Infection Control Assessment and Promotion Program

CDI Audit and Feedback Processes in Infection Prevention

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Learning Objectives

Understand CDI infection prevention best practices

Discuss auditing Clostridioides difficile (C. diff) infection (CDI) and reporting practices in hospital

Analyze staff education and feedback regarding CDI practices

Germs and How Infections Spread

- Germs are a part of everyday life and are found in our air, soil, water, and in and on our bodies. Some germs are helpful, others are harmful. Many germs live in and on our bodies without causing harm and some even help us to stay healthy. Only a small portion of germs are known to cause infection.

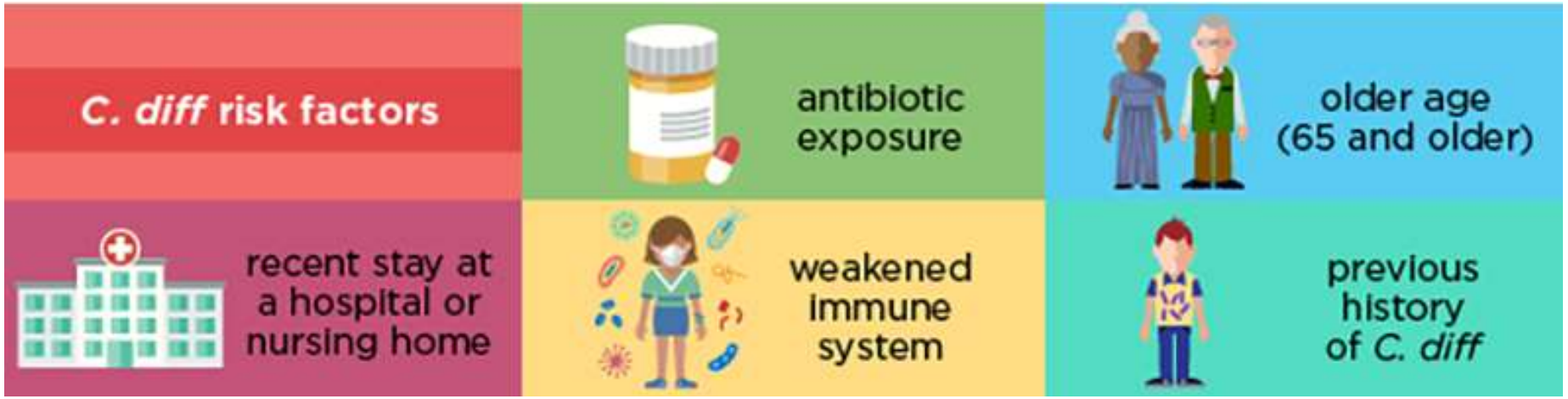
- An infection occurs when germs enter the body, increase in number, and cause a reaction of the body.

- Three things are necessary for an infection to occur:
  - **Source:** Places where infectious agents (germs) live
  - **Susceptible Person** with a way for germs to enter the body
  - **Transmission:** a way germs are moved to the susceptible person

CDC - How Infections Spread

CDC - Protect Patients

Susceptible Person – At Increased Risk



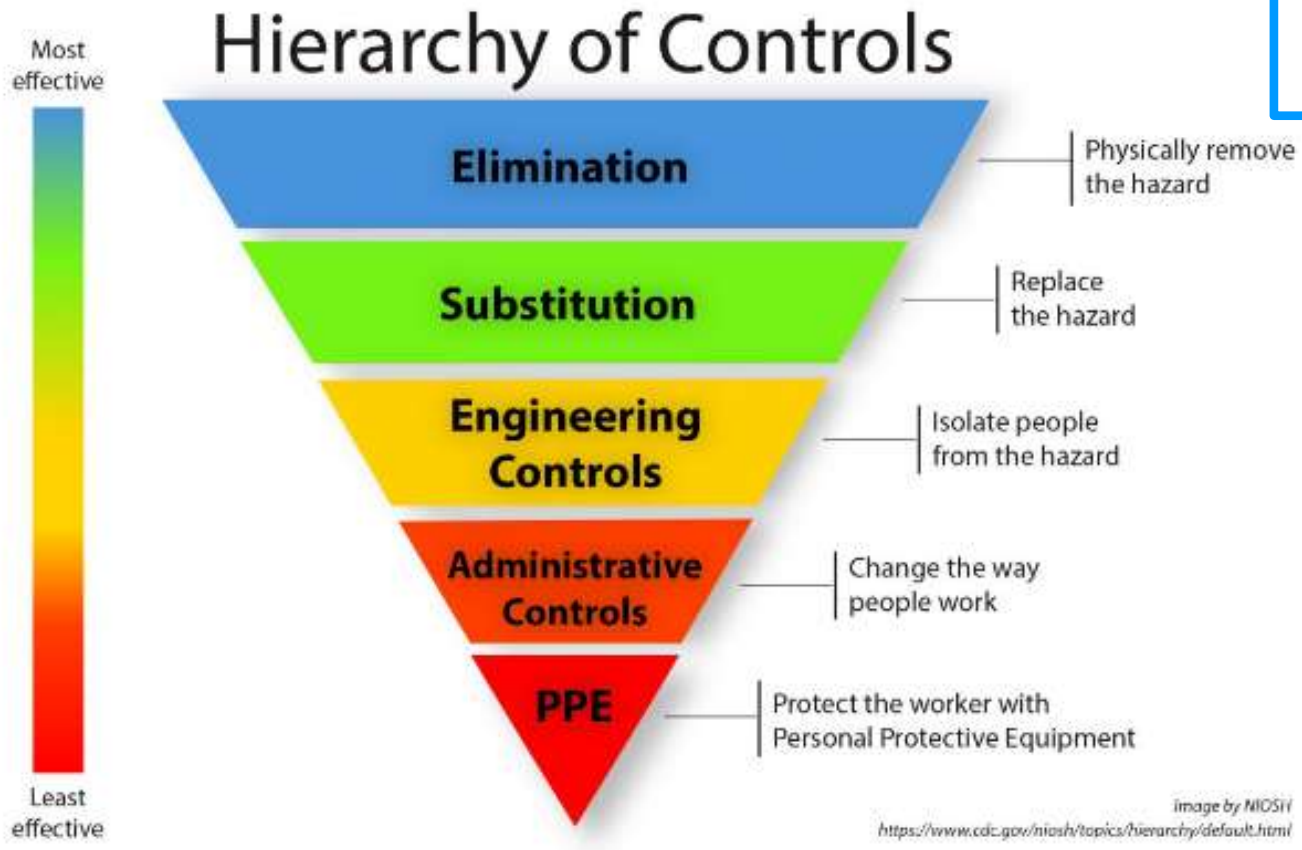
- The microbiome is the neighborhood of good and bad germs that live in or on the body.
- A healthy microbiome helps protect people from infection, but antibiotics disrupt the microbiome, wiping out both the good and the bad bacteria.
- The effect of antibiotics can last as long as several months. If a person comes in contact with C. diff germs during this time, they can get sick.

CDC - Your Risk for *C. diff*

Transmission – How It Spreads

CDC - C.diff Fact Sheet

Prevent and Control CDI



Eliminate - Antimicrobial Stewardship – Prescribe Only When Needed

Replace – Antimicrobial Stewardship – ABX with Less Risk

Contact Isolation – Private Room – Dedicated Equipment

Administrative – Hand Wash & Sporicidal Disinfectant

PPE – Use Gloves & Gowns

Hierarchy of Controls

Prevention and Control of CDI – Best Practices

Antimicrobial Stewardship	Educate Patients, Families, & Visitors	Diagnostic Stewardship
Early Identification & Isolation & Informing of Others	Contact Precautions	Adequately Clean & Disinfect
Healthcare Personnel Education & Training	Audit (Monitor & Document) Compliance	Feedback (Analyze and Report Compliance and Data)

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SHEA/IDSA/APIC Strategies to Prevent *Clostridioides difficile* Infections in Acute-Care Hospitals

10 Essential Practices

5 Additional Approaches

8 Unresolved Issues

- This expert guidance document is sponsored by the Society for Healthcare Epidemiology of America (SHEA) and is the product of a collaborative effort led by SHEA, the Infectious Diseases Society of America (IDSA), the Association for Professionals in Infection Control and Epidemiology (APIC), the American Hospital Association (AHA), and The Joint Commission.
- Highlights practical recommendations designed to assist acute-care hospitals to implement and prioritize their *C. difficile* infection prevention efforts.

Strategies to Prevent CDI in Hospitals: 2022 Update

5.24.23 NE ICAP Acute and OP Webinar - Prevention of CDI

Antimicrobial Stewardship for CDI Prevention Resources

NHA NEBRASKA HOSPITALS

Antimicrobial Stewardship

C. Difficile Best Practices: Testing to Containment to Treatment

Webinar Series

Session #4 – High Risk CDI Medications

October 31, 2023, 12:00 - 1:00 PM CT

Objectives:

- Discuss antibiotic therapy risk stratification for CDI.
- Assess antimicrobial stewardship interventions related to decreasing C. diff.
- Evaluate gastric acid suppression and implications for CDI risk.

Speakers: Jenna Preusker, PharmD, BCPS, BCIDP (ASAP Pharmacist)

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Educational Resources for CDI Prevention for Patients & Families

Educate Patients, Families, & Visitors

- Provide education so that patients can be aware of antibiotics and know that antibiotics are not always the answer.
- Patients need to know what antibiotics they are receiving and for what reason(s).
- They should also be educated about adverse effects and signs and symptoms that they should share with providers.
- CDC's Be Antibiotics Aware campaign has lots of developed educational resources to print or order for free.

[CDC Be Antibiotics Aware Print Materials]

Diagnostic Stewardship for CDI Prevention Resources

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Diagnostic Stewardship

C. Difficile Best Practices: Testing to Containment to Treatment

Webinar Series

Session #1 – CDI Testing

September 26, 2023, 12:00 - 1:00 PM CT

Objectives:

- Identify different testing strategies – advantages and disadvantages.
- Analyze signs and symptoms of CDI.
- Understand patient risk factors for CDI and exposure.

Speakers: Dr. Van Schooneveld/Dr. Teran (ASAP/ICAP Medical Directors)

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Containment of *C. difficile* – I x 3

Early Identification & Isolation & Informing of Others

Contact Precautions

Identify patients that have symptoms consistent with C. difficile.

Isolate those patients by placing them in contact precautions.

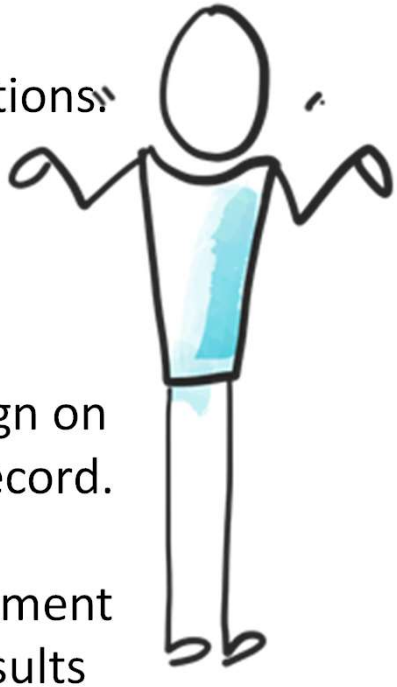
Inform others with the isolation sign, electronic medical record, and patient care including transfer communication.

Strategies to Prevent CDI in Hospitals: 2022 Update

Why Proactive Contact Precautions?

- **Identify** patients with new-onset, unexplained diarrhea or CDI symptoms.

- **Isolate** using contact precautions/isolation proactively because this is the period of greatest C. difficile shedding and contamination.
  - Start using gloves and gowns an additional to standard precautions.
  - Dedicate equipment or ensure equipment is cleaned and disinfected.
  - A private or cohorted room while testing is pending is ideal.



- **Inform** others of the contact precautions by posting the isolation sign on the outside of the patient door and within the electronic medical record. Within your patient care communication, consider using testing algorithms to help make informed decisions about testing and treatment if needed. Lab based alerts are also helpful to inform HCP of lab results and the need for isolation. Clear policies and procedures help inform HCP.
  - If testing is negative, and another infectious etiology that requires contact precautions is not suspected, contact precautions can be discontinued based on test type and clinical suspicion for CDI.

Strategies to Prevent CDI in Hospitals: 2022 Update

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Contact (or Enteric) Precautions

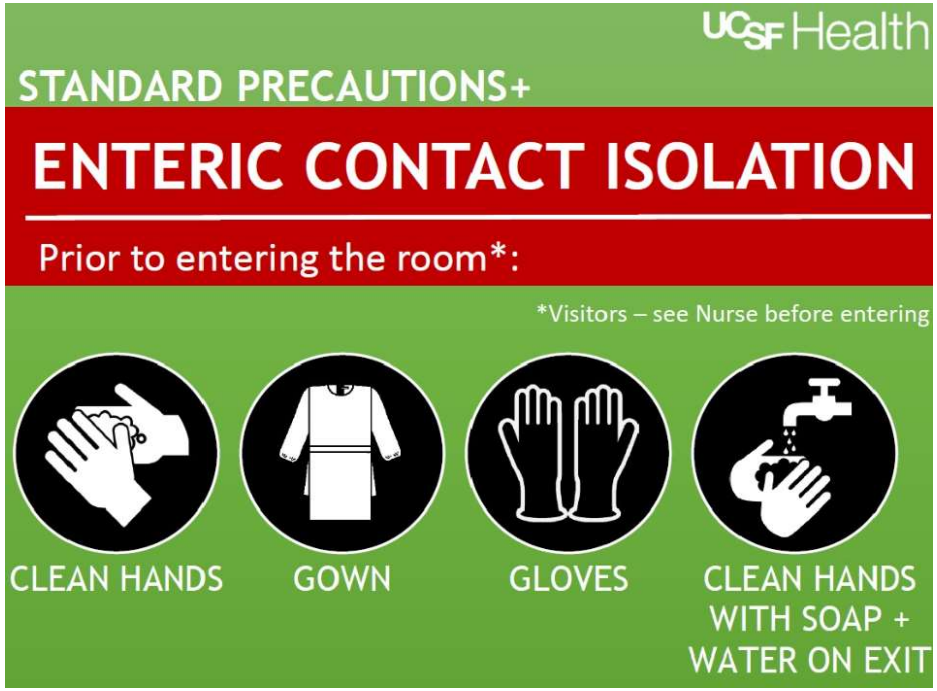
- Appropriate patient placement
  - Single-person room is preferred but cohorting is acceptable if single rooms are unavailable.
- Prioritize cleaning & disinfection
  - Room is cleaned and disinfected at least daily focusing on high-touch surfaces and equipment near the patient.
- Limit transport and movement of patient outside the room.
  - *See next slide for details*

CDC - Transmission Based Precautions

CDC - Contact Sign

Contact / Enteric Precautions Transport & Other Considerations

- Limit patient transport to medically necessary purposes or use control measures.
  - Notify the receiving department of the contact precautions.
  - Cover or contain potentially infectious body fluids before transport.
  - Transporter should discard contaminated PPE before transport.
  - Don clean PPE to handle the patient at the destination.



- Considerations
  - For needed hallway ambulation, consider control measures of patient hand washes upon exit, wearing clean gloves if needed, and disinfecting touched railings.
  - Use a sporicidal disinfectant.
  - Encourage hand washing upon exit of the room but don't restrict alcohol-based hand rub.
  - Consider specific isolation signs.

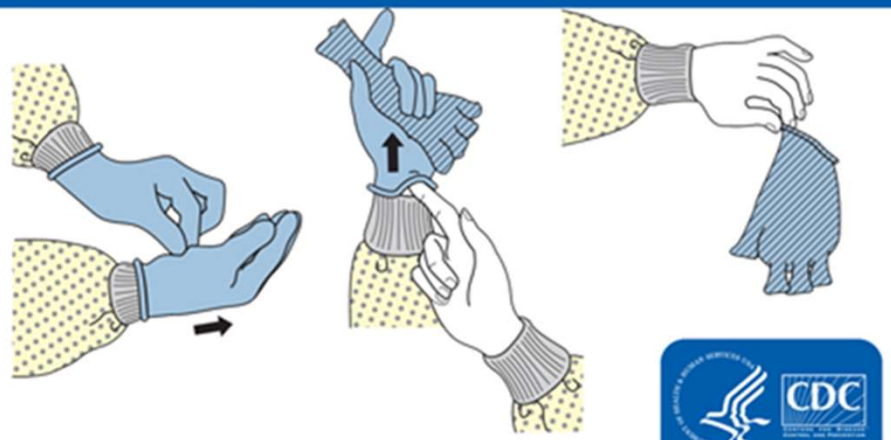
UCSF - Enteric Contact Sign

Ensure Appropriate Glove Use to Reduce Hand & Environmental Contamination

- When considering a CDI-specific hand hygiene measure, the priority should be ensuring gloves are worn with proper doffing technique to minimize self-contamination risk.
- Educate HCP about potential for environmental and self-contamination with glove use.
- Educate and confirm that HCP doff gloves in a manner that avoids contamination.
- Clean hands immediately following glove removal. If handwashing is indicated and sinks are not immediately available, use ABHR then wash hands as soon as possible.

HOW TO SAFELY REMOVE PERSONAL PROTECTIVE EQUIPMENT (PPE)

- Outside of gloves are contaminated!
- If your hands get contaminated during glove removal, immediately wash your hands or use an alcohol-based hand sanitizer
- Using a gloved hand, grasp the palm area of the other gloved hand and peel off first glove
- Hold removed glove in gloved hand
- Slide fingers of ungloved hand under remaining glove at wrist and peel off second glove over first glove
- Discard gloves in an waste container
- Wash your hands thoroughly



2022 SHEA Hand Hygiene Guidelines

CDC - How to Safety Remove PPE

Washing Hands With Soap & Water

- As the preferred method, perform hand hygiene with soap and water following patient care or interacting with the healthcare environment of a patient with CDI.
  - Ensure proper hand washing technique.
  - Don’t restrict assess to alcohol-based hand rub (ABHR).
    - Educate that ABHR does not kill *C. difficile.*
  - Be aware that hand hygiene adherence may decrease when soap and water is the preferred method.

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[Rationale for Hand Hygiene – SHEA]

[Strategies to Prevent CDI in Acute-Care Hospitals: 2022 Update]

Educate Patients, Families, & Visitors on CDI Contact Precautions

Educate Patients, Families, & Visitors

Image by rawpixel.com

- Education may help to alleviate patient and family fears regarding being placed on contact precautions.

- Include information about anticipated questions:
  - general information about CDI
  - colonization versus infection
  - components of and rationale for contact precautions
  - risk of transmission to family and visitors while in the hospital and after discharge
  - importance of hand hygiene by staff, patients, and visitors

Prevent the Spread of C. diff - CDC
Help Prevent Infections - For Patients and Visitors
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Adequately Clean & Disinfect – Dedicate Equipment When Able

- Adequately clean and disinfect equipment and the patient environment.
  - *C. difficile* spores contaminate the environment in which patients are cared for and the equipment used to care for them.
  - Contaminated surfaces and equipment are potential reservoirs for transmission of *C. difficile*.
  - Dedicate noncritical patient care items, such as blood pressure cuffs, stethoscopes, and thermometers, to a single patient with *C. difficile*.
- Develop and implement protocols for disinfection of equipment and the environment.

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Environmental Cleaning for CDI Prevention Resources

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Adequately Clean & Disinfect

C. Difficile Best Practices: Testing to Containment to Treatment

Webinar Series

Session #3 – Strategies to Improve Environmental Cleaning
October 24, 2023, 12:00 - 1:00 PM CT
Objectives:

- Understand appropriate cleaning products for CDI infections.
- Address high-touch surfaces cleaning.
- Discuss terminal cleaning practices.
- Identify cleaning audit tools.

Speakers: Jody Scebold/Kate Tyner (ICAP Infection Preventionists)

ICAP

HCP Training, Auditing, and Feedback for Prevention and Control of CDI

Healthcare Personnel Education & Training

Audit (Monitor & Document) Compliance

Feedback (Analyze and Report Compliance and Data)

Competency-Based Training & Auditing – CMS QSO-22-20-Hospitals (7/6/22 excerpts)

Interpretive Guidelines §482.42(c)(2)(iv)

The hospital's infection preventionist(s) and/or infection control professional(s) must take an active role in the competency-based training and education of hospital personnel and staff, including medical staff, and, as applicable, personnel providing contracted services in the hospital. This training and education must include the practical applications of infection prevention and control guidelines, policies, and procedures.

Interpretive Guidelines §482.42(c)(2)(v)

The hospital's infection preventionist(s) and/or infection control professional(s) are responsible for preventing and controlling healthcare acquired infections, and transmission of pathogens, including auditing of adherence to infection prevention and control policies and procedures by hospital personnel.

- CMS - SOM - **Appendix A** - Survey Protocol, Regulations and Interpretive Guidelines for **Hospitals**
  - **42 CFR §482.42** Conditions of Participation (CoP): **Infection prevention and control and antibiotic stewardship programs**.
- CMS - SOM - **Appendix W** - Survey Protocol, Regulations and Interpretive Guidelines for **Critical Access Hospitals**
  - **42 CFR §485.640** Conditions of Participation (CoP): **Infection prevention and control and antibiotic stewardship programs**.
- CMS QSO-22-20-Hospitals

CDC's Core IPC Practices for Safe Healthcare

- CDC's Core Infection Prevention and Control Practices for Safe Healthcare Delivery in All Settings represent fundamental standards of care that are not expected to change based on emerging evidence or to be regularly altered by changes in technology or practices and are applicable across the continuum of healthcare settings.
  - There are 8 core practice categories:
    - Leadership Support
      - Patient, Family and Caregiver Education
    - Education and Training of Healthcare Personnel on Infection Prevention
    - Performance Monitoring and Feedback
    - Standard Precautions
      - Includes hand hygiene, environmental cleaning and disinfection, injection and medication safety, risk assessment with use of personal protective equipment (PPE), minimizing potential exposures, and reprocessing of reusable medical equipment.
    - Transmission-Based Precautions
    - Temporary Invasive Medical Devices for Clinical Management
    - Occupational Health

CDC's Core IPC Practices

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Education & Competency-Based Training (CBT) of HCP on IPC Practices

- Provide written IPC policies and procedures that are available, current, and based on evidence-based guidelines (e.g., CDC/ HICPAC, etc.).

- Provide job-specific, infection prevention education and competency-based training (CBT) to all HCP adapted for their tasks and needs, the facility type, and reflective of the diverse workforce.
    - Require training before HCP are allowed to perform their duties, at least annually, to address new equipment or protocols, and in response to recognized lapses in adherence.

- Develop processes to ensure that all HCP demonstrate the proven ability to apply essential knowledge, skills, and abilities (competency) to adhere to IPC requirements as they perform their roles and responsibilities.

CDC's Core IPC Practices for Safe Healthcare Delivery in All Settings

HCP Education & Training for Prevention and Control of CDI

Healthcare Personnel Education & Training

- HCP need to know the signs and symptoms of *C. difficile*
  - Episodes of watery diarrhea, fever, stomach tenderness or pain, loss of appetite, or nausea
- HCP need to know risk factors, transmission routes, patient outcomes, and treatment.
- HPC need to know about IPC measures they can implement.
- HCP need to know the tools available for them and their testing algorithms and sequences.

CDC - C.diff Fact Sheet

Strategies to Prevent CDI in Acute-Care Hospitals: 2022 Update

HCP Can Help Prevent CDI

BE ANTIBIOTICS AWARE
SMART USE, BEST CARE

Optimizing the way they prescribe antibiotics.

Using the tests that give the most accurate results.

Rapidly identifying and isolating patients with *C. diff*.

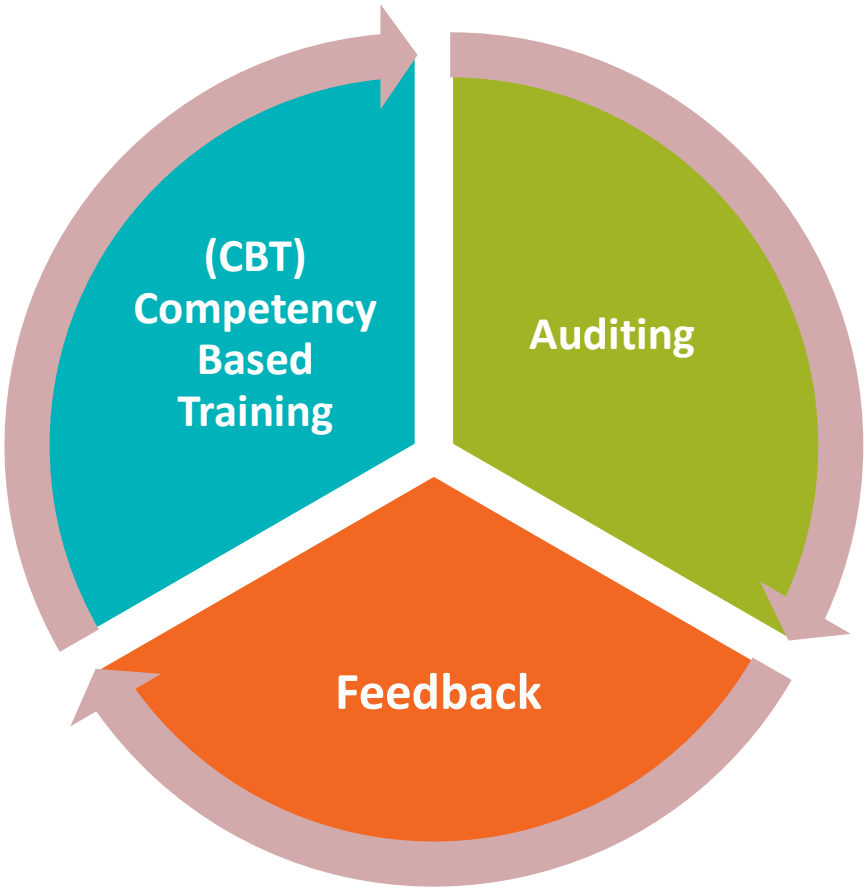
Cleaning surfaces in rooms where *C. diff* patients are treated with EPA-approved, spore-killing disinfectant (see list K).

Wearing gloves and gowns when treating patients with *C. diff*—and remembering that hand sanitizer doesn't kill *C. diff*.

[CDC - C.diff Fact Sheet]

Auditing CDI Prevention and Control Practices

Audit (Monitor & Document) Compliance



Auditing Basics

- In healthcare, audits measure HCP adherence with standards and processes designed to improve patient care
- Effectively implemented audits can provide valuable information for improvement as they can help identify strengths and gaps in practices.
    - Develop an auditing plan
        - What do you want to assess?
        - What do you have the resources to assess?
        - Is a tool used and how is it used (paper, spreadsheet, electronic application, etc.)
            - Is the tool based on current guidance or other evidenced based practices?
        - How frequent will audits be performed?
        - How many audits are completed in relation to applicable patient census or volume?

CDC - STRIVE - CBT 102 Audits

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CDI Auditing - Daily Rounding Observation Ideas When Applicable

- Hand hygiene
  - Compliance upon entry and exit of patient room
  - WHO 5 moments for hand hygiene
  - Soap and water handwashing per policy
  - Attention to hand hygiene after glove use
- PPE
  - Availability and use of gloves
  - Availability and use of tied gown
  - Doffing PPE in the room
  - Doffing to avoid self contamination
- Contact Precautions / Isolation
  - Isolation sign posted for suspect or confirmed CDI
  - Isolation noted in the electronic medical record
  - Patient and visitor compliance
- Sporicidal disinfectant availability and use

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Strategies to Prevent CDI in Acute-Care Hospitals: 2022 Update

PPE Audit Tool for Contact Precautions

Item	Compliance		
Setup			
1. Precaution signage visible before entering the room or bedspace	Y	N	Not observed
2. PPE supplies available immediately outside room or bedspace	Y	N	Not observed
Putting On PPE			
3. Hand hygiene is performed immediately prior to putting on PPE	Y	N	Not observed
4. New single use PPE applied prior to entering room/space	Y	N	Not observed
5. PPE applied in appropriate sequence: A. Gown B. Gloves	Y	N	Not observed
6. Gown worn as indicated by Contact Precautions	Y	N	Not observed
7. Appropriate type of gown is worn (i.e., yellow isolation gown)	Y	N	Not observed
8. Gown securely tied at the neck and then waist	Y	N	Not observed
9. Gloves worn as indicated by Contact Precautions	Y	N	Not observed
Use of PPE			
10. PPE is only worn inside the isolation room/space	Y	N	Not observed
Taking Off PPE			
11. PPE is removed within the isolation room	Y	N	Not observed
12. PPE is removed in a manner to prevent contamination	Y	N	Not observed
13. PPE is removed in appropriate sequence: A. Gloves and gown removed	Y	N	Not observed
B. Hand hygiene performed immediately after removal of PPE	Y	N	Not observed

Example - Use of PPE for Contact Precautions Audit Tool

CDI Auditing Process Measures – Ideas Continued

- Diagnostic Stewardship for current stool sample orders
  - Is the patient having formed stools now? What is typical for them?
  - Was (is) the patient taking laxatives, stool softeners, or tube feedings?
  - Did they already have a test in the past 7 days?
  - Talk the nursing staff to assess and explore order discontinuation if appropriate

- Isolation
  - Are patients being screened for symptoms daily
  - Was isolation implemented timely
  - Are results being looked at to de-escalate isolation timely when appropriate

- Hand hygiene technique

- Think about what you are already doing and what might be useful without adding much more work. Explore what can be delegated or electronically automated.

- Additionally, when an CDI HAI is noted, do a full review including the multidisciplinary team to help guide prevention efforts and share data

Strategies to Prevent CDI in Acute-Care Hospitals: 2022 Update Image by rawpixel.com

Process Measures Compliance – Ideas for Auditing and Reporting

Process Measures[a]	
Compliance with hand hygiene guidelines: *If hand hygiene with soap and water is the preferred method of hand hygiene when caring for patients with CDI, also assess proper hand washing technique with the same formula.*	(No. of observed proper hand hygiene episodes performed by HCP ÷ total no. of observed opportunities for hand hygiene) × 100 = % compliance with hand hygiene compliance
Compliance with contact precautions	(No. of observed patient care episodes in which contact precautions are appropriately implemented ÷ the no. of observed patient care episodes in which contact precautions are indicated) × 100 = % compliance with contact precautions
Compliance with environmental cleaning and disinfection	One specific measure of compliance for use in all hospitals cannot be recommended. However, many hospitals use checklists, environmental rounds, fluorescent markers, and/or ATP bioluminescence to assess the cleaning and disinfection process and cleanliness of equipment and the environment (see Section 4: Essential practices, part 5).

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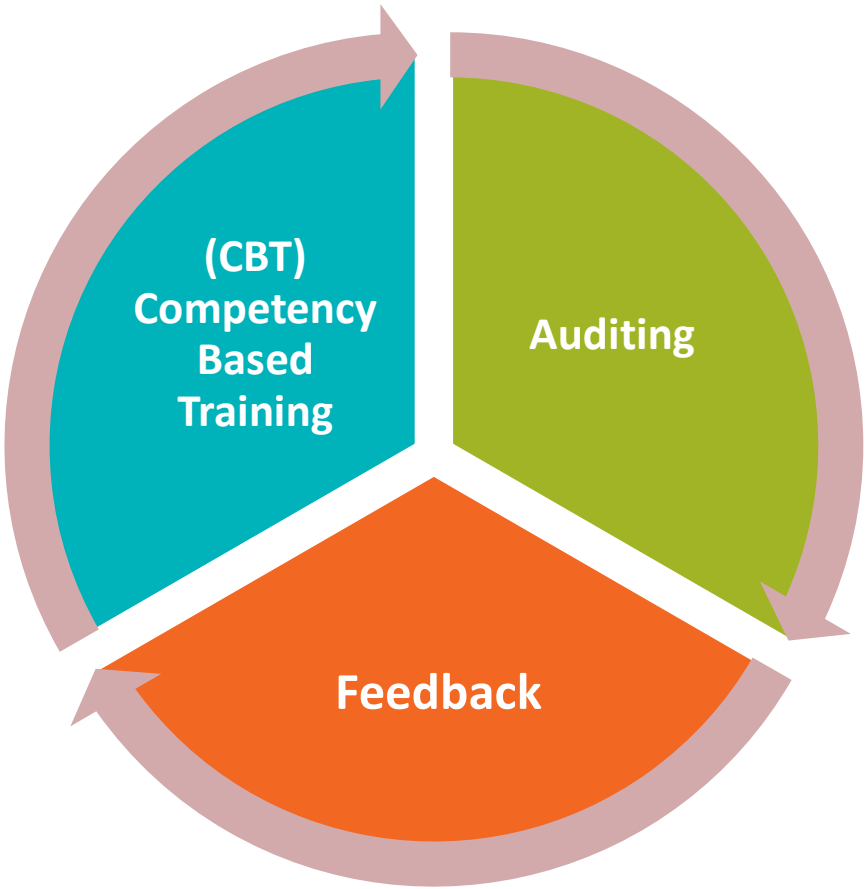
Feedback on CDI Prevention and Control Practices and Data

Feedback (Analyze and Report Compliance and Data)



Analyzing & Reporting Compliance

- What process measures are audited (monitored and documented) then analyzed? It should be scaled and tailored based on CDI incidence, resources, and risk analysis.
  - Use information collected through surveillance to detect transmission of infectious agents in the facility.
  - Monitor the incidence of infections that may be related to care provided at the facility and act on the data.
  - Audit adherence to CDI IPC practices.
  - Train performance monitoring personnel and use standardized tools and definitions.
  - Provide prompt, regular feedback on adherence and related outcomes to HCP and facility leadership.

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CDC's Core IPC Practices for Safe Healthcare Delivery in All Settings

CDC - STRIVE - CBT Audits and Feedback

CDI Prevention Feedback

- Feedback for C. diff infection (CDI) prevention and control activities is important. Feedback is defined as, “a summary of audit findings that is used to target performance improvement.”
- Feedback supports performance improvement, especially for complex tasks. When directed towards the task, it strengthens task performance.
- Feedback to individuals should be constructive and non-punitive.
- Provide prompt, regular feedback on adherence and related outcomes to healthcare personnel and facility leadership.
- There are various ways for provide feedback.
  - Immediate feedback to HCP
  - Planned feedback
    - Directly to managers and front-line personnel
    - Infection Prevention and Control Committee
    - Sharing NHSN CDI data with leadership
  - Posting data and trends in various formats for viewing or distribution
  - CDI HAI investigation feedback

CDC - Core IPC Practices for Safe Healthcare Delivery

CDC - STRIVE - Competency Based Training - Audits - Feedback

Image by rawpixel.com

Tips for Auditing & Feedback

- Be proactive, introduce yourself and explain your role especially to new faces
  - Be clear that the mission is education and performance improvement, not to “catch people doing something wrong”
  - Consider leadership and management introducing you at forums and meetings to reinforce your role
- Be familiar with the audit tools and rationale behind the IPC practice
  - Be familiar with how you will respond to anticipated observations
- Try to avoid peak times such as shift change to observe
  - Avoid slowing down their workflow
- Always be respectful and professional
  - Be mindful to privacy especially when providing feedback
  - Have empathy and focus on the process not the person
  - Ask if they have any questions and be helpful, show them the way
- Let them know you are interested in ideas to improve the process and follow-up to do your part to address barriers
- Keep communication open and remember to point out the positives

CDC - Core IPC Practices for Safe Healthcare Delivery

CDC - STRIVE - Competency Based Training - Audits - Feedback

Scripts Prior to Audits

- Introduce yourself and be clear and kind with HCP about your mission:
  - “I am doing my daily/weekly IP rounding,”
    - Do you have any questions?
    - “I have a question, I am trying to learn more about…”
  - “This is a friendly infection prevention visit”

- Be clear if you are there to observe or intervene
  - Simply observe:
    - “I am here to watch the process today, and I need to learn more about it before I offer feedback”
  - Intervene:
    - “I’ll be glad to tell you what is going well and what could be better”

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Feedback Scripts

- Direct observation - No hand hygiene after doffing gloves
  - "You did great with hand hygiene on the way into the room, but I didn't see it after you removed your gloves. That is often what some people miss so just a friendly reminder. Did you know that dirty hands easily contaminate clean gloves as we put them on?"
- Knowledge deficit – Stool sample order but no isolation sign or isolation in the EMR.
  - "I notice there was a stool sample order in the EMR but the patient isn't in isolation yet, is that order still active? Can I show you where to find that policy for proactive isolation or where the isolation signs are or how to put it into the EMR?" (feedback based on their response)
- Privacy needed –
  - "You did a good job. Can you step aside with me so I can tell you about it?"
- Provide education – Isolation removed when PCR positive toxin negative but symptomatic.
  - "I notice that isolation was removed for that patient, I know that for colonization sometimes there are questions why the patient remains in isolation, do you know if that is why they were removed from isolation? Let's walk through finding that protocol together, there is a helpful algorithm."

Feedback vs. Coaching

You are here

Feedback

- Discuss observation
- Assess for knowledge deficit
- Provide education
- Fill a gap in training
- Learn about practical barriers

Coaching & Next Steps

- Address willful non-compliance
  - Provide an objective report to manager, provide documentation and specifics as much as possible (in person or by phone, as much as possible)
- Mitigate defiant or disrespectful attitude
  - Pause. Environmental scan for situational factors. Report to manager, or move to safety concern
- Call out a disregard for safety
  - “I am concerned that you are not safe.”
- Deal with repeated educational intervention without improvement
  - Talk to the education team. Be prepared to describe the issue and the education that you have provided. Best to meet in-person. Plan for collaboration.

Surveillance & Reporting

- Conduct CDI surveillance, analyze and report data.
    - At a minimum, calculate healthcare facility–onset CDI rates at the organizational level and consider specifically calculating CDI rates by unit or ward.
    - Provide CDI rates and CDI prevention process measures to key stakeholders including senior leadership, physicians, nursing staff, and other clinicians.
    - Provide the process and outcome measures to appropriate hospital staff and administrators on a regular basis

CDC - NHSN - CDI - FAQs

Image by rawpixel.com

CDI Reports

Lacey Pavlovsky, RN, MSN, CIC, LTC-CIP
HAI/AR Infection Preventionist and
NHSN Coordination Lead,
NE DHHS

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Infection Control Assessment and Promotion Program

NHSN Reporting

CDI LabID Event Reporting is based strictly on the number of hospital days between the specimen collection date and the date the patient is admitted to the facility. Facility admission date is considered Day 1. There is no consideration for clinical presentation.

- ≤ 3 days = community-onset (CO)
- ≤ 3 days but patient had prior discharge from the reporting facility in the previous 4 weeks = community-onset healthcare facility-associated (CO-HCFA)
- ≥ 4 days = healthcare facility-onset (HO)
- GI-CDI HAI surveillance is based on specific infection criteria that are met within the HAI timeframe:

Day of admission or the day after = present on admission (POA) Hospital day 3 or greater = HAI

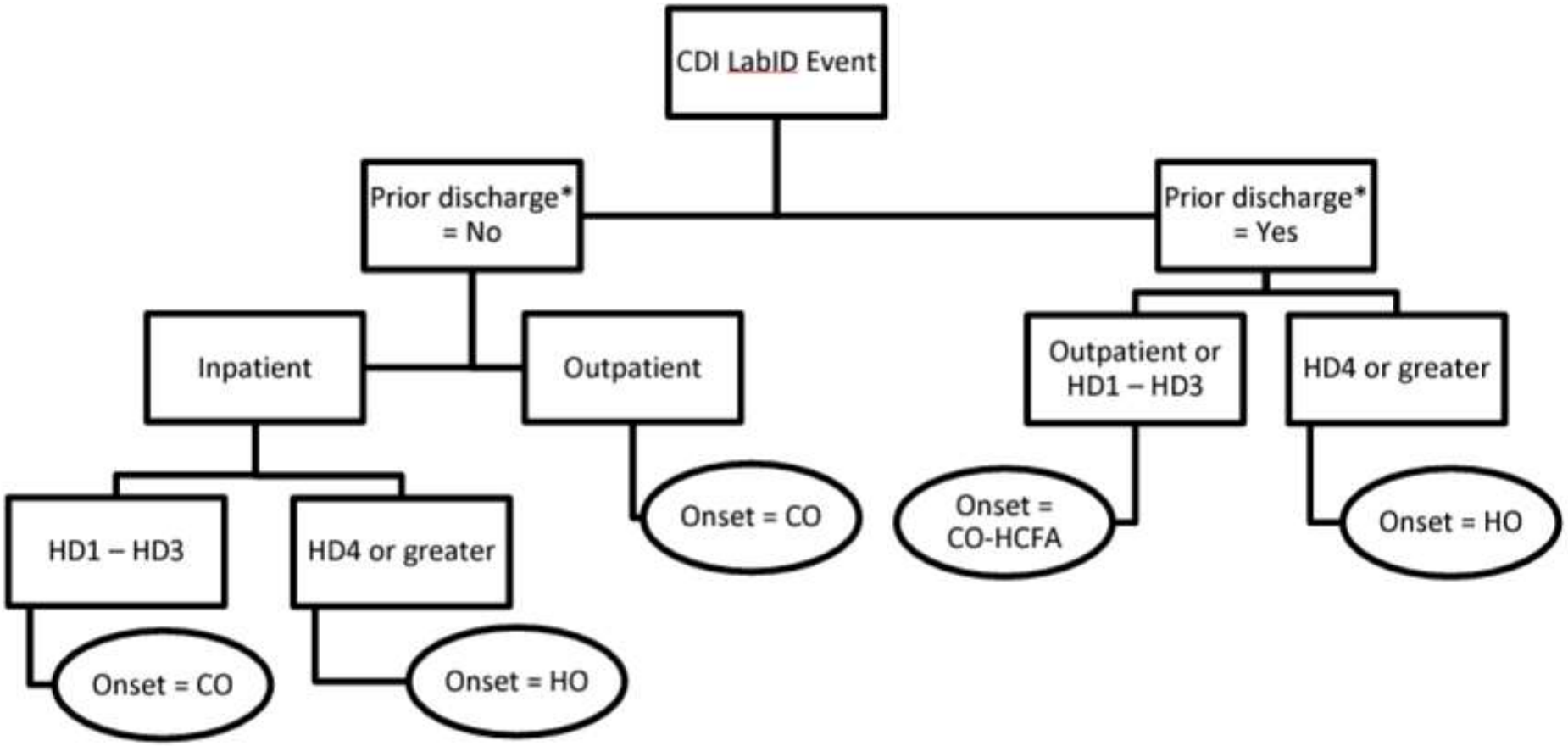
Hospital Day	HAI GI-CDI Surveillance	CDI LabID Event Reporting
-2	POA	Does not apply
-1	POA	Does not apply
Day 1 (Admission)	POA	CO
Day 2	POA	CO
Day 3	**HAI**	CO
Day 4	**HAI**	**HO**

Each method requires a positive test for toxin-producing *C. difficile* on an unformed stool specimen.

Note: Although diarrhea is not a specific element for a GI-CDI event, it must be checked when entering the GI-CDI event to validate that testing was performed on the appropriate specimen type.

CDC - NHSN - CDI - FAQs

Outcome Measures & Reporting



Strategies to Prevent CDI in Acute-Care Hospitals: 2022 Update
https://www.cdc.gov/nhsn/pdfs/pscmanual/12pscmdro_cdadcurrent.pdf

CDI Incidence Rates

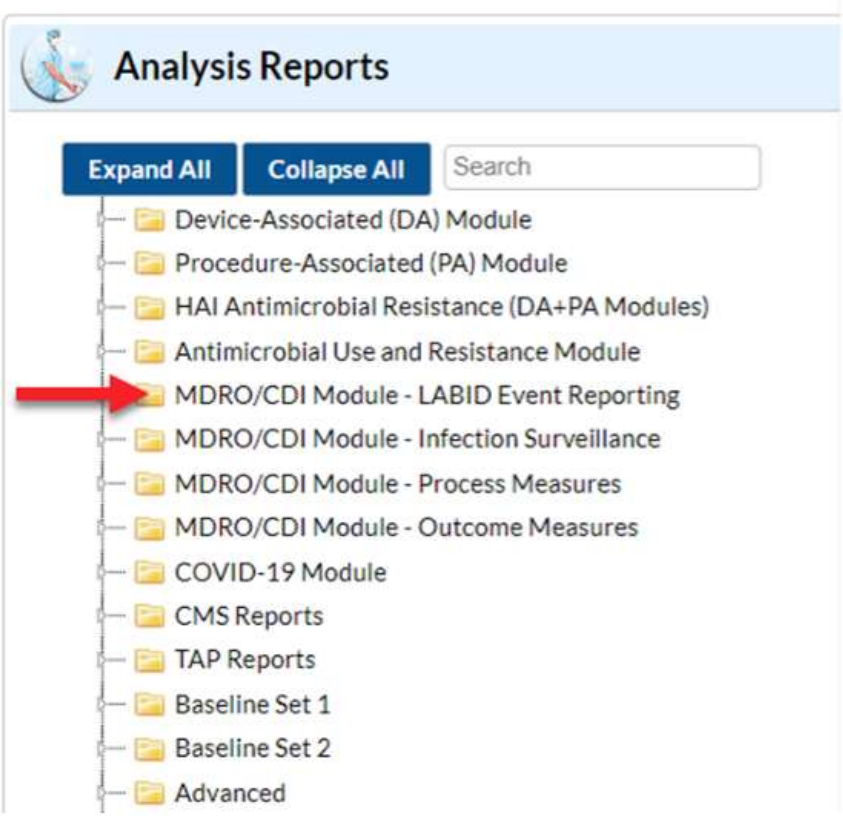
- **C. difficile Infection Incidence Rate =** Number of HAI CDI cases / Number of patient days x 10,000
  - Example: Facility had 3 HAI CDI cases and 1800 patient days.
    (3 HAI CDI Cases/1800) x 10,000 =16.67 CDI Incidence Rate

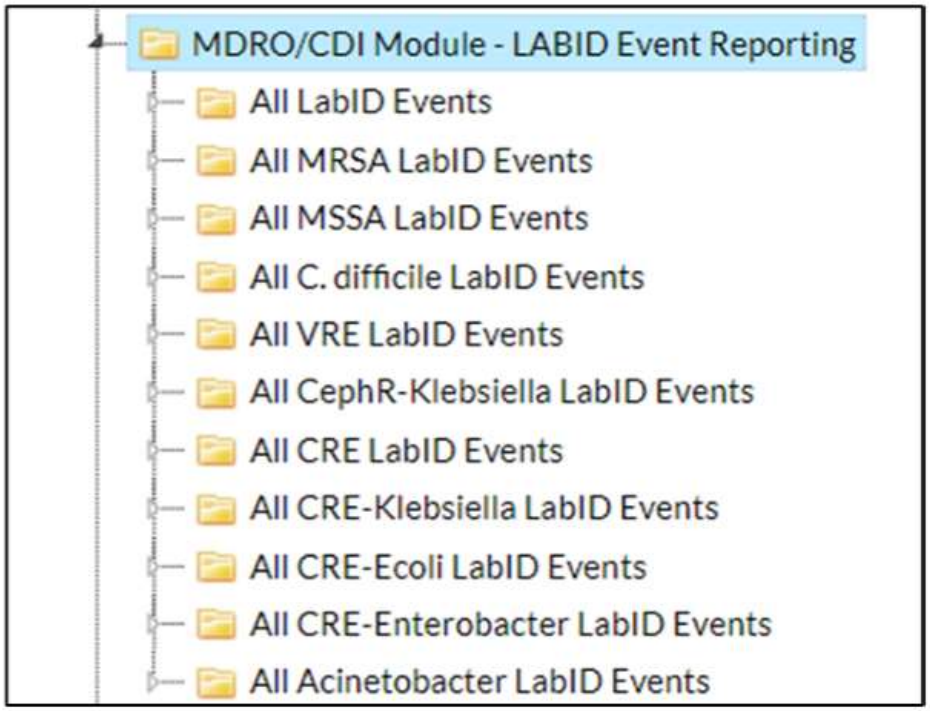
Other Incidence Rates

- **Inpatient Location CDI Incidence Rate** =
  - *Number of Incident CDI LabID Events* per month identified more than 3 days after admission to the location / Number of patient days for the location x ***10,000***
  - *Note:* See "CDIF_incRate" in the NHSN Rate Tables. This rate is only available for locationspecific CDI surveillance.
- **Inpatient Facility CDI Healthcare Facility-Onset Incidence Rate =**
  - Number of all Incident HO CDI LabID Events per month in the facility / Number of patient days for the facility x ***10,000***
  - *Note:* See "CDIF_HOIncRate" in the NHSN Rate Tables. (This calculation is only available for FacWideIN reporting.)

Strategies to Prevent CDI in Acute-Care Hospitals: 2022 Update
https://www.cdc.gov/nhsn/pdfs/pscmanual/12pscmdro_cdadcurrent.pdf

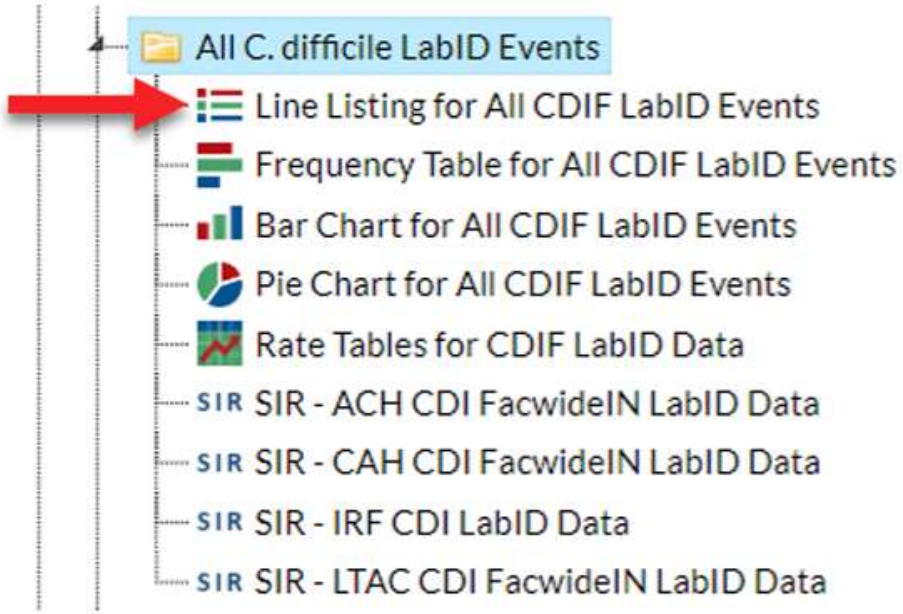
Analysis Reports





www.cdc.gov/nhsn/pdfs/training/2023/LabID-Analysis-Refresher-508.pdf

Line Listings



- Provides event level information
- Contains all the LabID events reported
- Used to review NHSN even categorizations
  - Healthcare associated versus community acquired
- Identify which events are counted in the SIR
- Easy to modify and customize

Example:

patID	eventID	spcOrgType	location	onset	cdiAssay	admitDate	locationAdmitDate	specimenDate	FWCDIF_facIncHOCount	FWCDIF_admPrevCOCount
2323	110902	CDIF	ICU	CO	INCIDENT	03/03/2022	03/03/2022	03/04/2022	0	1
3425	110903	CDIF	MED	CO	INCIDENT	03/07/2022	03/07/2022	03/08/2022	0	1
870	110900	CDIF	ICU	HO	INCIDENT	03/13/2022	03/13/2022	03/16/2022	1	0
8787	110901	CDIF	MED	CO	INCIDENT	03/30/2022	03/30/2022	03/30/2022	0	1

https://www.cdc.gov/nhsn/pdfs/training/2023/LabID-Analysis-Refresher-508.pdf

Rate Tables

- Review healthcare onset cases and community onset cases.
- Location Specific rates can be calculated

  *only if location-specific denominator records are entered
- Rates can be calculated by month, quarter, half-year or year.

Example:

Rate Table - All CDIF LabID Events by Location

CDI Incidence - Inpatient Facility CDIF Healthcare Facility-Onset Incidence Rate

As of: October 2023 at 5:15 PM

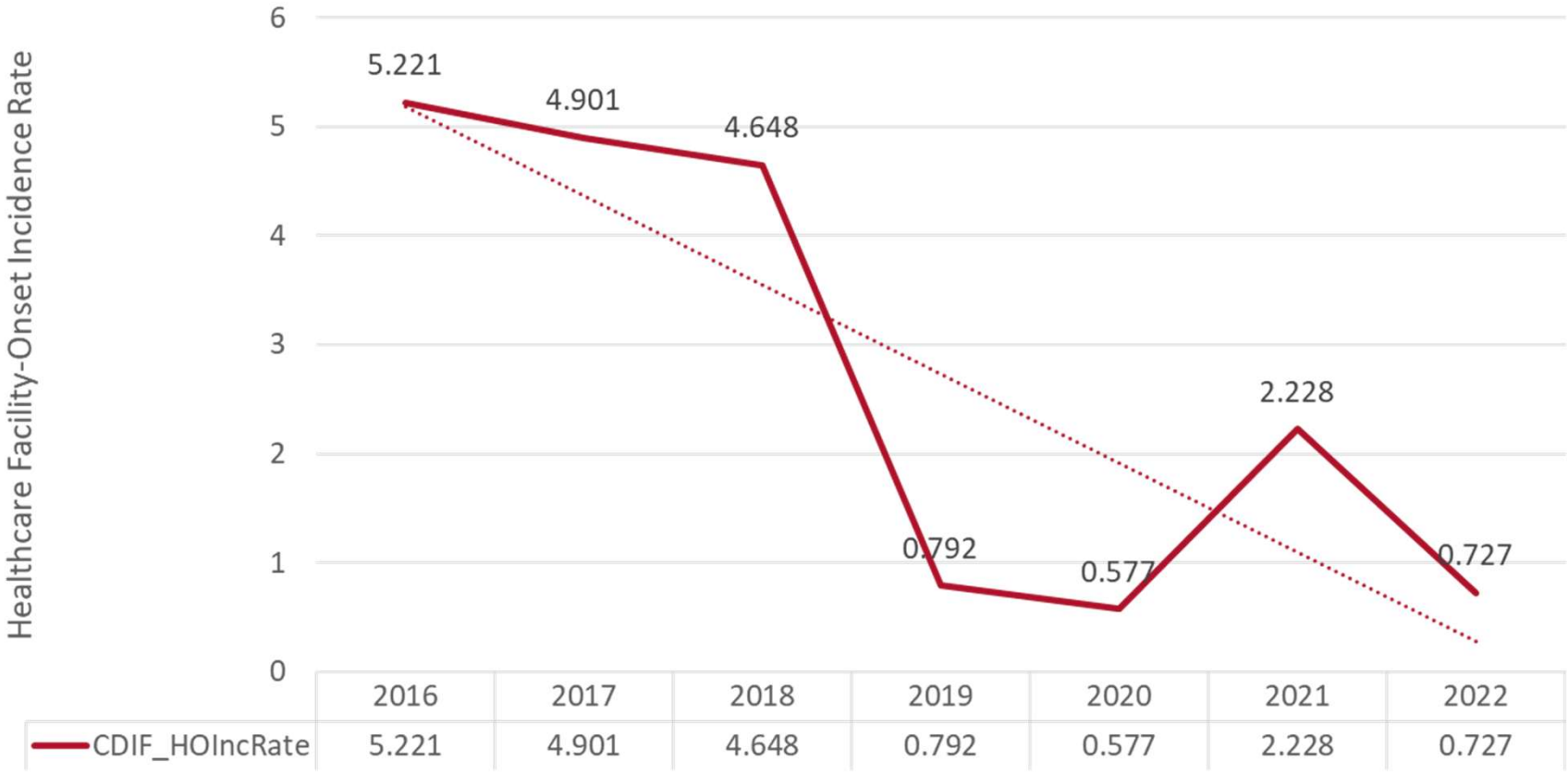
Date Range: BS2_LABID_RATESCDIF summaryYr 2015 to 2022

orgID=xxxxx locCDC=' ' ccn=000000 facType=HOSP-GEN medType=M state=NE

summaryYr	months	location	CDIF_facIncHOCount	numpatdays	CDIF_HOIncRate
2016	12	FACWIDEIN	33	63212	5.221
2017	12	FACWIDEIN	33	67339	4.901
2018	12	FACWIDEIN	36	77458	4.648
2019	12	FACWIDEIN	6	75745	0.792
2020	12	FACWIDEIN	4	69331	0.577
2021	12	FACWIDEIN	18	80808	2.228
2022	12	FACWIDEIN	6	82541	0.727

https://www.cdc.gov/nhsn/pdfs/training/2023/LabID-Analysis-Refresher-508.pdf

Example Graph: Healthcare Facility Onset Incidence Rate by Year



	2016	2017	2018	2019	2020	2021	2022
CDIF_HOIncRate	5.221	4.901	4.648	0.792	0.577	2.228	0.727

https://www.cdc.gov/nhsn/pdfs/training/2023/LabID-Analysis-Refresher-508.pdf

Example Chart: Healthcare Facility Onset Incidence Rate by Department

Hospital A Healthcare-Onset CDI Rates 2023			
location	**HO-CDI Cases**	**Patient Days**	**CDI Rate**
2ICU	3	5549	5.41
3PCU	1	3587	2.79
4Rehab	0	2548	0.00
5ORTHO	1	4879	2.05
6Surgical	2	7894	2.53
7Medical	4	8997	4.45
8Peds	1	2546	3.93

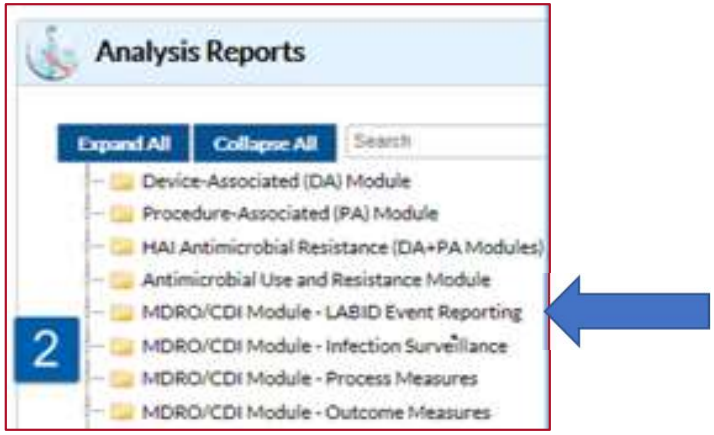
Standardized Infection Ratio (SIR)

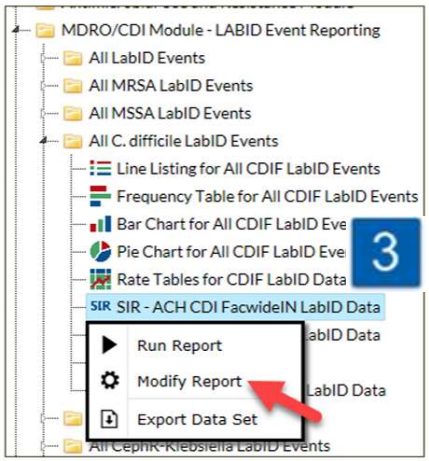
- An equation is used to determine the predicted number of hospital-onset CDI cases for a hospital based on the hospital characteristics, type of C. difficile testing done, and number of people admitted with community-onset CDI.
  - SIR > 1.0 = more HAIs were observed than predicted
  - SIR < 1.0 = fewer HAIs were observed than predicted

$$SIR = \frac{\#\ observed\ HO\ LabID\ Events}{\#\ predicted\ HO\ LabID\ Events}$$

Strategies to Prevent CDI in Acute-Care Hospitals: 2022 Update
https://www.cdc.gov/nhsn/pdfs/ps-analysis-resources/nhsn-sir-guide.pdf

Generate a CDI SIR Report





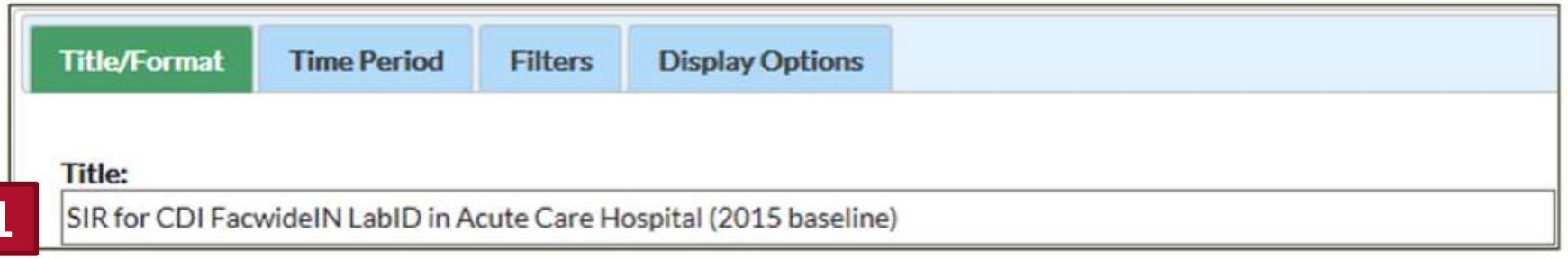
- Select Analysis on the NHSN home screen
- ALWAYS Generate Data Sets before running any reports.
- Then select “Reports” from the dropdown menu that opens.
- Expand the “MDRO/CDI Module-LABID Even Reporting folder” folder.
- Select the “SIR-ACH CDI FacewideIN LabID Data” Report
- Modify Report

SIRs are only available for FacWideIN surveillance of MRSA bacteremia and C. difficile.
Unit-specific SIRs are not available.

https://www.cdc.gov/nhsn/pdfs/ps-analysis-resources/ref-guide/tap-reports_facility_cauti.pdf

Generate a CDI SIR Report continued

1



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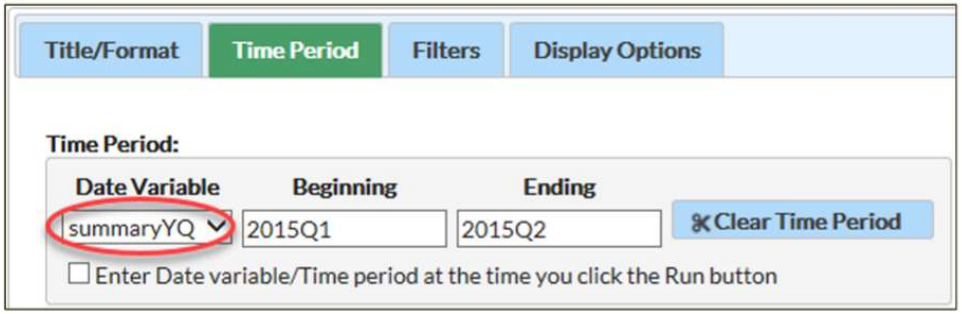

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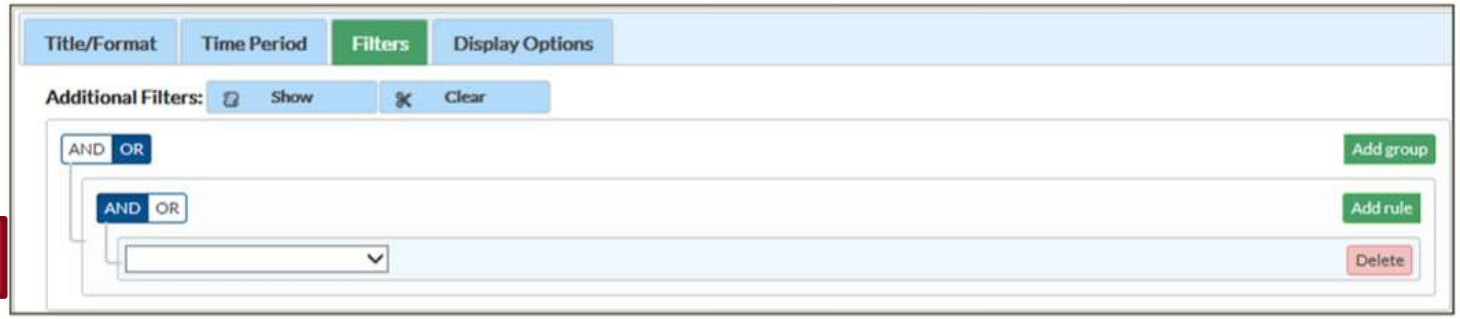

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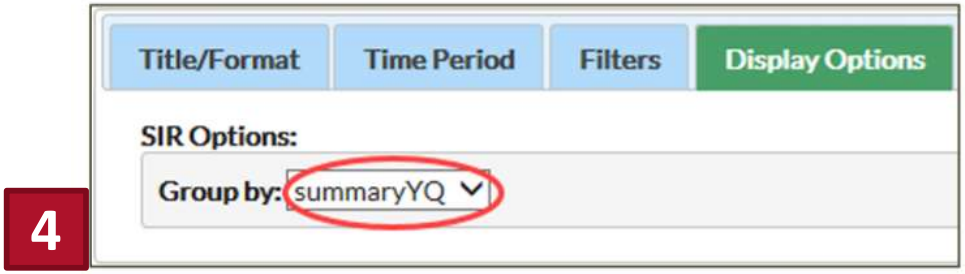


https://www.cdc.gov/nhsn/pdfs/ps-analysis-resources/sirtables_labidevents.pdf

Example of a CDI SIR Report

National Healthcare Safety Network

SIR for CDI FacwideIN LabID in Acute Care Hospital (2015 baseline)

As of: November 30, 2016 at 9:26 AM

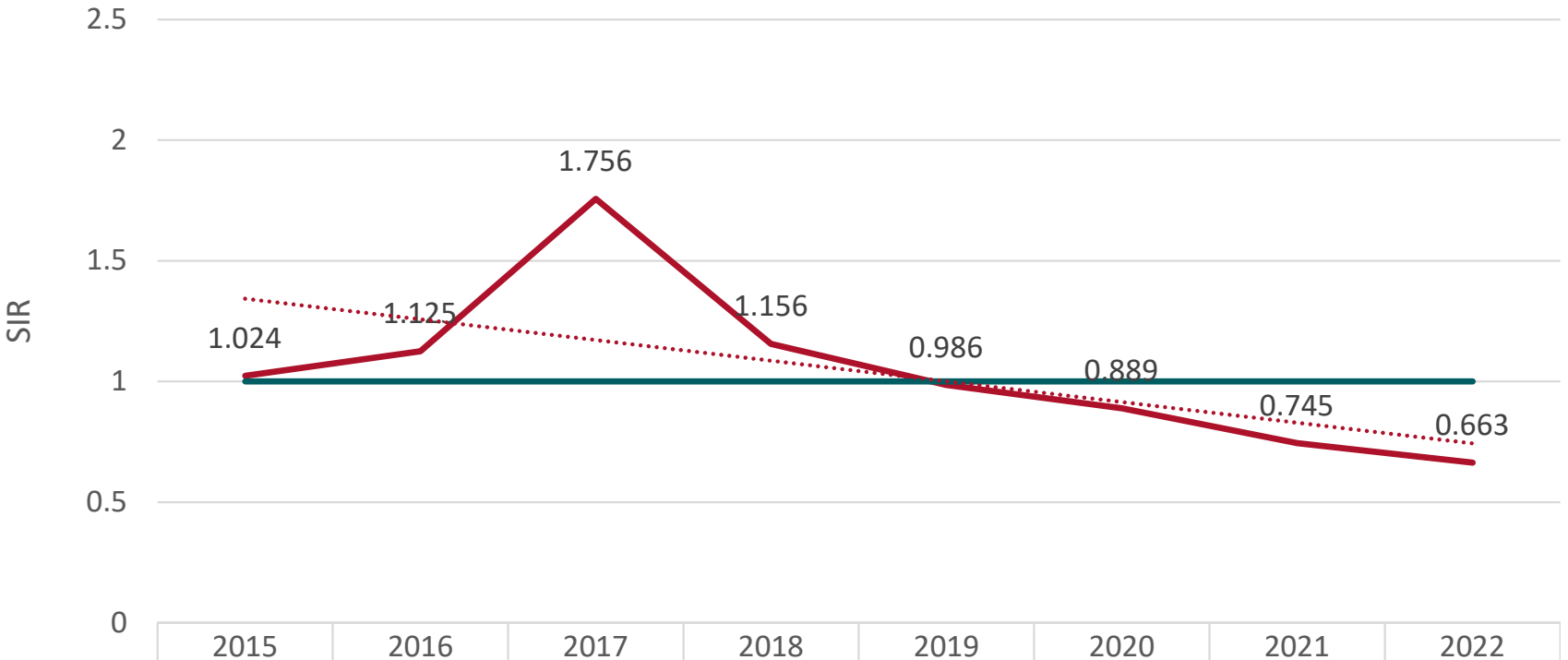
Date Range: BS2_LABID_RATESCDIF summaryYQ 2015Q1 to 2015Q2

Facility Org ID= CMS Certification Number=

Location	Summary Yr/Qtr	Months	CDIF Facility Incident HO LabID Event Count	Number Predicted	Patient Days	SIR	SIR p-value	95% Confidence Interval
FACWIDEIN	2015Q1	3	4	6.627	10621	0.604	0.3132	0.192, 1.456
FACWIDEIN	2015Q2	3	0	4.331	10520	0.000	0.0132	, 0.692

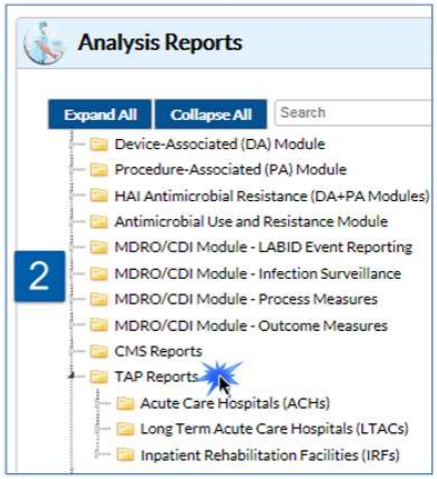
https://www.cdc.gov/nhsn/pdfs/ps-analysis-resources/sirtables_labidevents.pdf

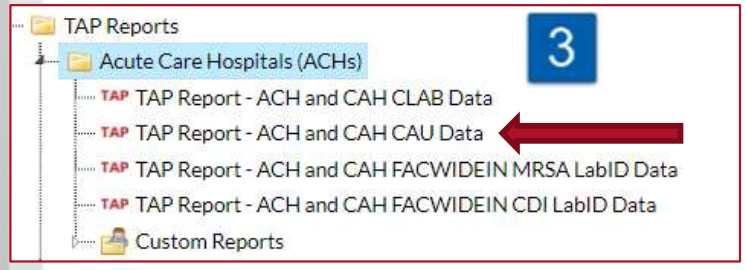
Example Graph: CDI SIR by Year

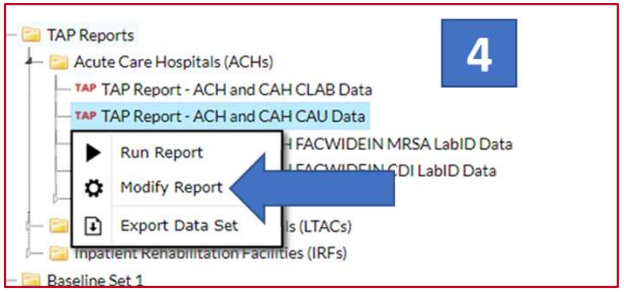


	2015	2016	2017	2018	2019	2020	2021	2022
SIR	1.024	1.125	1.756	1.156	0.986	0.889	0.745	0.663
Goal	1	1	1	1	1	1	1	1

Generate a TAP Report



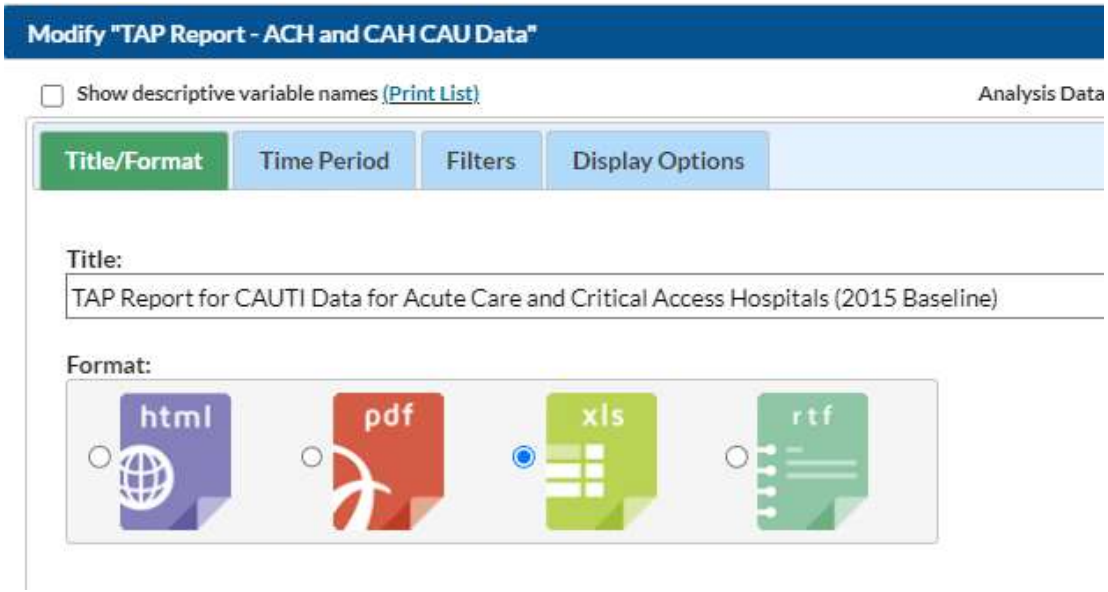


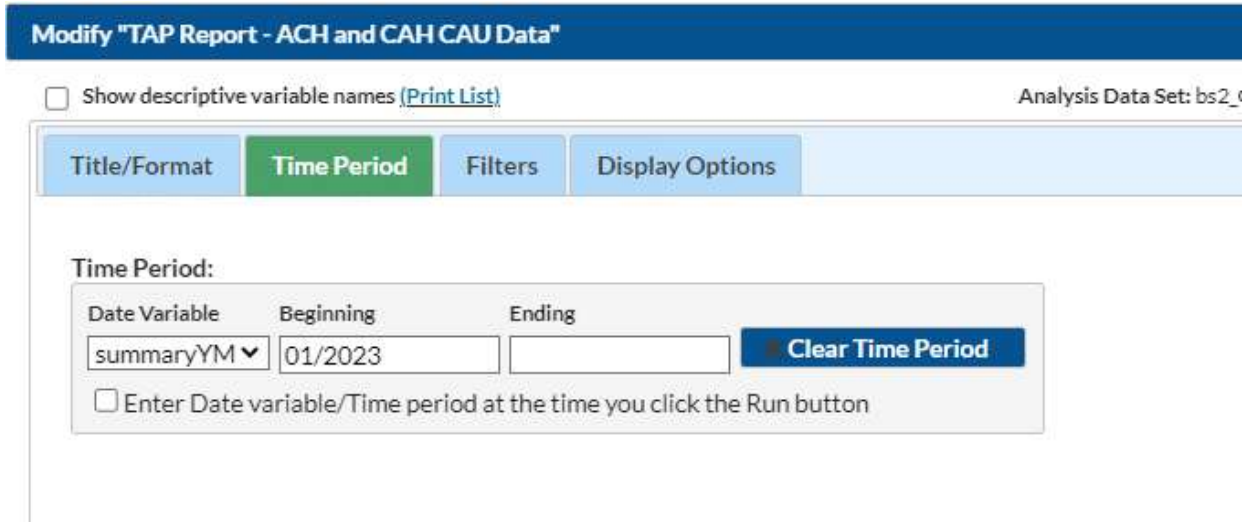


- Select Analysis on the NHSN home screen
- ALWAYS Generate Data Sets before running any reports.
- Then select “Reports” from the dropdown menu that opens.
- Expand the “TAP Reports” folder. The TAP reports are organized by facility type. Expand the folder for the facility type relevant to your analysis to see the available TAP Report options.
- Modify Report

https://www.cdc.gov/nhsn/pdfs/ps-analysis-resources/ref-guide/tap-reports_facility_cauti.pdf

Generate a TAP Report continued





- Select format for the report
  - Excel (xls)
  - Html
  - PDF
- Edit desired timeframe for report.
  - Example: calendar year, fiscal year, etc.

https://www.cdc.gov/nhsn/pdfs/ps-analysis-resources/ref-guide/tap-reports_facility_cauti.pdf

Example of a CDI TAP Report

CAD=the number of infections that need to be prevented to reach a target, or SIR goal

National Healthcare Safety Network
TAP Report for FACWIDEIN CDI LabID data for Acute Care and Critical Access Hospitals (2015 Baseline)
Facilities Ranked by CAD 'Cumulative Attributable Difference'
SIR Goal: HHS Goal = 0.7
As of February 16, 2017 at 2:00 PM
Date Range: BS2_CDI_TAP summaryYr2016 to 2016

Facility Org ID	Facility Name	State	Type of Facility	Type of Affiliation	Number of Beds	Patient Days	COHCFA Prevalence	CDIF Facility Incident HO LabID Event Count	CDIF Facility Incident HO LabID Number Expected	Facility CAD	SIR	SIR Test
10000	DHQP Memorial Hospital	GA	HOSP-GEN	M	354	60059	0.14	61	55.034	22.48	1.108	

SIR is set to '.' when expected number of events is <1.0.
Facility Rank = Priority ranking for Targeted Assessment of Prevention by CAD in descending order
COHCFA PREVALENCE RATE = Community-onset healthcare facility-associated CDI prevalence rate per 100 admissions
CAD = Observed - Expected*SELECTED CAD MULTIPLIER
SIR TEST = 'SIG' means SIR > SIR Goal significantly
Data contained in this report were last generated on February 16, 2017 at 12:22 PM.

https://www.cdc.gov/nhsn/pdfs/ps-analysis-resources/ref-guide/TAP-Reports_Facility_CDI.pdf

Additional Educational Resources

ICAP

Infection Control Assessment and Promotion Program

CDI Specific CDC STRIVE Training

C. difficile Infection (CDI)

- CDI 101: Overview of CDI [PDF – 42 pages]
  Provides background information on the impact *difficile* has on patients, the pathogenesis of *C. difficile* infection and Tier 1 strategies to prevent CDI.
- CDI 102: Antibiotic and Lab Testing Stewardship to Prevent CDI [PDF – 69 pages]
  Overview of Tier 1 strategies, aspects of antibiotic stewardship and lab testing stewardship and how they play a crucial role in preventing CDI.
- CDI 103: CDI: Preventing Transmission [PDF – 46 pages]
  Outlines how *difficile* transmission occurs and how health care staff can work together to prevent transmission using Tier 1 strategies. It also reviews common barriers and offers strategies to effectively overcome challenges.
- CDI 104: Monitoring for Compliance and Improvement [PDF – 63 pages]
  Reviews ways hospitals can use the Tier 1 process and outcomes data to
  - identify gaps in practice,
  - monitor compliance with evidence-based practices,
  - communicate with key stakeholders and
  - turn data into actionable information to drive improvement.
- CDI 201: Using the Guide to Patient Safety (GPS) and Targeted Assessment for Prevention (TAP) to Assess CDI Prevention Efforts [PDF – 49 pages]
  Discusses use of the CDI GPS and the TAP to establish focused goals and evaluate possible barriers to implementation of CDI prevention strategies. Introduction to Tier 2 CDI prevention strategies.
- CDI 202: CDI Tier 2 Interventions [PDF – 66 pages]
  Outlines Tier 2 CDI prevention strategies and how to implement them. Strategies include
  - initiating Contact Precautions when CDI results are pending and extending them until discharge,
  - implementing environmental cleaning process tools and using an EPA –registered sporicidal agent, and,
  - implementing hand hygiene with soap and water as the preferred method at room exit with enhanced staff training and monitoring.

Supplemental Material

- CDI Guide to Patient Safety (GPS)
- TAP CDI Implementation Guide

CDC STRIVE - CDI