



# A QAPI Approach to CDI Reduction Using the National Healthcare Safety Network (NHSN)

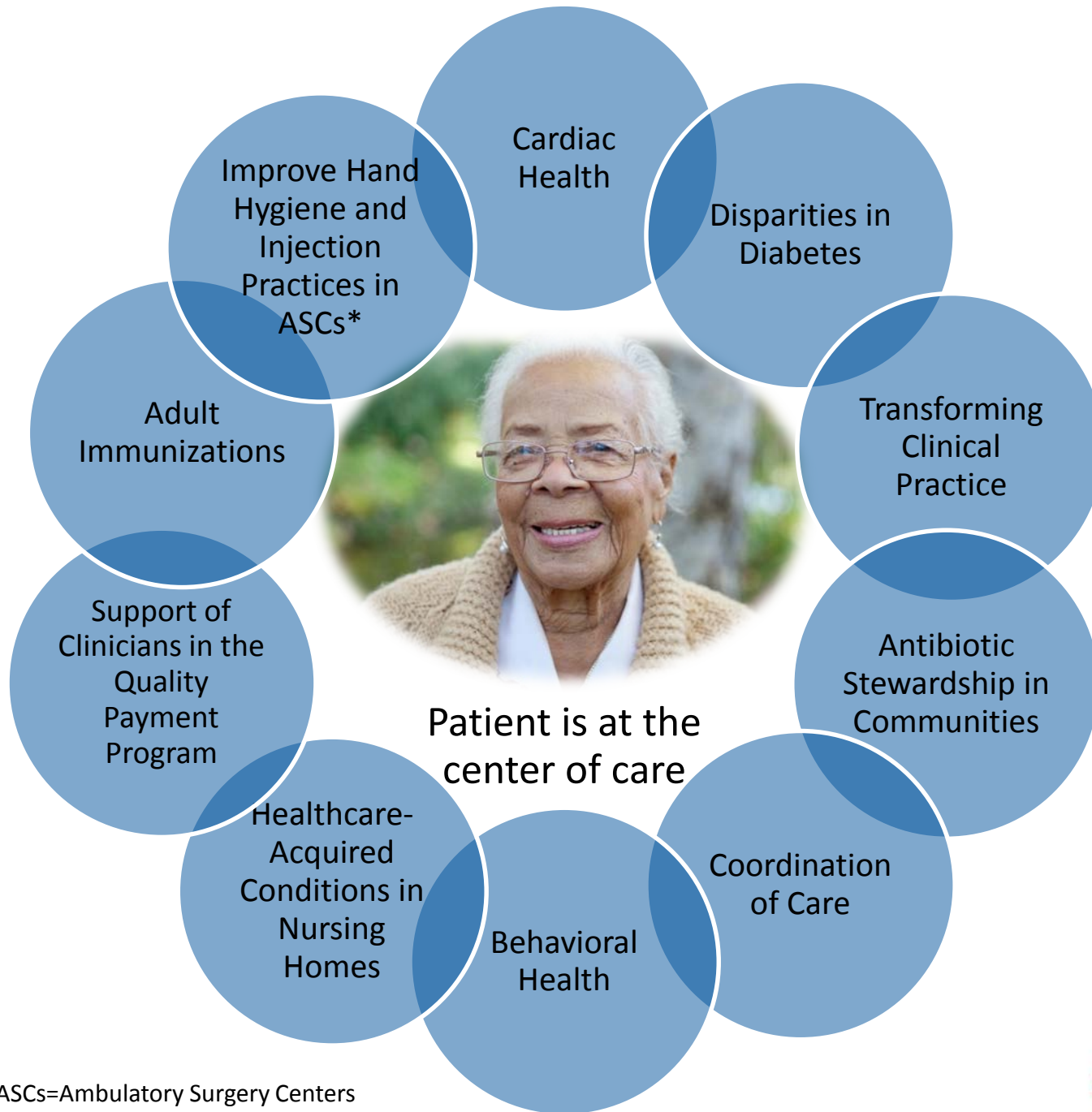
Health Services Advisory Group (HSAG)

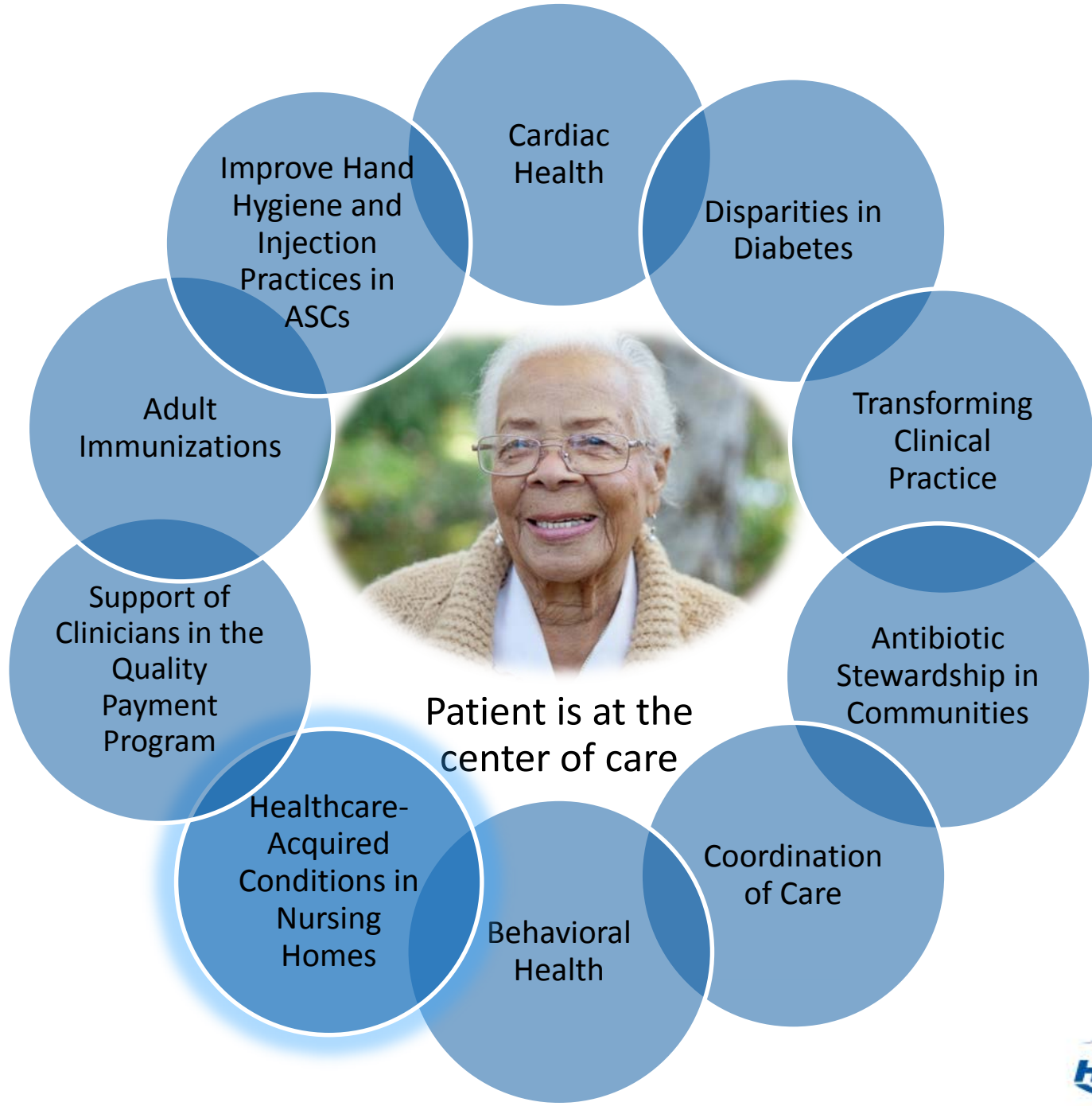
Tuesday, November 13, 2018

# Objectives

At the end of this session, you will be able to...

- Describe the CDC's National Healthcare Safety Network (NHSN) and how it applies to nursing homes in California.
- Demonstrate how to input laboratory-identified events, such as *Clostridium difficile*, into NHSN.
- Discuss the experience of nursing homes participating in the Quality Improvement Organization national cohort to input data into NHSN.





# The California Nursing Home Quality Care Collaborative (NHQCC)

- Support recruited NHQCC member NHs with:
  - QAPI as a framework to achieve system-wide improvement.
  - Reducing inappropriate use of antipsychotic medications.
  - Using the quality measure composite score to monitor progress.
  - **Managing CDIs with the CDI Initiative.**

# CDI

*C. difficile* caused almost **half a million infections** among patients in the U.S. in 2011. (CDC 2015)



**1 out of 9** patients aged 65 or older with a healthcare-associated *C. difficile* infection died within 30 days following their diagnosis. (CDC 2015)

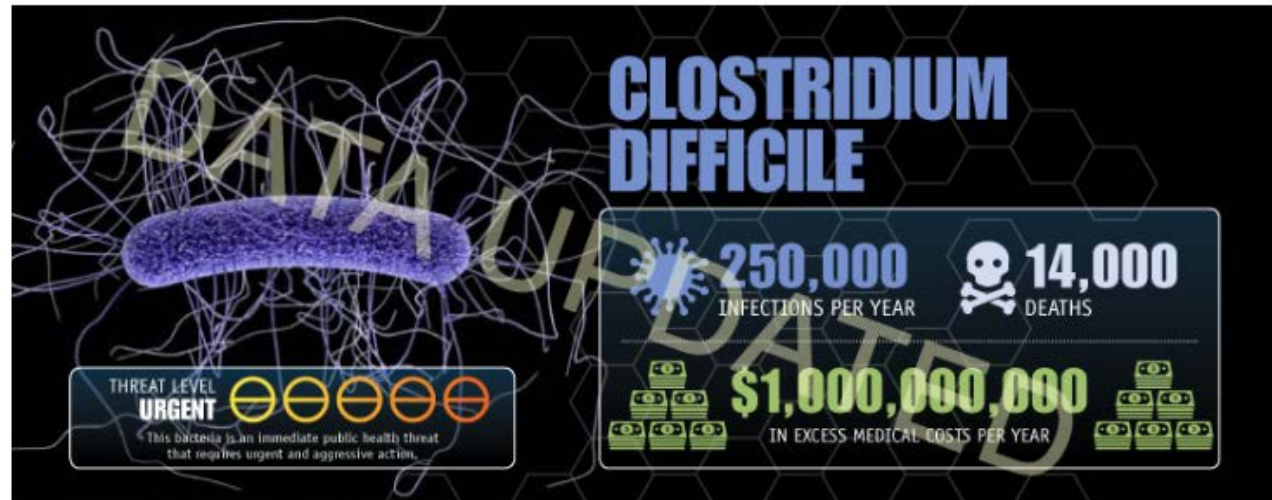
**70%** of *C. difficile* infection-related harm was preventable (OIG 2014 report on adverse events in SNFs)



HAZARD LEVEL  
**URGENT**

These are high-consequence antibiotic-resistant threats because of significant risks identified across several criteria. These threats may not be currently widespread but have the potential to become so and require urgent public health attention to identify infections and to limit transmission.

*Clostridium difficile* (*C. difficile*), Carbapenem-resistant Enterobacteriaceae (CRE), Drug-resistant *Neisseria gonorrhoeae* (cephalosporin resistance)







In nursing homes,  
approximately

**20%** of healthcare  
providers

account for about

**80%** of antibiotics  
prescribed.<sup>1</sup>



Roughly

**40–75%**  
of antibiotics are  
prescribed incorrectly.

Nearly

**50%**  
of antibiotics prescribed  
in nursing homes  
may be given  
longer than necessary.<sup>1</sup>



# NHSN CDI Cohort



# CDI Initiative in AZ, CA, FL, and OH

- 483 nursing homes participating
- All participants enrolled in NHSN
- Baseline period (March–December 2017)
- Remeasurement period (January–December 2018)
- Data analysis
- Quality improvement coaching

# First, What is NHSN?

- National Healthcare Safety Network (NHSN)
- Operated by the Centers for Disease Control and Prevention (CDC)
- Secure federal mainframe
  - Need for Secure Access Management Services (SAMS) card

# NHSN Enrollment Update (as of June 2018)

Healthcare Setting	NHSN Enrollment
Hospitals	7,054
Outpatient Dialysis Centers	7,278
Ambulatory Surgery Centers	5,173
Long-Term Care Facilities (LTCFs)	3,299
<b>Total Facilities Enrolled</b>	<b>22,804</b>

Source: <https://www.cdc.gov/nhsn/pdfs/newsletters/nhsn-nl-jun18-508.pdf>

# What Can NHSN Do For CDI?

- Facility's CDI rate (LTCF-Onset vs. On Admission)
- Identify not just residents, but units or neighborhoods with CDI issues
- Aggregate data from multiple facilities (need rights)
- **Help support antibiotic stewardship programs**



# NHSN LTC Monthly Reporting

# Benefits of Sustained Reporting

- Gain familiarity with CDC reporting system
- Tracking platform for facility CDI reporting, analysis, quality improvement, infection prevention
- Opportunity to contribute to national surveillance, control, and prevention program
- Improve community communication, especially with hospitals



# Keys To Successful NHSN Reporting



Verify Monthly Reporting Plan (MRP)



Verify all events entered

Enter summary data



Check box if no events




Resolve alerts

# SAMS Log-In

Choose a login option

**External Partners**

SAMS Grid Card



SAMS Username

SAMS Password

**Login**

[Forgot SAMS Password?](#)

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

## Log into SAMS with Grid Card Credentials

### Log-in Requires:

1. Username (email)
2. Password
3. SAMS Grid Card

# Set up MRPs

**Set up MRPs through December 2018**

**MRP must be added before NHSN will allow you to enter your Summary Data.**

**Reporting Plan > Add > Month, Year > Select C. difficile under Specific Organism Type > SAVE**

# LabID *C. difficile* Event Criteria

## Report a CDI Event in NHSN if:

- Stool specimen tested was unformed/loose and conformed to the shape of container, **and**
- Stool specimen tested positive for *C. difficile*, **and**
- Stool specimen was collected while resident was in your facility, **or** at Emergency Department (ED) for observation, **or** in outpatient setting, during current admission, **and**
- Resident had no prior positive CDI lab result within the last 14 days.



**Tip:** Report ALL positive *C. difficile* laboratory assay, tested on a **loose unformed stool** specimen, and collected while a resident is receiving care in the LTCF, and the resident has no prior *C. difficile* positive laboratory assay collected in the previous 14 days.

Form Approved  
OMB No. 0920-0666  
Exp. Date: 11/30/2019  
www.cdc.gov/nhsn

## Laboratory-identified MDRO or CDI Event for LTCF Sample Form

Page 1 of 1

*required for saving	
Facility ID: Auto-entered by the system	Event #: Event # auto-assigned
*Resident ID: Ex. Medical Record #	*Social Security #: Insert 999-99-9999 if not using SSN
Medicare number (or comparable railroad insurance number):	
Resident Name, Last: Recommend to enter name	First: Middle:
*Gender: M F Other	*Date of Birth: MM / DD / YYYY
Ethnicity (specify):	Race (specify):
*Resident type: <input type="checkbox"/> Short-stay (< or = 100 days) <input type="checkbox"/> Long-stay (> 100 days from date of first admission)	
*Date of First Admission to Facility: __/__/__	*Date of Current Admission to Facility: __/__/__
<b>Event Details</b>	
*Event Type: LabID	*Date Specimen Collected: MM / DD / YYYY
*Specific Organism Type: (check one)	
<input type="checkbox"/> MRSA <input type="checkbox"/> MSSA <input type="checkbox"/> VRE <input checked="" type="checkbox"/> <i>C. difficile</i> <input type="checkbox"/> CephR-Klebsiella <input type="checkbox"/> CRE- <i>E. coli</i> <input type="checkbox"/> CRE- <i>Enterobacter</i> <input type="checkbox"/> CRE- <i>Klebsiella</i> <input type="checkbox"/> MDR- <i>Acinetobacter</i>	
*Specimen Body Site/System: DIGEST – Digestive System	*Specimen Source: STOOL – Stool Specimen
*Resident Care Location: Where resident was residing on date of specimen collection	
*Primary Resident Service Type: (check one)	
<input type="checkbox"/> Long-term general nursing <input type="checkbox"/> Long-term dementia <input type="checkbox"/> Long-term psychiatric <input type="checkbox"/> Skilled nursing/Short-term rehab (subacute) <input type="checkbox"/> Ventilator <input type="checkbox"/> Bariatric <input type="checkbox"/> Hospice/Palliative	
*Has resident been transferred from an acute care facility in the past 4 weeks (prior to admission to this facility)?	
Yes	No
If answer is YES, need to answer the	
<a href="https://www.hsag.com/NHSN-LTC-Resources">https://www.hsag.com/NHSN-LTC-Resources</a> at the time of transfer to your facility?	

# Event Entry Into NHSN

**NHSN Home**

- Alerts
- Reporting Plan ▶
- Resident ▶
- Event ▶**
  - Add**
  - Find
  - Incomplete
- Summary Data ▶
- Surveys ▶
- Analysis ▶
- Users ▶
- Facility ▶
- Group ▶
- Logout

## Add Event

Mandatory fields marked with \*

Record completion marked with \*\*

Facility ID \*: LTCF/QIN-QIO Project - test (ID 45188) ▼

Resident ID \*:  Find Find Events for Resident

Last Name:

Middle Name:

Gender \*:  ▼

Ethnicity:  ▼

Race:  American Indian/Alaska Native  Asian  
 Black or African American  Native Hawaiian/Oth  
 White

**Event > Add > Resident ID (Medical Record #)**



# Event > Add > Print > Save

[Print Form](#)

Mandatory fields marked with \*

Fields required for record completion marked with \*\*

## Resident Information

Facility ID \*: LTCF/QIN-QIO Project - test (45188)

Resident ID \*: 566727

Last Name:

Middle Name:

Gender \*: F - Female

Ethnicity:

Race:  American Indian/Alaska Native  Asian

Black or African American  Native Hawaiian/Other Pacific Islander

White

Event # 11370

Social Security # \*: 999-99-9999

Medicare number (or comparable railroad insurance number):

First Name:

Date of Birth \*: 01/25/1972

**SSN  
Alternative:  
999-99-9999**

Resident type \*: LS - Long Stay

Date of First Admission  
to Facility \*: 01/01/2017

Date of Current Admission  
to Facility \*: 04/05/2017

## Event Information

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

Date of Event \*: 04/06/2017

Specific Organism Type \*: CDIF - C. difficile

Specimen Body Site/System \*: DIGEST - Digestive System

Specimen Source \*: STOOL - Stool specimen

Resident Care Location \*: 2NORTH - 2 NORTH

Primary Resident Service Type \*: GENNUR - Long-term general nursing

Has resident been transferred from an acute care facility in the past 4 weeks \*? N - No

Save

Back

# Common NHSN Event Errors

- \*Resident type:**  Short-stay (< or = 100 days)  
 Long-stay (> 100 days from date of first admission)

**TIP** Count the number of days resident in facility from first admission to determine if short or long-stay. Check with business office.

**\*Date Specimen Collected:** MM/DD/YYYY

**TIP** Date resident's specimen was collected at your facility. Do not count a specimen collected at an acute care facility. An error will occur if date is prior to the current admission date.

# Common NHSN Event Errors (cont.)

**\*Date of First Admission to Facility: MM/DD/YYYY**

**TIP**

Resident's very first admission to your facility. If resident leaves for >30 consecutive days, use the new admission date.

**\*Date of Current Admission to Facility: MM/DD/YYYY**

**TIP**

Resident's most recent date of admission to your facility (after re-admission).

Can be  
the  
same  
date

# Common NHSN Event Errors (cont.)

**\*Has resident been transferred from an acute care facility in the past 4 weeks (prior to specimen collection date)?**

Before answering “Yes”:

- Confirm resident was admitted to hospital. ED visit for observation or outpatient appointment is excluded.

**TIP**

Count days prior to specimen collection date. 4 weeks is 28 days.

# Common NHSN Event Errors (cont.)

If YES, date of last transfer from acute care to your facility: \_\_/\_\_/\_\_\_\_  
If YES, was the resident on antibiotic therapy for this specific organism  
(**C. diff**) type at the time of transfer to your facility?

**TIP** Use date of current admission

**TIP** Confirm antibiotics are prescribed specifically for CDI, and not for another reason.

# Summary Data

## Monthly Totals to Submit:

- Number of admissions (including re-admissions)
- Number of resident days
- Number of admissions on CDI Treatment

**SUMMARY DATA**, select **ADD**, select month and year > complete all \* fields > **PRINT** > **SAVE**.



# Summary Data > Add > Select Month, Year > Insert Data > Print Form > SAVE

[Print Form](#)

Mandatory fields marked with \*

Fields required for record completion marked with \*\*

Facility ID\*:    
 Month\*:    
 Year\*:

## Denominators for Long Term Care Locations

- No long term care locations selected on monthly reporting plan

## MDRO & CDI LabID Event Reporting

Location Code	MRSA	VRE	CephR-Klebsiella	CRE-Ecoli	CRE-Enterobacter	CRE-Klebsiella	C. difficile	MDR-Acinetobacter
Resident Admissions: <input type="text" value="9"/> * Resident Days: <input type="text" value="1838"/> * Number of Admissions on C. diff Treatment: <input type="text" value="3"/> *							<input checked="" type="checkbox"/>	
Facility-wide Inpatient (FacWIDEIn) LabID Event (All specimens) Report No Events	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/> **	<input type="checkbox"/>

## Prevention Process Measures

- No long term care locations selected on monthly reporting plan

Save

Back

If you have no *C. difficile* LabID Events to report, click the check box with \*\* under *C. difficile* column!

# Common Summary Data Errors

## Missing Check Box if Reporting No Events

	MRSA	VRE	CephR-Klebsiella	CRE-Ecoli	CRE-Enterobacter	CRE-Klebsiella	C. difficile	MDR-Acinetobacter
LabID Event (All specimens)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Report No Events	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> **	<input type="checkbox"/>

If you forget to click the check box with \*\*, your data will not count as complete. You will get an alert on your Alerts Page.

**SUMMARY DATA > FIND > Month, Year > EDIT >  
Check box with \*\* > SAVE**

# Common Summary Data Errors (cont.)

## Incorrect Resident Admissions and Resident Days

### MDRO & CDI LabID Event Reporting

Location Code	
	Resident Admissions: 9 *
Facility-wide Inpatient (FacWIDEIn)	Resident Days: 1838 *
	Number of Admissions on C. diff Treatment: 3 *

- Resident Admissions = **ALL** resident admissions and readmissions for the entire month; **not just Medicare residents**
- Resident Days Calculation = Daily census totals added up for the entire month; **not average daily census**

# Check NHSN Alerts Before Logout

NHSN Home

Alerts

Reporting Plan ▶

Resident ▶

Event ▶

Summary Data ▶

Surveys ▶

Analysis ▶

Users ▶

Facility ▶

Group ▶

Logout



NHSN Long Term Care Facility Component Home Page

## ▼ Action Items

### COMPLETE THESE ITEMS

### ALERTS

1

Incomplete Events

3

Missing Summary  
Data

- Missing events
- Incomplete events
- Missing monthly summaries
- Incomplete monthly summaries



# NHSN Data Analysis

# HSAG QIN-QIO and National CDI Rates

	Total Number of Resident Days	Total		Facility Onset	
		Count of CDI	CDI Rate*	Count of CDI	CDI Rate**
Arizona	701,366	128	1.825	117	1.668
California	5,161,716	335	0.649	285	0.552
Florida	3,515,763	267	0.759	212	0.603
Ohio	3,417,834	267	0.781	239	0.699
National	66,953,032	4,362	0.652	3,513	0.525

\*Total CDI Rate: (Total CDI Count/Total Number of Resident Days) \* 10,000 Resident Days

\*\*Facility Onset CDI Rate: (Facility Onset CDI Count/Total Number of Resident Days) \* 10,000 Resident Days



# 7 Easy Steps to Generate Your Facility Monthly *Clostridium difficile* Infection (CDI) Rates in the National Healthcare Safety Network (NHSN)

**Step 1** | Once logged into NHSN, Generate a New Data Set. Select 'Analysis' and then select 'Generate Data Sets', and click 'Generate New'.

**Step 2** | A pop-up will appear telling you that the current data set will be updated. Click 'OK'.

**Step 3** | Once the data set is complete, a pop-up will appear stating that the data sets have been successfully generated. Click 'OK'.

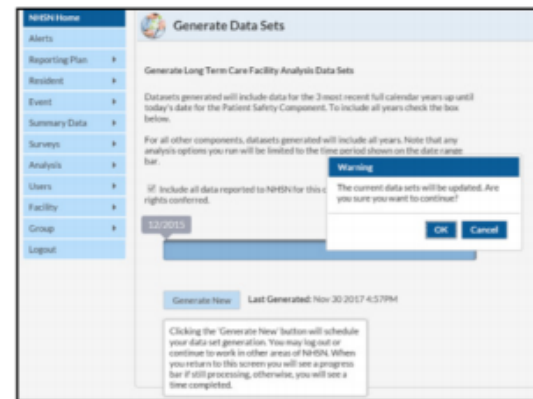
**Step 4** | Next, select 'Analysis' and 'Reports'.

**Step 5** | Select 'Multidrug-Resistant Organism (MDRO)/ CDI Module Laboratory-Identified (LabID) Event Reporting' and click on the sub-folder labeled 'All *C. difficile* LabID Events'.

**Step 6** | Next, select 'Rate Tables for CDI LabID Event Data' and click 'Run Report'.

**Step 7** | From here you can review the 7 generated rate tables specific to your facility:

- a. Total CDI Rate
- b. CDI Rate by Organism
- c. CDI Rate by Event Type
- d. CDI Rate by Patient Type
- e. CDI Rate by Patient Location
- f. CDI Rate by Patient Care Type
- g. CDI Rate by Patient Care Unit



# NHSN CDI Sample Report

Facility Org ID	Resident ID	Resident Type*	Date of Current Admission	Days: Admit to Event	Event Date	Location**	Transferred from Acute Care Facility in Past 4 Weeks?
45188	555258	SS	12/13/2017	21	1/2/2018	NH A	Y
45188	30259	SS	2/15/2018	10	2/24/2018	NH A	Y
45188	39820	LS	6/14/2017	237	2/5/2018	NH A	N
45188	28596	SS	1/8/2018	30	2/6/2018	NH A	N
45188	58762	SS	3/1/2018	4	3/4/2018	NH A	Y
45188	87952	SS	2/14/2018	24	3/9/2018	NH A	N
45188	55589	LS	9/13/2017	182	3/13/2018	NH A	N

\*SS = Short Stay; LS = Long Stay

\*\*ST A = Station A

# NHSN Antibiotic Stewardship Report

**Table 2: NHSN Annual Facility Survey: 7 Core Elements of AS**

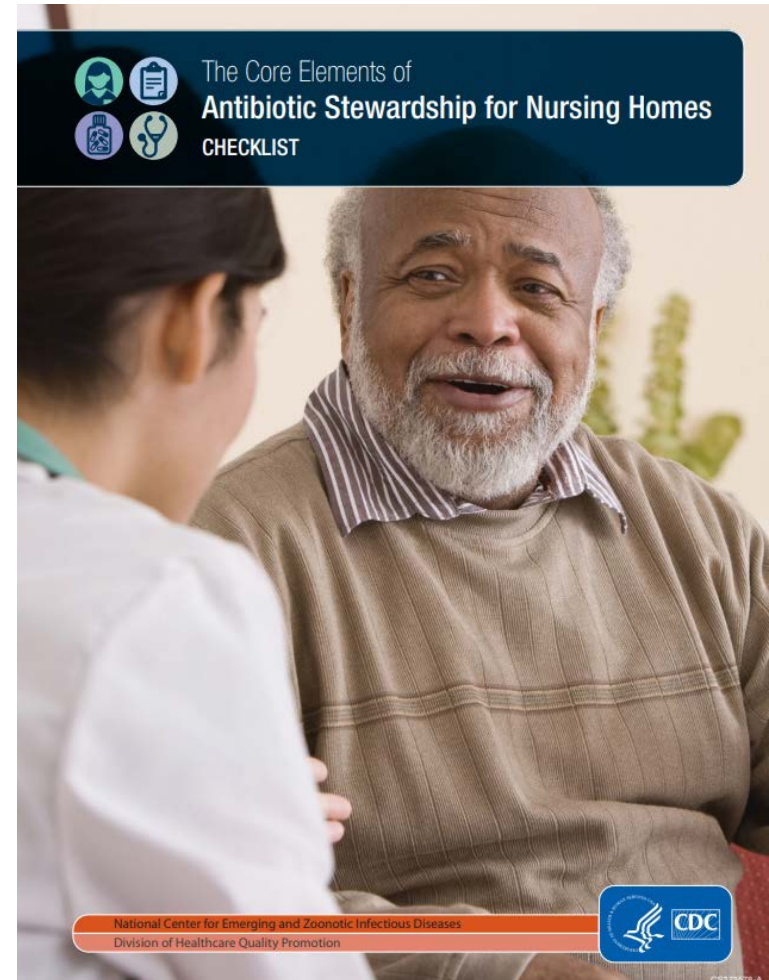
Year	Leadership	Accountability	Drug Expertise	Action	Tracking	Reporting	Education	Total Core Elements of AS Met
2015	N	Y	N	Y	Y	Y	Y	5
2016	Y	Y	Y	Y	Y	Y	Y	7
2017	Y	Y	Y	Y	Y	Y	Y	7



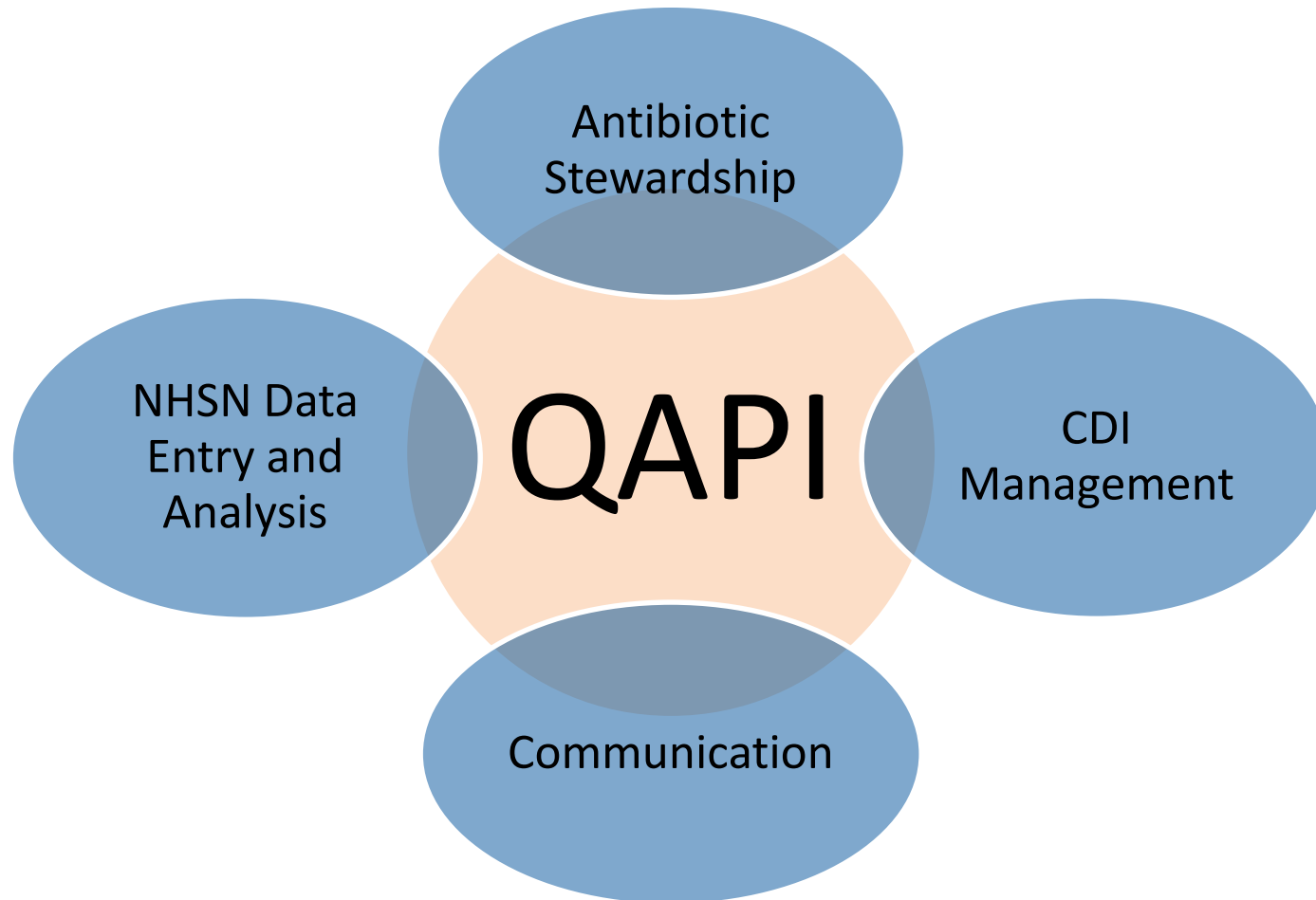
# CDI Reduction Strategies

# The Core Elements of Antibiotic Stewardship

- Leadership
- Accountability
- Drug Expertise
- Action
- Tracking and Monitoring
- Reporting
- Education



# Key CDI Reduction Strategies



# CDI Probing Questions to PIPs

- Why is our rate high?
- Which groups are most affected?
- Is there a process for early diagnosis and isolation of CDI?
- Is a hand hygiene process in place?
- How do we use antibiotics?



## Clostridium difficile Infection (CDI) Tracer and Assessment Tool (Post-Acute)

### Patient Information

Date: \_\_\_\_\_ Staff Interviewed: \_\_\_\_\_  
 Facility: \_\_\_\_\_  
 Primary Diagnosis: \_\_\_\_\_  
 Allergy Information: \_\_\_\_\_

### CDI Tracer Question/Scenario

The CDI tracer worksheet helps you/your facility identify CDI risk factors and areas of improvement. If a resident is not available, create a scenario, and then interview the appropriate staff members to answer the questions below. At the end review the answers with your team(s) to identify solutions and improvements.

#	Question	Yes	No	N/A	Areas of Concern	Areas of Excellent Care	Notes
<b>General Interview</b>							
1	How many active resident beds do you have?						
2	What is your average daily census?						
3	What is the current number of staff working in infection prevention within your facility?						
4	Is there an initiative within the facility to address CDI? <b>If "Yes," obtain a copy and use it as a guide to compare policy and practice.</b>						
5	Is there staff/provider/patient education program addressing CDI within your facility?						
6	Are there specific hand hygiene instructions when CDI is suspected or confirmed? <b>If so, please describe.</b>						





# Resources

# NHSN Data Entry and QAPI

- NHSN Data Analysis
  - **Goal:** Create PIP and monitor and track data for QAPI

Resource	Link
HSAG NHSN Website	<a href="https://goo.gl/ne9VBR">https://goo.gl/ne9VBR</a>
NHSN Enrollment Videos	<a href="https://goo.gl/NSkl5q">https://goo.gl/NSkl5q</a>
NHSN Analysis Videos	<a href="https://goo.gl/rYs89F">https://goo.gl/rYs89F</a>
Nursing Home Change Package	<a href="https://goo.gl/Z7Fwc5">https://goo.gl/Z7Fwc5</a>
QAPI At-a-Glance	<a href="https://goo.gl/mUYKft">https://goo.gl/mUYKft</a>

# HSAG CDI Initiative Website

NHSN for NNHQCC CDI Initiative



 Submit NHSN Long-Term Care Annual Facility Survey and Contact Information Forms Electronically

Submit NHSN Long-Term Care Annual Facility Survey and Contact Information Forms Electronically

 CDC NHSN Data Entry

Step 1: Monthly Reporting Plan

Step 2: Enter C. difficile LabID Event

Step 3: Enter Summary Data

 CDC NHSN Data Analysis

Step 1: When to Report a C. difficile LABID Event

Step 2: Common C. difficile Data Reporting Errors in NHSN

Need Help with Adding a New NHSN User?

Looking for NHSN Enrollment and Set-up Steps?

Nursing Home CDI Initiative

- NHSN for NNHQCC CDI Initiative
- NHSN Enrollment and Set-Up
- Resources
- Arizona Nursing Homes
- California Nursing Homes
- Florida Nursing Homes
- Ohio Nursing Homes

[www.hsag.com/nh-nhsn-resources](http://www.hsag.com/nh-nhsn-resources)

# 2018 Monthly Educational Webinars

Date	Topic	Link
1/17/18	CDI Intervention Kick-Off	<a href="#">Recording</a>
2/22/18	Antibiotic Stewardship	<a href="#">Recording</a>
3/22/18	Exploring the Role of Antibiotics	<a href="#">Recording</a>
4/19/18	Case Study: CDI Reduction and QAPI	<a href="#">Recording</a>
5/31/18	Strategies to Decrease Antibiotic Resistance	<a href="#">Recording</a>
6/21/18	CDI Part 1: Clinical Overview	<a href="#">Recording</a>
<del>7/19/18</del>	<del>CDI Intervention PIP Progress Report</del>	Postponed
8/16/18	Antibiotic Stewardship in Nursing Homes	<a href="#">Recording</a>
9/13/18	TeamSTEPPS® Communication	<a href="#">Recording</a>

Recordings Available!

# TeamSTEPPS<sup>®</sup> Communication

- Instruct NHs in TeamSTEPPS<sup>®</sup> Long-Term Care Communication Module

Resource	Link
Nursing Home Training Sessions	<a href="https://goo.gl/mHAh8b">https://goo.gl/mHAh8b</a>
Agency for Healthcare Research and Quality	<a href="https://goo.gl/wbPq7n">https://goo.gl/wbPq7n</a>

# HSAG YouTube Channel



Health Services Advisory Group, Inc.

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## QIN-QIO | NHSN Monthly Reporting



**NHSN Data Reporting - Monthly Reporting Plan - Video #1**  
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**NHSN Data Reporting - Entering C. diff Events - Video #2**  
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**NHSN Data Reporting - Entering Summary Data - Video #3**  
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## QIN-QIO | NHSN Enrollment



**NHSN Enrollment Introduction and IT Set-Up - 2017 Version**  
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<https://www.youtube.com/user/hsagvideo>



# Summary

# Deadline Reminder

Please submit monthly NHSN CDI data *no later than* day 10 of the following month.

Data Month	Submit Data no Later Than
October	November 10
November	December 10
December	January 10*

*\* Submit all past due data no later than January 10, 2019*



# Summary Reporting Points

1. We are here to help you! Give HSAG a call anytime.
2. Add additional SAMS card users!
3. Submit your Summary Data by day 10 of every month. This allows time to fix errors.
4. Add CDI LabID events as they occur.
5. Do not forget to check “no events” box with \*\* if there are no events to report.
6. Work with business office/medical records for summary data.
7. Enters all “9s” for resident social security number.
8. Start discussing cases with your QAPI/infection control team!

# HSAG Ongoing Technical Assistance

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Questions?



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