National Healthcare Safety Network (NHSN)

Long-term Care Facility (LTCF) Component

Laboratory-identified (LabID) Event Module:

Clostridium difficile Infection (CDI) Event Reporting
Multidrug-Resistant Organism (MDRO) Event Reporting

DO NOT DISCARD Facility ID: _____

SAMS/NHSN Login:

_____

SAMS/NSHN Password:

_____

NSHN Administrator:

_____

Other NHSN Users:

_____

Keep SAMS card in pouch.

For questions:

1) Email: NHSN: nhsn@cdc.gov
2) Contact Oregon Health Authority:
    a. General Acute & Communicable Disease Prevention, ohd.acdp@state.or.us, Tel: 971-673-1111, ext #3 for the On-Call Epidemiologist; Fax: 971-673-1100
    b. Genevieve Buser Genevieve.l.buser@state.or.us, 971-673-1095
    c. Katherine Ellingson Katherine.ellingson@state.or.us, 971-673-1074
3) Contact Oregon Patient Safety Commission:
    a. Rebecca Rottman rebecca.rottman@oregonpatientsafety.org, 503-719-4647

FAQs
(frequently asked questions)

about
"Clostridium Difficile"

What is Clostridium difficile infection?

Clostridium difficile [pronounced Klo-STRID-ee-um dif-uh-SEEL], also known as "*C. diff*" [See-dif], is a germ that can cause diarrhea. Most cases of *C. diff* infection occur in patients taking antibiotics. The most common symptoms of a *C. diff* infection include:

- Watery diarrhea
- Fever
- Loss of appetite
- Nausea
- Belly pain and tenderness
- Blood in stool

Who is most likely to get C. diff infection?

The elderly and people with certain medical problems have the greatest chance of getting *C. diff. C. diff* spores can live outside the human body for a very long time and may be found on things in the environment such as bed linens, bed rails, bathroom fixtures, and medical equipment. *C. diff* infection can spread from person-to-person on contaminated equipment and on the hands of doctors, nurses, other healthcare providers and visitors.

Can C. diff infection be treated?

Yes, there are antibiotics that can be used to treat *C. diff* . In some severe cases, a person might have to have surgery to remove the infected part of the intestines.

This surgery is needed in only 1 or 2 out of every 100 persons with *C. diff.*

What are healthcare facilities are doing to prevent C. diff infections?

To prevent *C. diff.* infections, doctors, nurses, and other healthcare providers:

- Clean their hands with soap and water or an alcohol-based hand rub before and after caring for every patient. This can prevent *C. diff* and other germs from being passed from one patient to another on their hands.
- Carefully clean hospital rooms and medical equipment that have been used for patients with *C. diff*.
- Use Contact Precautions to prevent *C. diff* from spreading to other patients. Contact Precautions mean:
  - Whenever possible, patients with *C. diff* will have a single room or share a room only with someone else who also has *C. diff*.
  - Healthcare providers will put on gloves and wear a gown over their clothing while taking care of patients with *C. diff*.
  - Visitors may also be asked to wear a gown and gloves.
  - When leaving the room, hospital providers and visitors remove their gown and gloves and clean their hands.
  - Patients on Contact Precautions are asked to stay in their hospital rooms as much as possible. They should not go to common areas, such as the gift shop or

cafeteria. They can go to other areas of the facility for treatments and tests.

- Only give patients antibiotics when it is necessary.

What can I do to help prevent C. diff infections?

- Make sure that all doctors, nurses, and other healthcare providers clean their hands with soap and water or an alcohol-based hand rub before and after caring for you.

If you do not see your providers clean their hands, please ask them to do so.

- Only take antibiotics as prescribed by your doctor.
- Be sure to clean your own hands often, especially after using the bathroom and before eating.

Can my friends and family get C. diff when they visit me?

C. diff infection usually does not occur in persons who are not taking antibiotics. Visitors are not likely to get *C. diff* . Still, to make it safer for visitors, they should:

- Clean their hands before they enter your room and as they leave your room
- Ask the nurse if they need to wear protective gowns and gloves when they visit you.

What do I need to do when I go home from the healthcare facility?

Once you are back at home, you can return to your normal routine. Often, the diarrhea will be better or completely gone before you go home. This makes giving *C. diff* to other people much less likely. There are a few things you should do, however, to lower the chances of developing *C. diff* infection again or of spreading it to others.

- If you are given a prescription to treat *C. diff ,* take the medicine exactly as prescribed by your doctor and pharmacist. Do not take half-doses or stop before you run out.
- Wash your hands often, especially after going to the bathroom and before preparing food. Use a dedicated bathroom, if possible.
- People who live with you should wash their hands often as well.
- Do not share cloth hand towels with other household members; use single-use paper towels instead.
- Launder towels and linens with detergent using hot water; use bleach if appropriate for the fabric. Dry items in dryer on high heat.
- Disinfect "high touch" areas in your home daily using a cleaner containing bleach: light switches, door knobs, toilets and handles, sink faucets. Wet the surface well, and allow to air dry.
- Disinfect using a dilute bleach cleaner. If making your own, mix 1 part bleach to 10 parts water. *Never mix bleach with other cleaners.*
- If you develop more diarrhea after you get home, tell your doctor immediately. Your doctor may give you additional instructions.

If you have questions, please ask your doctor or nurse.

Oregon Health Authority

OHA (6/2015)

Adapted from FAQ created by:

APIC Spreading knowledge Preventing infection™ · CDC Centers for Disease Control and Prevention · American Hospital Association · SHEA The Society for Healthcare Epidemiology of America · The Joint Commission · IDSA

Facility Logo

Inter-facility Infection Control Transfer Form

SENDING FACILITY TO COMPLETE FORM and COMMUNICATE TO ACCEPTING FACILITY

Please attach copies of latest culture reports with susceptibilities, if available

Patient/Resident Last Name	First Name	Date of Birth
Print or place Patient Label		

Sending Facility Name	Sending Facility Unit	Sending Facility Phone #

Is the patient/resident currently on antibiotics? □ **NO** □ **YES** **DX:** _____

Does the patient/resident have pending cultures? □ **NO** □ **YES**

Is the patient/resident currently on precautions? □ **NO** □ **YES**

Type of Precautions (check all that apply) □ **Contact** □ **Droplet** □ **Airborne** □ **Other:**_____

Does patient currently have an infection, colonization OR a history of a multidrug-resistant organism (MDRO)?	**Colonization or history** *Check if YES*	**Active infection on treatment** *Check if YES*
MRSA (methicillin-resistant *Staphylococcus aureus)*	☐	☐
VRE (Vancomycin-resistant *Enterococcus*)	☐	☐
C. diff (*Clostridium difficile, CDI*)	☐	☐
Acinetobacter **spp.,** multidrug-resistant	☐	☐
Gram-negative organism resistant to multiple antibiotics* (e.g., *E. coli, Klebsiella, Proteus* spp.)	☐	☐
CRE (carbapenem-resistant *Enterobacteriaceae*)	☐	☐
Other:**	☐	☐

*Culture report with multiple antibiotics marked resistant (R); send copy of report with susceptibilities.
**Other: lice, scabies, shingles, norovirus, influenza, tuberculosis, etc.

Does the patient/resident currently have any of the following?

☐ Cough or requires suctioning
☐ Diarrhea
☐ Vomiting
☐ Incontinent of urine or stool
☐ Open wounds or wounds requiring dressing change
☐ Drainage (source)_____
☐ Central line/PICC
☐ Hemodialysis catheter
☐ Urinary catheter
☐ Suprapubic catheter
☐ Percutaneous gastrostomy tube
☐ Tracheostomy

Notes:

Printed Name of Person completing form:	**Signature:**	**Date:**	**Name and phone of individual at receiving facility who received information:**

Important:

Must Read

Direct Observation of Facility Practices: Point of Care Testing and Hand Hygiene & PPE Tools

Certain infection control lapses (e.g., reuse of syringes on more than one patient or to access a medication container that is used for subsequent patients; reuse of lancets) can result in bloodborne pathogen transmission and should be halted immediately. Identification of such lapses warrants notification and testing of potentially affected patients.

Point of Care Testing Observations (e.g., assisted blood glucose monitoring)					
HH performed	**New gloves worn**	***Single use, lancet used?**	****Testing meter**	**Gloves removed**	**HH performed**
○ Yes ○ No	○ Yes ○ No	○ Yes ○ No	○ Dedicated to resident, cleaned/disinfected before storing ○ Cleaned/disinfected before next resident	○ Yes ○ No	○ Yes ○ No
○ Yes ○ No	○ Yes ○ No	○ Yes ○ No	○ Dedicated to resident, cleaned/disinfected before storing ○ Cleaned/disinfected before next resident	○ Yes ○ No	○ Yes ○ No
○ Yes ○ No	○ Yes ○ No	○ Yes ○ No	○ Dedicated to resident, cleaned/disinfected before storing ○ Cleaned/disinfected before next resident	○ Yes ○ No	○ Yes ○ No
○ Yes ○ No	○ Yes ○ No	○ Yes ○ No	○ Dedicated to resident, cleaned/disinfected before storing ○ Cleaned/disinfected before next resident	○ Yes ○ No	○ Yes ○ No
○ Yes ○ No	○ Yes ○ No	○ Yes ○ No	○ Dedicated to resident, cleaned/disinfected before storing ○ Cleaned/disinfected before next resident	○ Yes ○ No	○ Yes ○ No
○ Yes ○ No	○ Yes ○ No	○ Yes ○ No	○ Dedicated to resident, cleaned/disinfected before storing ○ Cleaned/disinfected before next resident	○ Yes ○ No	○ Yes ○ No
○ Yes ○ No	○ Yes ○ No	○ Yes ○ No	○ Dedicated to resident, cleaned/disinfected before storing ○ Cleaned/disinfected before next resident	○ Yes ○ No	○ Yes ○ No
○ Yes ○ No	○ Yes ○ No	○ Yes ○ No	○ Dedicated to resident, cleaned/disinfected before storing ○ Cleaned/disinfected before next resident	○ Yes ○ No	○ Yes ○ No
Notes: ****Lancet holder devices (e.g., lancing penlets) are not suitable for multi-patient use. ***If the manufacturer does not provide instructions for cleaning and disinfection, then the testing meter should not be used for >1 patient.*					

Hand Hygiene and Contact Precautions observation tool				
Staff type*	**Type of opportunity**	**HH performed?**	**Gown or glove indicated?**	**Gown/glove used?**
	○ Room entry ○ Room exit ○ Before resident contact ○ After resident contact ○ Before glove ○ After glove ○ Other:_____	○ Alcohol-rub ○ Hand Wash ○ No HH done	○ Gown only ○ Glove only ○ Both ○ No	○ Gown used ○ Glove used ○ Both ○ Neither
	○ Room entry ○ Room exit ○ Before resident contact ○ After resident contact ○ Before glove ○ After glove ○ Other:_____	○ Alcohol-rub ○ Hand Wash ○ No HH done	○ Gown only ○ Glove only ○ Both ○ No	○ Gown used ○ Glove used ○ Both ○ Neither
	○ Room entry ○ Room exit ○ Before resident contact ○ After resident contact ○ Before glove ○ After glove ○ Other:_____	○ Alcohol-rub ○ Hand Wash ○ No HH done	○ Gown only ○ Glove only ○ Both ○ No	○ Gown used ○ Glove used ○ Both ○ Neither
	○ Room entry ○ Room exit ○ Before resident contact ○ After resident contact ○ Before glove ○ After glove ○ Other:_____	○ Alcohol-rub ○ Hand Wash ○ No HH done	○ Gown only ○ Glove only ○ Both ○ No	○ Gown used ○ Glove used ○ Both ○ Neither
	○ Room entry ○ Room exit ○ Before resident contact ○ After resident contact ○ Before glove ○ After glove ○ Other:_____	○ Alcohol-rub ○ Hand Wash ○ No HH done	○ Gown only ○ Glove only ○ Both ○ No	○ Gown used ○ Glove used ○ Both ○ Neither
	○ Room entry ○ Room exit ○ Before resident contact ○ After resident contact ○ Before glove ○ After glove ○ Other:_____	○ Alcohol-rub ○ Hand Wash ○ No HH done	○ Gown only ○ Glove only ○ Both ○ No	○ Gown used ○ Glove used ○ Both ○ Neither
	○ Room entry ○ Room exit ○ Before resident contact ○ After resident contact ○ Before glove ○ After glove ○ Other:_____	○ Alcohol-rub ○ Hand Wash ○ No HH done	○ Gown only ○ Glove only ○ Both ○ No	○ Gown used ○ Glove used ○ Both ○ Neither
	○ Room entry ○ Room exit ○ Before resident contact ○ After resident contact ○ Before glove ○ After glove ○ Other:_____	○ Alcohol-rub ○ Hand Wash ○ No HH done	○ Gown only ○ Glove only ○ Both ○ No	○ Gown used ○ Glove used ○ Both ○ Neither
	○ Room entry ○ Room exit ○ Before resident contact ○ After resident contact ○ Before glove ○ After glove ○ Other:_____	○ Alcohol-rub ○ Hand Wash ○ No HH done	○ Gown only ○ Glove only ○ Both ○ No	○ Gown used ○ Glove used ○ Both ○ Neither
	○ Room entry ○ Room exit ○ Before resident contact ○ After resident contact ○ Before glove ○ After glove ○ Other:_____	○ Alcohol-rub ○ Hand Wash ○ No HH done	○ Gown only ○ Glove only ○ Both ○ No	○ Gown used ○ Glove used ○ Both ○ Neither

***Staff key: MD= Physician, PA= Physician assist., NP= Advanced practice nurse, RN=Registered nurse, LPN=Licensed practice nurse, CNA=Certified nurse aide or assist., REHAB= Rehabilitation staff (e.g. physical, occupational, speech), DIET=Dietary staff, EVS=Environmental services or housekeeping staff, SW = Social worker, UNK = Unknown/unable to determine**

Resources for *Clostridium difficile* Infection (CDI) Prevention and National Healthcare Safety Network (NHSN) Guidance for Nursing Homes

Disclaimer: The links below are not mutually exclusive nor do they represent an exhaustive list of all the possible resources available. Furthermore, the links presented do not constitute an endorsement of these organizations or their programs by the Centers for Disease Control and Prevention (CDC) or the federal government, and none should be inferred.

Department of Health and Human Services (HHS):

- National Action Plan to Prevent Health Care-Associated Infections: Road Map to Elimination (April 2013); Chapter 8 – provides guidance on healthcare-associated infection (HAI) prevention in nursing homes and other long-term care facilities (LTCFs): http://www.health.gov/hai/pdfs/hai-action-plan-ltcf.pdf

Centers for Disease Control and Prevention (CDC):

- Surveillance Definitions of Infections in Long-Term Care Facilities: Revisiting McGreer Criteria – journal article detailing the modification of surveillance definitions for infectious diseases, including *C. difficile*, in the nursing home setting: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3538836/
- NHSN –5-Step Enrollment for Long-term Care Facilities (LTCFs) – details NHSN enrollment process for nursing homes : http://www.cdc.gov/nhsn/LTC/enroll.html
- Prevention tools for Nursing Homes and Assisted Living (Long-term Care Facilities [LTCFs])– resources including infection prevention toolkits and an antibiotic use fact sheet: http://www.cdc.gov/longtermcare/prevention/index.html

Advancing Excellence in America's Nursing Homes:

- Collection of resources to support a facility in evaluating the problem of *C. difficile* in their facility and strategies for implementing prevention activities: https://www.nhqualitycampaign.org/goalDetail.aspx?g=inf

Medscape:

- *Clostridium difficile* Infection in Long-Term Care (LTC): Tailored Approaches to Management – slide set describing infection control strategies in the nursing home setting for *C. difficile:* http://www.medscape.org/viewarticle/585132 (free registration required to access)

STATE RESOURCES:

Arizona:

- Arizona NHSN Training Series – collection of WebEx recordings, workshop materials, and presentation slides on NHSN enrollment and utilization: http://www.azdhs.gov/phs/oids/hai/surveillance/training.htm

California:

- Long Term Care Facility Infection Prevention and Control Survey – tool for use in evaluating infection control practices in nursing homes: http://www.cdph.ca.gov/programs/hai/Documents/LTCInfectionControlSurveyFINAL2.pdf
- California Department of Public (CDPH) Health Interfacility Infection Control Transfer form – example form for documentation of *Clostridium difficile* infection (CDI) and other HAIs when transferring patients between facilities: http://www.cdph.ca.gov/programs/hai/Documents/InterfacilityTransfer-Acute-LTC-9-13-13-10.pdf
- Joint Infection Prevention and Control Guidelines, Enhanced Standard Precautions, California Long-Term Care Facilities, 2010 – provides comprehensive guidelines for prevention and transmission of CDI and other HAIs in nursing homes: http://www.cdph.ca.gov/programs/hai/Documents/AFL10-27AttachmentIncluded.pdf

Connecticut:

- *C. difficile* Prevention in Long Term Care Collaborative – partnership between Connecticut Department of Public Health and Qualidigm (Quality Improvement Organization), with over 28 nursing homes participating: http://www.qualidigm.org/index.php/current-initiatives/c-difficile-cdi-prevention-in-long-term-care-collaborative/

Illinois:

- Preventing *C. difficile* in the Long Term Care Setting - presentation from regional workshop, July 2012; content focused on CDI prevention activities in the nursing home setting: http://www.idph.state.il.us/patientsafety/Breakout-LTC.pdf
- Long Term Care Infection Prevention Starts at the Top: Webinar for LTC leaders, quality directors, and administrators – slide presentation with a focus on antibiotic resistance/appropriate use in nursing homes: https://www.xdro.org/img/IDPH-CRE-presentation-slides-LTCF-leaders-FINAL.pdf
- "Not Just Maid Service" video - 15-minute video that shows how two hospitals engaged their environmental service workers to decrease transmission of *C. difficile* infections: http://www.notjustamaidservice.com/

- Cleaning the Healthcare Environment to Prevent *Clostridium difficile* Transmission (May 2012)– environmental cleaning webinar with a focus on environmental contamination and transmission of *C. difficile* in the nursing home setting,: http://idphdev.prod.acquia-sites.com/sites/default/files/publications/illinoiscleaningenvironmentwebinar.pdf

Kentucky:

- Environmental Cleaning and Disinfection in the Long-Term Care Setting – procedures for environmental cleaning in nursing homes, with explanation of enhanced cleaning and disinfection for *C. difficile* reduction: http://chfs.ky.gov/NR/rdonlyres/D4BC4A00-A844-4DF1-A404-9E563899E4B1/0/Policy1FEnvironmentalCleanandDisinfect.pdf

Maine:

- Protocol for Prevention of *C. difficile* Transmission in Long Term Care – protocol for testing and managing residents in nursing homes infected with *C. difficile*, including a checklist for outbreak management: http://www.maine.gov/dhhs/mecdc/infectious-disease/hai/documents/c_difficile_ltc_protocol_final.pdf

Maryland:

- Guidelines for the Prevention and Control of *Clostridium difficile* in Long Term Care Facilities – includes guidance on testing, room placement, precautions, and patient transfers: http://phpa.dhmh.maryland.gov/SitePages/clostridium-difficile.aspx

Massachusetts:

- Massachusetts Coalition for the Prevention of Medical Errors, Elimination of Healthcare Associated Infections – presentations and handouts from the Massachusetts *C. difficile* Prevention Partnership Collaborative final workshop (June 2012): http://www.macoalition.org/cdiff-programs.shtml

Michigan:

- Methicillin-resistant *Staphylococcus aureus* (MRSA)/CDI Train-the-Trainer Instructor Package – course providing education for healthcare and public health professionals on MRSA and CDI prevention and control; includes a facility needs assessment and slide presentations: http://www.michigan.gov/mdch/0,4612,7-132-2945_5104_55205-300679--,00.html

Minnesota:

- Educational Module for Nurses in Long-Term Care Facilities: Preventing and Managing *Clostridium difficile* Infections – slide presentation describing CDI prevention strategies for nurses working in the nursing home setting: http://www.health.state.mn.us/divs/idepc/dtopics/antibioticresistance/asp/ltc/modslidenursecdi.pdf
- Educational Module for Nursing Assistants in Long-term Care Facilities: Preventing and Managing Clostridium difficile Infections - slide presentation describing CDI prevention strategies for nursing assistants employed in the nursing home setting: http://www.health.state.mn.us/divs/idepc/dtopics/antibioticresistance/asp/ltc/modslidenacdi.pdf
- Minnesota Antimicrobial Stewardship Program Toolkit for Long-term Care Facilities – toolkit and supplemental materials for antimicrobial stewardship strategies, and prevention of CDI and other HAIs: http://www.health.state.mn.us/divs/idepc/dtopics/antibioticresistance/asp/ltc/
- Algorithms for Prevention and Management of *Clostridium difficile* Infections in Long-Term Care Facilities – five decision making algorithms ranging from early identification to implementation of social and activity precautions for infected nursing homes residents: http://www.health.state.mn.us/divs/idepc/diseases/cdiff/hcp/ltcalgorithms.pdf
- Nursing and Provider Antibiotic Use Attitudes and Beliefs Surveys – survey questions designed to assess long-term care facility provider beliefs regarding antibiotic use, including section about provider knowledge of connection between antimicrobial use and CDI: https://www.google.com/url?q=http://www.health.state.mn.us/divs/idepc/dtopics/antibioticresistance/asp/ltc/apxd.docx&sa=U&ei=VqsZVfyED4WlgwSA14LYBg&ved=0CAsQFjAIOAo&client=internal-uds-cse&usg=AFQjCNF4r5bcEIs8kZhLtZvUvQG3EsP_1Q

Texas:

- NHSN Enrollment Instructions – Texas-specific instructions on how to enroll in NHSN: https://www.dshs.state.tx.us/WorkArea/linkit.aspx?LinkIdentifier=id&ItemID=8589975202
- NHSN Training Slides (Part 1 and Part 2) - Texas Department of State Health Services & Association for Professionals in Infection Control and Epidemiology (APIC) NHSN training slides, including information about enrollment and generation of reports: https://www.dshs.state.tx.us/WorkArea/linkit.aspx?LinkIdentifier=id&ItemID=8589973214 (Part 1) https://www.dshs.state.tx.us/WorkArea/linkit.aspx?LinkIdentifier=id&ItemID=8589973216 (Part 2)
- NHSN Incomplete/Missing Alerts Instructional Guide - guidelines on how to address missing or incomplete data alerts in the NHSN Action Items Table: https://www.dshs.state.tx.us/WorkArea/linkit.aspx?LinkIdentifier=id&ItemID=8589972616

Utah:

- Resource for Infection Prevention in Utah Long-Term Care Facilities - several resources for infection prevention in nursing homes; includes infection control manual, several checklists, and transfer forms: http://health.utah.gov/epi/diseases/HAI/resources/LTCF_IC_Manual.pdf

Virginia:

- Frequently Asked Questions about *Clostridium difficile* – fact sheet from the Virginia Department of Health; notes increased risk of CDI for nursing home residents: http://www.vdh.virginia.gov/epidemiology/surveillance/hai/documents/pdf/ClostridiumDifficile_FAQ.pdf

West Virginia:

- Guidelines for *Clostridium difficile* Outbreaks in Long-Term Care Facilities– summary of recommendations for infection control measures both prior to and during an outbreak: http://www.dhhr.wv.gov/oeps/disease/AtoZ/Documents/CDiff%20Guidelines.pdf
- Multidrug Resistant Organism (MDRO) and CDI Long Term Facility Training Materials – slide presentations summarizing key points of disease transmission, hand hygiene, patient placement, environmental cleaning, and surveillance training: http://www.dhhr.wv.gov/oeps/disease/HAI/Pages/WVBPHHAIResources.aspx

Wisconsin:

- Wisconsin Healthcare-Associated Infections (HAIs) in Long-Term Care Coalition Events – recorded sessions of a 2-day conference for infection preventionists working in nursing homes, addressing the three most common areas of need for training – surveillance, antibiotic stewardship, and outbreak identification and management: https://www.dhs.wisconsin.gov/regulations/nh/hai-events.htm
- Overview of Centers for Medicare and Medicaid Services (CMS) Regulation §483.65 (F441) Infection Control Surveillance Requirements – slide presentation summarizing key infection control and surveillance materials, with content based on a "train-the- trainer" course: https://www.dhs.wisconsin.gov/sites/default/files/files/documents/overview-cms-483-65.pdf

Oregon *Clostridium Difficile* Initiative
from spores to sporicidals

Genevieve Buser, MDCM MSHP
Healthcare-Associated Infections Program
Acute and Communicable Disease Prevention
Oregon Public Health Division
Genevieve.l.buser@state.or.us
971-673-1111, ext 1095

Oregon Health Authority

CDC Centers for Disease Control and Prevention

(Enter) DEPARTMENT (ALL CAPS)
(Enter) Division or Office (Mixed Case)

Current as of 12/1/2015

Overview

- Biology and human disease
- Why is it an healthcare-associated infection (HAI)?
- What is the burden of CDI?
- What we can do? How?
  - Prepare infrastructure, capacity, and processes
  - Early Recognition and Detection
  - Infection control: contact precautions and hand hygiene
  - Infection control: environmental cleaning
  - Antibiotic stewardship
  - Treatment
  - Surveillance
  - Interfacility communication
- What are you doing now?

BIOLOGY & HUMAN DISEASE

Let's begin at the beginning

- *Clostridium* spp. are ancient spore-forming anaerobes
- Soil, water, food, bodies, waste
- Long-time human toxin-producing pathogens:
  - *Clostridium tetani*…..tetanus
  - *Clostridium botulinum*…..botulism
  - *Clostridium septicum*…..fatal sepsis
  - *Clostridium difficile*…..colitis

Clostridium difficile infection

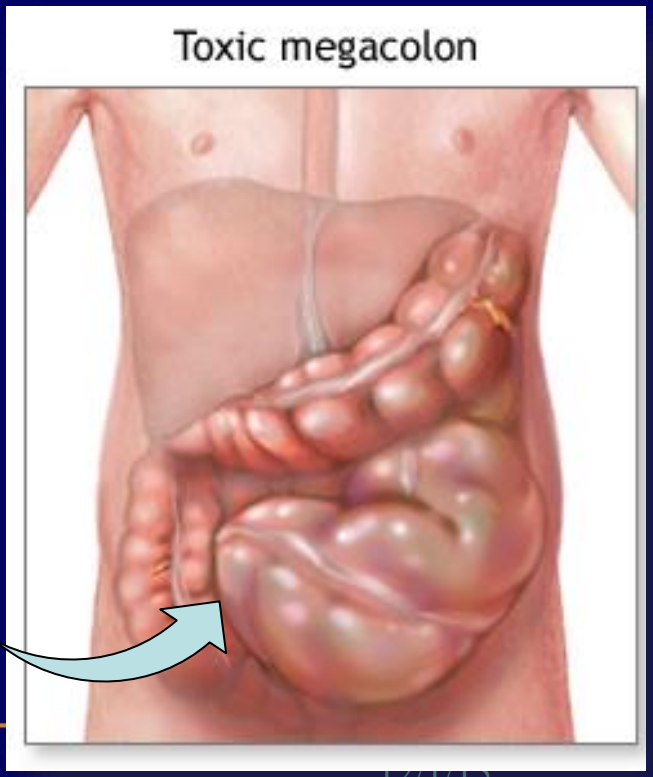
- Fecal-oral transmission of hardy spores
  - Environment
  - Hands of healthcare workers caring for CDI-positive patients
  - CDI-positive persons
  - Asymptomatic carriers
- Spores germinate (vegetative form)
- Make **toxins A & B**
- Incubation: median <7 days

Gram-positive rods of *C. difficile*

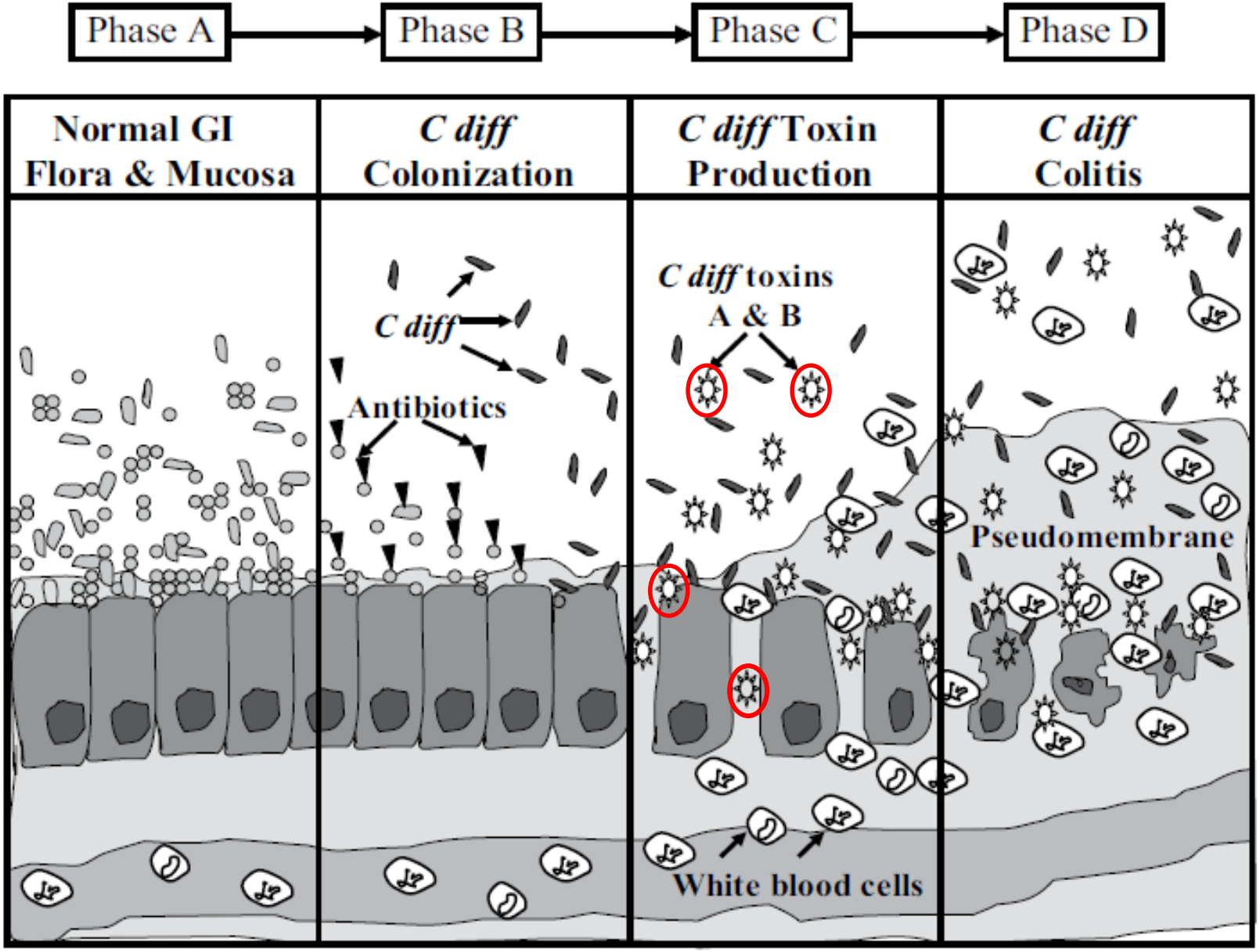
APIC. Guide to Preventing *Clostridium difficile* Infections 2012.

Clostridium difficile disease

- No disease: asymptomatic carrier, antibodies
- Diarrhea with recovery: colitis, develop antibodies
- Diarrhea with recurrence: colitis, no antibodies
- Diarrhea with severe disease: pseudomembranous colitis, toxic megacolon, sepsis, death



6 Kyne L et al. *N Engl J Med 2000;342:390-7*



Phases of pathogenesis of *C. difficile* colitis. APIC, 2013: Figure 10.1

Epidemic strain of *C. difficile*

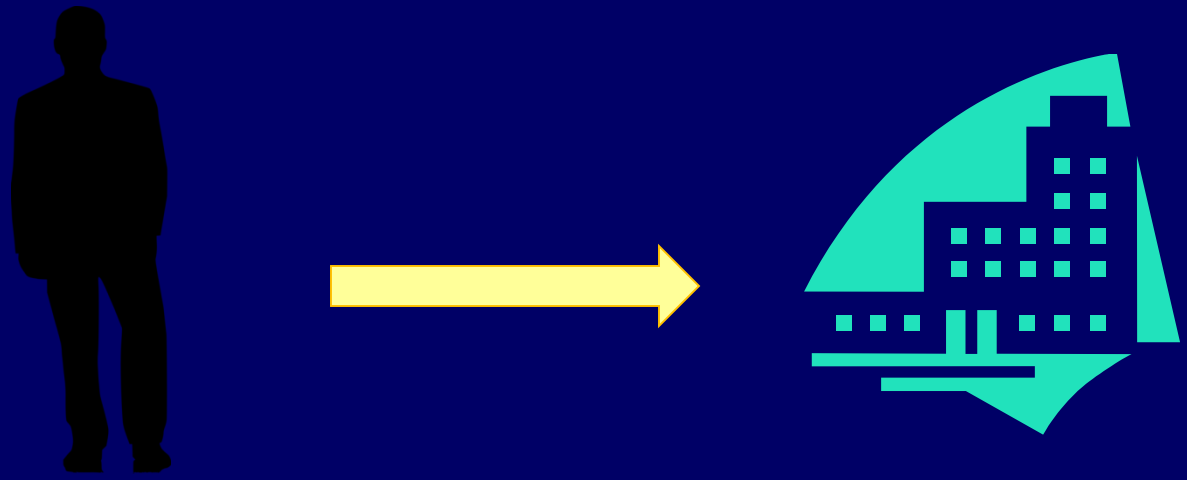
- B1/NAP1/027, toxinotype III
- Epidemic since 2000; out of eastern Canada
- More resistant to fluoroquinolones
  - Higher MICs
- More virulent
  - Increased toxin A and B production
  - Polymorphisms in binding domain of toxin B
  - Increased sprorulation

- Some testing algorithms include this strain
- Oregon: 16% (11 of 68) strains with PFGE performed

McDonald et al. *N Eng J Med* 2005;353:2433–41.
Warny et al. *Lancet* 2005;366:1079–84.
Stabler et al. *J Med Micro* 2008;57;771–5.
Akerlund et al. *J Clin Microbioll* 2008;46;1530–3.
EIP Oregon data, 2010–2013, partial data.

WHY IS CDI AN HAI?

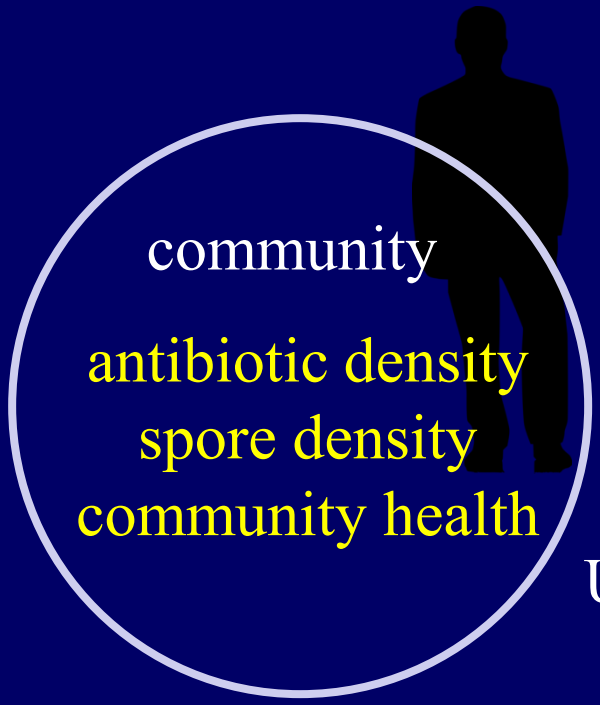
Why does CDI occur?



Antibiotic use
Underlying health issues*
Female
65+ years
Environmental spores
Spores that make Toxin A or B

*Immunocompromised, renal failure, diabetes, chronic pulmonary disease, tube feeds

Why does CDI occur?



Antibiotic use
Underlying health issues*
Female
65+ years
Environmental spores
Spores that make Toxin A or B

*Immunocompromised, renal failure, diabetes, chronic pulmonary disease, tube feeds

Why is CDI considered an HAI?

community

antibiotic density
spore density
community health

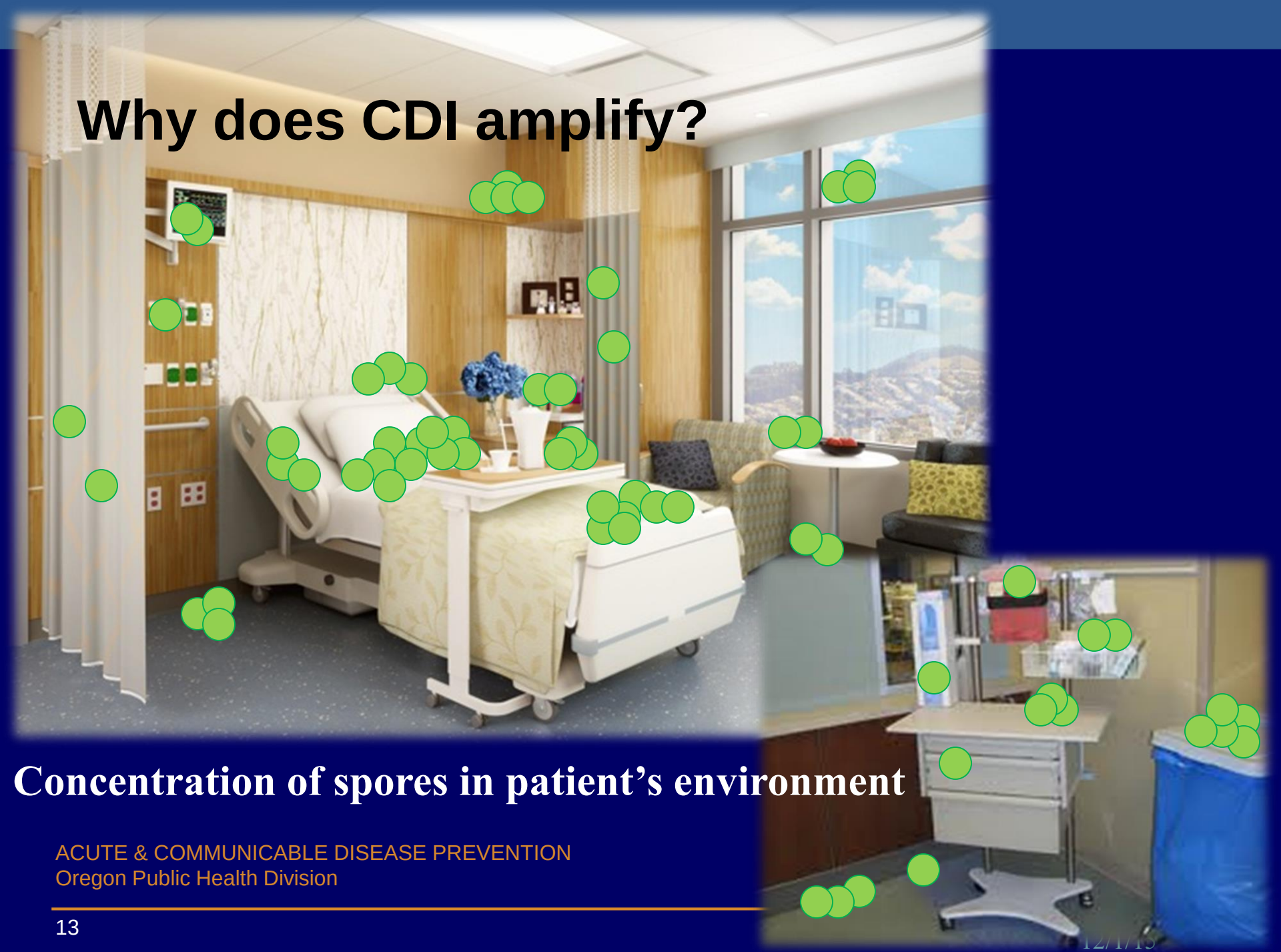
Antibiotic use
Underlying health issues*
Female
65+ years
Environmental spores
Spores that make Toxin A or B

facility
amplification

antibiotics
vulnerable

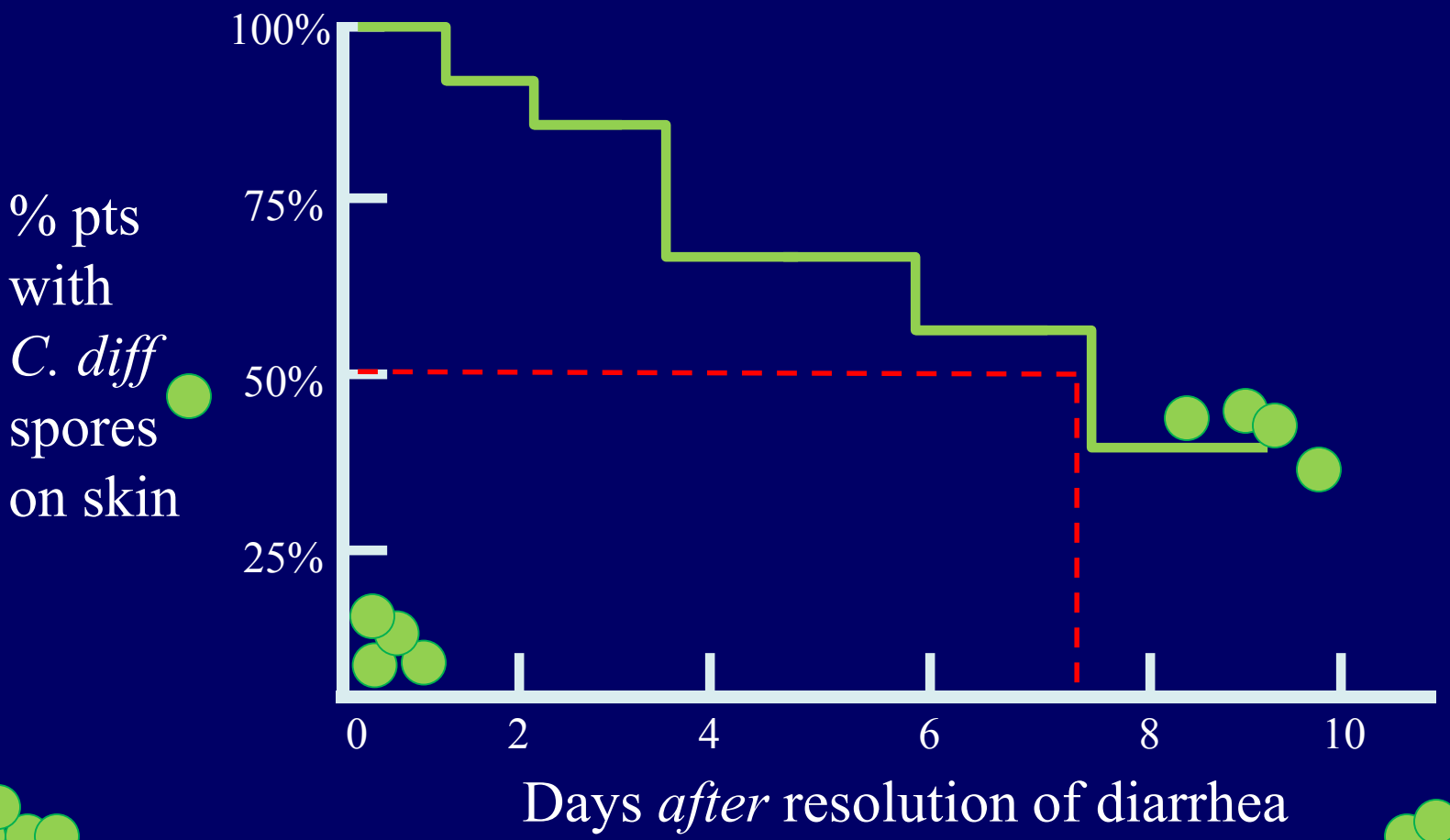
*Immunocompromised, renal failure, diabetes, chronic pulmonary disease, tube feeds

Why does CDI amplify?



Concentration of spores in patient's environment

Why extend gloves and gowns after diarrhea has ended?



Bobulsky et al. *Clin Infect Dis* 2008;46:447–50

Cleaning Tactics

- Bleach kills spores, whereas other standard disinfectants do not
- Limited data suggest bleach (1:10 dilution) reduces *C. difficile* transmission
  - Prepare fresh daily
  - If commercial, EPA-label as “sporicidal” (List K)

July 8, 2014

LIST K: EPA’s Registered Antimicrobial Products Effective against *Clostridium difficile* Spores

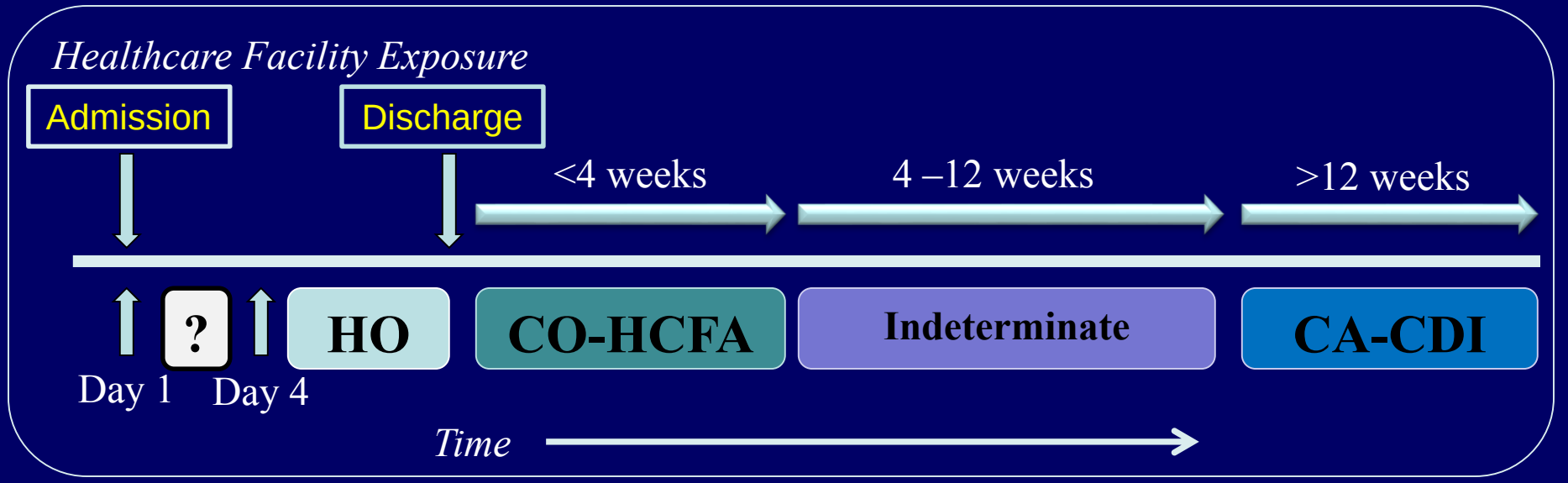
EPA Reg. No.	Primary Registered Product Name
777-83	LYSOL BRAND DISINFECTANT BLEACH PLUS
1043-124	HASTE-SSD-COMPONENT B
1043-125	HASTE-SSD-COMPONENT A
1672-65	AUSTIN A-1 ULTRA DISINFECTING BLEACH
1672-67	AUSTIN’S A-1 CONCENTRATED BLEACH 8.25%

Mayfield et al. *CID* 2000;31:995-1000.
Wilcox et al. *J Hosp Infect* 2003;54:109-14.

WHAT IS THE BURDEN OF CDI?

Quick Primer on CDI Surveillance

- Surveillance categorizes CDI by where *presumably* acquired
  - HO: Healthcare-Onset (hospital or LTCF)
  - CO-HCFA: Community-Onset, Healthcare Facility Associated
  - CA: Community-Associated



? = Depends on if patient was in a HCF in 12 weeks prior

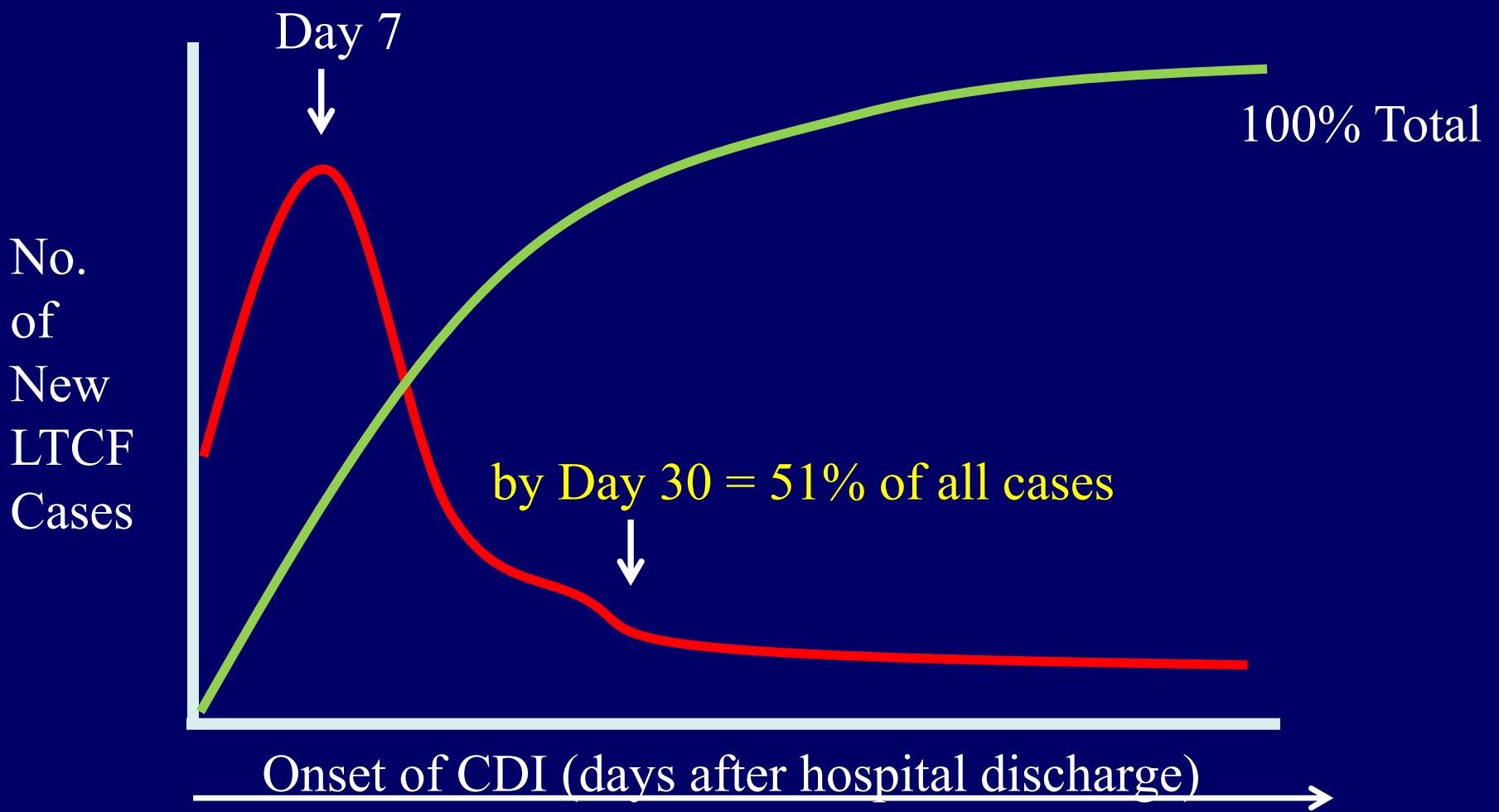
LTCF-onset CDI closely related to Hospital rates over time

- NYC CDI Surveillance
- Reviewed 425 LTCF patients diagnosed with CDI

- 64% (272/425) of new (incident) LTCF residents with CDI had acute care exposure in prior 12 weeks
  - 88% received antibiotics
  - 28% had surgery

Yikes!

Onset of CDI after Hospital Discharge



Rebecca Smith, NYC EIP CDI Surveillance Update, CDC, 2011

Burden of CDI in United States, 2011

- 34 counties across U.S.; 1 rural Oregon county (pop 66,299)
- 15,461 CDI cases onset 2011
- 66% Healthcare-associated; 24% HO

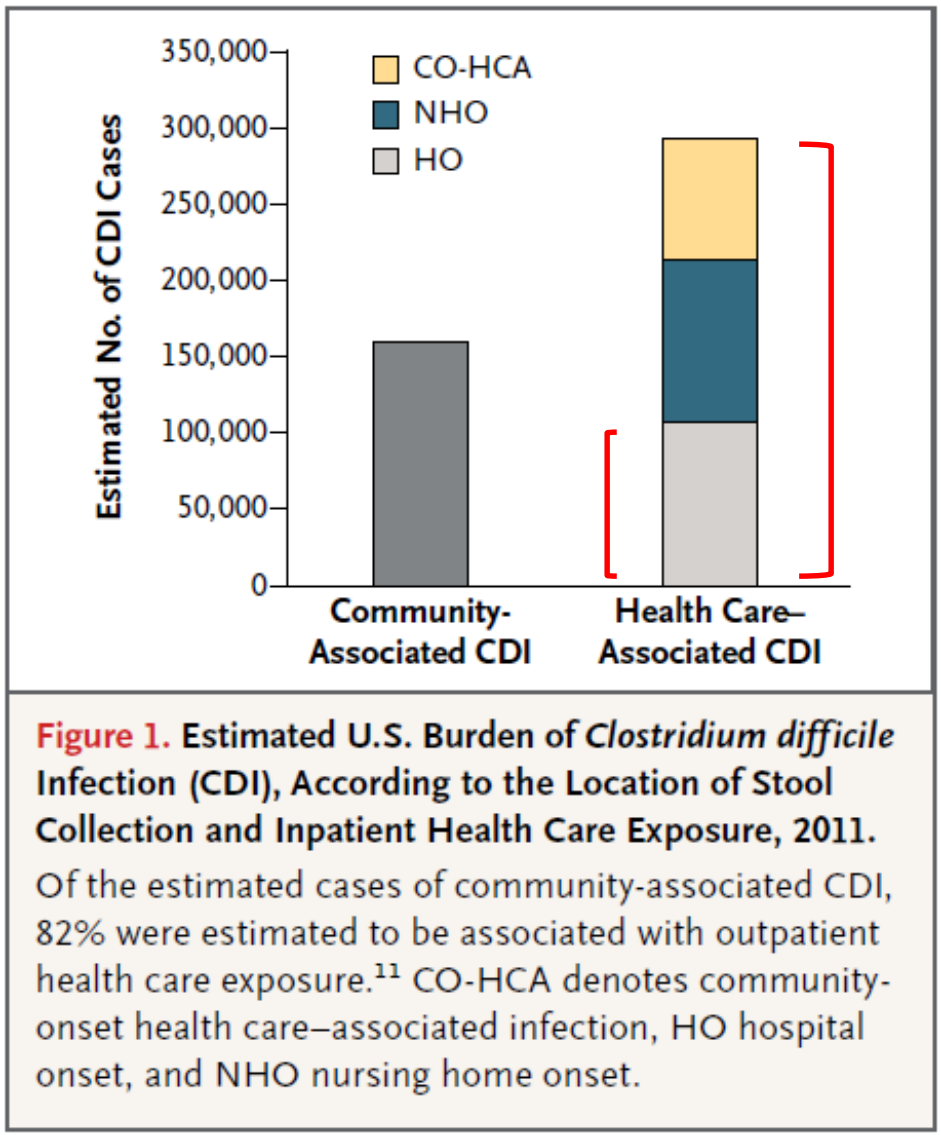


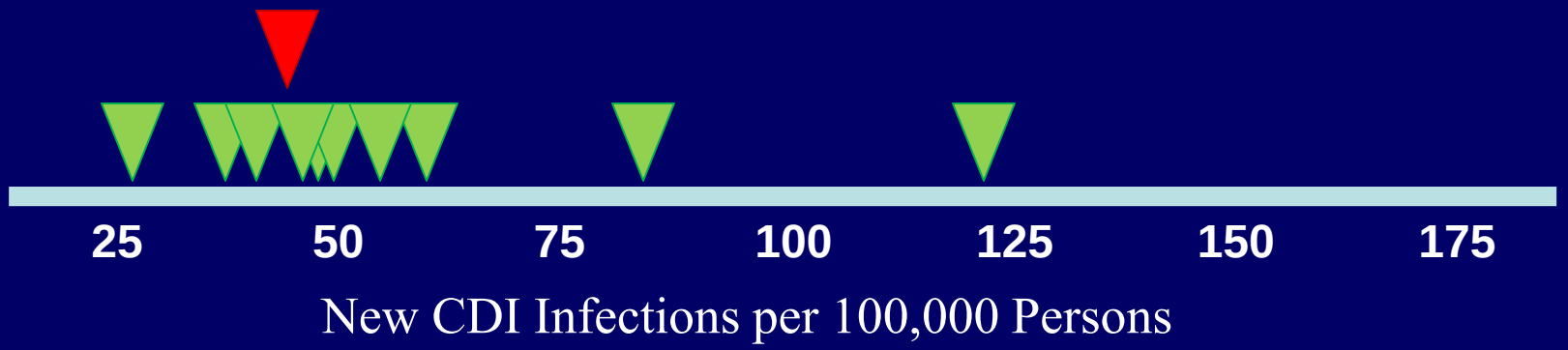
Figure 1. Estimated U.S. Burden of *Clostridium difficile* Infection (CDI), According to the Location of Stool Collection and Inpatient Health Care Exposure, 2011.

Of the estimated cases of community-associated CDI, 82% were estimated to be associated with outpatient health care exposure.[11] CO-HCA denotes community-onset health care–associated infection, HO hospital onset, and NHO nursing home onset.

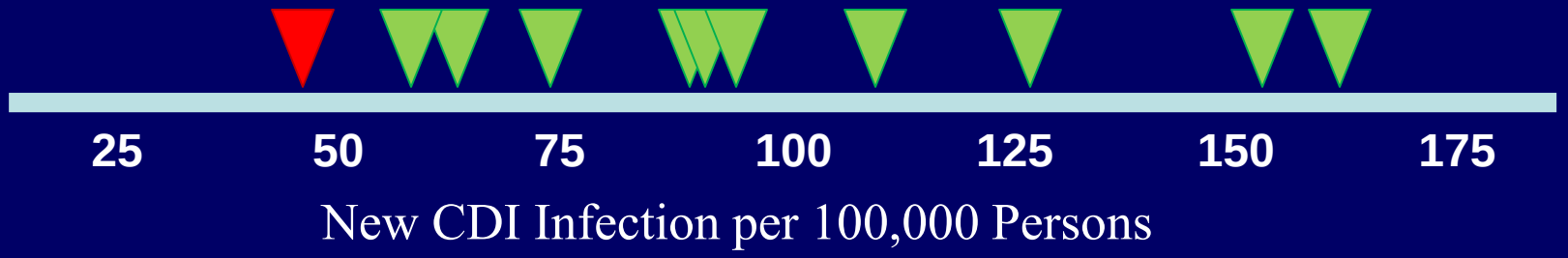
Lessa FC et al. *N Engl J Med 2015;372(9):825–834*

New CDI Infections, by state

Community-Associated (no healthcare contact in >12 weeks)



Healthcare-Associated (short- or long-term healthcare contact)



Estimated Burden of CDI in Oregon

Community-Associated

- U.S.: 51.9 cases per 100,000 persons (range: 26.7–123.7)
- Oregon: 2,060 persons*

Healthcare-Associated

- U.S.: 95.3 cases per 100,000 persons (range: 47.3–159.1)
- Oregon: 3,783 persons*

* U.S. Census, 2014 Oregon population estimate

WHAT CAN WE DO ABOUT CDI?

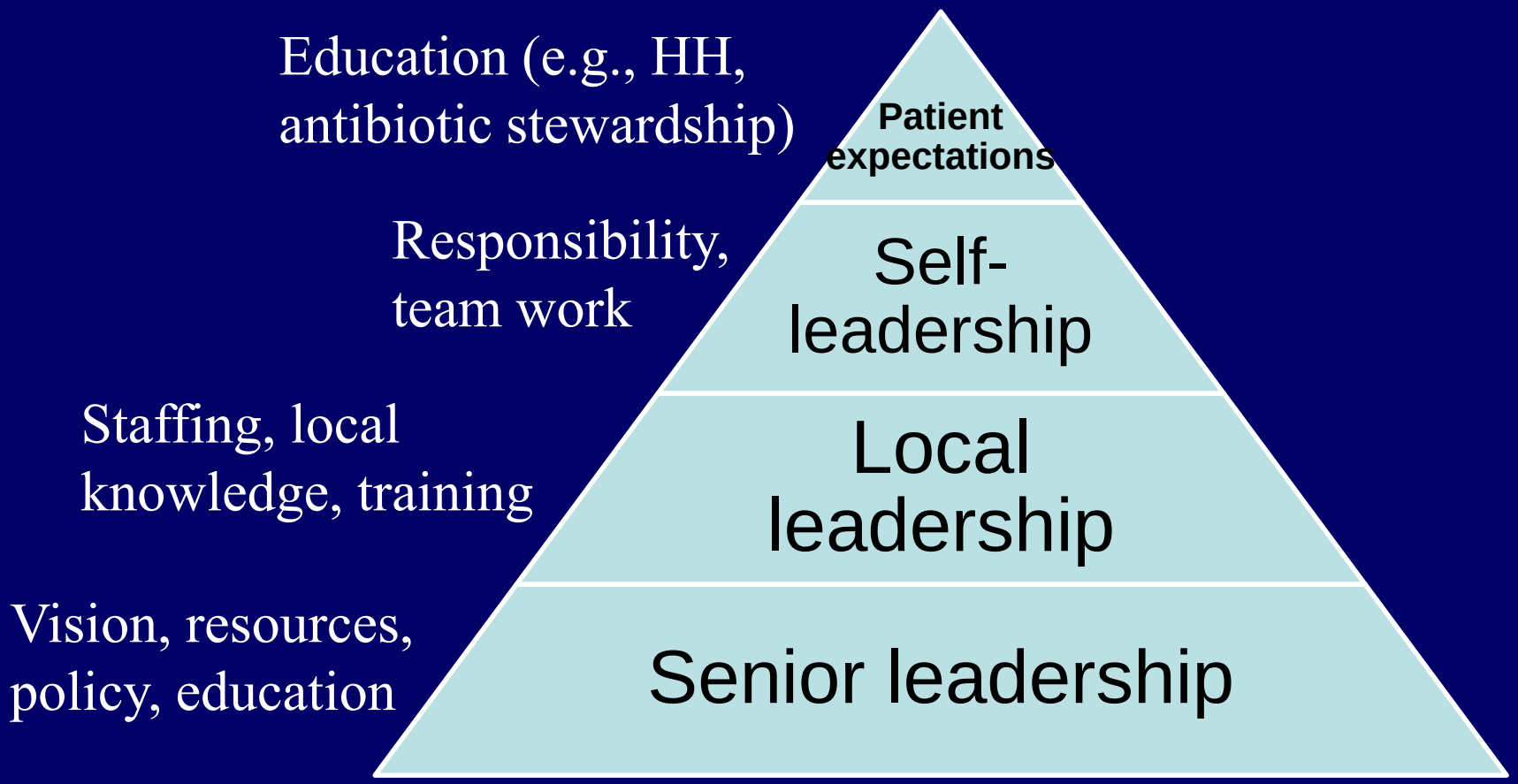
Five Moments of CDI Prevention

- Surveillance
- Best practice infection control implementation and competency
- Environmental Hygiene
- Antibiotic Stewardship
- Interfacility Transfer

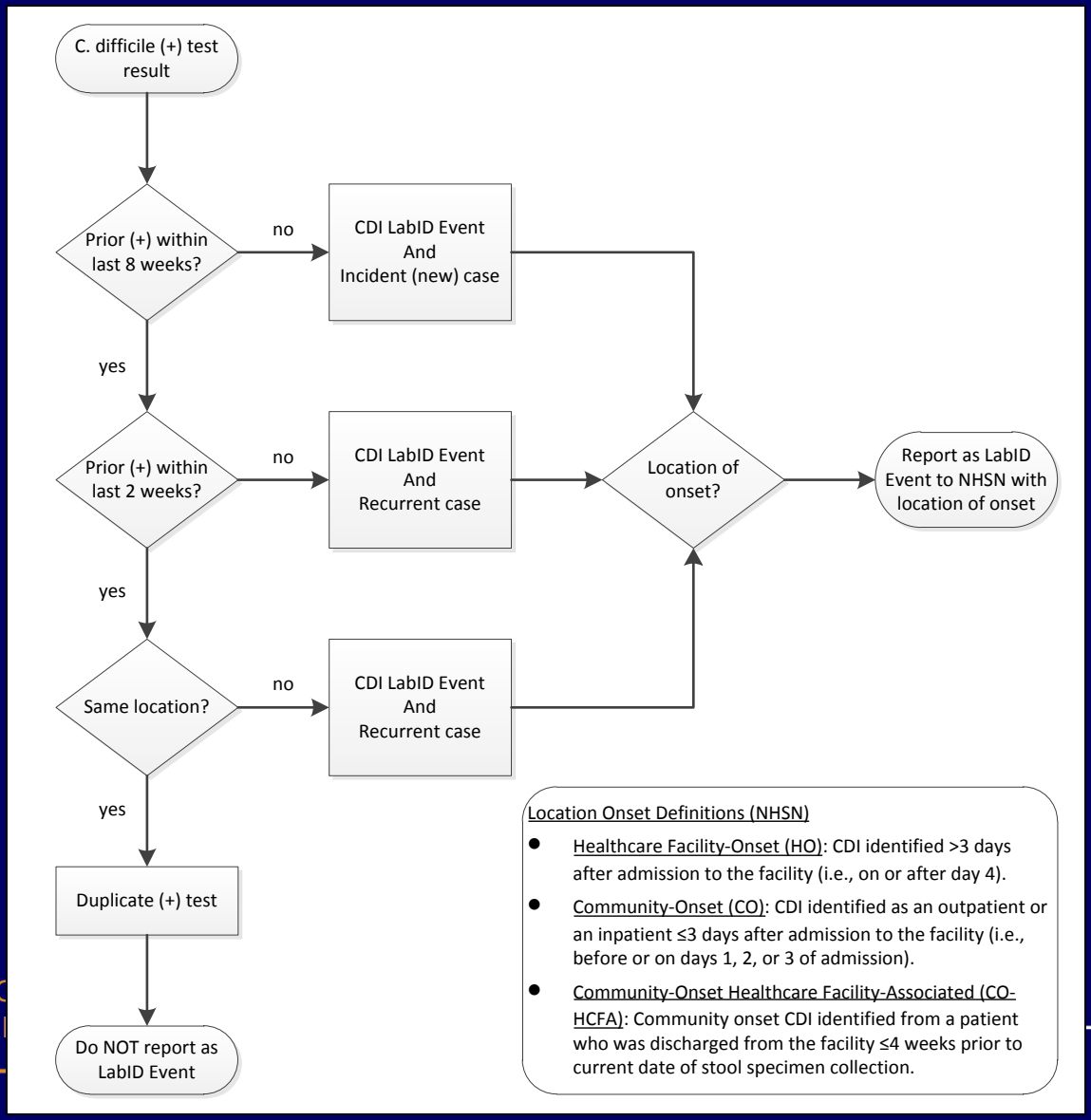
What now?

- What we can do? How?
  - Prepare infrastructure, capacity, and processes
  - Surveillance
  - Core vs. Supplemental Prevention Strategies
  - Early Recognition and Detection
  - Infection control: contact precautions and hand hygiene
  - Infection control: environmental cleaning
  - Antibiotic stewardship
  - Treatment
- Interfacility Communication

Prepare the Groundwork



Surveillance...know the burden



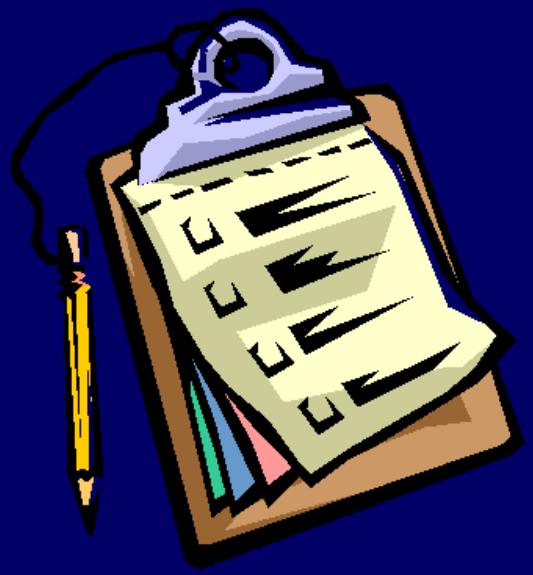
What we count matters

- National Health Safety Network (NHSN)
  - National healthcare-associated infection surveillance system
  - Required for hospitals and LTACHs
  - Optional for LTCFs, but highly recommended
  - More information: http://www.cdc.gov/nhsn/
  - HAI Program can help your facility enroll! hai.comments@state.or.us

- Visualize trends
- Show improvement over time, after intervention
  - *C. difficile*
  - *Catheter-associated urinary tract infections*
  - *Hand hygiene and PPE use over time*

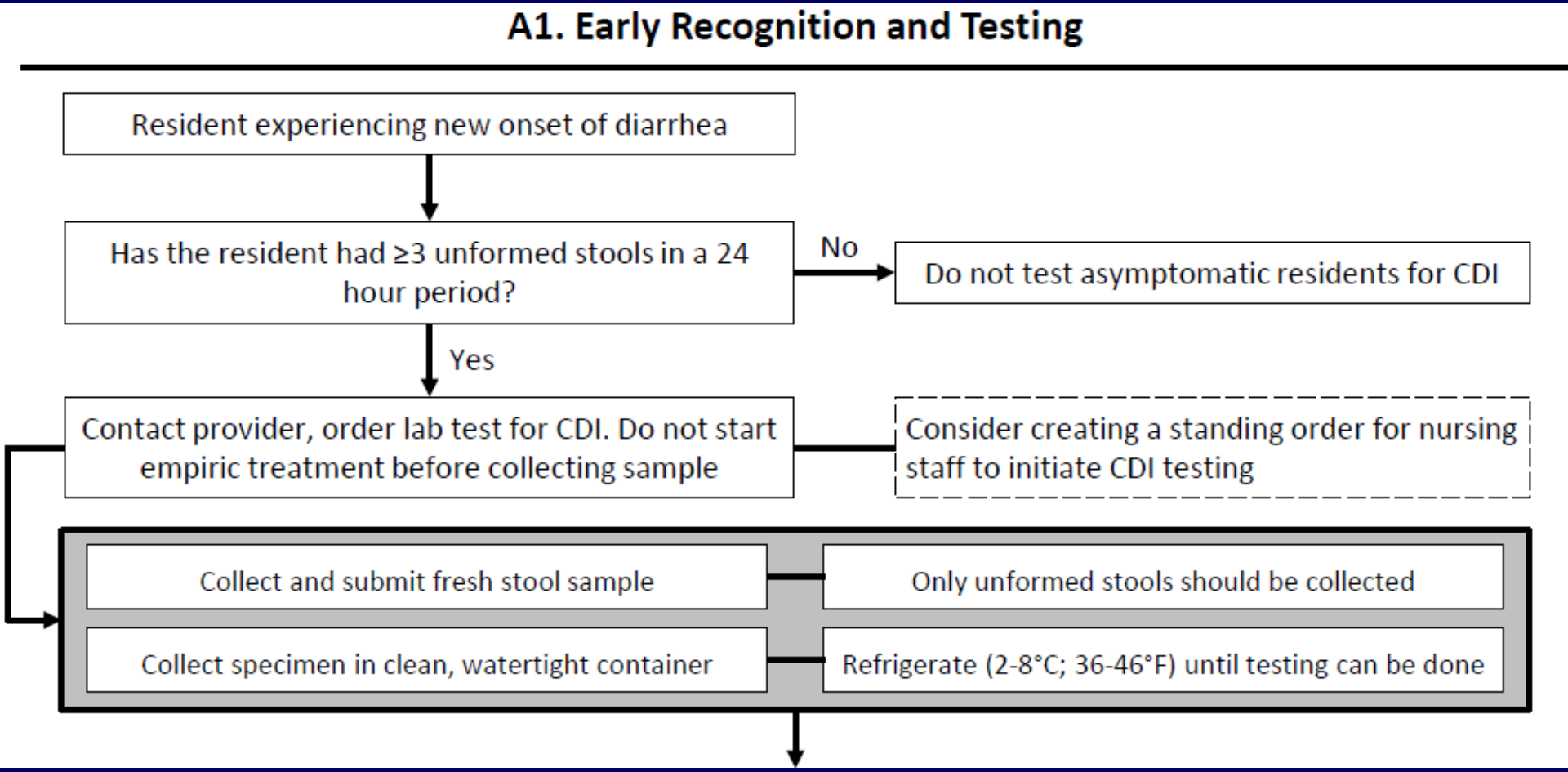
Implement and Verify Best Infection Control Practices

- Make it easy to do the right thing
  - Policy that matches best practices
  - Procedures that work with the work flow
  - Best “environment” for success
  - Competency checks after learning



- Teach
  - The difference between cleaning and disinfection
  - Staff about disinfecting high-touch areas
  - Staff how to correctly and safely prepare of bleach or EPA sporicidal solutions
- Define who cleans and disinfections what
- Monitor adherence with checklists or spot fluorescence checks
- Troubleshoot barriers with frontline staff

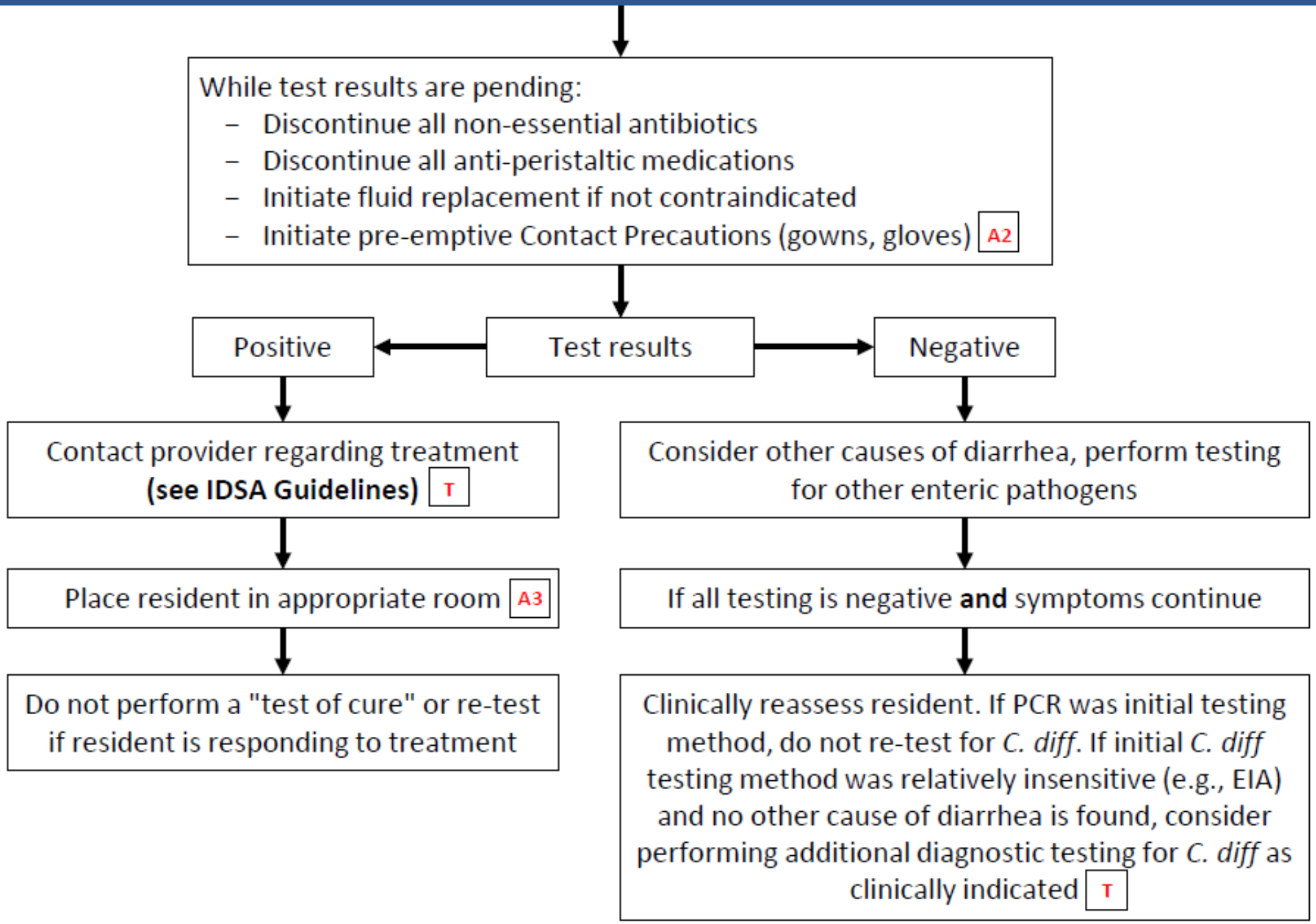
Early Recognition and Detection



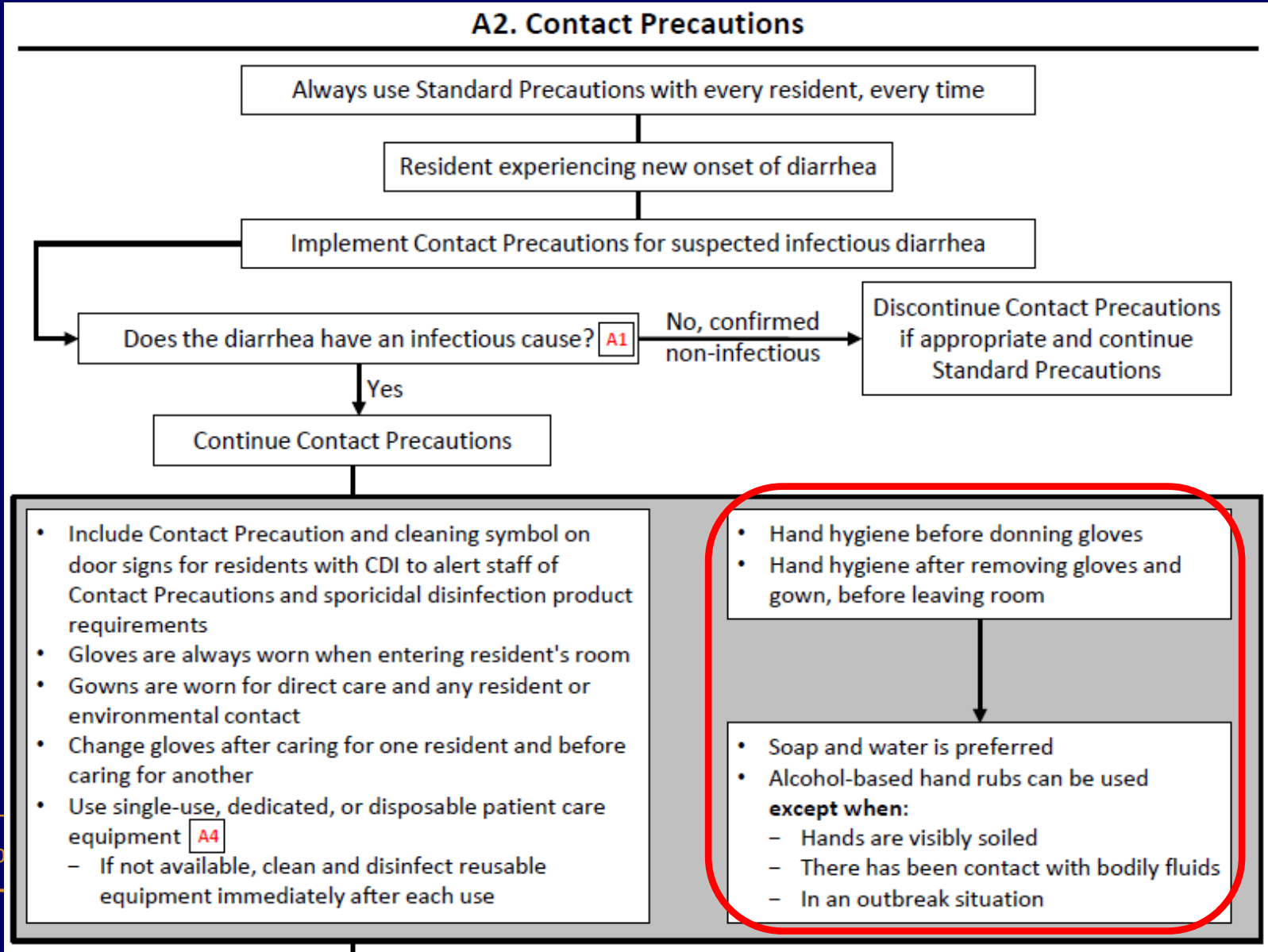
Testing

Diagnostic test	Advantages	Disadvantages	Performance
Nucleic acid amplification (including polymerase chain reaction (PCR))	Excellent sensitivity Excellent specificity Rapid	Expensive Infrastructure for PCR	Direct Sensitivity ≈97% Specificiy≈80% PPV ≈81% NPV ≈97%
Toxin enzyme immunoassay (EIA)	Inexpensive Rapid	Very poor sensitivity Poor specificity	Direct Sensitivity ≈47% Specificity ≈87% PPV ≈76% NPV ≈65%
Glutamate dehydrogenase	Inexpensive Rapid Good sensitivity Good negative predictive value	Very poor specificity Requires use of a second-line test for toxin detection	Indirect, followed by direct
Toxigenic (cytotoxic) culture	Excellent sensitivity Good specificity	Requires second-line test for toxin detection 3- to 4-day turnaround time Requires expertise in culturing C. difficile	Indirect, followed by direct Considered gold-standard in most comparison studies
Cell cytotoxicity	Good sensitivity	2-day turnaround time Requires tissue culture capacity	Indirect

adapted from *Guide to Preventing CDIs*, APIC, 2013; Humphries et al. 2013


While test results are pending:
– Discontinue all non-essential antibiotics
– Discontinue all anti-peristaltic medications
– Initiate fluid replacement if not contraindicated
– Initiate pre-emptive Contact Precautions (gowns, gloves) A2
Test results
Positive
Negative
Contact provider regarding treatment (see IDSA Guidelines) T
Place resident in appropriate room A3
Do not perform a "test of cure" or re-test if resident is responding to treatment
Consider other causes of diarrhea, perform testing for other enteric pathogens
If all testing is negative and symptoms continue
Clinically reassess resident. If PCR was initial testing method, do not re-test for C. diff. If initial C. diff testing method was relatively insensitive (e.g., EIA) and no other cause of diarrhea is found, consider performing additional diagnostic testing for C. diff as clinically indicated T

Contact Precautions



Hand hygiene and *C. difficile*

- Spores may be difficult to eradicate even with excellent hand hygiene
- Adherence to GLOVE USE & Contact Precautions is fundamental!

Hand Hygiene Product	Log_{10} Reduction
Tap water	0.76
4% CHD antimicrobial hand wash	0.77
Non-antimicrobial hand wash	0.78
Non-antimicrobial body wash	0.86
0.3% triclosan antimicrobial hand wash	0.99
Heavy duty hand cleaner used in manufacturing environments	1.21*

*statistically better

35 Edmonds et al. SHEA 2009; abstract 43

Consider universal glove use on units with high CDI rates

- Maximize all other CDI prevention strategies
- Spores may be difficult to remove from hands
- Asymptomatic carriers may have a role in transmission, although the magnitude of their contribution is uncertain
- Practical screening tests are not available
- Use in addition to Contact Precautions for CDI-positive patients
- Change between patients & perform hand hygiene
- Consider on units with longer lengths of stay
- Enhance environmental cleaning
- Avoid shared medical equipment

Johnson et al. *Am J Med* 1990;88:137-40
Dubberke *Medscape*, March 23, 2015

The Great Debate

USE Both!

Soap & Water

- Detergent
  - Better for biofilms, visible dirt
- Needs access to sink
- No residual activity
- Bacteria, viruses

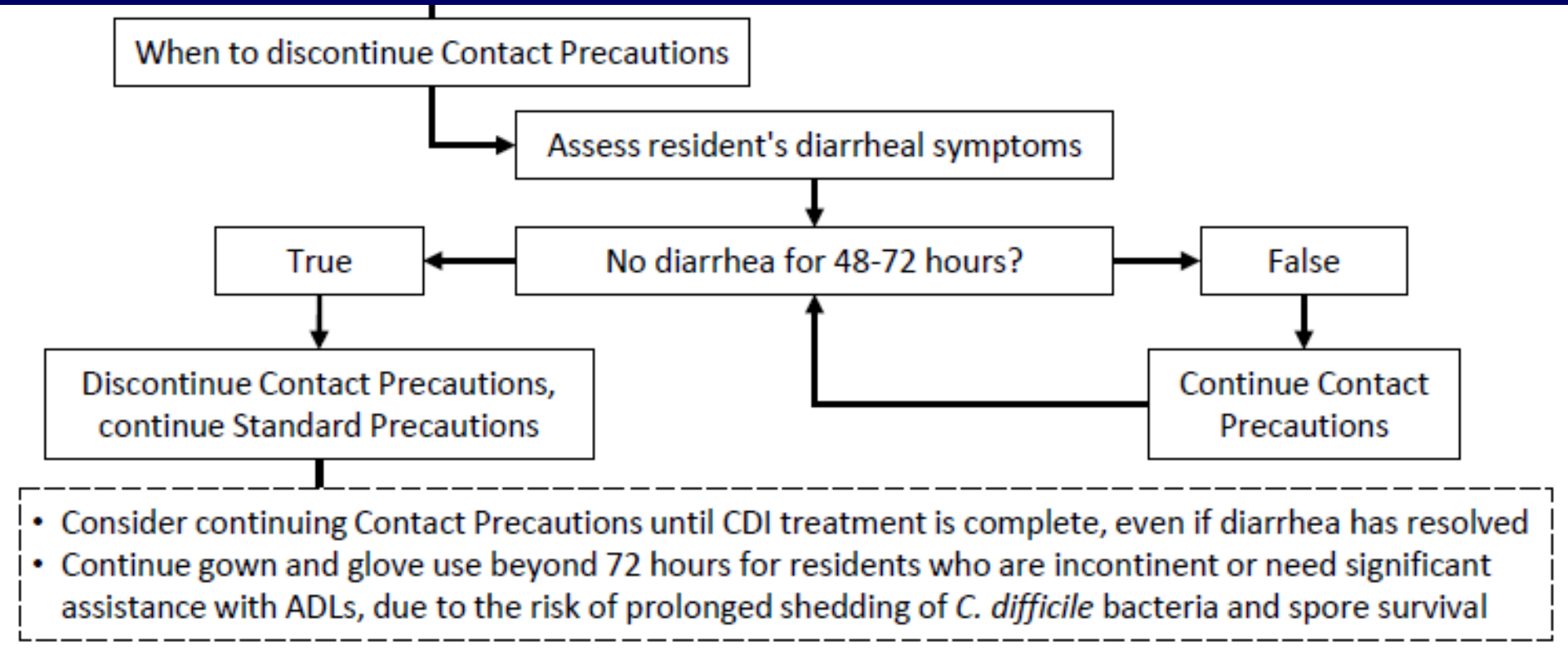
Alcohol Hand Gel

- Disinfectant
- Easy to use
- Residual activity
- Bacteria, viruses
- NOT norovirus
- NOT sporocidal

Discouraging alcohol use may undermine overall hand hygiene program with poor consequences for HAIs

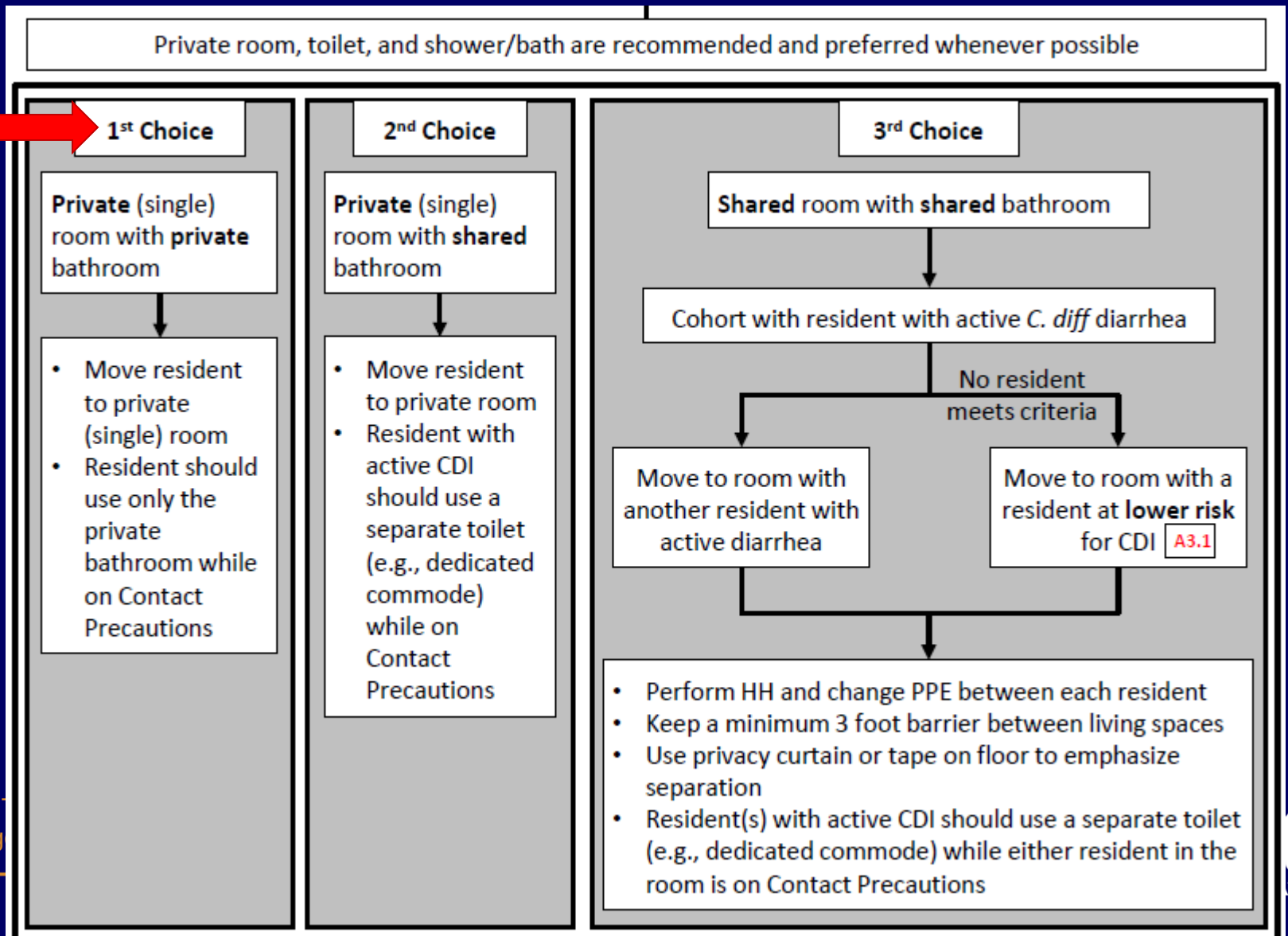
CDC. CDI Toolkit, 2009

When to discontinue Contact Precautions?



Minnesota Department of Health, *Algorithms for CDI in LTCF*, 2014

Room Placement for Residents with CDI



How to choose a "lower" risk resident:

Primary considerations

Not currently taking antibiotics (1st choice)

or has not taken antibiotics in previous 4 weeks (2nd choice)

or has not taken antibiotics in previous 12 weeks (3rd choice)

No history of prior CDI (1st choice)

or has no CDI in previous 4 weeks (2nd choice)

or has no CDI in previous 12 weeks (3rd choice)

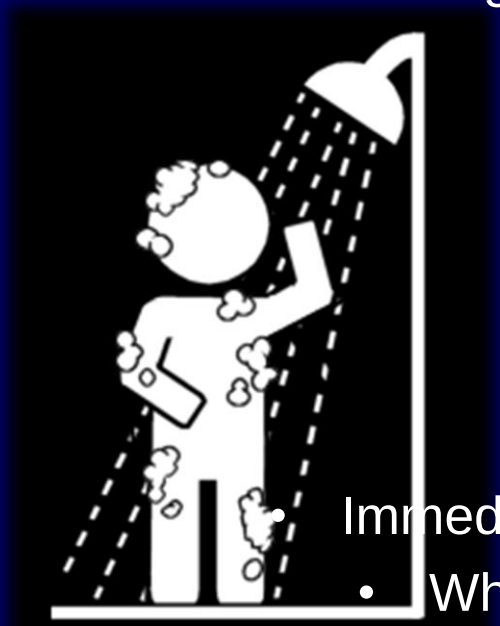
Secondary considerations

- Not currently on proton pump inhibitors (PPIs)
- No GI/bowel condition comorbidities (diverticular disease, inflammatory bowel disease, Crohn's, peptic ulcer disease)
- No PEG/PEJ tube (no tube feeds)
- Not severely immunocompromised (cancer, chemotherapy, or solid organ transplant)
- Not bedbound/heavily dependent on healthcare workers for ADLs

Minnesota Department of Health, *Algorithms for CDI in LTCF*, 2014

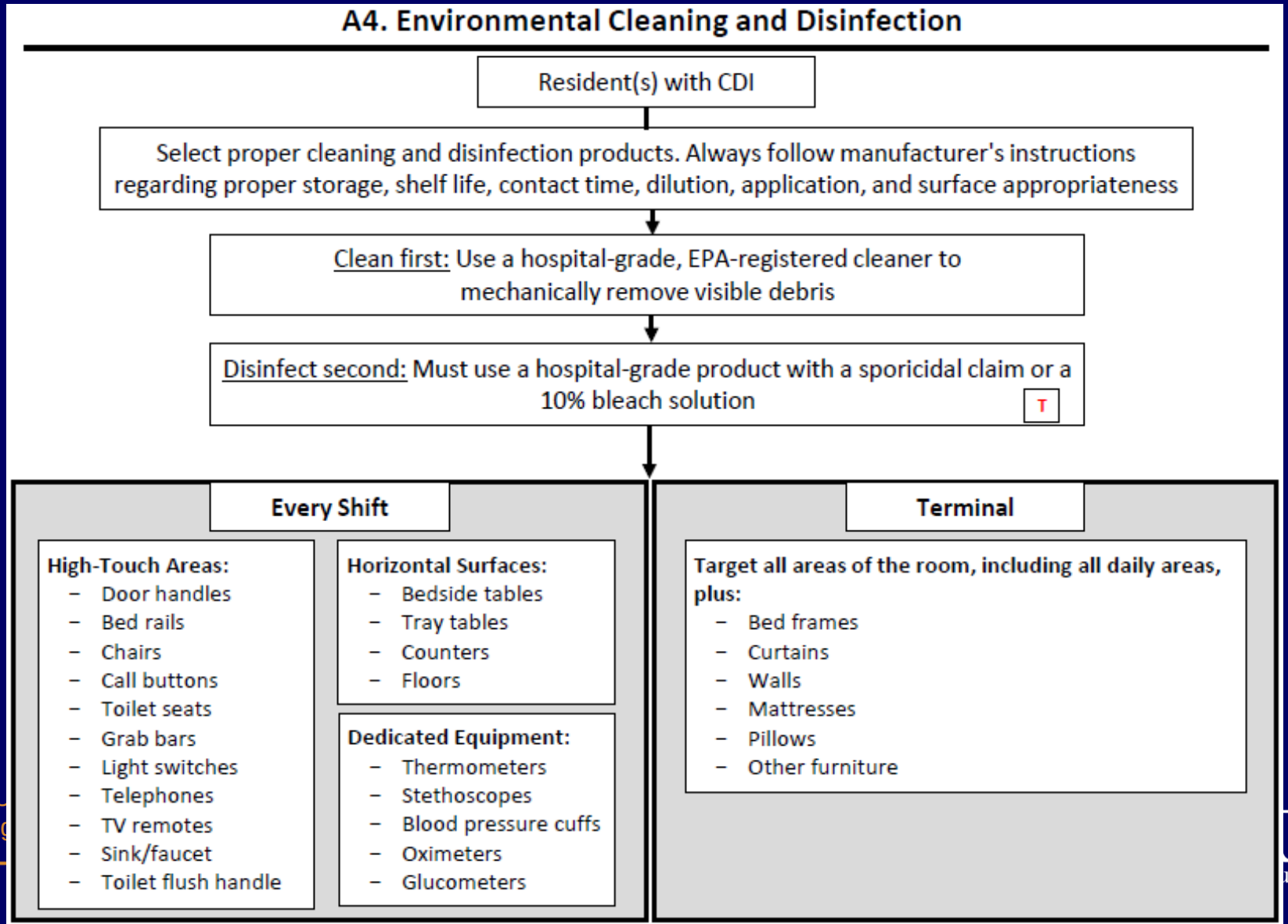
Housekeeping considerations

- Use commode liners, whenever possible
  - Absorbent liners decrease spillage & splash!
- Immediately clean and disinfect commode/toilet and arm rests/grab bars after each use.



- Use the shower, avoid baths
- Immediately clean and disinfect shower area after every use
- Whenever possible, have residents with CDI shower last

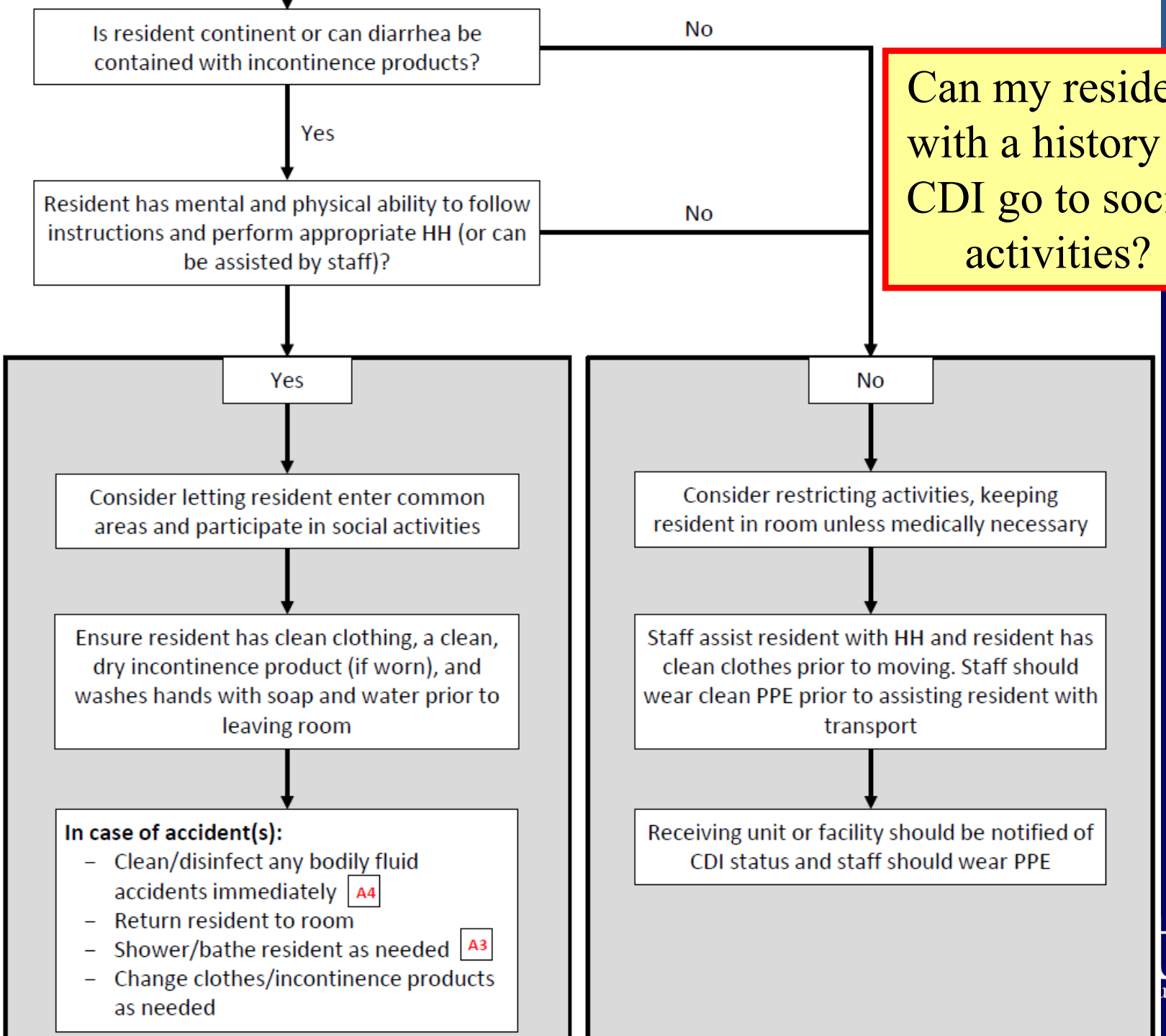
Environmental Cleaning & Disinfection



Bathroom cleaning

- Use commode liners whenever possible; if not using, empty commode in resident's toilet (never in the sink)
- Immediately clean and disinfect commode/toilet (including seat, flush handle, arm rests/grab handles) after each use and/or emptying
- Use a separate cloth for cleaning only the commode/toilet
- Always clean bathroom last, and clean from least contaminated (e.g., doorknobs, light switches, handrails) to most contaminated (e.g., sink handles, seat, flush handle)

- Always clean from clean to dirty and from high to low
- Microfiber cloths are preferred over cotton cloths
- Cloths should not be pre-soaked or re-dipped in an open bucket system
- Discard facility items that cannot be disinfected (bag personal items)
- Clean rooms of residents with active CDI last
- Change cleaning solution, mop, bucket, and cloths after cleaning each room



Can my resident with a history of CDI go to social activities?

“Lower” risk vs. “Higher” risk residents

- Is the resident currently having diarrhea?

  If so, shouldn’t mingle until starts to resolve infection and symptoms
- 3 C’s
- Clean
  - Can the resident maintain hand hygiene?
  - Can the resident change into clean clothes before leaving room?
- Contained
  - Is the resident continent?
  - If in continent, can it be contained?
  - Is the resident on treatment?
- Coherent
  - Can the resident follow instructions, perform hand hygiene, stay out of others’ rooms/personal space?

Antibiotic Stewardship

AWARE, Oregon Public Health

Antibiotic Resistance (AWARE)

- Health Professionals
- Educators
- Child Care
- AWARE Coalition
- AWARE Partners
- AWARE Materials

Public Health > Prevention and Wellness > Safe Living > Antibiotic Resistance (AWARE) > Resources for Health Professionals

Resources for Health Professionals

Google: AWARE Oregon

Oregon Alliance Working for Antibiotic Resistance Education (**AWARE**) is dedicated to reducing the problem of antibiotic-resistant bacteria in Oregon. Clearly, health care professionals have an important role in this initiative.

Research shows that adverse health outcomes are rare when providers are conservative in their prescribing of antibiotics.

Research also shows that patient satisfaction increases in direct proportion to the health care provider's commitment to educating patients about self-care and symptom management for conditions where antibiotics are unnecessary. Evidence shows that patient satisfaction does not increase by fulfilling a patient's or parent's expectation of receiving an antibiotics prescription when requested.

For the Public

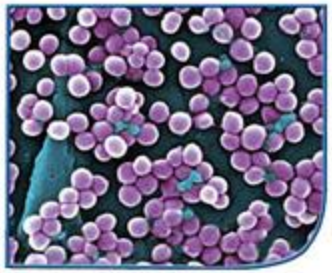
- Información en Español
- Safe Antibiotic Use
- Get Smart Week

Contact Us

- AWARE Program

The following are resources for health care professionals to support the judicious use of antibiotics.

Hot Topics



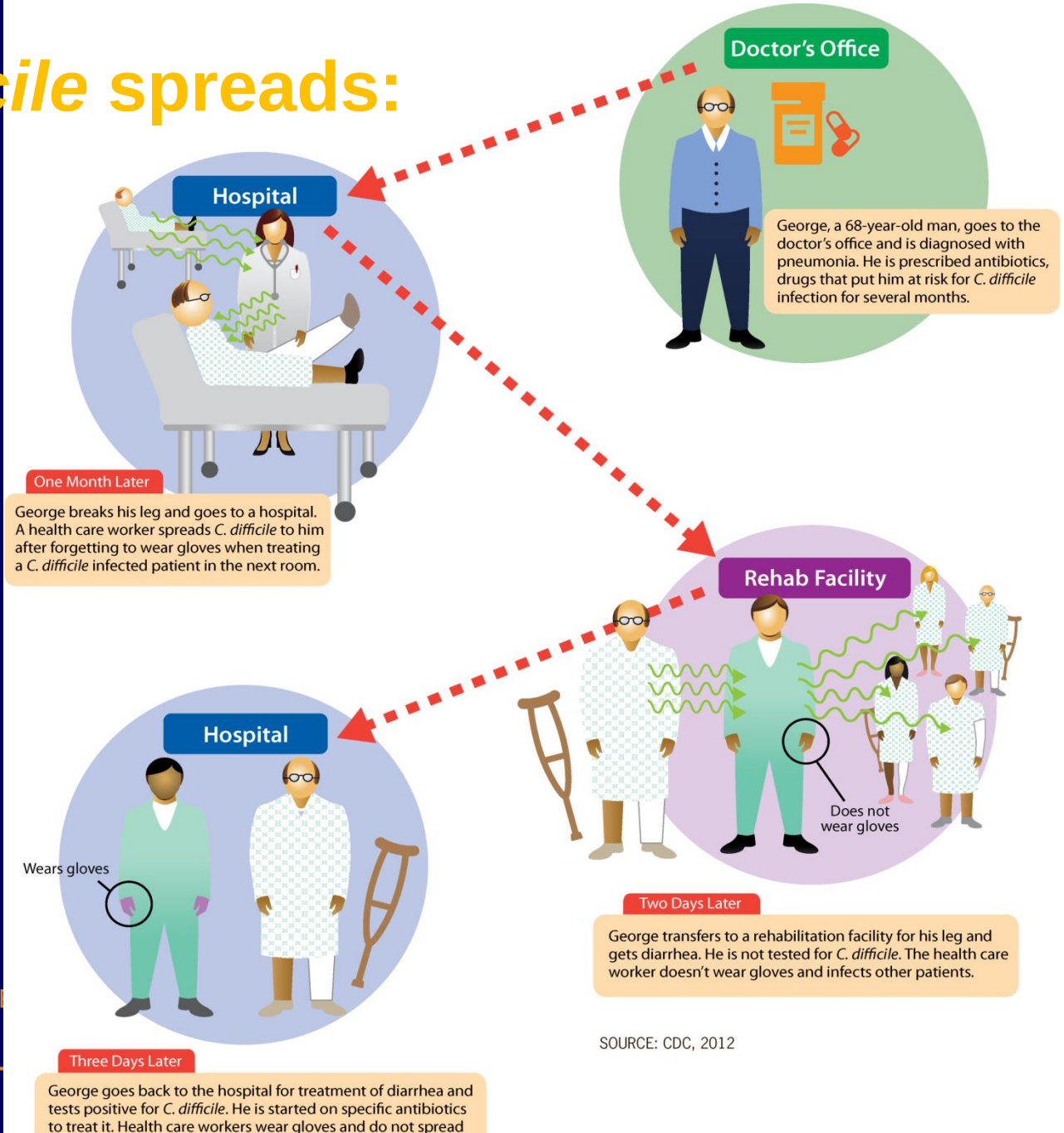
Common Medications used for CDI

	Route	Dose	Pros/Cons
Metronidazole	PO IV	500 mg TID, 10–14d 500 mg q8h	Metallic taste Medication interactions IV for severe infections with vanco
Vancomycin	PO	125 mg QID, 10–14d	Frequent dosing Expensive
Fidoxomicin	PO	200 mg BID, 10d	Newly approved; may be related to increased recurrence
Nitazoxanide	PO	500 mg BID, 10d	Cheap Evidence pending to prove non-inferior to metronidazole and vancomycin
Stool transplant	NG or rectal	per protocol	Specialty centers Donor screening FDA special license New adverse effects appearing
Probiotics	PO	per product	Adjunct; may decrease risk of primary infection. Not for use in immunocompromised patients or neonates.

Interfacility Transfer Communication

- Inadequate precautions spread MDROs
- Awareness of MDRO or other pathogens before and at time of transfer allows receiving facility to prepare
- Information available across multiple types of health care facilities
  - Need same information even if different actions
  - E.g., MRSA colonization in a hospital vs. LTCF
- Medical transport needs high-level information
  - E.g., type of precautions

How *C. difficile* spreads:



Rule 333-019-0052

1. When a referring facility transfers or discharges a patient who is infected or colonized with a multidrug-resistant organism (MDRO) or pathogen which warrants Transmission-based Precautions, it must include written notification of the infection or colonization to the receiving facility in transfer documents. The referring facility must ensure that the documentation is readily accessible to all parties involved in patient transfer (for example, referring facility, medical transport, emergency department, receiving facility).

Rule 333-019-0052

2. When a facility becomes aware that it received in transfer one or more patients with an MDRO or pathogen that warrants Transmission-based Precautions, and that was isolated from a patient specimen collected within 48 hours after transfer, it must notify the referring facility.

3. When a facility becomes aware that it transferred or discharged one or more patients who have an MDRO or pathogen that warrants Transmission-based Precautions, the referring facility must notify the receiving facility.

Rule 333-019-0052

4. If a facility transfers or discharges a patient with *laboratory-confirmed, carbapenemase-producing Enterobacteriaceae***, the facility must notify the local health department communicable disease staff within one working day of the date and destination of the transfer or discharge.

**NOTE: only 9 identified since 2010

Facility Logo

Inter-facility Infection Control Transfer Form

SENDING FACILITY TO COMPLETE FORM and COMMUNICATE TO ACCEPTING FACILITY

Please attach copies of latest culture reports with susceptibilities, if available

Patient/Resident Last Name	First Name	Date of Birth
Print or place Patient Label		

Sending Facility Name	Sending Facility Unit	Sending Facility Phone #

Is the patient/resident currently on antibiotics? □ **NO** □ **YES** **DX:** _____

Does the patient/resident have pending cultures? □ **NO** □ **YES**

Is the patient/resident currently on precautions? □ **NO** □ **YES**

Type of Precautions (check all that apply) □ **Contact** □ **Droplet** □ **Airborne** □ **Other:**_____

Does patient currently have an infection, colonization OR a history of a multidrug-resistant organism (MDRO)?	**Colonization or history** *Check if YES*	**Active infection on treatment** *Check if YES*
MRSA (methicillin-resistant *Staphylococcus aureus)*	☐	☐
VRE (Vancomycin-resistant *Enterococcus*)	☐	☐
C. diff *(Clostridium difficile, CDI)*	☐	☐
Acinetobacter **spp.**, multidrug-resistant	☐	☐
Gram-negative organism resistant to multiple antibiotics* (e.g., E. coli, Klebsiella, Proteus etc.)	☐	☐
CRE (carbapenem-resistant *Enterobacteriaceae*)	☐	☐
Other:**	☐	☐

*Culture report with multiple antibiotics marked resistant (R); send copy of report with susceptibilities.

**Other: lice, scabies, shingles, norovirus, influenza, tuberculosis, etc.

Does the patient/resident currently have any of the following?

- ☐ Cough or requires suctioning
- ☐ Diarrhea
- ☐ Vomiting
- ☐ Incontinent of urine or stool
- ☐ Open wounds or wounds requiring dressing change
- ☐ Drainage (source)_____
- ☐ Central line/PICC
- ☐ Hemodialysis catheter
- ☐ Urinary catheter
- ☐ Suprapubic catheter
- ☐ Percutaneous gastrostomy tube
- ☐ Tracheostomy

Notes:

Printed Name of Person completing form:	**Signature:**	**Date:**	**Name and phone of individual at receiving facility who received information:**

Patient/Resident Last Name	First Name	Date of Birth
Print or place Patient Label		

Sending Facility Name	Sending Facility Unit	Sending Facility Phone #

Is the patient/resident currently on antibiotics? ☐ **NO** ☐ **YES** **DX:** _____

Does the patient/resident have pending cultures? ☐ **NO** ☐ **YES**

Is the patient/resident currently on precautions? ☐ **NO** ☐ **YES**

Type of Precautions (check all that apply) ☐ **Contact** ☐ **Droplet** ☐ **Airborne** ☐ **Other:** _____

Does patient currently have an infection, colonization OR a history of a multidrug-resistant organism (MDRO)?	**Colonization or history** *Check if YES*	**Active infection on treatment** *Check if YES*
MRSA (methicillin-resistant *Staphylococcus aureus)*	☐	☐
VRE (Vancomycin-resistant *Enterococcus*)	☐	☐
C. diff *(Clostridium difficile, CDI)*	☐	☐
Acinetobacter **spp.,** multidrug-resistant	☐	☐
Gram-negative organism resistant to multiple antibiotics* (e.g., E. coli, Klebsiella, Proteus etc.)	☐	☐
CRE (carbapenem-resistant *Enterobacteriaceae*)	☐	☐
Other:**	☐	☐

*Culture report with multiple antibiotics marked resistant (R); send copy of report with susceptibilities.
**Other: lice, scabies, shingles, norovirus, influenza, tuberculosis, etc.

Does the patient/resident currently have any of the following?

- ☐ Cough or requires suctioning
- ☐ Diarrhea
- ☐ Vomiting
- ☐ Incontinent of urine or stool
- ☐ Open wounds or wounds requiring dressing change
- ☐ Drainage (source)_____
- ☐ Central line/PICC
- ☐ Hemodialysis catheter
- ☐ Urinary catheter
- ☐ Suprapubic catheter
- ☐ Percutaneous gastrostomy tube
- ☐ Tracheostomy

Sample IFT form

SENDING FACILITY TO COMPLETE FORM and COMMUNICATE TO ACCEPTING FACILITY

Please attach copies of latest culture reports with susceptibilities, if available

Patient/Resident Last Name	First Name	Date of Birth
Print or place Patient Label		

Sending Facility Name	Sending Facility Unit	Sending Facility Phone #

Is the patient/resident currently on antibiotics? □ **NO** □ **YES** **DX:** _____

Does the patient/resident have pending cultures? □ **NO** □ **YES**

Is the patient/resident currently on precautions? □ **NO** □ **YES**

Type of Precautions (check all that apply) □ **Contact** □ **Droplet** □ **Airborne** □ **Other:** _____

Sample IFT form

Does patient currently have an infection, colonization OR a history of a multidrug-resistant organism (MDRO)?	Colonization or history *Check if YES*	Active infection on treatment *Check if YES*
MRSA (methicillin-resistant *Staphylococcus aureus*)	☐	☐
VRE (Vancomycin-resistant *Enterococcus*)	☐	☐
C. diff (*Clostridium difficile, CDI*)	☐	☐
***Acinetobacter* spp.,** multidrug-resistant	☐	☐
Gram-negative organism resistant to multiple antibiotics* (e.g., E. coli, Klebsiella, Proteus etc.)	☐	☐
CRE (carbapenem-resistant *Enterobacteriaceae*)	☐	☐
Other:**	☐	☐

*Culture report with multiple antibiotics marked resistant (R); send copy of report with susceptibilities.
**Other: lice, scabies, shingles, norovirus, influenza, tuberculosis, etc.

For a copy of the form, go to:
https://public.health.oregon.gov/DiseasesConditions/CommunicableDisease/HAI/Prevention/Pages/Interfacility-Communication.aspx

Sample IFT form

Does the patient/resident currently have any of the following?

- ☐ Cough or requires suctioning
- ☐ Diarrhea
- ☐ Vomiting
- ☐ Incontinent of urine or stool
- ☐ Open wounds or wounds requiring dressing change
- ☐ Drainage (source)_____
- ☐ Central line/PICC
- ☐ Hemodialysis catheter
- ☐ Urinary catheter
- ☐ Suprapubic catheter
- ☐ Percutaneous gastrostomy tube
- ☐ Tracheostomy

Notes:

Printed Name of Person completing form:	Signature:	Date:	Name and phone of individual at receiving facility who received information:

For a copy of the form, go to: https://public.health.oregon.gov/DiseasesConditions/CommunicableDisease/HAI/Prevention/Pages/Interfacility-Communication.aspx

Summary of Prevention Strategies

High level of scientific evidence
Demonstrated feasibility

CORE

- Contact Precautions for duration of diarrhea
- Hand hygiene per CDC/WHO guidelines
- Clean & disinfect of equipment & environment
- Lab-based notification
- CDI Surveillance
- Education: Everyone!

Some scientific evidence
Variable feasibility

SUPPLEMENTAL

- Contact Precautions beyond diarrhea
- Presumptive precautions for suspect CDI patients
- Add soap & water for hand hygiene leaving CDI
- Universal glove use on units with high CDI rates
- Use bleach to disinfect
- Antimicrobial Stewardship

How to measure progress?

CORE

- Measure compliance with CDC/WHO hand hygiene and Contact Precautions
- Assess adherence to environmental cleaning

SUPPLEMENTAL

- Track use of antibiotics in the facility
  - Associated with CDI
  - Most frequent indications (e.g., urinary tract infections)
- Intensify assessment with process measures

WHAT IS YOUR FACILITY DOING?

Five Moments of CDI Prevention

- Surveillance
- Best practice infection control implementation and competency
- Environmental Hygiene
- Antibiotic Stewardship
- Interfacility Transfer

WHAT IS YOUR 1ST GOAL?

CDC CDI Infections Toolkit, ELC 2009

EXTRA SLIDES

Impact of *C. difficile*

- Hospital-acquired, hospital onset:
  - 165,000 cases
  - $1.3 billion in excess costs
  - 9,000 deaths annually
- Hospital acquired, post-discharge (up to 4 weeks):
  - 50,000 cases
  - $0.3 billion in excess costs
  - 3,000 deaths annually
- Nursing home onset:
  - 263,000 cases
  - $2.2 billion in excess costs
  - 16,500 deaths annually

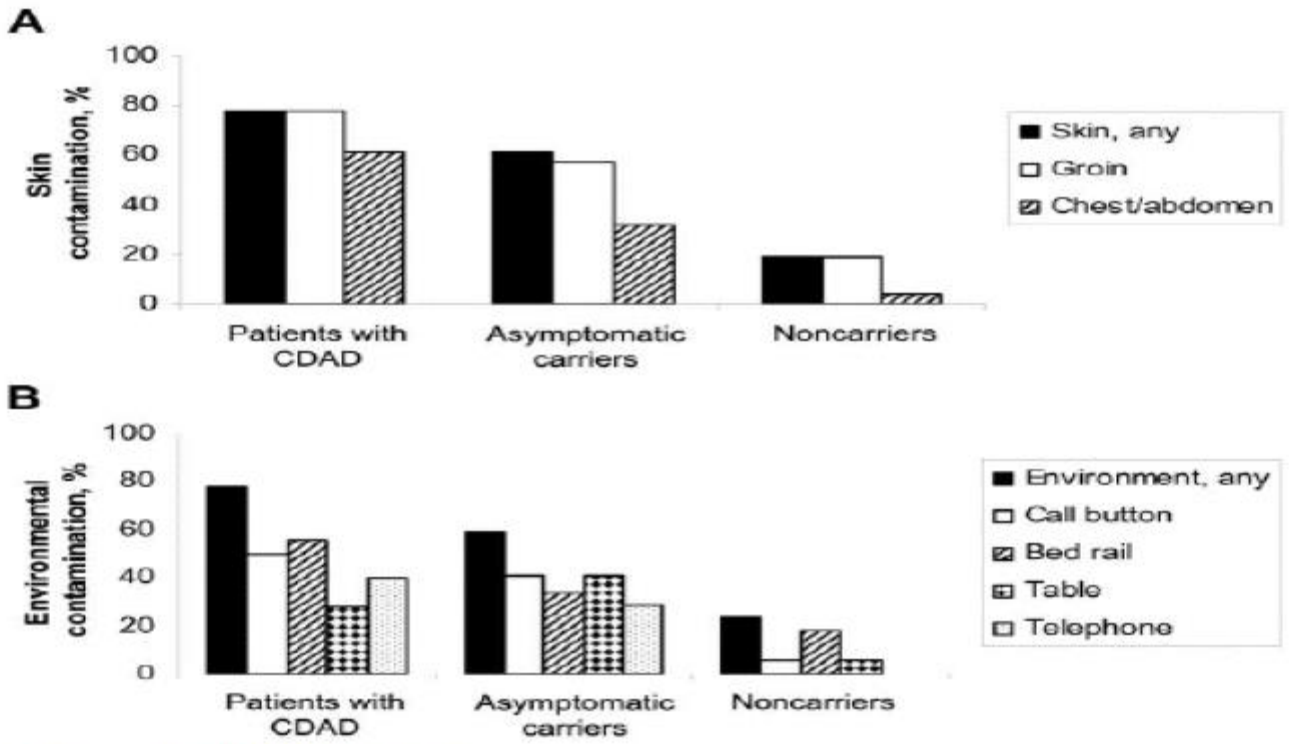
Campbell et al. ICHE 2009;30:523-33.
Dubberke et al. CID 2008;46:497-504.
Dubberke et al. EID 2008;14:1031-8.
Elixhauser et al. HCUP Statistical Brief #50, 2008.

Supplemental Prevention Strategies:

Universal Glove Use

Role of asymptomatic carriers?

Rationale for universal glove use on units with high CDI rates



Riggs et al. Clin Infect Dis 2007;45:992–8.

Supplemental Prevention Strategies: Rationale for Soap and Water: Lack of efficacy of alcohol-based handrub against *C. difficile*

Interventions compared		Mean log reduction (95% CI), $\log_{10}$ CFU/mL
Intervention 1	Intervention 2	
Warm water and plain soap	No hand hygiene	2.14 (1.74–2.54)
Warm water and plain soap	Alcohol-based handrub	2.08 (1.69–2.47)
Cold water and plain soap	No hand hygiene	1.88 (1.48–2.28)
Cold water and plain soap	Alcohol-based handrub	1.82 (1.43–2.22)
Warm water and plain soap	Antiseptic hand wipe	1.57 (1.18–1.96)
Warm water and antibacterial soap	No hand hygiene	1.51 (1.12–1.91)
Warm water and antibacterial soap	Alcohol-based handrub	1.46 (1.06–1.85)
Cold water and plain soap	Antiseptic hand wipe	1.31 (0.92–1.71)
Warm water and antibacterial soap	Antiseptic hand wipe	0.94 (0.55–1.34)
Warm water and plain soap	Warm water and antibacterial soap	0.63 (0.23–1.02)
Antiseptic hand wipe	No hand hygiene	0.57 (0.17–0.96)
Antiseptic hand wipe	Alcohol-based handrub	0.51 (0.12–0.91)
Cold water and plain soap	Warm water and antibacterial soap	0.37 (−0.03 to 0.76)
Warm water and plain soap	Cold water and plain soap	0.26 (−0.14 to 0.66)
Alcohol-based handrub	No hand hygiene	0.06 (−0.34 to 0.45)

Oughton et al. Infect Control Hosp Epidemiol 2009;30:939-44.

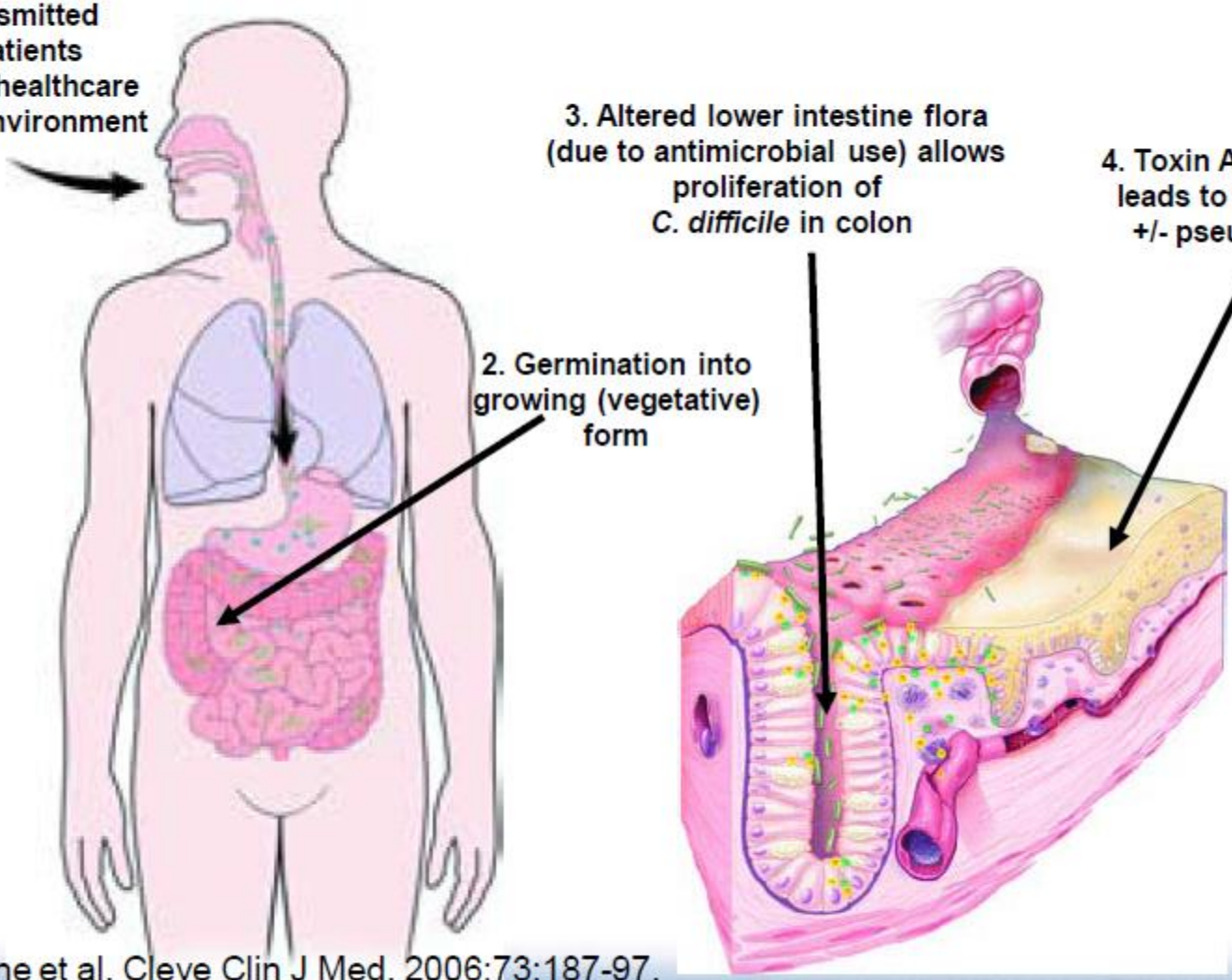
Background: Pathogenesis of CDI

1. Ingestion of spores transmitted from other patients via the hands of healthcare personnel and environment

2. Germination into growing (vegetative) form

3. Altered lower intestine flora (due to antimicrobial use) allows proliferation of *C. difficile* in colon

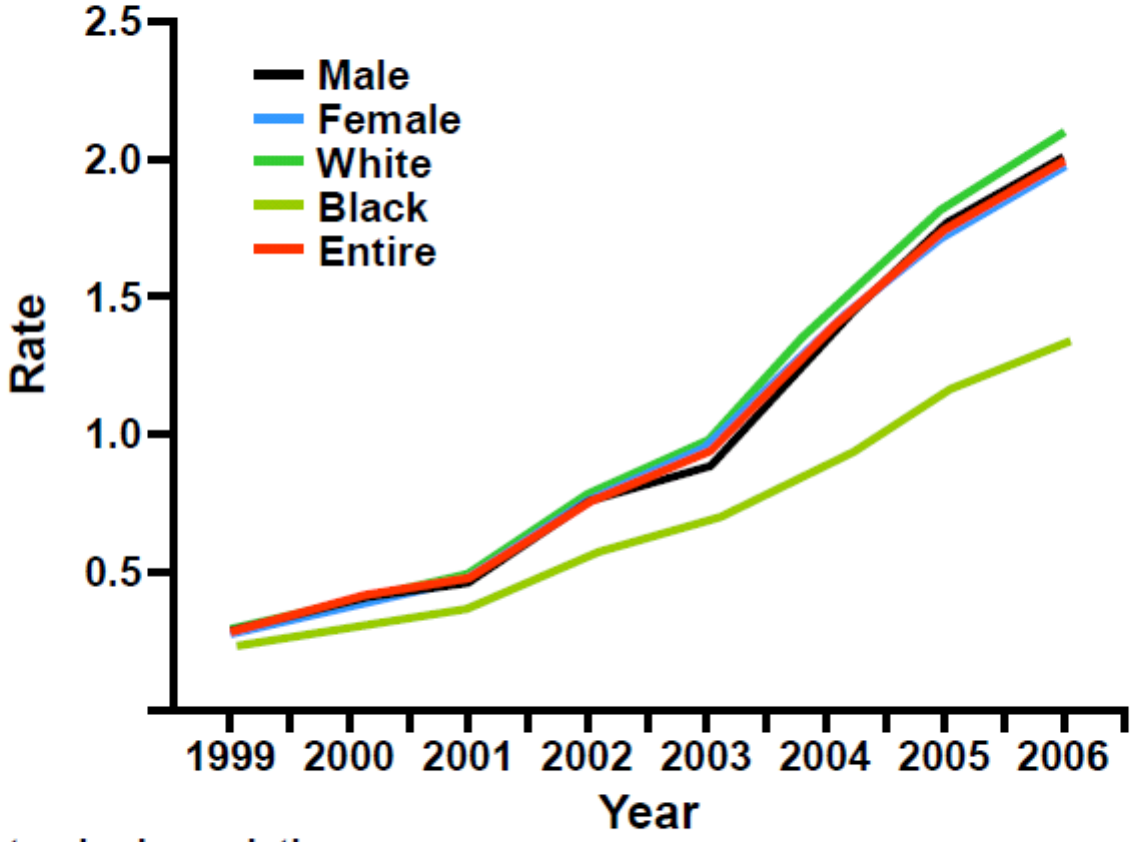
4. Toxin A & B Production leads to colon damage +/- pseudomembrane



Sunenshine et al. Cleve Clin J Med. 2006;73:187-97.

Background: Impact

Age-Adjusted Death Rate* for Enterocolitis Due to *C. difficile*, 1999–2006

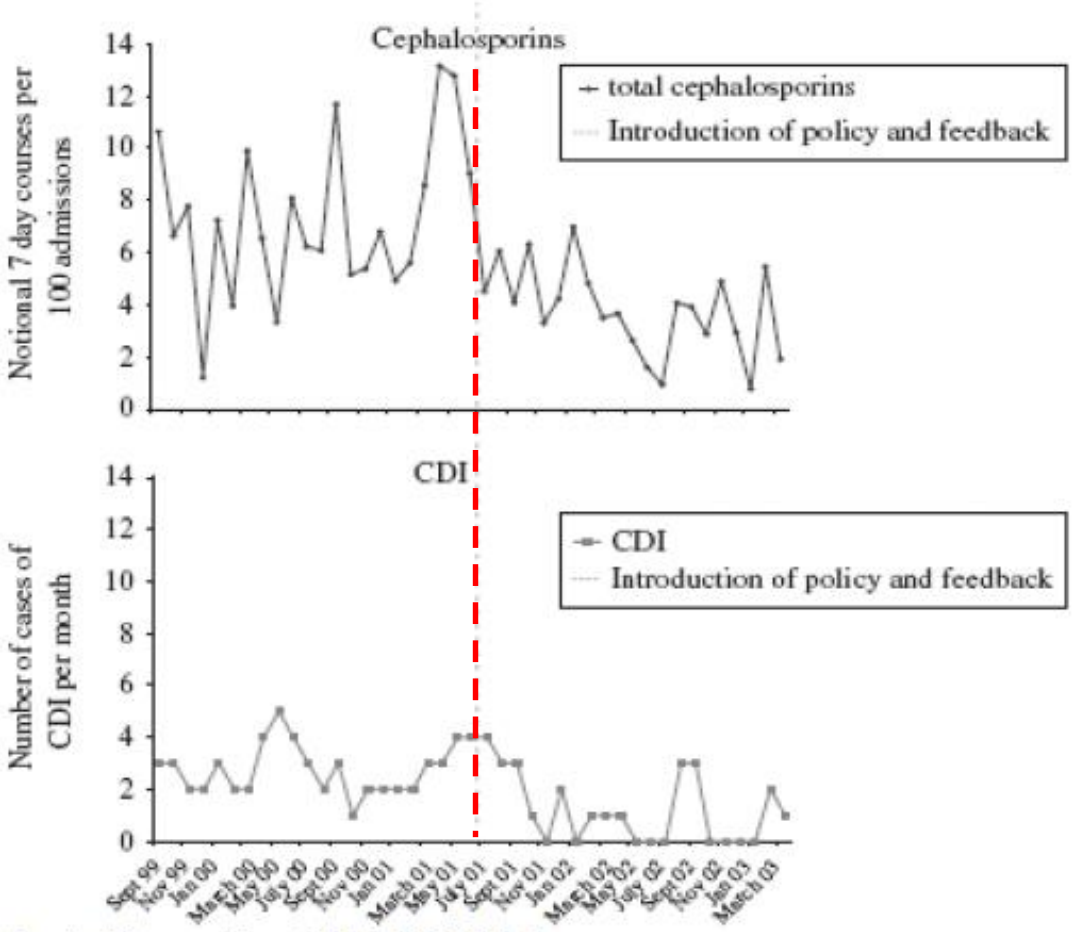


*Per 100,000 US standard population

Heron et al. Natl Vital Stat Rep 2009;57(14).
Available at http://www.cdc.gov/nchs/data/nvsr/nvsr57/nvsr57_14.pdf

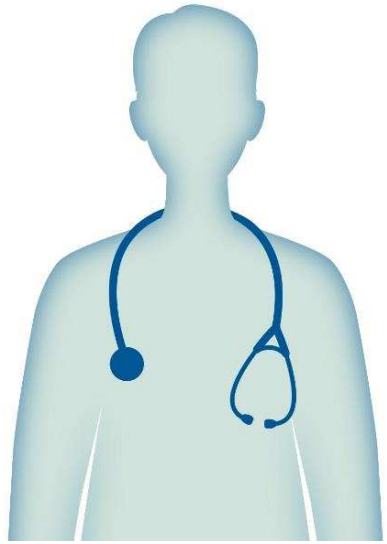
SAFER • HEALTHIER • PEOPLE™

Supplemental Prevention Strategies:
Audit and feedback targeting broad-spectrum antibiotics



Fowler et al. J Antimicrob Chemother 2007;59:990-5.

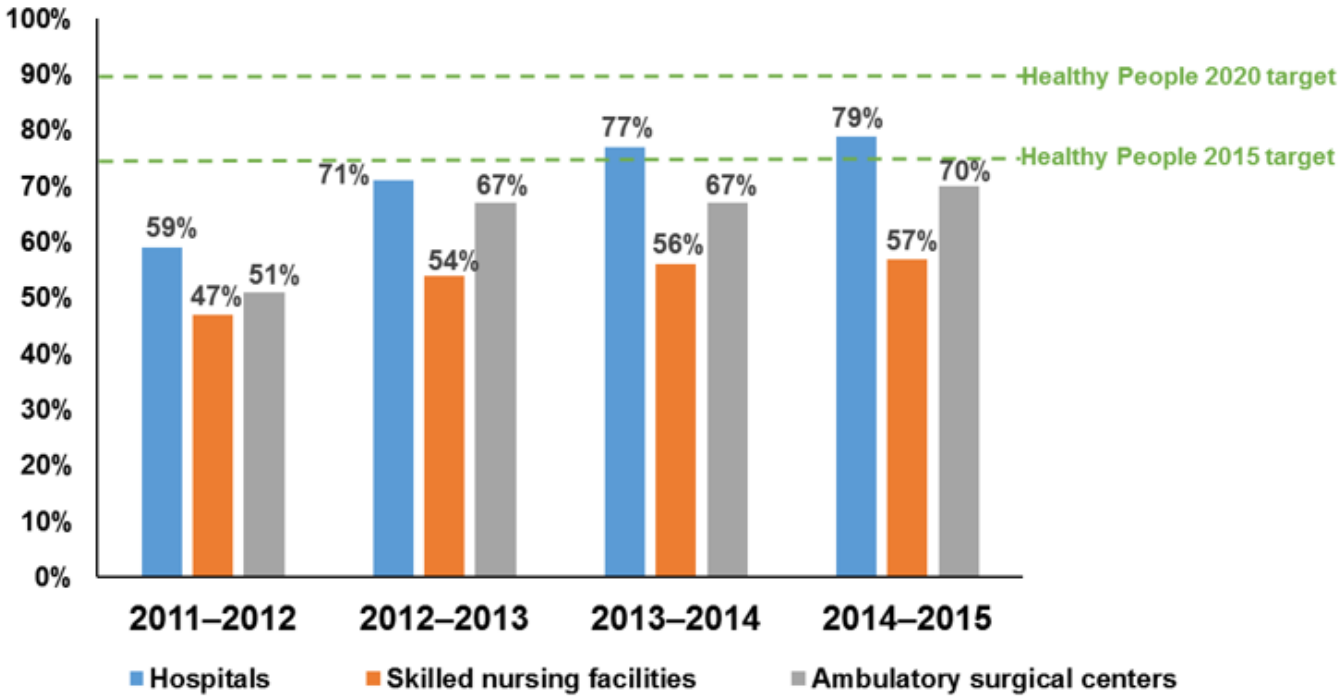
Health care worker influenza vaccination in hospitals, ambulatory surgical centers and skilled nursing facilities: 2014–2015 influenza season



Immunization of health care workers (HCW) is a critical weapon in the fight against influenza virus infection, which causes thousands of hospitalizations and deaths annually, disproportionately impacting vulnerable populations.[11] Infected HCW can inadvertently transmit influenza virus to patients and each other. Oregon has gradually added requirements for mandatory reporting of vaccination rates in health care facilities and has worked to build awareness through widespread educational campaigns.

The U.S. Office of Disease Prevention and Health Promotion has set a series of Healthy People (HP) goals for 2015 and 2020, which includes target rates of HCW vaccination. In aggregate, Oregon hospitals met the 2015 Healthy People target rate of 75% HCW vaccination in both the 2013–2014 and 2014–2015 influenza seasons. Although there were slight increases in rates of HCW vaccination for ambulatory surgical centers and skilled nursing facilities, neither met the 2015 Healthy People target (Figure 13).

Figure 13. Influenza vaccination rates for all health care workers (HCW) by influenza season and health care facility type



What can providers do to increase rates of HCW influenza vaccination?

- Get vaccinated at the beginning of every influenza season
- Encourage all coworkers, including those not employed by the facility (e.g., contractors, volunteers, etc.), to get vaccinated
- Participate in and encourage promotional strategies such as:
  - Mass vaccination fairs
  - Peer vaccination
  - No-cost vaccines
  - Incentive programs
  - Documentation of vaccination status for all HCP and requiring declination forms

CDC information and guidance:
www.cdc.gov/flu/healthcareworkers.htm

Table 17. Aggregate HCW influenza vaccination rate data for the 2014–2015 influenza season for hospitals, ambulatory surgical centers and skilled nursing facilities stratified by HCW type.

Facility and worker type	Total number of HCW eligible for vaccination*	Aggregate rate of influenza vaccination among eligible HCW	Aggregate rate of influenza vaccine declination by eligible HCW	Aggregate rate of unknown vaccination status among eligible HCW	Change in rate of HCW influenza vaccination since 2013
Hospitals					
All health care worker (HCW)	92,648	79%	9%	13%	+3%
Employees	69,637	84%	10%	5%	+1%
Independent practitioners	9,398	58%	3%	40%	0%
Other contractors	1,404	39%	2%	59%	-29%
Students/Volunteers	12,209	67%	5%	28%	+3%
Ambulatory surgical centers					
All HCW	5,039	70%	16%	14%	+4%
Employees	3,026	70%	20%	10%	-1%
Independent practitioners	1,817	70%	9%	21%	+11%
Other contractors	102	61%	23%	17%	+205%
Students/Volunteers	93	78%	4%	17%	+16%
Skilled nursing facilities					
All HCW	15,749	57%	16%	26%	+2%
Employees	13,497	61%	18%	20%	+5%
Independent practitioners	327	54%	5%	41%	+35%
Other contractors	339	57%	9%	34%	0%
Students/Volunteers	1,586	25%	1%	74%	-24%

* Includes total number of health care worker (HCW), including employees, licensed independent practitioners, other contractors, students and volunteers without documented medical contraindication for influenza vaccination

Health care worker vaccination data

Influenza vaccination rates for health care workers during the 2014–2015 influenza season varied by worker type (Table 17). Other contractors and students or volunteers were among the groups with the lowest rates. Of note, for certain types of HCWs, low vaccination rates were driven by the high proportion of workers with unknown vaccination status, suggesting documentation of vaccination status may be the first step towards improving rates (e.g., for independent practitioners and other contractors in hospitals and for students or volunteers in skilled nursing facilities).

Facility-specific tables

Tables 18–20 show facility-specific vaccination, declination and unknown status rates of for all HCW combined. Additionally, there are two columns designating each facility as having met or not having met the Healthy People 2015 (HP2015) and 2020 (HP2020) goals of 75% and 90%, respectively, for HCW vaccination. The last column of the tables includes number of additional HCWs needed to vaccinate to reach the HP2020 target of 90%. Figures 14–16 list vaccination rates for hospitals, ambulatory surgical centers and skilled nursing facilities from highest to lowest.

Table 20. Health care worker (HCW) influenza vaccination rates, rates of declination, and rates of unknown vaccination status for the 2014–2015 influenza season: Oregon skilled nursing facilities (n=137)

Facility name	# HCW eligible for influenza vaccine*	Rate of influenza vaccination for eligible HCW†	Rate of vaccine declination by eligible HCW	Rate of unknown vaccination status for eligible HCW	Change in vaccination rate since last season	Met HP2015 target (75%)	Met HP2020 target (90%)	Additional HCW needed to vaccinate to reach HP2020§
Aidan Senior Living at Reedsport	41	**71%**	2%	27%	-10%	✗	✗	8
Avamere Court at Keizer	140	**61%**	39%	0%	10%	✗	✗	41
Avamere Crestview of Portland	125	**33%**	8%	59%	+74%	✗	✗	72
Avamere Health Services of Rogue Valley	92	**46%**	53%	1%	+21%	✗	✗	41
Avamere Medford at Three Fountains	56	**82%**	9%	9%	+53%	✓	✗	4
Avamere Rehabilitation of Beaverton	110	**39%**	0%	61%	-46%	✗	✗	56
Avamere Rehabilitation of Clackamas	62	**74%**	26%	0%	+34%	✗	✗	10
Avamere Rehabilitation of Coos Bay	68	**78%**	15%	7%	+20%	✓	✗	8
Avamere Rehabilitation of Eugene	98	**18%**	82%	0%	-76%	✗	✗	70
Avamere Rehabilitation of Hillsboro	105	**52%**	19%	29%	+217%	✗	✗	40
Avamere Rehabilitation of King City	109	**37%**	0%	63%	-27%	✗	✗	58
Avamere Rehabilitation of Lebanon	100	**26%**	0%	74%	-35%	✗	✗	64
Avamere Rehabilitation of Oregon City	92	**21%**	5%	74%	-50%	✗	✗	64
Avamere Riverpark Of Eugene	178	**44%**	18%	38%	+46%	✗	✗	82
Avamere Transitional Care at Sunnyside	95	**33%**	0%	67%	-49%	✗	✗	55
Avamere Twin Oaks of Sweet Home	68	**24%**	16%	60%	-52%	✗	✗	45
Avamere of Junction City	54	**70%**	15%	15%	-1%	✗	✗	11
Avamere of Newport Rehabilitation and Specialty Care	56	**41%**	4%	55%	-45%	✗	✗	27
Baycrest Village	231	**94%**	6%	0%	+18%	✓	✓	
Bend Transitional Care	71	**61%**	7%	32%	35%	✗	✗	21
Blue Mountain Care Center	38	**89%**	11%	0%	-4%	✓	✗	0
Care Center East	89	**73%**	27%	0%	+22%	✗	✗	15
Cascade Manor	57	**82%**	18%	0%	-3%	✓	✗	4
Cascade Terrace	136	**53%**	29%	18%	0%	✗	✗	50
Cascade View Nursing and Alzheimer's	66	**27%**	36%	36%	-31%	✗	✗	41
Chehalem Health and Rehabilitation	73	**66%**	27%	7%	+127%	✗	✗	18
Clatsop Care Center	100	**79%**	21%	0%	+24%	✓	✗	11
Coast Fork Nursing Center	65	**74%**	26%	0%	0%	✗	✗	11
Columbia Basin Care Facility	123	**52%**	17%	31%	-32%	✗	✗	47
Columbia Care Center	57	**61%**	39%	0%	-11%	✗	✗	16

Facility name	# HCW eligible for influenza vaccine*	Rate of influenza vaccination for eligible HCW†	Rate of vaccine declination by eligible HCW	Rate of unknown vaccination status for eligible HCW	Change in vaccination rate since last season	Met HP2015 target (75%)	Met HP2020 target (90%)	Additional HCW needed to vaccinate to reach HP2020§
Cornerstone Care Option	82	**72%**	28%	0%	+24%	✗	✗	15
Corvallis Manor Nursing and Rehabilitation Center	147	**62%**	17%	21%	-5%	✗	✗	41
Creswell Health and Rehabilitation Center	63	**68%**	32%	0%	-20%	✗	✗	14
Dallas Retirement Village	338	**31%**	2%	67%	+19%	✗	✗	200
East Cascade Retirement Community	4	**50%**	50%	0%	-30%	✗	✗	2
Empres Hillsboro	131	**15%**	4%	82%	+54%	✗	✗	99
Fair View Transitional Health Center	86	**59%**	37%	3%	+51%	✗	✗	26
Fernhill Estates	29	**72%**	28%	0%	+17%	✗	✗	5
Forest Grove Rehabilitation and Care Center	85	**49%**	0%	51%	-21%	✗	✗	35
French Prairie Nursing and Rehab Center	95	**81%**	17%	2%	+5%	✓	✗	9
Friendsview Manor	175	**49%**	10%	41%	-17%	✗	✗	72
GSS Fairlawn Village	179	**35%**	2%	63%	-28%	✗	✗	99
Gateway Care & Retirement	87	**77%**	23%	0%	+51%	✓	✗	11
Glisan Care Center	85	**93%**	7%	0%	-3%	✓	✓	
Good Samaritan Curry Village	90	**73%**	27%	0%	+54%	✗	✗	15
Good Samaritan Society Eugene Village	70	**60%**	34%	6%	-6%	✗	✗	21
Gracelen Terrace	124	**100%**	0%	0%	0%	✓	✓	
Green Valley Nursing and Rehabilitation Center	135	**90%**	10%	0%	+38%	✓	✓	
Health Care at Foster Creek	188	**90%**	6%	3%	+217%	✓	✓	
Hearthstone Nursing & Rehabilitation Center	118	**72%**	28%	0%	-16%	✗	✗	21
Highland House Nursing and Rehabilitation Center	154	**57%**	43%	0%	-10%	✗	✗	51
Hillside Heights	132	**23%**	22%	55%	-44%	✗	✗	89
Holgate Community	146	**38%**	14%	48%	-24%	✗	✗	76
Holladay Park Plaza	216	**52%**	29%	19%	+38%	✗	✗	82
Hood River Care Center	91	**48%**	1%	51%	-34%	✗	✗	38
Independence Health and Rehab	84	**20%**	4%	76%	-78%	✗	✗	59
La Grande Post Acute Rehab	68	**56%**	38%	6%	-18%	✗	✗	23
Lakeview Gardens	33	**79%**	18%	3%	‡	✓	✗	4
Laurel Hill Nursing and Rehab Center	21	**43%**	19%	38%	-43%	✗	✗	10
Laurelhurst Village	220	**35%**	14%	51%	+25%	✗	✗	120
Lawrence Convalescent Center	14	**64%**	29%	7%	+32%	✗	✗	4
Lifecare Center McMinnville	108	**77%**	22%	1%	-8%	✓	✗	14
Lifecare Center of Coos Bay	98	**59%**	31%	10%	+44%	✗	✗	30

Facility name	# HCW eligible for influenza vaccine*	Rate of influenza vaccination for eligible HCW†	Rate of vaccine declination by eligible HCW	Rate of unknown vaccination status for eligible HCW	Change in vaccination rate since last season	Met HP2015 target (75%)	Met HP2020 target (90%)	Additional HCW needed to vaccinate to reach HP2020§
Linda Vista Nursing & Rehabilitation	108	**33%**	38%	29%	+8%	✗	✗	61
Marian Estates	138	**61%**	33%	7%	+30%	✗	✗	40
Marquis Autumn Hills	111	**73%**	23%	4%	+22%	✗	✗	19
Marquis Centennial	195	**95%**	5%	0%	+4%	✓	✓	
Marquis Forest Grove	71	**79%**	21%	0%	-4%	✓	✗	8
Marquis Mt Tabor	192	**55%**	31%	14%	+28%	✗	✗	67
Marquis Newberg	90	**87%**	7%	7%	-3%	✓	✗	3
Marquis Oregon City Post Acute Rehab	96	**67%**	15%	19%	+424%	✗	✗	22
Marquis Piedmont	129	**75%**	19%	5%	+6%	✓	✗	19
Marquis Plum Ridge	128	**48%**	0%	52%	-5%	✗	✗	54
Marquis Post Acute Rehab at Mill Park	78	**62%**	38%	0%	‡	✗	✗	22
Marquis Post Acute Rehabilitation at Hope Village	118	**56%**	8%	36%	-13%	✗	✗	40
Marquis Silver Gardens	38	**100%**	0%	0%	+3%	✓	✓	
Marquis Springfield	217	**80%**	20%	0%	+73%	✓	✗	22
Marquis Vermont Hills	98	**95%**	5%	0%	+19%	✓	✓	
Marquis Wilsonville	123	**85%**	15%	0%	+74%	✓	✗	6
Mary's Woods at Marylhurst	383	**44%**	6%	49%	-13%	✗	✗	175
Maryville Nursing Home	275	**48%**	6%	46%	-15%	✗	✗	117
Meadow Park	68	**72%**	21%	7%	-7%	✗	✗	12
Mennonite Home	215	**63%**	1%	35%	+9%	✗	✗	58
Milton Freewater Health and Rehabilitation Center	64	**64%**	36%	0%	-28%	✗	✗	17
Milwaukie Convalescent Center	131	**28%**	12%	60%	-11%	✗	✗	81
Mirabella Portland	249	**43%**	24%	34%	-2%	✗	✗	118
Molalla Manor Care Center	73	**95%**	5%	0%	+3%	✓	✓	
Myrtle Point Care Center	59	**56%**	15%	29%	-4%	✗	✗	20
Nehalem Valley Care Center	50	**92%**	8%	0%	+13%	✓	✓	
Ochoco Care Center	52	**81%**	19%	0%	-2%	✓	✗	5
Oregon City Health Care Center	53	**62%**	38%	0%	+43%	✗	✗	15
Oregon Veterans' Home	272	**63%**	23%	15%	+35%	✗	✗	75
Pacific Health & Rehabilitation	75	**69%**	29%	1%	+32%	✗	✗	16
Park Forest Care Center	65	**49%**	15%	35%	+10%	✗	✗	27
Pilot Butte Rehab	50	**60%**	28%	12%	-1%	✗	✗	15
Pioneer Nursing Home	60	**0%**	0%	100%	-100%	✗	✗	54
Porthaven Care Center	112	**93%**	6%	1%	+63%	✓	✓	

Facility name	# HCW eligible for influenza vaccine*	Rate of influenza vaccination for eligible HCW†	Rate of vaccine declination by eligible HCW	Rate of unknown vaccination status for eligible HCW	Change in vaccination rate since last season	Met HP2015 target (75%)	Met HP2020 target (90%)	Additional HCW needed to vaccinate to reach HP2020§
Portland Health and Rehab	76	**74%**	26%	0%	+3%	✗	✗	12
Presbyterian Community Care Center	137	**47%**	3%	50%	-6%	✗	✗	58
Prestige Care & Rehab of Menlo Park	100	**47%**	53%	0%	-49%	✗	✗	43
Prestige Care and Rehab of Reedwood	66	**83%**	12%	5%	+71%	✓	✗	4
Prestige Oakwood	60	**43%**	57%	0%	-12%	✗	✗	28
Prestige Post Acute Care & Rehab Center -Gresham	69	**81%**	19%	0%	‡	✓	✗	6
Providence Benedictine	326	**75%**	12%	13%	+56%	✓	✗	50
Providence Child Center	256	**77%**	2%	22%	+13%	✓	✗	34
Redmond Health Care Center	61	**41%**	38%	21%	-46%	✗	✗	30
Regency Albany	109	**39%**	13%	49%	-54%	✗	✗	56
Regency Florence	79	**68%**	32%	0%	-18%	✗	✗	17
Regency Gresham Nursing and Rehabilitation Center	155	**58%**	15%	27%	-10%	✗	✗	50
Regency Hermiston	100	**77%**	23%	0%	+24%	✓	✗	13
Robison Jewish Health Center	435	**44%**	3%	53%	-30%	✗	✗	199
Rogue Valley Manor	88	**25%**	0%	75%	-1%	✗	✗	57
Rose City Nursing Home	39	**82%**	18%	0%	+420%	✓	✗	3
Rose Haven Nursing Center	100	**81%**	11%	8%	+3%	✓	✗	9
Rose Linn Care Center	95	**26%**	40%	34%	-36%	✗	✗	61
Rose Schnitzer Manor	363	**23%**	3%	74%	‡	✗	✗	245
Rose Villa Senior Living	180	**62%**	14%	24%	-3%	✗	✗	50
Royale Gardens Health and Rehabilitation Center	195	**62%**	29%	10%	+17%	✗	✗	56
Salem Transitional Care	80	**89%**	4%	8%	‡	✓	✗	1
Sheridan Care Center	92	**51%**	14%	35%	+7%	✗	✗	36
Sherwood Park Nursing & Rehab Center	123	**33%**	15%	53%	-14%	✗	✗	71
South Hills Rehabilitation Center	117	**97%**	3%	0%	+5%	✓	✓	
The Dalles Health and Rehabilitation	56	**63%**	27%	11%	-30%	✗	✗	15
The Pearl	148	**28%**	5%	67%	+21%	✗	✗	91
The Village at Hillside	159	**0%**	0%	100%	‡	✗	✗	143
Tierra Rose Care Center	145	**69%**	26%	5%	+3%	✗	✗	31
Timberview Care Center	97	**98%**	2%	0%	0%	✓	✓	
Town Center Village Rehab	49	**76%**	24%	0%	+3%	✓	✗	7
Trinity Mission Health & Rehab of Portland, LLC	39	**46%**	54%	0%	1+06%	✗	✗	17
Umpqua Valley Nursing and Rehabilitation Center	121	**64%**	27%	9%	-1%	✗	✗	32
Valley West Health Care Center	150	**75%**	24%	1%	+49%	✓	✗	23
Village Health Care	110	**47%**	53%	0%	+34%	✗	✗	47

Facility name	# HCW eligible for influenza vaccine*	Rate of influenza vaccination for eligible HCW†	Rate of vaccine declination by eligible HCW	Rate of unknown vaccination status for eligible HCW	Change in vaccination rate since last season	Met HP2015 target (75%)	Met HP2020 target (90%)	Additional HCW needed to vaccinate to reach HP2020§
Village Manor	63	**84%**	16%	0%	+201%	✔	✘	4
West Hills Health and Rehab	181	**47%**	4%	49%	-36%	✘	✘	78
Willamette View Health Center	110	**45%**	0%	55%	+22%	✘	✘	49
Willowbrook Terrace	72	**92%**	8%	0%	+20%	✔	✔	
Windsor Health and Rehabilitation	61	**80%**	20%	0%	+25%	✔	✘	6

* Includes total number of health care worker (HCW), including employees, licensed independent practitioners, other contractors, students and volunteers without documented medical contraindication for influenza vaccination

† Calculated as: (total number of HCW vaccinated at the facility + total number of HCW vaccinated elsewhere) / (total number of HCW eligible for influenza vaccination)

‡ Percentage change not calculated if vaccination rate was 0% during the 2013–2014 influenza season, or if the skilled nursing facility did not report influenza vaccination to OHA in 2013–2014

§ Calculated as: (total HCW eligible for vaccination * 0.9) – (total number of HCW vaccinated at the facility + total number of HCW vaccinated elsewhere)

Figure 16. Skilled nursing facilities sorted by HCW influenza vaccination rates for the 2014–2015 influenza season (n=137)

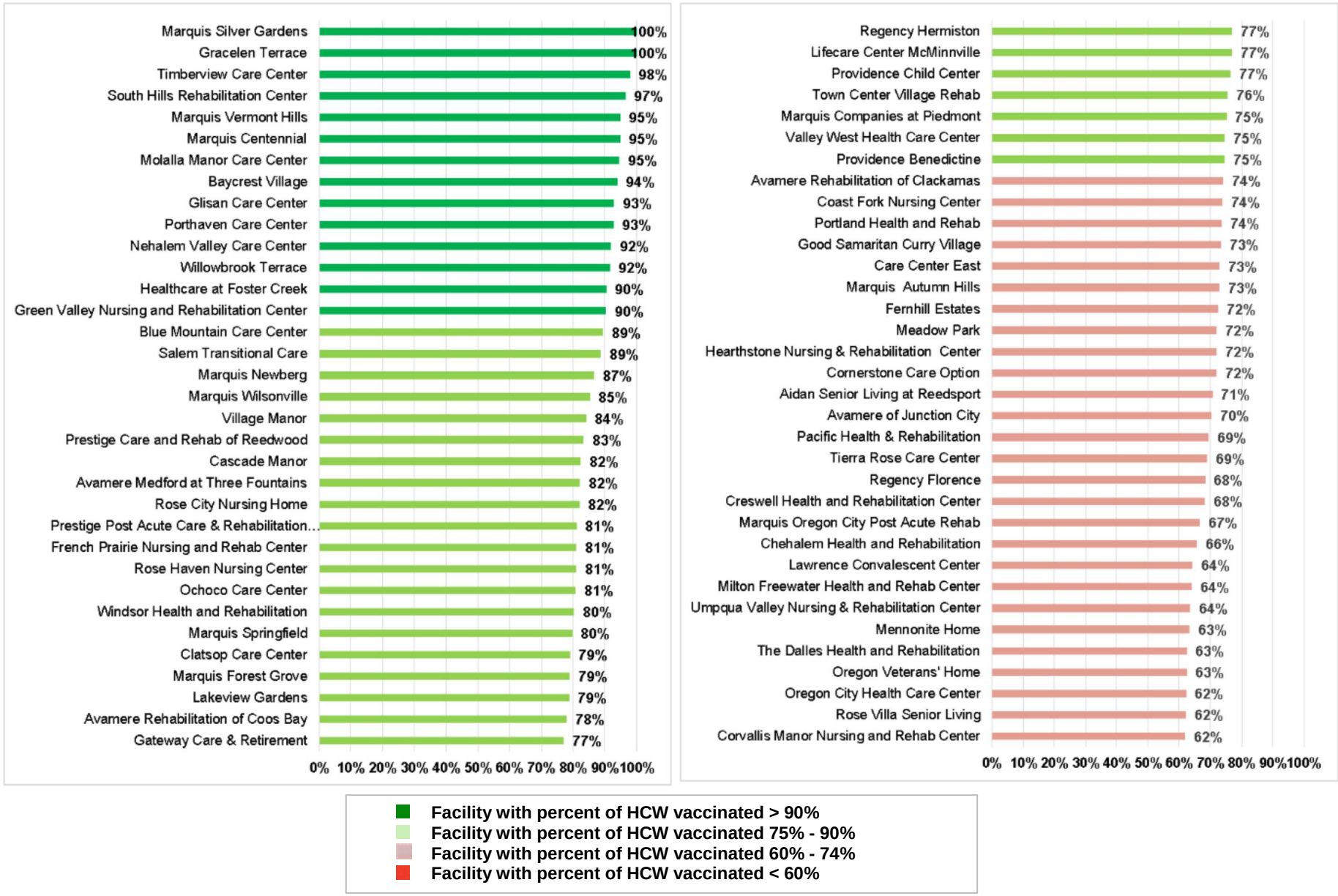
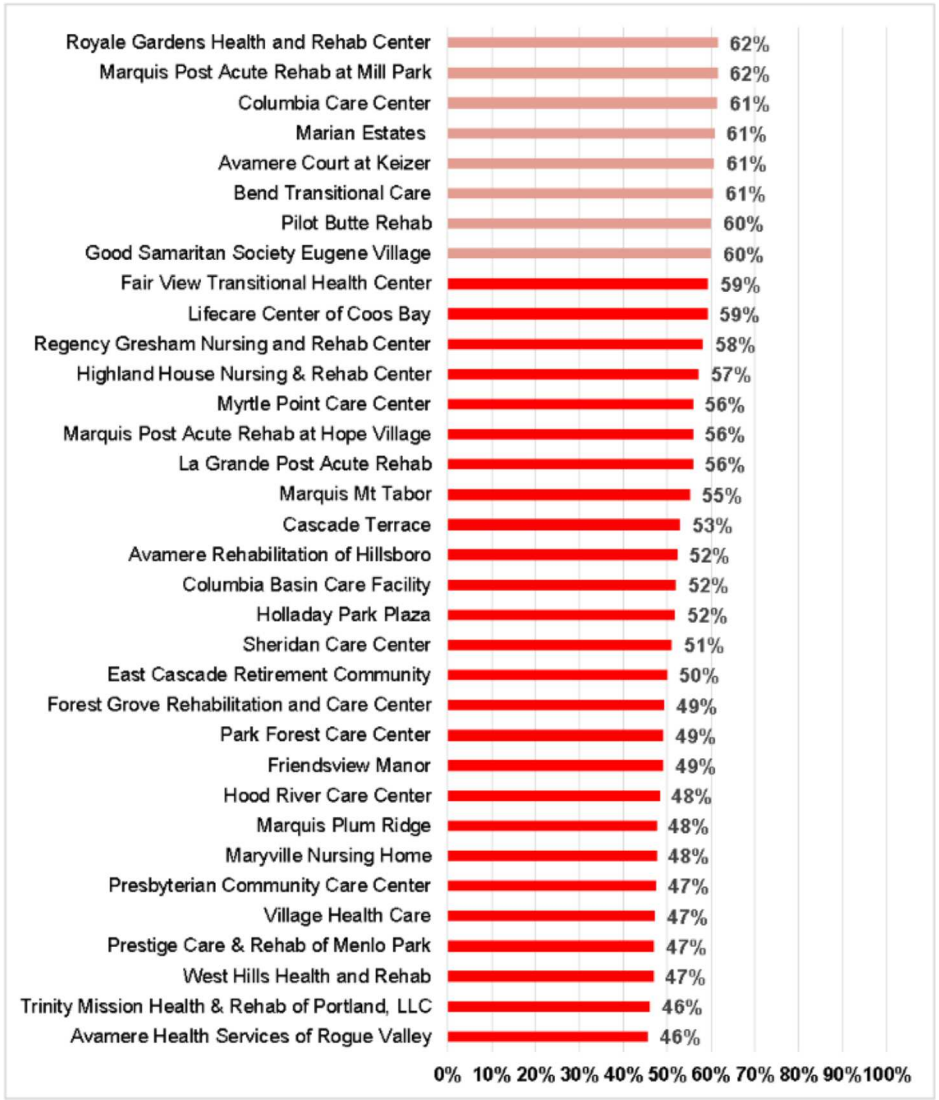
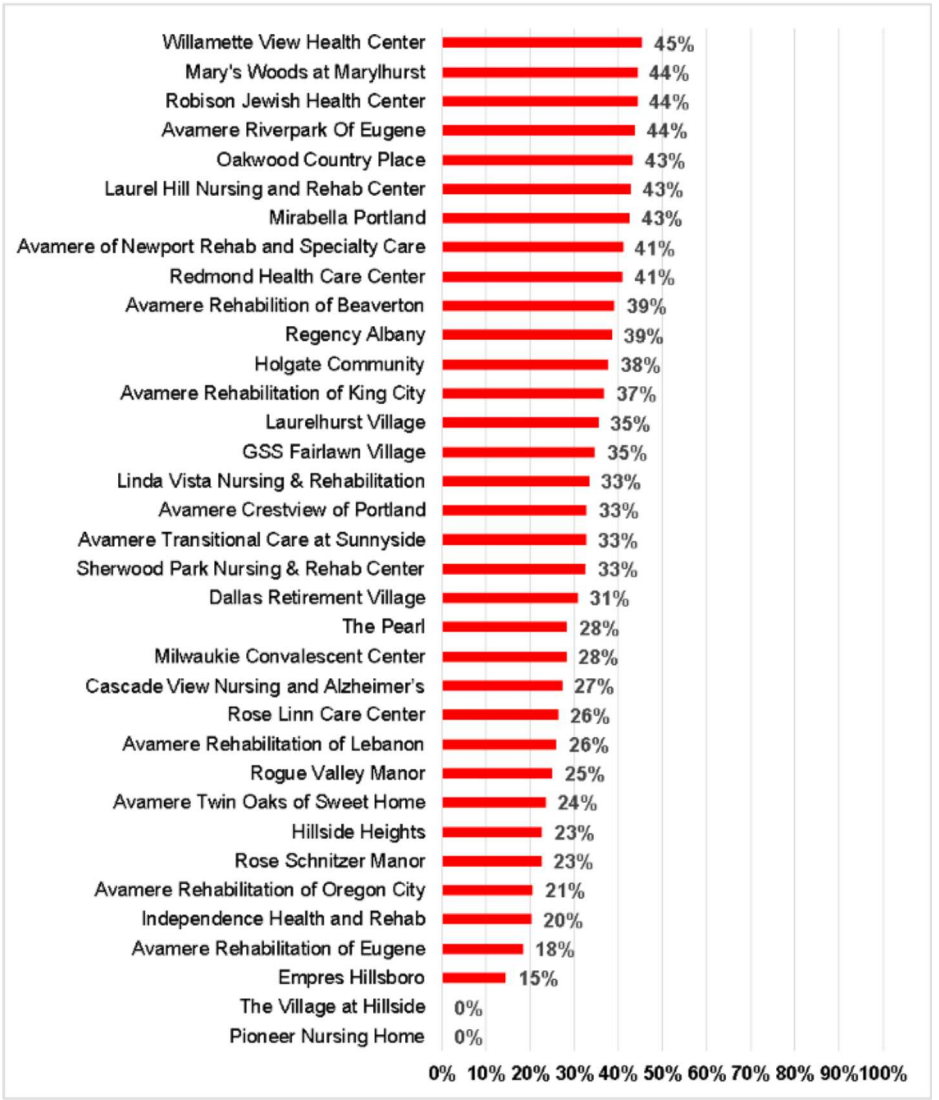
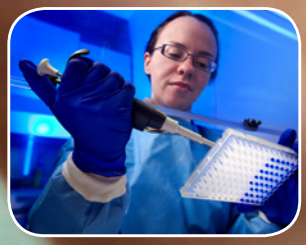


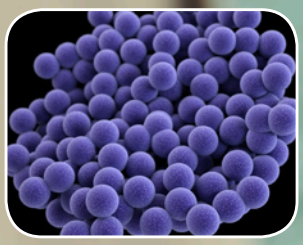
Figure 16 (continued). Skilled nursing facilities sorted by HCW influenza vaccination rates for the 2014–2015 influenza season (n=137)

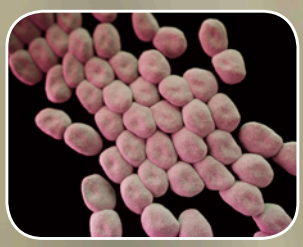


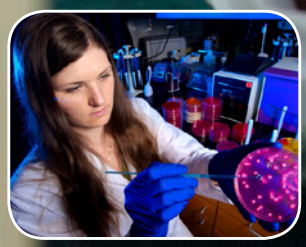


Facility with percent of HCW vaccinated > 90%
Facility with percent of HCW vaccinated 75% - 90%
Facility with percent of HCW vaccinated 60% - 74%
Facility with percent of HCW vaccinated < 60%









The Core Elements of Antibiotic Stewardship for Nursing Homes

National Center for Emerging and Zoonotic Infectious Diseases
Division of Healthcare Quality Promotion

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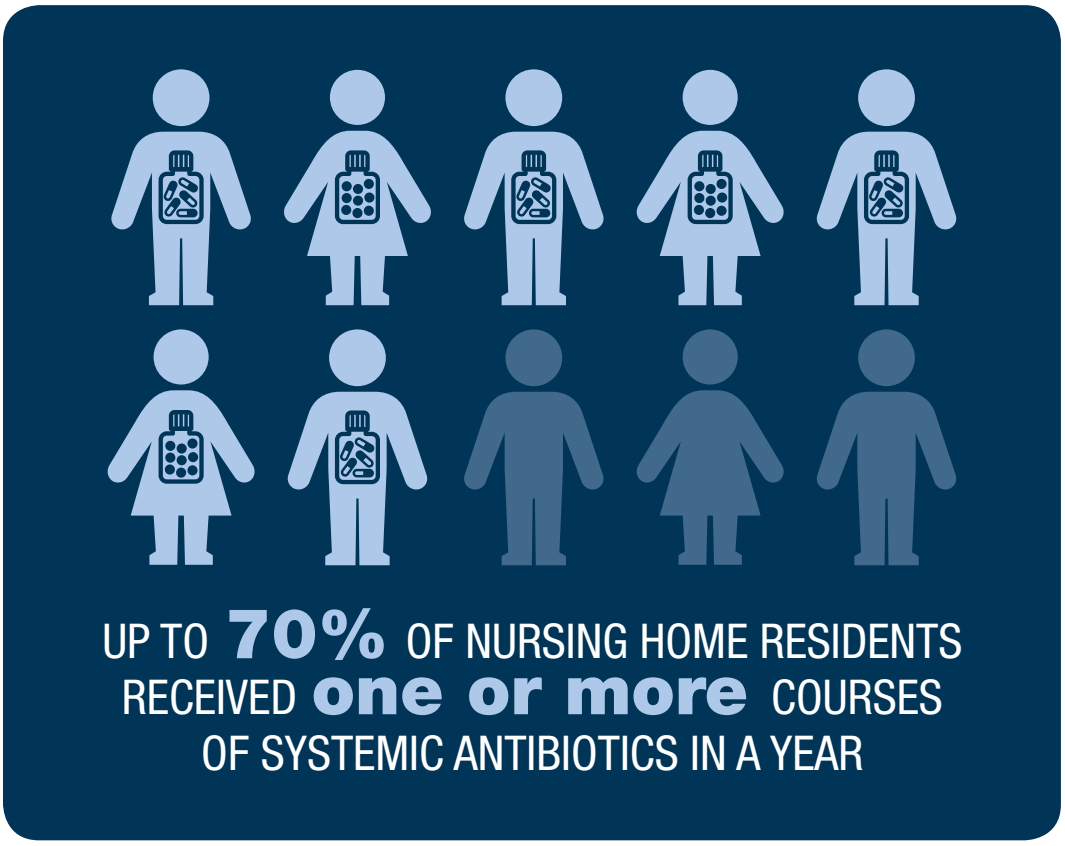
Introduction

Improving the use of antibiotics in healthcare to protect patients and reduce the threat of antibiotic resistance is a national priority.[1] Antibiotic stewardship refers to a set of commitments and actions designed to "optimize the treatment of infections while reducing the adverse events associated with antibiotic use."[2] The Centers for Disease Control and Prevention (CDC) recommends that all acute care hospitals implement an antibiotic stewardship program (ASP) and outlined the seven core elements which are necessary for implementing successful ASPs.[2] CDC also recommends that all nursing homes take steps to improve antibiotic prescribing practices and reduce inappropriate use.

Antibiotics are among the most frequently prescribed medications in nursing homes, with up to 70% of residents in a nursing home receiving one or more courses of systemic antibiotics when followed over a year.[3,4] Similar to the findings in hospitals,[5,6] studies have shown that 40–75% of antibiotics prescribed in nursing homes may be unnecessary or inappropriate.[3,4] Harms from antibiotic overuse are significant for the frail and older adults receiving care in nursing homes. These harms include risk of serious diarrheal infections from *Clostridium difficile,* increased adverse drug events and drug interactions, and colonization and/or infection with antibiotic-resistant organisms.



This document adapts the **CDC Core Elements of Hospital Antibiotic Stewardship** into practical ways to initiate or expand antibiotic stewardship activities in nursing homes. While the elements are the same for both hospitals and nursing homes, the implementation of these elements may vary based on facility staffing and resources. Nursing homes are encouraged to work in a step-wise fashion, implementing one or two activities to start and gradually adding new strategies from each element over time. Any action taken to improve antibiotic use is expected to reduce adverse events, prevent emergence of resistance, and lead to better outcomes for residents in this setting.

Antibiotic stewardship refers to a set of commitments and activities designed to *"optimize the treatment of infections while reducing the adverse events associated with antibiotic use."*

Summary of Core Elements for Antibiotic Stewardship in Nursing Homes

Leadership commitment
Demonstrate support and commitment to safe and appropriate antibiotic use in your facility

Accountability
Identify physician, nursing and pharmacy leads responsible for promoting and overseeing antibiotic stewardship activities in your facility

Drug expertise
Establish access to consultant pharmacists or other individuals with experience or training in antibiotic stewardship for your facility

Action
Implement **at least one** policy or practice to improve antibiotic use

Tracking
Monitor **at least one process** measure of antibiotic use and **at least one outcome** from antibiotic use in your facility

Reporting
Provide regular feedback on antibiotic use and resistance to prescribing clinicians, nursing staff and other relevant staff

Education
Provide resources to clinicians, nursing staff, residents and families about antibiotic resistance and opportunities for improving antibiotic use

Leadership Commitment

Nursing home leaders commit to improving antibiotic use. Facility leadership, both owners and administrators, as well as regional and national leaders if the facility is part of a larger corporation, can demonstrate their support in the following ways:

Write statements in support of improving antibiotic use to be shared with staff, residents and families

Include stewardship-related duties in position descriptions for the medical director, clinical nurse leads, and consultant pharmacists in the facility

Communicate with nursing staff and prescribing clinicians the facility's expectations about use of antibiotics and the monitoring and enforcement of stewardship policies

Create a culture, through messaging, education, and celebrating improvement, which promotes antibiotic stewardship

Accountability

Nursing homes identify individuals accountable for the antibiotic stewardship activities who have the support of facility leadership:

Empower the medical director to set standards for antibiotic prescribing practices for all clinical providers credentialed to deliver care in a nursing home and be accountable for overseeing adherence. To be effective in this role, the medical director should review antibiotic use data (see Tracking and Reporting section) and ensure best practices are followed in the medical care of residents in the facility.[10]

Empower the director of nursing to set the practice standards for assessing, monitoring and communicating changes in a resident's condition by front-line nursing staff. Nurses and nurse aides play a key role in the decision-making process for starting an antibiotic. The knowledge, perceptions and attitudes among nursing staff of the role of antibiotics in the care of nursing home residents can significantly influence how information is communicated to clinicians who are deciding whether to initiate antibiotic therapy. Therefore the importance of antibiotic stewardship is conveyed by the expectations set by nursing leadership in the facility.

Engage the consultant pharmacist in supporting antibiotic stewardship oversight through quality assurance activities such as medication regimen review and reporting of antibiotic use data.

Nursing home antibiotic stewardship leads utilize existing resources to support antibiotic stewards' efforts by working with the following partners:

Infection prevention program coordinator

Infection prevention coordinators have key expertise and data to inform strategies to improve antibiotic use. This includes tracking of antibiotic starts, monitoring adherence to evidence-based published criteria[12,13] during the evaluation and management of treated infections, and reviewing antibiotic resistance patterns in the facility to understand which infections are caused by resistant organisms. When infection prevention coordinators have training, dedicated time, and resources to collect and analyze infection surveillance data, this information can be used to monitor and support antibiotic stewardship activities.

Consultant laboratory

Nursing homes contracting laboratory services can request reports and services to support antibiotic stewardship activities. Examples of laboratory support for antibiotic stewardship include developing a process for alerting the facility if certain antibiotic-resistant organisms are identified, providing education for nursing home staff on the differences in diagnostic tests available for detecting various infectious pathogens (e.g., EIA toxin test vs. nucleic amplification tests for *C. difficile*), and creating a summary report of antibiotic susceptibility patterns from organisms isolated in cultures. These reports, also known as antibiograms, help inform empiric antibiotic selection (i.e., before culture results are available) and monitor for new or worsening antibiotic resistance.[14]

State and local health departments

Nursing homes benefit from the educational support and resources on antibiotic stewardship and infection prevention which are provided by the Healthcare-Associated Infection (HAI) Prevention programs at state and local health departments.

Drug Expertise

Nursing homes establish access to individuals with antibiotic expertise to implement antibiotic stewardship activities. Receiving support from infectious disease consultants and consultant pharmacists with training in antibiotic stewardship can help a nursing home reduce antibiotic use and experience lower rates of positive *C. difficile* tests.[11] Examples of establishing antibiotic expertise include:

Work with a consultant pharmacist who has received specialized infectious diseases or antibiotic stewardship training. Example training courses include the Making a Difference in Infectious Diseases (MAD-ID) antibiotic stewardship course (http://mad-id.org/antimicrobial-stewardship-programs/), and the Society for Infectious Diseases Pharmacists antibiotic stewardship certificate program (http://www.sidp.org/page-1442823).

Partner with antibiotic stewardship program leads at the hospitals within your referral network.

Develop relationships with infectious disease consultants in your community interested in supporting your facility's stewardship efforts.

Take Action through Policy and Practice Change to Improve Antibiotic Use

Nursing homes implement prescribing policies and change practices to improve antibiotic use. The introduction of new policies and procedures which address antibiotic use should be done in a step-wise fashion so staff become familiar with and not overwhelmed by new changes in practice. Prioritize interventions based on the needs of your facility and share outcomes from successful interventions with nursing staff and clinical providers. Below are brief descriptions of policy and practice changes. For more details, see *Appendix A: Policy and practice actions to improve antibiotic use.*

Policies that support optimal antibiotic use

Ensure that current medication safety policies, including medication regimen review, developed to address Centers for Medicare and Medicaid Services (CMS) regulations[15–17] are being applied to antibiotic prescribing and use.

Broad interventions to improve antibiotic use

Standardize the practices which should be applied during the care of any resident suspected of an infection or started on

an antibiotic. These practices include improving the evaluation and communication of clinical signs and symptoms when a resident is first suspected of having an infection, optimizing the use of diagnostic testing, and implementing an antibiotic review process, also known as an "antibiotic time-out," for all antibiotics prescribed in your facility. Antibiotic reviews provide clinicians with an opportunity to reassess the ongoing need for and choice of an antibiotic when the clinical picture is clearer and more information is available.

Pharmacy interventions to improve antibiotic use

Integrate the dispensing and consultant pharmacists into the clinical care team as key partners in supporting antibiotic stewardship in nursing homes. Pharmacists can provide assistance in ensuring antibiotics are ordered appropriately, reviewing culture data, and developing antibiotic monitoring and infection management guidance in collaboration with nursing and clinical leaders.

Infection and syndrome specific interventions to improve antibiotic use

Identify clinical situations which may be driving inappropriate courses of antibiotics such as asymptomatic bacteriuria or urinary tract infection prophylaxis[18,19] and implement specific interventions to improve use.

Tracking and Reporting Antibiotic Use and Outcomes

Nursing homes monitor both antibiotic use practices and outcomes related to antibiotics in order to guide practice changes and track the impact of new interventions. Data on adherence to antibiotic prescribing policies and antibiotic use are shared with clinicians and nurses to maintain awareness about the progress being made in antibiotic stewardship. Clinician response to antibiotic use feedback (e.g., acceptance) may help determine whether feedback is effective in changing prescribing behaviors. Below are examples of antibiotic use and outcome measures. For more details, see *Appendix B: Measures of antibiotic prescribing, use and outcomes*.

Process measures: Tracking how and why antibiotics are prescribed

Perform reviews on resident medical records for new antibiotic starts to determine whether the clinical assessment, prescription documentation and antibiotic selection were in accordance with facility antibiotic use policies and practices. When conducted over time, monitoring process measures can assess whether antibiotic prescribing policies are being followed by staff and clinicians.

Antibiotic use measures: Tracking how often and how many antibiotics are prescribed

Track the amount of antibiotic used in your nursing home to review patterns of use and determine the impact of new stewardship interventions. Some antibiotic use measures (e.g., prevalence surveys) provide a snap-shot of information; while others, like

nursing home initiated antibiotic starts and days of therapy (DOT) are calculated and tracked on an ongoing basis.[20,21] Selecting which antibiotic use measure to track should be based on the type of practice intervention being implemented. Interventions designed to shorten the duration of antibiotic courses, or discontinue antibiotics based on post-prescription review (i.e., "antibiotic time-out"), may not necessarily change the rate of antibiotic starts, but would decrease the antibiotic DOT.

Antibiotic use data from nursing homes to improve antibiotic stewardship efforts is important both for individual facility improvements and for public health action. Expansion of electronic health records in nursing homes will allow for facilities to obtain systems which integrate pharmacy and laboratory data and make antibiotic use and resistance data to inform stewardship efforts more accessible to facility staff and leadership. CDC is working closely with many nursing home partners including providers, long-term care pharmacies, and professional organizations, to develop an Antibiotic Use (AU) reporting option for nursing homes within the CDC's National Healthcare Safety Network (NHSN). The NHSN AU option allows for standardized antibiotic use data, submitted electronically, to be aggregated and summarized for developing facility-adjusted national benchmarks.

Antibiotic outcome measures: Tracking the adverse outcomes and costs from antibiotics

Monitor clinical outcomes such as rates of *C. difficile* infections, antibiotic-resistant organisms or adverse drug events to demonstrate that antibiotic stewardship activities are successful in improving patient outcomes. Nursing homes already tracking these clinical outcomes for their infection prevention program can submit data on *C. difficile* and selected antibiotic-resistant bacteria, such as methicillin-resistant *Staphylococcus aureus* (MRSA) and carbapenem-resistant *Enterobacteriaceae* (CRE) into the CDC's NHSN Laboratory-identified event reporting module for long-term care facilities.

Education

Nursing homes provide antibiotic stewardship education to clinicians, nursing staff, residents and families. Effective educational programs address both nursing staff and clinical providers on the goal of an antibiotic stewardship intervention, and the responsibility of each group for ensuring its implementation.[3,22] There are a variety of mechanisms for disseminating antibiotic education to nursing home staff including flyers, pocket-guides, newsletters or electronic communications; however, interactive academic detailing (e.g., face-to-face interactive workshops) has the strongest evidence for improving medication prescribing practices.[23]

Nursing homes sustain improvements by incorporating both education and feedback to providers. One nursing home antibiotic stewardship intervention demonstrated a sustained reduction in antibiotic use for two years after the intervention by linking education with feedback on physician prescribing practices.[24] Another study showed a 64% reduction in inappropriate antibiotic use (i.e., prescriptions which did not adhere to guidelines), by providing feedback on individual physician prescribing practices and adherence to the guidelines over 12 months.[25]

Nursing homes engage residents and their family members in antibiotic use and stewardship educational efforts to ensure clinicians have their support to make appropriate antibiotic use decisions. Working with residents and families will reduce the perception that their expectations may be a barrier to improving antibiotic use in nursing homes.[26,27]

Conclusion

The core elements of antibiotic stewardship are the same for both hospitals and nursing homes. This guide provides examples of how these elements can be applied by nursing home leadership, clinicians and staff to monitor and improve antibiotic use. Nursing homes are encouraged to select one or two activities to start with and over time, as improvements are implemented, expand efforts to add new strategies to continue improving antibiotic use. Commit now to ensure antibiotic stewardship policies and practices are in place to protect patients and improve clinical care in nursing homes.

References

1. The White House. NATIONAL STRATEGY FOR COMBATING ANTIBIOTICRESISTANT BACTERIA. 2014; **http://www.whitehouse.gov/sites/default/files/docs/carb_national_strategy.pdf** Accessed 9/30/2014.

2. Centers for Disease Control and Prevention. Core Elements of Hospital Antibiotic Stewardship Programs. Atlanta, GA: US Department of Health and Human Services, CDC; 2014 **http://www.cdc.gov/getsmart/healthcare/implementation/core-elements.html** Accessed 9/30/2014

3. Lim CJ, Kong DCM, Stuart RL. Reducing inappropriate antibiotic prescribing in the residential care setting: current perspectives. Clin Interven Aging. 2014; 9: 165-177

4. Nicolle LE, Bentley D, Garibaldi R, et al. Antimicrobial use in long-term care facilities. Infect Control Hosp Epidemiol 2000; 21:537–45.

5. Dellit TH, Owens RC, McGowan JE, Jr., et al. Infectious Diseases Society of America and the Society for Healthcare Epidemiology of America guidelines for developing an institutional program to enhance antimicrobial stewardship. Clinical infectious diseases. 2007;44(2):159-177.

6. Fridkin SK, Baggs J, Fagan R, et al. Vital Signs: Improving antibiotic use among hospitalized patients. MMWR. Morbidity and mortality weekly report. 2014;63.

7. Gerwitz JH, Field TS, Harrold LR. Incidence and preventability of adverse drug events among older persons in the ambulatory settting. JAMA 2003;289: 1107–11.

8. Loeb MB, Craven S, McGeer A, et al. Risk factors for resistance to antimicrobial agents among nursing home residents. Am J Epidemiol 2003;157:40–7.

9. Centers for Disease Control and Prevention. Antibiotic resistance threats in the United States, 2013 Atlanta, GA: CDC; 2013.

10. Centers for Medicare and Medicaid Services. Summary of Requirements for Medical Director- 501 State Operations Manual (SOM); Appendix PP; Rev 107, 04-04-2014 Pages 626 – 633: **https://cms.gov/manuals/Downloads/som107ap_pp_guidelines_ltcf.pdf** Accessed 9/30/2014.

11. Jump RLP, Olds DM, Seifi N et al. Effective antimicrobial stewardship in a long-term care facility through an infectious disease consultation service:Keeping a LID on antibiotic use. Infect Control Hosp Epidemiol 2012;33(12):1185-1192

12. Stone ND, Ashraf MS, Calder J, Crnich CJ, et al. Surveillance definitions of infections in long-term care facilities: revisiting the McGeer criteria. Infect Control Hosp Epidemiol 2012; 33: 965-977.

13. Loeb M, Bentley DW, Bradley S, et al. Development of minimum criteria for the initiation of antibiotics in residents of long-term care facilities: Results of a consensus conference. Infect Control Hosp Epidemiol 2001; 22: 120-4.

14. Furuno JP, Comer AC, Johnson JK, et al. Using antibiograms to improve antibiotic prescribing in skilled nursing facilities. Infect Control Hosp Epidemiol. 2014;35 (Suppl 3):S56-61.

15. Centers for Medicare and Medicaid Services. Summary of Requirements for Unnecessary Drugs - F329 State Operations Manual (SOM); Appendix PP; Rev 107, 04-04-2014 Pages 563–588: **https://cms.gov/manuals/Downloads/som107ap_pp_guidelines_ltcf.pdf** Accessed 9/30/2014.

16. Centers for Medicare and Medicaid Services. Summary of Requirements for Medication Errors- F332 and 333 State Operations Manual (SOM); Appendix PP; Rev 107, 04-04-2014 Pages 430–439: **https://cms.gov/manuals/Downloads/som107ap_pp_guidelines_ltcf.pdf** Accessed 9/30/2014.

17. Centers for Medicare and Medicaid Services. Summary of Requirements for Drug Regimen Review- F428 State Operations Manual (SOM); Appendix PP; Rev 107, 04-04-2014 Pages 539–548: **https://cms.gov/manuals/Downloads/som107ap_pp_guidelines_ltcf.pdf** Accessed 9/30/2014.

18. Benoit SR, Nsa W, Richards CL et al. Factors associated with antimicrobial use in nursing homes: A multilevel model. J Am Geriatr Soc 2008; 56:2039–2044

19. Latour K, Catry B, Broex E et al. Indications for antimicrobial prescribing in European nursing homes: results from a point prevalence survey. Pharmacoepidem and drug safety. 2012; 21: 937–944

20. Mylotte JM. Antimicrobial prescribing in long-term care facilities: Prospective evaluation of potential antimicrobial use and cost indicators. Am J Infect Control. 1999; 27(1): 10-19.

21. Mylotte JM, Keagle J. Benchmarks for antibiotic use and cost in long-term care. J Am Geriatr Soc 2005; 53:1117-1122.

22. Nicolle LE. Antimicrobial stewwardship in long-term care facilities: what is effective?. Antimicrob Resist Infect Contr 2014; 3:6. **http://www.aricjournal.com/content/3/1/6** Accessed 12/3/14

23. Loganathan M, Singh S, Franklin BD, Bottle A, Majeed A. Interventions to optimise prescribing in care homes: systematic review. Age Aging 2011; 40: 150-162

24. Schwartz DN, Abiad H, DeMarais PL. et al. An educational intervention to improve antimicrobial use in a hospital-based long-term care facility. J Am Geriatr Soc. 2007; 55(8), 1236-1242.

25. Monette J, Miller MA, Monette M, et al. Effect of an educational intervention on optimizing antibiotic prescribing in long-term care facilities. J Am Geriatr Soc. 2007; 55(8), 1231-1235

26. Lim CJ, Kwong MW, Stuart RL Antibiotic prescribing practice in residential aged care facilities--health care providers' perspectives. Med J Aust. 2014; 201(2):98-102.

27. Lohfeld L, Loeb M, Brazil K. Evidence-based clinical pathways to manage urinary tract infections in long-term care facilities: a qualitative case study describing administrator and nursing staff views. J Am Med Dir Assoc. 2007; 8(7):477-84.

Checklist for Core Elements of Antibiotic Stewardship in Nursing Homes

The following checklist is a companion to the Core Elements of Antibiotic Stewardship in Nursing Homes. The CDC recommends that all nursing homes take steps to implement antibiotic stewardship activities. Before getting started, use this checklist as a baseline assessment of policies and practices which are in place. Then use the checklist to review progress in expanding stewardship activities on a regular basis (e.g., annually). Over time, implement activities for each element in a step-wise fashion.

LEADERSHIP SUPPORT	ESTABLISHED AT FACILITY	
1. Can your facility demonstrate leadership support for antibiotic stewardship through one or more of the following actions?	❑ Yes	❑ No

If yes, indicate which of the following are in place (select all that apply)
- ❑ Written statement of leadership support to improve antibiotic use
- ❑ Antibiotic stewardship duties included in medical director position description
- ❑ Antibiotic stewardship duties included in director of nursing position description
- ❑ Leadership monitors whether antibiotic stewardship policies are followed
- ❑ Antibiotic use and resistance data is reviewed in quality assurance meetings

ACCOUNTABILITY

2. Has your facility identified a lead(s) for antibiotic stewardship activities? ❑ Yes ❑ No

If yes, indicate who is accountable for stewardship activities (select all that apply)
- ❑ Medical director
- ❑ Director or assistant director of nursing services
- ❑ Consultant pharmacist
- ❑ Other:_____

DRUG EXPERTISE

3. Does your facility have access to individual(s) with antibiotic stewardship expertise? ❑ Yes ❑ No

If yes, indicate who is accountable for stewardship activities (select all that apply)
- ❑ Consultant pharmacy has staff trained/is experienced in antibiotic stewardship
- ❑ Partnering with stewardship team at referral hospital
- ❑ External infectious disease/stewardship consultant
- ❑ Other:_____

ACTIONS TO IMPROVE USE

4. Does your facility have policies to improve antibiotic prescribing/use? ❑ Yes ❑ No

If yes, indicate which policies are in place (select all that apply)
- ❑ Requires prescribers to document a dose, duration, and indication for all antibiotic prescriptions
- ❑ Developed facility-specific algorithm for assessing residents
- ❑ Developed facility-specific algorithms for appropriate diagnostic testing (e.g., obtaining cultures) for specific infections
- ❑ Developed facility-specific treatment recommendations for infections
- ❑ Reviews antibiotic agents listed on the medication formulary
- ❑ Other:_____

5. Has your facility implemented practices to improve antibiotic use? ❑ Yes ❑ No

If yes, indicate which practices are in place (select all that apply)
- ❑ Utilizes a standard assessment and communication tool for residents suspected of having an infection
- ❑ Implemented process for communicating or receiving antibiotic use information when residents are transferred to/from other healthcare facilities
- ❑ Developed reports summarizing the antibiotic susceptibility patterns (e.g., facility antibiogram)
- ❑ Implemented an antibiotic review process/"antibiotic time out"
- ❑ Implemented an infection specific intervention to improve antibiotic use
  Indicate for which condition(s):_____

6. Does your consultant pharmacist support antibiotic stewardship activities? ❑ Yes ❑ No

If yes, indicate activities performed by the consultant pharmacist (select all that apply)
- ❑ Reviews antibiotic courses for appropriateness of administration and/or indication
- ❑ Establishes standards for clinical/laboratory monitoring for adverse drug events from antibiotic use
- ❑ Reviews microbiology culture data to assess and guide antibiotic selection

TRACKING: MONITORING ANTIBIOTIC PRESCRIBING, USE, AND RESISTANCE

7. Does your facility monitor one or more measures of antibiotic use? ❑ Yes ❑ No

If yes, indicate which of the following are being tracked (select all that apply)
- ❑ Adherence to clinical assessment documentation (signs/symptoms, vital signs, physical exam findings)
- ❑ Adherence to prescribing documentation (dose, duration, indication)
- ❑ Adherence to facility-specific treatment recommendations
- ❑ Performs point prevalence surveys of antibiotic use
- ❑ Monitors rates of new antibiotic starts/1,000 resident-days
- ❑ Monitors antibiotic days of therapy/1,000 resident-days
- ❑ Other:_____

8. Does your facility monitor one or more outcomes of antibiotic use? ❑ Yes ❑ No

If yes, indicate which of the following are being tracked (select all that apply)
- ❑ Monitors rates of *C. difficile* infection
- ❑ Monitors rates of antibiotic-resistant organisms
- ❑ Monitors rates of adverse drug events due to antibiotics
- ❑ Other:_____

REPORTING INFORMATION TO STAFF ON IMPROVING ANTIBIOTIC USE AND RESISTANCE

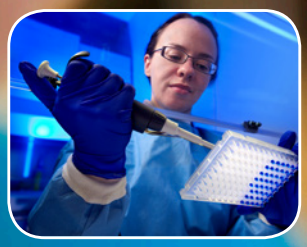
9. Does your facility provide facility-specific reports on antibiotic use and outcomes with clinical providers and nursing staff? ❑ Yes ❑ No

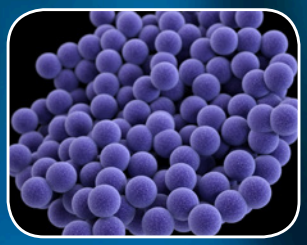
If yes, indicate which of the following are being tracked (select all that apply)
- ❑ Measures of antibiotic use at the facility
- ❑ Measures of outcomes related to antibiotic use (i.e., *C. difficile* rates)
- ❑ Report of facility antibiotic susceptibility patterns (within last 18 months)
- ❑ Personalized feedback on antibiotic prescribing practices (to clinical providers)
- ❑ Other:_____

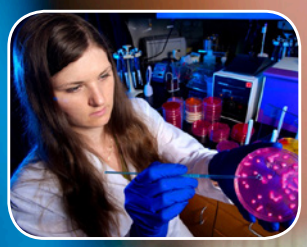
EDUCATION

10. Does your facility provide educational resources and materials about antibiotic resistance and opportunity for improving antibiotic use? ❑ Yes ❑ No

If yes, indicate which of the following are being tracked (select all that apply)
- ❑ Clinical providers (e.g., MDs, NPs, PAs, PharmDs)
- ❑ Nursing staff (e.g., RNs, LPNs, CNAs)
- ❑ Residents and families
- ❑ Other:_____







The Core Elements of Antibiotic Stewardship for Nursing Homes

APPENDIX A

National Center for Emerging and Zoonotic Infectious Diseases
Division of Healthcare Quality Promotion

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Appendix A: Policy and practice actions to improve antibiotic use

This document contains more detailed explanations of policy and practice actions which can be taken by nursing homes as part of their antibiotic stewardship activities.

Antibiotic prescribing and use policies

Documentation of dose, duration, and indication.
Specify the dose (including route), duration (i.e., start date, end date, and planned days of therapy), and indication, which includes both rationale (i.e., prophylaxis vs. therapeutic) and treatment site (i.e., urinary tract, respiratory tract), for every course of antibiotics. This bundle of antibiotic prescribing elements should be documented for both nursing home-initiated antibiotic courses as well as courses continued in the nursing home which were initiated by a transferring facility or emergency department. Documenting and making this information accessible (e.g., verifying indication and planned duration is documented on transfer paperwork) helps ensure that antibiotics can be modified as needed based on additional laboratory and clinical data and/or discontinued in a timely manner.[1]

Establish best practices for use of microbiology testing. Inappropriate use of microbiology tests in nursing homes may drive unnecessary antibiotic treatment.[2] For example, submitting urine cultures or *C. difficile* stool tests to demonstrate "test of cure" following clinical resolution after an appropriate treatment course may uncover asymptomatic colonization and drive additional unnecessary antibiotic exposure. Review the current protocols and laboratory testing practices to ensure that laboratory tests are used correctly in your facility (e.g., your facility should not require one or more negative *C. difficile* stool studies following completion of therapy for *C. difficile* infection). Identifying and reducing inappropriate use of laboratory testing may be a high-yield effort for improving antibiotic use and reducing other management costs.

Develop facility-specific treatment recommendations. Facility-specific treatment recommendations, based on national guidelines[3,4] and local susceptibilities can optimize antibiotic selection and duration, particularly for common indications for antibiotic use like pneumonia, urinary tract infection, and skin and soft tissue infections.

Review the antibiotic agents available in the facility including an inventory of drugs accessible during off hours (e.g., emergency kit or overnight box) to ensure availability is not a barrier to use of preferred agents.

Broad interventions to improve antibiotic use

Develop and implement algorithms for the assessment of residents suspected of having an infection using evidence-based guidance.[4,5]

Utilize a communication tool for residents suspected of having an infection. Since attending physicians, nurse practitioners and/or physician assistants are not always available on-site in nursing homes, a significant amount of management of nursing home residents is mediated via phone interactions. Clinical providers must rely on the assessment and information conveyed to them by the front-line nursing staff to make diagnostic and treatment decisions. Barriers to effective telephone interactions between physicians and nurses, such as inadequate preparation or feeling rushed on the phone,

likely impact the quality of information exchange.[6] Implementing structured communication tools to guide nursing-physician interactions (e.g., situation, background, assessment, recommendation, or SBAR protocol) may improve the quality of communication and the subsequent management process[7,8] when an infection is suspected. Communication tools used to facilitate information when a resident is suspected of having an infection should include key pieces of the clinical history including new symptoms and complaints, physical exam findings (e.g., vital signs, pulse oximetry, localizing pain, etc.) and other relevant information (e.g., previous antibiotic exposure, previous culture and susceptibility results, current medications, and medication allergy history). Forms used for this information exchange could not only include information about the resident from nursing staff, but also options for how the off-site provider may want to manage the resident based on the information provided (e.g., hydrate and monitor, send further diagnostic tests, initiate treatment). In addition, any tools or forms utilized to improve communication should become part of the resident's medical record to improve documentation of decision making.

Develop and disseminate a facility-specific report of antibiotic susceptibility to clinical providers. Nursing homes should work with consultant laboratories to create a facility-specific summary of antibiotic susceptibility patterns from the organisms commonly isolated in microbiology cultures. One example of a susceptibility summary is called an antibiogram. Antibiograms are tables developed by the microbiology laboratory showing the percent susceptibility for a panel of common bacteria tested against a panel of common antibiotics.[9] Nursing home laboratories may have to tailor the antibiogram based on the facility's diagnostic testing practices. For example, a nursing home antibiogram may only include organisms causing urinary tract infection if urine cultures are the most frequent test sent to the laboratory.[10] Antibiograms may be updated every 12 to 24 months, based on the number of cultures submitted by a facility. Summaries of susceptibility patterns should be disseminated to front-line nursing staff, clinical providers and consultant pharmacists as an educational tool and to guide management decisions.

Perform antibiotic "time outs." Antibiotics are often started empirically in nursing home residents when the resident has a change in

physical or mental status while diagnostic information is being obtained. However, providers often do not revisit the selection of the antibiotic after more clinical and laboratory data (including culture results) become available.[11,12] An antibiotic "time out" is a formal process designed to prompt a reassessment of the ongoing need for and choice of an antibiotic once more data is available including: the clinical response, additional diagnostic information, and alternate explanations for the status change which prompted the antibiotic start. Nursing homes should have a process in place for a review of antibiotics by the clinical team two to three days after antibiotics are initiated to answer these key questions:

- Does this resident have a bacterial infection that will respond to antibiotics?
- If so, is the resident on the most appropriate antibiotic(s), dose, and route of administration?
- Can the spectrum of the antibiotic be narrowed or the duration of therapy shortened (i.e., de-escalation)?
- Would the resident benefit from additional infectious disease/ antibiotic expertise to ensure optimal treatment of the suspected or confirmed infection?

Reduce prolonged antibiotic treatment courses for common infections. A large study of antibiotic prescribing practices in nursing homes demonstrated that over 50% of antibiotic treatment courses extended beyond a week with no correlation with resident characteristics or type of infection being treated.[13] Given the growing body of evidence that short courses of antibiotics are effective for common infections,[14–16] interventions designed to decrease antibiotic duration among nursing home residents may reduce the complications and adverse events associated with antibiotic exposure.

Pharmacy interventions to improve antibiotic use

Review of antibiotic prescriptions as part of the drug regimen review (F-tag 428) for new medications is an existing practice for the

consultant pharmacist.[17] Elements of the antibiotic review should include dosing and administration data, to ensure prescribers are making appropriate adjustments for renal function and potential drug interactions. Consultant pharmacists can also review indication and justification of use to verify that antibiotics are used in accordance with facility-specific treatment guidelines.

Establish standards on laboratory testing to monitor for adverse drug events related to use of antibiotics and other high risk medications such as warfarin.[18,19]

Review of microbiology culture results by the consultant pharmacist can add an additional level of feedback to prescribing clinicians on initial antibiotic selection and subsequent modifications of therapy once data is available. Consultant pharmacists can be given a predefined set of criteria and/or guidance developed in collaboration with physician support[20,21] to help optimize antibiotic use.

Infection specific interventions to improve antibiotic use

Reduce antibiotic use in asymptomatic bacteriuria (ASB). The prevalence of ASB, bacteriuria without localizing signs or symptoms of infection, ranges from 25% to 50% in non-catheterized nursing home residents and up to 100% among those with long-term urinary catheters.[22] Antibiotic use for treatment of ASB in nursing home residents does not confer any long-term benefits in preventing symptomatic urinary tract infections (UTI) or improving mortality, and may actually increase the incidence of adverse drug events and result in subsequent infections with antibiotic-resistant pathogens.[23] The unreliable clinical assessment for infections in nursing home residents coupled with the diagnostic uncertainties in differentiating ASB from infection contributes greatly to inappropriate antibiotic use and its related complications. Suspected UTIs account for 30% to 60% of antibiotic prescriptions in nursing homes.[24] Implementing a set of diagnostic testing and management algorithms to help providers differentiate ASB from symptomatic UTI has been shown to reduce inappropriate antibiotic use for ASB.[25,26]

Reduce antibiotic prophylaxis for prevention of UTI. Surveys of antibiotic use have shown that UTI prophylaxis accounts for a significant proportion of antibiotic prescriptions.[27] Very few studies support antibiotic use for UTI prophylaxis, especially in older adults, and many studies have shown this antibiotic exposure increases risk of side effects and resistant organisms.[23] Therefore, efforts to educate providers on the potential harm of antibiotics for UTI prophylaxis could reduce unnecessary antibiotic exposure and improve resident outcomes.

Optimize management of nursing home-associated pneumonia. Limited access to high-quality diagnostic testing makes the differentiation of viral and bacterial causes of lower respiratory tract infections very difficult in nursing home residents.[28] Implementation of algorithms for diagnosis and management of nursing home-associated pneumonia may be valuable in helping guide decision-making about use of antibiotics and need for hospital transfer.[29–31]

Optimize use of superficial cultures for management of chronic wounds. Although obtaining specimens for wound culture can help guide antimicrobial treatment, reliance on superficial swab cultures alone may drive inappropriate or unnecessary antibiotic use. Superficial wound swabs cannot differentiate bacterial colonization from infection and there may be a lack of correlation between organisms identified by superficial swab cultures compared with deep tissue cultures.[32] Reviewing the indications for obtaining cultures in residents with chronic wounds (e.g., presence of purulent drainage) and assessing the type of specimen submitted for culture (e.g., superficial swab vs. tissue specimen from debrided wound base) may identify opportunities for improving antibiotic use in residents with chronic wounds.[33]

References

1. Centers for Disease Control and Prevention. Core Elements of Hospital Antibiotic Stewardship Programs. Atlanta, GA: US Department of Health and Human Services, CDC; 2014

2. Phillips CD, Adepoju O, Stone N Asymptomatic bacteriuria, antibiotic use, and suspected urinary tract infections in four nursing homes BMC Geriatr. 2012 Nov 23;12:73

3. Nicolle LE, Bentley D, Garibaldi R, et al. Antimicrobial use in long-term care facilities. Infect Control Hosp Epidemiol 2000; 21:537–45.

4. High K, Bradley SF, Gravenstein S et al. Clincal practice guideline for the evaluation of fever and infection in older adult residents of long term care facilities. Clin Infect Dis. 2009; 48: 149-171

5. Loeb M, Bentley DW, Bradley S, et al. Development of minimum criteria for the initiation of antibiotics in residents of long-term care facilities: Results of a consensus conference. Infect Control Hosp Epidemiol 2001; 22: 120-4.

6. Tjia J, Mazor KM, Field T, Meterko V, Spenard A, Gurwitz JH Nurse-physician communication in the long-term care setting: perceived barriers and impact on patient safety J Patient Saf. 2009;5(3):145-52

7. Ouslander JG, Bonner A, Herndon L, Shutes J. The interventions to reduce acute care transfers (INTERACT) quality improvement program: An overview for medical directors and primary care clinicians in long term care. J Am Med Dir Assoc. 2014;15(3):162-70

8. Renz SM, Boltz MP, Wagner LM, Capezuti EA, Lawrence TE. Examining the feasibility and utility of an SBAR protocol in long-term care. Geriatr Nurs. 2013;34(4):295-301

9. Furuno JP, Comer AC, Johnson JK, et al. Using antibiograms to improve antibiotic prescribing in skilled nursing facilities. Infect Control Hosp Epidemiol. 2014;35 (Suppl 3):S56-61.

10. Drinka P, Podzorski RP, Griffin V, Crnich CJ. Antibiogram of urinary isolates. J Am Med Dir Assoc. 2013;14(6):443

11. Katz PR, Beam TR Jr., Brand F, Boyce K. Antibiotic use in the nursing home: Physician practice patterns. Arch Int Med. 1990; 150: 1465-1468

12. Shirts BH, Perera S, Hanlon JT, et al. Provider management of and satisfaction with laboratory testing in the nursing home setting: Results of a national internet-based surgery. J Am Med Dir Assoc. 2009;10: 161–166.

13. Daneman N, Gruneir A, Bronskill SE et al. Prolonged antibiotic treatment in long-term care: role of the prescriber. JAMA Intern Med. 2013; 173 (8): 673-682

14. Lutters M, Vogt-Ferrier NB. Antibiotic duration for treating uncomplicated, symptomatic lower urinary tract infections in elderly women. Cochrane Database Syst Rev. 2008;(3):CD001535.

15. Hepburn MJ, Dooley DP, Skidmore PJ, Ellis MW, Starnes WF, Hasewinkle WC. Comparison of short-course (5 days) and standard (10 days) treatment for uncomplicated cellulitis. Arch Intern Med. 2004;164(15):1669-1674.

16. El Moussaoui R, de Borgie CA, van den Broek P, et al. Effectiveness of discontinuing antibiotic treatment after three days versus eight days in mild to moderate severe community-acquired pneumonia: randomised, double blind study. BMJ.2006;332(7554):1355.

17. Centers for Medicare and Medicaid Services. Summary of Requirements for Drug Regimen Review- F428 State Operations Manual (SOM); Appendix PP; Rev 107, 04-04-2014 Pages 539 – 548: **https://cms.gov/manuals/Downloads/som107ap_pp_guidelines_ltcf.pdf** Accessed 9/30/2014.

18. Baillargeon J1, Holmes HM, Lin YL. Concurrent use of warfarin and antibiotics and the risk of bleeding in older adults. Am J Med. 2012 Feb;125(2):183-9

19. Hines LE, Murphy JE. Potentially harmful drug-drug interactions in the elderly: a review. Am J Geriatr Pharmacother. 2011; 9(6): 364-377

20. Faulks JT, Drinka P, Gauerke C, Miller J. Pharmacy review of culture and sensitivity with prompting of physicians to reduce antibiotic pressure. J Am Geriatr Soc. 2001 Sep;49(9):1259-60

21. Gugkaeva Z, Franson M. Pharmacist-led model of antibiotic stewardship in a long-term care facility. Annals of Long Term Care. 2012; 20(10). **http://www.annalsoflongtermcare.com/article/pharmacist-led-model-antibiotic-stewardship-long-term-care-facility** Accessed 12/30/2014.

22. Nicolle LE. Urinary tract infections in long-term-care facilities. Infect Control Hosp Epidemiol 2001; 22:167–75.

23. Nicolle LE. Asymptomatic bacteriuria: Review and discussion of the IDSA guidelines Int J Antimicrob Agents 2006; 28S:S42–S48.

24. Benoit SR, Nsa W, Richards CL et al. Factors associated with antimicrobial use in nursing homes: A multilevel model. J Am Geriatr Soc. 2008; 56:2039–2044

25. Loeb M, Brazil K, Lohfield L, et al. Effect of a multifaceted intervention on number of antimicrobial prescriptions for suspected urinary tract infections in residents of nursing homes: cluster randomised controlled trial. British Med J 2005; 331: 669

26. Zarbarsky TF, Sethi AK, Donskey CJ. Sustained reduction in inappropriate treatment of asymptomatic bacteriuria in a long-term care facility through an educational intervention. Am J Infect Contr 2008; 36: 476-480

27. Latour K, Catry B, Broex E et al. Indications for antimicrobial prescribing in European nursing homes: results from a point prevalence survey. Pharmacoepidem and drug safety. 2012; 21: 937–944

28. Mubareka S, Duckworth H, Cheang M, et al. Use of diagnostic tests for presumed lower respiratory tract infection in long-term care facilities. J Am Geriatr Soc. 2007; 55:1365–1370

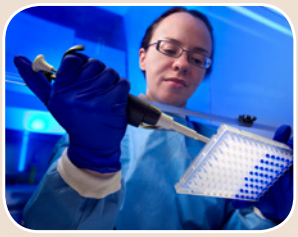
29. Carusone SC, Loeb M, Lohfeld L. A clinical pathway for treating pneumonia in the nursing home: part I: the nursing perspective. J Am Med Dir Assoc. 2006;7(5):271-8.

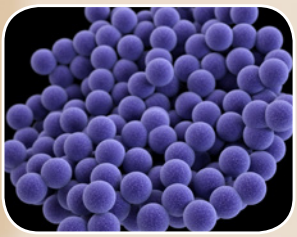
30. Carusone SC, Loeb M, Lohfeld L.A clinical pathway for treating pneumonia in the nursing home: part II: the administrators' perspective and how it differs from nurses' views. J Am Med Dir Assoc. 2006;7(5):279-286.

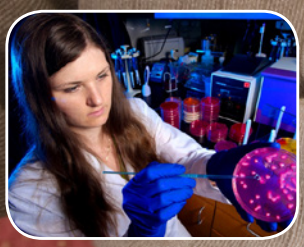
31. Loeb M, Carusone SC, Goeree R et al. Effect of a clinical pathway to reduce hospitalizations in nursing home residents with pneumonia: a randomized controlled trial. JAMA. 2006;295(21):2503-10

32. Mutluoglu M, Uzun G, Turhan V et al. How reliable are cultures of specimens from superficial swabs compared with those of deep tissue in patients with diabetic foot ulcers? J Diabetes Comp. 2012; 26: 225-229

33. Drinka P, Bonham P, Crnich CJ. Swab culture of purulent skin infection to detect infection or colonization with antibiotic-resistant bacteria. J Am Med Dir Assoc. 2012; 13: 75-79







The Core Elements of Antibiotic Stewardship for Nursing Homes

APPENDIX B

National Center for Emerging and Zoonotic Infectious Diseases
Division of Healthcare Quality Promotion

CS256066-A

Appendix B: Measures of antibiotic prescribing, use and outcomes

This document contains more detailed explanations of antibiotic use process and outcome measures which can be tracked by nursing homes to monitor the impact of their antibiotic stewardship activities.

Process measures for tracking antibiotic stewardship activities

Completeness of clinical assessment documentation at the time of the antibiotic prescription. Incomplete assessment and documentation of a resident's clinical status, physical exam or laboratory findings at the time a resident is evaluated for infection can lead to uncertainty about the rationale and/or appropriateness of an antibiotic. If a facility has developed algorithms or protocols for evaluating a resident suspected of having an infection, then perform audits of the quality of the assessment to ensure that algorithm was followed.

Completeness of antibiotic prescribing documentation. Ongoing audits of antibiotic prescriptions for completeness of documentation, regardless of whether the antibiotic was initiated in the nursing home or at a transferring facility, should verify that the antibiotic prescribing elements have been addressed and recorded. These elements include: dose, (including route), duration (i.e., start date, end date and planned days of therapy), and indication (i.e., rationale and treatment site) for every course of antibiotics.

Antibiotic selection is consistent with recommended agents for specific indications. If a facility has developed and implemented facility-specific treatment guidelines for one or more infections, then an intermittent review of antibiotic selection is warranted to ensure practices are consistent with facility policies.

Measures of antibiotic use

Point prevalence of antibiotic use. Point prevalence surveys of antibiotic use track the proportion of residents receiving antibiotics during a given time period (i.e., a single-day, a week, or a month). Because the data collection is time-limited, point prevalence surveys are an easier way to capture antibiotic use data. In addition to providing a snap-shot of the burden of antibiotic use in a facility, point-prevalence surveys can capture specific information about the residents receiving antibiotics and indications for antibiotic therapy.[1] Unlike other antibiotic use measures which focus only on the prescriptions initiated in the nursing home, prevalence surveys could also include data on residents admitted to the facility already receiving an antibiotic to track the total burden of individuals at risk for complications from antibiotic use (e.g., *C. difficile* infection).

- Percent of residents receiving antibiotics: (Number of residents on antibiotic/total residents in the facility) X 100
    - Prevalence data can be stratified by specific resident characteristics, for example percent of residents receiving antibiotics among short-stay versus long-stay residents
- Percent of new admissions receiving antibiotics: (Number of residents admitted to nursing home receiving antibiotics/total number of new admissions) X 100

Because prevalence surveys are often conducted for a brief window of time, this data may not portray the magnitude of antibiotic use over time. While a single-day prevalence survey may show 5% to 13% of residents are receiving an antibiotic, studies which follow a group of residents over long periods of time (e.g., 12 months) show that as many as 50% to 75% of residents receive one or more courses of antibiotics.[2]

Antibiotic starts. Most nursing home infection prevention and control programs already track new antibiotic starts occurring in the facility as part of their infection surveillance activity. Generally, rates of antibiotic starts are based on the prescriptions written after the resident has been admitted to the facility. Data on antibiotic starts can be calculated and reported in the following ways:

- Rate of new antibiotic starts initiated in nursing home (per 1,000 resident-days): (Number of new antibiotic prescriptions/total number of resident-days) X 1,000
    - Rate of antibiotic starts can be calculated by indication, for example: (Number of new antibiotic starts for urinary tract infection/total number of resident-days) X 1,000
- Rates of antibiotic starts could also be calculated for individual prescribers in the nursing home to compare

prescribing patterns among different providers practicing in the facility. However, prescriber-specific rates must take into account differences in the total number of residents cared for by each provider.

Tracking and reporting antibiotic start data could assess the impact of antibiotic stewardship initiatives designed to educate and guide providers on situations when antibiotics are not appropriate. However, interventions focused on shortening the number of days of therapy may not demonstrate significant changes in antibiotic starts.

Antibiotic days of therapy (DOT). Tracking antibiotic DOTs requires more effort than tracking antibiotic starts, but may provide a better measure to monitor changes in antibiotic use over time. The ratio of antibiotic DOT to total resident-days has been referred to as the antibiotic utilization ratio (AUR).[3] Below are the steps for calculating monthly rates of antibiotic DOT and AUR.

- An antibiotic day: each day that a resident receives a single antibiotic
    - For example, if a resident is prescribed a 7-day course of amoxicillin, that course equals 7 antibiotic days. However, if a resident is prescribed a 7-day course of ceftriaxone plus azithromycin, then that course equals 14 antibiotic days.
- Antibiotic DOT: the sum of all antibiotic days for all residents in the facility during a given time frame (e.g., 1 month or 1 quarter)
    - Rate of antibiotic DOT (per 1,000 resident-days): (Total monthly DOT/total monthly resident-days) X 1,000
    - Antibiotic utilization ratio: Total monthly DOT/total monthly resident-days

Antibiotic outcome measures

Track *C. difficile* and antibiotic resistance.
The National Healthcare Safety Network (NHSN) is a CDC-operated web-based system for tracking and reporting targeted infections and antibiotic-resistant organisms from healthcare facilities. In 2012, NHSN launched a reporting component specifically designed for use by nursing homes and other long-term care facilities. The Laboratory-identified event module in NHSN (**http://www.cdc.gov/nhsn/ltc/cdiff-mrsa/index.html**) allows facilities to track rates of *C. difficile* and selected multidrug-resistant organisms such as methicillin-resistant *Staphylococcus aureus* (MRSA) and antibiotic resistant gram-negative bacteria like *E.coli* using laboratory based surveillance as a proxy for infections.[4]

Track adverse drug events related to antibiotic use.
Adverse events due to use of medications in skilled nursing homes accounted for nearly 40% of harms identified in a recent report.[5] Antibiotics are among the most frequently prescribed medications in LTCFs and have a high rate of adverse drug events.[6,7]

Track costs related to antibiotic use.
Very few, if any, studies on antibiotic use in nursing homes have calculated the financial costs of antibiotic use.[8,9] However, in acute care settings, antibiotic stewardship has been shown to reduce hospital pharmacy costs in addition to improving antibiotic use.[10] This metric can be useful in justifying support of staff time and external consultant support for ASP activities.

References

1. Zarbarsky TF, Sethi AK, Donskey CJ. Sustained reduction in inappropriate treatment of asymptomatic bacteriuria in a long-term care facility through an educational intervention. Am J Infect Contr. 2008; 36: 476-480

2. Lim CJ, Kong DCM, Stuart RL. Reducing inappropriate antibiotic prescribing in the residential care setting: current perspectives. Clin Interven Aging. 2014; 9: 165-177

3. Mylotte JM. Antimicrobial prescribing in long-term care facilities: Prospective evaluation of potential antimicrobial use and cost indicators. Am J Infect Control. 1999; 27(1): 10-19.

4. Centers for Disease Control and Prevention. Laboratory-identified Event Module for Long-term care facilities. **http://www.cdc.gov/nhsn/PDFs/LTC/LTCF-LabID-Event-Protocol_FINAL_8-24-12.pdf** Accessed 12/30/14

5. Office of the Inspector General. Adverse Events in Skilled Nursing Facilities: National Incidence Among Medicare Beneficiaries (OEI-06-11-00370), February 2014.

6. Nicolle LE, Bentley D, Garibaldi R, et al. Antimicrobial use in long-term care facilities. Infect Control Hosp Epidemiol 2000; 21:537–45.

7. Gurwitz JH, Field TS, Avorn J et al. Incidence and preventability of adverse drug events in nursing homes. Am J Med. 2000;109:87–94.

8. Mylotte JM. Antimicrobial prescribing in long-term care facilities: Prospective evaluation of potential antimicrobial use and cost indicators. Am J Infect Control. 1999; 27(1): 10-19.

9. Mylotte JM, Keagle J. Benchmarks for antibiotic use and cost in long-term care. J Am Geriatr Soc 2005; 53:1117-1122.

10. Beardsley JR, Williamson JC, Johnson JW, Luther VP, Wrenn RH, Ohl CC. Show me the money: long-term financial impact of an antimicrobial stewardship program. Infect Control and Hosp Epidemiol. 2012;33(4):398-400

Antibiotics for asymptomatic bacteriuria (Review)

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[Intervention Review]

Antibiotics for asymptomatic bacteriuria

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ABSTRACT

Background

Asymptomatic bacteriuria is commonly detected in women aged up to 60 years, patients with diabetes, and the elderly. The benefit of antibiotic treatment for this condition is controversial.

Objectives

To assess the effectiveness and safety of antibiotics treatment for asymptomatic bacteriuria in adults. Specific objectives were to assess 1) the effectiveness of antibiotics for preventing development of symptomatic UTI, UTI-related complications, overall mortality, UTI-related mortality, and resolution of bacteriuria; 2) the development of resistance to antibiotic treatment by comparing resistance of grown bacteria in urine before and after therapy; and 3) the frequency of adverse events.

Search methods

We searched the Cochrane Renal Group's Specialised Register up to 24 February 2015 through contact with the Trials' Search Co-ordinator using search terms relevant to this review.

Selection criteria

Randomised controlled trials (RCTs) and quasi-RCTs comparing antibiotics to placebo or no treatment for asymptomatic bacteriuria in adults were included. The outcomes of interest were the development of symptomatic urinary tract infection (UTI), complications, death, any adverse event, development of antibiotic resistance, bacteriological cure, and decline in kidney function.

Data collection and analysis

Two authors independently extracted the data and assessed study quality. Statistical analyses were performed using the random effects model and the results expressed as risk ratios (RR) with 95% confidence intervals (CI).

Main results

We included nine studies (1614 participants) in this review. Symptomatic UTI (RR 1.11, 95% CI 0.51 to 2.43), complications (RR 0.78, 95% CI 0. 35 to 1.74), and death (RR 0.99, 95% CI 0.70 to 1.41) were similar between the antibiotic and placebo or no treatment arms. Antibiotics were more effective for bacteriological cure (RR 2.67, 95% CI 1.85 to 3.85) but also more adverse events developed in this group (RR 3.77, 95% CI 1.40 to 10.15). No decline in the kidney function was observed across the studies; minimal data were available on the emergence of resistant strains after antimicrobial treatment.

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The included studies were of medium and high quality, used different treatments for different durations of treatment and follow-up, different populations, but this did not appear to influence the results of review.

Authors' conclusions

No differences were observed between antibiotics versus no treatment of asymptomatic bacteriuria for the development of symptomatic UTI, complications or death. Antibiotics were superior to no treatment for the bacteriological cure but with significantly more adverse events. There was no clinical benefit from treating asymptomatic bacteriuria in the studies included in this review.

PLAIN LANGUAGE SUMMARY

Antibiotic treatment for asymptomatic bacteriuria

Growth of bacteria in the urine without any complaints (asymptomatic bacteriuria) is commonly detected in women up to 60 years, people with diabetes and in the elderly. It is not clear whether antibiotic treatment for this condition is of benefit for non-pregnant adults.

Nine studies of medium to high quality, enrolling 1614 institutionalised participants or outpatients, assigned to antibiotics or placebo/no treatment for treating asymptomatic bacteriuria for different durations of treatment and follow-up were included in this review. The evidence is current to February 2015. No clinical benefit was found for antibiotic treatment. Antibiotics eradicated the growth of bacteria in more participants but at the cost of more adverse events than in the no treatment groups.

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NHSN Enrollment and Set-up Checklist for Long-Term Care Facilities

☑	COMPLETE ITEMS IN ORDER	TIME

NHSN Enrollment Step 1: Training and Preparation

	COMPLETE LONG-TERM CARE FACILITY COMPONENT TRAINING	2 HR
	COMPLETE THE FACILITY CONTACT FORM ON PAPER (NEEDED FOR STEPS 2 AND 4)	30 MIN
	COMPLETE LONG-TERM CARE FACILITY COMPONENT ANNUAL FACILITY SURVEY ON PAPER (NEEDED FOR STEP 4)	30 MIN
	ADD HTTPS://*.CDC.GOV AND HTTPS://*.VERISIGN.COM TO LIST OF TRUSTED WEBSITES AND PERMIT POP-UPS FOR THESE SITES	5 MIN
	CHANGE SPAM-BLOCKER SETTINGS TO ALLOW ALL NHSN@CDC.GOV, PHINTech@cdc.gov & SAMS-NO-REPLY@CDC.GOV EMAILS	10 MIN

Step 2: Request to Enroll your Facility in NHSN

	AGREE TO RULES OF BEHAVIOR AT HTTP://NHSN.CDC.GOV/REGISTRATIONFORM/INDEX	5 MIN
	REGISTER FACILITY WITH NHSN – INCLUDE NAME AND EMAIL FOR THE "NHSN FACILITY ADMINISTRATOR" AND THE FACILITY CMS CERTIFICATION NUMBER OR VA STATION CODE (LOCATED ON FACILITY CONTACT FORM)	5 MIN

NOTE: IF YOUR FACILITY DOES NOT HAVE A CMS CERTIFICATION NUMBER, AHA NUMBER OR VA STATION CODE, PLEASE CONTACT NHSN@CDC.GOV TO RECEIVE AN ENROLLMENT NUMBER

IMMEDIATELY AFTER SUCCESSFUL REGISTRATION, RECEIVE NHSN EMAIL, SUBJECT "WELCOME TO NHSN!"

Step 3a: Register with the Secure Access Management System (SAMS) for NHSN access

	RECEIVE SAMS 'INVITATION TO REGISTER' AND SELECT SAMS REGISTRATION LINK	5 MIN
	AGREE TO SAMS RULES OF BEHAVIOR AND COMPLETE REGISTRATION INFORMATION	10 MIN

IMMEDIATELY AFTER COMPLETING THE REGISTRATION INFORMATION, RECEIVE IDENTITY VERIFICATION INSTRUCTIONS VIA EMAIL

Step 3b: Submit Identity Verification Documentation

	TAKE REQUIRED DOCUMENTATION TO AN OFFICIAL PROOFING AGENT FOR ENDORSEMENT	30 MIN
	SUBMIT COPIES TO THE SAMS PROCESSING TEAM	5 MIN
	RECEIVE NOTICE OF APPROVAL FOR SAMS ACCESS	VARIES

Step 4: Submit Forms Electronically

	ACCESS NHSN ENROLLMENT AT HTTPS://AUTH.CDC.GOV USING YOUR SAMS CREDENTIALS	2 MIN
	SUBMIT REQUIRED FORMS ONLINE, SELECT THE APPROPRIATE FACILITY TYPE, COMPONENT IS LONG-TERM CARE FACILITY	30 MIN

NOTE: YOU CANNOT SAVE THE ANNUAL FACILITY SURVEY ON-LINE UNLESS IT'S COMPLETE, SO HAVE ALL THE NECESSARY INFORMATION ON A PAPER VERSION OF THE ANNUAL FACILITY SURVEY, BEFORE SUBMITTING ELECTRONICALLY

IMMEDIATELY AFTER SUCCESSFULLY SUBMITTING FORMS, RECEIVE NHSN EMAIL, SUBJECT "NHSN FACILITY ENROLLMENT SUBMITTED"

Step 5: Print, Sign and Submit the Facility Consent Form

	FROM THE "NHSN FACILITY ENROLLMENT SUBMITTED" EMAIL, ACCESS AND PRINT CONSENT FORM	5 MIN
	GET NHSN LONG-TERM CARE FACILITY PRIMARY CONTACT PERSON'S AND FACILITY LEADERSHIP'S SIGNATURES ON CONSENT FORM	VARIES
	RETURN SIGNED CONSENT FORM TO CDC (CONTACT INFORMATION IS ON THE BOTTOM OF PAGE 3), KEEP A COPY FOR YOUR RECORDS	5 MIN

WITHIN 3 BUSINESS DAYS OF CDC'S RECEIPT OF THE CONSENT FORM, RECEIVE NHSN EMAIL, SUBJECT "NHSN ENROLLMENT APPROVED"

NHSN Enrollment and Set-up Checklist for Long-Term Care Facilities

NHSN Set-up Step 1: Map Locations

	ACCESS NHSN REPORTING AT HTTPS://AUTH.CDC.GOV	2 MIN
	SELECT YOUR FACILITY FROM THE "NHSN LANDING PAGE"	2 MIN
	GO TO "FACILITY" ON THE NAVIGATION MENU AND SELECT LOCATIONS	2 MIN
	FOR EACH UNIT IN YOUR FACILITY, CREATE A CODE, LOCATION LABEL AND ASSIGN A CDC LOCATION DESCRIPTION. THE CODES AND LABELS YOU CHOOSE WILL IDENTIFY RESIDENT CARE LOCATIONS IN YOUR FACILITY	10 MIN
	NOTE: EVEN THOUGH SURVEILLANCE IS PERFORMED FACILITY-WIDE, EVERY EVENT IS MAPPED TO A RESIDENT CARE LOCATION.	

Step 2: Create Monthly Reporting plan

	GO TO "REPORTING PLAN" ON THE NAVIGATION MENU AND SELECT "ADD"	2 MIN
	NOTE: MONTHLY REPORTING PLANS CAN BE COMPLETED FOR THE FULL CALENDAR YEAR OF THE YEAR ENROLLED	
	FOR EACH MONTH, SELECT THE MODULES AND EVENTS FOR REPORTING. SEVERAL MONTHLY REPORTING PLANS CAN BE ADDED AT ONE TIME.	5 MIN
	NOTE: ONCE A PLAN HAS BEEN ENTERED, THE SYSTEM WILL PROMPT YOU TO COMPLETE EVENTS AND PROVIDE SUMMARY DATA (DENOMINATORS) FOR THAT MONTH	

Step 3: Add Additional Users & Assign Rights

	GO TO "USERS" ON THE SIDE NAVIGATION MENU AND SELECT "ADD"	2 MIN
	FOR EACH NEW USER, YOU WILL NEED TO ASSSIGN A USER ID AND PROVIDE AN EMAIL ADDRESS	2 MIN
	NOTE: EACH USER WILL NEED TO COMPLETE TRAINING AND REGISTER FOR SAMS	
	ONCE A USER HAS BEEN CREATED, YOU CAN ASSIGN RIGHTS WITHIN THE NHSN SYSTEM. ONCE YOU HAVE ASSIGNED RIGHTS TO A USER AND SAVE THEM. YOU CAN CHECK THE ACTIVITIES THEY WILL BE ABLE TO PERFORM BY SELECTING THE FUNCTION, "EFFECTIVE RIGHTS" ON THE USER RIGHTS PAGE	2 MIN
	NOTE: WE SUGGEST A FACILITY TO IDENTIFY AT LEAST 2 INDIVIDUALS TO HAVE NHSN ADMINISTRATIVE RIGHTS FOR THE FACILITY	

Report to NHSN

	READ THE APPROPRIATE Long-term Care Facility Component Protocols TO ENSURE ACCURATE REPORTING	15 MIN

ONCE PRECEDING STEPS ARE COMPLETE, YOU ARE READY TO REPORT
ACCESS NHSN REPORTING AT HTTPS://AUTH.CDC.GOV

START ENTERING EVENTS FOR THE MODULES SELECTED IN EACH MONTHLY REPORTING PLAN

NHSN Enrollment Part I & II

Part I: Choose Your NHSN Team

Your team will consist of:

NHSN Facility Administrator:

- **Required role**
- **Does not have to be your facility administrator**
- Manages NHSN users and user rights-controls who gets access
- Can add, edit and delete facility data
- Only facility admin can reassign their role to another user
- **We highly recommend that you designate a back-up administrator as well**

Additional NHSN Users

Level of rights are determined by NHSN Facility Administrator

- Right to view, enter and perform analysis of data
- May also be given administrative rights (back up NHSN facility administrator)
- Roles include data collector, back-up NHSN facility administrator, etc.

Data Collector

- Will collect/submit data
- Will become familiar with the NHSN protocols

Note: One person can carry out multiple roles (e.g., the data collector can be the contact person.)

Part II: Training, Preparation and Registration

1) Complete the Long-term Care Facility Training Component: http://www.cdc.gov/nhsn/PDFs/LTC/slides/NHSN-LTCF-enroll-training-Portfolio1.pdf.
2) Print and complete the Long-Term Care Annual Facility Survey and Facility Contact Information forms:
   - http://www.cdc.gov/nhsn/PDFs/LTC/forms/57.137_LTCFSurv_BLANK.pdf and
   - http://www.cdc.gov/nhsn/forms/57.101_facconinf_blank.pdf

   Completing the paper forms prior to entering the information online ensures you have the time to complete entry online before the system times out.
3) Add **https:// *.cdc.gov** & **https://*.verisign.com** to your list of trusted websites and permit pop-ups for these sites*
4) Change spam-blocker settings to allow all nhsn@cdc.gov & phintech@cdc.gov emails through*
5) Accept the Rules of Behavior. When you get to the "Facility Identifier" section of the registration page, select CCN and enter your CMS number. If the system rejects the number please email NHSN@cdc.gov and ask for your facility identifier number for your NHSN registration form.
6) You will receive an NHSN email a few hours later, subject line: **"NHSN Rules of Behavior Submitted"**
7) Immediately after successful registration, you will receive an acceptance email from NHSN@cdc.gov subject, **"Welcome to NHSN"** and a separate email from sams-no-reply@cdc.gov subject, **"U.S. Centers for Disease Control: SAMS Partner Portal - Invitation to Register"** (this may take up to a few days). **Save this email.**

Keep your SAMS registration email for Part III

**If you have trouble with Steps 3 or 4 of Part 2, please consult with your IT department or contact our office.*

NHSN Enrollment: Part III

Part III: Secure Access Management Services (SAMS) Enrollment

1) Open the email from week 1: **"SAMS Partner Portal—Invitation to Register"** and scroll down to the portion that shows the SAMS registration portal link and your username and temporary password. Follow the email directions to cut and paste the SAMS Partner Portal link into your browser.
2) Enter your username and password into the SAMS Credentials portal (i.e., your current email and temporary password stated in the email).
3) Complete the SAMS Rules of Behavior and SAMS registration form.
4) You will then receive the SAMS registration confirmation email from sams-no-reply@cdc.gov, subject, **"U.S. Centers for Disease Control (CDC): SAMS Partner Portal - Identity Verification Request".**
5) Scroll to the bottom of the email to find the **Identity Verification Form**. Print the form and fill it out.
6) Take the **Identity Verification Form** to a notary public for endorsement along with TWO forms of acceptable identification (listed in the **SAMS Partner Portal - Identity Verification Request** email).

   Types of businesses that will notarize are:
   - Bank
   - Post office
   - Some schools

   We recommend you call ahead to make an appointment with the notary or confirm their availability

7) Mail, fax or upload the notarized Identity Verification form and copies of your identification back to the CDC. (Instructions for how to do this are in **Identity Verification Request** email)
8) Receive a confirmation email that your forms were received from sams-no-reply@cdc.gov, subject, **U.S. Centers for Disease Control (CDC): SAMS Partner Portal - Proofing Documentation Delivered.** Depending on volume of SAMS submissions and method of submission, this could take a while.
9) Receive your SAMS grid card at your home address. This could take up to 3 weeks.

List A - Primary Photo ID	List B - Secondary ID
Driver's license or ID card issued by a state or outlying possession of the US	Driver's license or ID card issued by a state or outlying possession of the US
U.S. Passport or U.S. Passport Card	U.S. Passport or U.S. Passport Card
U.S. Military ID	U.S. Military ID
U.S. Permanent Resident Card	U.S. Permanent Resident Card
U.S. Employment Authorization Card	U.S. Employment Authorization Card
	Employee ID Card issued by your organization that includes: - Your name - Your organization name - Your photo
	State-issued Voter ID or Registration Card
	Certification of Birth Abroad issued by the U.S. Department of State
	Original or Certified copy of birth certificate issued by state, county, municipal authority, or territory of the U.S. bearing an official seal

*Instructions to apply for a U.S. Passport or Passport Card: https://www.usa.gov/passport

OREGON
PATIENT SAFETY
COMMISSION

GETTING STARTED WITH NHSN

September 16, 2014

Rebecca Rottman

Mary Post

This webinar will be recorded and emailed to you along with a copy of the presentation

Objectives

- Describe how NHSN supports infection surveillance
- Understand how LTCFs can use NHSN for reporting infections
- Use webinar resources to enroll in NHSN

What is NHSN?

- NHSN stands for the National Healthcare Safety Network
- The Centers for Disease Control and Prevention's (CDC) supported internet-based system designed for healthcare facility reporting of infections
- Data used by facilities for surveillance, benchmarking, and internal quality improvement

Why Track Infections in LTCF?

- To comply with infection surveillance regulations
- To identify the most common or most harmful infections impacting residents and staff
- To have a baseline to detect new or increasing infections (e.g., outbreaks)
- To have data to develop and evaluate infection prevention activities in the facility*

**Without data, we can't show improvement*

How does NHSN Support LTCFs?

- Promotes targeted infection surveillance and reporting
- No fees for participation and services related to reporting
- Data is secure, confidential and immediately available for analysis and use by the facility
- Facilities can choose to share data with others
  - Between partner facilities (e.g., multi-facility or corporate system) or with other entities (e.g., public health agencies or quality improvement organizations)

How Can Using NHSN Benefit LTCFs?

- All reporting will use the same nationally accepted infection definitions
- Allows for fair comparison of rates by facility characteristics (e.g., # of beds or services provided)
- Provides national rates for facilities to use as a benchmark for assessing their own rates and prevention efforts
- Demonstrates trends in improvement in infection prevention by LTCFs across the country

Benefits of Enrolling Now

- Surveillance for not only CAUTs, but also for symptomatic urinary tract infections (SUTIs) and asymptomatic bacteremic UTIs (ABUTIs)
- Record organisms associated with the infection and the antibiotic susceptibility patterns; this information may help identify potential outbreaks and can be used for antimicrobial stewardship initiatives
- CMS will require LTCFs to use NHSN for reporting- “what” and “when” are still under discussion
- Oregon may opt to require LTCFs to begin public reporting prior to CMS

Is Data Entered into NHSN Kept Confidential?

- Accessed through a secure identity-verified portal (SAMS)
- Data entered into NHSN by facilities reporting as part of state or federal regulations are shared with the agencies overseeing the reporting programs
- Data entered into NHSN by facilities reporting voluntarily are protected by a data confidentially agreement
- Public Health Service Act (42USC242k and 242m(d)-Sections 304, 306, and 308(d)
  - The voluntarily provided information contained in this surveillance system that would permit identification of any individual or institution is collected with a guarantee that it will be held in strict confidence, will be used only for the purposes stated and will not be disclosed or released without the consent of the individual or the institution

How is NHSN Organized?

NHSN reporting is divided into different reporting components:

- **Patient Safety** is used by hospitals and other acute care facilities for infection reporting
- **Biovigilance** is used by hospitals for reporting blood transfusion safety events
- **LTCF** was adapted from Patient Safety for LTCF infection reporting
- **Healthcare Personnel Safety** is used by all healthcare facilities to report healthcare staff safety events (e.g., influenza vaccination)

Which NHSN Components are Available for LTCFs?

Currently, LTCFs can enroll and report in the following:

Long-term Care Facility Component

- To track infections and processes to prevent infections

Healthcare Personnel Safety Component

- To track healthcare staff influenza vaccination
- This training focuses on LTCF Component reporting
- For more information about Healthcare Personnel Safety: http://www.cdc.gov/nhsn/hps.html

Long-term Care Facility Component: Event Modules

Reporting is divided into different events:

- Healthcare Associated Infection Module
  - Currently, focuses on urinary tract infection reporting, both catheter and non-catheter related events
  - Could expand to include other infection events in the future
- Laboratory Identified (Lab-ID) Event Module
  - Uses positive laboratory tests and cultures to track antibiotic resistant organisms, (e.g., methicillin-resistant *Staphylococcus aureus*) and *C. difficile*
- Preventions Process Measures Module
  - Tracks adherence to infection prevention activities like hand hygiene and proper use of gowns/gloves

What Will Enrollment Look Like?

- The steps of enrollment have been broken down into several weeks
- Each week you will receive an email with detailed instructions for each step
- Emails will include tips and the specific documents you will need to complete that week's step

Weekly Schedule

Week 1: Choosing Your Team and Registration

Week 2: Secure Access Management Services (SAMS) Enrollment and apply for grid card

Week: 3-5 Receive grid card in the mail (it can take several weeks to receive your card)

Once you receive your card, you can use it to login into the SAMS portal online.

Week 1: Identifying Your Team

You and your facility will need to choose NHSN Users (e.g., who will need to enter, view, and/or analyze data)

These roles will include a:

- NHSN Facility Administrator (Required)
- Data Collector
- Other users
- These roles are also defined in Part I & Part II

Ensure the NHSN facility administrator and any individuals who will be submitting data into NHSN have computer/internet access

Identify the "NHSN Facility Administrator"

- The "NHSN facility administrator" is the person who leads NHSN enrollment and reporting for your facility
  - CDC uses this term to designate the person who adds users and submits/edits facility information within NHSN
  - This person is the key contact with NHSN
- The NHSN facility administrator does NOT have to be the same person who serves as the facility administrator for your organization
  - The NHSN facility administrator should have support and authority to make decisions about NHSN use for the facility
- Consider having a second person learn about the NHSN enrollment and reporting process as a "back-up" NHSN administrator for your facility

Additional NHSN Users

- Data collector:
  - Collects/submits data
  - Should become familiar with the NHSN UTI protocols
- Other users:
  - Can view, enter, and perform analysis of data
  - Level of rights determined by NHSN Facility Administrator
  - May also be given administrative rights (could be backup NHSN facility administrator)

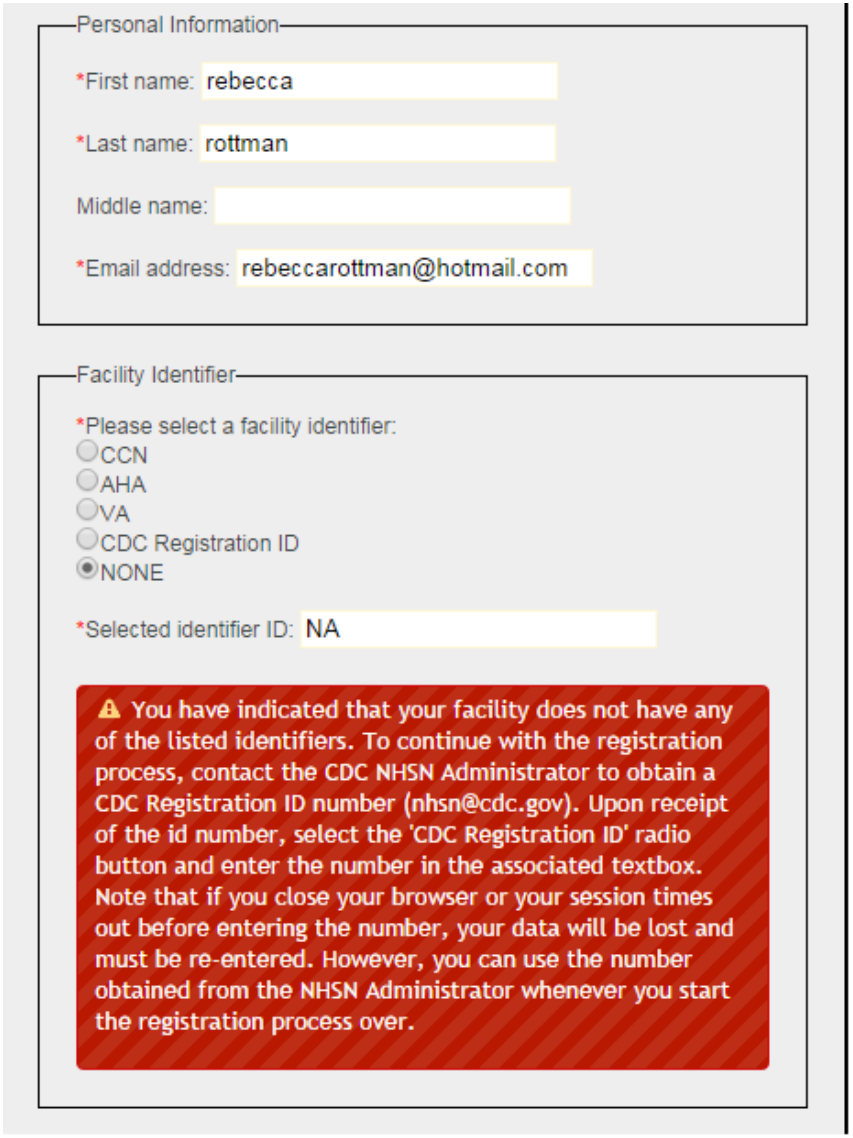
Identify Other NHSN Users

- Some facilities divide the NHSN data reporting activities among staff members
- All NHSN users must receive NHSN system access by going through the enrollment process
- Anyone entering data into NHSN for a facility must be designated for reporting in NHSN by the NHSN Facility Administrator
- Once a user has access to the NHSN system, he/she should review the training slides for reporting event data and summary data

Part I & II: Training, Preparation and Registration

1) Complete the Long-Term Care Facility Training Component
2) Complete the Long Term Care Annual Facility Survey- recommend that this be completed on a hard copy prior to entering electronically
3) Accept Rules of Behavior
4) Fill out registration form*
5) For the “Facility Identifier” section, select CCN and enter your CMS number

*You will need your Facility’s Identifier Number (CMS number)



If this box appears, it means your facility identified ID cannot be verified at this time. You will need to follow the stated instructions and contact NHSN to receive an Identifier ID.

Part I & II: Training, Preparation and Registration Cont.

5) After successful registration you will receive an email from NHSN@cdc.gov
6) You will also receive a separate email from sams-no-reply@cdc.gov

Please hold onto this email for Part III

NHSN Rules of Behavior Submitted

nhsn@cdc.gov

Sent: Tue 8/26/2014 8:41 AM

To: Rebecca Rottman

Thank you for reviewing and accepting the NHSN Rules of Behavior.

In order to begin using NHSN Reporting, you must first complete Secure Access Management Services (SAMS) registration and identity proofing. SAMS is a web portal designed to provide centralized access to public health information and computer applications operated by the Centers for Disease Control and Prevention (CDC).

You will receive an invitation email from SAMS with instructions regarding registration and identity proofing, which is required by law due to the nature of the data you will be accessing.

For the further information regarding SAMS identity proofing, please visit http://www.cdc.gov/nhsn/sams/about-sams.html. Please note that you must receive your SAMS grid card, which will be delivered to your home address via U.S. mail, before you may access NHSN via SAMS.

If you are already an active NHSN user, you may disregard the instructions in this email. Log in to the Secure Access Management System (SAMS) and access NHSN Reporting.

If you have already completed the SAMS process for another CDC application but you have not previously had access to NHSN, please contact nhsn@cdc.gov and indicate that you need the NHSN Reporting Activity in SAMS.

For questions regarding SAMS registration and identity proofing, please contact SAMS support at

U.S. Centers for Disease Control: SAMS Partner Portal - Invitation to Register

sams-no-reply@cdc.gov

Sent: Mon 8/18/2014 12:06 PM

To: Rebecca Rottman

3. Access Approval

Online registration with the SAMS portal takes about 5 minutes. Please have the following available before you begin:

- Your home address - This must match the documentation you intend to use for proofing if applicable.
- Your organization / employer and their address
- Your telephone number

Should you have questions about the SAMS Partner Portal or the registration process, please contact our Help Desk for assistance or refer to the SAMS User FAQ.

Thank you,

The SAMS Team

To register with the SAMS Partner Portal, please click the following link or cut and paste it into your browser:

https://im.cdc.gov/iam/im/SAMS3/ui/index.jsp?task.tag=SAMSRegistration

When prompted, please enter:

- Your Email/User Name: rebecca.rottman@oregonpatientsafety.org
- Temporary Password [redacted]

and click the Login button.

Part III: SAMS Enrollment

The purpose of SAMS enrollment is to:

- Verify your identity
- Apply for a grid card so you can access the NHSN data system

SAMS Identity Verification

Required by the U.S. federal government to help:

- Ensure that the person registering for access to non-public information is who they claim to be
- Protect individuals and the public at large by helping to ensure that only trusted persons are allowed access to non-public data
- Protect you (the person registering for access) by helping to prevent someone from attempting to impersonate you and take actions in your name

Warning: You are accessing a US Government information system, which includes (1) this computer, (2) this computer network, (3) all computers connected to this network, and (4) all devices and storage media attached to this network or to a computer on this network. This information system is provided for US Government-authorized use only. Unauthorized or improper use of this system may result in disciplinary action, as well as civil and criminal penalties. By using this information system, you understand and consent to the following: You have no reasonable expectation of privacy regarding any communication or data transiting or stored on this information system. At any time, and for any lawful government purpose, the government may monitor, intercept, and search and seize any communication or data transiting or stored on this information system. Any communication or data transiting or stored on this information system may be disclosed or used for any lawful Government purpose.

Access Request Failure: The authentication credentials that you entered could not be verified. If you have forgotten your password, please click the Forgotten Password link below. Note: After three (3) failed authentication attempts, your account will be locked for one (1) hour.

Login Options

Choose one of the three login options.

SAMS Credentials

SAMS Username: rebecca.rottman@oregonpat

SAMS Password: ••••••••••

Login

Forgot SAMS Password?

For users who login with only a SAMS issued UserID and Password.

OR

SAMS Grid Card Credentials

Click login below to login with SAMS Grid Card.

Login

For users who have been issued a SAMS Grid Card.

OR

HHS PIV Card

Insert your PIV card in your smart card reader before you try to login.

Login

For users who are CDC staff and have been issued a PIV card.

SAMS Help: For more information and/or assistance, please contact the SAMS Help Desk between the hours of 8:00 AM and 6:00 PM EST Monday through Friday (excluding U.S. Federal holidays) at the following Toll Free: 877-681-2901, Email: samshelp@cdc.gov.

U.S. Centers for Disease Control (CDC): SAMS Partner Portal - Identity Verification Request

sams-no-reply@cdc.gov

Sent: Mon 9/8/2014 1:42 PM

To: Rebecca Rottman

Applicant

You will print this form and get it notarized

Name: Rebecca Rottman

Preferred Name: Rebecca

Primary Phone: [redacted]
Alternate Phone: [redacted]
Email: rebecca.rottman@oregonpatientsafety.org

Verification Initiated On: 9/8/2014

Applicant to complete:

Printed Name: _____

Date of Birth: _____

Signature: _____

Today's Date: _____

Getting Your SAMS Notarized

You will need **one** form of identification from **each** list

List A - Primary Photo ID	List B - Secondary ID
Driver's license or ID card issued by a state or outlying possession of the US	Driver's license or ID card issued by a state or outlying possession of the US
U.S. Passport or U.S. Passport Card	U.S. Passport or U.S. Passport Card
U.S. Military ID	U.S. Military ID
U.S. Permanent Resident Card	U.S. Permanent Resident Card
U.S. Employment Authorization Card	U.S. Employment Authorization Card
	Employee ID Card issued by your organization that includes: - Your name - Your organization name - Your photo
	State-issued Voter ID or Registration Card
	Certification of Birth Abroad issued by the U.S. Department of State
	Original or Certified copy of birth certificate issued by state, county, municipal authority, or territory of the U.S. bearing an official seal

Businesses that Notarize

- Bank
- Post Office
- Some Schools
- Recommend calling ahead to ensure notary is available

The actual notarization process took less than ten minutes

Submitting Notarized Forms

- You will submit:
  - a copy of your notarized Identity Verification form
  - a copy of both forms of identification you used for notarization
- All of these documents can be submitted via fax, mail, or uploaded as single document
- We recommend uploading because it is the fastest mode of submission
- You **CANNOT** email these forms

Once the CDC Receives Your Documents

- You will receive a confirmation email titled "Proofing Documentation Delivered".
  - The CDC's system is currently back logged due to a high volume of submissions; your submission method will determine how quickly you receive a confirmation

FW: U.S. Centers for Disease Control (CDC): SAMS Partner Portal - Proofing Documentation Delivered

Dear SAMS User,

This is a notification that we have successfully delivered your proofing documentation to the CDC Proofing Authority for review.

You will be contacted by the SAMS Help Desk if further information is needed to process your submission.

Transaction: [redacted]
File Name: NHSN ID Verification.pdf

If you feel that this notification is in error or if you have any questions or concerns, please contact the SAMS Help Desk.

Thank you,

The SAMS Team
https://sams.cdc.gov

For more information or assistance, please contact the SAMS Help Desk between the hours of 8:00 AM and 6:00 PM EST Monday through Friday (excluding U.S. Federal holidays) at the following:

Toll Free: 1-877-681-2901
Email: samshelp@cdc.gov

******Note: This email has been sent from an unmonitored mailbox. DO NOT REPLY TO THIS EMAIL. Please direct all inquires to the Help Desk as listed above.***

Grid Card

- You will receive your grid card at your home mailing address within 2 – 3 weeks (this may take longer depending on number of SAMs requests)
- Packaging for the card will be addressed from the CDC and it does not require a delivery signature
- Once you receive the card, you can login to the SAM's Grid Card Login Portal
- We recommend making a copy of the grid card so that it is available should it be misplaced

Warning: You are accessing a US Government information system, which includes (1) this computer, (2) this computer network, (3) all computers connected to this network, and (4) all devices and storage media attached to this network or to a computer on this network. This information system is provided for US Government-authorized use only. Unauthorized or improper use of this system may result in disciplinary action, as well as civil and criminal penalties. By using this information system, you understand and consent to the following: You have no reasonable expectation of privacy regarding any communication or data transiting or stored on this information system. At any time, and for any lawful government purpose, the government may monitor, intercept, and search and seize any communication or data transiting or stored on this information system. Any communication or data transiting or stored on this information system may be disclosed or used for any lawful Government purpose.

Access Request Failure: The authentication credentials that you entered could not be verified. If you have forgotten your password, please click the Forgotten Password link below. Note: After three (3) failed authentication attempts, your account will be locked for one (1) hour.

Login Options

Choose one of the three login options.

SAMS Credentials

SAMS Username: rebecca.rottman@oregonpat

SAMS Password: ••••••••

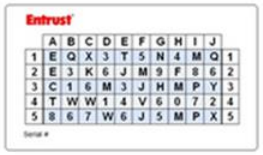
Login

Forgot SAMS Password?

For users who login with only a SAMS issued UserID and Password.

OR

SAMS Grid Card Credentials



Click login below to login with SAMS Grid Card.

Login

For users who have been issued a SAMS Grid Card.

OR

HHS PIV Card

Insert your PIV card in your smart card reader before you try to login.

Login

For users who are CDC staff and have been issued a PIV card.

SAMS Help: For more information and/or assistance, please contact the SAMS Help Desk between the hours of 8:00 AM and 6:00 PM EST Monday through Friday (excluding U.S. Federal holidays) at the following Toll Free: 877-681-2901, Email: samshelp@cdc.gov.

Questions?

Press star 6 to unmute your phone

Or

Submit your question through the chat box on the right side of screen, select “to host”

Overview: Tracking Infections in Long-term Care Facilities (LTCFs)

Finalized 9/2014

National Center for Emerging and Zoonotic Infectious Diseases
Division of Healthcare Quality Promotion

Target Audience

- This training is for people who want to:
  - Use NHSN to track infections and analyze infection data in one or more LTCFs
  - Support a LTCF interested in enrolling and reporting infection data into NHSN
  - Learn how using NHSN can benefit long-term care facilities (LTCFs)

Objectives

- Describe how NHSN supports infection surveillance
- Understand how LTCFs can use NHSN to analyze and report infection data
- Identify what a LTCF needs to report into NHSN

What is NHSN?

- CDC supported internet-based system designed for healthcare facility reporting of infections
- Data used by facilities for surveillance, benchmarking, and internal quality improvement
- Data used by CDC to establish national benchmarks and monitor success of efforts to prevent healthcare-associated infections (also called HAIs)

Why track infections in LTCF?

- To comply with infection surveillance regulations
- To identify the most common or most harmful infections impacting residents and staff
- To have a baseline to detect new or increasing infections (e.g., outbreaks)
- To have data to develop and evaluate infection prevention activities in the facility*

**Without data, we can't show improvement «*

How does NHSN support LTCFs?

- Provides tools and resources to assist your surveillance program
- No fees for participation or the services related to reporting
- Data are secure, confidential and immediately available for analysis and use by the facility
- Facilities can choose to share data with others
  - Between partner facilities (e.g., multi-facility or corporate system) or with other entities (e.g., public health agencies or quality improvement organizations)

How can using NHSN benefit LTCFs?

- All reporting will use the same nationally accepted infection definitions
- Allows for fair comparison of rates by facility characteristics (e.g., # of beds or services provided)
- Provides national rates for facilities to use as a benchmark for assessing their own rates and prevention efforts
- Demonstrates trends in improvements in infection prevention by LTCFs across the country

How is NHSN organized?

NHSN reporting is divided into different reporting components

- Patient Safety is used by hospitals and other acute care facilities for infection reporting
- Biovigilance is used by hospitals for reporting blood transfusion safety events
- LTCF was adapted from Patient Safety for LTCF resident infection reporting
- Healthcare Personnel Safety is used by all healthcare facilities to report healthcare staff safety events (e.g., influenza vaccination)

Which NHSN Components are available for LTCFs?

- Currently, LTCFs can enroll and report in the following:
  1. Long-term Care Facility Component
     - To track resident infections
     - To track staff adherence with hand hygiene and gown/glove use
  2. Healthcare Personnel Safety Component
     - To track staff influenza vaccination
     - For more information about Healthcare Personnel Safety: http://www.cdc.gov/nhsn/hps.html

What events can you report in the LTCF Component?

Reporting is divided into different modules/events:

- Healthcare Associated Infection Module
  - Focuses on urinary tract infection reporting, both catheter and non-catheter related events
  - Could expand to include other infection events in the future
- Laboratory Identified (Lab-ID) Event Module
  - Uses positive laboratory tests and cultures to track antibiotic resistant organisms, (e.g., methicillin-resistant *Staphylococcus aureus*) and *C. difficile*
- Preventions Process Measures Module
  - Tracks staff adherence to hand hygiene and proper use of gowns/gloves

Are data entered into NHSN kept confidential?

- Data entered into NHSN by facilities reporting as part of state or federal regulations are shared with the agencies overseeing the reporting programs
- Data entered into NHSN by facilities reporting voluntarily are protected by a data confidentiality agreement in the Public Health Service Act
  - Public Health Service Act (42 USC 242b, 242k, and 242m(d) - Sections 304, 306 and 308(d))
  - "The **voluntarily provided** information contained in this surveillance system that would permit identification of any individual or institution is collected with a guarantee that it will be held in strict confidence, will be used only for the purposes stated, and will not be disclosed or released without the consent of the individual, or the institution

Could I share my data with someone not at my facility?

- Yes, a facility can **choose to share** their NHSN data with external partners such as their corporate leadership or quality improvement organizations
- Sharing data can be done through an optional feature called "Joining an NHSN Group"
- Facilities who join an NHSN Group, provide permission to the external group leader to see parts of their data
  - If more than one facility is part of an NHSN Group, individual facilities cannot see one another's data

How to get started using NHSN

- Obtain support from your organization's leadership to participate in NHSN
  - Identify the *"NHSN facility administrator"* – the primary point of contact between your facility and NHSN
- Ensure computer/internet access for the NHSN facility administrator and any other users
  - Each person needs a current email address
- Review the enrollment training slides and materials on the NHSN LTCF website: http://www.cdc.gov/nhsn/LTC/enroll.html

Identify the "NHSN Facility administrator" «

- The "NHSN facility administrator" is the person who leads the NHSN enrollment and reporting for your facility
  - CDC uses this term to designate the person who adds users and submits/edits facility information within NHSN
- The NHSN facility administrator does NOT have to be the same person who serves as the facility administrator for your organization
  - The NHSN facility administrator should have support and authority to make decisions about NHSN use for the facility
- Consider having a second person learn about the NHSN enrollment and reporting process as a "back-up" NHSN lead for your facility

Ensure computer access

- NHSN is a web-based data reporting system
- The NHSN Facility Administrator and all users will need access to a computer with internet access to use NHSN
- All staff using NHSN will need a current email address
  - Email is the primary way CDC contacts NHSN users
  - Some individuals opt to use their personal email address to maintain a stable contact with CDC
- A facility's IT/computer support services may have to work with NHSN users to be sure the privacy and security settings on their computer and email allow for NHSN access and communication with CDC

Identify other NHSN users

- Some facilities divide the NHSN data reporting activities among multiple people to share the work
  - Anyone entering data into NHSN for a facility must be designated as a facility user by the NHSN facility administrator
- All NHSN users must receive NHSN system access by receiving a user ID and passcode from the CDC's Secure Access Management System (SAMS)
- Once a user has access to NHSN, he/she should review the training slides for reporting event data and summary data

What happens next?

- There are several steps to enrolling a facility including:
  - Agreeing to the NHSN rules of behavior
  - Registering the facility and facility contact information with NHSN
  - Obtaining SAMS/NHSN access for all users
  - Submitting facility demographic information into the "NHSN Annual Facility Survey"
  - Signing and returning the NHSN consent form to CDC
- For step-by-step instructions about getting NHSN access for users and enrolling your facility, review the NHSN LTCF Enrollment slide set: http://www.cdc.gov/nhsn/LTC/enroll.html

For more information, visit the NHSN LTCF website: http://www.cdc.gov/nhsn/LTC/

Long-term Care Facility Component

- Training
- Protocols
- Data collection forms
- Tables of instructions for completing all forms
- Key terms

Questions or Need Help?

Contact User Support at nhsn@cdc.gov

Enrollment: Getting access to NHSN for your LTCF

Finalized 11/2014

National Center for Emerging and Zoonotic Infectious Diseases
Division of Healthcare Quality Promotion

Training audience

- This training is for:
  - Any person who wants to register and enroll a long-term care facility (LTCF) into NHSN
  - Any person who may be training other individuals on the NHSN enrollment process for LTCFs

Learning Objectives

- Define the key personnel roles for a facility enrolled in NHSN
- Describe the information needed to enroll a LTCF into NHSN
- Explain the steps for submitting information during the NHSN enrollment process

Who can enroll a facility into NHSN?

- Any person in a LTCF can be given permission to enroll the facility into NHSN
  - Often, the person responsible for NHSN enrollment is also the person who oversees the infection prevention program activities
- Before you start the enrollment process for your LTCF, decide with your facility leadership who will become the point of contact for NHSN enrollment
  - It may help to have more than one person learning about the NHSN enrollment process to provide additional support
- The person assigned to enroll the LTCF into NHSN is called the “NHSN Facility Administrator”

Key Personnel Roles: The NHSN Facility Administrator

- Responsible for NHSN enrollment and coordination of users doing data collection and reporting for a LTCF
- This person has authority within NHSN to
  - Add or remove NHSN users for a facility
  - Manage each users' activities (e.g., reporting data, editing data, or analyzing data) within NHSN
  - Add, edit & delete facility data
  - Nominate (or join) groups for sharing data
- If the NHSN Facility Administrator has to change their position or leave a facility, he or she can reassign the role of "NHSN Facility administrator" to another user

Tips for selecting your NHSN Facility Administrator

- Select someone who is already familiar with infection surveillance activities in your facility
  - This person may not necessarily be your organization's facility administrator or part of the executive leadership
  - This person may be your director of nursing, assistant director of nursing, staff educator, or even the MDS coordinator, if he/she is familiar with data management and infection prevention
- Although only one person in your facility will have the role of NHSN Facility Administrator – consider training a second person on the NHSN enrollment/data submission process to have an extra set of hands

Other Key Personnel Roles

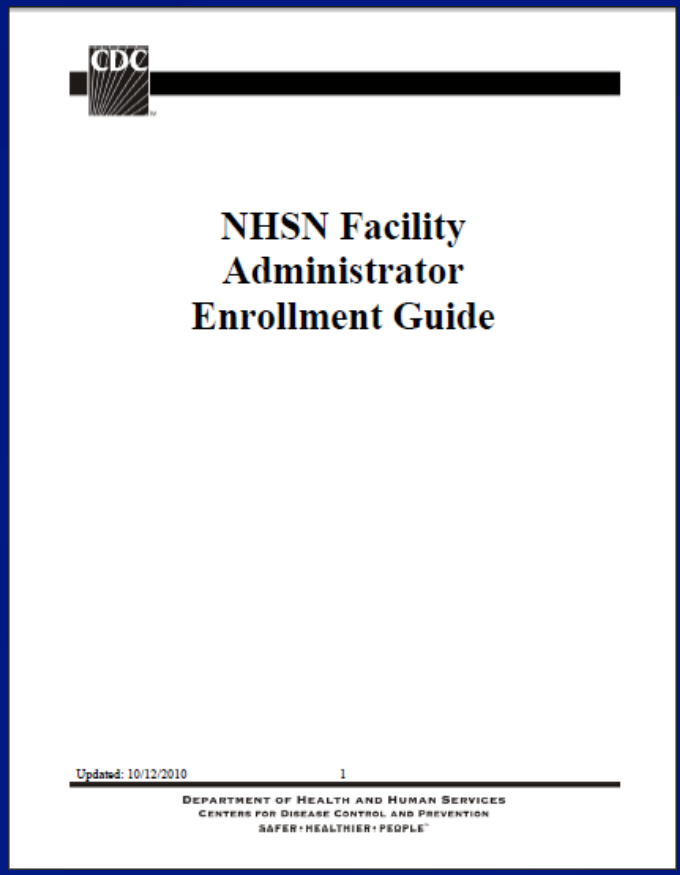
- NHSN LTCF Contact Person
  - Serves as the main point of contact between CDC and the facility
  - Often the NHSN Facility Administrator also serves as the NHSN Contact Person, but it could be someone else

- NHSN Users (Facility Administrator is a user too!!)
  - Other staff at a facility can become NHSN users for an enrolled LTCF
  - Activities that NHSN users can do, known as “user rights” include: viewing, entering, editing or analyzing data in NHSN
  - The NHSN Facility Administrator can add or remove people as NHSN users for their facility
  - The NHSN Facility Administrator works with each user to assign user rights to give him/her access to a facility’s NHSN data

NHSN Facility Administrator Enrollment Guide

- This guide is a general NHSN enrollment resource, not specific to the LTCF Component
- Contains instructions and tips which may address other questions about the enrollment process
- This guide is available on the NHSN LTCF enrollment page:

http://www.cdc.gov/nhsn/LTC/enroll.html



NHSN Enrollment process in a snapshot

Step 1: Training and preparation for enrollment

Step 2: Request to enroll your facility in NHSN

Step 3a: Register with the Secure Access Management System (SAMS)

Step 3b: Complete identity verification process and receive confirmation of SAMS/NHSN access

Step 4: Access NHSN Enrollment and submit Annual Facility Survey electronically

Step 5: Print, sign and mail the facility consent form to CDC and receive confirmation of your facility's enrollment into NHSN

Success! Your facility is now approved to report into NHSN

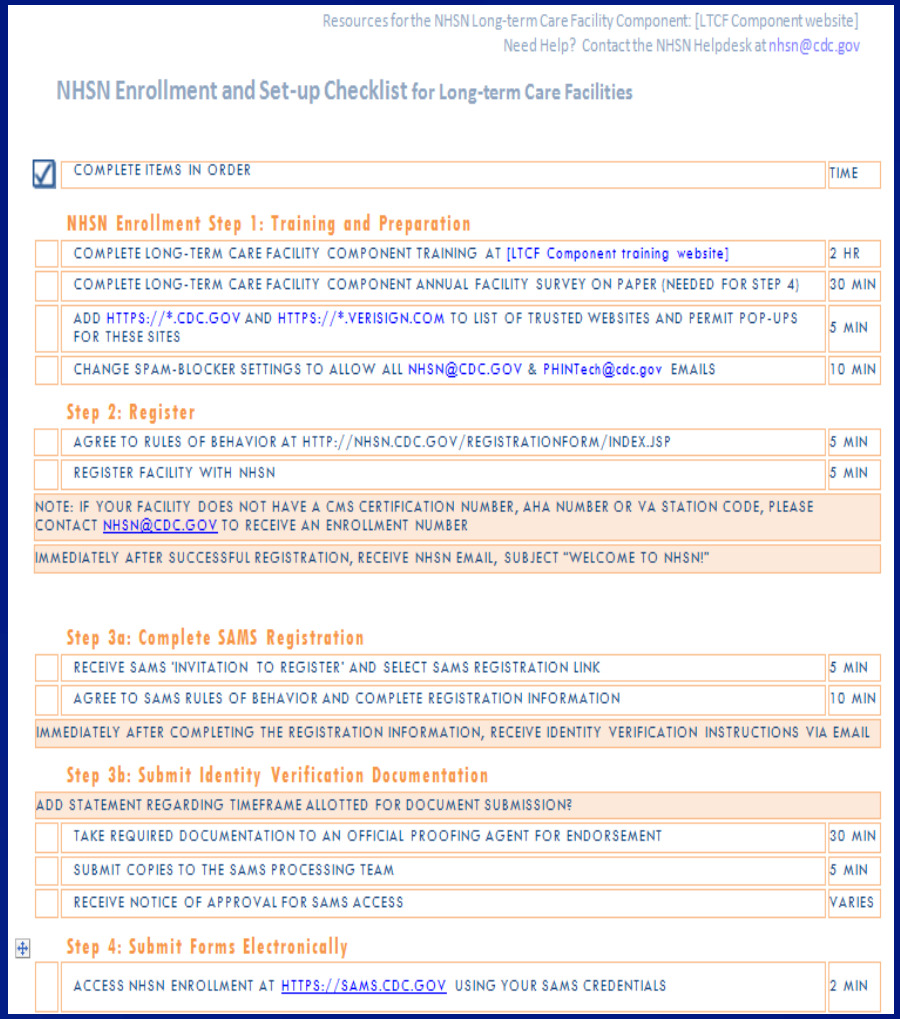
Step 1 - Training and Preparation

- Review the following documents before starting the enrollment process
  - Being familiar with these materials will help you gather all the information you will need to enroll your LTCF
- The main forms/tools you will need to review include:
  - The NHSN Enrollment Checklist
  - The NHSN Facility Contact Form
  - The LTCF Annual Facility Survey
  - For additional information, you can also download the NHSN Facility Administrator Enrollment Guide
- All these documents can be downloaded from:

  http://www.cdc.gov/nhsn/LTC/enroll.html

Documents to review: Enrollment Checklist for LTCF

- This checklist outlines each step in the NHSN enrollment process
- It provides estimates for how much time each step will take and allows you to track your progress
- Complete all steps and forms in order because you will need this information when you are enrolling into NHSN



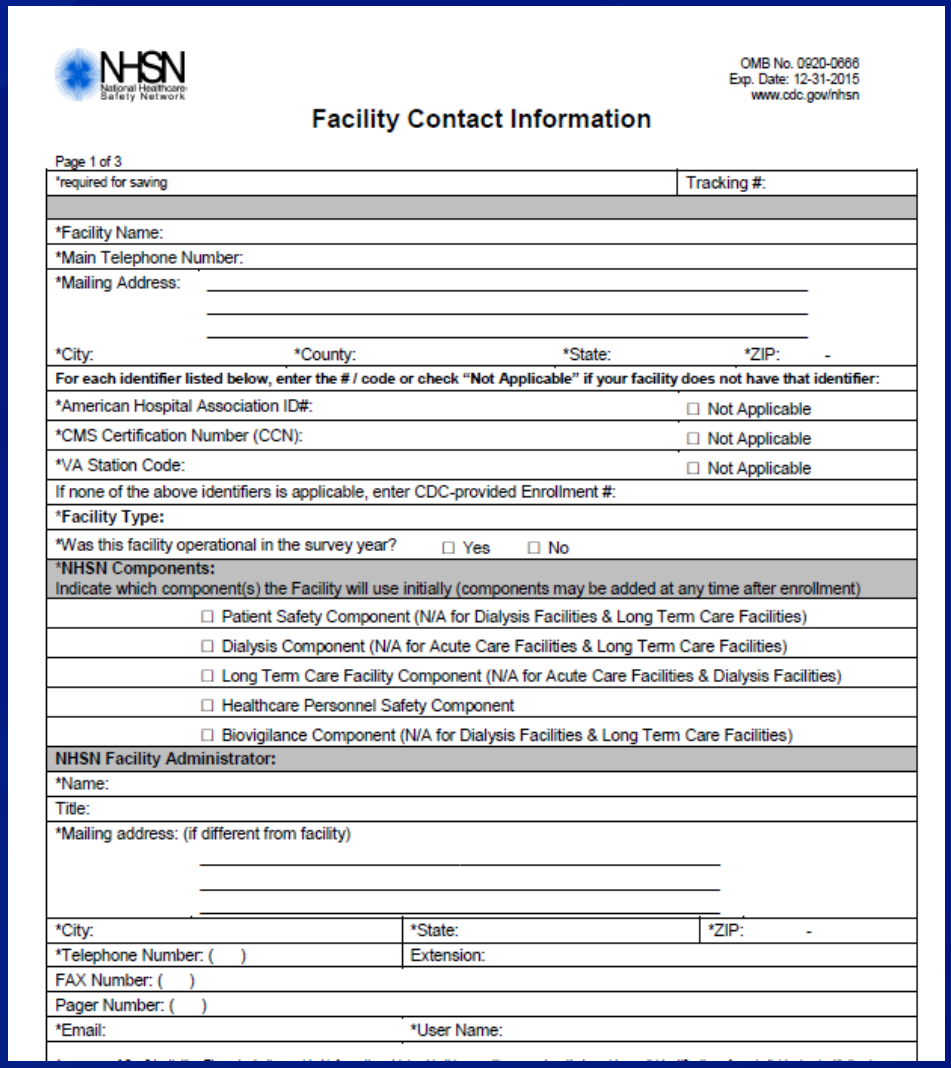
Resources for the NHSN Long-term Care Facility Component: [LTCF Component website]
Need Help? Contact the NHSN Helpdesk at nhsn@cdc.gov

NHSN Enrollment and Set-up Checklist for Long-term Care Facilities

☑	COMPLETE ITEMS IN ORDER	TIME
	NHSN Enrollment Step 1: Training and Preparation	
	COMPLETE LONG-TERM CARE FACILITY COMPONENT TRAINING AT [LTCF Component training website]	2 HR
	COMPLETE LONG-TERM CARE FACILITY COMPONENT ANNUAL FACILITY SURVEY ON PAPER (NEEDED FOR STEP 4)	30 MIN
	ADD HTTPS://*.CDC.GOV AND HTTPS://*.VERISIGN.COM TO LIST OF TRUSTED WEBSITES AND PERMIT POP-UPS FOR THESE SITES	5 MIN
	CHANGE SPAM-BLOCKER SETTINGS TO ALLOW ALL NHSN@CDC.GOV & PHINTech@cdc.gov EMAILS	10 MIN
	Step 2: Register	
	AGREE TO RULES OF BEHAVIOR AT HTTP://NHSN.CDC.GOV/REGISTRATIONFORM/INDEX.JSP	5 MIN
	REGISTER FACILITY WITH NHSN	5 MIN
	NOTE: IF YOUR FACILITY DOES NOT HAVE A CMS CERTIFICATION NUMBER, AHA NUMBER OR VA STATION CODE, PLEASE CONTACT NHSN@CDC.GOV TO RECEIVE AN ENROLLMENT NUMBER	
	IMMEDIATELY AFTER SUCCESSFUL REGISTRATION, RECEIVE NHSN EMAIL, SUBJECT "WELCOME TO NHSN!"	
	Step 3a: Complete SAMS Registration	
	RECEIVE SAMS 'INVITATION TO REGISTER' AND SELECT SAMS REGISTRATION LINK	5 MIN
	AGREE TO SAMS RULES OF BEHAVIOR AND COMPLETE REGISTRATION INFORMATION	10 MIN
	IMMEDIATELY AFTER COMPLETING THE REGISTRATION INFORMATION, RECEIVE IDENTITY VERIFICATION INSTRUCTIONS VIA EMAIL	
	Step 3b: Submit Identity Verification Documentation	
	ADD STATEMENT REGARDING TIMEFRAME ALLOTTED FOR DOCUMENT SUBMISSION?	
	TAKE REQUIRED DOCUMENTATION TO AN OFFICIAL PROOFING AGENT FOR ENDORSEMENT	30 MIN
	SUBMIT COPIES TO THE SAMS PROCESSING TEAM	5 MIN
	RECEIVE NOTICE OF APPROVAL FOR SAMS ACCESS	VARIES
	Step 4: Submit Forms Electronically	
	ACCESS NHSN ENROLLMENT AT HTTPS://SAMS.CDC.GOV USING YOUR SAMS CREDENTIALS	2 MIN

Documents to review: The NHSN Facility Contact Form

- This form collects contact information for the LTCF and the people coordinating NHSN use
- You may need to talk with others in the facility for data such as the CMS Certification Number (CCN) for your facility
- Note: If your facility does not have a CCN, please contact NHSN@cdc.gov to receive an enrollment number



NHSN National Healthcare Safety Network

OMB No. 0920-0666
Exp. Date: 12-31-2015
www.cdc.gov/nhsn

Facility Contact Information

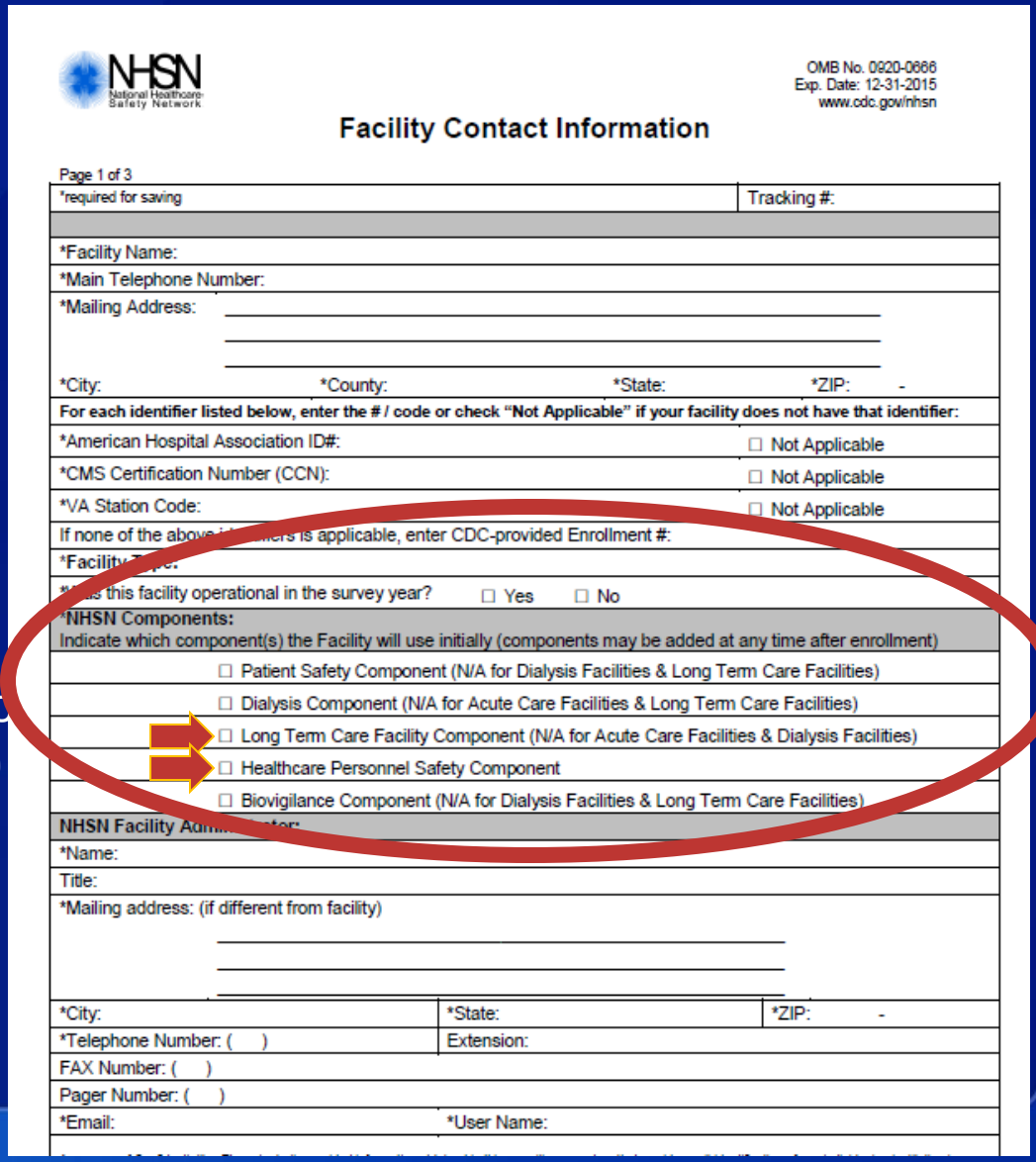
Page 1 of 3

*required for saving	Tracking #:
*Facility Name:	
*Main Telephone Number:	
*Mailing Address:	
*City: *County: *State: *ZIP: -	
For each identifier listed below, enter the # / code or check "Not Applicable" if your facility does not have that identifier:	
*American Hospital Association ID#:	☐ Not Applicable
*CMS Certification Number (CCN):	☐ Not Applicable
*VA Station Code:	☐ Not Applicable
If none of the above identifiers is applicable, enter CDC-provided Enrollment #:	
***Facility Type:**	
*Was this facility operational in the survey year? ☐ Yes ☐ No	
***NHSN Components:** Indicate which component(s) the Facility will use initially (components may be added at any time after enrollment)	
☐ Patient Safety Component (N/A for Dialysis Facilities & Long Term Care Facilities)	
☐ Dialysis Component (N/A for Acute Care Facilities & Long Term Care Facilities)	
☐ Long Term Care Facility Component (N/A for Acute Care Facilities & Dialysis Facilities)	
☐ Healthcare Personnel Safety Component	
☐ Biovigilance Component (N/A for Dialysis Facilities & Long Term Care Facilities)	
NHSN Facility Administrator:	
*Name:	
Title:	
*Mailing address: (if different from facility)	
*City:	*State: *ZIP: -
*Telephone Number: ( )	Extension:
FAX Number: ( )	
Pager Number: ( )	
*Email:	*User Name:

Documents to review: The NHSN Facility Contact Form, continued

NHSN Components: Indicate which component your facility will use initially:

- Select the Long Term Care Facility component - indicated by arrow
- Remember, LTCFs can also report into the Healthcare Personnel Safety Component (to track staff Influenza vaccination)
  - Selection for Healthcare Personnel Safety component indicated by arrow



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Page 1 of 3

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*Facility Name:
*Main Telephone Number:
*Mailing Address:

*City: *County: *State: *ZIP: -

For each identifier listed below, enter the # / code or check "Not Applicable" if your facility does not have that identifier:

*American Hospital Association ID#: ☐ Not Applicable
*CMS Certification Number (CCN): ☐ Not Applicable
*VA Station Code: ☐ Not Applicable
If none of the above identifiers is applicable, enter CDC-provided Enrollment #:
*Facility Type:
*Was this facility operational in the survey year? ☐ Yes ☐ No

***NHSN Components:**
Indicate which component(s) the Facility will use initially (components may be added at any time after enrollment)

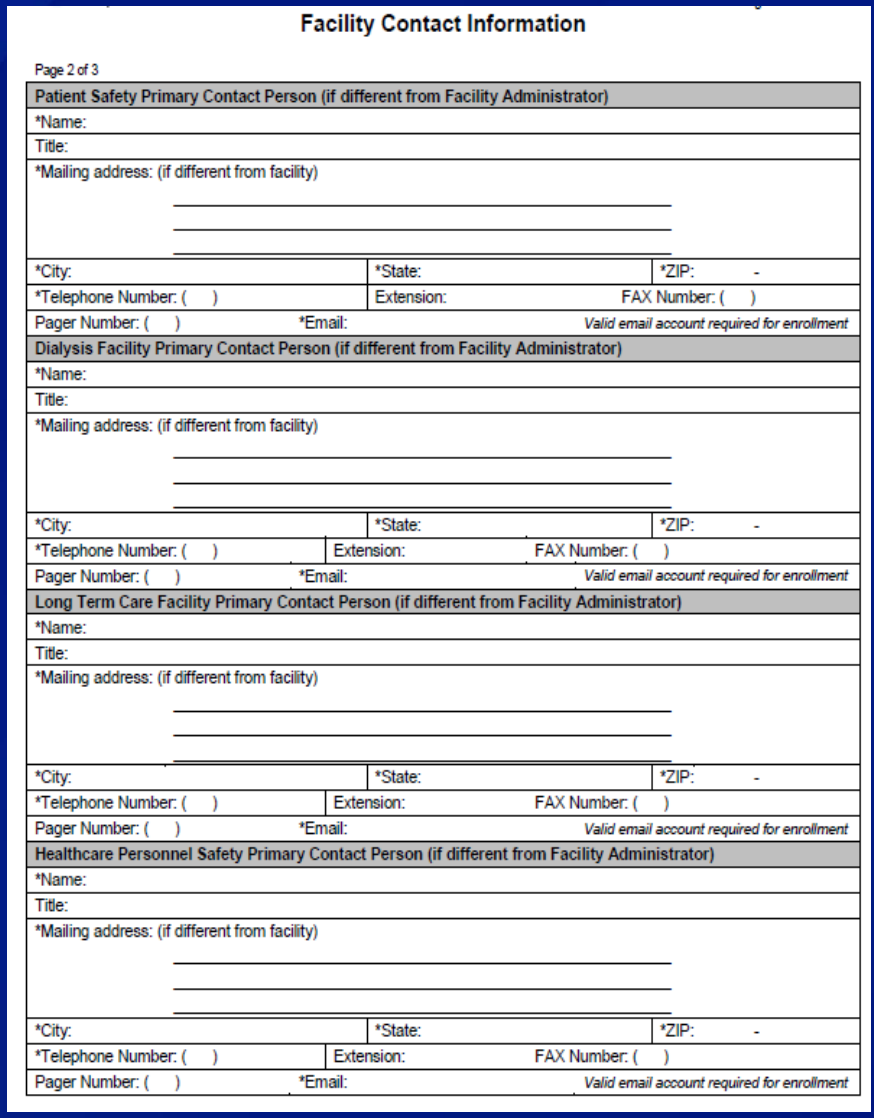
☐ Patient Safety Component (N/A for Dialysis Facilities & Long Term Care Facilities)
☐ Dialysis Component (N/A for Acute Care Facilities & Long Term Care Facilities)
☐ Long Term Care Facility Component (N/A for Acute Care Facilities & Dialysis Facilities)
☐ Healthcare Personnel Safety Component
☐ Biovigilance Component (N/A for Dialysis Facilities & Long Term Care Facilities)

NHSN Facility Administrator:
*Name:
Title:
*Mailing address: (if different from facility)

*City: *State: *ZIP: -
*Telephone Number: ( ) Extension:
FAX Number: ( )
Pager Number: ( )
*Email: *User Name:

The NHSN Facility Contact Form, page 2

- You may designate a different point of contact for each NHSN component that your facility uses
- You don't have to include additional people if the NHSN Facility Administrator will be the primary point of contact for your LTCF



Facility Contact Information

Page 2 of 3

Patient Safety Primary Contact Person (if different from Facility Administrator)		
*Name:		
Title:		
*Mailing address: (if different from facility)		
*City:	*State:	*ZIP: -
*Telephone Number: ( )	Extension:	FAX Number: ( )
Pager Number: ( )	*Email:	*Valid email account required for enrollment*

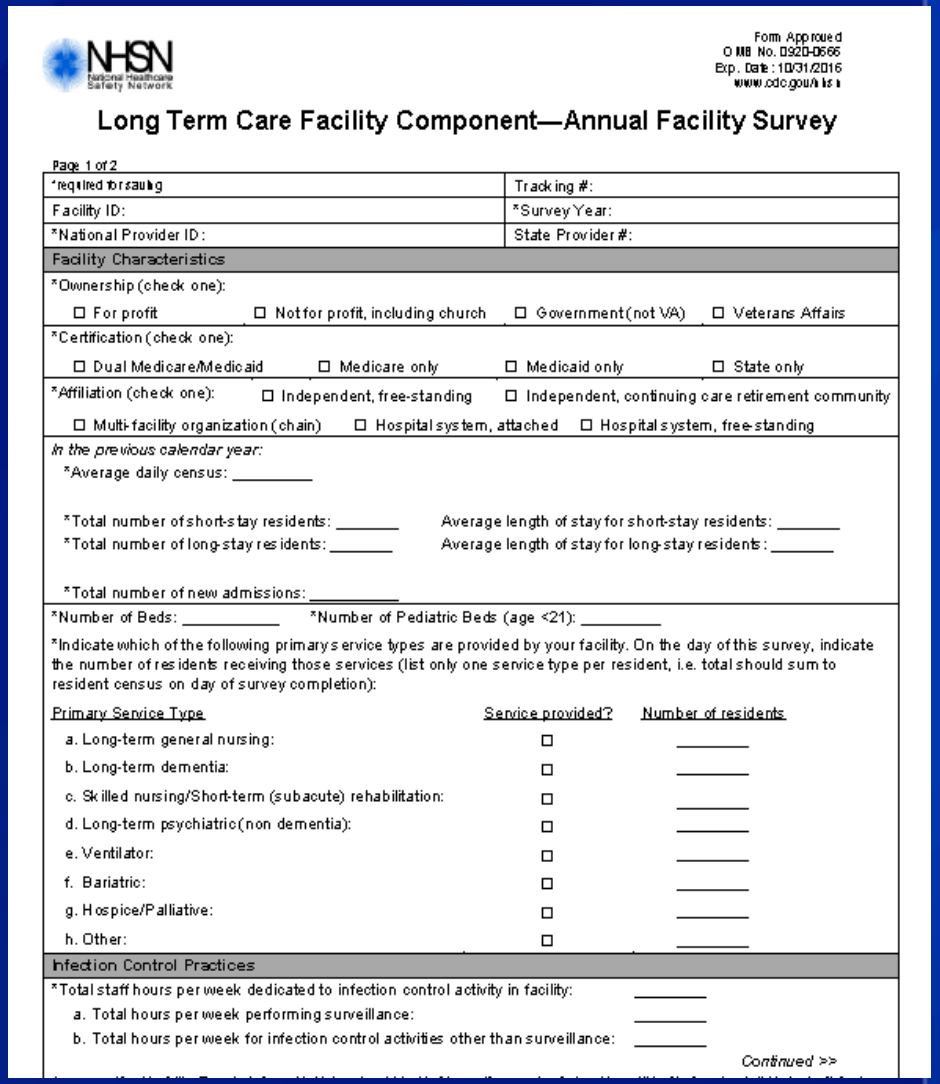
Dialysis Facility Primary Contact Person (if different from Facility Administrator)		
*Name:		
Title:		
*Mailing address: (if different from facility)		
*City:	*State:	*ZIP: -
*Telephone Number: ( )	Extension:	FAX Number: ( )
Pager Number: ( )	*Email:	*Valid email account required for enrollment*

Long Term Care Facility Primary Contact Person (if different from Facility Administrator)		
*Name:		
Title:		
*Mailing address: (if different from facility)		
*City:	*State:	*ZIP: -
*Telephone Number: ( )	Extension:	FAX Number: ( )
Pager Number: ( )	*Email:	*Valid email account required for enrollment*

Healthcare Personnel Safety Primary Contact Person (if different from Facility Administrator)		
*Name:		
Title:		
*Mailing address: (if different from facility)		
*City:	*State:	*ZIP: -
*Telephone Number: ( )	Extension:	FAX Number: ( )
Pager Number: ( )	*Email:	*Valid email account required for enrollment*

Documents to review: The LTCF Annual Facility Survey

- This form collects information about your LTCF and services provided to your resident population
- The data submitted should reflect your facility's experience from the previous calendar year
- You may need to talk with others in the facility to answer some of these questions



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www.cdc.gov/nhsn

Long Term Care Facility Component—Annual Facility Survey

Page 1 of 2

*required for saving	Tracking #:
Facility ID:	*Survey Year:
*National Provider ID:	State Provider #:

Facility Characteristics

*Ownership (check one):
☐ For profit ☐ Not for profit, including church ☐ Government (not VA) ☐ Veterans Affairs

*Certification (check one):
☐ Dual Medicare/Medicaid ☐ Medicare only ☐ Medicaid only ☐ State only

*Affiliation (check one): ☐ Independent, free-standing ☐ Independent, continuing care retirement community
☐ Multi-facility organization (chain) ☐ Hospital system, attached ☐ Hospital system, free-standing

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: _____

*Number of Beds: _____ *Number of Pediatric Beds (age <21): _____

*Indicate which of the following primary service types are provided by your facility. On the day of this survey, indicate the number of residents receiving those services (list only one service type per resident, i.e. total should sum to resident census on day of survey completion):

Primary Service Type	Service provided?	Number of residents
a. Long-term general nursing:	☐	_____
b. Long-term dementia:	☐	_____
c. Skilled nursing/Short-term (subacute) rehabilitation:	☐	_____
d. Long-term psychiatric (non dementia):	☐	_____
e. Ventilator:	☐	_____
f. Bariatric:	☐	_____
g. Hospice/Palliative:	☐	_____
h. Other:	☐	_____

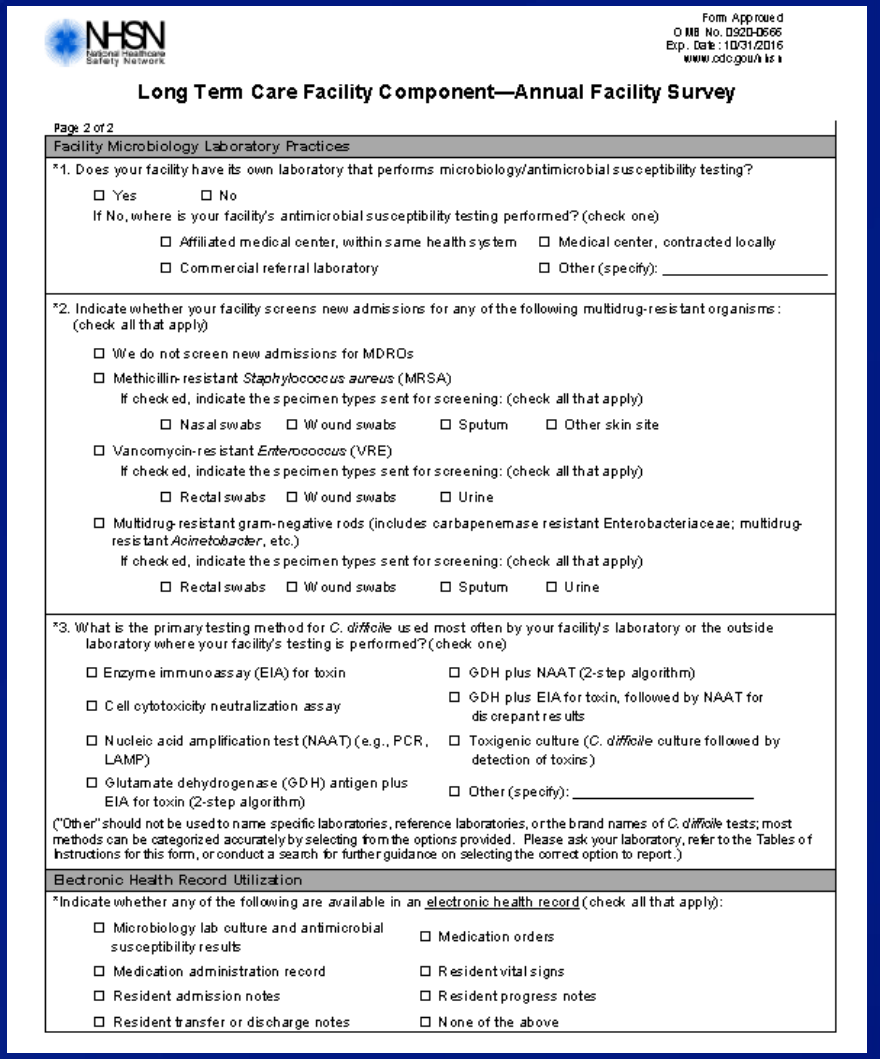
Infection Control Practices

*Total staff hours per week dedicated to infection control activity in facility: _____
a. Total hours per week performing surveillance: _____
b. Total hours per week for infection control activities other than surveillance: _____

Continued >>

The LTCF Annual Facility Survey, page 2

- Give yourself time to review and gather the information on this form
- The NHSN LTCF annual facility survey may get updated from time to time, so be sure to check for notices if a new version is being released
- For additional guidance on completing this document, review the Table of Instructions



NHSN National Healthcare Safety Network

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Long Term Care Facility Component—Annual Facility Survey

Page 2 of 2

Facility Microbiology Laboratory Practices

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

☐ Yes ☐ No

If No, where is your facility's antimicrobial susceptibility testing performed? (check one)

☐ Affiliated medical center, within same health system ☐ Medical center, contracted locally

☐ Commercial referral laboratory ☐ Other (specify): _____

*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)

If checked, indicate the specimen types sent for screening: (check all that apply)

☐ Nasal swabs ☐ Wound swabs ☐ Sputum ☐ Other skin site

☐ Vancomycin-resistant *Enterococcus* (VRE)

If checked, indicate the specimen types sent for screening: (check all that apply)

☐ Rectal swabs ☐ Wound swabs ☐ Urine

☐ Multidrug-resistant gram-negative rods (includes carbapenemase resistant Enterobacteriaceae; multidrug-resistant *Acinetobacter*, etc.)

If checked, indicate the specimen types sent for screening: (check all that apply)

☐ Rectal swabs ☐ Wound swabs ☐ Sputum ☐ Urine

*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? (check one)

☐ Enzyme immunoassay (EIA) for toxin

☐ Cell cytotoxicity neutralization assay

☐ Nucleic acid amplification test (NAAT) (e.g., PCR, LAMP)

☐ 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 *C. difficile* tests; most methods can be categorized accurately by selecting from the options provided. Please ask your laboratory, refer to the Tables of Instructions for this form, or conduct a search for further guidance on selecting the correct option to report.)

Electronic Health Record Utilization

*Indicate whether any of the following are available in an electronic health record (check all that apply):

☐ Microbiology lab culture and antimicrobial susceptibility results

☐ Medication administration record

☐ Resident admission notes

☐ Resident transfer or discharge notes

☐ Medication orders

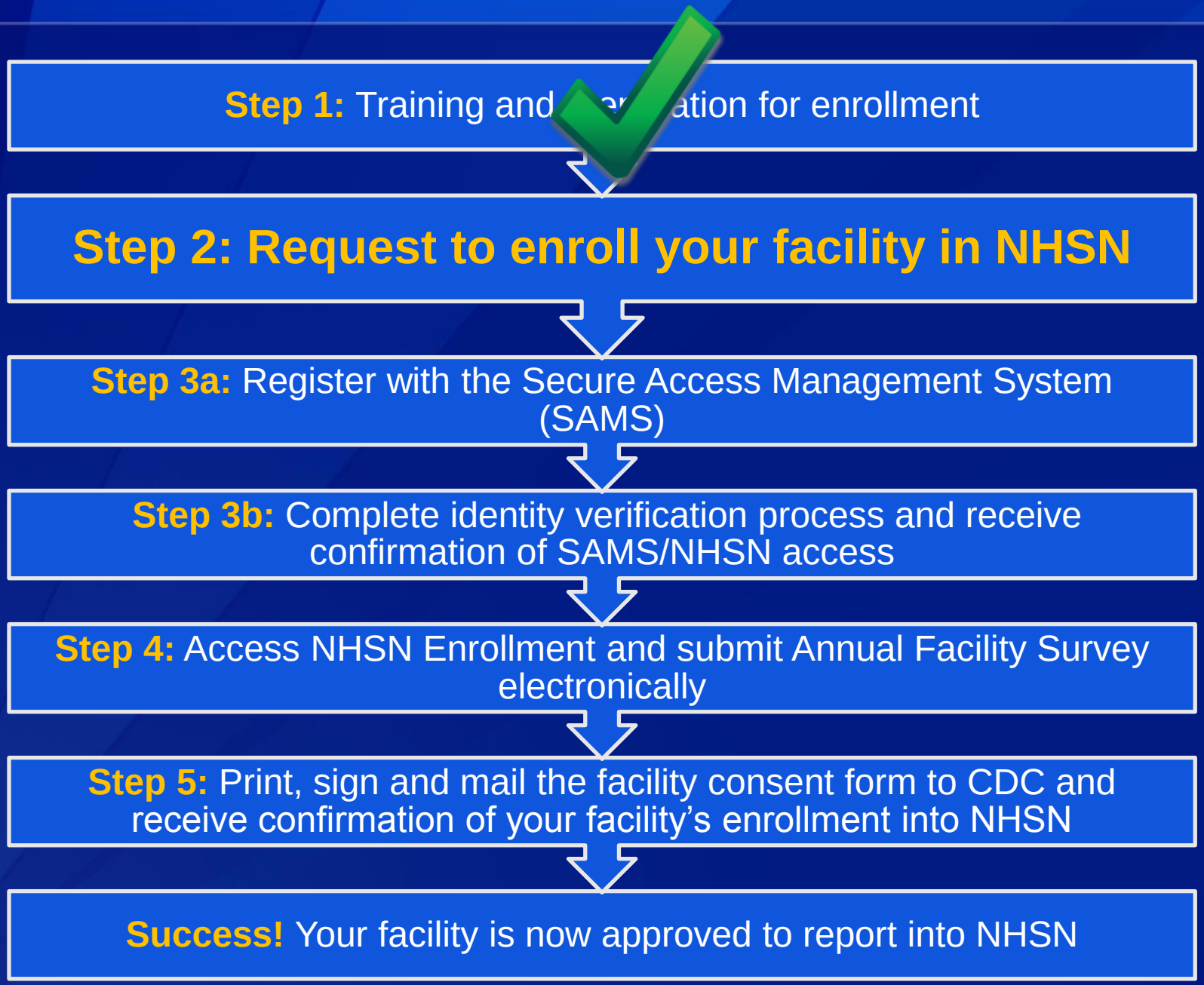
☐ Resident vital signs

☐ Resident progress notes

☐ None of the above

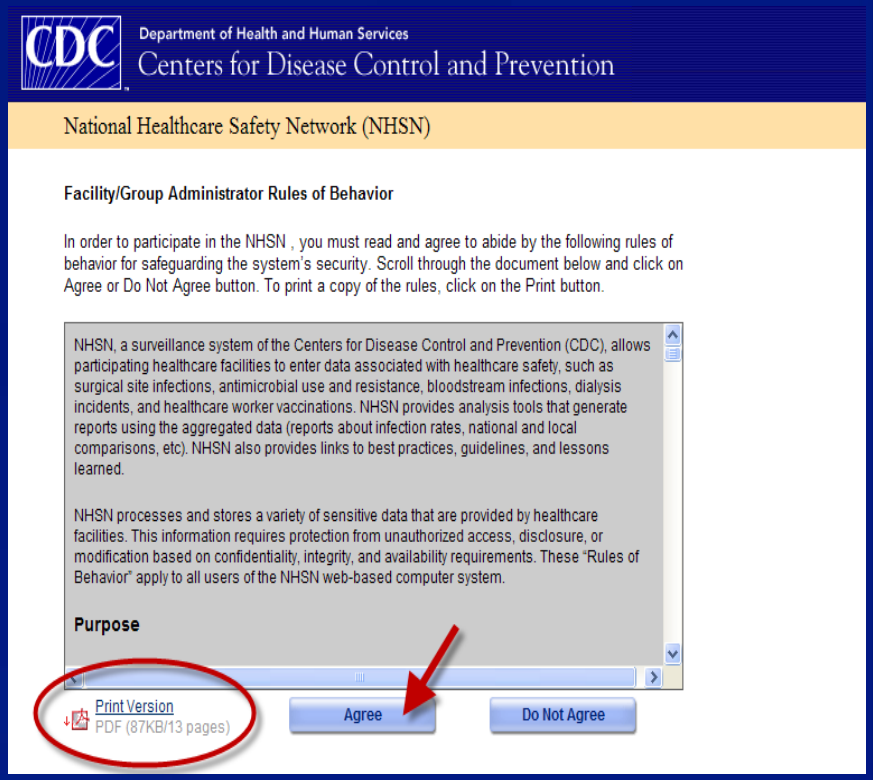
Prepare your computer to interact with NHSN

- You may need to change your email and internet security settings to receive communications from NHSN during the enrollment process
- Change spam-blocker settings to allow all email from:
  - nhsn@cdc.gov ; PHINTech@cdc.gov ; and
  - SAMS-NO-REPLY@cdc.gov
- Add https://*.cdc.gov and https://*.verisign.com to trusted sites list and allow pop-ups
  - In Internet Explorer, open “Tools” menu, select “Internet Options”
  - Add trusted sites on the “Security” tab
  - Allow pop-ups on the “Privacy” tab
- These changes may require assistance from your IT manager or department


Step 1: Training and ation for enrollment
Step 2: Request to enroll your facility in NHSN
Step 3a: Register with the Secure Access Management System (SAMS)
Step 3b: Complete identity verification process and receive confirmation of SAMS/NHSN access
Step 4: Access NHSN Enrollment and submit Annual Facility Survey electronically
Step 5: Print, sign and mail the facility consent form to CDC and receive confirmation of your facility's enrollment into NHSN
Success! Your facility is now approved to report into NHSN

Step 2 – Request to Enroll your Facility to NHSN

- After reviewing the enrollment materials, you are ready to begin the enrollment process
- Registering your facility includes:
  - Reading and agreeing to the NHSN Rules of Behavior
  - Providing contact information for the NHSN facility administrator

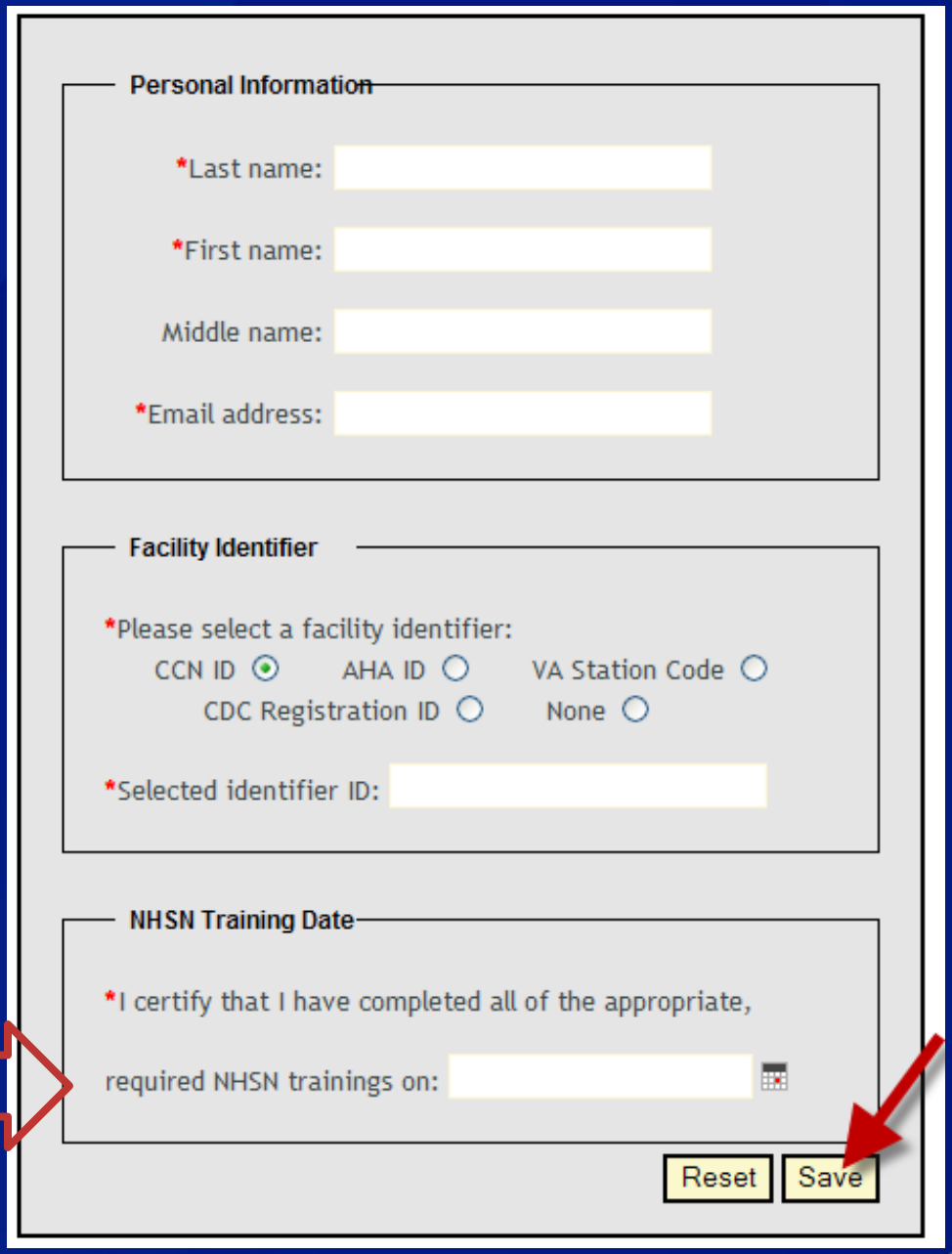


You can link to the registration website from the LTCF Enrollment page or go to:
http://nhsn.cdc.gov/RegistrationForm/index

Step 2 - Register

- The NHSN Facility Administrator completes this form:
  - Name
  - Check your email address! *Use the same email address for all enrollment steps*
  - CCN is a 6 digit CMS Certification # or CDC-provided enrollment #
  - Click ‘Save’
  - Hint: Refer to the Facility Contact Information form you filled out earlier

Required trainings are listed on the NHSN LTCF Component enrollment website. Indicate the date you completed training.



Step 2 - Register

- Following successful registration, you will immediately receive a welcome to NHSN email.
- You will also receive an email invitation to register for SAMS access (step 3a) similar to the following
- Be sure to print this email out because it has information you need to register for SAMS

Hello

You have been invited to register with the U.S. CDC's Secure Access Management Service (SAMS). Registration with SAMS will allow you to access selected CDC Extranet applications specifically designed and implemented for the Public Health community. A registration account has already been created for you. A link to this account and a temporary password word are provided below. This invitation is valid for 30 days.

Should you have questions with the SAMS registration process, please contact our Help Desk for assistance.

Thank you,

The SAMS Team

SAMS basic registration process includes the following steps:

1. **Online Registration** - Follow the link below and use the included temporary password to log into SAMS' user registration pages. During registration, you will be asked to supply some basic information about yourself. This information will help CDC Program Administrators provide you with the application access most appropriate for your role in Public Health. You will also choose your personal SAMS password to help keep your account private and secure.
2. **Identity Verification** - Once you complete your online registration, you will receive an email with instructions for completing Identity Verification. In order to provide individuals with access to non-public information, U.S. law **requires** that the identity of potential users is first verified - this step is critical in helping to protect people's private data and in helping to prevent information misuse. Please be assured that CDC and its Programs have made every effort to keep this necessary process as simple and non-intrusive as possible. Also be assured that your registration materials will only be used to help determine your suitability for information access and that these materials will not be shared outside of CDC programs.
3. **Access Approval** - Once your Identity Verification is complete, CDC Program Administrators will determine the access level most appropriate for your role and will activate your SAMS account. SAMS will send you an account activation email with a link to the SAMS portal page where you can begin using your extranet applications.

To re[illegible]er with SAMS, please click the following link or cut and paste it into your br[illegible]

[illegible]tps://sams.cdc.gov/idm/SAMS/ca/index.jsp?task.tag=SAMSRegistration

When prompted, please enter:

- Your Username:
- Temporary Password:

and click t[illegible]Login button.

***Note:** In order to access SA[illegible] configured to use TLS 1.0 encryption. If your computer is not configured for TLS, or if you are unsure, please contact your local IT System Administrator for assistance.

Temporary Username and password needed for online registration

Step 1: Training and preparation for enrollment

Step 2: Request to [illegible] your facility in NHSN

Step 3a: Register with the Secure Access Management System (SAMS)

Step 3b: Complete identity verification process and receive confirmation of SAMS/NHSN access

Step 4: Access NHSN Enrollment and submit Annual Facility Survey electronically

Step 5: Print, sign and mail the facility consent form to CDC and receive confirmation of your facility's enrollment into NHSN

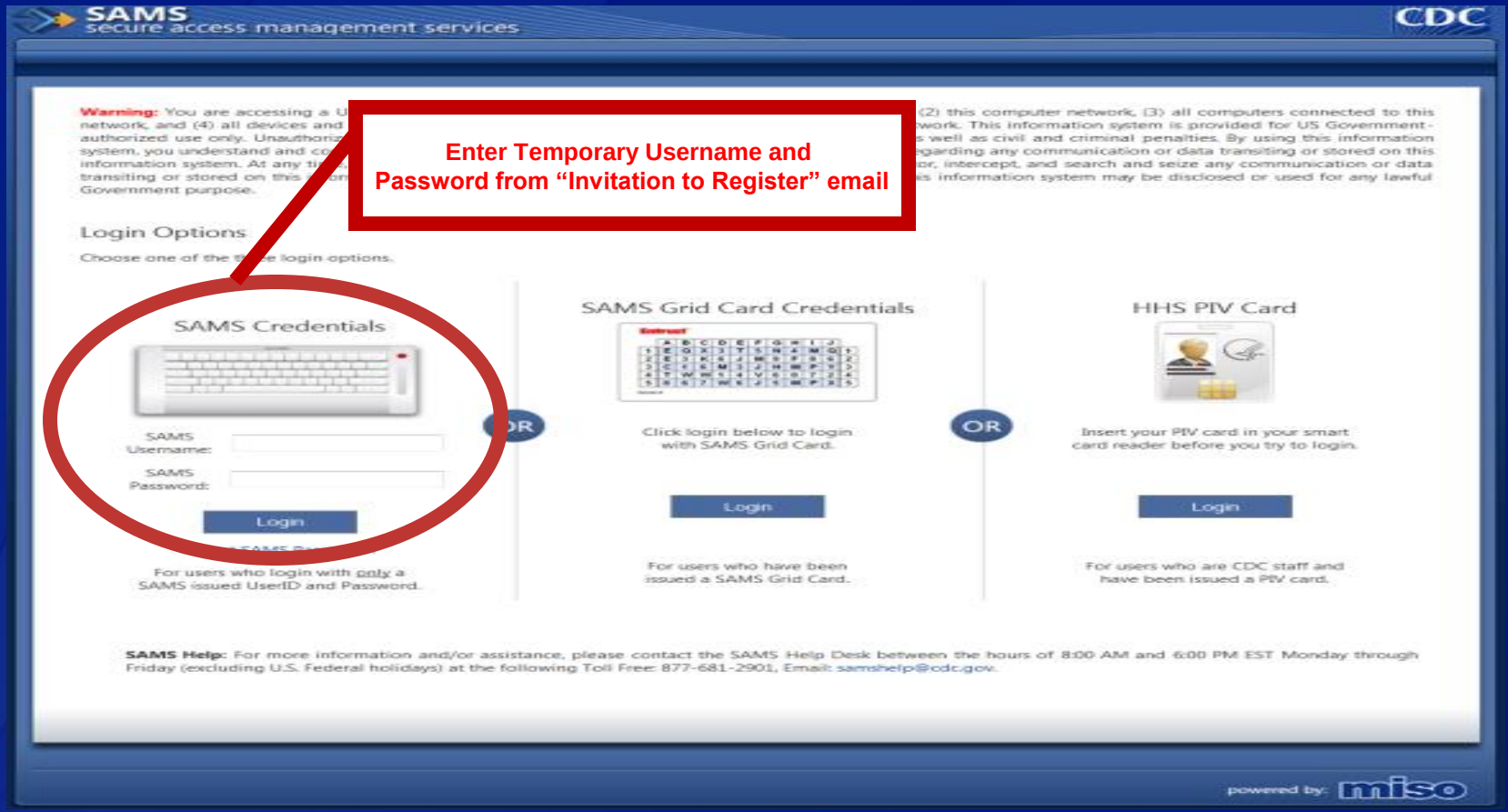
Success! Your facility is now approved to report into NHSN

Secure Access Management (SAMS)

- SAMS provides secure online access to and exchange of information between CDC and public health partners
- Users receive an invitation to register with SAMS which provides instructions for registration and identify proofing in order to obtain access to CDC applications, including NHSN
- During registration the user sets a password which expires every 60 days.
- The user is also issued an electronic grid card which adds an additional level of security when logging in to the system.

Step 3a - SAMS Registration

- The Invitation to Register email contains your Username and Password for SAMS registration



https://sams.cdc.gov/

Step 3a - SAMS Registration

After accepting the Rules of Behavior, enter the required registration information and click Submit.

Step 1: Training and preparation for enrollment

Step 2: Request to enroll your facility in NHSN

Step 3a: Register with the Secure Access Management System (SAMS)

Step 3b: Complete identity verification process and receive confirmation of SAMS/NHSN access

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Step 5: Print, sign and mail the facility consent form to CDC and receive confirmation of your facility's enrollment into NHSN

Success! Your facility is now approved to report into NHSN

Step 3b - Identity Proofing

- After accepting the SAMS Rules and Behaviors, you will receive an email which contains all the information and documentation for “Identity Verification”. (Print this email out because it contains a document which must be completed)
- Carefully follow the instructions in the email to insure the enrollment process is not delayed

Hello New NHSN User,

Thank you for registering with CDC's SAMS Partner Portal. Your registration information has been received and is currently pending approval.

In order to provide individuals with access to non-public information, U.S. law ***requires*** the identity of potential users to be verified - this step is critical in helping to protect people's private data and in helping to prevent information misuse. Please be assured that CDC and its Programs have made every effort to keep this necessary process as simple and non-intrusive as possible. Also be assured that your identity information will only be used to help determine your suitability for access and that this data will not be shared outside of CDC programs.

To complete identity verification, please print the form attached to this email message and follow the instructions provided below. The required steps are as follows:

1. Complete the Applicant Section in the attached form - part of the information has been pre-filled for you based on the information you supplied during registration.
2. Take the printed form, along with appropriate photo identity documentation to a Proofing Agent (a person specifically designated by CDC to conduct identity verification or a Notary Public). Have them verify your identity and complete the Proofing Agent / Notary Section. Acceptable forms of identification are listed in the table below:

   You must provide one (1) unexpired document from List A and one (1) additional unexpired document from List B.

List A - Primary Photo ID	List B - Secondary ID
Driver's license or ID card issued by a state	Driver's license or ID card issued by a state or outlying possession of

Step 3b - Registration Approval

- Once your identity documentation has been processed you will receive confirmation of approval for SAMS access via email
- You will also be issued an electronic grid card which is used when logging into the system along with your username and password
- Note: The option to log in using only your username and password only provides Level 2 security access. In order to gain Level 3 access, which is necessary for NHSN use, you must use your grid card
- Electronic grid cards are mailed to the address used in registration and can take up to 3 weeks to receive.

Step 1: Training and preparation for enrollment

Step 2: Request to enroll your facility in NHSN

Step 3a: Register with the Secure Acces[illegible]Management System (SAMS)

Step 3b: Complete identity verifi[illegible]rocess and receive confirmation of SAMS/N[illegible]N access

Step 4: Access NHSN Enrollment and submit Annual Facility Survey electronically

Step 5: Print, sign and mail the facility consent form to CDC and receive confirmation of your facility's enrollment into NHSN

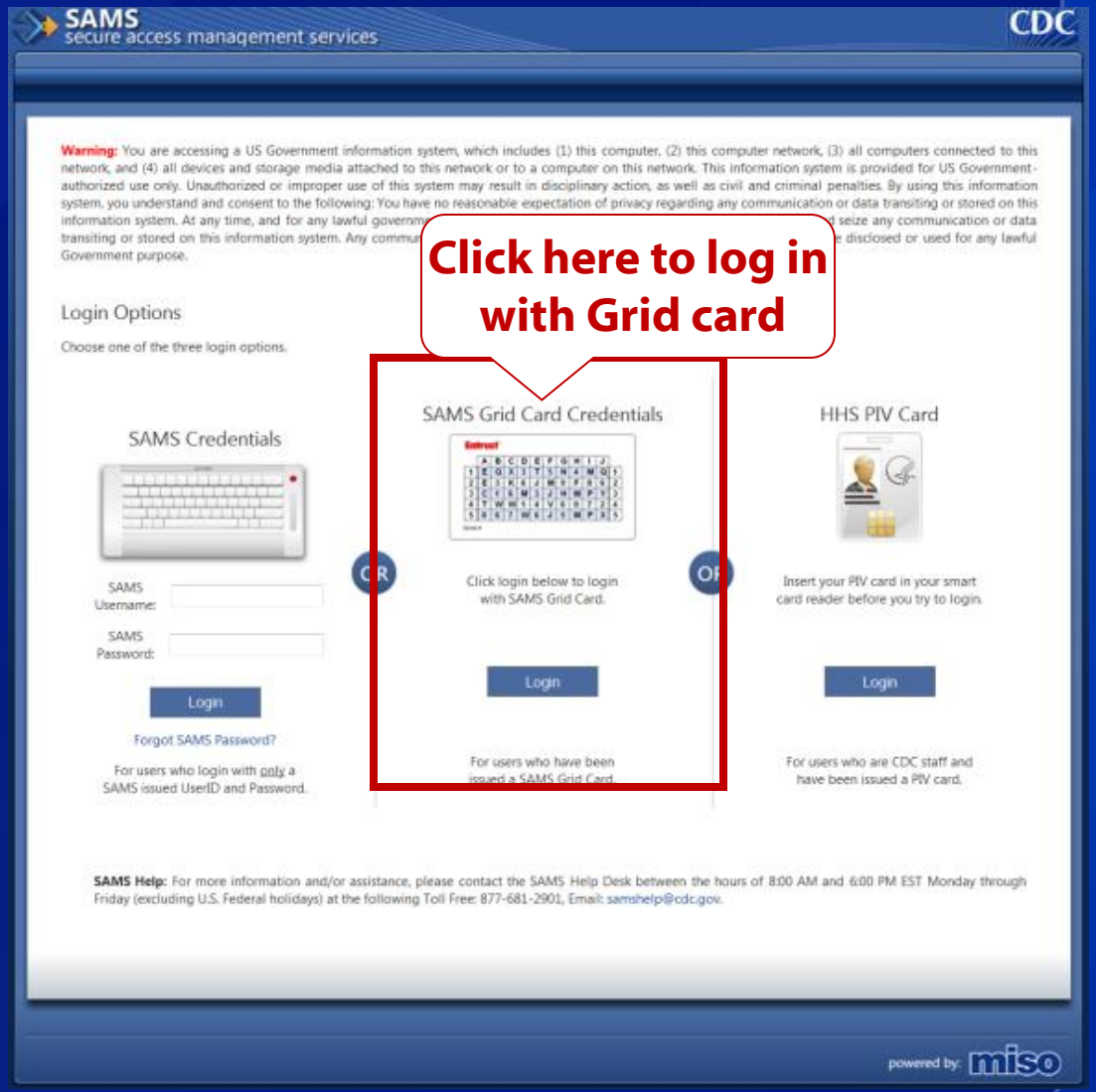
Success! Your facility is now approved to report into NHSN

Step 4a – Enter the SAMS Portal

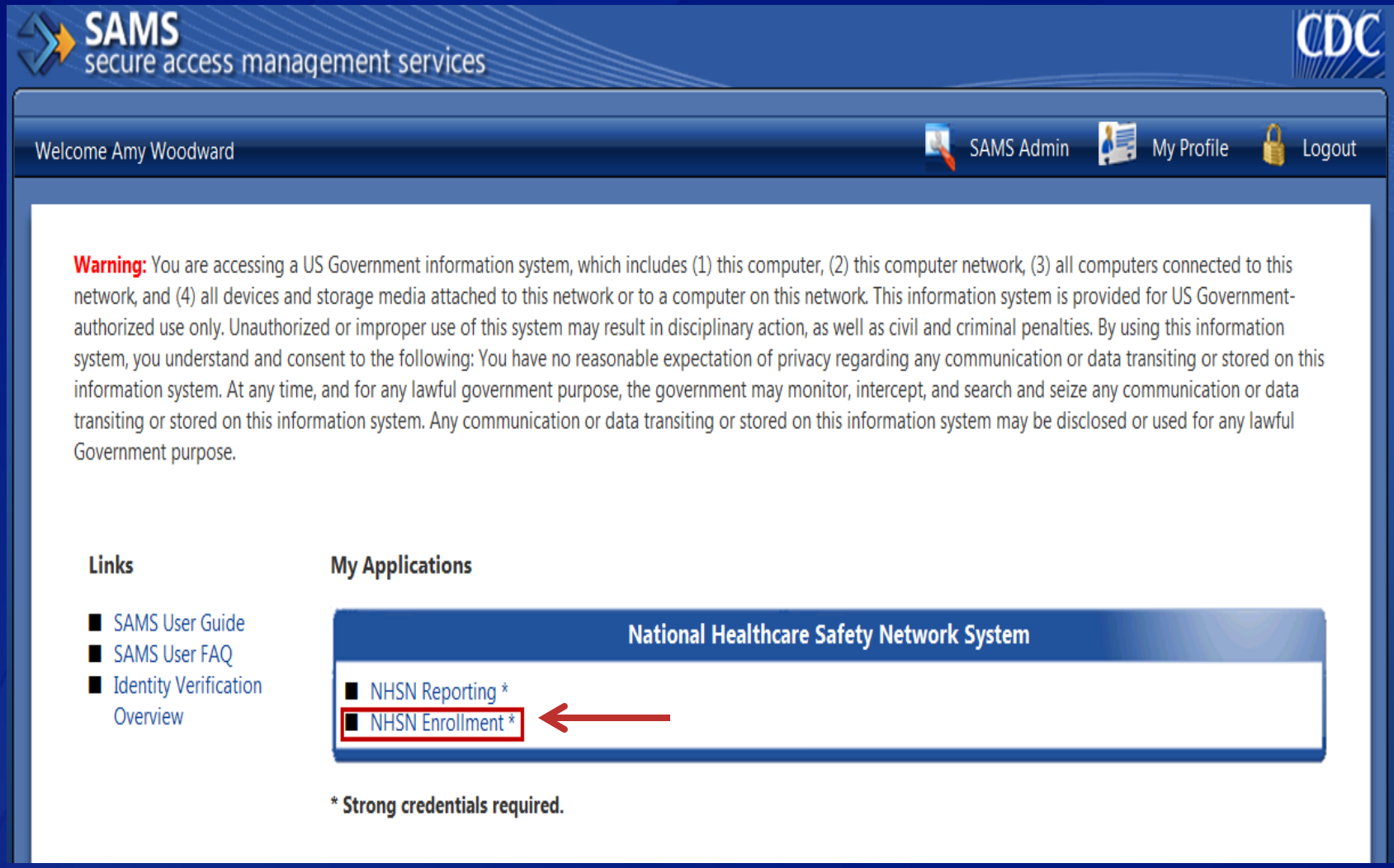
- Once you have successfully registered to with SAMS and provided identify verification documentation, you will receive and email indicating your registration is approved.

- In order to access NHSN, you must first log into SAMS using your newly obtained Grid Card, which takes up to 3 weeks to obtain after you are approved, and your username and password. The SAMS website:

https://sams.cdc.gov/

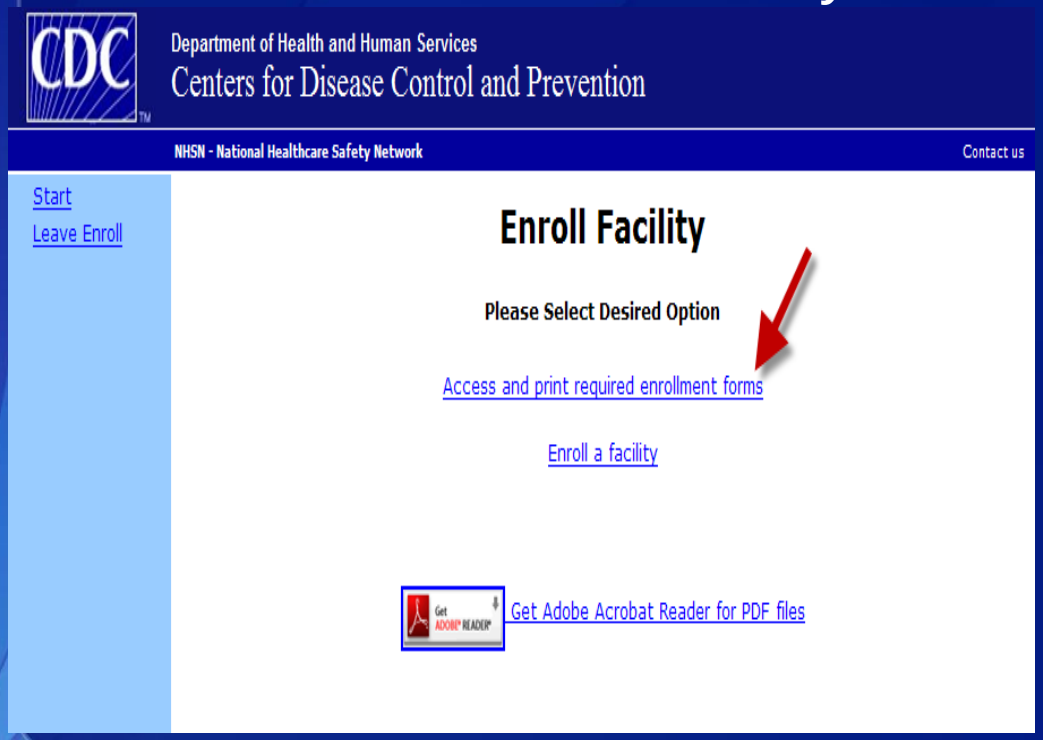


Step 4b – Select "NHSN Enrollment" to submit your facility's contact and survey information



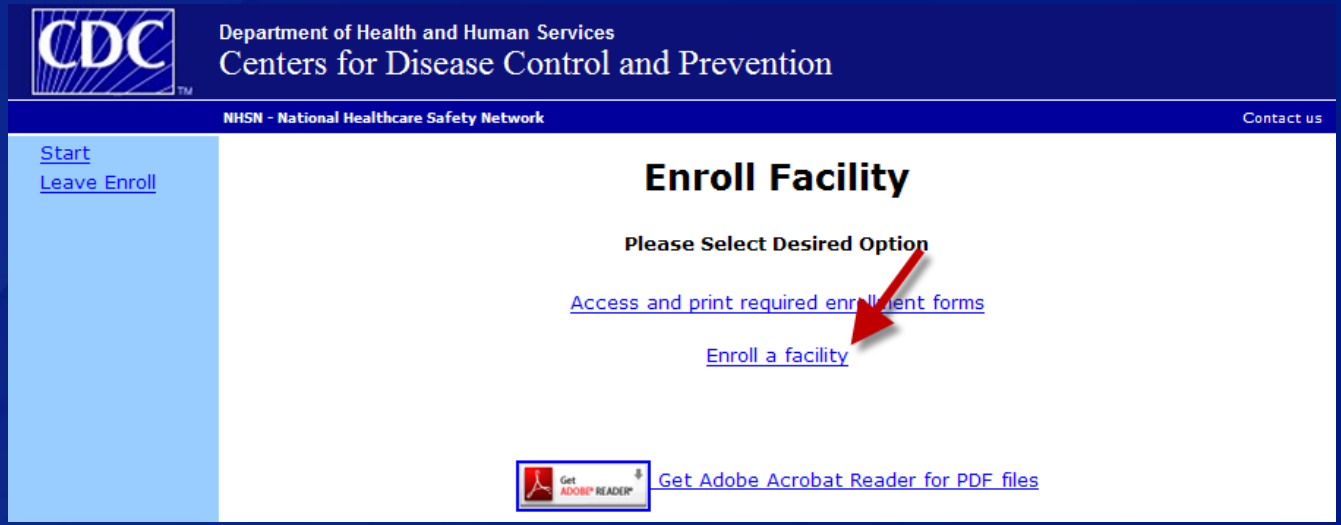
Step 4c - Access Enrollment Forms

- If you have not already printed out copies of the Facility Contact form and Annual Facility Survey (see slides 11-16), then click ‘Access and Print” to view these forms
- These forms must be completed prior to entering the information electronically into NHSN



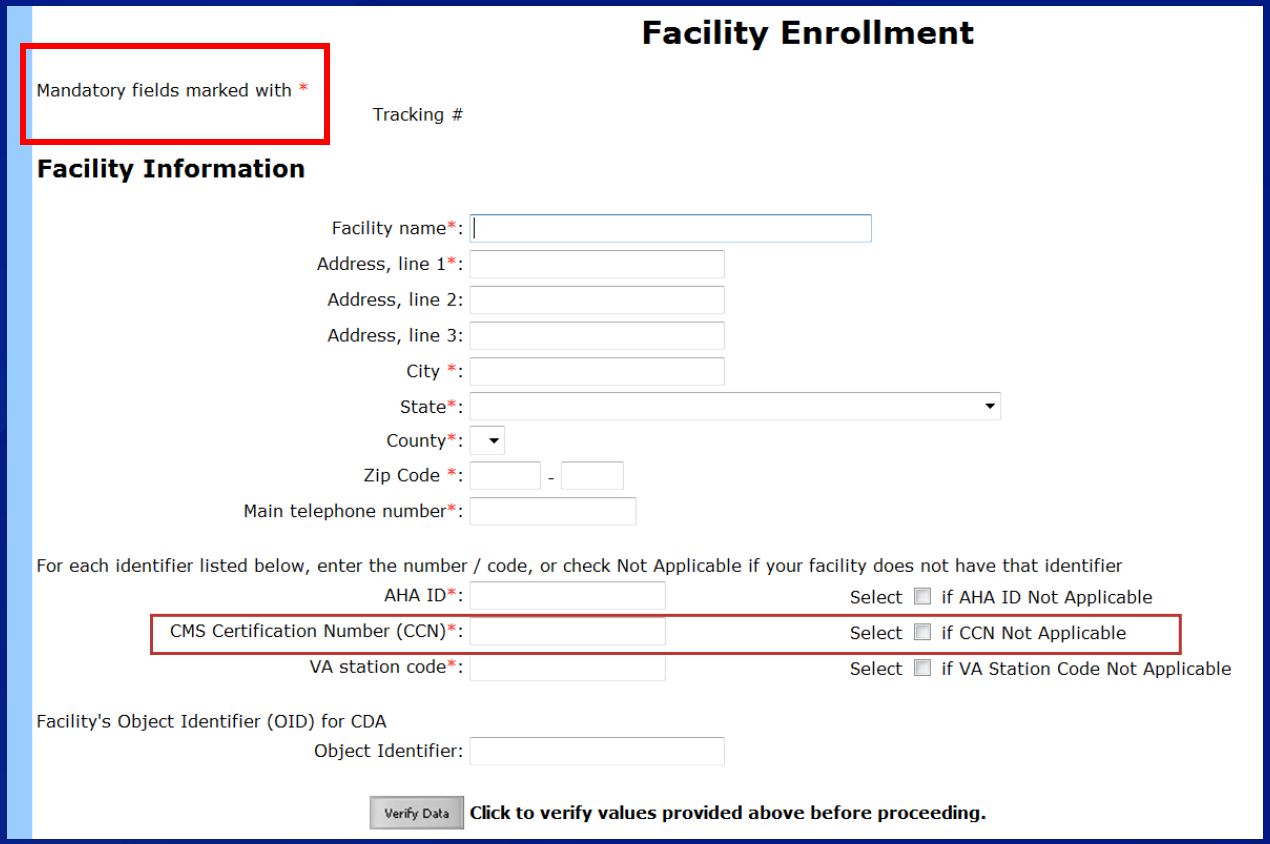
Step 4d – Enrolling a Facility

- After accessing, printing and completing the required enrollment forms, click “Enroll a facility”
- IMPORTANT: You must complete all the data submission about your facility in one session!
  - You cannot save work in progress so be prepared before you start the enrollment process by having all documents completed



Step 4 - Facility Contact Information

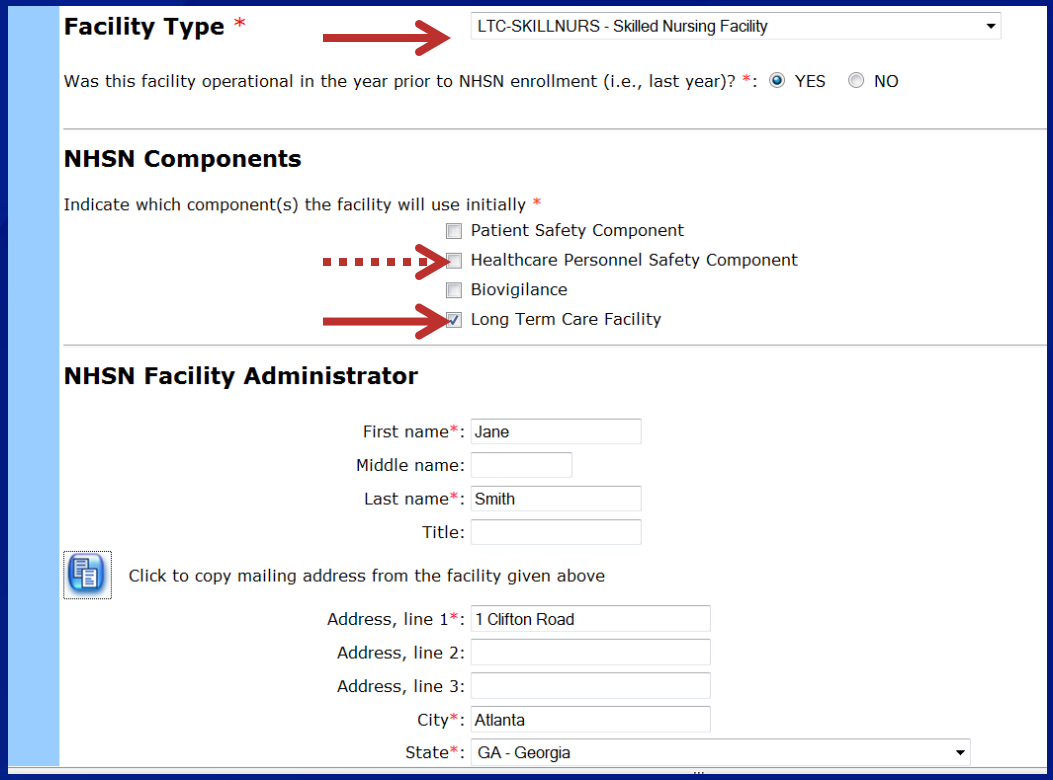
- Fields with a red asterisk MUST be completed to save your work
- Facilities which are CMS-certified should have a certification number (CCN)
- If your facility does not have a CCN contact the NHSN help desk nhsn@cdc.gov



- Facilities within the Department of Veterans Affairs (VA) Healthcare System, may have a VA station code instead of a CCN

Step 4 - Facility Information

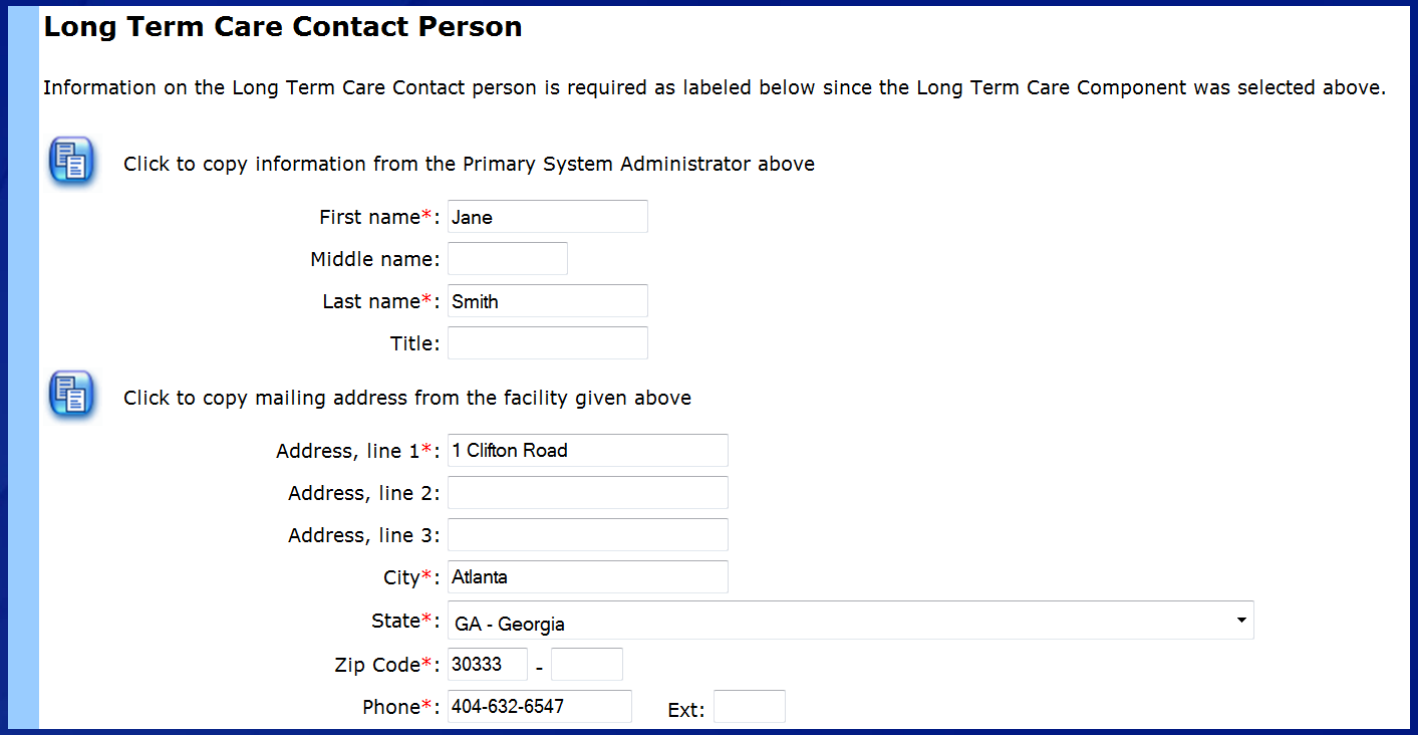
- Select most appropriate Facility Type from:
  - LTC-ASSIST - Assisted Living or Residential Care Facility
  - LTC-DEVDIS – Facility Caring for Individuals with Developmental Disabilities
  - LTC-SKILLNURS - Skilled Nursing Facility or Nursing Home
- Select the NHSN components in which your facility will participate:
  - Long-Term Care Facility - for tracking infections
  - Healthcare Personnel Safety - for tracking staff influenza vaccination



- The NHSN Facility Administrator is person enrolling the facility
  - IMPORTANT! Use the same email address as in steps 2 and 3

Step 4 - Facility Contact Information

- LTCF Component enrollment requires a LTCF Contact Person
  - Person who will be most involved with LTCF surveillance
  - Can be the same person as the Facility Administrator



Step 4: Complete Annual Facility Survey

Mandatory fields marked with *

Facility ID*: NT Nursing Home (11133) Survey Year*: 2011

National Provider ID*: 125325465432132 State Provider #:

Facility Characteristics

Facility ownership*: P - For profit Certification*: DUAL - Dual Medicare/Medicaid

Affiliation*: MFO - Multi-facility organization (chain)

In the previous calendar year,

Average daily census*: 105

Number of Short-stay residents*: 300

Number of Long-stay residents*: 85

Average Length of Stay for Short-stay residents*: 55

Average Length of Stay for Long-stay residents*: 450

Number of New Admissions*: 254

Total Number of Beds*: 120 Number of Pediatric Beds (age <21)*: 0

On the day of this survey, indicate the number of residents receiving the following primary service types: (list only one servic
i.e. total should sum to resident census on day of survey completion)

a. Long-term General Nursing*: 50

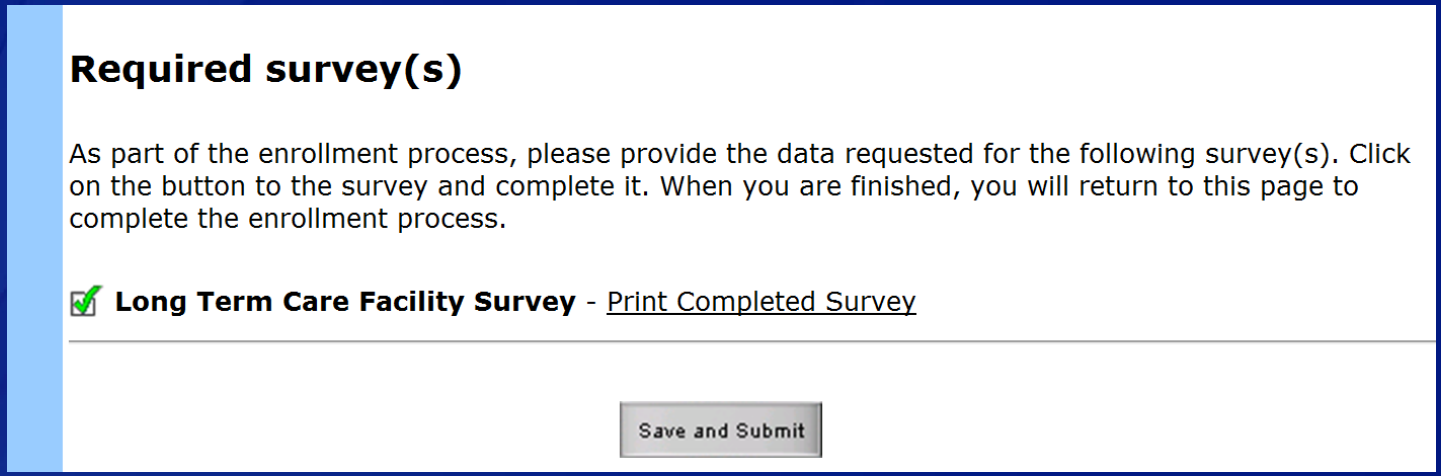
b. Long-term Dementia*: 0

Hint: Reference completed form, “LTCF –Annual Facility Survey”

Remember you cannot partially complete a form, save and return

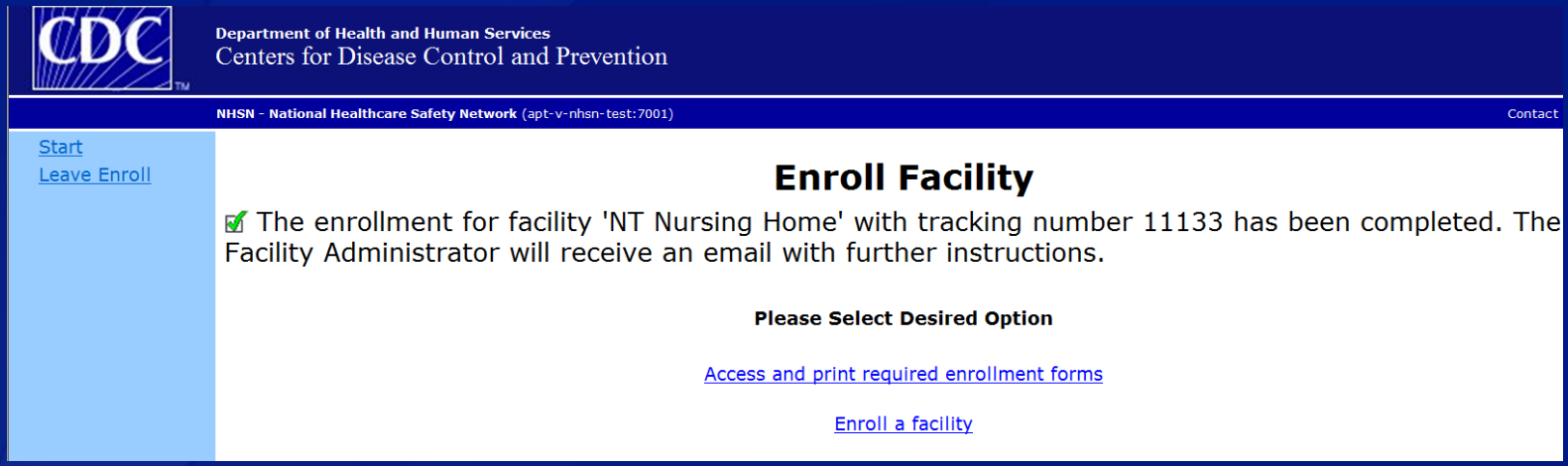
Step 4 - Submit Forms Electronically

- Once information is saved, a green checkmark displays next to it
  - Can print a completed survey for your records
- Once all required information is entered and saved, click 'Submit'
  - If you print your survey, don't forget to press submit!



Step 4 - Submit Forms Electronically

- Once required forms are submitted, confirmation message displays



- Facility Administrator will immediately receive an NHSN email with a link to your consent form
  - If you do not receive this email, contact the NHSN Helpdesk
    - nhsn@cdc.gov

Step 1: Training and preparation for enrollment

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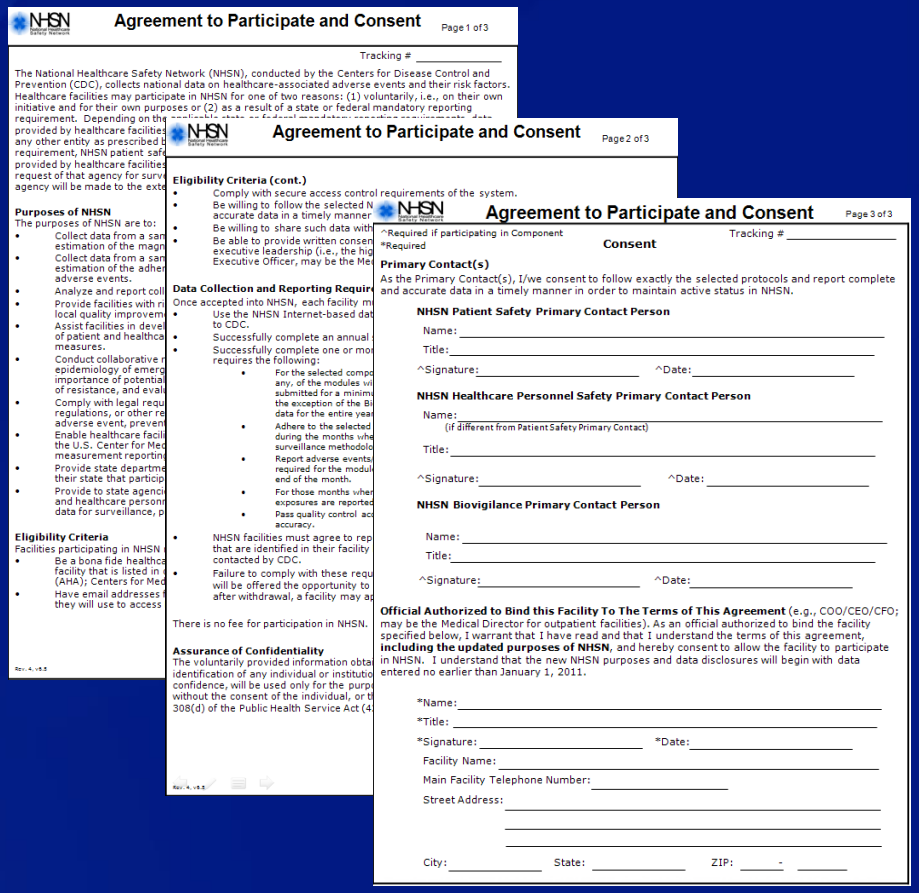
Success! Your facility is now approved to report into NHSN

Step 5 - Sign and Send Consent

- NHSN email, subject line “NHSN Facility enrollment submitted” links to your consent form
  - Consent forms are facility-specific, you must print the consent form provided in the email link
- You have 30 days to open the link and print form
- Once printed, CDC must receive it within 60 days

Step 5 - Sign and Send Consent

- Agreement to Participate and Consent includes:
  - NHSN Purposes
  - Eligibility
  - Data collection and reporting requirements
  - Assurance of Confidentiality
- Must be signed by
  - Long-term Care Facility Contact Person (see slide 36)
  - Your facility Leadership
- Requires signature from the highest level administrator at your facility



Agreement to Participate and Consent Page 1 of 3

Tracking # _____

The National Healthcare Safety Network (NHSN), conducted by the Centers for Disease Control and Prevention (CDC), collects national data on healthcare-associated adverse events and their risk factors. Healthcare facilities may participate in NHSN for one of two reasons: (1) voluntarily, i.e., on their own initiative and for their own purposes or (2) as a result of a state or federal mandatory reporting requirement. Depending on the

Purposes of NHSN

The purposes of NHSN are to:

- Collect data from a san estimation of the magn
- Collect data from a san estimation of the adher adverse events.
- Analyze and report coll
- Provide facilities with ri
- local quality improvem
- Assist facilities in devel of patient and healthca measures.
- Conduct collaborative r epidemiology of emerg importance of potentia of resistance, and eval
- Comply with legal requ regulations, or other re adverse event, prevent
- Enable healthcare facili the U.S. Center for Med measurement reportin
- Provide state departme their state that particip
- Provide to state agenci and healthcare personn data for surveillance, p

Eligibility Criteria

Facilities participating in NHSN

- Be a bona fide healthca facility that is listed in (AHA); Centers for Med
- Have email addresses they will use to access

Agreement to Participate and Consent Page 2 of 3

Eligibility Criteria (cont.)

- Comply with secure access control requirements of the system.
- Be willing to follow the selected N accurate data in a timely manner
- Be willing to share such data with
- Be able to provide written consen executive leadership (i.e., the hig Executive Officer; may be the Me

Data Collection and Reporting Requir

Once accepted into NHSN, each facility m

- Use the NHSN Internet-based dat to CDC.
- Successfully complete an annual
- Successfully complete one or mo requires the following:
  - For the selected compo any, of the modules wi submitted for a minim the exception of the Bl data for the entire yea
  - Adhere to the selected during the months whe surveillance methodolo
  - Report adverse events required for the modul end of the month.
  - For those months when exposures are reported
  - Pass quality control ac accuracy.
- NHSN facilities must agree to rep that are identified in their facility contacted by CDC.
- Failure to comply with these requ will be offered the opportunity to after withdrawal, a facility may ap

There is no fee for participation in NHSN.

Assurance of Confidentiality

The voluntarily provided information obta identification of any individual or institutio confidence, will be used only for the purp without the consent of the individual, or t 308(d) of the Public Health Service Act (4

Agreement to Participate and Consent Page 3 of 3

^Required if participating in Component
*Required

Consent

Tracking # _____

Primary Contact(s)

As the Primary Contact(s), I/we consent to follow exactly the selected protocols and report complete and accurate data in a timely manner in order to maintain active status in NHSN.

NHSN Patient Safety Primary Contact Person

Name: _____

Title: _____

^Signature: _____ ^Date: _____

NHSN Healthcare Personnel Safety Primary Contact Person

Name: _____
(if different from Patient Safety Primary Contact)

Title: _____

^Signature: _____ ^Date: _____

NHSN Biovigilance Primary Contact Person

Name: _____

Title: _____

^Signature: _____ ^Date: _____

Official Authorized to Bind this Facility To The Terms of This Agreement (e.g., COO/CEO/CFO; may be the Medical Director for outpatient facilities). As an official authorized to bind the facility specified below, I warrant that I have read and that I understand the terms of this agreement, **including the updated purposes of NHSN**, and hereby consent to allow the facility to participate in NHSN. I understand that the new NHSN purposes and data disclosures will begin with data entered no earlier than January 1, 2011.

*Name: _____

*Title: _____

*Signature: _____ *Date: _____

Facility Name: _____

Main Facility Telephone Number: _____

Street Address: _____

_____

_____

City: _____ State: _____ ZIP: _____ - _____

Step 5 - Sign and Send Consent

- 2-3 business days after NHSN receives signed consent form, NHSN will activate your facility
- The NHSN Facility administrator will receive email notification of facility activation from NHSN

From: NHSN (CDC)
Sent: Wednesday, March 17, 2010 4:02 PM
To:
Subject: NHSN enrollment approved

To: NHSN Facility Administrator
From: NHSN
Date: 03/17/2010
Subject: NHSN enrollment approved

Your facility or group has been approved as a new member of NHSN. Welcome!

Facility Name: Alicia's Test Facility
Facility ID #: 00000

As the Facility Administrator, you will now need to access the NHSN application through SAMS by selecting the NHSN Reporting activity. Once in the NHSN application, your first task should be to add those individuals who need to use the application ("users").

Once you add a user, that person will receive an email prompting her/him to register with SAMS.

If you have any questions about NHSN, please contact us at nhsn@cdc.gov or http://www.cdc.gov/nhsn.

Step 1: Training and preparation for enrollment

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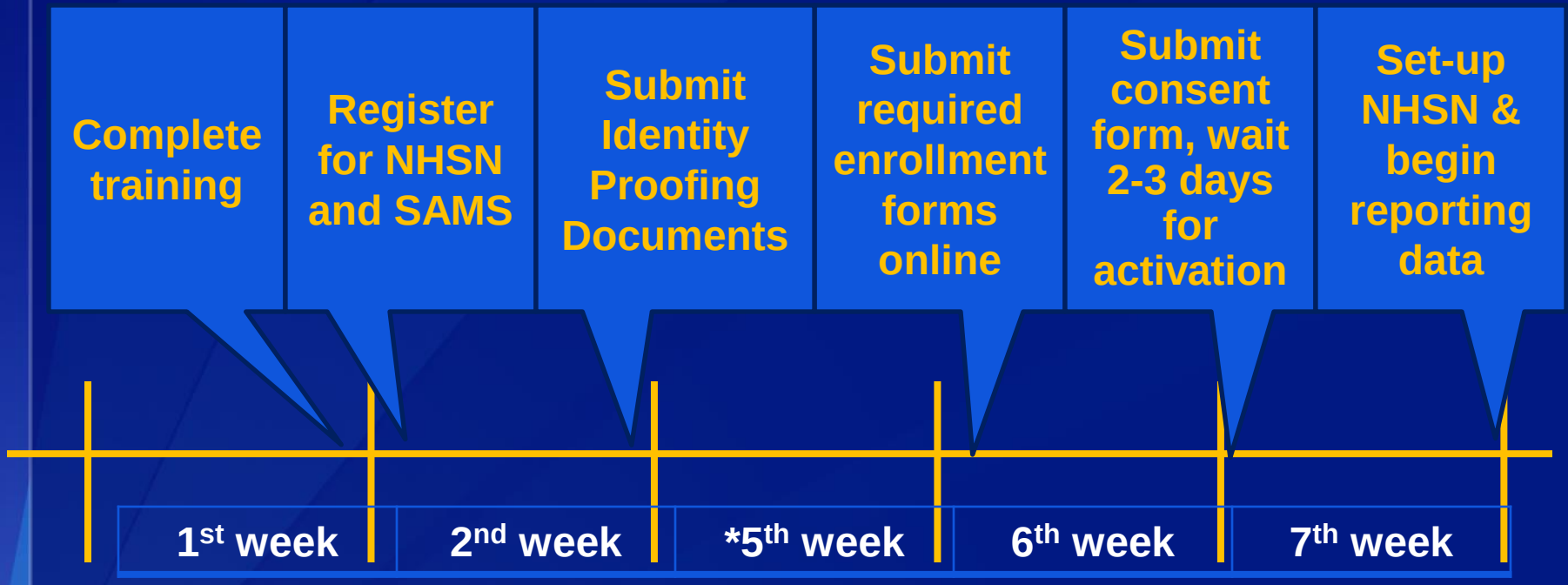
Success! Your facility is now approved to report into NHSN

Enrollment is complete: Next is NHSN Set-Up

- Set-up training for the NHSN LTCF Component is available
- Set-up NHSN for your facility
  - Mapping NHSN locations (required)
  - Add users & assign user rights (optional)
  - Create Monthly Reporting Plans (required)
- Set-up is required before data can be reported

Suggested NHSN Enrollment Timeline



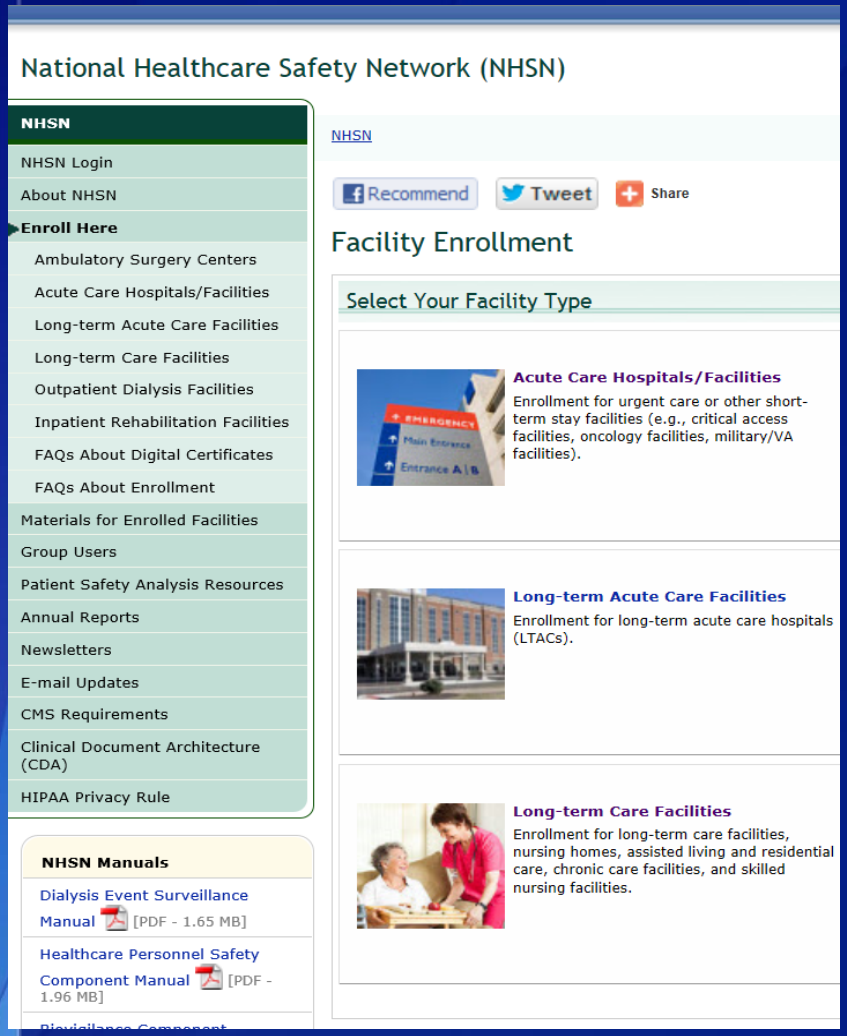
Work on LTCF Component - Annual Facility Survey

* Turn around time on receiving access to SAMs is approximately 3-4 weeks

Important !!

- Email is our only way to communicate with you!
- Please email nhsn@cdc.gov with any changes in your email address

Where can I find more information about Enrollment?



- To email questions to the NHSN Helpdesk: nhsn@cdc.gov
- For general enrollment resources http://www.cdc.gov/nhsn/enrollment
- LTCF specific enrollment and reporting resources http://www.cdc.gov/nhsn/LTC

Questions? Problems?

Contact the NHSN Helpdesk at nhsn@cdc.gov

For more information please contact Centers for Disease Control and Prevention
1600 Clifton Road NE, Atlanta, GA 30333
Telephone, 1-800-CDC-INFO (232-4636)/TTY: 1-888-232-6348
E-mail: cdcinfo@cdc.gov Web: www.cdc.gov

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

OMB No. 0920-0666
Exp. Date: 12-31-2015
www.cdc.gov/nhsn

Facility Contact Information

*required for saving	Tracking #:

*Facility Name:

*Main Telephone Number:

*Mailing Address: _____

_____

_____

*City: *County: *State: *ZIP: -

For each identifier listed below, enter the # / code or check "Not Applicable" if your facility does not have that identifier:

*American Hospital Association ID#: ☐ Not Applicable

*CMS Certification Number (CCN): ☐ Not Applicable

*VA Station Code: ☐ Not Applicable

If none of the above identifiers is applicable, enter CDC-provided Enrollment #:

***Facility Type:**

*Was this facility operational in the survey year? ☐ Yes ☐ No

***NHSN Components:**
Indicate which component(s) the Facility will use initially (components may be added at any time after enrollment)

☐ Patient Safety Component (N/A for Dialysis Facilities & Long Term Care Facilities)

☐ Dialysis Component (N/A for Acute Care Facilities & Long Term Care Facilities)

☐ Long Term Care Facility Component (N/A for Acute Care Facilities & Dialysis Facilities)

☐ Healthcare Personnel Safety Component

☐ Biovigilance Component (N/A for Dialysis Facilities & Long Term Care Facilities)

NHSN Facility Administrator:

*Name:

Title:

*Mailing address: (if different from facility)

_____

_____

_____

*City:	*State:	*ZIP: -
*Telephone Number: ( )	Extension:	

FAX Number: ( )

Pager Number: ( )

*Email: *User Name:

Assurance of Confidentiality: The voluntarily provided information obtained in this surveillance system that would permit identification of any individual or institution is collected with a guarantee that it will be held in strict confidence, will be used only for the purposes stated, and will not otherwise be disclosed or released without the consent of the individual, or the institution in accordance with Sections 304, 306 and 308(d) of the Public Health Service Act (42 USC 242b, 242k, and 242m(d)).

Public reporting burden of this collection of information is estimated to average 10 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. An agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a currently valid OMB control number. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to CDC, Reports Clearance Officer, 1600 Clifton Rd., MS D-74, Atlanta, GA 30333, ATTN: PRA (0920-0666).

OMB No. 0920-0666
Exp. Date: 12-31-2015
www.cdc.gov/nhsn

Facility Contact Information

Patient Safety Primary Contact Person (if different from Facility Administrator)		
*Name:		
Title:		
*Mailing address: (if different from facility) _____ _____ _____		
*City:	*State:	*ZIP: -
*Telephone Number: ( )	Extension:	FAX Number: ( )
Pager Number: ( )	*Email:	*Valid email account required for enrollment*

Dialysis Facility Primary Contact Person (if different from Facility Administrator)		
*Name:		
Title:		
*Mailing address: (if different from facility) _____ _____ _____		
*City:	*State:	*ZIP: -
*Telephone Number: ( )	Extension:	FAX Number: ( )
Pager Number: ( )	*Email:	*Valid email account required for enrollment*

Long Term Care Facility Primary Contact Person (if different from Facility Administrator)		
*Name:		
Title:		
*Mailing address: (if different from facility) _____ _____ _____		
*City:	*State:	*ZIP: -
*Telephone Number: ( )	Extension:	FAX Number: ( )
Pager Number: ( )	*Email:	*Valid email account required for enrollment*

Healthcare Personnel Safety Primary Contact Person (if different from Facility Administrator)		
*Name:		
Title:		
*Mailing address: (if different from facility) _____ _____ _____		
*City:	*State:	*ZIP: -
*Telephone Number: ( )	Extension:	FAX Number: ( )
Pager Number: ( )	*Email:	*Valid email account required for enrollment*

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Facility Contact Information

Biovigilance Primary Contact (if different from Facility Administrator)		
*Name:		
Title:		
*Mailing address: (if different from facility) _____ _____ _____		
*City:	*State:	*ZIP: -
*Telephone Number: ( )	Extension:	FAX Number: ( )
Pager Number: ( )	*Email:	*Valid email account required for enrollment*

+Microbiology Laboratory Director/Supervisor (if different from Facility Administrator) +Optional for Dialysis Facilities		
*Name:		
Title:		
*Mailing address: (if different from facility) _____ _____ _____		
*City:	*State:	*ZIP: -
*Telephone Number: ( )	Extension:	FAX Number: ( )
Pager Number: ( )	*Email:	*Valid email account required for enrollment*

Form Approved
OMB No. 0920-0666
Exp. Date: 12/31/2017
www.cdc.gov/nhsn

Long Term Care Facility Component—Annual Facility Survey

*required for saving	Tracking #:
Facility ID:	*Survey Year:
*National Provider ID:	State Provider #:

Facility Characteristics

*Ownership (check one):

☐ For profit ☐ Not for profit, including church ☐ Government (not VA) ☐ Veterans Affairs

*Certification (check one):

☐ Dual Medicare/Medicaid ☐ Medicare only ☐ Medicaid only ☐ State only

*Affiliation (check one): ☐ Independent, free-standing ☐ Independent, continuing care retirement community

☐ Multi-facility organization (chain) ☐ Hospital system, attached ☐ Hospital system, free-standing

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: _____

*Number of Beds: _____ *Number of Pediatric Beds (age <21): _____

*Indicate which of the following primary service types are provided by your facility. On the day of this survey, indicate the number of residents receiving those services (list only one service type per resident, i.e. total should sum to resident census on day of survey completion):

Primary Service Type	Service provided?	Number of residents
a. Long-term general nursing:	☐	_____
b. Long-term dementia:	☐	_____
c. Skilled nursing/Short-term (subacute) rehabilitation:	☐	_____
d. Long-term psychiatric (non dementia):	☐	_____
e. Ventilator:	☐	_____
f. Bariatric:	☐	_____
g. Hospice/Palliative:	☐	_____
h. Other:	☐	_____

Continued >>

Assurance of Confidentiality: The voluntarily provided information obtained in this surveillance system that would permit identification of any individual or institution is collected with a guarantee that it will be held in strict confidence, will be used only for the purposes stated, and will not otherwise be disclosed or released without the consent of the individual, or the institution in accordance with Sections 304, 306 and 308(d) of the Public Health Service Act (42 USC 242b, 242k, and 242m(d)).

Public reporting burden of this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. An agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a currently valid OMB control number. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to CDC, Reports Clearance Officer, 1600 Clifton Rd., MS D-74, Atlanta, GA 30333, ATTN: PRA (0920-0666).

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Long Term Care Facility Component—Annual Facility Survey

Facility Microbiology Laboratory Practices

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

☐ Yes ☐ No

If No, where is your facility's antimicrobial susceptibility testing performed? (check one)

☐ Affiliated medical center, within same health system ☐ Medical center, contracted locally

☐ Commercial referral laboratory ☐ Other (specify): _____

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

☐ We do not screen new admissions for MDROs

☐ Methicillin-resistant *Staphylococcus aureus* (MRSA)

If checked, indicate the specimen types sent for screening: (check all that apply)

☐ Nasal swabs ☐ Wound swabs ☐ Sputum ☐ Other skin site

☐ Vancomycin-resistant *Enterococcus* (VRE)

If checked, indicate the specimen types sent for screening: (check all that apply)

☐ Rectal swabs ☐ Wound swabs ☐ Urine

☐ Multidrug-resistant gram-negative rods (includes carbapenemase resistant Enterobacteriaceae; multidrug-resistant *Acinetobacter*, etc.)

If checked, indicate the specimen types sent for screening: (check all that apply)

☐ Rectal swabs ☐ Wound swabs ☐ Sputum ☐ Urine

*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? (check one)

☐ Enzyme immunoassay (EIA) for toxin

☐ Cell cytotoxicity neutralization assay

☐ Nucleic acid amplification test (NAAT) (e.g., PCR, LAMP)

☐ 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 *C. difficile* tests; most methods can be categorized accurately by selecting from the options provided. Please ask your laboratory, refer to the Tables of Instructions for this form, or conduct a search for further guidance on selecting the correct 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)?

☐ Yes ☐ No

If Yes, how often is this summary report or antibiogram provided to your facility? (check one)

☐ Once a year ☐ Every 2 years ☐ Other (specify): _____

Continued >>

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Long Term Care Facility Component—Annual Facility Survey

Infection Prevention and Control Practices

*5. Total staff hours per week dedicated to infection prevention and control activity in facility: _____

a. Total hours per week performing surveillance: _____

b. Total hours per week for infection prevention and control activities other than surveillance: _____

*6. Does the facility routinely require use of gowns/gloves for care of residents infected or colonized with MRSA? (check one)

- ☐ Yes, all infected and colonized residents
- ☐ Yes, only residents with active infection
- ☐ Yes, only those with certain characteristics that make them high-risk for transmission (e.g., wounds, diarrhea, presence of an indwelling device)
- ☐ No

*7. Does the facility routinely require use of gowns/gloves for care of residents infected or colonized with VRE? (check one)

- ☐ Yes, all infected and colonized residents
- ☐ Yes, only residents with active infection
- ☐ Yes, only those with certain characteristics that make them high-risk for transmission (e.g., wounds, diarrhea, presence of an indwelling device)
- ☐ No

*8. Does the facility routinely require use of gowns/gloves for care of residents infected or colonized with CRE? (check one)

- ☐ Yes, all infected and colonized residents
- ☐ Yes, only all residents with active infection
- ☐ Yes, only those with certain characteristics that make them high-risk for transmission (e.g., wounds, diarrhea, presence of an indwelling device)
- ☐ No

*9. Does the facility routinely require use of gowns/gloves for care of residents infected or colonized with ESBL-producing or extended spectrum cephalosporin resistant Enterobacteriaceae in contact precautions? (check one)

- ☐ Yes, all infected and colonized residents
- ☐ Yes, only residents with active infection
- ☐ Yes, only those with certain characteristics that make them high-risk for transmission (e.g., wounds, diarrhea, presence of an indwelling device)
- ☐ No

*10. When a resident colonized or infected with an MDRO is transferred to another facility, does your facility communicate the resident's MDRO status to the receiving facility at the time of transfer? ☐ Yes ☐ No

Continued >>

Form Approved
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Long Term Care Facility Component—Annual Facility Survey

Infection Prevention and Control Practices (continued)

*11. Among residents with an MDRO admitted to your facility from other healthcare facilities, what percentage of the time does your facility receive information from the transferring facility about the resident's MDRO status? _____%

Antibiotic Stewardship Practices

*12. Is there a leader responsible for the impact of activities to improve use of antibiotics at your facility? ☐ Yes ☐ No

If Yes, what is the position of this leader?

☐ Medical director ☐ Director of Nursing

☐ Consultant Pharmacist ☐ Other (please specify): _____

*13. Does your facility have a policy that requires prescribers to document an indication for all antibiotics in the medical record or during order entry? ☐ Yes ☐ No

If Yes, has adherence to the policy to document an indication been monitored? ☐ Yes ☐ No

*14. Does your facility provide facility-specific treatment recommendations, based on national guidelines and local susceptibility, to assist with antibiotic decision making for common clinical conditions? ☐ Yes ☐ No

If Yes, has adherence to facility-specific treatment recommendations been monitored? ☐ Yes ☐ No

*15. Is there a formal procedure for performing a follow-up assessment 2-3 days after a new antibiotic start to determine whether the antibiotic is still indicated and appropriate (e.g. antibiotic time out)? ☐ Yes ☐ No

*16. Does a physician, nurse, or pharmacist review courses of therapy for specified antibiotic agents and communicate results with prescribers (i.e., audit with feedback) at your facility? ☐ Yes ☐ No

*17. Does the pharmacy service provide a monthly report of antibiotic use (e.g., new orders, number of days of antibiotic treatment) for the facility? ☐ Yes ☐ No

*18. Has your facility provided education to clinicians and other relevant staff on improving antibiotic use in the past 12 months? ☐ Yes ☐ No

Electronic Health Record Utilization

*19. Indicate whether any of the following are available in an electronic health record (check all that apply):

☐ Microbiology lab culture and antimicrobial susceptibility results
☐ Medication orders
☐ Medication administration record
☐ Resident vital signs
☐ Resident admission notes
☐ Resident progress notes
☐ Resident transfer or discharge notes
☐ None of the above

Table 1. Instructions for Completion of the Long-term Care Facility Component - Annual Facility Survey (CDC 57.137)

Data Field	Instructions for Form Completion
Facility ID	**Required**. The NHSN-assigned facility ID will be auto-entered by the system.
Survey Year	**Required**. Select the calendar year for which this survey was completed. The survey year should represent the last full calendar year. For example, in 2011, a facility would complete a 2010 survey.
National Provider ID	**Required**. Enter your facility National Provider ID (10-digit number).
State Provider ID	*Optional*. If available, enter your facility State Provider ID.
Facility Characteristics	
Ownership	**Required**. Select the appropriate ownership of this facility (*check one*). • For profit • Not for profit, including church • Government (Not Veterans Affairs [VA]) • Veterans Affairs
Certification	**Required**. Select the appropriate certification of this facility (*check one*). • Dual Medicare/Medicaid • Medicare only • Medicaid only • State only
Affiliation	**Required**. Select the appropriate affiliation for this facility (*check one*): • Independent, free-standing - The facility does not share a building, staff, or policies (such as infection control) with any other healthcare institution. • Independent, continuing care retirement community – This facility is not affiliated with any other healthcare system, but is part of a campus containing other levels of elder care services. • Multi-facility organization (chain) - The facility is part of a regional or national network of specialty facilities. Facilities share policies (such as infection control), corporate leadership, and a common business structure. • Hospital system, attached - The facility is affiliated with a local healthcare system. Facility shares policies (such as infection control) with other institutions within the hospital system. The facility is physically connected to the hospital within the system. • Hospital system, free-standing - The facility is affiliated with a local healthcare system. Facility shares policies (such as infection control) with other institutions within the hospital system. The facility is not physically connected to the hospital within the system.
Average daily census	**Required**. Enter the average daily census for your facility during the last full calendar year (12 months).

Total number of short-stay residents	**Required**. Enter the <u>total</u> number of residents that stayed **≤ 100** days in the previous calendar year.
Total number of long-stay residents	**Required**. Enter the <u>total</u> number of residents that stayed **> 100** days in the previous calendar year.
Average length of stay for short-stay residents	*Optional*. Enter the average length of stay for short-stay residents for your facility during the last full calendar year.
Average length of stay for long-stay residents	*Optional.* Enter average length of stay for long-stay residents for your facility during the last full calendar year.
Number of new admissions	**Required**. Enter the <u>total</u> number new admissions to your facility during the last full calendar year.
Number of Beds	**Required**. Enter the total number of beds (including any pediatric beds) for your facility.
Number of Pediatric (age < 21) Beds	**Required**. Enter the number of pediatric beds for your facility. Pediatric beds are defined as those beds dedicated to residents that are less than 21 years of age. If you have no pediatric beds at your facility report zero.
Indicate which of the following primary service types are provided by your facility. For each service indicated: On the day of this survey, how many residents are receiving care in your facility by the following primary service types	**Required**. For each primary service type listed, check the box <u>only</u> if your facility provides this primary service type. For the primary service types your facility provides (those with boxes checked), indicate the number of residents primarily receiving that service <u>on the day this survey is completed</u>. Only list <u>one</u> service type per resident and this should be the primary service (or most specialized care) the resident is receiving. For example, a resident may be admitted for skilled care while on a ventilator. That resident would be counted as "ventilator care". A resident who is long-stay but on a specialized dementia unit would be listed as "long-term dementia". The total of residents per service type reported should sum to the resident census on the day the survey is completed. • Long-term general nursing: • Long-term dementia: • Skilled nursing/short-term (sub-acute) rehabilitation: • Long-term psychiatric (non-dementia): • Ventilator: • Bariatric: • Hospice/Palliative: • Other:

Facility Microbiology Laboratory Practices *Completion of this section may require the assistance from the microbiology laboratory.*	
1. Does your facility have its own laboratory that performs antimicrobial susceptibility testing? If 'No', where is the facility's antimicrobial susceptibility testing performed? *(Check One)*	**Required**. Select 'Yes' if your laboratory performs antimicrobial susceptibility testing. Otherwise, select 'No'. *Conditionally Required*. If 'No' is selected, select the location where your facility's antimicrobial susceptibility testing is performed (*check one*): • Affiliated medical center, within same health system • Commercial referral laboratory • Medical center, contracted locally • Other **NOTE:** If multiple laboratories are used, select the laboratory which performs the majority of the bacterial susceptibly testing.

2. Indicate whether your facility screens new admissions for any of the following multidrug-resistant organisms (MDROs). *(Check all that apply)*
 	
For each MDRO selected, indicate the specimen type(s) sent for screening. *(Check all that apply)*
	Required. Indicate, by checking the appropriate box(es), if your facility obtains screening cultures (Active Surveillance Testing) on newly admitted residents for the following multidrug-resistant organisms (MDROs): (c*heck all that apply*)
	
	• **We do not screen new admissions for MDROs**: Select this box if your facility <u>does not</u> obtain screening cultures on new admissions for any of the MDROs listed. **NOTE:** if this box is checked, no other boxes should be selected.
	• **Methicillin-resistant *Staphylococcus aureus* (MRSA)**: *Conditionally Required*. If checked, indicate the specimen type(s) that are sent for screening. (C*heck all that apply*)
	  ○ Nasal swabs
	  ○ Wound swabs
	  ○ Sputum
	  ○ Other skin site
	• **Vancomycin-resistant *Enterococcus* (VRE)**: *Conditionally Required*. If checked, indicate the specimen type(s) that are sent for screening. (*Check all that apply*)
	  ○ Rectal swabs
	  ○ Wound swabs
	  ○ Urine
	• **Multidrug-resistant gram-negative rods** (includes carbapenemase-resistant *Enterobacteriaceae*; multidrug-resistant *Acinetobacter*, etc.): If checked, indicate the specimen type(s) that are sent for screening. (*Check all that apply*)
	  ○ Rectal swabs
	  ○ Wound swabs
	  ○ Sputum
	  ○ Urine

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? (*Check one)*	**Required.** Select, from the choices listed, the testing methods used to perform *C. difficile* testing by your facility's laboratory or the outside laboratory where your facility's testing is done. If 'Other' is selected, please specify. **NOTE:** 'Other' should not be used to name specific laboratories, reference laboratories, or the brand names of C. *difficile* tests; most methods can be categorized accurately by selecting from the options provided. Please ask your laboratory or conduct a search for further guidance on selecting the correct 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)? If 'Yes', indicate how often this summary report is provided.	**Required.** Select 'Yes' if your laboratory provides your facility with a summary report of antibiotic resistance patterns in common bacterial organisms identified in cultures sent from your facility. This report may be called a facility antibiogram. Otherwise, select 'No'. **NOTE:** This summary is NOT the same as antibiotic susceptibility testing provided on culture reports for individual residents. *Conditionally Required*. If 'Yes' is selected, indicate whether the summary report or antibiogram is provided once a year, every two years, or Other. If 'Other' is selected, specify the frequency.
Infection Prevention and Control Practices	
5. Number of staff hours dedicated to infection prevention and control activities in the facility.	**Required**. Enter estimated hours per week that are dedicated to ALL infection prevention and control activities in your facility. If multiple staff members are responsible for parts of the infection prevention and control program, combine the hours spent per week by each person.
a. Total hours per week performing surveillance	**Required**. Based on the total hours dedicated to all program activities, enter the estimated number of hours per week engaged in identifying and reporting healthcare-associated infections and the appropriate denominators.
b. Total hours per week for infection prevention activities other than surveillance	**Required**. Based on the total hours dedicated to all program activities, enter the estimated number of hours per week spent on infection prevention and control activities other than surveillance. These activities include, but are not limited to, education, prevention, meetings, etc.
6. Does the facility routinely require use of gowns/gloves for care of residents infected or colonized with MRSA? *(Check one)*	**Required.** Select the single best choice from the choices listed that most accurately describes the primary approach to using gowns/gloves for care of residents with methicillin resistant *Staphylococcus aureus* (MRSA) at your facility. Select 'No' if your facility does not routinely use gowns/gloves during care of residents infected or colonized with MRSA.
7. Does the facility routinely require use of gowns /gloves for care of residents infected or colonized with VRE?	**Required.** Select the single best choice from the choices listed that most accurately describes the primary approach to using gowns/gloves for care of residents with vancomycin resistant *Enterococcus* (VRE) at your facility. Select 'No' if your facility does not routinely use gowns/gloves during care of residents infected or colonized with VRE.

8. Does the facility routinely require use of gowns/gloves for care of residents infected or colonized with CRE? *(Check one)*	**Required.** Select the single best choice from the choices listed that most accurately describes the primary approach to using gowns/gloves for care of residents with Carbapenem resistant *Enterobacteriaceae* (CRE) at your facility. Select 'No' if your facility does not routinely use gowns/gloves during care of residents infected or colonized with CRE. **NOTE:** The term "*Enterobacteriaceae"* refers to a family of common gram negative bacteria which can colonize the gastrointestinal (GI) or urinary tract of frail and/or older adults. Examples of these bacteria include *E. coli*, *Klebsiella*, and *Enterobacter*.
9. Does the facility routinely require use of gowns/gloves for care of residents infected or colonized with ESBL-producing or extended spectrum cephalosporin resistant *Enterobacteriaceae* in contact precautions? *(Check one)*	**Required.** Select the single best choice from the choices listed that most accurately describes the primary approach to using gowns/gloves for care of residents with extended-spectrum beta-lactamase producing (ESBL) or extended-spectrum cephalosporin resistant *Enterobacteriaceae* at your facility. Select 'No' if your facility does not routinely use gowns/gloves during care of residents infected or colonized with ESBL producing or extended cephalosporin resistant *Enterobacteriaceae.* **NOTE:** The term "*Enterobacteriaceae"* refers to a family of common gram negative bacteria which can colonize the gastrointestinal (GI) or urinary tract of frail and/or older adults. Examples of these bacteria include *E. coli*, *Klebsiella*, and *Enterobacter*.
10. When a resident colonized or infected with an MDRO is transferred to another facility, does your facility communicate the resident's MDRO status to the receiving facility at the time of transfer?	**Required.** Select 'Yes' if your facility **routinely** communicates the status of a patient known to be colonized or infected with a multidrug-resistant organism (MDRO) to the receiving facility at the time of patient transfer; otherwise, select 'No'.
11. Among residents with an MDRO admitted to your facility from other healthcare facilities, what percentage of the time does your facility receive information from the transferring facility about the resident's MDRO status?	**Required.** Enter the estimated percentage of the time that your facility receives information from a transferring facility about the status of a resident known to be colonized or infected with a multidrug-resistant organism (MDRO).

Antibiotic Stewardship Practices. *Completion of this by section may require assistance from the consultant pharmacist, director of nursing, and/or medical director who focus on efforts to improve antibiotic use and monitoring (known as Stewardship) for your facility.*	
12. Is there a leader responsible for the impact of activities to improve use of antibiotics at your facility?	**Required.** Select 'Yes' if any individual has been identified as a lead for antibiotic stewardship activities as evidenced by responsibility for improving antibiotic use in the job description or performance review, authority to coordinate activities of staff from multiple departments (e.g. laboratory, pharmacy, information technology), and/or responsibility to report to facility administration/senior leaders on the antibiotic stewardship program planning and outcomes. Select 'No' if the facility leadership has not specifically given a person the responsibility, support and authority to oversee antibiotic use and stewardship efforts in the facility.
If Yes, what is the position of this leader?	*Conditionally Required.* If 'Yes', specify the qualification or job title of the leader(s). More than choice one may be selected. If 'Other' is selected, please specify the position.
13. Does your facility have a policy that requires prescribers to document in the medical record or during order entry, a dose, duration, and indication for all antibiotics?	**Required.** Select 'Yes' if your facility has a policy requiring documentation of dose, duration and indication for all antibiotics in the medical record or during order entry; otherwise, select 'No'.
If 'Yes', has adherence to this documentation policy (dose, duration, and indication) been monitored?	*Conditionally Required.* If 'Yes' to question 13, select 'Yes' if charts are routinely being been reviewed to confirm documentation of dose, duration, and indication in patient medical records; otherwise, select 'No'.
14. Does your facility provide facility-specific treatment recommendations, based on national guidelines and local susceptibility, to assist with antibiotic decision making for common clinical conditions?	**Required.** Select 'Yes' if there are facility-specific recommendations for antibiotic treatment selection based on evidence-based guidelines and/or local susceptibility reports for ANY common clinical infections diagnosed and treated (e.g., community required pneumonia, urinary tract infections, or skin and soft tissue infections); otherwise, select 'No'.
If 'Yes', has adherence to facility-specific treatment recommendations been monitored?	*Conditionally Required.* If 'Yes' to question 14, indicate if charts have been audited to confirm adherence to facility-specific treatment guidelines for ANY of the common clinical conditions listed above by selecting 'Yes' or 'No'.

15. Is there a formal procedure for performing a follow-up assessment 2-3 days after a new antibiotic start to determine whether the antibiotic is still indicated and appropriate (e.g. antibiotic time out)?	**Required.** Select 'Yes' if your facility has developed a standardized way for clinicians or nurses caring for a resident to reassess the continuing need and choice of antibiotics between 2-3 days after a new antibiotic start in order to determine the following: confirm indication, review microbiology results, and review antibiotic choice, dose, and duration; Otherwise, select 'No'.
16. Does a physician, nurse or pharmacist review courses of therapy for specified antibiotic agents and communicate results with prescribers (i.e., audit with feedback) at your facility?	**Required.** Select 'Yes' if your facility has a physician, nurse or pharmacist knowledgeable in antibiotic use, *and not part of the treating team*, review courses of therapy for specified antibiotic agents **and** communicate the results to the providers caring for the resident; otherwise, select 'No'.
17. Does the pharmacy service provide a monthly report of antibiotic use (e.g., new orders, number of days of antibiotic treatment) for the facility?	**Required.** Select 'Yes' if your pharmacy service provides your facility with a report which summarizes the antibiotic use in your facility on a monthly basis. This report could include a list of all antibiotics started each month or number of days of antibiotics used each month; Select 'No' if no report specifically describing on antibiotic use is provided to the facility every month.
18. Has your facility provided education to clinicians and other relevant staff on improving antibiotic use in past 12 months?	**Required.** Select 'Yes' if your facility has provided specific education on ways to improve antibiotic use to providers, nurses, and other relevant staff (e.g. in-service training, direct instruction, etc.); Otherwise, select 'No'.
Electronic Health Record Utilization	
19. Indicate whether any of the following are available in an electronic health record. (*Check all that apply*)	**Required**. Indicate by checking the appropriate box(es) whether any of the following are available in an electronic health record at your facility. (*Check all that apply*). • Microbiology lab culture and antimicrobial susceptibility results • Medication orders • Medication administration record • Resident vital signs • Resident admission notes • Resident progress notes • Resident transfer or discharge notes • None of the above

NHSN Long-Term Care Facility Component

NHSN Set-up

Audience

- **Any person enrolling a Long-term Care Facility in NHSN**
  - Known as the NHSN Facility Administrator
- **NHSN group users who want to understand the Long-term Care Facility set-up process**

Learning Objectives

- Introduce NHSN organization and navigation
- Map Long-term Care Facility Locations
- Create Monthly Reporting Plans
- Add users and assign user rights
- Other set-up options: Joining a group

INTRODUCTION

Set-Up Follows NHSN Enrollment

- **Once the NSHN Agreement to Participate and Consent is processed, NHSN sends an email to confirm enrollment is complete and facility is active**

From: NHSN (CDC)
Subject: NHSN enrollment approved

To: NHSN Facility Administrator
From: NHSN
Subject: NHSN enrollment approved

Your facility or group has been approved as a new member of NHSN. Welcome!

Facility Name: Test Facility
Facility ID #: xxxxx

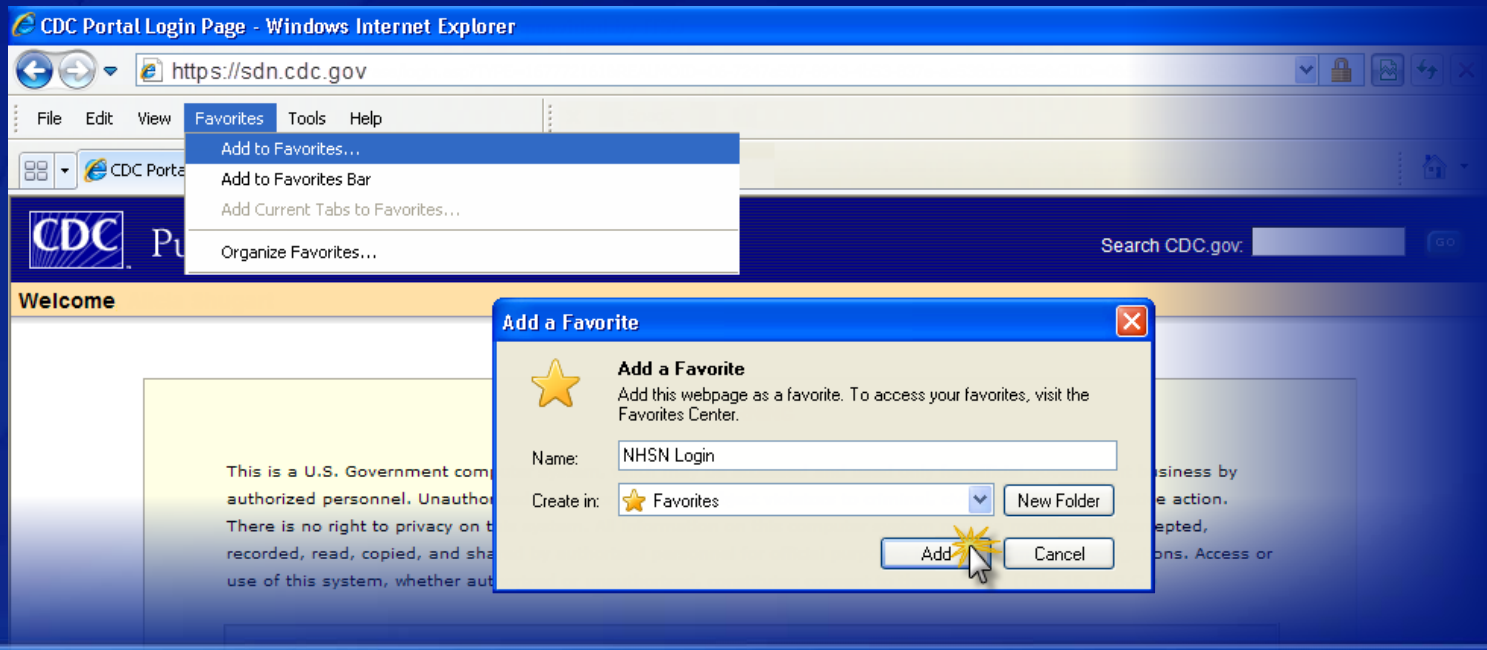
As the Facility Administrator, you will now need to access the NHSN application through the SDN by selecting the NHSN Reporting activity. Once in the NHSN application, your first task should be to add those individuals who need to use the application ("users").

Once you add a user, that person will receive an email prompting her/him to obtain a digital certificate.

If you have any questions about NHSN, please contact us at nhsn@cdc.gov or http://www.cdc.gov/nhsn.

Tip: Add NHSN Websites to Favorites

- **In Internet Explorer, save NHSN websites as favorites to find them quickly each month**
  - Site to log on to NHSN Reporting https://sdn.cdc.gov
  - Long-term Care Facility Component resources http:www.cdc.gov/nhsn/LTC



NHSN Set-Up

- Immediately following facility activation, you can login to SDN's Public Health Partners page to access 'NHSN Reporting' using your challenge phrase (password)

- A three step set-up process is required before data can be reported to NHSN

1. Map Long-term Care Facility Locations
2. Create Monthly Reporting Plans
3. Add Users & Assign Rights

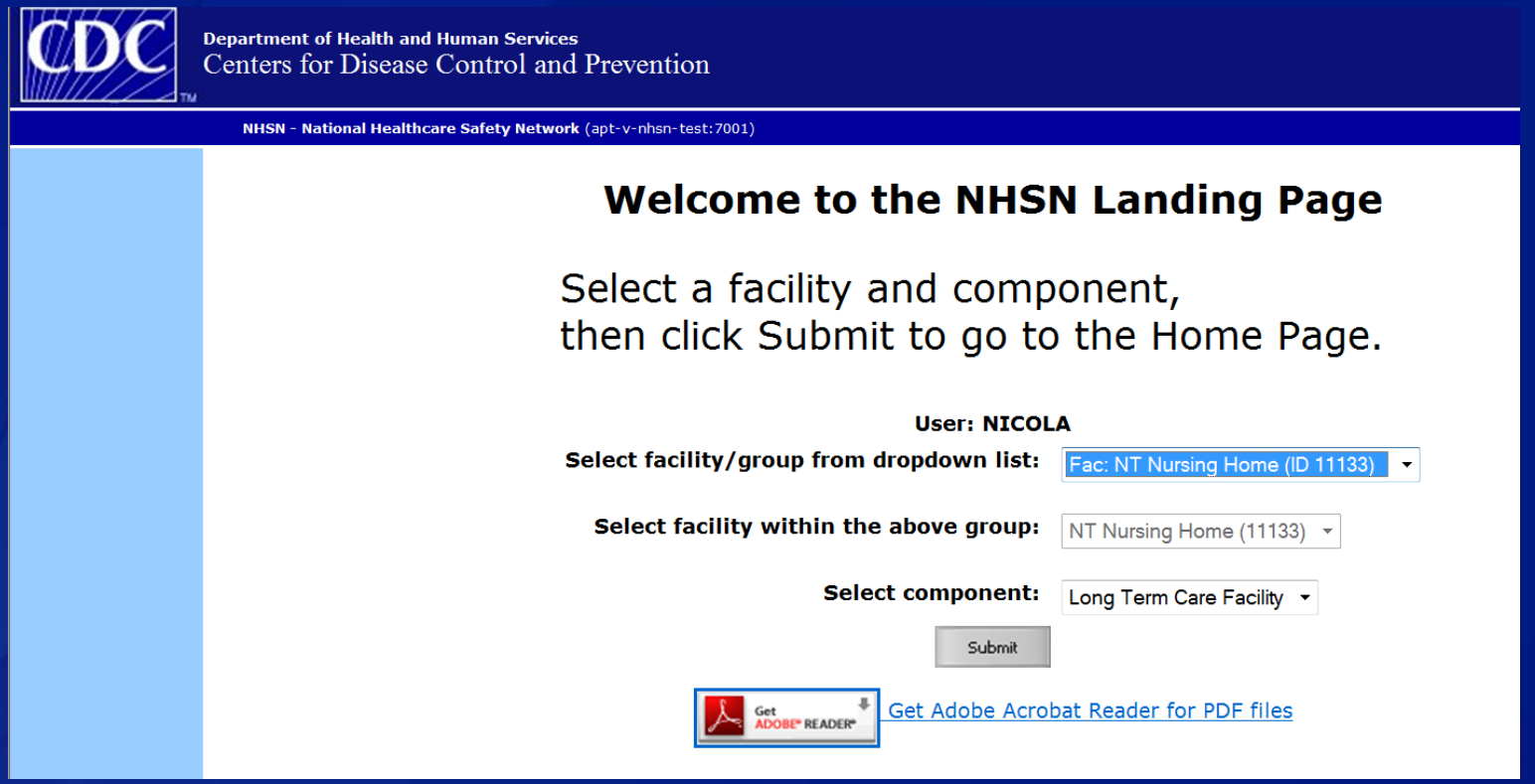
NHSN NAVIGATION

Log in to NHSN

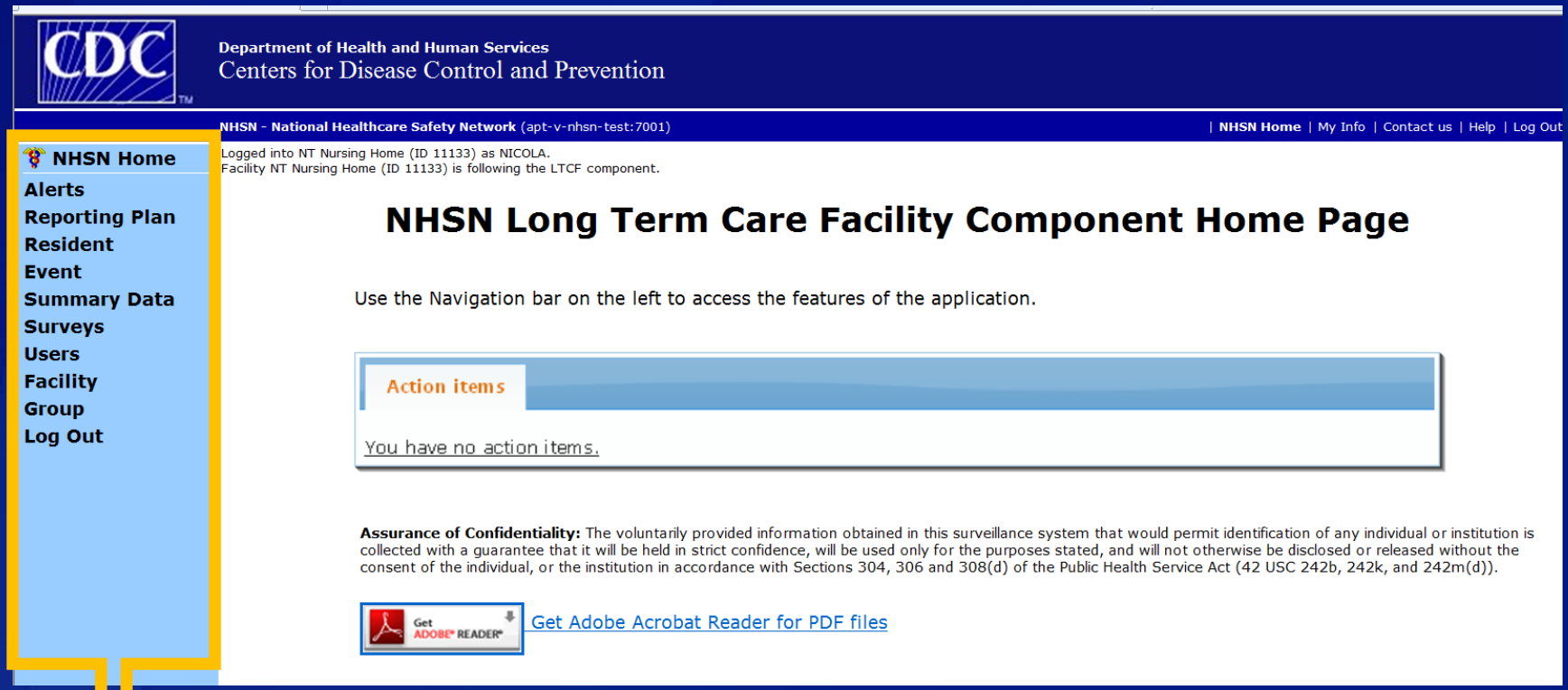
- Go to https://sdn.cdc.gov
- Submit your challenge phrase (password)
- Click on 'NHSN Reporting'
  - If you do not have the NSHN Reporting link, request it through the "Request Additional Activities" link

NHSN Landing Page

- Select your facility and LTCF Component
- Click 'Submit'



NHSN LTCF Component Home Page

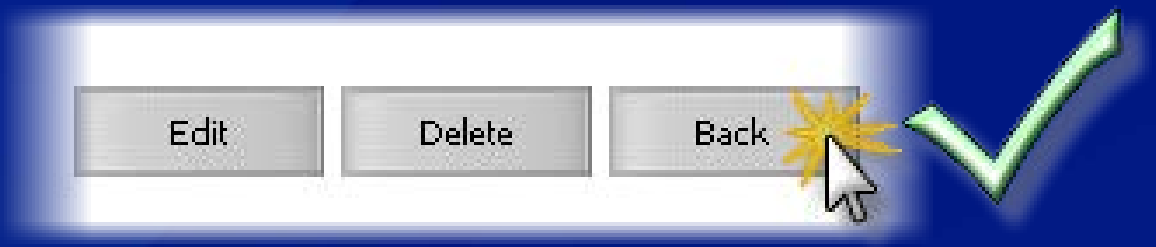


Navigation Bar

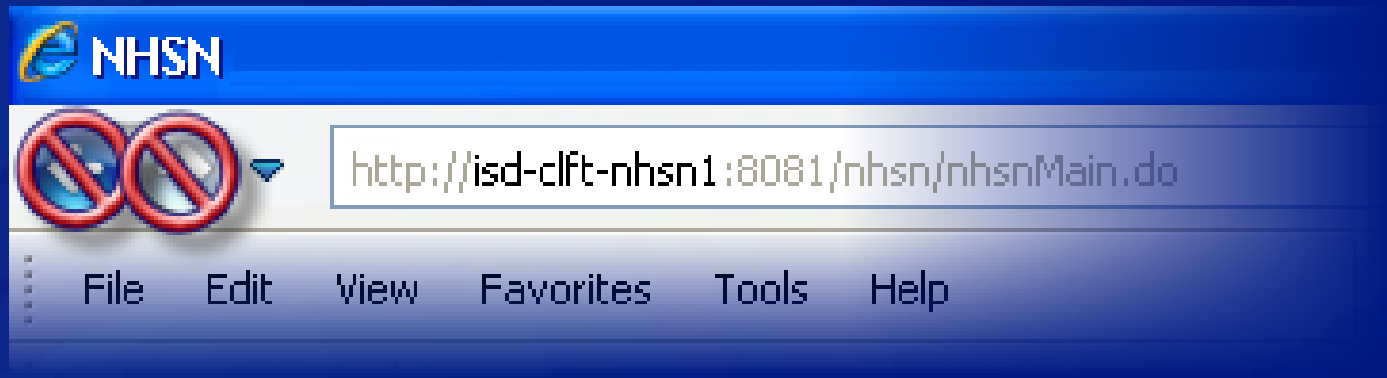
- **User rights determine which navigation bar options are present**

Navigating NHSN

- Use the navigation bar or NHSN buttons to navigate



- Do not use Internet Explorer web browser buttons



1. MAP LONG-TERM CARE FACILITY LOCATIONS

1. Map Long-term Care Facility Locations
2. Create Monthly Reporting Plans
3. Add Users & Assign Rights

Mapping LTCF Locations

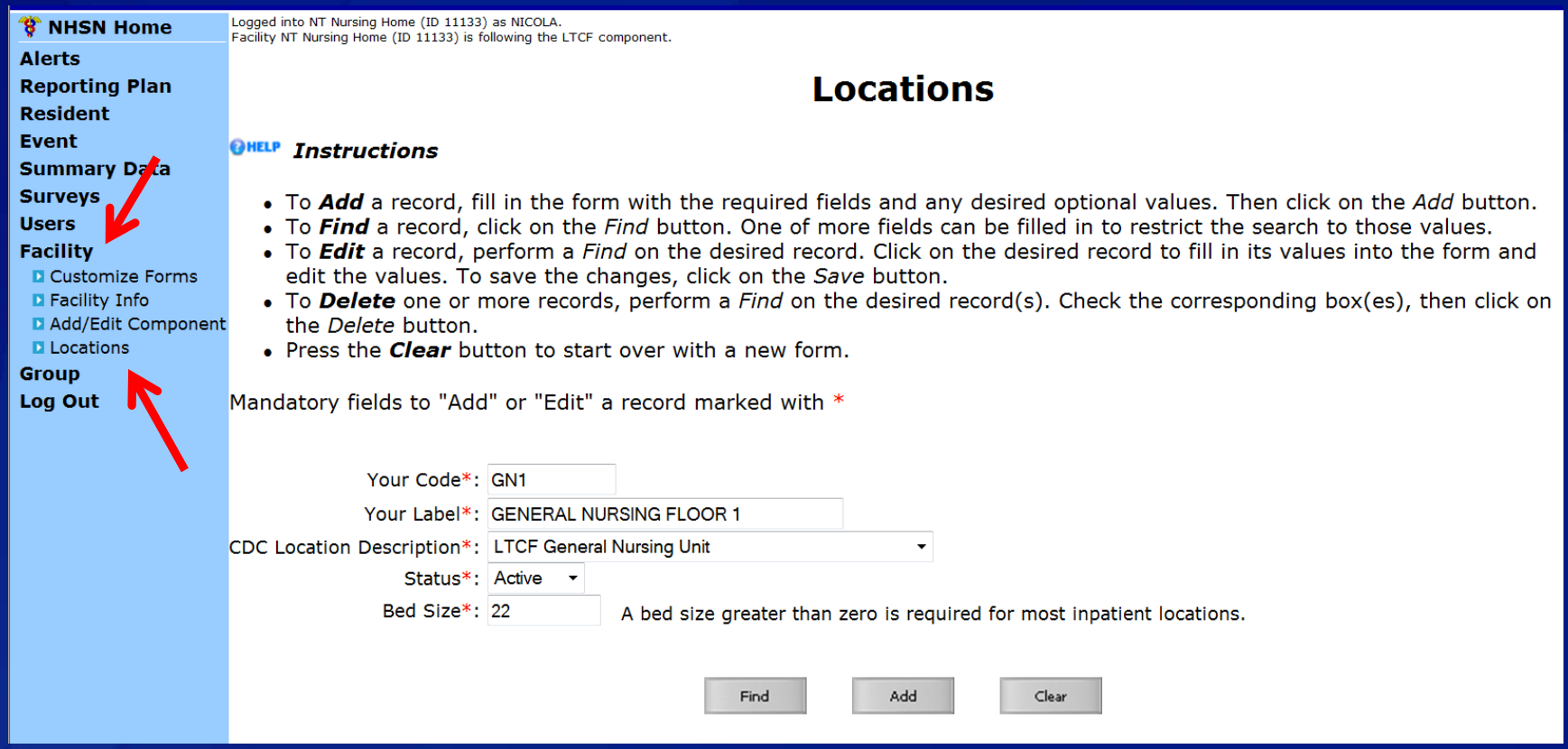
- All resident care locations in your facility need to be mapped to a CDC location description
- When reporting events, locations are used to identify where the resident was in your facility at the time of the event
- For a list of NHSN LTCF location types, codes and definitions see

  http://www.cdc.gov/nhsn/LTC/ltc-setup.html

How to: Add a Location

- **NHSN navigation bar: select ‘Facility’, then ‘Locations’**
- **Choose a Code and Label for the location entered**
  - They can be the same
- **CDC location description: select the description that best represent the location entered**
- **Bed size is the number of beds in that location**
- **Click “Add”**
- **Repeat steps for each location in your LTCF**

Add a Location



2. CREATE MONTHLY REPORTING PLANS

1. Map Long-term Care Facility Locations
2. Create Monthly Reporting Plans
3. Add Users & Assign Rights

Monthly Reporting Plans

- **Indicates what Long-term Care Facility Component surveillance modules your facility intends to do**

Surveillance Module	Events
Healthcare Associated Infection	UTI
LabID	MDRO CDI
Prevention Process Measures	Hand Hygiene Gown & Glove Use

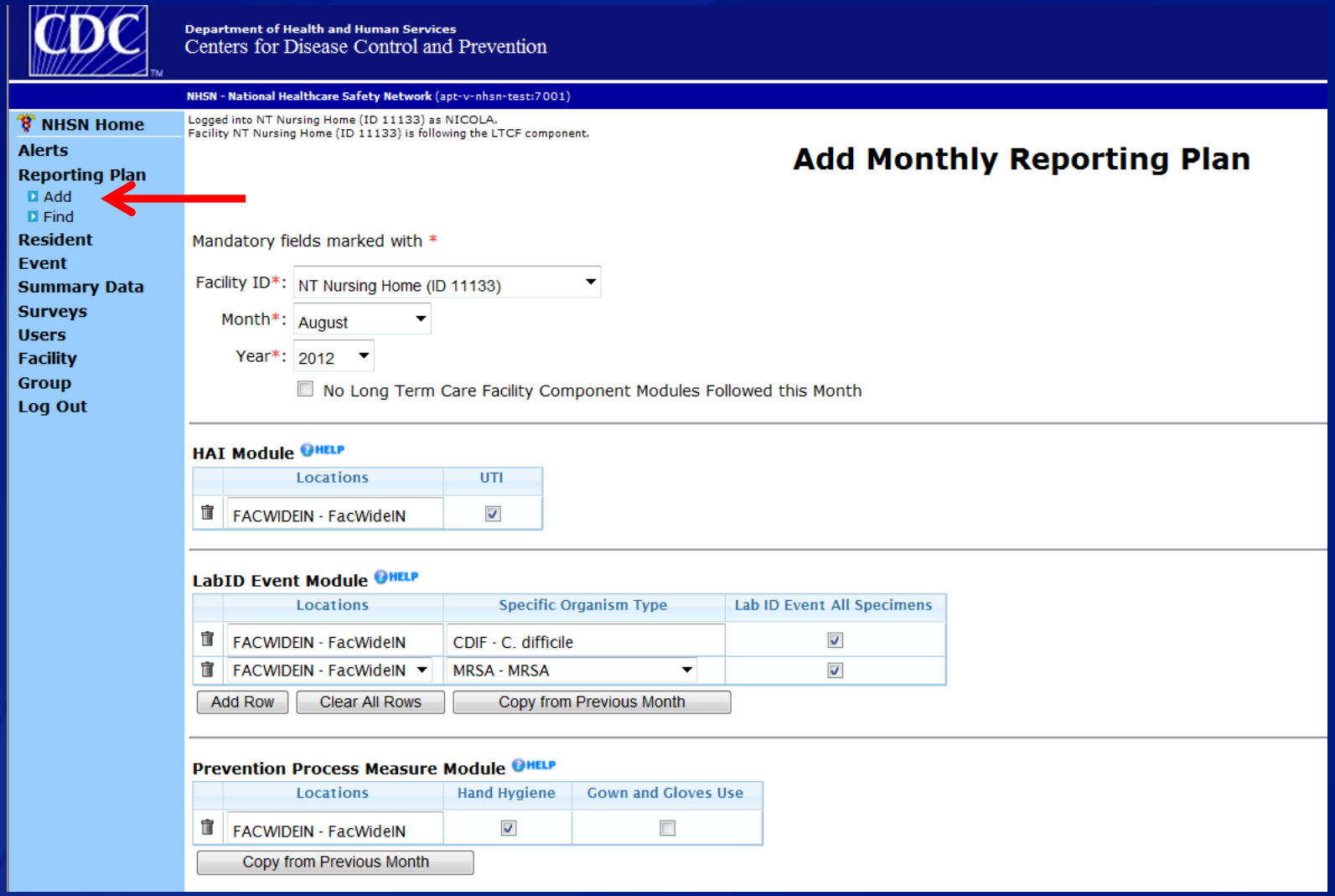
Monthly Reporting Plans

- Monthly Reporting Plans need to be added for every month of the year
- If not doing surveillance for a specific month, indicate ‘No NHSN Modules Followed this Month’ on the Monthly Reporting Plan
- You can submit up to one year of Monthly Reporting Plans in advance

How to: Add Monthly Reporting Plan

- **On the NHSN Navigation Bar**
  - Select ‘Reporting Plan’, then ‘Add’
- **Select month & year of surveillance**
- **Option to choose “No Modules Followed this Month”**
  - Remember NHSN requires ≥ 6 months/year to remain active
- **Complete the reporting plan**
  - Check box for UTI surveillance
  - Select organism(s) from drop-down for Lab ID
  - Check box for Hand Hygiene and/or Gown and Gloves use
- **Scroll to bottom of page and click ‘Save’**

Add a Monthly Reporting Plan



3. ADD USERS & ASSIGN RIGHTS

1. Map Long-term Care Facility Locations
2. Create Monthly Reporting Plans
3. Add Users & Assign Rights

Users

- **The NHSN Facility Administrator can add additional users to access NHSN**
  - Adding users is optional
- **The NHSN Facility Administrator assigns rights to each user**
  - Enables users to add, edit or delete NHSN data for your LTCF

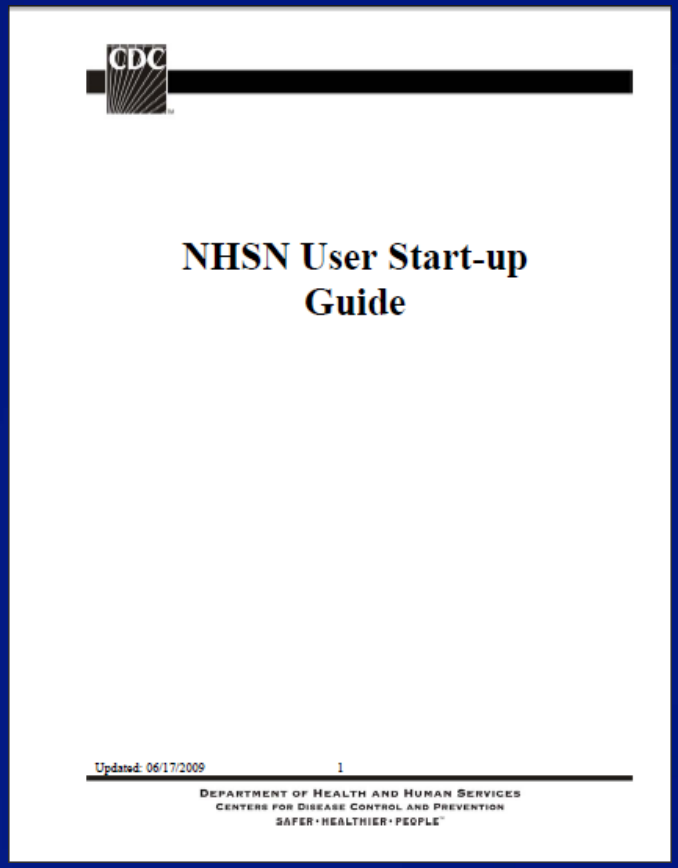
Users

- Once a new user is added, an email is automatically sent to their email address with instructions
- Each user requires their own digital certificate to access NHSN
- Each user must complete required training before using NHSN
- Instructions for new users are available in the NHSN User Start-Up Guide

Reference Materials

- NHSN User Start-up Guide

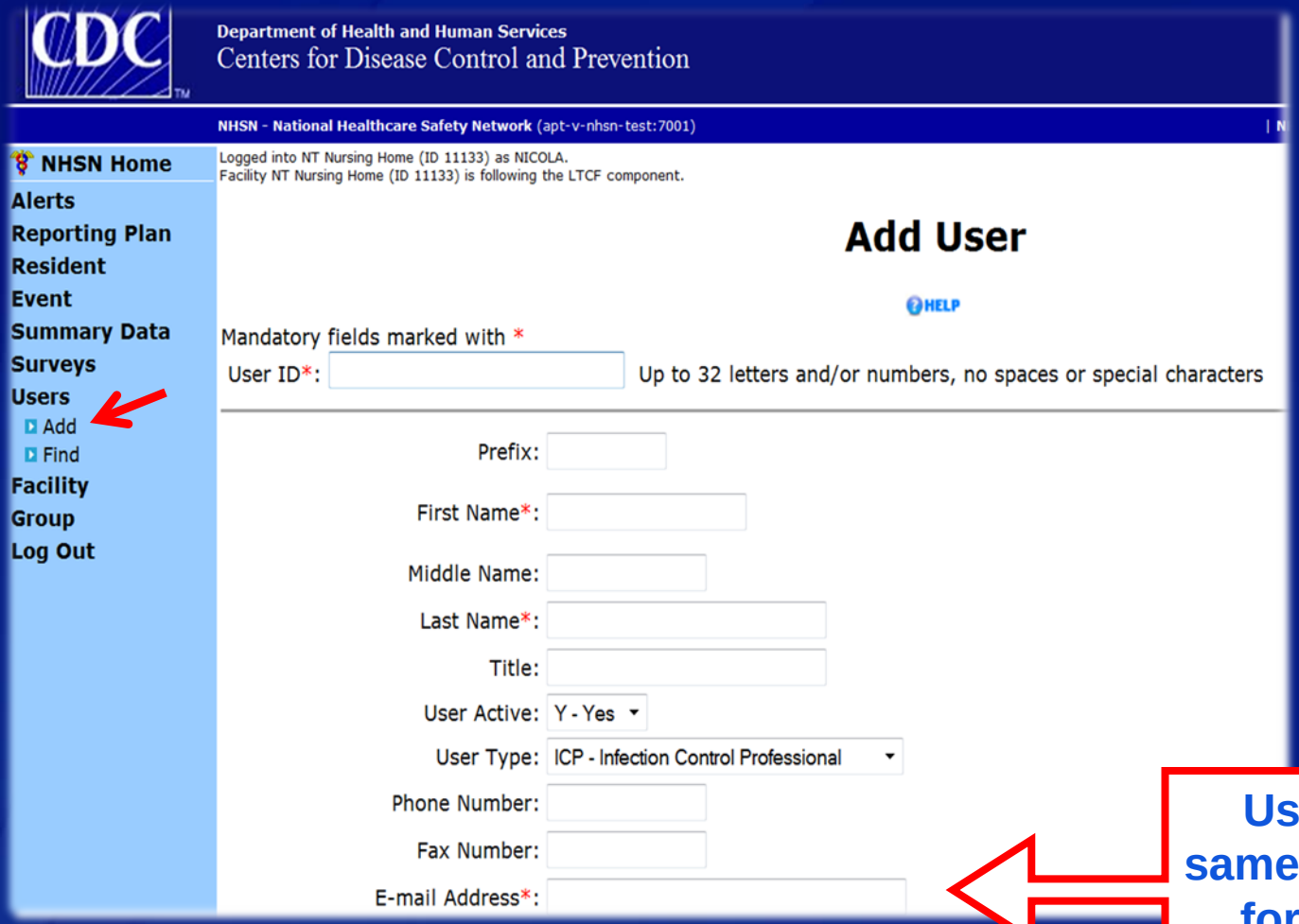
http://www.cdc.gov/nhsn/enroll.html



How to: Add User & Assign Rights

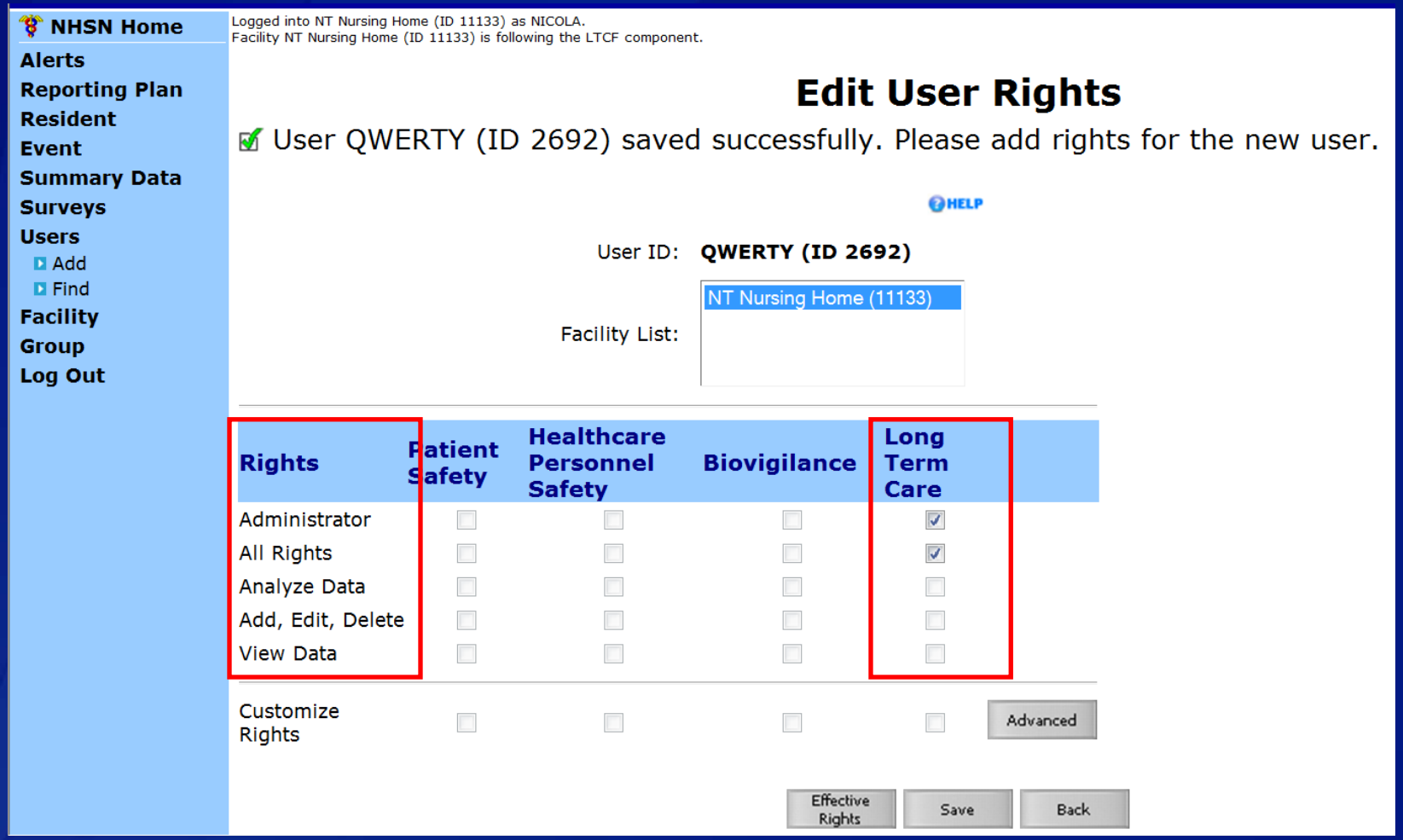
- **From the NHSN navigation bar: select ‘Users’, then select ‘Add’**
- **Enter user information**
  - Create a username
  - The email address entered must be the same one used to request their digital certificate
- **Click “Save” button to create the user**
- **Assign rights by checking boxes under Long Term Care,**
- **Click “Save” button to save the rights assigned**

Add User



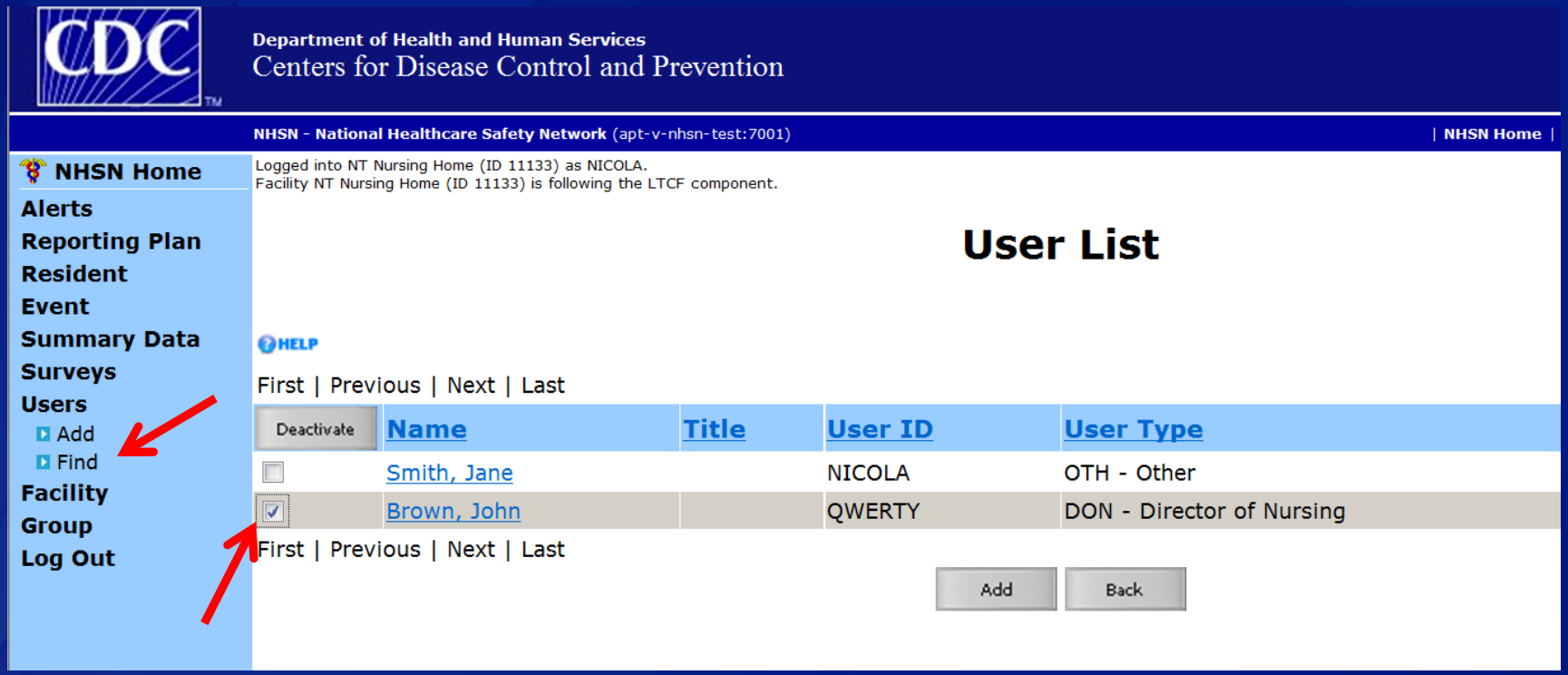
User must use same email address for their digital certificate!

Assign and Save User Rights



Deactivate Users

- **If necessary you can deactivate users**
  - e.g., when staff member leaves



Set-up is complete: Next Step

- All set-up steps are complete

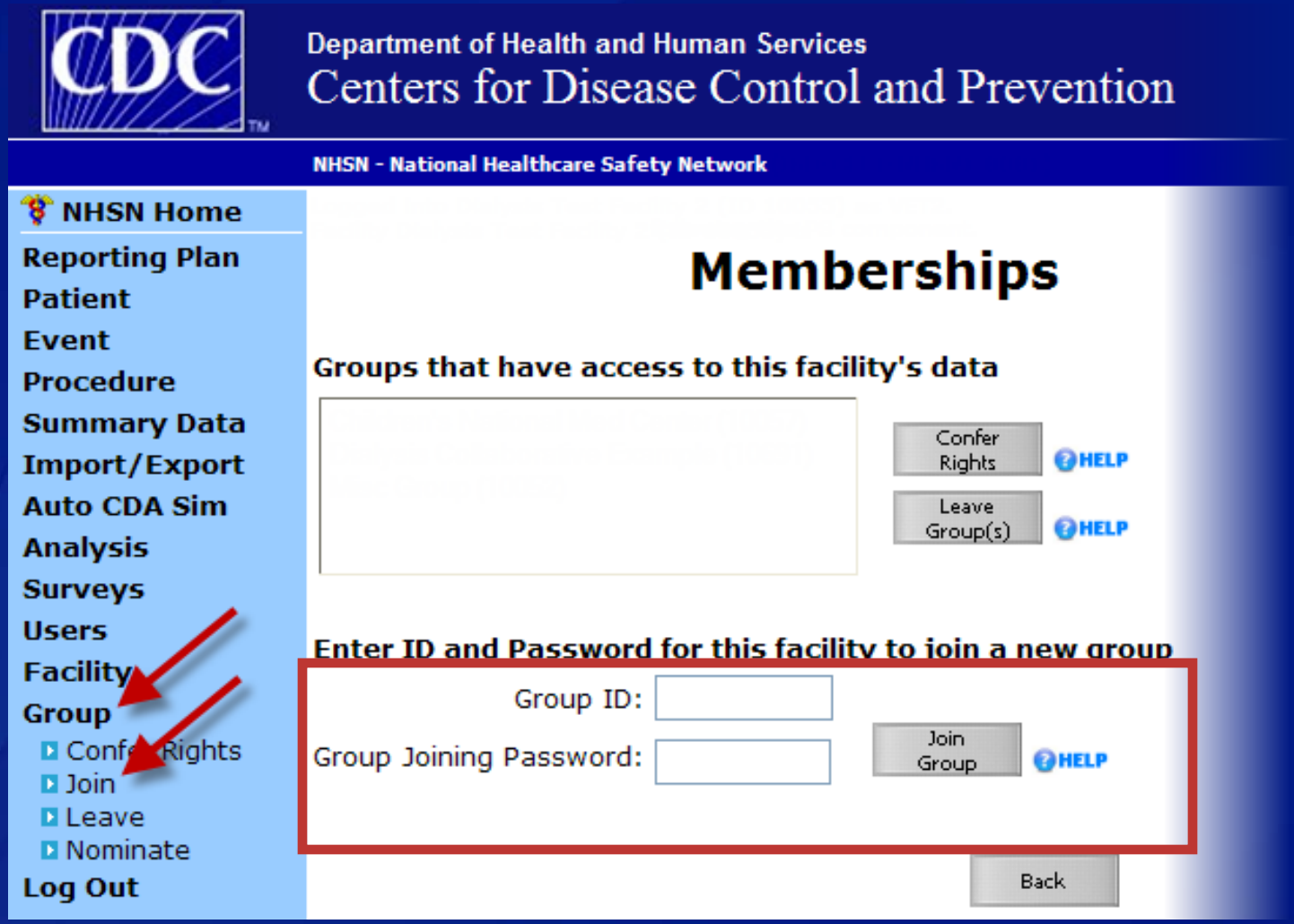
1. Map Long-term Care Facility Locations
2. Create Monthly Reporting Plans
3. Add Users & Assign Rights

- Next step: begin reporting data!

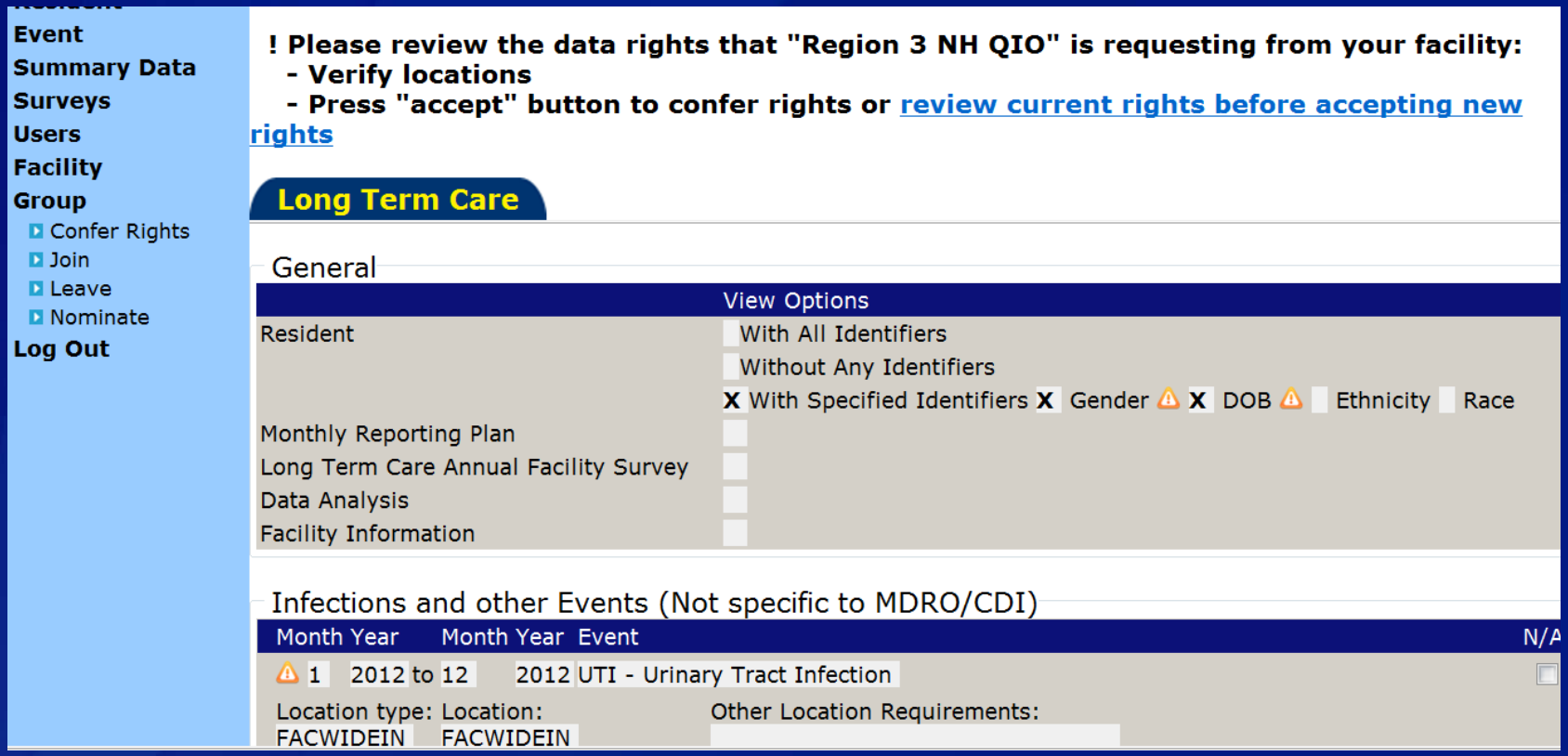
Other Set-up Options: Joining a NHSN Group

- **Any entity can maintain a group in NHSN**
  - Corporate chain, Quality Improvement Organization, etc.
- **NHSN facilities join using a Group ID number and Joining Password provided by the group**
- **After joining, the facility will see the "Confer Rights Screen" which shows which data the group wants the facility to share**
  - The facility must press the "Accept" button on the Confer Rights screen to share data
- **A facility that joins a group does not have access to data from other facilities in the group**

Joining a Group



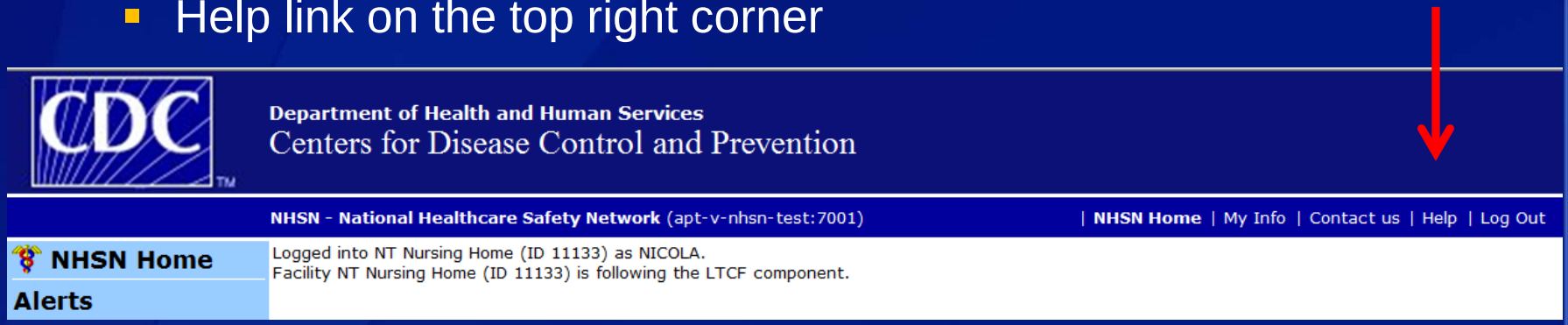
Joining a Group



- **Scroll to the bottom of the page and click “Accept” to join the group**

NHSN Support

- **NHSN Online Help Manual**
  - Help link on the top right corner



- **Email the NHSN Helpdesk at nhsn@cdc.gov**

Important !!

- Email is our only way to communicate with you!
- Please email nhsn@cdc.gov with any changes in your email address

Summary

- Add NHSN websites to “Favorites”
- NHSN Navigation
- Map Long-term Care Facility Locations
- Create Monthly Reporting Plans
- Add Users and assign user rights
- Joining groups

Questions? Problems?

Contact the NHSN Helpdesk at nhsn@cdc.gov

For more information please contact Centers for Disease Control and Prevention
1600 Clifton Road NE, Atlanta, GA 30333
Telephone, 1-800-CDC-INFO (232-4636)/TTY: 1-888-232-6348
E-mail: cdcinfo@cdc.gov Web: www.cdc.gov

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

Appendix: Creation and Management of Locations in NHSN

Create New Locations:

If there are any operational locations in your hospital that are not already set-up in NHSN, you will need to create these locations for the purposes of NHSN surveillance and reporting.

Locations can be set up by following these steps:

1. Go to Facility > Locations.
2. On the Locations screen, enter a location code ("Your Code") and location label ("Your Label").
3. Select a CDC Location Description from the drop-down menu. NOTE: When selecting a CDC Location Description, your location must meet the 80% Rule in order to be assigned as that CDC Location Description.
4. Make sure the Status is set to "Active" and then enter the number of beds that are set up and staffed in that location.
5. Once all information for this new location is entered, click 'Add'.

Manage Existing Locations:

Facilities should make sure that the only locations with an "active" status in NHSN are those that are operational units within the facility. The number of beds indicated for each location should also be checked for accuracy and, if necessary, updated to reflect the current number of beds set up and staffed.

Location information can be updated by following these steps:

1. Go to Facility > Locations.
2. On the Locations screen, click 'Find'.
3. Review the information that appears in the Location Table at the bottom of the screen. Review the Status of each location, as well as Bed size.
4. If a location's information needs to be updated, click the location code under the "Your Code" column; the location's information will auto-fill in the fields above the Location Table.
5. Make any modifications to the Status and/or Bed size, then click 'Save'.

Manage Physically Moved Locations

Units within a facility may physically move to another area of the same facility, and be given a different name. If the staff are moving with these locations, and the type of patients remains the same (i.e., the only difference is the geographical location and/or bedsize), then it's recommended to change "Your Code" and "Your Label" (and bedsize, if appropriate) on the existing location records. These fields can be updated by following the instructions for "Manage Existing Locations" above. Updating the value of "Your Code" will also update all previously-entered records for these locations, allowing for continuous analysis and reporting.

Inaccurate CDC Location Description

If you believe that the CDC Location Description assigned to your existing location is incorrect, there are additional steps you will need to follow, depending on the scenario:

Scenario 1: The patient population in this unit has changed such that the current CDC Location Description, using the 80% rule, is inaccurate.

> Solution: Because the patient population has changed, a new location should be created in NHSN and should be mapped to a CDC Location Description that most accurately reflects the type of patients receiving care in that location, using the 80% rule. The old location should be put into "Inactive" status. Note that data which have been reported from inactive locations can continue to be analyzed within NHSN, however these locations will not be linked to new, active locations.

Scenario 2: The CDC Location Description initially assigned has been inaccurate for much, if not all, of the reporting to NHSN, based on the updated location guidance for 2013.

Solution: Users cannot change the CDC Location Description on existing locations within NHSN. Facilities should ensure that the locations set up in NHSN are accurate for 2013 reporting per the updated guidance. If a new CDC Location Description is needed, users must create a new location in NHSN and inactivate the old location, per the instructions above. Note that data for the old location can still be analyzed, but these data will not be connected to data reported under the new location.

CDC Location Label	NHSN Healthcare Service Location Code	CDC Location Code	Location Description
Interventional Radiology	1203-9	IN:ACUTE:OR:RAD	A room or suite in a hospital where diagnostic or therapeutic radiologic procedures on outpatients and/or inpatients occurs. Operating Room requirements for air changes, temperature, humidity and surfaces must be met.
Operating Room/Suite	1096-7	IN:ACUTE:OR	A room or suite in a hospital equipped for the performance of surgical operations. Requirements for air changes, temperature, humidity and surfaces must be met. (For outpatient operating room, use Ambulatory Surgery Center designation or other specialty OR shown in Outpatient Locations section of this chapter).
Post Anesthesia Care Unit/Recovery Room	1097-5	IN:ACUTE:OR_STEP	Hospital area designated for monitoring patients for immediate effects of anesthesia before either going home or on to an in-patient care area. May also be used for pre surgical prep.
Chronic Care Units (Previously named Long-Term Care) ***NOTE:*** *These location descriptions should only be used to define chronic care units that share a CCN with the affiliated acute care hospital. Skilled nursing facility (SNF) units located within a hospital that have a CCN that is different from the acute care hospital should be enrolled as a separate NHSN facility within the NHSN Long Term Care Facility Component, and use the long term care locations defined on pages 28-29.*			
Inpatient Hospice	1165-0	IN:NONACUTE:LTC:HSP	Area where palliative care is provided to the dying patient.

CDC Location Label	NHSN Healthcare Service Location Code	CDC Location Code	Location Description
Chronic Alzheimer's Unit	1103-1	IN:NONACUTE:LTC:ALZ	Area where care is provided to patients diagnosed with Alzheimer's syndrome for extended periods of time. Formerly called Long Term Care Alzheimer's Unit.
Chronic Behavioral Health/Psych Unit	1104-9	IN:NONACUTE:LTC:BHV	Area where care is provided to patients with psychiatric or behavioral-disorder diagnoses for extended periods of time. Formerly called Long Term Care Behavioral Health/Psych Unit.
Chronic Rehabilitation Unit	1105-6	IN:NONACUTE:LTC: REHAB	Area where evaluation and restoration of function is provided to patients who have lost function due to acute or chronic pain, musculoskeletal problems, stroke, or catastrophic events resulting in complete or partial paralysis. Formerly called Long Term Care Rehabilitation Unit.
Chronic Care Unit	1102-3	IN:NONACUTE:LTC	Area where care provided for patients with chronic disease or disabilities for extended periods of time. Formerly called Long Term Care Unit.
Ventilator Dependent Unit	1164-3	IN:NONACUTE:LTC:R	Area where care is provided to patients whose respirations depend on the use of a ventilator for extended periods of time.

CDC Location Label	NHSN Healthcare Service Location Code	CDC Location Code	Location Description
LONG TERM CARE FACILITIES			
LTCF Inpatient Hospice Unit	1254-2	IN:NONACUTE:LTCF:HSP	A unit or designed area which provides palliative and supportive care services to individuals diagnosed with life limiting (terminal) conditions.
LTCF Dementia Unit	1255-9	IN:NONACUTE:LTCF:DEM	A unit or designed area which provides specialized care for individuals diagnosed with dementia or related conditions, including Alzheimer's disease.
LTCF Psychiatric Unit	1256-7	IN:NONACUTE:LTCF:PSY	Unit or designated area which provides specialized care for individuals diagnosed with psychiatric or behavioral disorders.
LTCF Skilled Nursing/Short Term Rehabilitation	1257-5	IN:NONACUTE:LTCF: REHAB	A unit or designated area which primarily provides short term (<90 days), medical, skilled nursing or rehabilitation services to individuals requiring restorative care following recent hospitalization.
LTCF General Nursing Unit	1258-3	IN:NONACUTE:LTCF:GEN	A unit or designated area which primarily provides nursing, rehabilitative or custodial services to individuals with varying levels of chronic conditions or disability requiring long term (>90 days) support.

CDC Location Label	NHSN Healthcare Service Location Code	CDC Location Code	Location Description
LTCF Ventilator Dependent Unit	1259-1	IN:NONACUTE:LTCF:VEN	A unit or designated area which provides nursing and respiratory care to individuals who require mechanical ventilation.
LTCF Bariatric Unit	1260-9	IN:NONACUTE:LTCF:BAR	A unit or designated area which provides specializing care for individuals who are preparing for or have undergone bariatric surgery.
LONG TERM ACUTE CARE FACILITIES			
LTAC ICU	1220-3	IN:ACUTE:CC:LTAC	Critical care area specializing in the evaluation, treatment, and management of patients that require high observance/acuity and/or special care that are suffering medically complex conditions or who have suffered recent catastrophic illness or injury and require and extended stay in an acute care environment.
LTAC Ward	1221-1	IN:ACUTE:WARD:LTAC	Hospital area for the evaluation and treatment of patients suffering medically complex conditions or who have suffered recent catastrophic illness or injury, and require an extended stay in an acute care environment.

National Healthcare Safety Network (NHSN)

Long-term Care Facility (LTCF) Component

Laboratory-identified (LabID) Event Module:

Clostridium difficile Infection (CDI) Event Reporting
Multidrug-Resistant Organism (MDRO) Event Reporting

Target Audience

- **This training is designed for those who will collect, report, or analyze prevention process measures data in NHSN, and may include:**
  - NHSN Facility Administrator
  - LTCF Component Primary Contact
  - LTCF Administrator
  - Director of Nursing
  - Infection Prevention and Control Staff
  - Professional Nursing Staff
  - Trained Support Staff

You should have viewed the Overview of the LTCF Component slides prior to beginning this training

Objectives

- Describe the rationale for monitoring *C. difficile* infection (CDI) and multidrug-resistant organisms (MDROs) in NHSN
- Describe the methodology, protocol and definitions used for monitoring Laboratory-identified (LabID) Events

Documents and Forms

- The following documents and forms will be discussed in this training. You may wish to PRINT these to follow along.

1) Laboratory-identified (LabID) MDRO and CDI Events for LTCF Protocol
2) Table of Instructions for the LabID Event Form
3) LabID for LTCF Event Reporting Form
4) Denominators for LTCF Form
5) Monthly Reporting Plan for LTCF

LTCF Component MDRO/CDI page: http://www.cdc.gov/nhsn/LTC/mdro-cdi/index.html

Background

- **Why monitor MDRO and CDI in long-term care facilities?**
  - Residents in long term care facilities are at risk of carrying or acquiring MDROs and *C. difficile*
  - Infections from MDROs and CDI can be more severe, harder to treat, and are associated with increased risk of hospitalization, debility, and death
  - Focused monitoring of MDROs and CDI helps to evaluate trends and changes in the occurrence of these pathogens and related infections in the facility over time
  - Tracking these events will also inform infection control staff of the impact of targeted prevention efforts

Purpose of LabID Event Reporting

- **To calculate proxy measures for MDRO and CDI events, exposures, and healthcare acquisition**
- **This method is based solely on laboratory data and limited resident admissions/transfer data**
  - This includes results of testing performed on residents while at the facility
  - Clinical evaluation of resident is not required, and therefore this surveillance option is less labor intensive

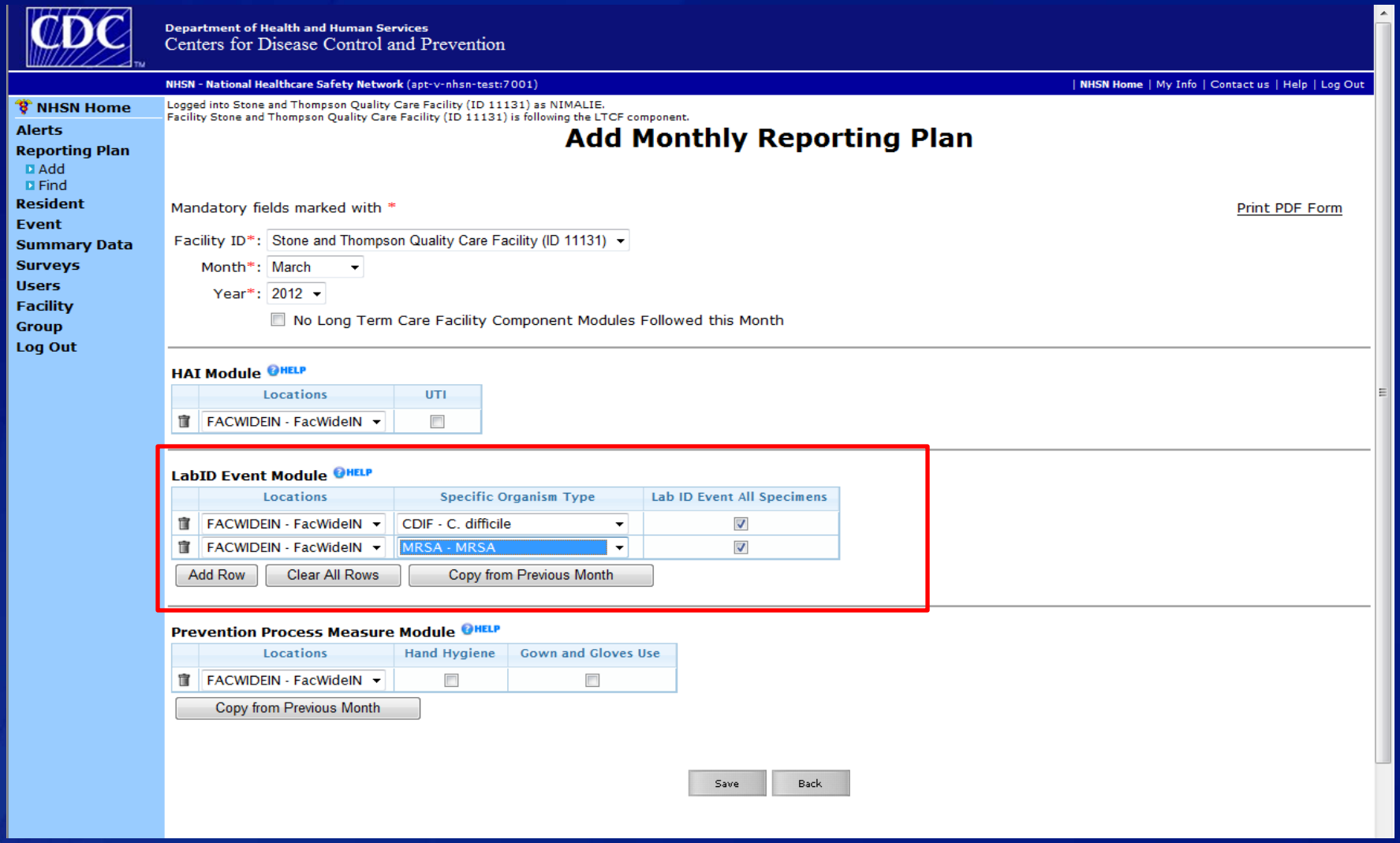
Settings for LabID Event Reporting

- **Reporting is available for the following facility types:**
  - Certified skilled nursing facilities/nursing homes (LTC:SKILLNURS)
  - Intermediate/chronic care facilities for the developmentally disabled (LTC:DEVDIS)

Reporting Requirements

- **Facilities must indicate LabID event surveillance in the *Monthly Reporting Plan for LTCF***
- **Surveillance must be reported for at least 6 consecutive months to provide meaningful measures**
- **MDRO and CDI surveillance should be performed facility-wide**

Monthly Reporting Plan for LTCF



Reporting Options

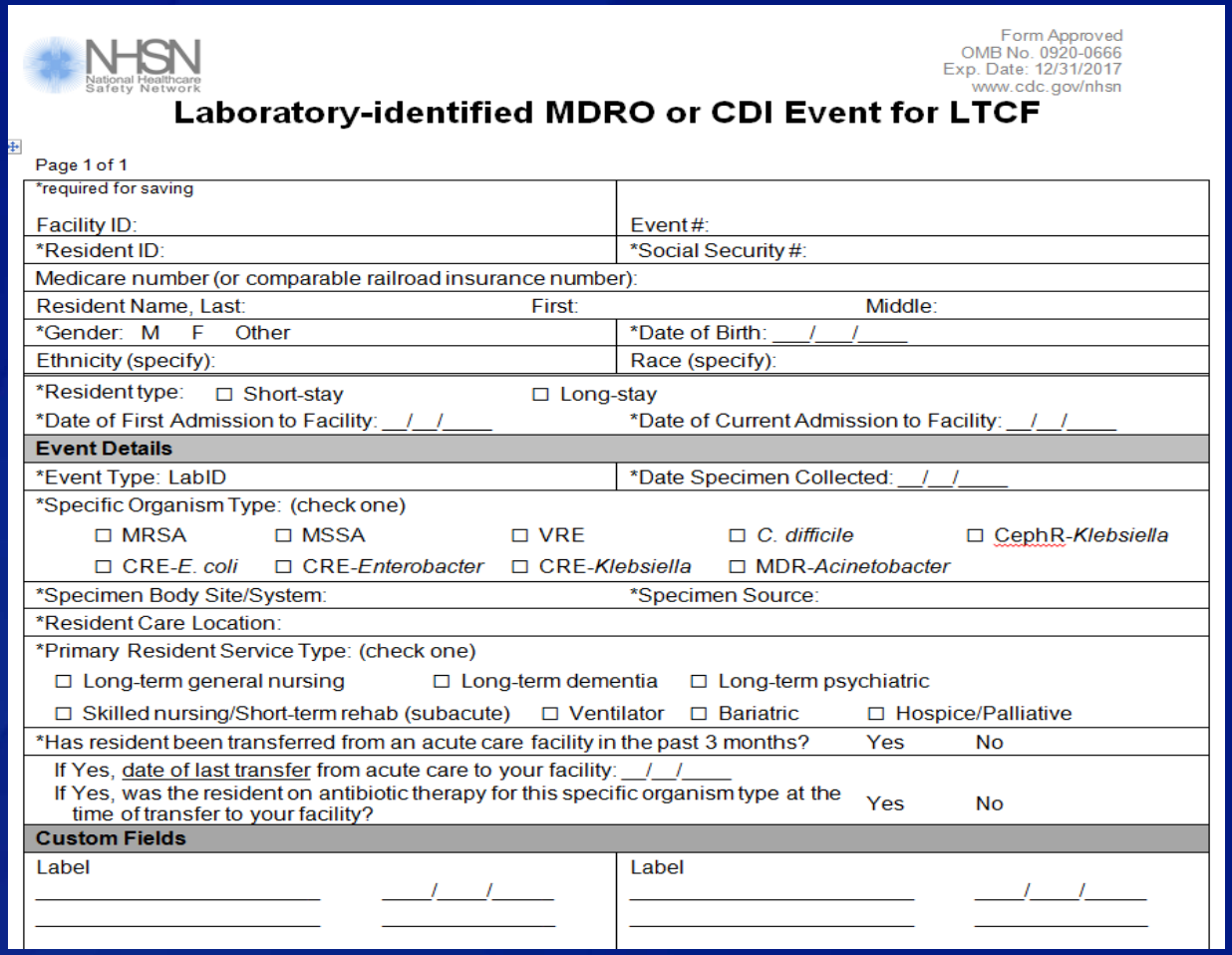
- I. CDI
- II. MDROs
  - **A facility can chose to monitor one or more of the following organisms:**
    - *Staphylococcus aureus,* methicillin-resistant (MRSA)
    - *Staphylococcus aureus,* methicillin-susceptible (MSSA)
    - Vancomycin-Resistant *Enterococcus* spp. (VRE)
    - Cephalosporin-Resistant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

Required Forms

- **Laboratory-identified MDRO or CDI Event for LTCF Form**
  - Numerator data
    - Collect and report each MDRO or CDI event that meets the LabID Event definition
- **Denominators for LTCF Locations Form**
  - Denominator data
    - Resident-days each month
    - Resident admissions each month
    - Residents admitted on *C. difficile* treatment each month

Laboratory-identified Event Form

- "Numerator" – one form per MDRO or CDI Event



NHSN National Healthcare Safety Network

Form Approved
OMB No. 0920-0666
Exp. Date: 12/31/2017
www.cdc.gov/nhsn

Laboratory-identified MDRO or CDI Event for LTCF

Page 1 of 1

*required for saving Facility ID:	Event #:
*Resident ID:	*Social Security #:
Medicare number (or comparable railroad insurance number):	
Resident Name, Last: First: Middle:	
*Gender: M F Other	*Date of Birth: ___/___/____
Ethnicity (specify):	Race (specify):
*Resident type: ☐ Short-stay ☐ Long-stay *Date of First Admission to Facility: __/__/____	*Date of Current Admission to Facility: __/__/____
Event Details	
*Event Type: LabID	*Date Specimen Collected: __/__/____
*Specific Organism Type: (check one) ☐ MRSA ☐ MSSA ☐ VRE ☐ *C. difficile* ☐ CephR-*Klebsiella* ☐ CRE-*E. coli* ☐ CRE-*Enterobacter* ☐ CRE-*Klebsiella* ☐ MDR-*Acinetobacter*	
*Specimen Body Site/System:	*Specimen Source:
*Resident Care Location:	
*Primary Resident Service Type: (check one) ☐ Long-term general nursing ☐ Long-term dementia ☐ Long-term psychiatric ☐ Skilled nursing/Short-term rehab (subacute) ☐ Ventilator ☐ Bariatric ☐ Hospice/Palliative	
*Has resident been transferred from an acute care facility in the past 3 months? Yes No	
If Yes, date of last transfer from acute care to your facility: __/__/____ If Yes, was the resident on antibiotic therapy for this specific organism type at the time of transfer to your facility? Yes No	
Custom Fields	
Label _____ ____/____/____ _____ _____	Label _____ ____/____/____ _____ _____

See Table of Instructions at : http://www.cdc.gov/nhsn/LTC/mdro-cdi/index.html

Entering Denominator Data in NHSN

Facility ID*: Pike Nursing Home (ID 11106)

Month*: January

Year*:

Denominators for Long Term Care Locations

	Location Code	Total Resident Days	Urinary Catheter Days	Report No UTI	New Antibiotic Starts for UTI Indication	
	Facility-wide Inpatient (FacWIDEIn)	*	*	☐	*	Custom Fields

MDRO & CDI LabID Event Reporting

	Location Code			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	☐	☐	☐	☐	☐	☐	☐	☐	

Prevention Process Measures

	Location Code	Hand Hygiene		Gown and Gloves		
		Performed	Indicated	Used	Indicated	
	Facility-wide Inpatient (FacWIDEIn)	*	*	*	*	Custom Fields

Save Back

LabID Event Module:

C. DIFFICILE REPORTING

CDI Definitions

- ***C. difficile* positive laboratory assay:** A positive result for a laboratory test detecting presence of either of the following:
  - *C. difficile* toxin A or B (e.g., enzyme immunoassay or EIA test), OR
  - A toxin-producing *C. difficile* organism detected in the stool specimen by culture or other laboratory means (e.g., nucleic acid amplification testing by polymerase-chain reaction, or PCR).

- **Duplicate *C. difficile* positive assay:** Any *C. difficile* positive laboratory test from the same resident following a previous *C. difficile* positive test within the past 2 weeks.

CDI Definitions (continued)

- **CDI LabID Event:** All non-duplicate C. *difficile* positive laboratory assays obtained while a resident is receiving care in the LTCF.
  - Lab results from outside facilities, before a resident's admission, should not be included in LabID event reporting
  - It is helpful to keep a log of all the positive *C. difficile* tests sent from your facility so you can track duplicate results to ensure they are not incorrectly entered as CDI LabID Events

Date of Positive C.difficile lab tests for a resident	Duplicate?	Enter as a CDI LabID Event?
1/3/2012	No	Yes
1/7/2012	Yes	No (within 2 weeks of positive test 1/3/2012)
1/20/2012	Yes	No (within 2 weeks of positive test 1/7/2012)
2/1/2012	Yes	No (within 2 weeks of positive test 1/20/2012)
2/23/2012	No	Yes

CDI Definitions (continued)

CDI LabID Events are categorized further by the NHSN system:

- **Incident CDI LabID Event:** The first LabID Event ever entered or a subsequent LabID Event entered > 8 weeks after the most recent LabID Event reported for an individual resident

- **Recurrent CDI LabID Event:** Any LabID Event entered > 2 weeks and ≤ 8 weeks after the most recent LabID Event reported for an individual resident

**Remember, duplicate *C. difficile* positive laboratory tests for a resident should NOT be entered as LabID events

Identifying a CDI LabID Event

Resident with positive CDI test result

Prior CDI positive in last 2 weeks?

YES → Duplicate-Not LabID Event

NO →

LAB ID EVENT: Complete Form

NHSN Laboratory-identified MDRO or CDI Event for LTCF

Page 1 of 1

*required for saving Facility ID:	Event #:
*Resident ID:	*Social Security #:
Medicare number (or comparable railroad insurance number):	
Resident Name, Last: First: Middle:	
*Gender: M F Other	*Date of Birth: ___/___/____
Ethnicity (Specify):	Race (Specify):
Event Details	
*Resident type: ☐ Short-stay (≤90 days) ☐ Long-stay (>90 days)	
*Date of First Admission to Facility: ___/___/____	*Date of Current Admission to Facility: ___/___/___
*Event Type: LabID	*Date Specimen Collected: ___/___/____

Incident
No previous positive, OR
Prior positive >8 weeks

Recurrent
Prior positive > 2 and ≤ 8 weeks

LabID Event Module:

MDRO REPORTING

MDROs Tracked in LabID Event

GRAM-STAIN POSITIVE

- **Methicillin-resistant *Staphylococcus aureus* (MRSA)**
- **Methicillin-sensitive *Staphylococcus aureus* (MSSA)**
- **Vancomycin-resistant *Enterococcus* species (VRE)**

GRAM-STAIN NEGATIVE

- **Cephalosporin-resistant *Klebsiella* species (CephR-*Klebsiella*)**
- **Carbapenem-resistant *Enterobacteriaceae (must monitor all 3)***
  - **CRE-*Ecoli***
  - **CRE-*Klebsiella***
  - **CRE-*Enterobacter***
- **Multidrug-resistant *Acinetobacter* (MDR-*Acinetobacter*)**
  - *Acinetobacter* species resistant to at least one agent in at least 3 antimicrobial classes (see next slide for examples of antibiotic agents/classes)

For additional information on MDRO definitions, see LabID Event Protocol at: http://www.cdc.gov/nhsn/LTC/mdro-cdi/index.html

Select Antibiotic Agents and Classes in LabID Event

Class	Agents
Beta (β)-lactams and β-lactam/β-lactamase inhibitor combinations	Piperacillin, Piperacillin/tazobactam
Sulbactam	Ampicillin/sulbactam
Cephalosporins	Ceftazidime, Cefepime
Carbapenems	Imipenem, Meropenem, Doripenem
Aminoglycosides	Amikacin, Gentamicin, Tobramycin
Fluoroquinolones	Ciprofloxacin, Levofloxacin

MDRO Definitions

- **MDRO positive laboratory isolate:** Any laboratory culture specimen, from which a MDRO is identified, that was obtained for clinical decision making while a resident is receiving care in the facility.
  - Results from Active Surveillance Culture/Testing (e.g., nasal swabs for MRSA or perirectal swabs for VRE) are not considered MDRO positive laboratory isolates.

- **Duplicate MDRO laboratory isolate:** Any MDRO isolate from the *same* resident after an initial isolation of the same MDRO *during a calendar month*, regardless of the specimen source except when a unique blood source.

- **Unique blood source:** A MDRO isolate identified in a blood culture from a resident with no prior isolation of the MDRO *in blood in the past 2 weeks, even across calendar months*.

MDRO Definitions (continued)

- **MDRO LabID Event:** All non-duplicate MDRO positive laboratory isolates from any culture specimen, regardless of specimen source, or MDRO isolates from unique blood source, obtained while a resident is receiving care in the LTCF
  - LabID Event reporting is ONLY for collecting and tracking isolates from positive cultures that are taken for "clinical" purposes (i.e., for diagnosis and treatment)
  - Results from Active Surveillance Culture/Testing (e.g., nasal swabs for MRSA or perirectal swabs for VRE) are not reported as LabID Events
  - Lab results from outside facilities, before a resident's admission, should not be included in LabID event reporting

Identifying an MDRO LabID Event

MDRO from any specimen source

1st in Calendar Month?

NO

Duplicate MDRO Isolate

Source= BLOOD

NO

Duplicate- Not LabID Event

YES

Prior positive w/ same MDRO from blood in ≤ 2 weeks (including across calendar month

YES

NO

Unique Blood

YES

LAB ID EVENT: Complete Form

NHSN **Laboratory-identified MDRO or CDI Event for LTCF**

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Form Ap
OMB No. 092
Exp. Date: 05-3

*required for saving Facility ID:	Event #:
*Resident ID:	*Social Security #:
Medicare number (or comparable railroad insurance number):	
Resident Name, Last: First: Middle:	
*Gender: M F Other	*Date of Birth: ___/___/_____
Ethnicity (Specify):	Race (Specify):
Event Details	
*Resident type: ☐ Short-stay (≤90 days) ☐ Long-stay (>90 days)	
*Date of First Admission to Facility: ___/___/_____ *Date of Current Admission to Facility: ___/___/___	
*Event Type: LabID	*Date Specimen Collected: ___/___/_____

LabID Event Reporting

DATA ANALYSIS

LabID Event Categorization

- **Based on data provided in the LabID Event form, each event (CDI and/or MDRO) is further categorized by NHSN**
- **Categories are based on the date of current admission to facility and the date specimen collected:**
  - **Community-onset (CO) LabID Event:** Date specimen collected ≤ 3 calendar days after current admission to the facility (i.e., days 1, 2, or 3 of admission)
  - **Long-term Care Facility-onset (LO) LabID Event :** Date specimen collected > 3 calendar days after current admission to the facility (i.e., on or after day 4)
  - LO Events are further sub-classified :
    - **Acute Care Transfer-Long-term Care Facility-onset (ACT-LO):** LTCF-onset (LO) LabID event with specimen collection date ≤ 4 weeks following date of last transfer from an Acute Care Facility (Hospital, Long-term acute care hospital, or Acute inpatient rehabilitation facility only)

LabID Event Categorization (continued)

Example: NHSN Classification of Lab ID Events as Community-onset or LTCF-onset				
Admission date June 4th	June 5th	June 6th	June 7th	June 8th
day 1	day 2	day 3	day 4	day 5
Community-onset (CO)			Long-term Care Facility-onset (LO)	

CDI Event Metrics

- **Total CDI Rate/10,000 resident-days** = Number of CDI LabID Events per month regardless of time spent in the facility (i.e., CO + LO) / Number of resident-days per month x 10,000
- **CDI Treatment Prevalence on Admission** = Admissions on C. diff treatment / Number of Admissions * 100
- **Long-term Care Facility-onset Incidence Rate/10,000 resident-days** = Number of all incident LO CDI LabID Events per month / Number of resident-days x 10,000. *This formula excludes recurrent CDI events.*
- ***Percent* that is Community-onset** = Number of CDI LabID Events that are CO / Total number of CDI LabID Events x 100
- ***Percent* that is Long-term Care Facility-onset** = Number of CDI LabID Events that are LO / Total number of CDI LabID Events x 100
  - ***Percent* of LO that is Acute Care Transfer Long-term Care Facility-onset** = Number of ACT-LO CDI LabID Events / Total number of LO CDI LabID Events x 100
- ***Percent* that is Recurrent CDI** = Number of CDI LabID Events that are recurrent / Total number of CDI LabID Events x 100

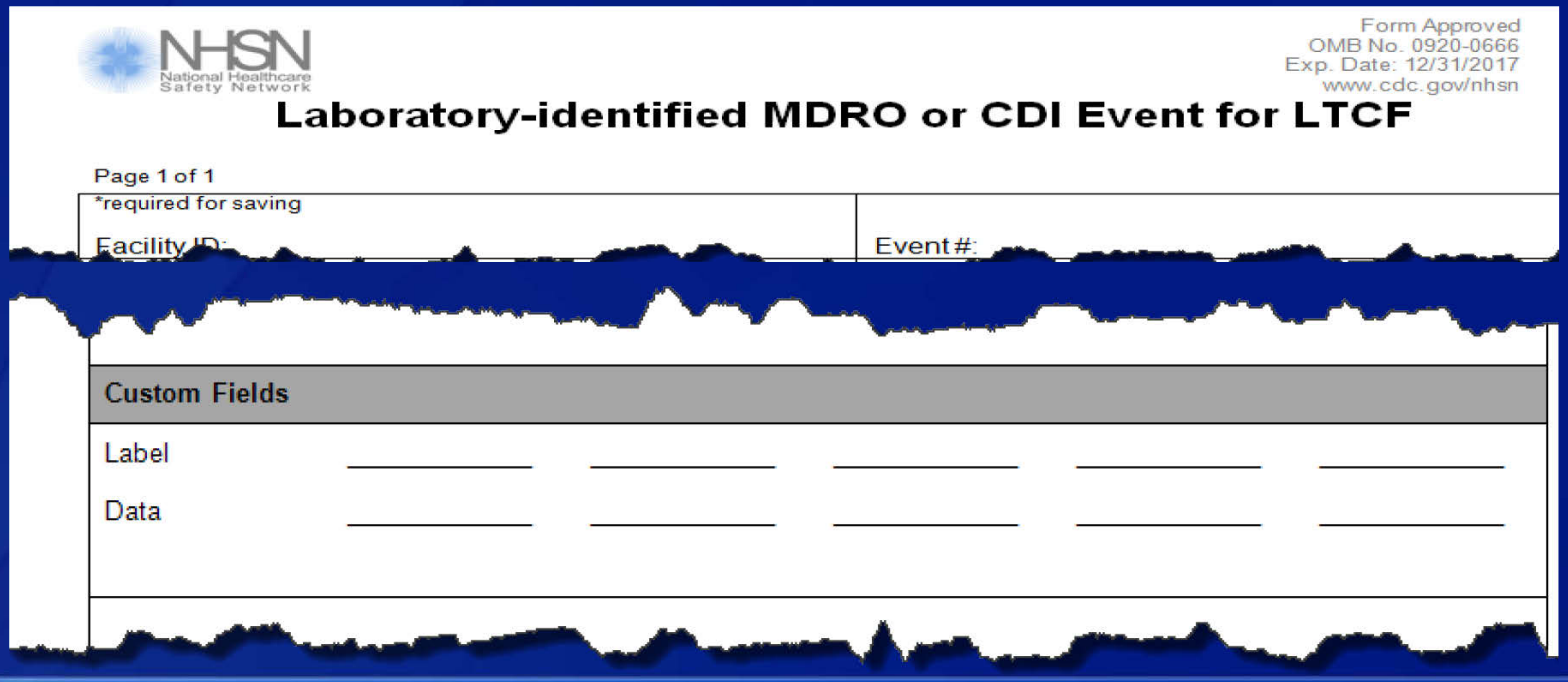
MDRO Event Metrics*

- **Total MDRO Rate/1,000 resident-days** = Number of MDRO LabID Events per month (regardless of time spent in the facility i.e., CO + LO) / Number of resident-days per month x 1,000
- **Long-term Care Facility-Onset Rate/1,000 resident-days** = Number of all LO MDRO LabID Events per month / Number of resident-days x 1,000
- ***Percent* that is Community-onset** = Number of MDRO LabID Events that are CO / Total number of MDRO LabID Events x 100
- ***Percent* that is Long-term Care Facility-onset** = Number of MDRO LabID Events that are LO / Total number of MDRO LabID Events x 100
  - ***Percent* of LO that is Acute Care Transfer Long-term Care Facility-onset** = Number of ACT-LO MDRO LabID Events / Total number of LO MDRO LabID Events x 100

*These calculations will be performed for each specific MDRO included in the reporting plan (e.g., MRSA, VRE, etc.).

Custom Fields

- Additional data entry fields which users can name (labels) and capture text or numeric data
- Available on each event form
- User can customize or expand data collected and submitted at your facility using these optional fields



NHSN National Healthcare Safety Network

Form Approved
OMB No. 0920-0666
Exp. Date: 12/31/2017
www.cdc.gov/nhsn

Laboratory-identified MDRO or CDI Event for LTCF

Page 1 of 1

*required for saving

Facility ID:

Event #:

Custom Fields					
Label	_____	_____	_____	_____	_____
Data	_____	_____	_____	_____	_____

Let's Review!

- **You can perform monitoring of CDI, and one or more MDROs using the LabID Event Module**

- **To get the most from your data:**
  - Minimum reporting is six months during a calendar year
  - Monitoring should be done facility-wide
  - Keeping a log of all positive laboratory tests and/or cultures for organisms being tracked will help prevent duplicate events from being entered into the system

NHSN Resources

- **NHSN Home Page**
  - http://www.cdc.gov/nhsn/
- **NHSN LTCF Component**
  - http://www.cdc.gov/nhsn/LTC/index.html
- **LTCF Component Laboratory-identified Event Module**
  - http://www.cdc.gov/nhsn/LTC/mdro-cdi/index.html

Laboratory-identified Multidrug-Resistant Organism (MDRO) & *Clostridium difficile* Infection (CDI) Events for Long-term Care Facilities

Background: *Clostridium difficile* infections (CDI), methicillin-resistant *Staphylococcus aureus* (MRSA), vancomycin-resistant *Enterococcus* spp. (VRE), and certain multidrug-resistant gram-negative bacilli (e.g. carbapenem-resistant *Enterobacteriaceae)* have increased in prevalence in U.S. healthcare settings over the last three decades, and have important implications for residents of long-term care facilities (LTCF). Studies have demonstrated a large proportion of residents are at risk for carrying or acquiring these multidrug-resistant organisms (MDRO) in LTCF. MDRO infections are associated with increased lengths of stay, hospitalizations and readmissions, increased healthcare costs, and mortality due to more severe illnesses and limited treatment options. CDI can present a variety of ways including uncomplicated diarrhea, pseudomembranous colitis, and toxic megacolon, which can, in some instances, lead to sepsis and even death. Infections from *C. difficile* represent a subset of gastroenteritis and gastrointestinal tract infections. Standard definitions for CDI should be incorporated into infection surveillance programs to obtain a more complete understanding of how *C. difficile* can manifest and be transmitted in LTCFs.

The Laboratory-identified (LabID) Event Module of the NHSN LTCF Component is a tool designed for use in certified skilled nursing facilities/nursing homes (LTC:SKILLNURS) and intermediate/chronic care facilities for the developmentally disabled (LTC:DEVDIS) to help meet criteria outlined in guidelines for the prevention, control, and surveillance of MDRO & CDI [1-5]. As outlined in these guidelines, these pathogens may require specialized monitoring to evaluate if intensified infection control efforts are required to reduce the occurrence of these organisms and related infections. The goal of this module is to provide a mechanism for facilities to collect, report, and analyze data that will inform infection control staff of the impact of prevention efforts. This module contains two options, one focused on CDI and the second on select MDROs.

References:

1: Smith et al. SHEA/APIC Guideline: Infection Prevention and Control in the Long-Term Care Facility. Infection Control and Hospital Epidemiology 2008;29:785-814.

2: Healthcare Infection Control Practices Advisory Committee (HICPAC) approved guidelines for the control of multidrug resistant organism (MDRO). Available at www.cdc.gov/hicpac/pdf/ MDRO/ MDROGuideline2006. .pdf

3: Cohen et al. Clinical Practice Guideline for Clostridium difficile infection in Adults: 2010 Update by SHEA and IDSA. Infection Control and Hospital Epidemiology 2010;31:431-55.

4: Simor et al. Clostridium difficile in Long-Term Care Facilities for the Elderly. SHEA Position Paper. Infection Control and Hospital Epidemiology 2002;23:696-703.

5: Cohen et al. Recommendations for Metrics for Multidrug-Resistant Organisms in Healthcare Settings: SHEA/HICPAC Position Paper. Infection Control and Hospital Epidemiology 2008;29:901-13.

I. *Clostridium difficile* Infection (CDI) Surveillance by Laboratory-identified (LabID) Event

Methods: Facilities may choose to monitor *Clostridium difficile* infections (CDI) using laboratory-identified (LabID) event surveillance. This surveillance method allows laboratory data to be used without clinical evaluation of the resident for signs or symptoms, allowing for a less labor intensive method to track *C. difficile*. This method provides proxy measures of *C. difficile* infections and healthcare exposure based solely on laboratory data and limited resident admission/transfer data.

The data collected will enable participating facilities and CDC to calculate several infection measures for CDI (listed below). NHSN forms should be used to collect all required data, using the definitions of each data field as indicated in the *Tables of Instructions.*

Settings: CDI LabID Event reporting is currently available for certified skilled nursing facilities/nursing homes (LTC:SKILLNURS) and intermediate/chronic care facilities for the developmentally disabled (LTC:DEVDIS). Events reported should include *C. difficile* positive laboratory assays obtained from any resident who is receiving care at the facility. Laboratory results available from other healthcare facilities before the resident was admitted to your facility should not be reported as LabID Events.

Requirements: Facilities must report LabID Events and denominators (number of resident admissions and number of resident-days) for the entire facility, referred to as facility-wide inpatient (FacWideIN), each month for at least 6 consecutive months to provide meaningful measures. *C. difficile* laboratory testing should be performed only on liquid or watery stool samples (i.e., conforming to the shape of the specimen collection container).

Facilities must indicate their reporting for the calendar month in the *Monthly Reporting Plan for LTCF* (CDC 57.141).

Definitions:

C. difficile -positive laboratory assay: A positive result for a laboratory test for *C. difficile* toxin A and/or B (e.g., enzyme immunoassay, or EIA test), **OR** a toxin-producing *C. difficile* organism detected in the stool specimen by culture or other laboratory means (e.g., nucleic acid amplification testing by polymerase-chain reaction, or PCR).

Duplicate *C. difficile*-positive laboratory assay: Any *C. difficile* positive laboratory test from the *same* resident following a previous *C. difficile* positive test *within the past two weeks.*

CDI Laboratory-identified (LabID) Event*:* All non-duplicate *C. difficile* positive laboratory assays obtained while a resident is receiving care in the long-term care facility. (See Figure 1 - *C. difficile Test Result Algorithm for Laboratory-identified (LabID) Events*.)

> NOTE: Laboratory results obtained from outside facilities, before a resident's admission, should not be entered as LabID Events.

Categorizations of CDI LabID Events: All CDI LabID Events will be categorized by NHSN.

Incident CDI LabID Event: Either the first CDI LabID Event ever entered for an individual resident in the facility, or a subsequent LabID Event entered > 8 weeks after the most recent CDI LabID Event reported for an individual resident.

Recurrent CDI LabID Event: Any CDI LabID Event entered > 2 weeks and ≤ 8 weeks after the most recent CDI LabID Event reported for an individual resident.

Example: NHSN Classification of CDI Lab ID Events as **Incident or Recurrent**				
Resident ID	Current Admit Date	CDI Event Date (i.e., date of specimen collection)	Organism	Categorization
1111	01/01/2015	01/05/2015	CDI	Incident
1111	01/01/2015	01/07/2015	CDI	Duplicate (Not reported in NHSN)
1111	01/01/2015	01/25/2015	CDI	Recurrent
1111	01/01/2015	02/2/2015	CDI	Duplicate (Not reported in NHSN)
1111	01/01/2015	03/11/2015	CDI	Recurrent
1111	01/01/2015	05/20/2015	CDI	Incident

Further Categorizations of CDI LabID Events: All incident or recurrent LabID Events will be further categorized by NHSN into Community-onset vs. LTCF-onset based on date of current admission to facility and date of specimen collected. Because of variability in documenting time of admission to the LTCF, calendar days are used to categorize LabID Events.

Community-onset (CO) LabID Event: Date specimen collected ≤ 3 calendar days from date of current admission to the facility (i.e., days 1, 2, or 3 of admission).

Long-term Care Facility-onset (LO) LabID Event: Date specimen collected > 3 calendar days after current admission to the facility (i.e., on or after day 4).

LO LabID Events can be further sub-classified as:

Acute Care Transfer-Long-term Care Facility-onset (ACT-LO): LTCF-onset (LO) LabID Event with date specimen collected ≤ 4 weeks following date of last transfer from an Acute Care Facility (Hospital, Long-term acute care hospital, or acute inpatient rehabilitation facility only).

Example: NHSN Classification of Lab ID Events as **Community-onset or LTCF-onset**				
Admission date June 4th	June 5th	June 6th	June 7th	June 8th
day 1	day 2	day 3	day 4	day 5
Community-onset (CO)			**Long-term Care Facility-onset (LO)**	

Numerator and Denominator Data:

Numerator: Data on each CDI LabID Event will be reported using the *Laboratory-identified MDRO or CDI Event for LTCF* form (CDC 57.138). (See *Tables of Instructions* for information on how to complete this form.)

Denominator: Monthly totals for resident-days, resident admissions, and residents on *C.difficile* treatment at the time of admission are collected using the *Denominators for LTCF* form (CDC 57.142). (See *Tables of Instructions* for information on how to complete this form.)

CDI Data Analysis: Data are stratified by time (e.g., month, quarter, etc.), whether an episode is incident or recurrent, community-onset or LTCF-onset and summarized for the entire facility.

Calculated CDI Rates and Metrics:
Line lists of CDI LabID Events and the measures and calculations listed below are available as part of the CDC-defined analysis outputs within the NHSN LTCF component.

Total CDI Rate/10,000 resident-days = Number of CDI LabID Events per month regardless of time spent in the facility (i.e., CO + LO) / Number of resident-days per month x 10,000.

CDI Treatment Prevalence on Admission = Admissions on C. difficile Treatment / Number of Admissions x 100.

CDI Long-term Care Facility-onset Incidence Rate/10,000 resident-days* = Number of all incident LO CDI LabID Events per month / Number of resident-days x 10,000.

*NOTE: This formula excludes recurrent CDI events.

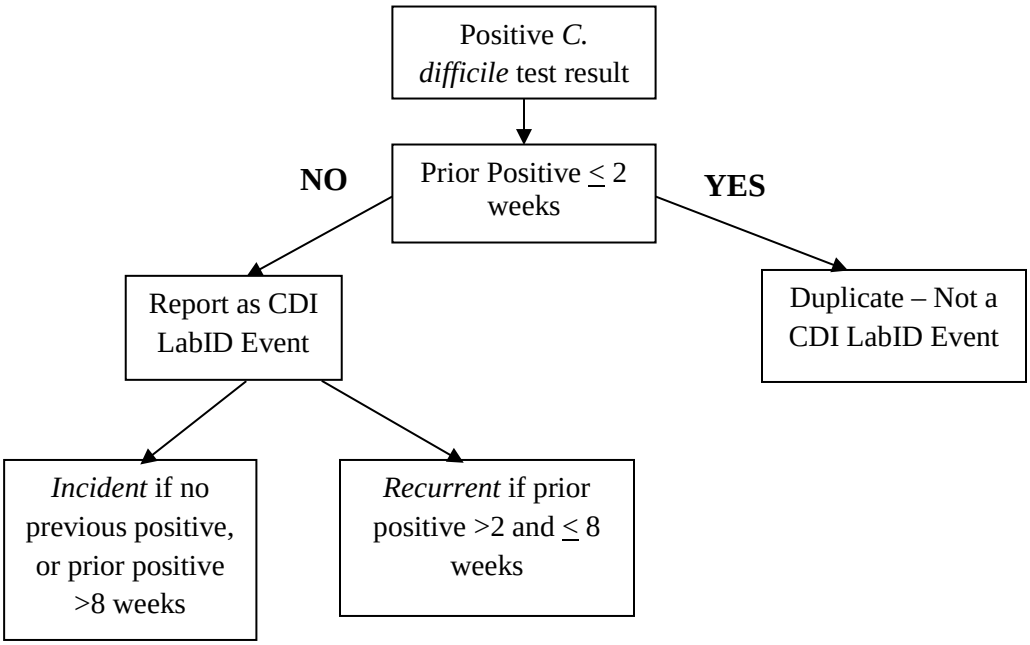
Percent that is Community-onset = Number of CDI LabID Events that are CO / Total number of CDI LabID Events x 100.

Percent that is Long-term Care Facility-onset = Number of CDI LabID Events that are LO / Total number of CDI LabID Events x 100.

Percent of LO that is Acute Care Transfer-Long-term Care Facility-onset = Number of ACT-LO CDI LabID Events / Total number of LO CDI LabID Events x 100.

Percent that is Recurrent CDI = Number of CDI LabID Events that are recurrent / Total number of CDI LabID Events x 100.

Figure 1. *C. difficile* Test Result Algorithm for Laboratory-identified (LabID) Events.



II. MDRO Surveillance by Laboratory-identified (LabID) Event
Methods: Facilities may choose to monitor one or more of the following MDROs: *Staphylococcus aureus*, both methicillin-resistant (MRSA) and methicillin-susceptible (MSSA), vancomycin-resistant *Enterococcus spp.* (VRE), cephalosporin-resistant *Klebsiella* spp., carbapenem-resistant *Enterobacteriaceae* (CRE), and multidrug-resistant *Acinetobacter* spp.

Laboratory-identified (LabID) Event reporting allows laboratory data to be used without clinical evaluation of the resident for signs or symptoms, creating a less labor intensive method to track MDROs. This method provides proxy measures of MDRO infections, and healthcare exposure based solely on laboratory data and limited resident admission/transfer data.

LabID Event reporting is ONLY for collecting and tracking isolates from positive cultures that are taken for "clinical" purposes (i.e., for diagnosis and treatment), which means that Active Surveillance Culture/Testing (e.g., nasal swabs for MRSA or perirectal swabs for VRE) results are not reported as LabID Events. Laboratory results available from other healthcare facilities before the resident was admitted to your facility should not be reported as LabID Events.

The data collected will enable participating facilities and CDC to calculate several measures, depending on which MDROs the facility chooses to track. NHSN forms should be used to collect all required data, using the definitions of each data field as indicated in the *Tables of Instructions*.

Setting: MDRO LabID Event reporting is currently available for certified skilled nursing facilities/nursing homes (LTC:SKILLNURS) and intermediate/chronic care facilities for the developmentally disabled (LTC:DEVDIS). Events reported should include MDRO positive laboratory cultures obtained from any resident who is receiving care at the facility.

Requirements: Facilities must report LabID Events and denominators (number of resident admission and number of resident-days) for the entire facility, referred to as facility-wide inpatient (FacWideIN), each month for at least 6 consecutive months to provide meaningful measures. Report only one LabID Event organism (positive isolate) per form.

Facilities must indicate their reporting for the calendar month in the *Monthly Reporting Plan for LTCF* (CDC 57.141).

Definitions: The following MDROs can be selected for tracking in the LabID Event module:

Gram-stain positive organisms:

- MRSA: Any ***S. aureus*** testing resistant to oxacillin, methicillin, or cefoxitin, by standard susceptibility testing methods or by a positive result from an FDA-approved test for direct MRSA detection from that specimen source.

- MSSA: Any ***S. aureus*** testing intermediate or susceptible to oxacillin, methicillin, and cefoxitin by standard susceptibility testing methods; a positive result from an FDA-approved test for direct MSSA detection from that specimen source; or a negative result from an FDA-approved test for direct MRSA detection from a specimen source.

- VRE: Any ***Enterococcus*** **species** that is resistant to vancomycin, by standard susceptibility testing methods or by a positive result from an FDA-approved test for VRE detection from that specimen source.

Gram-stain negative organisms:

- CephR-*Klebsiella*: Any ***Klebsiella*** **species** testing non-susceptible (i.e., resistant or intermediate) to cephalosporin antibiotics like ceftazidime, cefotaxime, ceftriaxone, or cefepime.

- CRE- Any ***Escherichia coli (E. coli)***, ***Klebsiella*** **species, or** ***Enterobacter*** **species** testing resistant to imipenem, meropenem, doripenem, or ertapenem by standard susceptibility testing methods (i.e., minimum inhibitory concentrations of ≥4 mcg/mL for doripenem, imipenem and meropenem or ≥2 mcg/mL for ertapenem) OR by production of a carbapenemase (i.e., KPC, NDM, VIM, IMP, OXA-48) demonstrated using a recognized test (e.g., polymerase chain reaction, metallo-β-lactamase test, modified-Hodge test, Carba-NP). NOTE: CRE surveillance requires facilities to monitor for all three organisms (CRE-*E. coli*, CRE-*Klebsiella spp.*, ***and*** CRE-*Enterobacter spp.).*

- MDR-*Acinetobacter:* Any ***Acinetobacter*** **species** testing non-susceptible (i.e., resistant or intermediate) to at least one agent in at least 3 antimicrobial classes of the following 6 antimicrobial classes:

Antimicrobial Class	**Agents**
β-lactams and β-lactam/β-lactamase inhibitor combinations	Piperacillin, Piperacillin/tazobactam
Sulbactam	Ampicillin/sulbactam
Cephalosporins	Cefepime, Ceftazidime
Carbapenems	Imipenem, Meropenem, Doripenem, Ertapenem
Aminoglycosides	Amikacin, Gentamicin, Tobramycin
Fluoroquinolones	Ciprofloxacin, Levofloxacin

MDRO positive laboratory isolate: Any laboratory specimen source, from which a MDRO is identified, obtained for clinical decision making (as defined above) while a resident is receiving care in the facility.

Duplicate MDRO laboratory isolate: Any MDRO isolate from the *same* resident after an initial isolation of the same organism *during a calendar month*, regardless of the specimen source except when a unique blood source is identified (see definition below and Figure 2).

NOTE: A duplicate MDRO laboratory isolate should not be reported as a LabID Event.

Unique blood source MDRO laboratory isolate: A MDRO isolate identified in a blood culture from a resident with no prior isolation of the MDRO *in blood in the past 2 weeks, even across calendar months*. A unique blood source isolate should be reported even if the resident had this same MDRO previously isolated in a non-blood specimen earlier during the same calendar month (See Figure 2).

NOTE: As a general rule, at a **maximum,** there should be no more than 2 blood isolates (which would be very rare) and 1 other specimen source isolate per MDRO type reported for the same resident during a calendar month.

MDRO Laboratory-identified (LabID) Event: All non-duplicate MDRO positive laboratory isolates from any culture specimen, regardless of specimen source or MDRO unique blood source isolates obtained while a resident is receiving care in the facility.

NOTE: Laboratory data available from outside facilities, before a resident's admission, should not be entered as LabID Events.

Categorizations of MDRO LabID Events: All MDRO LabID Events will be categorized by NHSN into Community-onset vs. LTCF-onset based on date of current admission to facility and date of specimen collected. Because of variability in documenting time of admission to the LTCF, calendar days are used to categorize LabID Events.

Community-onset (CO) LabID Event: Date specimen collected ≤ 3 calendar days after resident admission to the facility (i.e., days 1, 2, or 3 of admission).

Long-term Care Facility-onset (LO) LabID Event: Date specimen collected > 3 calendar days after admission to the facility (i.e., on or after day 4).

LO can be further sub-classified as:

Acute Care Transfer-Long-term Care Facility-onset (ACT-LO): LTCF-onset (LO) LabID Event with date specimen collected ≤ 4 weeks following date of last transfer from an Acute Care Facility (Hospital, Long-term acute care hospital, or acute inpatient rehabilitation facility only).

Example: NHSN Classification of Lab ID Events as **Community-onset or LTCF-onset**				
Admission date June 4th	June 5th	June 6th	June 7th	June 8th
day 1	day 2	day 3	day 4	day 5
Community-onset (CO)			**Long-term Care Facility-onset (LO)**	

Numerator and Denominator Data:

Numerator: Data on each MDRO LabID Event will be reported using the *Laboratory identified MDRO or CDI Event for LTCF* form (CDC 57.138). (See *Tables of Instructions* for information on how to complete this form.)

Denominator: Monthly totals for resident admissions and resident-days are collected using the *Denominators for LTCF* (CDC 57.142). (See *Tables of Instructions* for information on how to complete this form.)

MDRO Data Analysis: Data are stratified by time (e.g., month, quarter, etc.), whether an episode is community-onset or LTCF-onset and summarized for the entire facility.

Calculated MDRO Rates and Metrics*:

Line lists of MDRO LabID Events and the measures and calculations listed below are available as part of the CDC-defined analysis outputs within the NHSN LTCF component.

*NOTE: These calculations will be performed for each specific MDRO included in the reporting plan during a month (e.g., MRSA, VRE, etc.)

Total MDRO Rate/1,000 resident-days = Number of MDRO LabID Events per month (regardless of time spent in the facility i.e., CO + LO) / Number of resident-days per month x 1,000.

MDRO Long-term Care Facility-onset Incidence Rate/ 1,000 resident-days = Number of all LO MDRO LabID Events per month / Number of resident-days x 1,000.

Percent of MDRO LabID Events that is Community-onset = Number of MDRO LabID Events that are CO / Total number of MDRO LabID Events x 100.

Percent of MDRO LabID Events that is Long-term Care Facility-onset = Number of MDRO LabID Events that are LO / Total number of MDRO LabID Events x 100.

Percent of LO LabID Events that is Acute Care-Transfer-Long-term Care Facility-onset = Number of ACT-LO MDRO LabID Events / Total number of LO MDRO LabID Events x 100.

Figure 2. MDRO Test Result Algorithm for Laboratory-identified (LabID) Events.

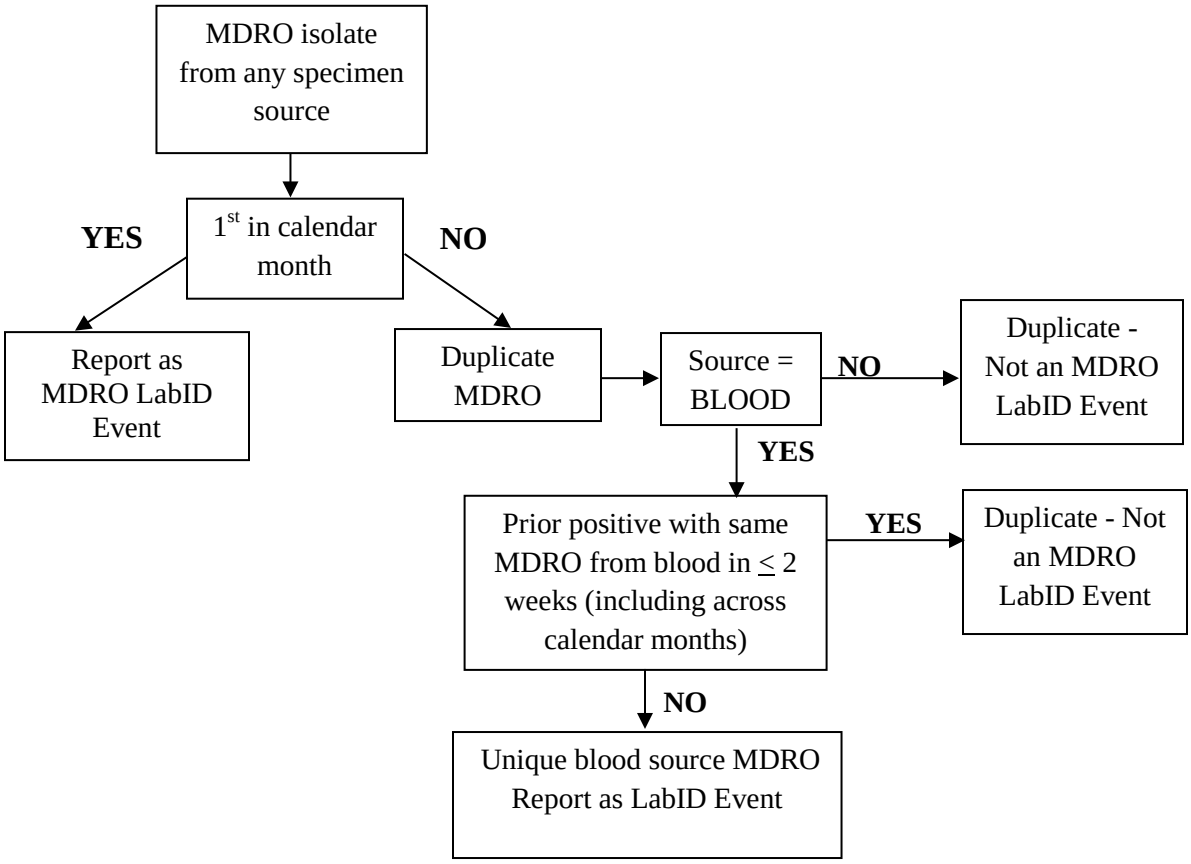


Table 2. Instructions for Completion of the Long-term Care Facility Component - Monthly Reporting Plan for LTCF (CDC 57.141)

Data Field	Instructions for Form Completion
Facility ID	**Required.** The NHSN-assigned facility ID will be auto-entered by the system.
Month/Year	**Required.** Enter the month and year for the surveillance plan being recorded; use MM/YYYY format.
Healthcare-Associated Infection (HAI)	
Locations	***Conditionally required.*** The location under surveillance will always be FacWideIN (Facility-wide Inpatient) for Long-term Care Facilities.
UTI	***Conditionally required.*** If you plan to follow urinary tract infection (UTI) Events check this box. You will collect and report urinary tract infection (UTI) Event data and the corresponding denominator data (Resident-days and Urinary catheter-days) for the month.
LabID Event	
Locations	***Conditionally required.*** The location under surveillance will always be FacWideIN (Facility-wide Inpatient) for Long-term Care Facilities.
Specific Organism Type	***Conditionally required***. Select each organism you will be following for LabID Event reporting: MRSA, MRSA/MSSA (if tracking MRSA & MSSA), VRE, CephR-*Klebsiella* species, CRE (CRE-*E. coli*, CRE-*Enterobacter*, and CRE-*Klebsiella)*, MDR-*Acinetobacter* species, or *C. difficile*. **Note:** if conducting surveillance for CRE, the facility must include in the monthly reporting plan and conduct surveillance for all three organisms (CRE-*E.coli*, CRE-*Enterobacter*, and CRE-*Klebsiella*).
±LabID Event All Specimens	***Conditionally required.*** Check the box to indicate that you plan to follow LabID Events for the specific organism type(s) entered. You will collect and report LabID Event data and the corresponding denominator data (Resident-days and Resident admissions).
Prevention Process Measures	
Hand Hygiene	***Conditionally required.*** Select this if the facility plans to monitor Hand Hygiene adherence in the facility.
Gown and Glove Use	***Conditionally required.*** Select this if the facility plans to monitor gown and gloves use adherence in the facility.

Table 3. Instructions for Completion of the Long-term Care Facility Component - Denominators for LTCF (CDC 57.142)

Data Field	Instructions for Form Completion
Facility ID	**Required**. The NHSN-assigned facility ID will be auto-entered by the system.
Location Code	**Required**: Enter the code for the location where surveillance was performed. For Long-term Care Facilities this code will be FacWideIN (Facility-wide Inpatient).
Month	**Required**. Record the 2-digit month during which the data were collected.
Year	**Required.** Record the 4-digit year during which the data were collected.
Number of residents	**Required.** For each day of the month, record the number of residents in the facility. Do not include residents for whom a bed is being held but are not actually present in the facility.
Number of residents with a urinary catheter	***Conditionally required***. Complete only if you are performing urinary tract infection (UTI) surveillance for this month. For each day of the month, count and record the number of residents in the facility that have an *indwelling urinary catheter*. Indwelling urinary catheter is a drainage tube that is inserted into the urinary bladder *through the urethra*, is left in place, and is connected to a closed collection system; also called a Foley catheter. Do not include straight in-and-out catheters, suprapubic catheters, or condom catheters in your count.
New antibiotic starts for UTI indication	***Conditionally required***. Complete only if you are performing urinary tract infection (UTI) surveillance for this month. For each day of the month, count and record the number of new prescriptions for an antibiotic given for residents suspected or diagnosed with having a urinary tract infection, (both catheter-associated and not catheter associated), in the facility. Capture all new antibiotic orders, regardless of number of doses or days of therapy. Include only antibiotics which are started while the resident is receiving care in your facility, either by clinical providers working in the facility or by outside physicians who see the resident in an outpatient clinic or Emergency department. Do not include antibiotic courses started by another healthcare facility prior to the resident's admission or readmission back to your facility, even if the resident continues to take the antibiotic while in the facility.
Number of admissions	**Required**. For each day of the month, count and record the number of residents admitted to the facility. Include both new admissions and re-admissions.

Number of admissions on *C.difficile* treatment	***Conditionally required***. Complete only if you are performing LabID event for *C.difficile* surveillance for this month. For each day of the month, count and record the number of residents who are receiving antibiotic therapy for *C.difficile* infection at the time of admission. Include both new admissions and re-admissions.
Total (for Resident-days, Urinary catheter-days, New antibiotic starts for UTI indication, Resident admissions, Admissions on *C. difficile* treatment)	**Required**. A total for each column should be calculated by summing the numbers recorded for each individual day of the month. Alternatively, if available, these monthly totals can be obtained from LTCF administrate data sources in place of performing daily counts. Only the monthly total will be entered into the NHSN application.
Custom Fields	*Optional*. Up to 50 fields may be customized for local or group use in any combination of the following formats: date (MMDDYYY), numeric, or alphanumeric. **NOTE:** Each Custom Field must be set up in the Facility/Custom Options section of NHSN before the field can be selected for use.

Table 5. Instructions for Completion of the LTCF Laboratory-identified (LabID) MDRO or CDI Event form (CDC 57.138)

Data Field	Instructions for Form Completion
Facility ID	The NHSN-assigned facility ID number will be auto-entered by the system.
Event ID	Event ID number will be auto-entered by the system.
Resident ID	**Required**. Enter the alphanumeric resident ID. This is the resident identifier assigned by the facility and may consist of any combination of numbers and/or letters. This should be an ID that remains the same for the resident across all visits and admissions.
Social Security #	**Required**. Enter the resident's 9-digit numeric Social Security Number or Tax Identification (ID) Number.
Medicare number	*Optional*. Enter the resident Medicare number or comparable railroad insurance number.
Resident Name, Last, First, Middle	*Optional*. Enter the name of the resident.
Gender	**Required**. Select M (Male) or F (Female) to indicate the gender of the resident.
Date of Birth	**Required**. Record the date of the resident's birth using this format:
Ethnicity (specify)	*Optional*. Enter the resident's ethnicity: Hispanic or Latino Not Hispanic or Not Latino
Race (specify)	*Optional*. Enter the resident's race: American Indian or Alaska Native Asian Black or African American Native Hawaiian or Other Pacific Islander White
Event Details	
Resident type	**Required**. Select short-stay or long-stay to indicate the resident type: Short-stay: Resident has been in facility for ≤ 100 days from date of **first** admission. Long-stay: Resident has been in facility for > 100 days from date of **first** admission.
Date of first admission to Facility	**Required**. The date of first admission is defined as the date the resident first entered the facility. This date remains the same even if the resident leaves the facility (e.g., transfers to another facility) for short periods of time (<30 consecutive days). If the resident leaves the facility and is away for > 30 consecutive days, the date of first admission should be updated to the date of return to the facility. Enter date using this format: MM/DD/YYYY.

Date of current admission to Facility	**Required**. The date of current admission is the most recent date the resident entered the facility. *If the resident enters the facility for the first time and has not left, then the date of current admission will be the same as the date of first admission.* Enter date using this format: MM/DD/YYYY. **Notes:** • If the resident leaves the facility for > 2 calendar days (the day the resident left the facility = day 1) and returns, the date of current admission should be updated to the date of return to the facility. • If the resident has not left your facility for > 2 calendar days, then the date of current admission should not be changed. *Example:* A resident is transferred from your facility to an acute care facility on June 2, 2015 and returns on June 5, 2015, the current admission date would be 06/05/2015. One week later, the same resident goes to the ED for evaluation on June 12, 2015 and returns on June 13, 2015. The date of current admission stays 06/05/2015.
Event Type	**Required**. Event type = LabID. This will be auto-entered by the system.
Date Specimen Collected	**Required**. Enter the date the specimen was **collected** for this Event using format: MM/DD/YYYY. This is also the Date of Event.
Specific Organism Type	**Required**. Check the laboratory-identified MDRO identified from this specimen: MRSA, MSSA, VRE, *C. difficile*, CephR-*Klebsiella*, CRE-*E. coli*, CRE-*Enterobacter*, CRE-*Klebsiella*, or MDR-*Acinetobacter*. If multiple MDROs are identified from the same culture, create a new Event report for each one (i.e., 1 form for each pathogen).

Specimen Body Site/System	**Required.** Select the main body site/system from which the specimen was taken. Cardio/Circulatory/Lymph (CARD) Central Nervous System (CNS) Digestive System (DIGEST) Eyes, Ears, Nose, and Throat (EENT) Endocrine (ENDCRN) Genitourinary (GU) Musculoskeletal (MSC) Reproductive Female (REPRF) Reproductive Male (REPRM) Respiratory (RESP) Skin/Soft Tissue (SST) Unspecified For a list of codes used in the system see: http://www.cdc.gov/nhsn/Archive/PSmanual/LabID_Event_Specimen_Source_Codes_Final_010110.pdf (Column: specBodySite).
Specimen Source	**Required**. Enter the specific source from which the specimen was taken. Examples of specimen source by each specimen body site/system include: *Cardio/Circulatory/Lymph (CARD)*: Blood, Lymph node, Vein, Spleen *Central Nervous System (CNS):* Brain , CSF, Spinal Cord *Digestive System (DIGEST)*: Stool, Rectal Swab, Liver, Stomach *Eyes, Ears, Nose, and Throat (EENT*): Mouth, Throat, Eye fluid *Endocrine (ENDCRN):* Thyroid, Thymus *Genitourinary (GU):* Genital swab, Perineal, Urethral swab, Urine *Musculoskeletal (MSC)*: Fat, Bone, Muscle, Synovial fluid *Reproductive Female (REPRF)*: Amniotic fluid, Ovary, Vaginal fluid *Reproductive Male (REPRM):* Prostatic fluid, Sperm *Respiratory (RESP)*: BAL, Lung, Nasopharyngeal wash, Pleural fluid *Skin/Soft Tissue (SST):* Abscess, Skin, Soft tissue biopsy For a complete list of specimen source options see: http://www.cdc.gov/nhsn/Archive/PSmanual/LabID_Event_Specimen_Source_Codes_Final_010110.pdf (Column: newCodeSpecimenSource).
Resident care location	**Required**. Enter the location where the resident was residing on the date the specimen was collected.
Primary resident service type	**Required**. Check the single primary service that best represents the type of care the resident is receiving on the date the specimen was collected: Long-term general nursing, long-term dementia, long-term psychiatric, skilled nursing/short-term rehab (subacute), ventilator, bariatric, or hospice/palliative.

Has resident been transferred from an acute care facility in the past 3 months?	**Required**. Select "Yes" if the resident has been an inpatient of an acute care facility (Hospital, Long-term acute care hospital, or acute inpatient rehabilitation facility only) and was directly admitted to your facility in the past three months, otherwise select "No". -
If yes, date of last transfer from acute care to your facility	***Conditionally Required***. If the resident was transferred from acute care to your facility in the past 3 months, enter the most recent date of transfer. Use format: MM/DD/YYYY
If yes, was the resident on antibiotic therapy for this specific organism type at the time of transfer to your facility?	***Conditionally Required***. If the resident was on antibiotic therapy for this specific organism at the time of transfer to your facility select "Yes", otherwise select "No".
Documented prior evidence of infection or colonization with this specific organism type from a previously reported LabID Event?	Non-editable. This is a system auto-populated field and is based on prior months LabID Events. "Yes" or "No" will be auto-filled by the system only, depending on whether there is prior LabID Event entered for the same organism and same patient in the prior month. Cannot be edited by user. If there is a previous LabID event for this organism type entered in NHSN in a prior month, the system will auto-populate with a "Yes." Note: This question is not used in the categorization of *C. difficile* LabID Events.
Custom Fields	
Labels	*Optional*. Up to 50 fields may be customized for local or group use in any combination of the following formats: date (MMDDYYY), numeric, or alphanumeric. **NOTE:** Each Custom Field must be set up in the Facility/Custom Options section of NHSN before the field can be selected for use.
Comments	*Optional.* Enter any information on the event.

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Exp. Date: 12/31/2017
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Monthly Reporting Plan for LTCF

*required for saving

Facility ID: _____ *Month/Year: _____ /_____

Healthcare Associated Infection (HAI)

+Locations	UTI
FacWideIN	☐

LabID Event

+Locations	Specific Organism Type	±LabID Event All Specimens
FacWideIN	_____	☐
FacWideIN	_____	☐
FacWideIN	_____	☐
FacWideIN	_____	☐
FacWideIN	_____	☐
FacWideIN	_____	☐
FacWideIN	_____	☐

Prevention Process Measures

+Location	Hand Hygiene	Gown and Gloves Use
FACWIDEIN	☐	☐

+ FacWideIN = Facility-wide Inpatient
± LabID Event = Laboratory-identified Event

Assurance of Confidentiality: The voluntarily provided information obtained in this surveillance system that would permit identification of any individual or institution is collected with a guarantee that it will be held in strict confidence, will be used only for the purposes stated, and will not otherwise be disclosed or released without the consent of the individual, or the institution in accordance with Sections 304, 306 and 308(d) of the Public Health Service Act (42 USC 242b, 242k, and 242m(d)).

Public reporting burden of this collection of information is estimated to average 5 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. An agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a currently valid OMB control number. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to CDC, Project Clearance Officer, 1600 Clifton Rd., MS D-74, Atlanta, GA 30333, ATTN: PRA (0920-0666).

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Denominators for LTCF

*required for saving

Facility ID:		*Location Code:		*Month:	*Year:
Date	***Number of residents**	***Number of residents with a urinary catheter**	***New antibiotic starts for UTI indication**	***Number of admissions**	**Number of admissions on *C. diff* treatment**
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					
***Total**					
	Resident-days	**Urinary-catheter days**	**Total antibiotic starts for UTI indication**	**Resident-admissions**	**Resident-admissions on *C. diff* treatment**
Label:	_____	_____	_____	_____	_____	_____
Data:	_____	_____	_____	_____	_____	_____

Assurance of Confidentiality: The voluntarily provided information obtained in this surveillance system that would permit identification of any individual or institution is collected with a guarantee that it will be held in strict confidence, will be used only for the purposes stated, and will not otherwise be disclosed or released without the consent of the individual, or the institution in accordance with Sections 304, 306 and 308(d) of the Public Health Service Act (42 USC 242b, 242k, and 242m(d)).
Public reporting burden of this collection of information is estimated to average 3.25 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. An agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a currently valid OMB control number. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to CDC, Reports Clearance Officer, 1600 Clifton Rd., MS D-74, Atlanta, GA 30333, ATTN: PRA (0920-0666).

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Laboratory-identified MDRO or CDI Event for LTCF

*required for saving Facility ID:	Event #:
*Resident ID:	*Social Security #:
Medicare number (or comparable railroad insurance number):	
Resident Name, Last: First: Middle:	
*Gender: M F Other	*Date of Birth: ___/___/____
Ethnicity (specify):	Race (specify):

*Resident type: ☐ Short-stay ☐ Long-stay

*Date of First Admission to Facility: __/__/____ *Date of Current Admission to Facility: __/__/____

Event Details

*Event Type: LabID	*Date Specimen Collected: __/__/____

*Specific Organism Type: (check one)

☐ MRSA ☐ MSSA ☐ VRE ☐ *C. difficile* ☐ CephR-*Klebsiella*

☐ CRE-*E. coli* ☐ CRE-*Enterobacter* ☐ CRE-*Klebsiella* ☐ MDR-*Acinetobacter*

*Specimen Body Site/System:	*Specimen Source:
*Resident Care Location:	

*Primary Resident Service Type: (check one)

☐ Long-term general nursing ☐ Long-term dementia ☐ Long-term psychiatric

☐ Skilled nursing/Short-term rehab (subacute) ☐ Ventilator ☐ Bariatric ☐ Hospice/Palliative

*Has resident been transferred from an acute care facility in the past 3 months? Yes No

If Yes, date of last transfer from acute care to your facility: __/__/____

If Yes, was the resident on antibiotic therapy for this specific organism type at the time of transfer to your facility? Yes No

Custom Fields

Label		Label	
_____	____/____/_____	_____	____/____/_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

Comments

Assurance of Confidentiality: The voluntarily provided information obtained in this surveillance system that would permit identification of any individual or institution is collected with a guarantee that it will be held in strict confidence, will be used only for the purposes stated, and will not otherwise be disclosed or released without the consent of the individual, or the institution in accordance with Sections 304, 306 and 308(d) of the Public Health Service Act (42 USC 242b, 242k, and 242m(d)).

Public reporting burden of this collection of information is estimated to average 15 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. An agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a currently valid OMB control number. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to CDC, Reports Clearance Officer, 1600 Clifton Rd., MS D-74, Atlanta, GA 30333, ATTN: PRA (0920-0666).