2010 ARO/CDI Prevalence Survey

1) Patient identifier: _____

2) Hospital number: _____

3) Is the patient currently (day of survey) infected or colonized with (check all that apply):

MRSA	[ ]
VRE	[ ]
Clostridium difficile	[ ]

4) Was the patient known to have been infected or colonized with any of the following organisms (check all that apply) prior to this hospital admission?

MRSA	[ ]
VRE	[ ]
Clostridium difficile	[ ]
None	[ ]
Unknown	[ ]

Patient demographics

5) Month/Year of Birth: ____/____
mm yy

6) Sex: Male [ ] Female [ ]

7) Native aboriginal or First Nations: Yes [ ] No [ ] Unknown [ ]

If First Nations:
Does this person live on a reservation? [ ] Yes [ ] No [ ] Unknown

8) Hospitalization outside of Canada within the last year?

[ ] Yes [ ] No [ ] Unknown

If yes, provide location if known _____

9) Date of current admission: ____/____/____
dd mm yy

10) Current (day of survey) type of ward or service the patient is on:

Medicine	[ ]	Trauma/burn	[ ]
Surgery	[ ]	Transplant	[ ]
Intensive care	[ ]	Dialysis	[ ]
Obstetrics/gynecology	[ ]		
Hematology/oncology	[ ]		
ER (but admitted)	[ ]		
Other (please specify)	[ ] _____		

Isolation precautions:

11) Is the patient currently (day of survey) on (additional) isolation precautions?

Yes [ ] No [ ]

If yes, what additional precautions are being taken (check all that apply):

Private Room	[ ]
Gowns	[ ]
Gloves	[ ]
Surgical Mask	[ ]
N95 Mask	[ ]
Face Shield	[ ]
Other (please specify)	[ ] _____

For MRSA

12) Reason for being included in survey (check all that apply):

Patient in precautions on the day of survey for known MRSA [ ]
Tested positive for MRSA on any sample submitted up to the day of survey [ ]

13) Date MRSA was first isolated in culture regardless of location (if unknown, check off 'Date Unknown'):

_____/_____/_____ →go to Q13a and skip Q13b
dd mm yy

Date Unknown [ ] →go to Q13b and skip Q13a

13a) The initial **MRSA** isolate was recovered from (check all that apply):

Screening specimen [ ]
Clinical specimen [ ]
Unknown [ ]

13b) If exact date of first isolation of MRSA is unknown the approximate time period patient has been known to be MRSA positive is:

Less than a year ago [ ]
More than one but less than two years ago [ ]
More than two years ago [ ]

14) Anatomic site(s) **MRSA** has been recovered from during this hospital admission (check all that apply):

None (cultures positive previously)	[ ]		
Nose	[ ]	Urine	[ ]
Rectum, perianal, perineal, groin	[ ]	Blood	[ ]
Surgical site	[ ]	Bone	[ ]
Decubitus ulcer	[ ]	Joint, synovial fluid	[ ]
Other skin or wound site	[ ]	CSF	[ ]
Throat, pharynx	[ ]		
Eye, conjunctiva	[ ]		
Sputum or other respiratory site	[ ]		
Other (please specify)	[ ]	_____	

15) On the day of the survey, was the patient (check all that apply):

Colonized with MRSA [ ] → go to Q17 and skip Q16
Infected with MRSA [ ] → go to Q16
Unknown [ ] → go to Q17 and skip Q16

16) If the patient was infected with **MRSA** on the day of the survey, the site(s) of infection was/were (check all that apply):

Skin/soft tissue	[ ]	
Surgical site	[ ]	
Pneumonia	[ ]	
Urinary tract	[ ]	
Osteomyelitis	[ ]	
Septic arthritis	[ ]	
Bloodstream infection	[ ]	
Endocarditis	[ ]	
Abscess (specify location)	[ ]	_____
Other infection (please specify)	[ ]	_____
Unknown	[ ]	

MRSA acquisition:

17) In your best judgement, this patient's MRSA acquisition was:

Healthcare-associated, your hospital	[ ]
Healthcare-associated, another facility	[ ]
Community-associated	[ ]

For VRE

18) Reason for being included in survey:

Patient in precautions on the day of survey for known VRE [ ]
Tested positive for VRE on a sample submitted on the day of survey [ ]

19) Date VRE was first isolated in culture regardless of location (if unknown, check off 'Date Unknown'):

_____/_____/_____ →go to Q19a and skip Q19b
dd mm yy

Date Unknown [ ] →go to Q19b and skip Q19a

19a) The initial **VRE** isolate was recovered from (check all that apply):

Screening specimen [ ]
Clinical specimen [ ]
Unknown [ ]

19b) If exact date of first isolation of VRE is unknown the approximate time period patient has been known to be VRE positive is:

Less than a year ago [ ]
More than one but less than two years ago [ ]
More than two years ago [ ]

20) Anatomic site(s) **VRE** has been recovered during this hospital admission (check all that apply):

None (cultures positive previously) [ ]
Stool, rectum, and/or perianal swab [ ]
Surgical site [ ]
Decubitus ulcer [ ]
Other skin or wound site [ ]
Urine [ ]
Blood [ ]
Other (please specify) [ ] _____

21) On the day of the survey, was the patient (check all that apply):

Colonized with VRE [ ] → go to Q23 and skip Q22
Infected with VRE [ ] → go to Q22
Unknown [ ] → go to Q23 and skip Q22

22) If the patient was infected with **VRE** on the day of the survey, the site(s) of infection was/were (check all that apply):

Skin/soft tissue	[ ]	
Surgical site	[ ]	
Urinary tract	[ ]	
Bloodstream infection	[ ]	
Endocarditis	[ ]	
Abscess (specify location)	[ ]	_____
Other infection (please specify)	[ ]	_____
Unknown	[ ]	

VRE acquisition:

23) In your best judgement, this patient's VRE acquisition was:

Healthcare-associated, your hospital	[ ]
Healthcare-associated, another facility	[ ]
Community-associated	[ ]

For *C. difficile*

24) *C. difficile* was confirmed by (check all that apply):

Stool toxin enzyme immunoassay (EIA)	[ ]
Pseudomembranous colitis detected by sigmoidoscopy/colonoscopy	[ ]
Histopathology from a bowel/colon biopsy	[ ]
Culture and toxin assay	[ ]
Polymerase chain reaction (PCR)	[ ]

25) Date *C.* difficile was first detected (or identified by colonoscopy or bowel biopsy) for this episode:

_____/_____/_____
dd mm yy

26) This episode of *C. difficile* infection is a:

Primary infection	[ ]
Recurrent infection	[ ]
Colonization	[ ] →Go to Q29 and skip Q27-28

27) Current (day of survey) treatment for *C. difficile* infection (check all that apply):

None	[ ]	
Metronidazole (Flagyl) IV	[ ]	
Metronidazole (Flagyl) PO	[ ]	
Vancomycin (Vancocin) PO	[ ]	
Probiotics (e.g. *Saccharomyces boulardii, Lactobacillus*)	[ ]	
IVIG (intravenous immunoglobulin)	[ ]	
Other (please specify)	[ ]	_____
Unknown	[ ]	

28) *C. difficile* infection complications as of day of survey (as documented in the medical records; check all that apply):

toxic megacolon	[ ]	
colectomy	[ ]	
other (specify)	[ ]	_____
none	[ ]	

29) In your best judgement, this patient's *C. difficile* acquisition was:

Healthcare-associated, your hospital	[ ]
Healthcare-associated, another facility	[ ]
Community-associated	[ ]

2010 ARO/CDI Prevalence Survey Data Dictionary

N.B. *All cases should have questions #1 to 11 completed. For questions #12-29, only the appropriate questions need to be completed depending on which AROs the patient is colonized or infected with.*

1) Patient Identifier:

This number should always be three digits. It will consist of the **3 character** unique patient identifier assigned by yourself starting at 001 for case number 1.

Example:

Third case at institution will be identified as 003 and the fourth case will be 004, and so on.

Please be sure to keep a list that matches this code with the name and hospital number of the patient. That way, if we need to contact you with a question, it will be easy for you to identify the patient. Alternatively, once you have faxed the forms to us, or mailed us a copy, write the name and hospital number of the patient on the copy of the form that you are keeping.

2) Hospital number:

This number should always be three digits. This will be the **3 character** alphanumeric code assigned to your institution by the investigators. It will always consist of two digits followed by a letter (e.g. 05H).

3) Is the patient currently (day of survey) infected or colonized with:

Current MRSA (on day of survey): if the patient is known to have had a screening or clinical culture positive for MRSA in the past, and the patient is in contact precautions because s/he is assumed to still have MRSA. Patients who have screening or clinical specimens obtained on the day of the survey that are subsequently found to be growing MRSA will also be included.

Current VRE (on day of survey): if the patient is known to have had a screening or clinical culture positive for VRE in the past, and the patient is in contact precautions because s/he is assumed to still have VRE. Patients who have screening or clinical specimens obtained on the day of the survey that are subsequently found to be growing VRE will also be included.

Current *C. difficile* infection (on day of survey): A patient is presumed to have current *C. difficile* infection if the patient meets criteria for *C. difficile* infection (see below) AND is on treatment for this with either metronidazole or oral vancomycin or intravenous and per rectum vancomycin on the day of the survey. Patients who have *C. difficile* tests obtained on the day of the survey, and are subsequently found to have *C. difficile* infection should also be included.

Criteria for C. difficile infection: (i) the patient had diarrhea (3 or more loose or watery stools in 24 hours) and laboratory confirmation of a

positive toxin assay for C. difficile toxin OR (ii) there is a diagnosis of pseudomembranous colitis on sigmoidoscopy or colonoscopy, or there is a histopathologic diagnosis of C. difficile infection from a bowel biopsy.

Current *C. difficile* colonization (on day of survey): A patient only has a positive *C. difficile* test but is asymptomatic AND not on treatment.

4) **Was the patient known to have been infected or colonized with any of the following organisms prior to this hospital admission?**

Please review all previous microbiological cultures, transfer notes, admission history or infection control flags to determine the answer to this question.

5) **Month/Year of Birth =** month and year of birth

6) **Sex =** Gender of patient.

7) **Native aboriginal or First Nations:**

First Nations is a term of ethnicity that refers to the Aboriginal peoples in Canada who are neither Inuit nor Métis.
This information is based on any individual registered with the Department of Indian and Northern Affairs, Canada or on information provided by the patient or patient's family members.
This may be found in numerous locations in hospital charts.

8) **Hospitalization Outside of Canada:**

Record if patient has been hospitalized outside of Canada in the last year. If known, please record location(s).

9) **Date of Current Admission:**

Date patient was admitted to hospital for the current hospitalization.

10) **Current type of ward or service the patient is on:**

Ward or unit type in which the patient was on the day the survey is conducted. Please select "ER (but admitted)" if patient has been admitted but it is still in the emergency department on the day of the survey.

11) **Is the patient currently on (additional) isolation precautions?**

Select if patient is in isolation or not.
If patient is in isolation, record all additional precautions being taken.

N.B. *Questions #12 to 17 should only be filled out if the patient is colonized or infected with MRSA. Questions #18 to 23 should only be filled out if the patient is colonized or infected with VRE. If the patient has C. difficile, please fill out questions #24-29.*

12) Select the main reason(s) this patient is being included in the survey. Check all that apply.

13) Date MRSA was first isolated in culture:

Refers to the date the first specimen that yielded MRSA. Please answer this as far back as is known, answer question 13a and skip question 13b. If this information is unknown, check off 'Date Unknown', skip question 13a and answer question 13b.

For 13a:
Screening specimen:
Any nose, perianal, rectal, perineal, groin, or axilla swab, or stool specimen
OR
skin swab, catheter exit site swab, medical device exit site, or urine that was a "screening" specimen rather than a clinical specimen (that is a specimen obtained from a patient as part of surveillance for MRSA, rather than to diagnose illness).

Clinical specimen:
Any specimen other than those listed above as "screening specimens", taken in a patient being investigated for symptoms of a possible infection.

For 13b:
Only answer if date of first MRSA isolation was unknown and estimate the time period patient has been positive with MRSA to the best of your abilities using the information available.

14) Anatomic site MRSA was recovered from:

Refers to the site(s) from which MRSA was recovered in culture. There may have been multiple sites; if so, please check all sites that were positive for the organism.

15) Definitions for MRSA or VRE colonization/infection:

MRSA or VRE **infection** is defined by standard criteria for healthcare-associated infections (CDC/NHSN Surveillance Definitions; Horan et al, Am J Infect Control 2008; 36:309-32) AND the patient must be on antimicrobial therapy for MRSA (e.g. vancomycin, linezolid, tigecycline, daptomycin, quinupristin/dalfopristin) or VRE infection (eg. linezolid, tigecycline, daptomycin, quinupristin/dalfopristin) on the day of the survey.

If patient is colonized with MRSA or if it is unknown, respond appropriately, skip question 16 and go to question 17.
If patient is infected with MRSA, respond appropriately and continue on to question 16.

16) If the patient was infected with MRSA or VRE on the day of the survey, the site(s) of infection was/were:

Check the appropriate site(s) of infection. NOTE: patient is defined as being infected if they are still on treatment for MRSA.

Skin and Soft Tissue Infection:

-Must meet one of the following criteria:

1) Patient has purulent drainage, pustules, vesicles, or boils

2) Patient has at least 2 of the following signs or symptoms with no other recognized cause: pain or tenderness, localized swelling, redness, or heat

-AND at least one of the following:

a) MRSA or VRE cultured from aspirate or drainage from affected site

b) MRSA or VRE cultured from blood with no other obvious source of infection

Surgical Site Infection:

Superficial Incisional Surgical site Infection:

-Infection occurs within 30 days after the operative procedure

-AND involves only skin and subcutaneous tissue of the incision

-AND patient has at least 1 of the following:

b) MRSA or VRE isolated from an aseptically obtained culture of fluid or tissue from the superficial incision OR

c) MRSA or VRE cultured from blood with no other obvious source of infection with purulent drainage from the superficial incision or at least one of the following signs and symptoms of infection: pain or tenderness, localized swelling, redness, or heat.

Deep Incisional Surgical Site Infection:

-Infection occurs within 30 days after the operative procedure if no implant is left in place or within 1 year if implant is in place and the infection appears to be related to the operative procedure

-AND involves deep soft tissues (eg, fascial and muscle layers) of the incision

-AND patient has at least one of the following:

a) purulent drainage from the deep incision but not from the organ/space component of the surgical site which is positive for MRSA or VRE

b) a deep incision spontaneously dehisces or is deliberately opened by a surgeon and is culture-positive for MRSA or VRE

c) an abscess or other evidence of infection involving the deep incision is found on direct examination, or during reoperation and is positive for MRSA or VRE

Organ Space Infection:

- Infection occurs within 30 days after the operative procedure if no implant is left in place or within 1 year if implant is in place and the infection appears to be related to the operative procedure

-AND infection involves any part of the body, excluding the skin incision, fascia, or muscle layers, that is opened or manipulated during the operative procedure

-AND patient has at least one of the following:

a) purulent drainage from a drain that is placed through a stab wound into the organ/space and is positive for MRSA or VRE
b) MRSA or VRE isolated from an aseptically obtained culture of fluid or tissue in the organ/space
c) an abscess or other evidence of infection involving the organ/space that is found on direct examination, or during reoperation that is positive for MRSA or VRE

Pneumonia:

-Patient with underlying diseases with 2 or more serial X-rays with one of the following OR without underlying diseases with 1 or more serial X-rays with one of the following:

a) new or progressive AND persistent infiltrate
b) consolidation
c) cavitation

-AND at least one of the following:

a) fever (greater than 38°C) with no other cause
b) leucopenia (less than 4,000 WBC/mm^3) or leukocytosis (greater than or equal to 12,000 WBC/mm^3)
c) altered mental status with no other cause in those greater than or equal to 70 years of age

-AND at least one of the following:

a) new onset of purulent sputum, or change in character of sputum, or increase in respiratory secretions or suctioning requirements
b) new onset or worsening cough, dyspnea, or tachypnea
c) rales or bronchial breath sounds
d) worsening gas exchange (e.g. O_2 desaturations, increased O_2 requirements, or increased ventilation demand)

-AND at least one laboratory result from the following:

a) positive blood culture not related to another infection for MRSA
b) positive pleural fluid culture for MRSA
c) positive culture from a minimally contaminated lower respiratory tract specimen (e.g. bronchoalveolar lavage or protected specimen brushing) for MRSA
d) positive quantitative culture of lung parenchyma for MRSA

Urinary Tract Infection:

- Patient has at least 1 of the following signs or symptoms with no other recognized cause: fever (38.8°C), urgency, frequency, dysuria, or suprapubic tenderness

-AND patient has a positive urine culture, that is, greater than 10^3 colony forming units per litre of urine with MRSA or VRE.

Osteomyelitis:

-Must meet at least 1 of the following criteria:

a) Patient has MRSA cultured from bone.
b) Patient has at least 2 of the following signs or symptoms with no other recognized cause: fever (38.8°C), localized swelling, tenderness, heat, or drainage at suspected site of bone infection and MRSA is cultured from blood with no other signs of infection.

Septic Arthritis:
-Must meet at least 1 of the following criteria:

a) Patient has MRSA cultured from joint fluid or synovial biopsy.
b) Patient has at least 2 of the following signs or symptoms with no other recognized cause: joint pain, swelling, tenderness, heat, evidence of effusion or limitation of motion and MRSA is cultured from blood with no other signs of infection and cellular profile and chemistries of joint fluid compatible with infection are not explained by an underlying rheumatologic disorder.

Bloodstream Infection:
- Patient has MRSA or VRE cultured from 1 or more blood cultures
-AND organism cultured from blood is not related to an infection at another site

Endocarditis:
-Must meet at least 1 of the following criteria:

a) Patient has MRSA or VRE cultured from valve or vegetation.
b) Patient has 2 or more of the following signs or symptoms with no other recognized cause: fever (38.8℃), new or changing murmur, embolic phenomena, skin manifestations (ie, petechiae, splinter hemorrhages, painful subcutaneous nodules), congestive heart failure, or cardiac conduction abnormality OR evidence of new vegetation seen on echocardiogram AND MRSA or VRE cultured from 2 or more blood cultures

Abscess:
-Patient has MRSA or VRE cultured from enclosed purulent material

17) MRSA/VRE acquisition:

Select the best answer using the following definitions:

Healthcare-associated:
MRSA (or VRE) was first identified more than 48 hours after hospital admission, OR the patient had been hospitalized or in a long-term care facility in the previous 12 months, OR had surgery or dialysis in the previous 12 months, OR had an indwelling catheter or other medical device (eg. urinary catheter, IV line, tracheostomy, feeding tube, etc.), OR had another significant healthcare exposure (eg. dialysis, outpatient surgery, outpatient chemotherapy, home care, etc.).

For healthcare-associated cases, best judgment (based on epidemiology and molecular typing, if available) should be used to determine whether the MRSA (or VRE) was acquired in your hospital OR in another healthcare facility.

Community-associated:
Patient has no prior history of MRSA (or VRE), MRSA (or VRE) was identified less than or equal to 48 hours after hospital admission, AND did not stay overnight in a hospital or in a long-term care facility in the previous 12 months AND did not have surgery or renal dialysis in the previous 12 months, AND has

no indwelling catheter or other medical device (eg. urinary catheter, IV catheter, tracheostomy, feeding tube, etc.)

18) Select the main reason(s) this patient is being included in the survey. Check all that apply.

19) Date VRE was first isolated in culture:

Refers to the date the first specimen that yielded VRE. Please answer this as far back as is known, answer question 19a and skip question 19b. If this information is unknown, check off 'Date Unknown', skip question 19a and answer question 19b.

For 19a:
Screening specimen:
Any nose, perianal, rectal, perineal, groin, or axilla swab, or stool specimen
OR
skin swab, catheter exit site swab, medical device exit site, or urine that was a "screening" specimen rather than a clinical specimen (that is a specimen obtained from a patient as part of surveillance for VRE, rather than to diagnose illness).

Clinical specimen:
Any specimen other than those listed above as "screening specimens", taken in a patient being investigated for symptoms of a possible infection.

For 19b:
Only answer if date of first VRE isolation was unknown and estimate the time period patient has been positive with VRE to the best of your abilities using the information available.

20) Anatomic site VRE was recovered from:

Refers to the site(s) from which VRE was recovered in culture. There may have been multiple sites; if so, please check all sites that were positive for the organism.

21) Please see question #15 in data dictionary for definitions.

If patient is colonized with VRE or if it is unknown, respond appropriately, skip question 22 and go to question 23.
If patient is infected with VRE, respond appropriately and continue on to question 22.

22) If the patient was infected with VRE on the day of the survey, the site(s) of infection was/were:

Check the appropriate site(s) of infection. NOTE: patient is defined as being infected if they are still on treatment for VRE.

23) MRSA/VRE acquisition:

See question #17 in data dictionary for definitions.

N.B. *Questions #25 to 30 should only be completed if the patient is infected with C. difficile.*

24) *C. difficile* infection was confirmed by:

Select appropriate method(s) used to arrive at diagnosis of infection. Check all that apply.

25) Date *C. difficile* was first detected:

Refers to when *C. difficile* was first detected by the method(s) selected in question #24.

26) This episode of *C. difficile* infection is a:

Primary infection:
If this is the first *C. difficile* infection ever experienced by the patient
OR
if this is a *C. difficile* infection occurring more than 8 weeks since the date of a previous positive *C. difficile* test result.

Recurrent infection:
If this is another episode of *C. difficile* infection, occurring less than or equal to 8 weeks since the date of the most recent positive *C. difficile* test.

Colonization:
If this patient has a positive *C. difficile* test but has no symptoms for the criteria of *C. difficile* infection (see question #3 for definition of infection).

If patient is colonized, skip questions 27-28 and go to question 29.

27) Current treatment for *C. difficile* infection:

Select anything presently being received for the treatment of their *C. difficile* infection on the day of the prevalence survey

28) *C. difficile* infection complications:

Select any complications occurring due to their *C. difficile* infection according to the medical records up to the day of the survey.

29) *C. difficile* acquisition:

Healthcare-associated (your facility):
Onset of patient's symptoms is 72 or more hours after admission to your hospital OR the patient had been hospitalized in your hospital and last discharged less than 8 weeks prior to the date the C. difficile toxin was first positive.

Healthcare-associated (another facility):
Onset of patient's symptoms is less 72 hours after admission to your hospital AND the patient was hospitalized in and discharged from another hospital or long-term care facility less than 8 weeks before the date of admission to your facility.

Community-associated:
Onset of patient's symptoms is less than 72 hours after admission to your hospital AND patient had not been hospitalized or in a long-term care facility in the past 8 weeks.