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| **CHARACTERISTICS** |
| Morphology | A gram positive rod that is anaerobic, motile, capable of producing subterminal spores, and produces a cytotoxin and enterotoxin. |
| Disease | Antibiotic- associated diarrhea, pseudomembranous colitis (PMC). |
| Zoonosis | Potential zoonosis. Moreover, contaminated food can cause infection. |

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| **HEALTH HAZARDS** |
| Host Range | Humans and animals. |
| Modes of Transmission | Fecal-oral contact; evidence for transmission via fomites and hands exists. |
| Signs and Symptoms | Mild or moderate diarrhea, pseudomembranous colitis, may be associated with the passage of mucus or occult blood in stool, fever, cramping abdominal discomfort and peripheral leukocytosis are common but found in fewer than half the patients. |
| Infectious Dose | Unknown. |
| Incubation Period | Unknown. |

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| **MEDICAL PRECAUTIONS/TREATMENT** |
| Prophylaxis | None. |
| Vaccines | None. |
| Treatment | Antibiotic therapy. Oral therapy with metronidazole or vancomycin. |
| Surveillance | Diagnosed by PCR. Monitor for symptoms (loose stool). Recover C. difficile organisms and/or toxin from stool samples to confirm. |
| MSU Requirements | Report any exposures. |

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| **LABORATORY HAZARDS** |
| Laboratory Acquired Infections (LAIs)  | One reported case of an LAI from C. difficile. |
| Sources | Clinical specimens (feces). Cultures, frozen stocks, other samples described in IBC protocol. |

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| **RISK GROUP & CONTAINMENT REQUIREMENTS** |
| Risk Group 2 | Agents that are associated with human disease which is rarely serious and for which preventive or therapeutic interventions are often available. |
| BSL2 | For all procedures involving suspected or known infectious specimen or cultures. |
| ABSL2 | For all procedures utilizing infected animals. |

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| **VIABILITY** |
| Disinfection | Spores are susceptible to 1:10 bleach:water for 20 minutes; susceptible to >2% gluteraldehyde with minimum of 20 minutes contact time, accelerated hydrogen peroxide. |
| Inactivation | Inactivated by moist heat (1 hour at 121oC). |
| Survival Outside Host | Can survive in soil, meat, and vegetables. Spores can survive for long periods outside of host. |

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| **SUPPLEMENTAL REFERENCES** |
| BMBL | <https://www.cdc.gov/labs/BMBL.html>  |
| NIH Guidelines | <https://osp.od.nih.gov/wp-content/uploads/NIH_Guidelines.pdf>  |
| Canada PSDS | <https://www.canada.ca/en/public-health/services/laboratory-biosafety-biosecurity/pathogen-safety-data-sheets-risk-assessment/clostridium-difficile-pathogen-safety-data-sheet.html> |

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| **SPILL PROCEDURES** |
| Small | Notify others working in the lab. Remove PPE and don new PPE. Cover area of the spill with absorbent material and add fresh 1:10 bleach:water. Allow 20 minutes (or as directed) of contact time. After 20 minutes, cleanup and dispose of materials. |
| Large | * Immediately notify all personnel in the lab and clear all personnel from the area. Remove any contaminated PPE/clothing and leave the lab.
* Secure the area by locking doors, posting signage and guarding the area to keep people out of the space.

For assistance, contact MSU's Biosafety Officer (406-994-6733) or Safety and Risk Management (406-994-2711). |

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| **EXPOSURE PROCEDURES** |
| Mucous membrane | Flush eyes, mouth, or nose for 5 minutes at eyewash station. |
| Other Exposures | Wash area with soap and water for 5 minutes. |
| Reporting | Immediately report incident to supervisor, complete a [First Report of Injury](https://firstreportinjury.mus.edu/) form, and submit to Safety and Risk Management. |
| Medical Follow-up | **During business hours:**Bridger Occupational Health 3400 Laramie Drive Weekdays 8am -6pm. Weekends 9am-5pm406-577-7674**After business hours:**Bozeman Deaconess Hospital Emergency Room915 Highland Blvd |

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| **PERSONAL PROTECTIVE EQUIPMENT (PPE)** |
| Minimum PPE Requirements | Lab coat, disposable gloves, safety glasses, closed toed shoes, long pants |
| Additional Precautions | Additional PPE may be required depending on lab specific SOPs and IBC Protocol. |