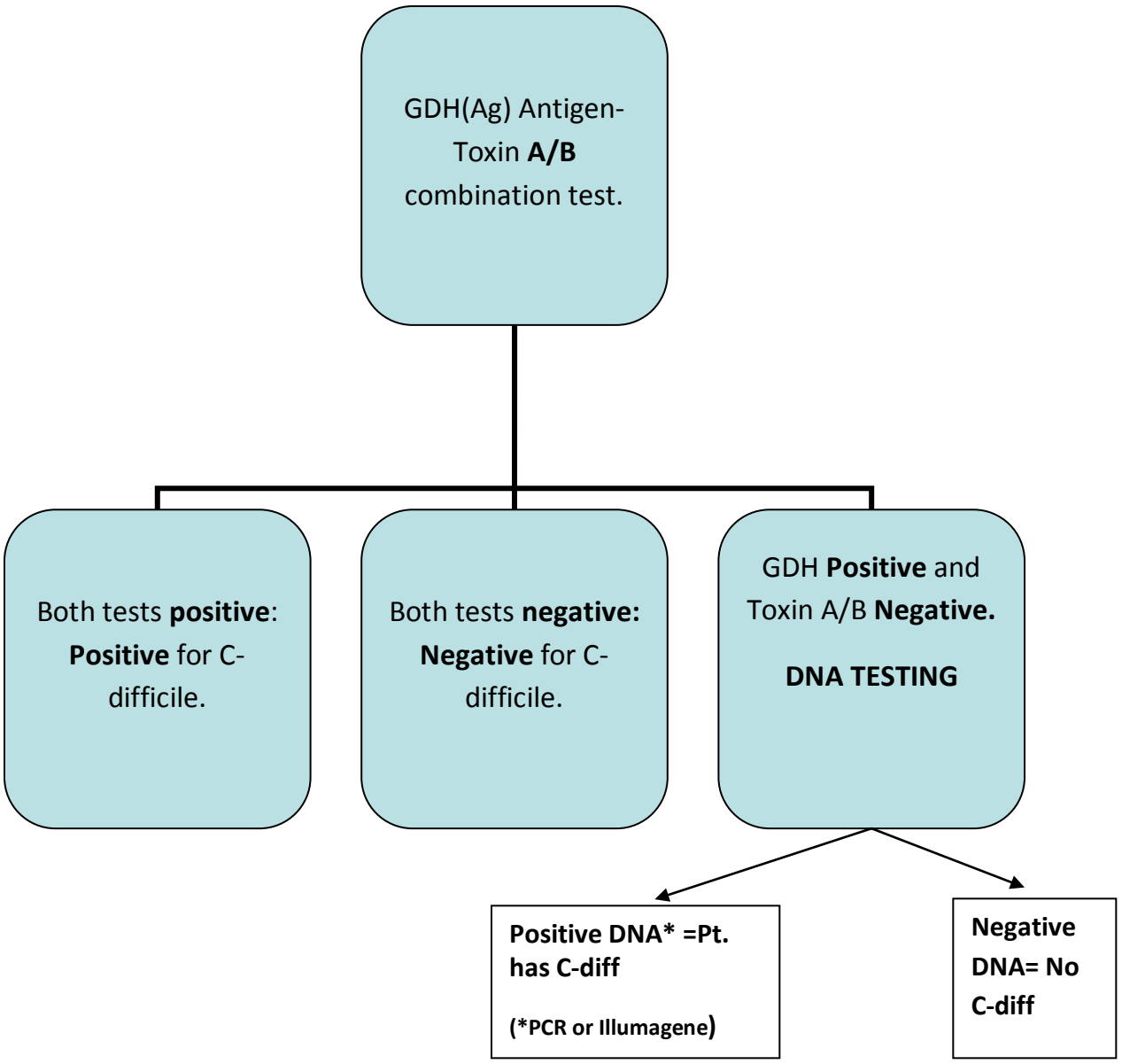
Protocol for Prevention of C. difficile Transmission in Long Term Care

General Information:

Clostridium difficile is the most frequently identified cause of nosocomial diarrhea. Antibiotic use is the greatest risk factor for C. difficile in elderly residents in long-term care facilities. Symptoms of C. difficile infection include profuse, loose, foul smelling, watery stools, fever, and cramping. Symptoms can present as late as 3 to 6 months after receiving antibiotics. C. difficile is shed in the feces. Any surface that becomes contaminated with the feces may serve as a reservoir for the Clostridium spores. The spores of C. diffiicle can live for extended periods (up to 5 months). C. difficile infection is diagnosed from lab testing of stool. Prevention of C. difficile infection requires early and reliable detection of the infection, isolation of symptomatic patients, effecting cleaning of the environment, and judicious use of antibiotics.

Specifically:

1. Early diagnosis: If a patient has 3 or more liquid stools in one day, the stool should be tested for C. difficile, as it is the most common cause of diarrhea in long term care. If a patient has a history of C. difficile (in the past 6 months), even one liquid stool should prompt testing. However, the liquid stool must have no other identifiable cause: tube feedings, laxative consumption, etc. For interpretation of test results, see algorithm below. Note*: **Repeat testing is not recommended, nor is testing for cure,*** since a person may remain positive for weeks after successful treatment. Testing for cure often results in unnecessary additional treatment. See diagram on next page.



NOTE*If PCR is used as the only lab test,
a patient with a positive result should be treated only if he/or she exhibits clinical symptoms.

2. Place any suspected or known C. difficile patient on contact precautions. Precautions should continue until 9 days after the diarrhea ceases, since shedding of the organism continues after symptoms resolve (see attached graph). Initiate contact precautions on all patients with diarrhea of unknown origin.
    a. Place patient in a private room if possible or cohort with another resident with CDI.

b. Post signage regarding contact precautions.
c. Wash hands with soap and water. Do not use alcohol gels since it does not kill spores.
d. Don gloves at all times when delivering care and when in contact with the resident's immediate environment, including call bells and trays.
e. Don gown upon entering the room and at all times when anticipating contact with the resident or the resident's immediate environment. If cleaning after explosive diarrhea, a mask should be worn since the organism can be temporarily airborne.
f. There should be no sharing of the bathroom. If there is more than one person using the bathroom, dedicate a personal commode to the patient with CDI. Use plastic bags with coagulant material to minimize health care worker contamination. Used plastic bags can be placed in regular trash.
g. Dedicate resident care equipment and items for single patient use, such as blood pressure cuffs, stethoscopes, thermometers, etc. If this is not possible, clean and disinfect equipment and items with 1:10 bleach between residents.
h. All laundry should be handled with minimum agitation to avoid contamination of air, surfaces, and persons. Contaminated fabrics should be bagged at the point of use. There should be no pre-rinsing of contaminated fabrics in patient-care areas (OSHA). For more information, see 4.a. Special Considerations(below).
i. If greater than one patient is infected, minimize patient and staff movement between affected and unaffected wards. Staff assignments should also minimize contact between caring for infected and caring for noninfected residents.

3. The resident's general condition, bowel control, and ability to demonstrate good personal hygiene will determine whether he/she can participate in out-of-room activities. The resident's hands must be washed prior to leaving the room. The patient must wear clean clothing. Disinfect assistive devices (wheel chair, etc.) before leaving the room (APIC guidelines).

4. Special considerations:

a. Laundry: Ideally, the laundry staff should handle all laundry: soiled and clean. Direct caregivers should not rinse contaminated laundry in patient-care areas. Soiled linen should be placed in a plastic bag at the point of use. All personnel should wear gloves and an impermeable apron or gown when handling soiled laundry. Because rinsing can cause the organism to be aerosolized, personnel should wear a face mask. Handle contaminated laundry carefully with no shaking or flapping. Hold laundry away from body. If nursing assistants are required to rinse laundry, it should be performed at the end of the day, after their direct care duties. This should be done in a laundry area reserved for the management of soiled linen.

b. Dietary: Disposable trays are not necessary. Gloves should be worn when handling trays.

c. Trash: Commode liners and all other trash can be disposed of in regular trash. Bags should be thick enough to prevent breakage and leakage. Gloves should be worn when handling trash.

d. Housekeeping: An Environmental Protection Agency (EPA) registered hypochlorite-based disinfectant will be used to clean any surface possibly contaminated with C. difficile. High touch surfaces in an infected resident's room should be cleaned daily with a 1:10 dilution of bleach (nine parts water to one part bleach). The bleach solution should be made fresh daily. If the resident dies or is discharged, the terminal cleaning should include diluted bleach on high touch surfaces as well as the floor. Floors will be dry-mopped before applying the bleach solution. After a floor is washed with bleach solution, the mop head should be laundered prior to use in another room. Toilet brushes should be dedicated to the room. The bleach solution should be changed before cleaning in any other area. Refrain from using any quaternary ammonium compound or window cleaner with ammonia in rooms where bleach is being used, as it can combine to release a lethal poisonous gas.

e. If two or more patients have CDI and appear epidemiologically linked (roommates, or on same unit), call Maine CDC (1-800-821-5821), and have the lab save specimens for PFGE typing. The lab may freeze the stool specimen prior to transport to the state lab. See lab instructions attached. If the outbreak escalates, consider restricting admissions. Keep staff informed of the outbreak status, including housekeeping and environmental service staff. See attached checklist for outbreaks.

References:

Association of Professionals of Infection Control (APIC) Guide to Preventing Clostridium difficile Infections (2008). Section 8: Special Considerations in Skilled Nursing Facilities.

Cohen, SH; Gerding, DN; Johnson, S, Kelly, CP; Loo, VG; McDonald, LC; Pepin, J; Wilcox, MH (2010) SHEA-ISDA guideline: Clinical Practice Guidelines for Clostridium difficile Infectin in Adults: 2010 Update by the Society for Healthcare Epidemiology of America (SHEA) and the Infectious Diseases Society of America (IDSA); Infection Control and Hospital Epidemiology, May 2010, Vol. 31, No.5.

Infection Control Nurses of Connecticut: Clostridium difficile Associated Disease in Extended Care Facilities, 2011.

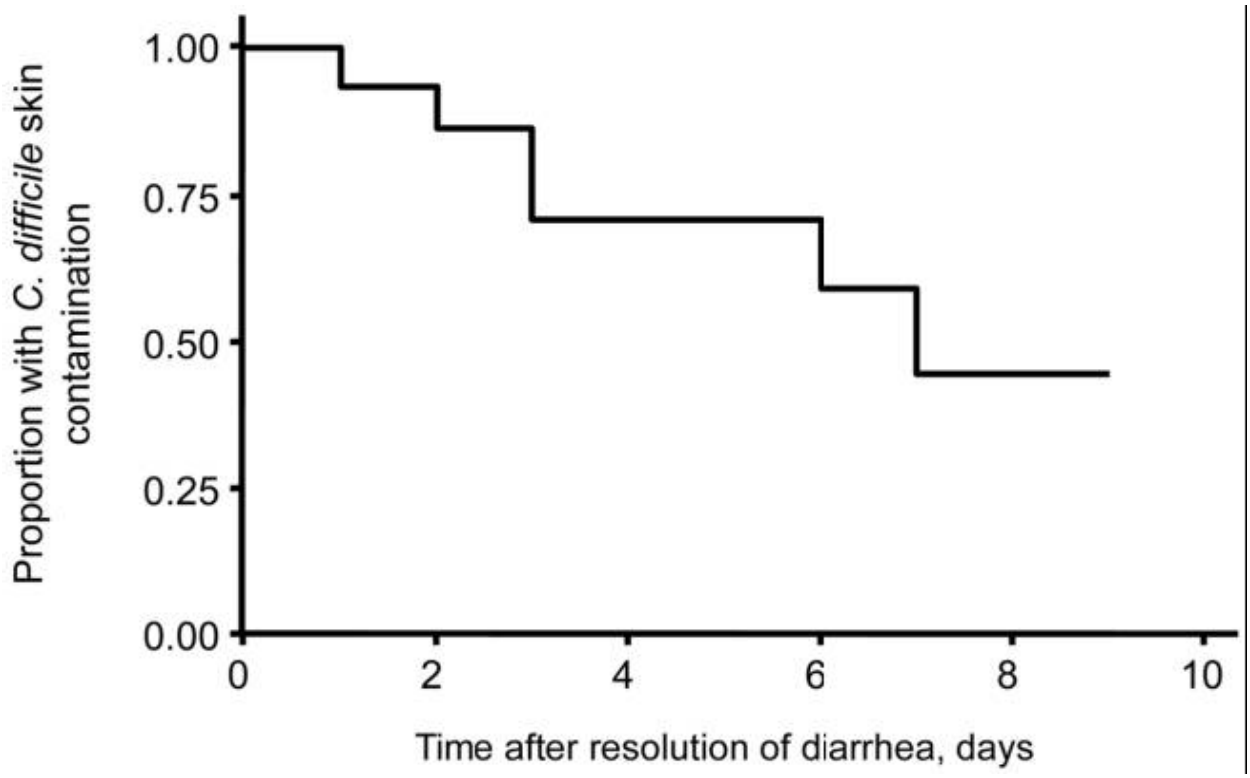
Clostridium difficile Infections in Nursing Homes: Pennsylvania Patient Safety Advisory, 2010 March 18:7 (supplement 1): 10-5: http://patientsafetyauthority.org/ADVISORY/AdvisoryLibrary/2012/mar18_7(suppl1)/Pages/10.

OSHA Bloodborne Pathogen Standard 29 CFR 1910.1030, Occupational Exposure to Bloodborne Pathogens, December 1991.

State of Maine Recommendations for the Prevention and Control of Infectious Conditions in Long Term Care Facilities, Maine CDC (2008).

State Operation Manual, Appendix PP-Guidance for Surveyors for Long Term Care Facilites: Handling Linens to Prevent and Control Infection Transmission, (federal rules enforced by State of Maine Licensing and Certification).

A special thanks to the Northeast Healthcare Quality Foundation for their collaboration and for the input provided by the Infection Preventionists at MaineGeneral Medical Center and area nursing homes participating in the Augusta pilot project to reduce C. difficile.



Isolation Precautions: Rationale for Extending Beyond Duration of Diarrhea

Source: Bobulsky, et. al, ***Clinical Infectious Disease*** 2008; 46: 447-50

From: Presentation by L. Clifford McDonald, MD, Presentation: Making Healthcare Safer: Stopping Clostridium difficile Infections, 2012 QualityNet Meeting, Dec 12, 2012, Baltimore,MD

Checklist for C. Difficile Outbreaks in Long Term Care

Recognition, Reporting & Testing

- ☐ Upon suspicion of a *Clostridium difficile* outbreak, notify Maine CDC by calling 1-800-821-5821
- ☐ Obtain an outbreak number from an Epidemiologist for identification purposes: #_____
- ☐ Maintain a list of symptomatic residents
- ☐ Collect and submit specimens from affected residents as soon as an outbreak is suspected. Do NOT test formed stool. If specimens are sent to a local lab, ask the lab to send the specimen to Health and Environmental Testing Laboratory (HETL). See instructions on next page.
- ☐ Follow HETL guidelines for specimen collection, handling, and transport; label specimens with Outbreak #
- ☐ If a stool is Toxin A,B negative, but the patient is symptomatic, send the specimen to HETL for PCR testing

Control Measures for Facility

Infection Control:

- ☐ Institute contact precautions for ill residents during outbreak
- ☐ Use gloves and gowns while caring for ill patients and cleaning up feces
- ☐ Use dedicated or disposable equipment for patient care to minimize transmission
- ☐ Use single-use, disposable thermometers during the outbreak
- ☐ Cohort ill patients as much as possible, have a designated commode for each ill resident if possible. Consider using sanibags to reduce exposure of fecal material to staff.
- ☐ Minimize patient and staff movement between affected and unaffected units/wards
- ☐ Enforce strict hand hygiene for all facility staff with use of soap and water, not alcohol gels
- ☐ Wash hands with soap and water after contamination with vomitus or feces. Do not use ethanol or alcohol-based hand sanitizers as they may not kill C. difficile spores.

Environmental Controls:

- ☐ Clean all high traffic areas and high touch items (faucets, door handles, and toilet or bath rails)
- ☐ Use EPA-registered disinfectants or detergents/disinfectants against C. diff for routine cleaning and disinfection. A 1:10 clorine bleach solution has been suggested by the Federal CDC.
- ☐ Handle soiled linens carefully, do not shake or hold close to the body
- ☐ Conduct thorough cleaning of affected personal and communal areas after the resolution of the last case

Administrative Controls:

- ☐ Place all residents positive for C. difficile in private rooms or co-hort whenever possible
- ☐ Post signage about the outbreak and proper hand hygiene using soap and water
- ☐ Restrict admissions if outbreak escalates or is prolonged
- ☐ Hold meetings, including housekeeping, to update staff on outbreak status.

Recommendations for Residents & Visitors

- ☐ Encourage ill residents to stay in their room/apartment if they are sick to minimize contact with unaffected residents until symptoms have resolved
- ☐ Promote good hand hygiene using soap and water for residents: after using the toilet, having contact with an ill individual, and before preparing food, eating or drinking
- ☐ Encourage visitors to wait at least 48 hrs after symptoms resolve before visiting residents
- ☐ Consider restricting visitation until the outbreak has subsided

Internal and External Communications

- ☐ Identify a single point of contact for internal communications
- ☐ Identify a single point of contact for external communications
- ☐ Notify staff of outbreak and control measures and conduct enhanced surveillance for ill residents

- □ Notify residents/guardians of outbreak and control measures and request ill residents report to nursing staff
- □ Consider a final communication to staff, residents, and guardians when the outbreak has resolved

C Clostridium difficile ***Laboratory Submission Information Sheet***	
Reporting of suspect case to Maine CDC	Not necessary.
Required To Submit Laboratory Specimen:	While submission is not required, HETL requests isolates or suspect isolates for both speciation and DNA fingerprinting to assist in epidemiological investigations
Required Information:	Specimen should be accompanied by a MeCDC requisition. Information on requisition must include: suspected organism, patient name, patient address, gender, DOB, date of collection, symptom onset, name of hospital if specimen is being sent to the reference lab from a hospital, specimen source or type, submitter name and contact information. Specimen must be labeled with patient name. IMPORTANT: *Patient name written on requisition and patient name on specimen itself must match.* Requisition form available at: http://www.maine.gov/dhhs/etl/micro/download_forms.htm
Specimen Requirements:	Collect only newly identified cases of C. difficile to avoid duplicates. Formed stool is not acceptable, it must be loose stool. Collect feces in a leak-proof container soon after onset of illness and preferably before start of treatment.
Collection Instructions:	Specimen should be raw unformed stool mixed 1:1 in 70% ethanol, emulsified and frozen at -20 C. Preferred specimen vessel is a 15 ml conical tube.
Specimen Handling and Transport:	Specimens are stable when frozen, and can be sent in batches. Clostridium difficile is a Category B organism and may be sent through the United States Postal Service.
Turn Around Time:	N/A
MeCDC Epidemiologists only	N/A
Unacceptable Conditions:	Formed stool unacceptable.
Results Include:	Report will include identification of Toxin type.
Results:	All results will be reported only to **submitter** as stated on requisition via mail or fax.
Laboratory Testing Fee:	None
Applicable CPT Codes:	HAI-Cd-2011
Additional Information:	For additional information, contact Maine HETL **Bacteriology at 207-287-1704** rev 07/30/10