Rochester Patient Safety
C. difficile Prevention Collaborative

C. difficile Prevention Toolkit

Collaborative Hospitals:
Highland Hospital
Rochester General Hospital
Strong Memorial Hospital
Unity Hospital

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Background

Clostridium difficile is the most common cause of antimicrobial-associated diarrhea [1] and causes an estimated 1.7 million infections and 99,000 deaths each year in the U.S. [2]. Incident and recurrent *C. difficile* infections (CDI) can greatly increase the cost of hospital stays by as much as $4800 and $18,000 per case, respectively [3]. An increase in both the number of CDI and the severity of these infections has been reported in recent years [4]. CDI are often the result of prolonged antibiotic use [5] and are most common in the elderly and immunocompromised [6] although CDI incidence is increasing in groups previously considered low risk such as pregnant women and persons with no previous healthcare or antimicrobial exposure [7]. Transmission of *C. difficile* can be difficult to control in healthcare settings due to the spore-forming nature of the bacteria and its ability to viably exist in the environment for 5 months or longer [8].

The Society for Healthcare Epidemiology of America (SHEA) and the Infectious Disease Society of America (IDSA) have recommended core CDI prevention strategies including surveillance and notification, use of contact precautions, enhanced environmental cleaning, education, hand hygiene and measuring compliance with infection control policies. Additional evidence suggests that a collaborative approach involving personnel from multiple disciplines may be key to successfully implementing these prevention strategies and reducing CDI rates [9, 10].

Project Summary

This is a quality improvement project involving the four major hospitals in Rochester: Strong Memorial Hospital, Rochester General Hospital, Highland Hospital and Unity Hospital. Representatives of each of these facilities will work collaboratively towards the following goals:

1. Reduce the burden of *Clostridium difficile* infection (CDI) in hospitalized patients by 30%;
2. Reduce the burden of CDI in community long term care facilities with high CDI burdens by 30%;
3. Reduce the burden of CDI in the community by 30%.

These goals were based on the U.S. Department of Health and Human Service's Plan to Prevent Healthcare-Associated Infections [11] and will be achieved using a variety of methods including educational programs, policy standardization, monitoring of policy adherence, and implementation of behavioral change theories.

Purpose of this Guide

The purpose of this document is to support the goal of achieving a 30% reduction in the burden of CDI in hospitalized patients by providing a comprehensive set of tools, recommendations and references related to CDI prevention. Specifically, this document:

1. Provides background on the occurrence and monitoring of CDI in the hospital setting,
2. Defines the roles of hospital staff and management in preventing CDI,
3. Provides guidelines for standardization of infection control and environmental cleaning policies,
4. Provides tools for monitoring adherence to infection control and environmental cleaning policies and instructions for using these tools.

Glossary of Terms

National Healthcare Safety Network (NHSN): a voluntary, secure, internet-based surveillance system that integrates patient and healthcare personnel safety surveillance systems managed by the Centers for Disease Control and Prevention's (CDC) Division of Healthcare Quality Promotion (DHQP).

CDI: *Clostridium difficile* infection.

CDI-positive laboratory assay: A positive result for a laboratory assay for *C. difficile* toxin A and/or B, OR a toxin-producing *C. difficile* organism detected in a stool sample by culture or other laboratory means.

Laboratory-Identified (LabID) Event: All non-duplicate *C. difficile* positive laboratory assays including specimens collected during an Emergency Department visit if collected the same day as patient admission.

Incident CDI Assay: Any LabID Event from a specimen obtained > 8 weeks after the most recent LabID Event (or with no previous LabID Event documented).

Recurrent CDI Assay: Any LabID Event from a specimen obtained > 2 weeks and ≤ 8 weeks after the most recent LabID Event for that patient.

Community-Onset (CO): LabID Event collected as an outpatient or an inpatient ≤ 3 days after admission to the facility (i.e., days 1, 2 or 3 of admission).

Community-Onset Healthcare Facility-Associated (CO-HCFA): CO LabID Event collected from a patient who was discharged from the facility ≤ 4 weeks prior to date stool specimen collected.

Healthcare Facility-Onset (HO): LabID Event collected > 3 days after admission to the facility (i.e., on or after day 4).

Facility CDI Healthcare Facility-Onset Incidence Rate: (Number of all Incident HO CDI LabID Events per month in the facility / Number of patient days for the facility) X 10,000.

Multidisciplinary Team: A team formed at each hospital that includes hospital leadership, clinicians, and quality/safety, environmental services, transport, admitting, and infection prevention personnel, as well as representatives from other areas deemed to have a role in leading *C. difficile* prevention efforts.

Rochester Patient Safety Collaborative (RPSC) Steering Committee: A group formed in June of 2010 to lead efforts to reduce CDI in Rochester. Members consist of epidemiologists, infection preventionists, and safety officers from the four major hospitals and the Steering Committee is modeled after the successful CLABSI Prevention Collaborative recently completed in Rochester.

Personal Protective Equipment (PPE): Any type of face mask, glove, or clothing that acts as a barrier between infectious materials and the skin, mouth, nose, or eyes (mucous membranes). When used properly, PPE can help prevent the spread of infection from one person to another [12].

Hand Hygiene: The removal of visible soil and the removal or killing of transient microorganisms from the hands. May be accomplished using soap and running water or an alcohol-based hand rub (ABHR) [13].

Roles and Responsibilities

- **All staff** working within the hospital are responsible for promoting a safe environment for all patients and working collaboratively to prevent CDI.
- **All staff** working within the hospital are responsible for adhering to the CDI prevention procedures described in this document and are responsible for speaking up, either directly to coworkers or to supervisors, when they notice that procedures are not being followed.
- **Clinical Unit and Department Managers** are responsible for ensuring implementation of these procedures within their unit, and for ensuring all unit staff are knowledgeable about the procedures and adhere to them at all times.
- **Hospital Leadership** is responsible for supporting the infection prevention efforts described in this document through the provision of resources, implementation support, and attendance at Multidisciplinary Team meetings.
- **Infection Preventionists** are responsible for providing technical advice related to these procedures and supporting staff in their implementation.
- **The Collaborative Steering Committee** is responsible for leading the development of appropriate CDI prevention efforts based on best practices as determined by up-to-date literature, reviewing these procedures on a regular basis, providing timely feedback to each facility, and incorporating feedback from all hospitals when making decisions.
- **The Multidisciplinary Team** is responsible for discussing issues suggested by the Collaborative Steering Committee, making executive-level decisions, ensuring these decisions are passed down to non-executive staff in an appropriate manner, and promoting a facility culture that supports the implementation of and adherence to suggested procedures.
- **Environmental Services (EVS) Managers** are responsible for the education of their staff on environmental cleaning procedures and ensuring that all staff are knowledgeable about the procedures and adhere to them at all times
- **Admitting** is responsible for working with clinical staff, Infection Prevention, and EVS to develop a plan to facilitate movement of patients so that enhanced terminal cleaning and UV light disinfection (if applicable) of CDI patient rooms can be performed.
- **Transport Managers** are responsible for education of transport staff on procedures for safe transport of a CDI patient and ensuring that these procedures are adhered to at all times.
- **The Principal Investigator and Project Coordinators** are responsible for providing timely data feedback to all hospitals and assisting hospitals in project implementation.

Project Initiation Task List and Timeline

Task	Date Expected	Date Completed
Form a Multidisciplinary Team	June 2011	June 2011
Designate IP and EVS representatives to participate in workgroups	July 2011	July 2011
Standardize EVS policies	Aug 2011	Aug 2011
Hold Collaborative kickoff meeting	Oct 2011	Oct 2011
Standardize IP policies	July 2011 – Jan 2012	Ongoing
Conduct baseline EVS audits	Dec 2011 - Jan 2012	Jan 2012
Prepare and shoot EVS training video	Jun-Sep 2012	Sep 2012
Finalize & distribute EVS training video	Nov 2012	N/A
Conduct baseline IP audits	Dec 2011 – Jan 2012	Feb 2012
IP Education	Feb – March 2012	N/A
Continue EVS and IP data collection	Ongoing	N/A
Provide quarterly data feedback reports	Ongoing	N/A
Hold 2nd-year Educational Workshop	Nov 2012	N/A

Prevention and Control of CDI

The Collaborative recommends the following core and supplemental CDI prevention strategies, as recommended by SHEA and the U.S. Centers for Disease Control and Prevention (CDC) [14]:

1. Use contact precautions (gowns and gloves) for infected patients, with a single-patient room preferred
2. Ensure cleaning and disinfection of equipment and the environment
3. Implement a laboratory-based alert system to provide immediate notification to infection prevention and control personnel and clinical personnel about patients with newly diagnosed CDI
4. Conduct CDI surveillance and analyze and report CDI data
5. Educate healthcare personnel, housekeeping personnel, and hospital administration about CDI
6. Educate patients and families about CDI, as appropriate
7. Measure compliance with CDC or World Health Organization (WHO) hand-hygiene and contact precautions recommendations
8. Extend contact precautions beyond resolution of diarrhea
9. Presumptive isolation of patients with diarrhea while awaiting results of laboratory testing for *C. difficile* to minimize horizontal transmission from active cases prior to their diagnosis
10. Optimize laboratory testing for *C. difficile* to include PCR confirmatory testing as the gold standard
11. Use of bleach for environmental cleaning during terminal and day-to-day cleaning activities

Additional supplemental strategies may be recommended in the future and/ or during outbreak situations [14]:

1. Hand washing exclusively with soap and water
2. Implementation of universal gloving on units with high CDI rates
3. Implementation of stewardship programs to curtail antibiotic overuse and limit use of other medications (i.e., proton pump inhibitors) that may have an impact on CDI rates

Reporting CDI

National Healthcare Safety Network (NHSN)

The four hospitals included in this project presently participate in the CDC's National Healthcare Safety Network (NHSN), a voluntary surveillance system for patient and healthcare safety data. Via NHSN, all hospitals currently enter a minimum dataset for CDI cases including event type, location of event, admission date/location, and discharge history. In addition, CDI cases entered into NHSN are classified as either community- or healthcare facility-onset (Appendix A). All hospitals will continue to report all lab-identified Community-Onset (CO), Community-Onset Healthcare Facility-Associated (CO-HCFA), and Healthcare Facility-Onset (HO) CDI into NHSN as dictated by their facility's reporting policy and will also create and enter data into custom fields as described below.

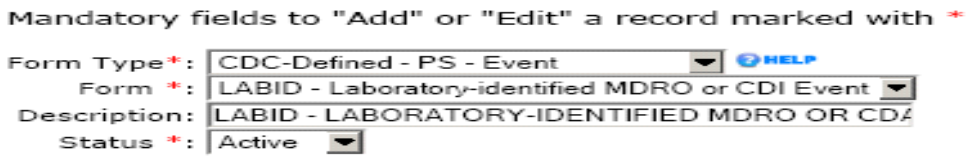
Custom Fields

All hospitals will create and retrospectively enter (effective January 1, 2012) data into NHSN custom fields on a monthly basis. Custom field data will be used to attribute CDI to units and determine the rate of CDI-related morbidity/mortality during the study period.

a) Creating Custom Fields:

1. Log into NHSN
2. Click "Facility" in left side menu, then "Customize Forms"
3. "Custom Options" form will open (Figure 1)
4. Scroll down half-way to Custom Field Labels
5. Form Type: enter [CDC - Defined - PS - Event] from drop-down
6. Form: enter [LABID - Laboratory-identified MDRO or CDI Event] from drop-down

Figure 1. NHSN Custom Options Form



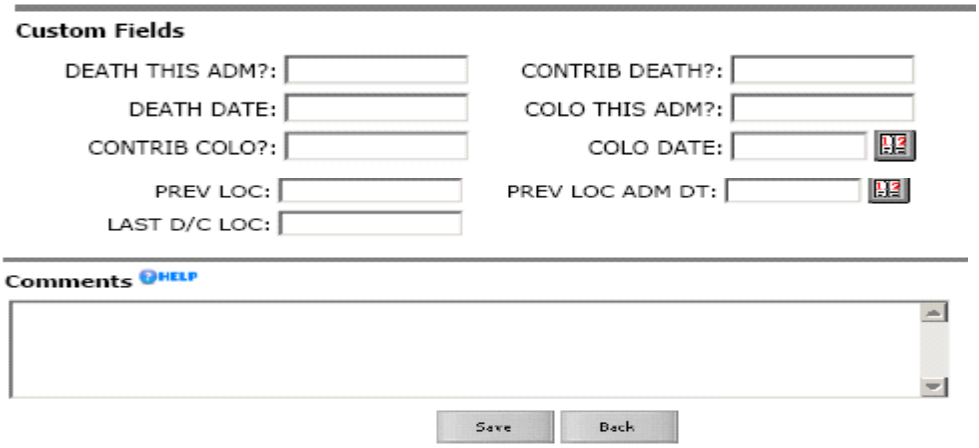
7. A fill-in table will appear for you to enter each custom field
8. Enter each the information for each field exactly as described in Table 1
9. Click "Add Row" if you need additional blank rows

Table 1. NHSN Custom Field Attributes

Name	Type	Status
DEATH THIS ADM?	Alphanumeric *(Required)*	Active
CONTRIB DEATH?	Alphanumeric	Active
DEATH DATE	Date	Active
COLO THIS ADM?	Alphanumeric *(Required)*	Active
CONTRIB COLO?	Alphanumeric	Active
COLO DATE	Date	Active
PREV LOC	Alphanumeric	Active
PREV LOC ADM DT	Date	Active
LAST D/C LOC	Alphanumeric	Active

10. The complete custom field entry screen should look like Figure 2:

Figure 2. NHSN Custom Fields Screen Shot



b) Entering Data into Custom Fields:

1. Enter data into custom fields for all HO CDI cases beginning January 1, 2012
2. An explanation of each field is contained in Table 2. Contact Paul Graman or Gail Quinlan for questions on creating/using custom fields.

Field Name	Accepted Entries	Definition
DEATH THIS ADM?*	Yes, No, Unknown	Enter whether patient died during this admission
CONTRIB DEATH?	Yes, No, Unknown	If the patient died during this admission, enter whether C. *difficile* was contributory to death. *[If DEATH THIS ADM='No' or 'Unknown' then leave blank]*
DEATH DATE	MM/DD/YYYY	Enter date of death. *[If DEATH THIS ADM='No' or 'Unknown' then leave blank]*
COLO THIS ADM?*	Yes, No, Unknown	Enter whether patient had a colectomy during this admission
CONTRIB COLO?	Yes, No, Unknown	If patient had a colectomy during this admission, enter whether C. *difficile* was contributory to colectomy. *[If COLO THIS ADM='No' or 'Unknown' then leave blank]*
COLO DATE	MM/DD/YYYY	If colectomy during admission, enter date of procedure. *[If COLO THIS ADM='No' or 'Unknown' then leave blank]*
PREV LOC	xxxxxxxx	Enter name of previous unit admitted to. *[Record only the last previous unit. If patient not transferred from another unit during this admission, leave blank]*
PREV LOC ADM DT	MM/DD/YYYY	Enter date admitted to previous unit. *[If patient not transferred from another unit during this admission, leave blank]*
LAST D/C LOC	xxxxxxxx	If patient has a CO-HCFA CDI (i.e., patient discharged from your hospital within the past 4 weeks), enter name of unit where previous admission or infection occurred. *[If patient does not have a CO-HCFA, leave blank]*

Table 2. NHSN Custom Fields Definitions *Required Fields

Cluster Reporting

All hospitals should report CDI clusters as they occur to the Collaborative coordinators (Christina Felsen [Christina_Felsen@urmc.rochester.edu] and Gail Quinlan [Gail_Quinlan@urmc.rochester.edu] via email. Please include the number of cases and unit the cluster occurred on in your email.

For the purposes of this project, a cluster is defined as **>2 cases/week or >3 cases in 2 weeks on a unit.**

At the end of each month, Christina will send a reminder email to report any clusters from the previous month if they have not already been reported.

CDI Infection Prevention

Standardization of Best Practices

Infection prevention practices should be standardized to adhere to SHEA's CDI Prevention guidelines, which are considered best practice [14]. Enhancement and standardization of current CDI prevention policies at each hospital will help ensure that all patients in the Rochester area, regardless of which hospital they are treated at, are equally protected from contracting *C. difficile.* The following CDI prevention policies should be implemented at all Collaborative hospitals:

- **Isolation upon suspicion of CDI: Presumptive isolation of patients with diarrhea of unknown origin should occur if it is expected that it will take > 4 hours to obtain *C. difficile* testing results. If results are expected to be obtained in ≤ 4 hours, it is not necessary to isolate the patient until definitive test results are received. To presumptively isolate a symptomatic patient, place patient in a private room if possible. If a private room is unavailable, cubicle isolation with a dedicated commode should be used. Empty the commode per your hospital's policy, avoiding emptying in semi-private bathrooms if possible.**
- **Standard Precautions: Standard precautions should be used for all patients with diarrhea, regardless of isolation/testing status.**
- **Duration of isolation: Isolate CDI patients until end of treatment *and* resolution of diarrhea. For patients with chronic diarrhea/GI symptoms not caused by *C. difficile,* contact your IP before discontinuing isolation.**
- **Collection of enhanced CDI data via NHSN: Effective January 1, 2012, data on colectomy, death, and previous hospital location should be collected and entered into NHSN for all CDI cases.**
- **Shared equipment: Please refer to your hospital's updated equipment cleaning template to determine which service (i.e., nursing, EVS, etc.) is responsible for cleaning equipment and the appropriate disinfection methods. Equipment cleaning policies will differ between hospitals based on the equipment used, however all hospitals should use as much dedicated equipment as possible when caring for patients with CDI. Non-dedicated equipment should be disinfected with a bleach-based disinfectant prior to transfer to another room.**
- **Hand hygiene: All staff are required to perform appropriate hand hygiene (using either alcohol-based hand rub or soap and water) upon entry to and exit from all CDI patient rooms.**

- **<u>Use of barrier precautions:</u> All staff should don gloves and gowns prior to entry to all CDI patient rooms. For hospitals using the Red Box Safe Zone, it is only necessary for staff to don gloves and gowns when entering a CDI patient room if they are leaving the "red zone" (i.e., going > 3-5 feet within the patient room). All staff should be knowledgeable about their hospital's use of Red Box and how this impacts the use of PPE. Gowns and gloves should also be used for all patients with diarrhea regardless of whether *C. difficile* testing results have been received. Gowns and gloves should be removed upon room exit and disposed of appropriately.**

Transport of CDI Patients

Standardization of Best Practices

C. difficile spores can be easily transmitted to the hands of any healthcare worker who has direct patient contact. Because of their high level of patient contact, transport personnel are a key group of non-clinical personnel that may be at risk of transmitting *C. difficile* from infected patients. Therefore, it is vital to ensure that all transport personnel are aware of and adhere to appropriate infection prevention policies for the prevention of CDI (and other communicable diseases). Unnecessary transfers of symptomatic CDI patients should be kept to a minimum; transport out of the room should be limited to medically-necessary purposes. The following procedures are adapted from the Healthcare Infection Control Practices Advisory Committee's 2007 Guidelines for Isolation Precautions and are considered the minimum standards for infection prevention during patient transport [15]. Follow your hospital's policy for transport of CDI patients if it requires additional actions.

Pre-Transport	1. Isolation patient is clearly identified using appropriate signage. If necessary, nursing provides further guidance to transporter regarding patient's isolation status and informs (electronically or verbally) receiving unit/service of patient's CDI diagnosis. 2. Perform hand hygiene (using soap and water or ABHR) & put on gown and gloves prior to entering patient's room. 3. Move patient to wheelchair/stretcher (if applicable). 4. Cover patient (i.e., with a sheet) to ensure that infected or colonized areas of the patient's body are contained. If using paper charts, follow your hospital's policy for transporting an isolation patient's chart. 5. Remove PPE, dispose of properly, and perform hand hygiene.
During Transport	6. Transport patient to new unit. Do not wear PPE during transport.
After Transport	7. Perform hand hygiene & put on gown and gloves prior to entering new room. 8. Move patient to bed (if applicable). 9. Remove PPE, dispose of properly, and perform hand hygiene once you no longer have contact with patient. 10. Strip stretcher of linen and place in hamper (if applicable). Disinfect stretcher/wheelchair used for transport according to your hospital's policy. 11. Perform hand hygiene upon completion of equipment decontamination.

Personal Protective Equipment Use by Visitors

If your hospital supports this policy, visitors of patients on isolation precautions should be encouraged to don gowns and gloves prior to entering the patient's room; gowns and gloves should remain on during all patient contact and be removed and disposed of properly upon room exit.

Ambulation of CDI Patients

Because of the potential for extensive environmental contamination and risk of transmission to other patients, CDI patients should be restricted to their rooms as much as possible. However, CDI patients without active diarrhea or fecal incontinence may ambulate following specific guidelines. Follow your facility's Infection Prevention policies for ambulation of CDI patients if additional actions/restrictions are required.

1. Patient must perform hand hygiene and don a clean gown prior to leaving room.
2. Patient may ambulate in hallways only and **must not** go into the kitchen, nurses' station, patient lounge or other communal areas, or other patient rooms.
3. If the patient requires assistance while ambulating that involves direct contact, the accompanying healthcare worker must don a clean gown and gloves prior to patient contact.
4. Upon completion of assistance, the accompanying healthcare worker should remove and discard PPE and perform hand hygiene.
5. The accompanying healthcare worker should not have direct contact with other patients, staff or equipment until PPE is removed and hand hygiene is performed.

Implementation of Infection Prevention Policies

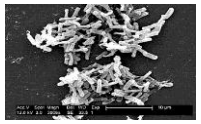
Rapid detection, isolation, and proper management of CDI patients are key to preventing transmission of *C. difficile* (Table 3). Key steps to reduce CDI rates in your facility include:

Rapidly diagnosing *C. difficile* cases by testing as soon as possible after 3 or more unformed stools within 24 hours for incident cases and after the first unformed stool for patients with a history of *C. difficile* (see http://www.cdc.gov/HAI/organisms/cdiff/Cdiff_clinicians.html for more information on testing)

Isolating patients immediately upon suspicion of *C. difficile* if it is anticipated that their test results will take longer than 4 hours to obtain

Doing your part to prevent transmission by performing hand hygiene before and after patient contact, wearing gowns and gloves when entering the patient's room, and reminding coworkers and visitors to do the same

Table 3. CDI Management Procedures: RID Your Hospital of CDI

ACTION	PROCEDURES	RATIONALE	WHO IS RESPONSIBLE?
 **Identify Suspect CDI Patients**	1. Determine if patient's bowel movements are increased in frequency and fluidity (defined by your hospital's policy; refer to Bristol Stool Chart [see below]) 2. Follow your hospital's management policy for potentially infectious diarrhea	Begin to determine cause of illness; initiate proper management of symptomatic patient; help reduce duration of patient's symptoms	1. Nursing 2. Nursing
 **Test patient for CDI**	1. Request an order for CDI testing immediately for patients with no history of CDI and ≥ 3 loose stools in 24 hours. For patients with a history of CDI, order testing immediately following first loose stool 2. Encourage lab to do more frequent testing & reporting of CDI results (i.e., nights and weekends)	Determine cause of diarrhea; enable prompt treatment through rapid identification of illness cause	1. Nursing, Physicians 2. Multidisciplinary Team, Lab Personnel, Hospital Leadership
 **Isolate Suspect/ Confirmed CDI Patients**	1. If it is expected that it will take > 4 hours to obtain *C. difficile* testing results, move symptomatic patient to private room if possible 2. If private room is unavailable, isolate patient in cubicle & provide dedicated commode 3. Initiate precautions procedures 4. Upon CDI confirmation, transfer patient to private room (if not already done). Perform a terminal clean of the room from which the patient was transferred. 5. Continue isolation until patient has ended treatment and diarrhea is resolved (consult Infection Prevention for patients with chronic diarrhea from causes other than *C. difficile* before removing them from isolation) 6. Notify Environmental Services (EVS) when a CDI patient is taken off isolation so that a terminal clean can be performed. A terminal clean should be performed even if the patient has not been discharged.	Prevent transmission to other patients; continue proper management of patient	1. Nursing, Transport, Admitting, 2. Nursing 3. Nursing, Materials Mgmt. 4. Nursing, Transport, Admitting, EVS 5. Nursing & other clinical staff 6. Infection Prevention
 **Perform & Promote Adequate Hand Hygiene**	1. Wash hands with soap & water or use alcohol-based hand rub (ABHR) before donning gloves & entering room and after exiting room & removing gloves 2. Remind visitors to wash hands using soap & water or ABHR prior to entering & after leaving patient room 3. Offer patient the opportunity to wash hands using soap and water before and after mealtimes and after using the bathroom/commode	Prevent spread of germs into and out of patient's room; provide patient opportunity to perform proper hand hygiene while hospitalized	1. Anyone entering/exiting room 2. Nursing & other clinical staff 3. Nursing & other clinical staff

 **Use PPE**	1. Don gown & gloves prior to room entry/ remove gown & gloves after room exit and dispose of in the appropriate receptacle	Prevent spread of germs into and out of patient's room	1. All hospital personnel & any visitor with patient contact entering/exiting room
 **Restrict Patients' Movement**	1. Limit ambulation of patient as much as possible; restrict ambulation to only those patients without active diarrhea/ fecal incontinence 2. Ensure patient performs hand hygiene and dons a clean gown prior to ambulation 3. Do not allow ambulation into the kitchen, nurses' station, patient lounge or other communal areas, or patient rooms 4. Any healthcare worker having direct contact with the patient during ambulation must don a clean gown and gloves. The worker must not have direct contact with other patients, staff or equipment unless PPE is discarded and hand hygiene is performed	Prevent transmission to other patients	1. Nursing & other clinical staff 2. Nursing & other clinical staff 3. Nursing & other clinical staff 4. Nursing & other clinical staff
 **Medical Equipment**	1. Provide dedicated equipment for the care of CDI patients 2. Use as much dedicated equipment as possible when caring for CDI patients 3. Clean all non-dedicated equipment with a bleach-based product (i.e., Dispatch) prior to removal from CDI patient's room	Prevent spread of germs to other patients	1. Hospital leadership, Multidisciplinary Team 2. Nursing & other clinical staff 3. Nursing & EVS
 **Environmental Services Room Cleaning**	1. Clean rooms of all CDI patients according to your hospital's cleaning policy, using a bleach-based product for both daily and terminal cleans. 2. Terminally clean CDI patient rooms using a 2-step cleaning process upon discharge, transfer, and after isolation has been discontinued. 3. Disinfect room using Ultraviolet (UV) light disinfection after terminal clean of a CDI patient's room if applicable.	Reduce the amount of patient room contamination with *C. difficile* spores; prevent transmission of *C. difficile* to other patients via the environment	1. EVS 2. EVS 3. EVS

Bristol Stool Chart

Type 1		Separate hard lumps, like nuts (hard to pass)
Type 2		Sausage-shaped but lumpy
Type 3		Like a sausage but with cracks on its surface
Type 4		Like a sausage or snake, smooth and soft
Type 5		Soft blobs with clear-cut edges (passed easily)
Type 6		Fluffy pieces with ragged edges, a mushy stool
Type 7		Watery, no solid pieces. **Entirely Liquid**

- Only unformed stool (i.e., Types 6 and 7) should be sent for *C. difficile* testing. Refer to your hospital's policy for comprehensive definitions of diarrhea, and specimen collection and testing guidelines.

Monitoring Compliance – Direct Observation

Evidence suggests that an increased awareness of and adherence to isolation procedures for CDI patients can contribute to a decrease in CDI rates [16]. Direct observation of these procedures, as well as compliance with hand hygiene recommendations can serve as a basis for improvement efforts and provide opportunity for on the spot education. Monitoring adherence to isolation practice policies is not meant to be a punitive action; but rather to ensure that all staff are properly educated and aware of these policies and are doing their best to prevent the occurrence of CDI.

ISOLATON PRACTICE/HAND HYGIENE OBSERVATION PROCEDURES

1. Each Multidisciplinary Team will determine the appropriate staff member to conduct observations

2. After a 1-month pilot audit period, the IP checklist will be finalized based on the baseline data

3. For hospitals using the IP checklist:
   - Perform 5 observations per week in randomly chosen CDI precautions rooms
   - Record observation data on the IP checklist shown in Appendix B
   - E-mail or fax completed checklists to Christina Felsen (Christina_Felsen@urmc.rochester.edu on a weekly basis
   - Contact Christina with questions

4. If your hospital currently has other procedures in place for conducting isolation practice observations, please continue to follow them. However, for the purposes of the Collaborative, please include as many isolation rooms in your observations as possible. Send your results to Christina (see contact information above) on a monthly basis.

Education

The Steering Committee and IP Workgroup will determine the gaps in current CDI prevention practices and develop appropriate training based on these findings.

Environmental Cleaning

Standardization of Best Practices

C. difficile spores can exist in the environment for 5 months and possibly longer [8], greatly increasing the likelihood of transmission to newly admitted patients. Adequate environmental cleaning has been shown to have a significant effect on the reduction of pathogens in patient rooms [17-19], therefore decreasing the likelihood of *C. difficile* transmission.

This toolkit is meant to build on each facility's current environmental cleaning policies. It is not meant to replace what is currently done, but rather to clarify existing policies and ensure they are in line with the most current cleaning guidelines. After review of the cleaning policies of each facility, the following additions/edits to all facilities' policies were suggested.

- **Use of Dispatch and other cleaning materials:**
  - Dispatch should be used to clean all patient rooms and surfaces
  - Dispatch contact time should be 5 minutes for *C. difficile* precaution rooms and 1 minute for all other rooms
  - Visible soil should be removed prior to Dispatch application

- **Surface Cleaning:**
  - The following high touch surfaces are recommended by the CDC and other organizations to be included for effective daily and discharge cleaning of patient rooms [20-22]. Any surfaces listed below that are not already clearly or specifically mentioned in your environmental cleaning policy should be added:

Daily Cleaning Room Surfaces	Terminal Cleaning Room Surfaces
Door knobs Sanitizer dispenser Bed rails Call button and cord Television remote Patient phone Overbed table and drawer Light switches Bedside tables and drawers Countertop or window sill Door inner surface Arms of patient chair Seat of patient chair Horizontal surfaces (visitor chair, linen hamper, etc.) Medical Equipment (as applicable) IV pump controls Monitor controls Monitor touch screen Monitor Cables Ventilator panel	All surfaces indicated in Daily Column AND: Mattress surface Pillows Headboard Footboard Bed Frame

Daily Cleaning Bathroom Surfaces	Terminal Cleaning Bathroom Surfaces
Bathroom door knob Toilet horizontal surfaces and seat Toilet lever/flush Sink faucets Soap and sanitizer dispensers Bathroom handrails/grab bars Sink surface Tub/shower surfaces and faucets Mirror Call light cord	All surfaces indicated in Daily Column

  - All cleaning policies should indicate who is responsible and the procedure for cleaning mobile computers that travel between patient rooms (if applicable) as well as bedside commodes
  - The use of microfiber mops and an appropriate cleaning solution should be used for mopping floors

- **PPE Use and Hand Hygiene:**
  - Perform hand hygiene (using soap and water or ABHR) upon initiation and completion of room cleaning – before PPE is donned, and after PPE is discarded
  - If it is necessary to restock/replace items in a recently cleaned isolation room, remove PPE worn during room cleaning, perform hand hygiene, and put on new PPE prior to restocking. Discard PPE when these tasks are complete.

- **Storage and Disposal of Toilet Brushes:**
  - Movement of toilet brushes between rooms should be limited. Use the following guidelines to minimize the risk of *C. difficile* transmission via contaminated toilet brushes:

    1) **Isolation Rooms:** Have a dedicated toilet brush and caddy that stays in the room during a patient's entire stay. Upon discharge, discard the toilet brush and either discard the caddy or clean with a bleach-based product (i.e., Dispatch) before using again.

    2) **Non-isolation rooms:** If possible, follow the same policy as for isolation rooms. If this is not feasible, store brushes in a bleach-based product between rooms to minimize the potential for contamination.

In addition, specific recommendations for policy updates were made to each facility. Please refer to your facility's gap analysis, given to you on August 16, 2011, for facility-specific recommendations. If you need additional copies of this document, please contact Christina Felsen by e-mail or phone (Christina_Felsen@urmc.rochester.edu).

Monitoring Compliance – Direct Observation

Certain "high touch" surfaces such as bed rails and the overbed table have been shown to be routinely contaminated with *C. difficile* spores [21], and can therefore play a role in CDI transmission. One method of reducing CDI rates is to ensure that these and other room surfaces are properly cleaned by conducting observations to determine cleaning adequacy. Similar to the IP observations, these observations are not meant to be punitive, but rather to identify gaps in current procedures and educational opportunities.

ENVIRONMENTAL CLEANING OBSERVATION PROCEDURES

1. Each Multidisciplinary Team will determine the appropriate staff member to conduct observations

2. Conduct a 1-month pilot audit in order to collect baseline data, finalize the EVS checklists, and gain feedback on the observation process in order to make improvements

3. Perform a minimum of 15 observations per month:
   - Choose rooms to be observed randomly – include all types of rooms (precautions, non-precautions, ICU, non-ICU, etc.) in all areas of the hospital at different times of day.
   - Ensure that your 15 monthly audits contain both ICU and non-ICU rooms; Conduct 2/3 of audits in non-ICU rooms and 1/3 in ICU rooms.
   - Include the following observations:
     I. **daily cleans in non-ICU rooms;**
     II. **discharge cleans in non-ICU rooms;**
     III. **daily cleans in ICU rooms;**
     IV. **discharge cleans in ICU rooms**

4. Record observation data on the EVS checklists shown in Appendix C and D (Non-ICU and ICU):
   - Use a new checklist for each observation
   - If a surface was cleaned, place an "X" in the "Done" column. If the surface was not cleaned, place an "X" in the "Not Done" column. If the surface was not evaluated, place an "X" in the "N/A" column

5. It may be useful to provide teaching while conducting these observations. **However**, make sure you only record the staff member's initial actions on the checklist. An example is provided below:
   - You are observing a staff member clean a non-ICU room. You notice that they do not clean the bedside table. You instruct the staff member to clean the table by telling them the table is considered a high touch surface and is therefore likely to be contaminated with *C. difficile* spores. The staff member cleans the table. **On the EVS checklist, you record an "X" in the "Not Done" column for bedside table.** Even though the table was eventually cleaned, it was only done after prompting, and we are trying to capture cleaning gaps that may be occurring when supervision is not present.

6. E-mail or fax completed checklists to Christina Felsen on a weekly basis

7. Contact Christina with questions regarding conducting the observations

Education

Upon completion of the 1-month pilot period, the Steering Committee and EVS Workgroup determined the gaps in current CDI prevention practices and developed appropriate training based on these findings. All hospitals worked collaboratively on an EVS training video to be used to educate new staff. The video was designed to highlight best practices and address cleaning deficiencies identified during the audit process. Additional training needs will be determined based on input from EVS managers regarding appropriate content and delivery methods.

Monitoring Compliance - ATP bioluminescence

Objective environmental cleaning monitoring systems such as Adenosine triphosphate (ATP) bioluminescence have been found to enhance the measurement of room cleanliness. ATP systems measure the amount of ATP (found in microorganisms and organic soil) on surfaces and provide a real-time teaching tool that can be used to identify potential cleaning deficiencies and educate staff on correct cleaning methods.

ATP TESTING PROCEDURES

1. Purchase ATP monitoring system if necessary

2. Via your Multidisciplinary Team, identify the appropriate staff person(s) to conduct ATP testing

3. Conduct a 1-month pilot audit in order to collect baseline data, finalize the ATP checklist, and gain feedback on the observation process in order to make improvements

4. Perform 5 tests per week
   - Conduct tests in rooms in which terminal Environmental Cleaning observations have occurred
   - If possible, test all 5 surfaces shown in the checklist in Appendix E
   - If unable to test any of the 5 surfaces, test one of the 2 alternate surfaces instead
   - To avoid bias, keep EVS cleaning staff blinded to the surfaces being tested by ATP

5. Record testing data on the ATP checklist shown in Appendix E or electronically via the 3M software

6. If recording data on paper, e-mail or fax completed checklists to Christina Felsen

7. Contact Christina with questions regarding conducting the observations

Data Feedback

Data from the IP, Environmental Cleaning, and ATP Testing direct observations will be analyzed by the project coordinator on a monthly basis to determine rates of compliance. Each hospital will receive reports during Steering Committee and workgroup meetings that contain both hospital-specific and Collaborative aggregate data. Reports may also contain data on each hospital's CDI rate (expressed as # of incident HO CDI/10,000 patient days) as well as other CDI-related data if applicable (i.e., number of CDI-related colectomies, unit attribution, etc.). As a reminder, data reports containing data from hospitals other than your own may not be shared outside of your hospital.

In addition to reporting at monthly meetings, the study coordinator will submit quarterly reports to the funding agency and the Collaborative Steering Committee. Quarterly reports will contain hospital-specific and Collaborative-aggregate data when appropriate including CDI incidence rates and other relevant data related to monitoring progress toward the goal of a decrease in the CDI rate over time.

Appendix A. CDC's NHSN *Clostridium difficile*-Associated Disease (CDAD) Case Definition

Methodology: Laboratory-identified (LabID) Events reporting is the second surveillance option and allows laboratory testing data to be used without clinical evaluation of the patient, allowing for a much less labor intensive method to track *C. difficile*. These provide proxy measures of *C. difficile* healthcare acquisition, exposure burden, and infection burden based solely on laboratory data and limited admission date data. Reporting of LabID Events for the entire facility (i.e., Overall facility-wide) can provide easily obtainable and valuable information for the facility. LabID Events can also be monitored for specific locations with unique denominator data required from each specific location (i.e., Facility-wide by location or Selected locations). This allows for both location-specific and facility-wide measures.

A. Required Reporting

***Clostridium difficile* Laboratory-identified Event**

Settings: Surveillance must be performed either Overall facility-wide or in multiple locations, where *C. difficile* testing in the laboratory is performed routinely only on unformed (i.e., conforming to the shape of the container) stool samples. Consider including *C. difficile* positive laboratory assays from all available inpatient locations as well as all available outpatient locations where care is provided to patients post discharge or prior to admission (e.g., emergency departments, outpatient clinics, and physician offices that submit samples to the facility's laboratory.) Surveillance will NOT be performed in Neonatal Intensive Care Units (NICU), Well Baby Nurseries, Well Baby Clinics, nor Outpatient Dialysis Centers.

Requirements: Facilities must choose one or more of three reporting choices: (A) report LabID Events for the entire facility, but by each location (Facility-wide by location), requiring separate denominator submissions for each location, (B) report LabID Events for only Selected locations, and (C) Overall facility-wide (with only one denominator for the entire facility) (Options include Overall Facility Wide Inpatient for all inpatients, Overall Facility Wide Outpatient for all outpatients or Facility Wide Both for all inpatients and outpatients.) (See protocol Table 1). Facilities must indicate each reporting choice chosen for the calendar month indicated in the *Patient Safety Monthly Reporting Plan* (CDC 57.106). Facilities reporting Overall facility-wide, which allows for the most complete data acquisition, can also report by Selected locations (i.e., (C) and (B)); otherwise, facilities must choose between choice (A) alone, (B) alone, or (C) alone (See protocol Table 1). Surveillance for positive laboratory results must be reported for 3 consecutive months to provide meaningful measures.

Definitions:

CDI-positive laboratory assay: A positive result for a laboratory assay for *C. difficile* toxin A and/or B, OR A toxin-producing *C. difficile* organism detected in the stool sample by culture or other laboratory means.

Duplicate *C. difficile*-positive test: Any *C. difficile* positive laboratory assay from the same patient following a previous *C. difficile* positive laboratory assay within the past two weeks.

Laboratory-Identified (LabID) Event*:* All non-duplicate *C. difficile* positive laboratory assays including specimens collected during an Emergency Department visit if collected same day as patient admission. (See Figure 2.)

Numerator and Denominator Data: Numerator: Data will be reported using the *Laboratory-Identified MDRO or CDAD Event* form (CDC 57.128). (See Tables of Instructions Table 19 for completion instructions.)

Denominator: Patient days, admissions, and encounters (for ER and outpatient locations) are reported using the *MDRO and CDAD Prevention Process and Outcome Measures Monthly Monitoring* form (CDC 57.127). (See Tables of Instructions Table 21 for completion instructions.) When performing facility wide-inpatient or facility-wide outpatient surveillance, denominator counts from neonatal intensive care units, well baby nurseries or clinics should not be included. Therefore the specific *C. difficile* denominator variables should be used.

CDI Data Analysis:

Data are stratified by time (e.g., month, quarter, etc.), incident or recurrent, and either aggregated across the entire facility or stratified by patient care location.

Based on data submitted on appropriate forms, LabID Events will be categorized as follows: Incident CDI Assay: Any LabID Event from a specimen obtained > 8 weeks after the most recent LabID Event (or with no previous LabID Event documented). Recurrent CDI Assay: Any LabID Event from a specimen obtained > 2 weeks and ≤EventLabID Event from a specimeLabID Event for that patient.

All incident or recurrent LabID Events are further categorized by NHSN analytical programs utilizing timing of specimen collection, setting where collected, and previous discharge or future admission.

The following definitions and calculations are built into the analysis capabilities of NHSN. These are some of the main metrics that are available in NHSN.

Categorization Based on Date Admitted to Facility and Date Specimen Collected:

Community-Onset (CO): LabID Event collected as an outpatient or an inpatient ≤ 3 days after admission to the facility (i.e., days 1, 2, or 3 of admission).

Community-Onset Healthcare Facility-Associated (CO-HCFA): CO LabID Event collected from a patient who was discharged from the facility ≤ 4 weeks prior to date stool specimen collected.

Healthcare Facility-Onset (HO): LabID Event collected > 3 days after admission to the facility (i.e., on or after day 4).

Calculated CDI Prevalence Rates:

Admission Prevalence Rate = Number of non-duplicate CDI LabID Events per patient per month identified ≤ 3 days after admission to the location (if monitoring by location), or facility (if monitoring by overall facility-wide) / Number of patient admissions to the location or facility X 100

Location Percent Admission Prevalence that is Community-Onset = Number of Admission Prevalent LabID Events to a location that are CO / Total number Admission Prevalent LabID Events x 100 (Note: The numerator in this formula does not include Admission Prevalent LabID Events that are CO-HFCA.)

Location Percent Admission Prevalence that is Community-Onset Healthcare Facility-Associated = Number of Admission Prevalent LabID Events to a location that are CO-HCFA / Total number Admission Prevalent LabID Events x 100

Location Percent Admission Prevalence that is Healthcare Facility-Onset = Number of Admission Prevalent LabID Events to a location that are HO / Total number of Admission Prevalent LabID Events x 100

Overall Prevalence Rate = Number of non-duplicate CDI LabID Events per patient per month regardless of time spent in location (if monitoring by location), or facility (i.e., CO + CO-HCFA + HO) (if monitoring by overall facility-wide) / Number of patient admissions to the location or facility x 100

Calculated CDI Incidence Rates: (see categorization of Incident, HO, and CO-HCFA above). Location CDI Incidence Rate = Number of Incident CDI LabID Events per month identified > 3 days after admission to the location / Number of patient days for the location x 10,000

Facility CDI Healthcare Facility-Onset Incidence Rate = Number of all Incident HO CDI LabID Events per month in the facility/ Number of patient days for the facility x 10,000 (this calculation is only accurate for Overall Facility-wide/ Location = All reporting)

Facility CDI Combined Incidence Rate = Number of all Incident HO and CO-HCFA CDI LabID Events per month in the facility / Number of patient days for the facility x 10,000 (this calculation is only accurate for Overall Facility-wide/ Location = All reporting)

Appendix B. Isolation Practice Checklist

Isolation Practice Checklist				
INSTRUCTIONS: Place an "X" in the appropriate box to indicate if an action was performed. If the item was not evaluated, place an "X" in the N/A box. Perform a total of 5 audits/week in any type of isolation room. Return completed forms to Christina Felsen via e-mail or fax (Christina_Felsen@urmc.rochester.edu, 442-7936)				
Date:	**Observer Initials:**			**Observer Title:**
Unit/Room No.:	**Hospital: ☐ HH ☐ RGH ☐ SMH ☐ Unity**			
	Yes	**No**	**N/A**	**Comment**
Precaution sign visible outside room door				
Gowns and Gloves readily available				
Hand hygiene upon entry:				
If yes, hand hygiene type?	☐ Soap and water ☐ Alcohol-based hand gel			
Gloves donned upon entry				
Gown donned upon entry				
Hand hygiene upon exit:				
If yes, hand hygiene type?	☐ Soap and water ☐ Alcohol-based hand gel			
Gloves removed upon exit				
Gown removed upon exit				
Dedicated equipment in room:				
Stethoscope				
BP cuff				
Thermometer				
Non-dedicated equipment cleaned before moving to another room:				
	☐ Dispatch wipe			
	☐ Cavi-wipe			
If yes, cleaning agent type?	☐ Other		Specify: _____	

Appendix C. *C. difficile* Collaborative Non-ICU Environmental Cleaning Checklist

Hospital: ☐ HH ☐ RGH ☐ SMH ☐ Unity **Unit/Room No.:** _____ **Daily Clean?** ☐ Yes ☐ No **Precautions:** ☐ C. diff ☐ Other ☐ None **Date:** ____/____/____ **Initials:** _____

INSTRUCTIONS: Complete checklist while directly observing room cleaning.
Place an "X" in the appropriate box to indicate if an action was performed. If the item was not evaluated, place an "X" in the N/A box. Complete the 2-step cleaning column for terminal cleans of *C. diff* rooms only. Perform a TOTAL of 15 audits/month in non-ICU and ICU rooms.

Time Started: ____:____ AM/PM		Done	Not Done	N/A	2-Step Cleaning*
Pre-Cleaning Actions	Perform Hand Hygiene				
	Put on Appropriate PPE				
	Empty Trash				
	Empty Linen Hamper				
	High/Low Dust Surfaces				
	Clean Visible Soil on Surfaces				
	Mop Floors				
High Touch I	Bed Rails				
	Overbed Table				
High Touch II	Hand Sanitizer Dispenser				
	Call button & cord				
	TV Remote				
	Light Switches				
	Bedside Table				
	Patient chair – Arms				
	Patient chair – Seat				
	Computer Keyboard				
	Computer Mouse				
	Commode				
High Touch III	Inside Room Doorknob				
	Room Door Inner Surface				
	Countertop or Windowsill				
	Patient Phone				
	Linen Hamper				
Bath-room	Trash Can				
	Bathroom Doorknob				
	Toilet Horizontal Surfaces /Seat				
	Toilet Lever/ Flush				
	Sink Faucet				

		Done	Not Done	N/A	2-Step Cleaning*
Bathroom cont.	Sink Surface				
	Soap Dispenser				
	Toilet Paper Dispenser				
	Paper Towel Dispenser				
	Hand Sanitizer Dispenser				
	Handrails/ Grab Bar				
	Tub/ Shower Surfaces				
	Mirror				
After-Cleaning Actions	Discard Toilet Brush/ Cloth				
	Discard Dust Cloth(s)				
	Change Mop Heads				
	Remove PPE				
	Perform Hand Hygiene				
Item Replacement	Put on new PPE (if precautions room)				
	Glove Boxes				
	Sharps Containers				
	Trash/ Linen Liners				
	Hand Sanitizer				
	Paper Towels				
	Toilet Paper				
Terminal Clean Additional Actions	Replace Privacy Curtains (if precautions room)				
	Bed Mattress – Surfaces				
	Bed – Headboard				
	Bed – Footboard				
	Bed - Frame				
	Patient Pillows				

Comments:

Time Finished: ____:____ AM/PM

***Terminal cleans only**

Return completed forms to Christina Felsen via e-mail or fax.

Appendix D. *C. difficile* Collaborative ICU Environmental Cleaning Checklist

Hospital: ☐ HH ☐ RGH ☐ SMH ☐ Unity **Unit/Room No.:** _____ **Daily Clean?** ☐ Yes ☐ No **Precautions:** ☐ C. diff ☐ Other ☐ None **Date:** ____/____/____ **Initials:** _____

INSTRUCTIONS: Complete checklist while directly observing room cleaning. Place an "X" in the appropriate box to indicate if an action was performed. If the item was not evaluated, place an "X" in the N/A box. Complete the 2-step cleaning column for terminal cleans of *C. diff* rooms only. Perform a TOTAL of 15 audits/month in non-ICU and ICU rooms.

Time Started: ____:____ AM/PM		Done	Not Done	N/A	2-Step Cleaning*
Pre-cleaning Actions	Perform Hand Hygiene				
	Put on Appropriate PPE				
	Empty Trash				
	Empty Linen Hamper				
	High/Low Dust Surfaces				
	Clean Visible Soil on Surfaces				
	Mop Floors				
High Touch I	Bed Rails				
	Bed Surfaces				
	Supply Cart – External Surfaces				
High Touch II	Hand Sanitizer Dispenser				
	IV Pole				
	Trash Can – Medical Waste				
	Bedside Table				
	Computer Keyboard				
	Computer Mouse				
	Commode or Under-counter toilet				
	Wall-mounted Suction				
	Call button & cord				
	TV remote				
High Touch III	Overbed Table				
	Sink Faucet				
	Sink Surface				
	Countertop				
	Soap Dispenser				
	Linen Hamper				
	Trash Can – Other Waste				
	Light Switch				

		Done	Not Done	N/A	2-Step Cleaning*
High Touch III cont.	Patient chair – Arms				
	Patient chair – Seat				
	Inside room Doorknob/ handle				
	Room Door Inner Surface				
After Cleaning Actions	Discard Dust Cloth(s)				
	Change Mop Heads				
	Remove PPE				
	Perform Hand Hygiene				
	Put on new PPE (if precautions room)				
Item Replace-ment	Hand Sanitizer				
	Paper Towels				
	Soap				
	Glove Boxes				
	Sharps Containers				
	Trash/ Linen Liners				
	Toilet Paper				
Terminal Clean Additional Surfaces	Replace Privacy Curtains (if precautions room)				
	Bed - Mattress Surfaces				
	Bed – Headboard				
	Bed – Footboard				
	Bed – Frame				
	O^2 Flowmeter				
	Monitor				
	Monitor Cables				
	Patient Pillows				

Comments:

Time Finished: ____:____ AM/PM

***Terminal Cleans Only**

Return completed forms to Christina Felsen via e-mail or fax.

Appendix E. ATP Testing Checklist

ROCHESTER PATIENT SAFETY COLLABORATIVE - *C. difficile* Collaborative
ATP Bioluminescence Checklist

Hospital: ☐ HH ☐ RGH ☐ SMH ☐ Unity Unit/Room No.: _____

Date____/____/_____Time ____:_____ AM/PM

EVS Initials_____ Evaluator Initials_____

Discharge clean [ ] Daily Clean [ ]

***C difficile* Contact Precautions [ ] Non-*C difficile* Contact Precautions [ ] No Precautions [ ]**

Infection Preventionist Present? [ ] Yes [ ] No If yes, IP Initials _____

INSTRUCTIONS: Swab approximately 2 x 2 inch square on each surface indicated by white box for the 5 surfaces listed below. Perform 15 observations per month (after EVS cleaning observation). Return completed forms to Christina Felsen by e-mail or fax (Christina_Felsen@urmc.rochester.edu, 442-7936).

SURFACES (Refer to pictures below)	ATP MEASUREMENT (RLU)
1. Overbed Table - swab lower edge/drawer	
2. Bed Rail - swab midway, near controls	
3. Toilet Flush Handle - swab around the handle	
4. TV Remote/Call Bell - swab over control buttons	
5. Inside bathroom door knob - swab side portion	

ALTERNATE SURFACES*	ATP MEASUREMENT (RLU)
Bed Control	
Patient Phone	

***ONLY SWAB THESE SURFACES IF YOU ARE UNABLE TO SWAB ALL 5 SURFACES LISTED ABOVE**

1.

2.

3

4.

5.

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