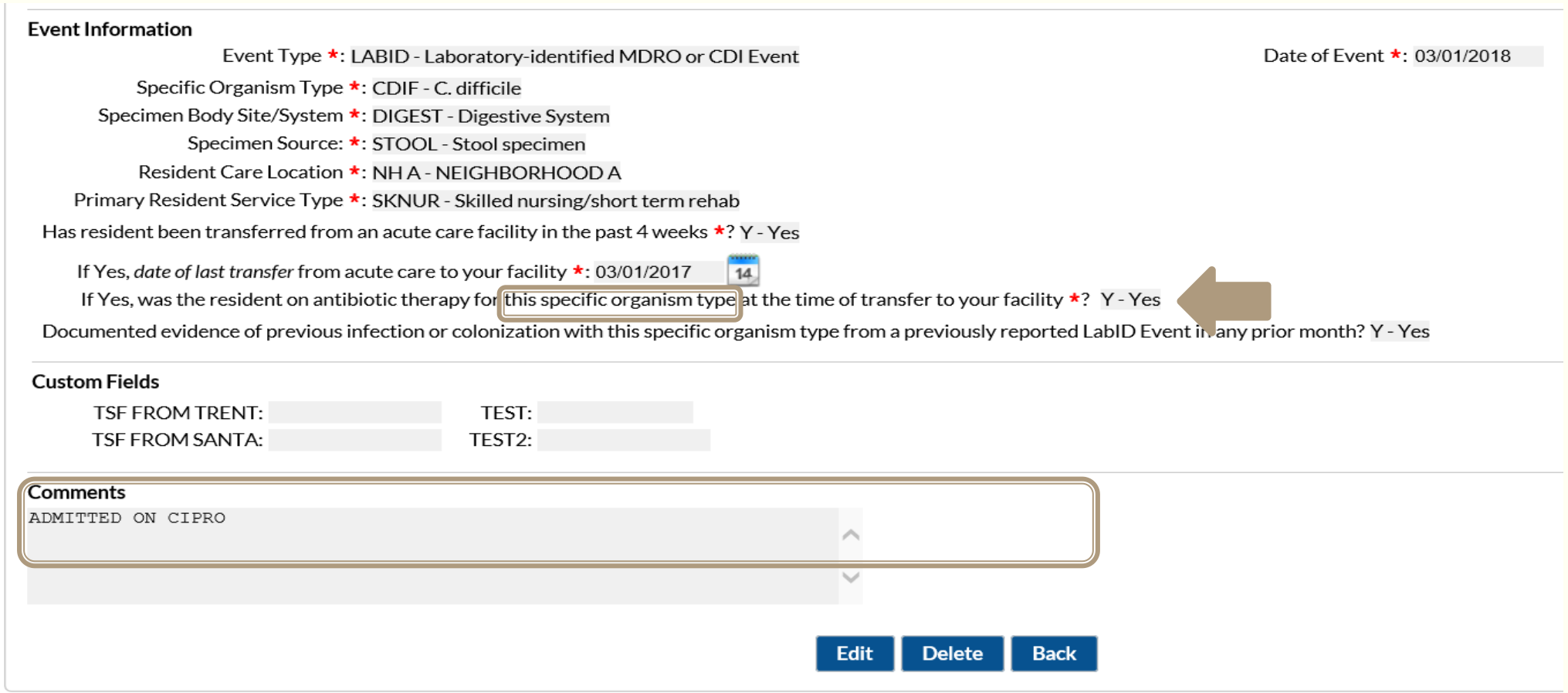
- Reporting antibiotic therapy for CDI organism type when the resident was on an antibiotic for ‘other’ organism type

Importance

- Misrepresent the number of residents on antibiotic therapy for CDI
- Can influence infection prevention strategies considering recurrence is a common risk-factor for residents with CDI

CDI Event Error # 2: Antibiotic Therapy

Many LTCFs enter 'Y' if the Resident is on **any** antibiotic therapy.



Event Information

Event Type *: LABID - Laboratory-identified MDRO or CDI Event

Date of Event *: 03/01/2018

Specific Organism Type *: CDIF - C. difficile

Specimen Body Site/System *: DIGEST - Digestive System

Specimen Source: *: STOOL - Stool specimen

Resident Care Location *: NH A - NEIGHBORHOOD A

Primary Resident Service Type *: SKNUR - Skilled nursing/short term rehab

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 *: 03/01/2017

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

TSF FROM TRENT:

TEST:

TSF FROM SANTA:

TEST2:

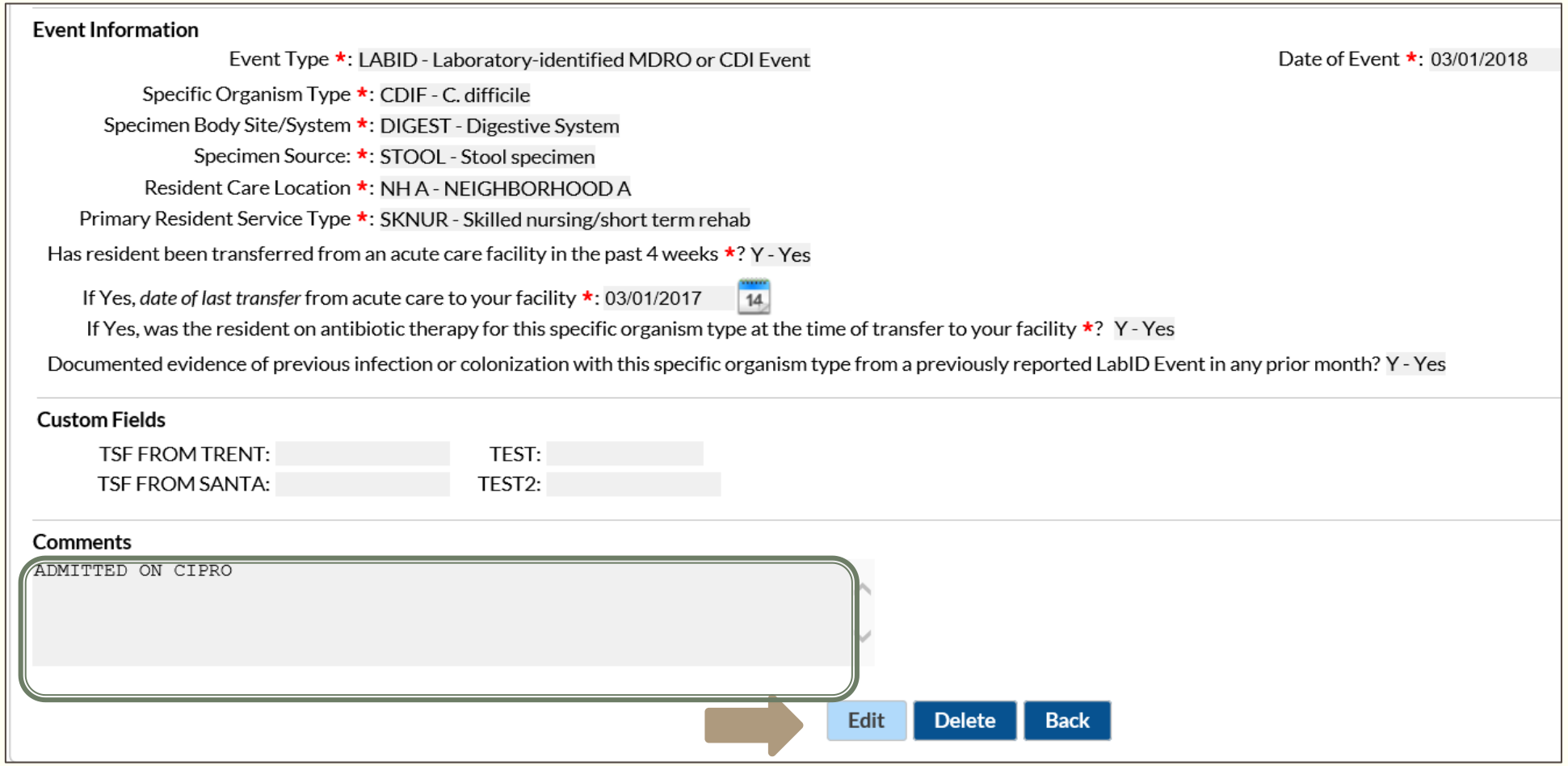
Comments

ADMITTED ON CIPRO

Edit Delete Back

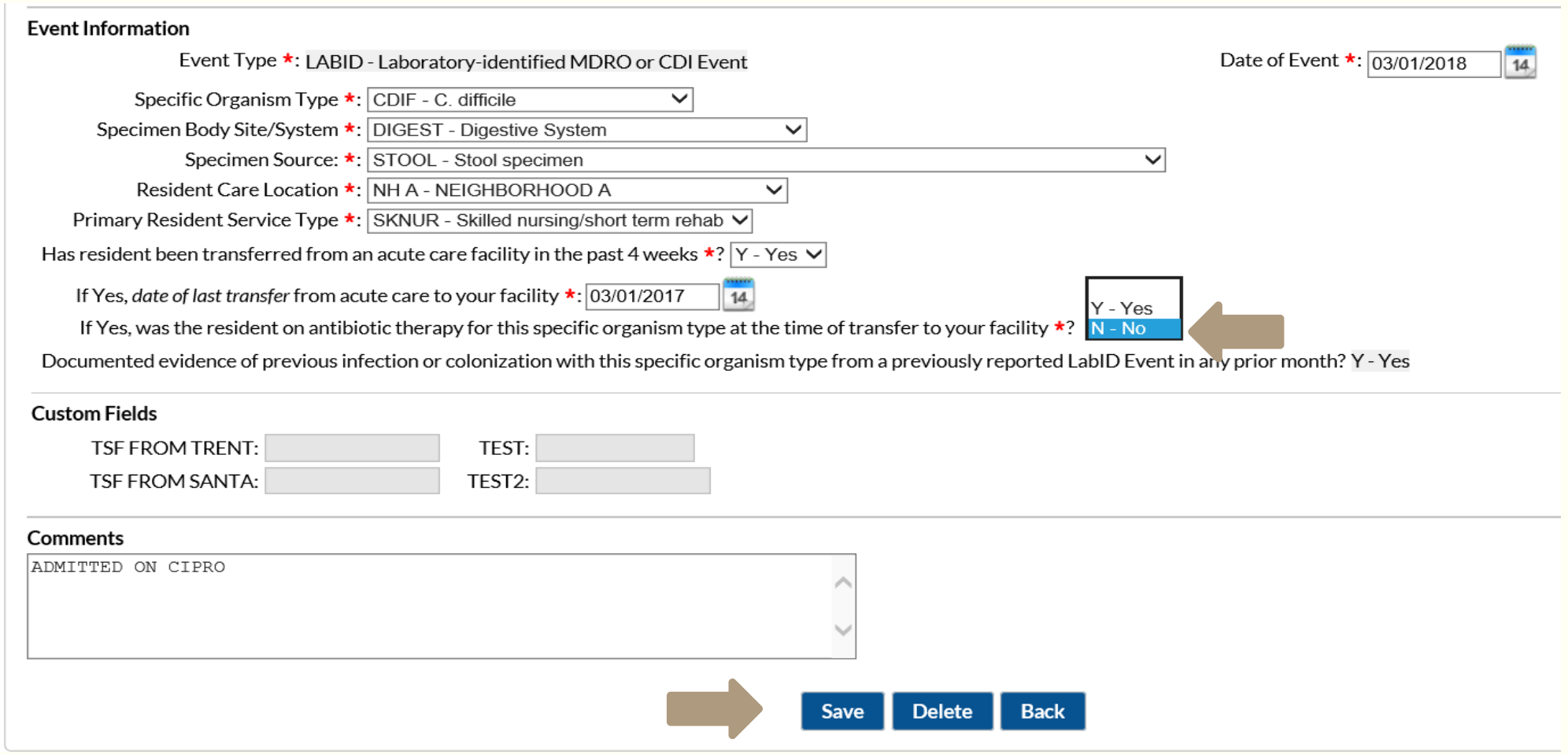
CDI Event Report: Problem 2 Action

Action: Verify that the resident was in fact admitted on antibiotics for **CDI Organism Type.**

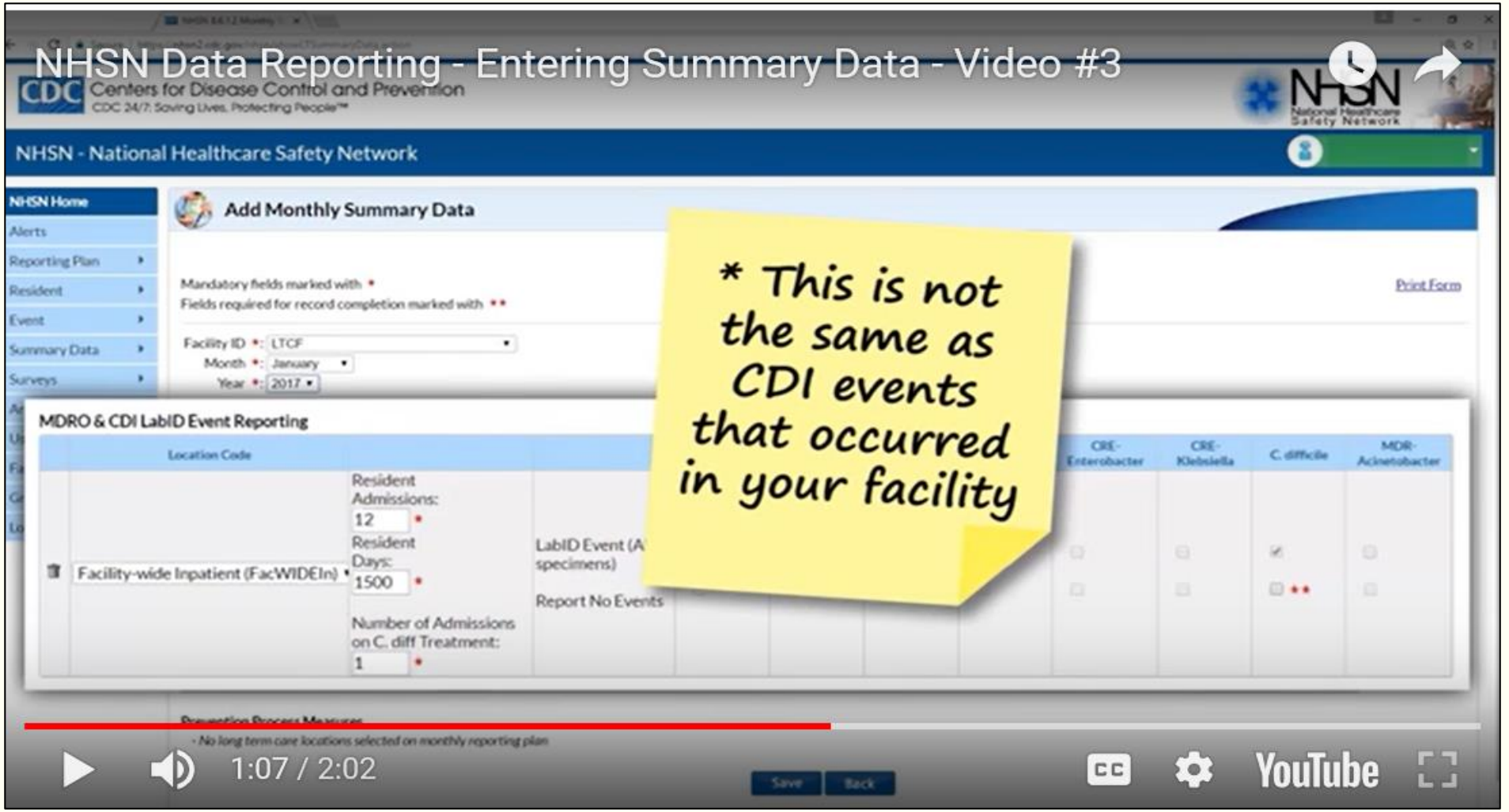


CDI Event Report: Problem 2 Action

Action: Verify that the resident was in fact admitted on antibiotics for **CDI Organism Type, edit and save if applicable.**



3: NHSN Monthly Summary Report



https://www.youtube.com/watch?v=Dwp8SebX6Lc

NHSN Summary Report: Error # 1

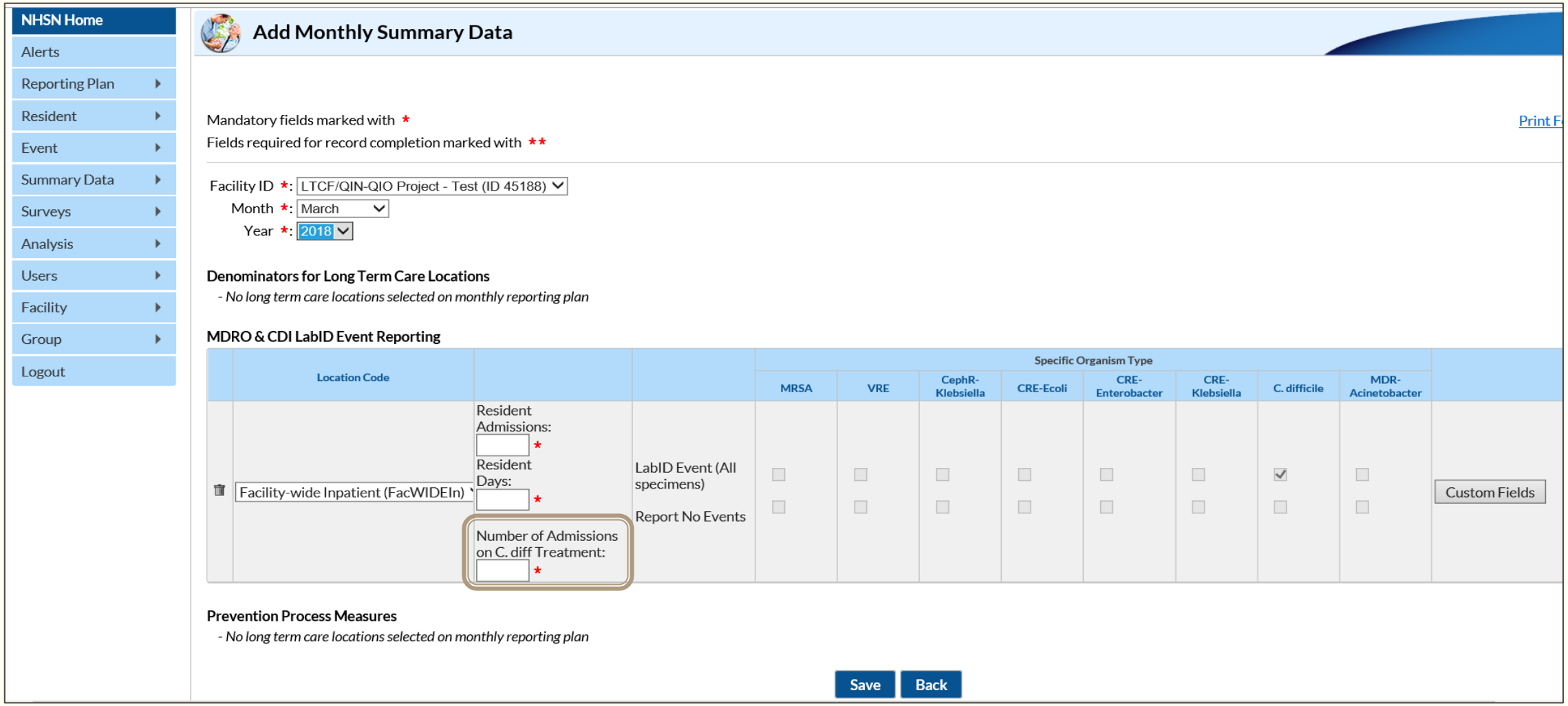
Problem

- Number of residents on CDI treatment are incorrectly added

Importance

- Over reporting of residents admitted on CDI treatment
- Affects admitted with CDI prevalence

NHSN Summary Report: Error # 1



NHSN Summary Report: Error # 1

Action:

Report only residents who were admitted and/or readmitted and taking antibiotics specifically for their *C. diff* infection.

Does not include residents that were tested and confirmed positive within your LTCF (exclusion for outpatient).

Review monthly admission to determine who was admitted with *C. diff* versus those that were tested by your LTCF.

NHSN Summary Report: Error # 2

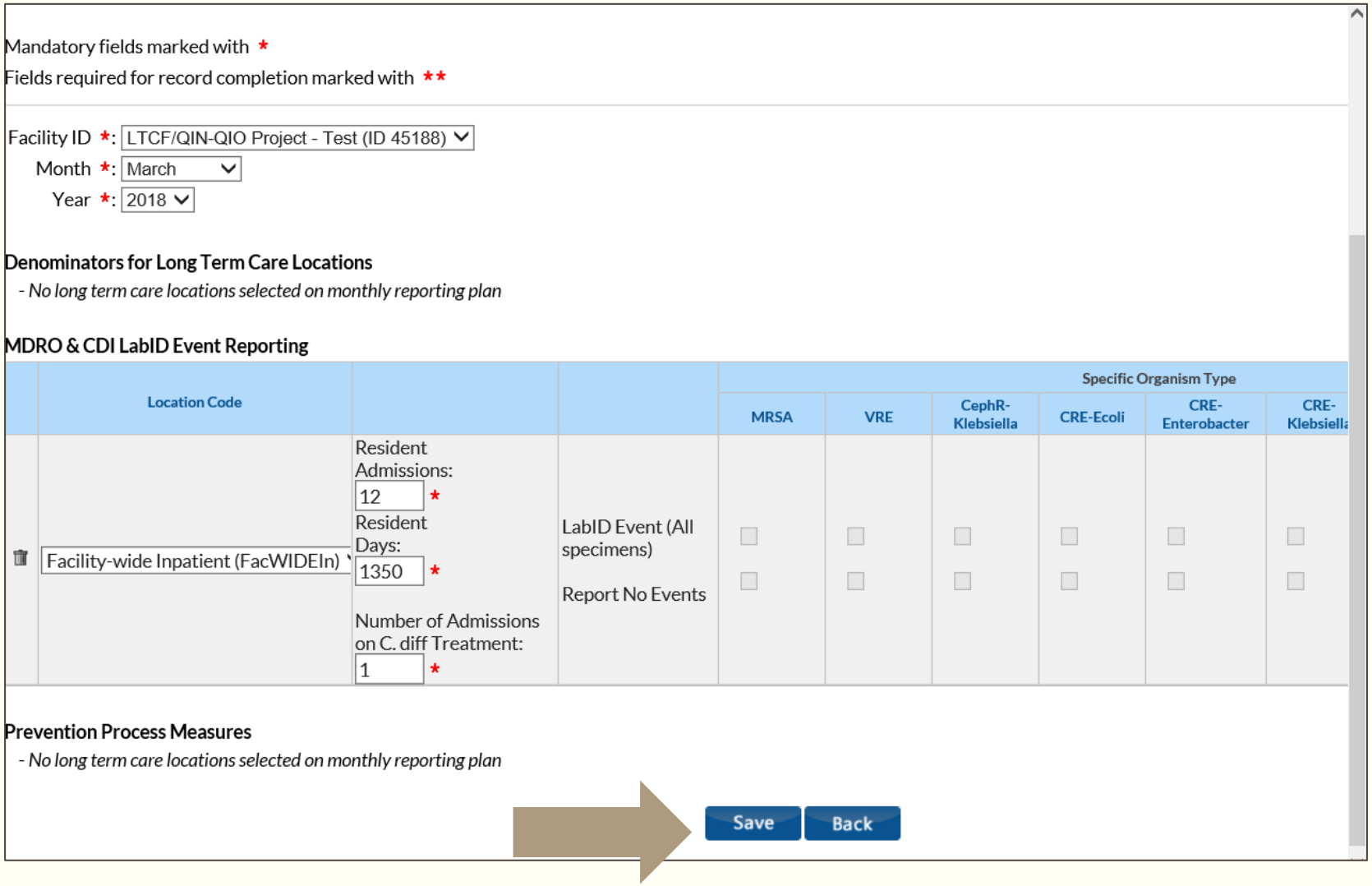
Problem

- No Lab ID Events Box Not Checked
  - Sometimes the checks no events box is at the far right of your monitor.
  - If the summary data is entered before the Event then this box will not be grayed out.

Importance

- If there were no CDI events and this box was not checked then the summary data will not save and an ALERT will be created.

Summary Data: What Happens



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

Facility ID *: LTCF/QIN-QIO Project - Test (ID 45188)
Month *: March
Year *: 2018

Denominators for Long Term Care Locations

- No long term care locations selected on monthly reporting plan

MDRO & CDI LabID Event Reporting

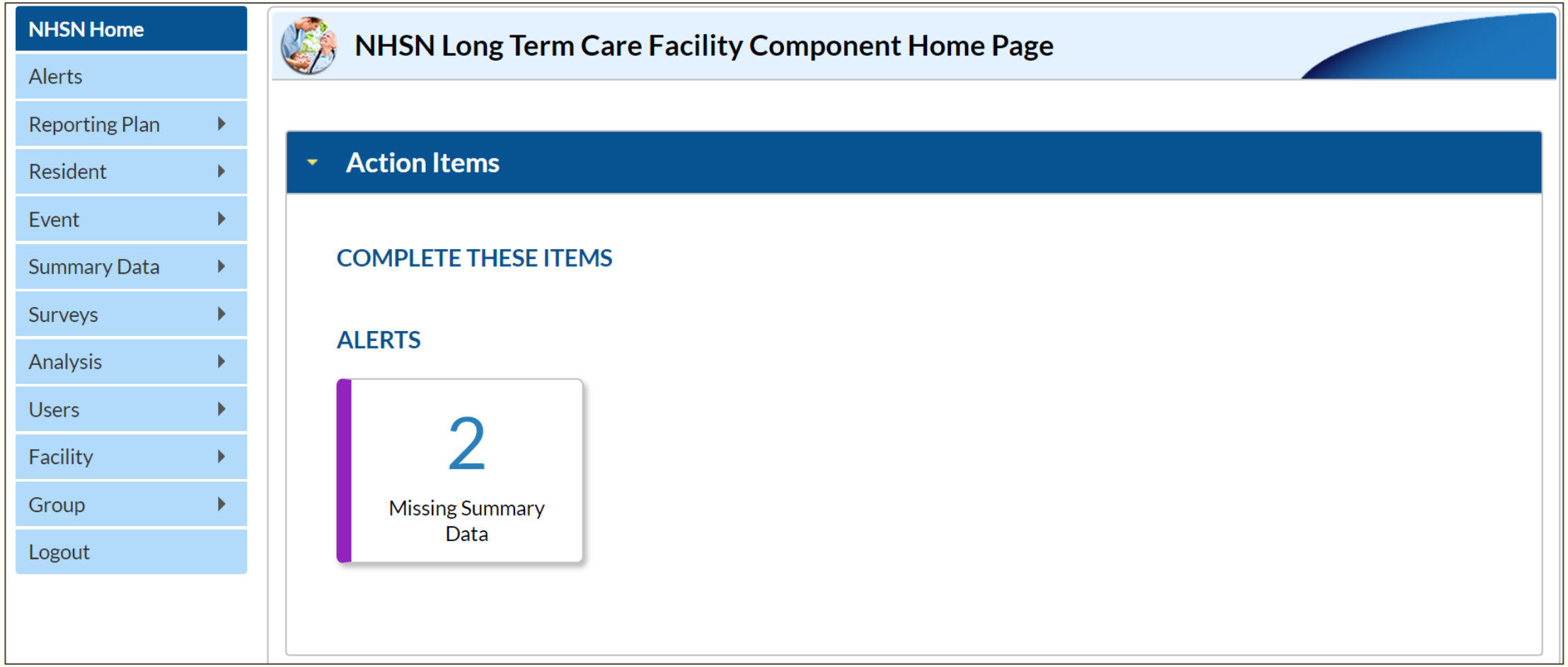
	Location Code			Specific Organism Type					
				MRSA	VRE	CephR-Klebsiella	CRE-Ecoli	CRE-Enterobacter	CRE-Klebsiella
	Facility-wide Inpatient (FacWIDEIn)	Resident Admissions: 12 * Resident Days: 1350 * Number of Admissions on C. diff Treatment: 1 *	LabID Event (All specimens)	☐	☐	☐	☐	☐	☐
			Report No Events	☐	☐	☐	☐	☐	☐

Prevention Process Measures

- No long term care locations selected on monthly reporting plan

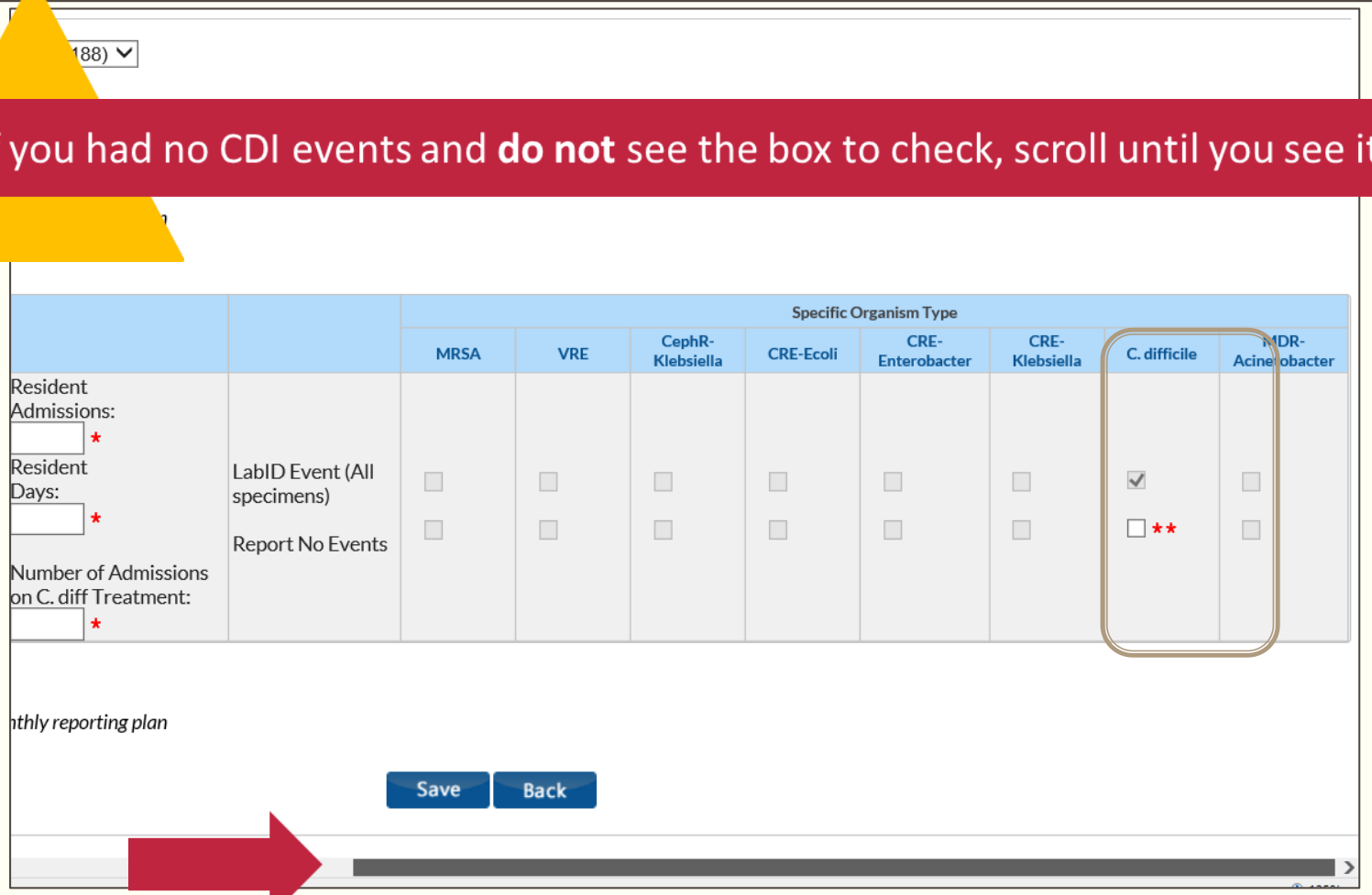
Save Back

Summary Report Alert



Summary Reports No Events: Check the Box!

If you had no CDI events and **do not** see the box to check, scroll until you see it!



Sometimes the checks no events box is at the far right of your monitor

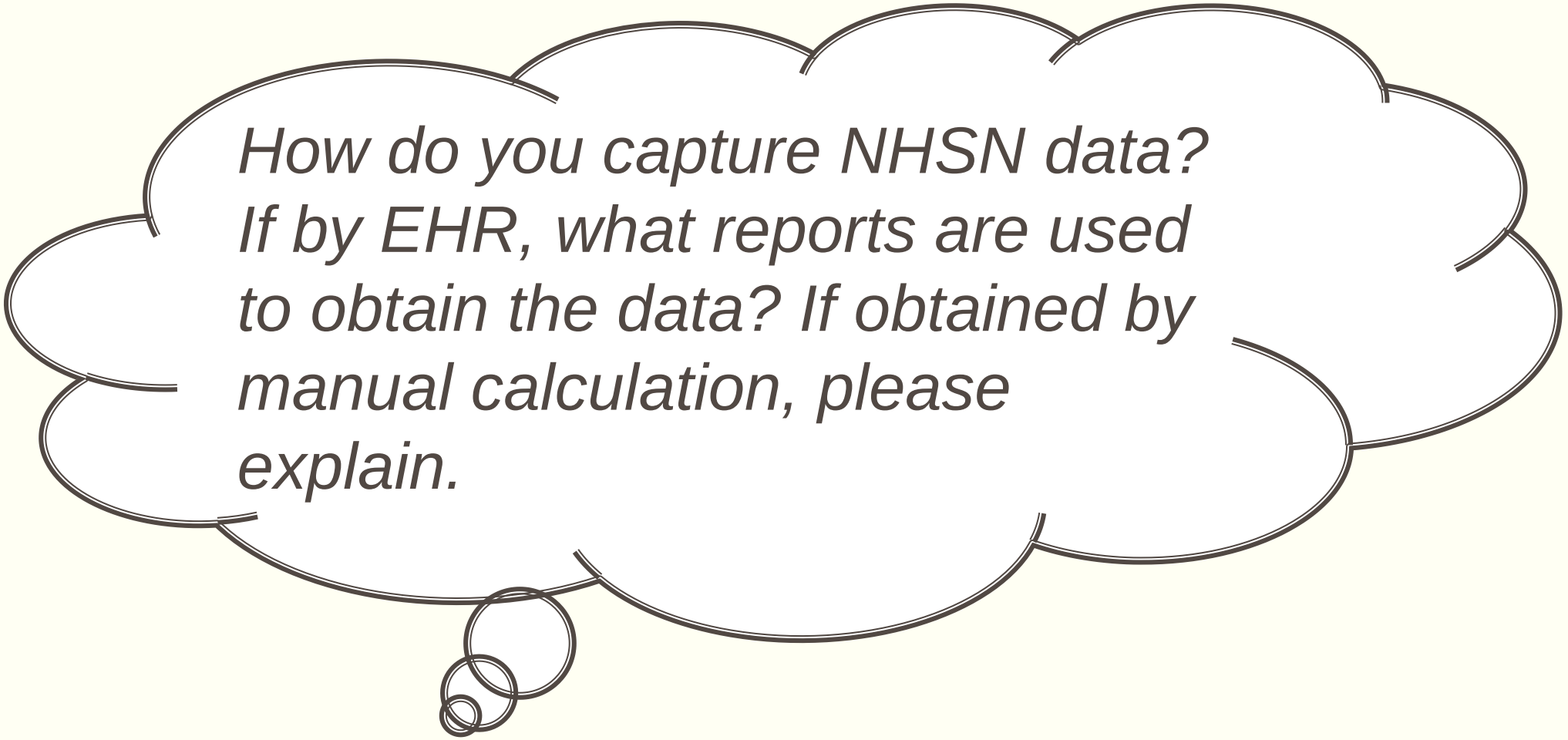
Demonstrate LTCF Data Surveillance and Collection Strategies

Collect data at the same time every month

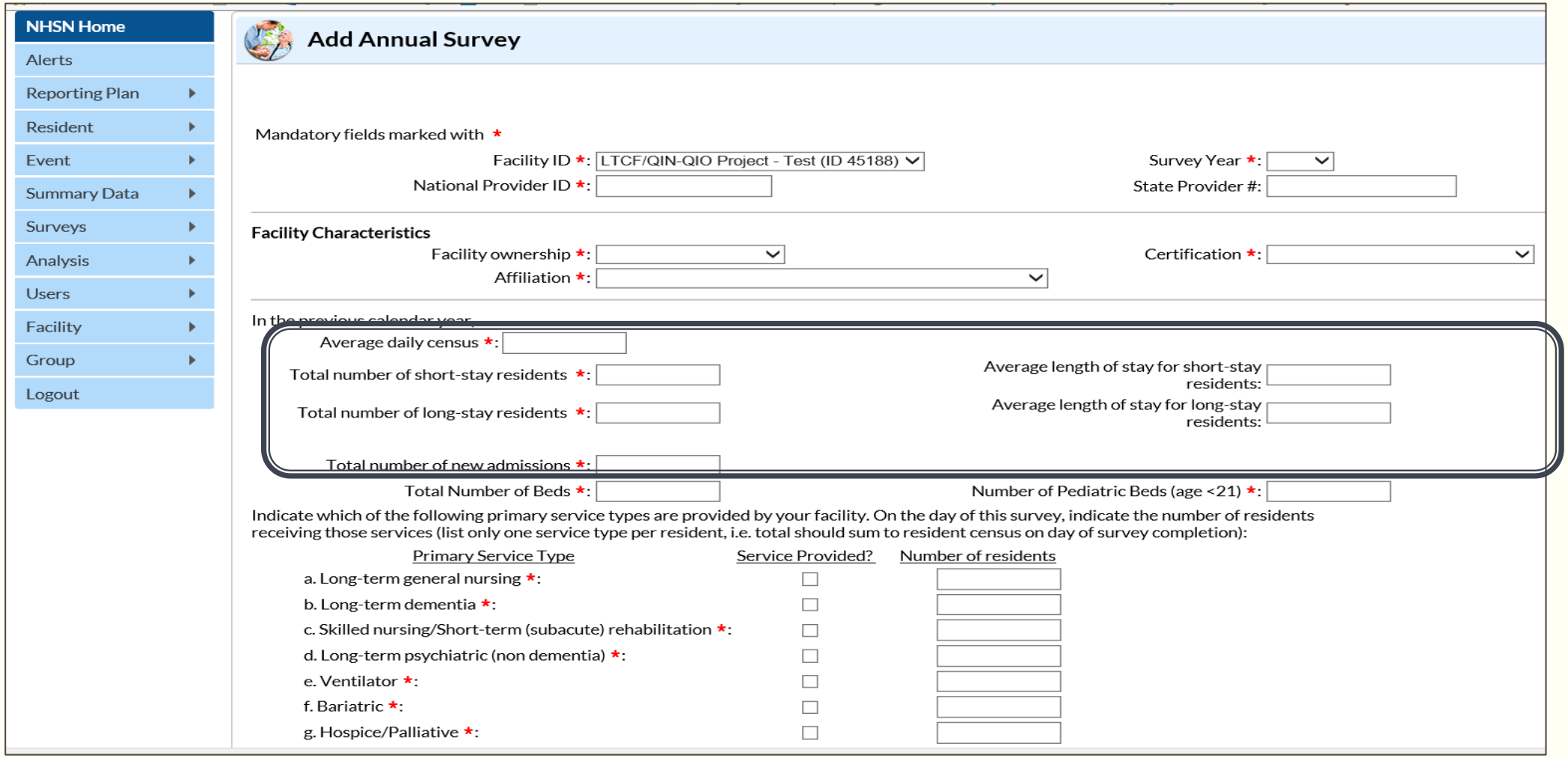
Align with other data submission requirements

Utilize electronic health record (EHR) reports to extract data

This Question Was Asked to LTCF Users:



NHSN Annual Survey # 1: Census Variables



Annual Survey #1: Census Data Variables

In the previous calendar year:
*Average daily census: _____
*Total number of short-stay residents: _____ Average length of stay for short-stay residents: _____
*Total number of long-stay residents: _____ Average length of stay for long-stay residents: _____
*Total number of new admissions: _____

Electronic Health Records: Facility Information, Summary Report/Census Report, some manual calculations may be required.

Business/accounting office which often uses Electronic Health Record

Physical Therapy assists with collecting the average length of stay for short stay residents

Admission discharge transfer report in Electronic Health Record

Manual calculation (short-stay/long-stay): Length of stay by discharge report then add each line manually

NHSN Annual Survey # 2: Microbiology Laboratory Practices

Facility Microbiology Laboratory Practices

1. Does your facility have its own laboratory that performs microbiology/antimicrobial susceptibility testing? *

2. Indicate whether your facility screens new admissions for any of the following multidrug-resistant organisms: (check all that apply) *

- ☐ We do not screen new admissions for MDROs
- ☐ Methicillin-resistant *Staphylococcus aureus* (MRSA)
- ☐ Vancomycin-resistant *Enterococcus* (VRE)
- ☐ Multidrug-resistant gram-negative rods (includes carbapenemase resistant Enterobacteriaceae; multidrug-resistant *Acinetobacter*, etc.)

3. 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? *

- ○ Enzyme immunoassay (EIA) for toxin
- ○ Cell cytotoxicity neutralization assay
- ○ Nucleic acid amplification test (NAAT)(e.g., PCR) (e.g., PCR, LAMP)
- ○ NAAT plus EIA, if NAAT positive (2-step algorithm)
- ○ Glutamate dehydrogenase (GDH) antigen plus EIA for toxin (2-step algorithm)
- ○ GDH plus NAAT (2-step algorithm)
- ○ GDH plus EIA for toxin, followed by NAAT for discrepant results
- ○ Toxigenic culture (C. difficile culture followed by detection of toxins)
- ○ Other (specify)

NHSN Annual Survey # 2: Microbiology Laboratory Practices

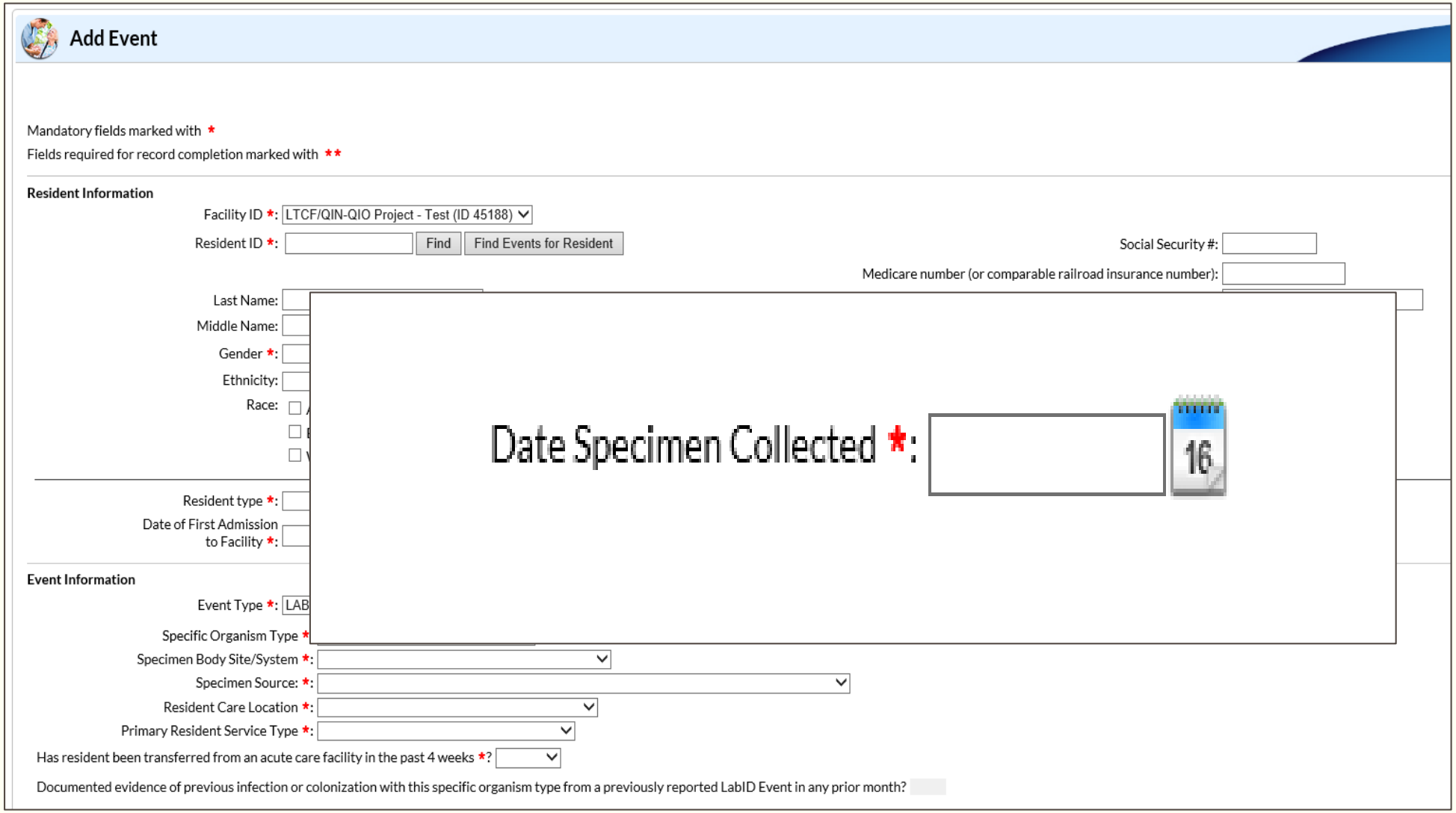
What is the primary testing method for *C. difficile* used most often by your facility's laboratory or the outside laboratory where your facility's testing is performed? (check one)

□ Enzyme immunoassay (EIA) for toxin
□ Cell cytotoxicity neutralization assay
□ Nucleic acid amplification test (NAAT) (e.g., PCR, LAMP)
□ NAAT plus EIA, if NAAT positive (2-step algorithm)
□ Glutamate dehydrogenase (GDH) antigen plus EIA for toxin (2-step algorithm)
□ GDH plus NAAT (2-step algorithm)
□ GDH plus EIA for toxin, followed by NAAT for discrepant results
□ Toxigenic culture (*C. difficile* culture followed by detection of toxins)
□ Other (specify): _____

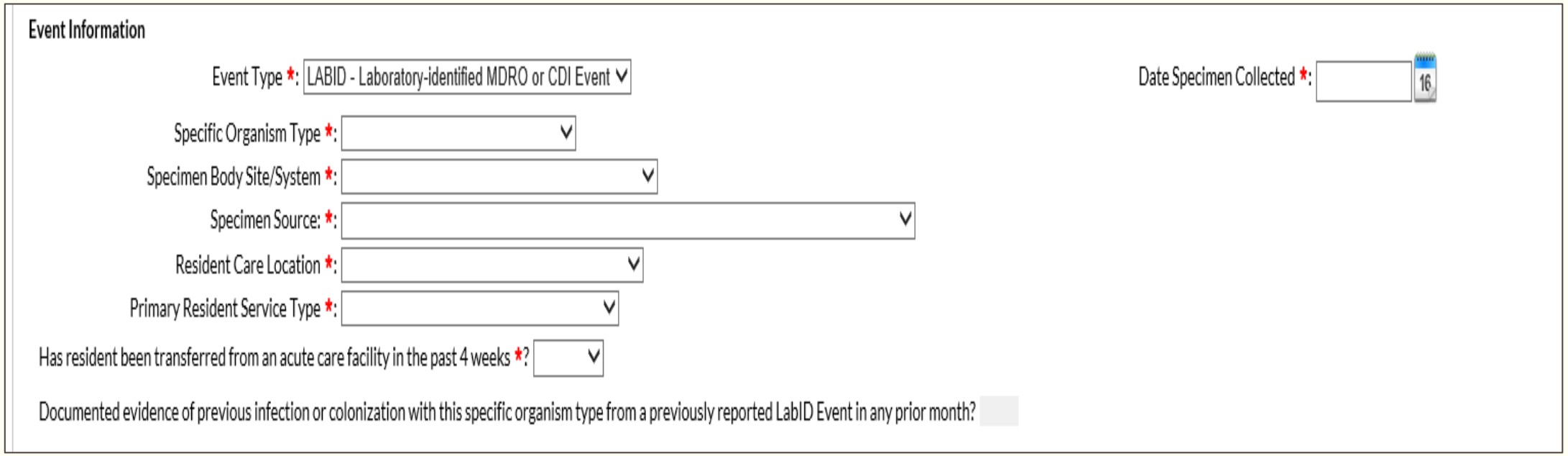
User contacts diagnostic laboratory to confirm testing type. If more than one diagnostic laboratory is used, the user selects the testing type most commonly used

Pulled directly from the lab reports provided by the lab

CDI Events # 1: Specimen Collection Date



CDI Events # 1: Specimen Collection Date



Electronic Health Records: Admission documents

New orders for *C. diff* stool testing kept on a daily NHSN Log used for monthly reporting

Nurses notes

Lab report

CDI Events #2: Resident Transfer

Event Information

Event Type *: LABID - Laboratory-identified MDRO or CDI Event

Date Specimen Collected *:

Specific Organism Type *:

Specimen Body Site/System *:

Specimen Source: *:

Resident Care Location *:

Primary Resident Service Type *:

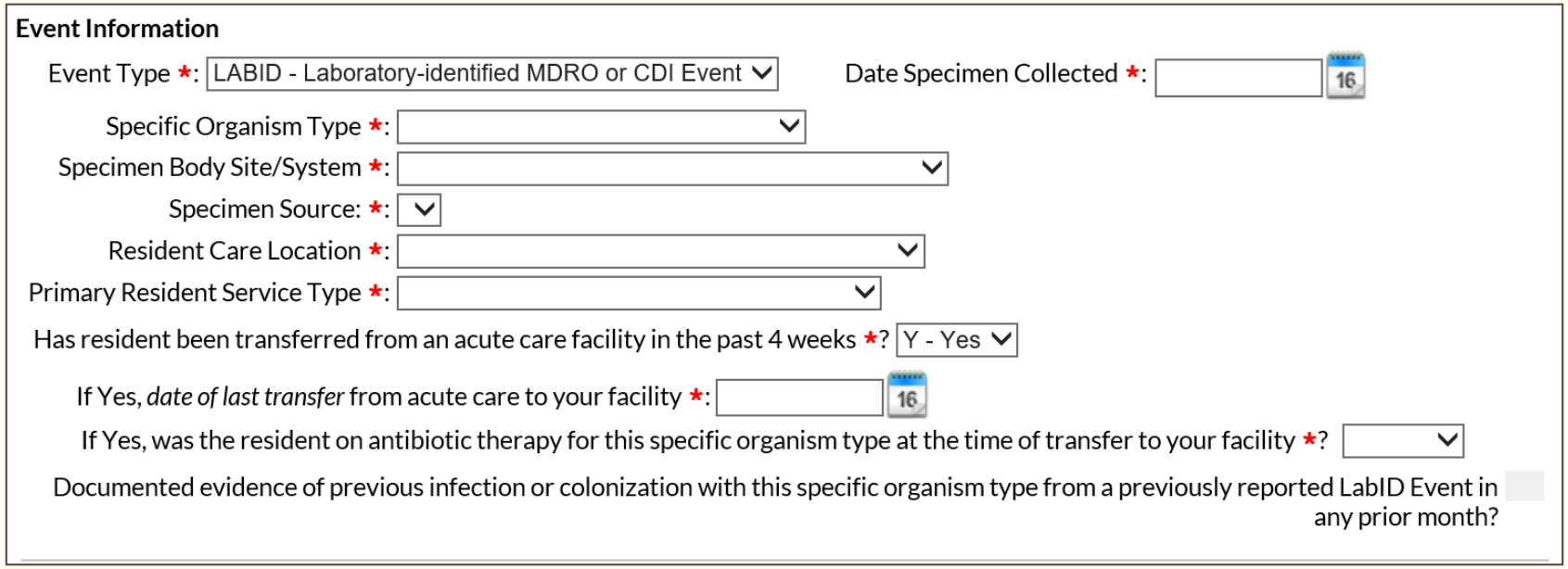
Has resident been transferred from an acute care facility in the past 4 weeks *? Y - Yes

If Yes, *date of last transfer* from acute care to your facility *:

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

Documented evidence of previous infection or colonization with this specific organism type from a previously reported LabID Event in any prior month?

CDI Events #2: Resident Transfer

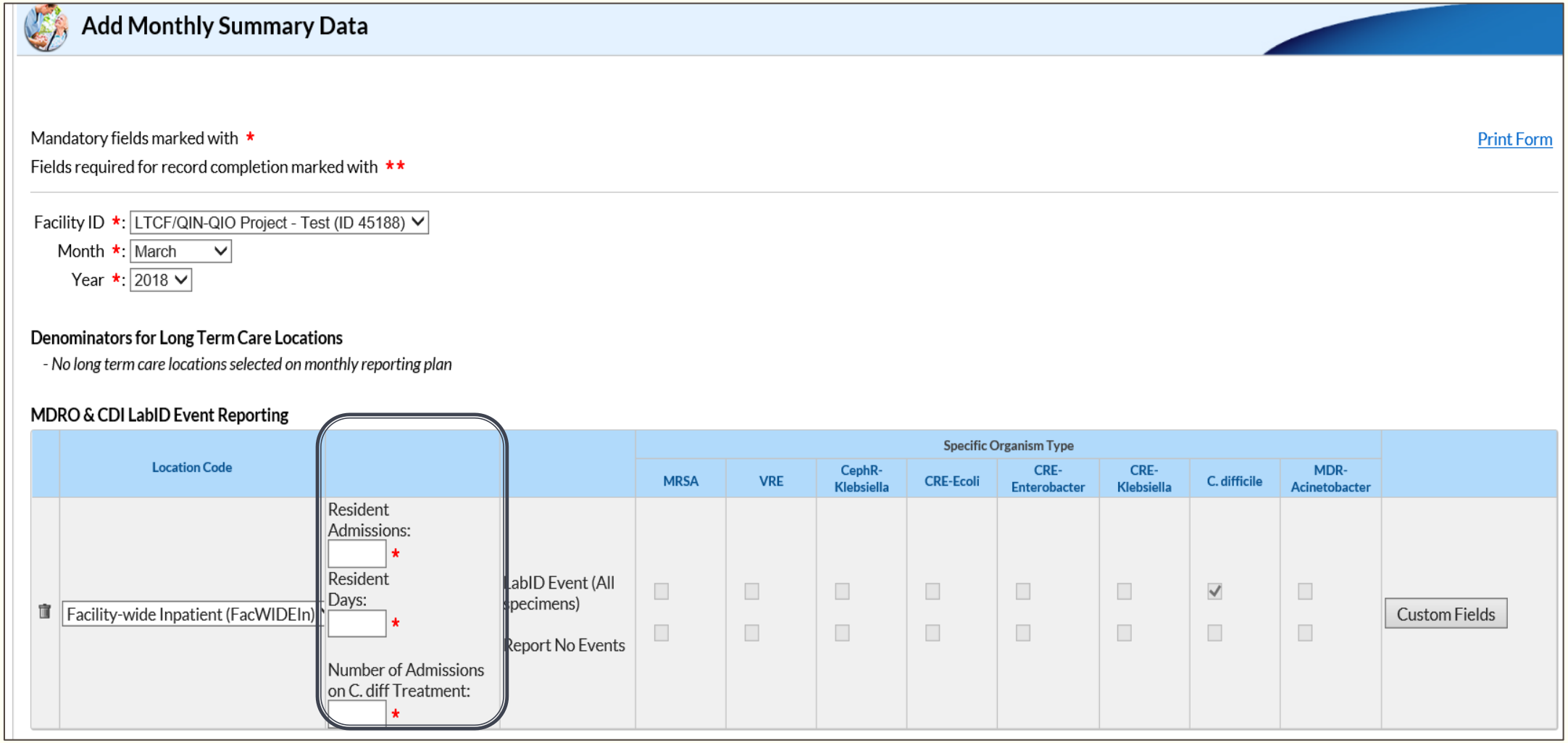


Electronic Health Records: Facility activity report, Action summary report

Face sheet from discharging facility

Facility notes

CDI Monthly Summary Report:



Add Monthly Summary Data

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

Print Form

Facility ID *: LTCF/QIN-QIO Project - Test (ID 45188)
Month *: March
Year *: 2018

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	VRE	CephR-Klebsiella	CRE-Ecoli	CRE-Enterobacter	CRE-Klebsiella	C. difficile	MDR-Acinetobacter	
	Facility-wide Inpatient (FacWIDEIn)	Resident Admissions: * Resident Days: * Number of Admissions on C. diff Treatment: *	LabID Event (All specimens)	☐	☐	☐	☐	☐	☐	☑	☐	Custom Fields
			Report No Events	☐	☐	☐	☐	☐	☐	☐	☐	

CDI Monthly Summary Report #1: Resident Admissions

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

Electronic Health Record: Daily census by unit and total census of the building, Action summary report

Business office

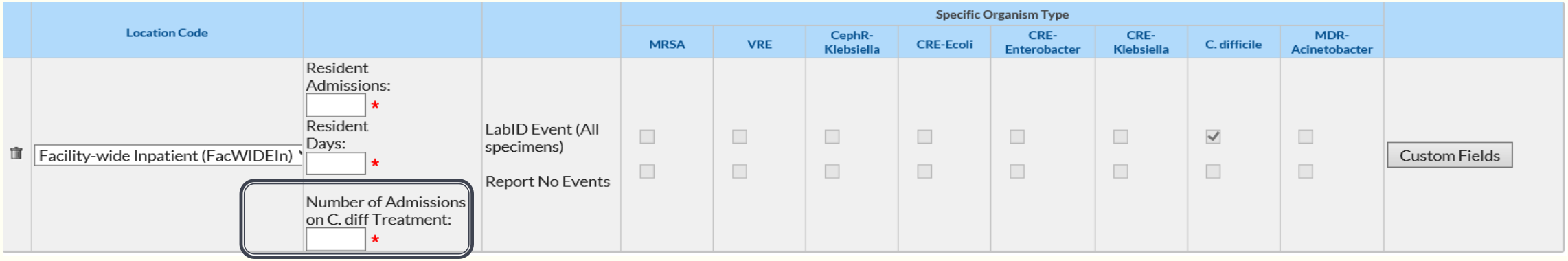
CDI Monthly Summary Report #2: Total Number of Resident Days

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

Electronic Health Record: Daily census by unit and total census of the building, Action Summary Report

Business office

CDI Summary Monthly Report #3 : Total Number of Admissions on *C. diff* Treatment



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

Any residents admitted with *C. diff* are tracked in an infection control log

Any new admission in the last 24 hours appears on the facility activity report along with medication orders and diagnosis

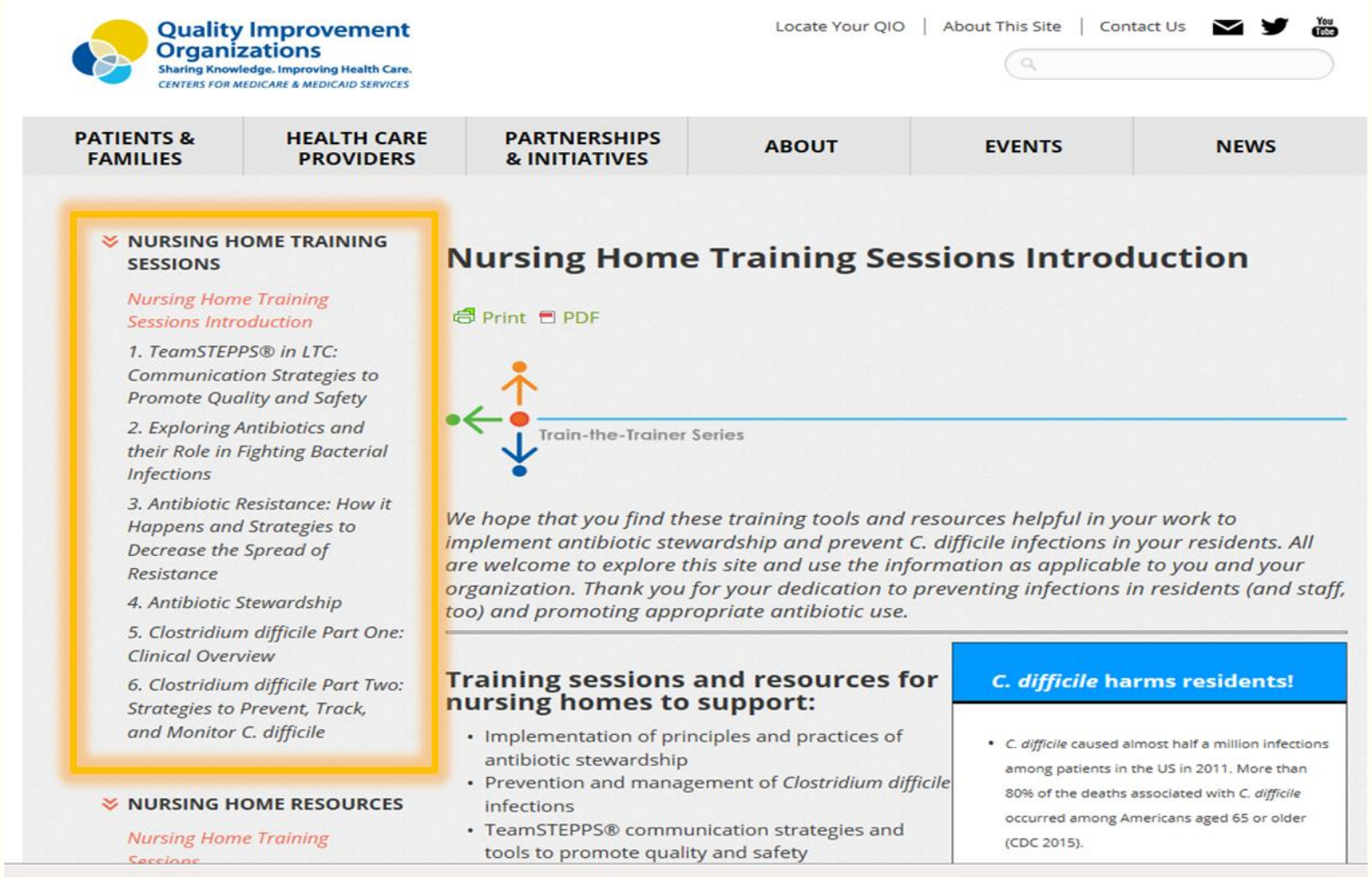
Admission discharge transfer report

There is Help…

NHSN

https://www.cdc.gov/nhsn/ltc/index.html

QIO: Nursing Home Training Sessions



http://www.qioprogram.org/nursing-home-training-sessions

AHCA: Infection Preventionist Specialized Training–IPCO

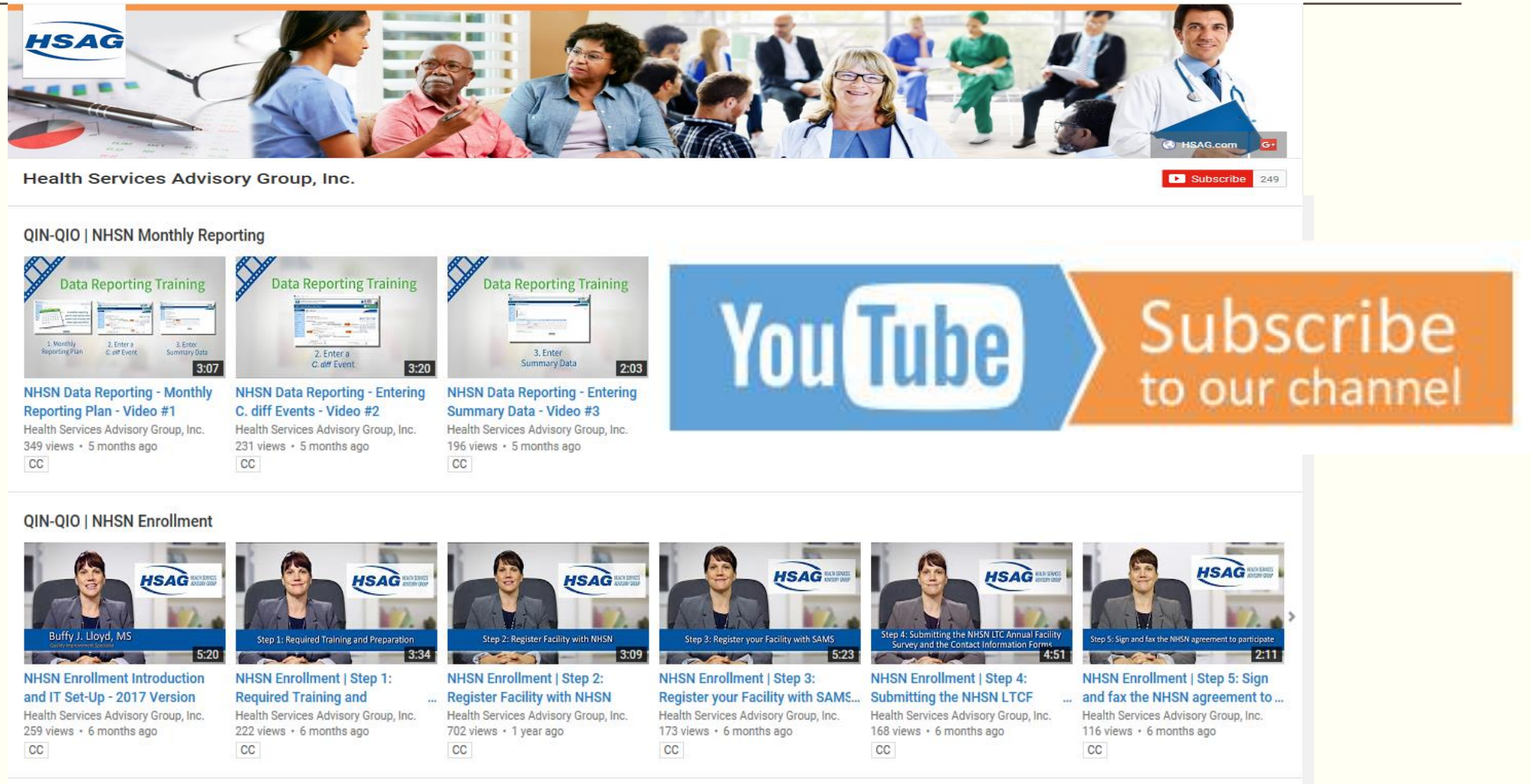
Specialized training for healthcare professionals who seek to serve as the Infection Preventionist

Training will enable you to effectively implement and manage an infection control program at your facility

Online, self-study infection prevention program

https://educate.ahcanal.org/products/infection-preventionist-specialized-training-ipco

NHSN YOUTUBE Training Videos: HSAG QIN-QIO



https://www.youtube.com/user/hsagvideo

You Can Do It!!!

QUESTIONS?

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