

# **Enhanced Surveillance of**

## ***Clostridioides difficile***

### **Infection in**

### **Ireland**

**Protocol**

**Version 5 Jan 2026**

## Version history

Issue	Reason for Update	Issuer	Approver	Effective Date
5.0	Update content - definition, treatment & IPC based on latest ECDC protocol	MOH	PD	January 2026
4.3	Update content	MOH		April 2025
4.2	Update content	MOH	SF	May 2024
4.1	Incorporated feedback	TM	SF	August 2023
4.0	Update content	TM	KB, SF	March 2023
3.5	Following publication of National clinical guidelines			July 2014

## Summary of Key changes and Rationale

This version of the CDI Enhanced Surveillance Protocol includes several important updates:

1. A new origin classification, **Healthcare Exposure (HE)**, has been introduced to improve the categorisation of CDI cases. This category captures cases with symptom onset:
  - Outside a healthcare facility or within the first two days of admission, and with documented healthcare admission within the previous 4–12 weeks or
  - With recent exposure to healthcare services without overnight admission (e.g. outpatient procedures, day surgeries).

This change reflects evolving healthcare utilisation patterns and aims to improve the accuracy of CDI surveillance classifications<sup>1</sup>.

2. **Treatment types.** The protocol now includes a broader range of treatment types<sup>2</sup>, allowing for more accurate documentation of clinical management and improved analysis of treatment outcomes. The available options are:
  - Enteral metronidazole (PO/NG/PR)
  - Enteral vancomycin (PO/NG/PR)
  - Fidaxomicin
  - Faecal Microbiota transplantation (FMT)
  - Other treatment types
  - No treatment
  - Treatment received but type unknown
3. **Infection Prevention and Control (IPC):** The protocol now captures hospital-level data on the presence and implementation of CDI-specific IPC measures across ten key areas, including PPE use, isolation, cleaning, stewardship, and education, to help identify gaps and improve compliance. This information must be submitted once a year using the 'Annual IPC return' sheet in the reporting file in line with European guidance<sup>3-4</sup>.

<sup>1</sup>Skally M, Bennett K, Humphreys H, Fitzpatrick F. Rethinking *Clostridioides difficile* infection (CDI) surveillance definitions based on changing healthcare utilisation and a more realistic incubation period: reviewing data from a tertiary-referral hospital, Ireland, 2012 to 2021. *Eurosurveillance*. 2024;29(6):2300335. <https://doi.org/10.2807/1560-7917.ES.2024.29.6.2300335>

<sup>2</sup>Prehn J van, Reigadas E, Vogelzang EH, Bouza E, Hristea A, Guery B, et al. *European Society of Clinical Microbiology and Infectious Diseases: 2021 update on the treatment guidance document for Clostridioides difficile infection in adults*. *Clinical Microbiology and Infection*. 2021;27(Suppl 1):S1–S21. <https://doi.org/10.1016/j.cmi.2021.09.038>

<sup>3</sup>Tschudin-Sutter, S. *et al.* Guidance document for prevention of *Clostridioides difficile* infection in acute healthcare settings. *Clinical Microbiology and Infection*. 2018;24:1051-54. <https://doi.org/10.1016/j.cmi.2018.02.020>

<sup>4</sup>Health Service Executive (HSE) Antimicrobial Resistance & Infection Control (AMRIC) Team. Guidelines for the Management of *Clostridioides difficile* Infection in Adults and Infection Prevention and Control Measures. April 2023. Available at: <https://www.hse.ie/amric>

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## Key Concepts

### What is a healthcare facility?

A healthcare facility is any acute care (e.g. hospital) or non-acute care (e.g. residential, long-term care, nursing home) facility in which skilled nursing care is provided and patients/residents are admitted at least overnight.

### What is diarrhoea?

Diarrhoea is defined as three or more loose/watery bowel movements that take up the shape of their container (which are unusual or different for the patient<sup>5</sup>) in a 24-hour period.

### What is the day three rule?

The day three rule is an easy-to-apply guideline that helps determine if an infection is healthcare-associated (HCAI):

- Day one is the date the patient is admitted to the hospital.
- If symptoms start on or after day three, the infection is usually considered HCAI.

Note: Certain scenarios (e.g., prolonged ED stay, late-night admission, or transfers from other settings) may require additional consideration.

## Abbreviations

CDI	<i>Clostridioides difficile</i> infection
HCF	Healthcare facility
IPC	Infection prevention and control
LTCF	Long-term care facility
NH	Nursing home

<sup>5</sup> Department of Health National Clinical Effectiveness Committee. Surveillance, Diagnosis and Management of *Clostridioides difficile* infection in Ireland. National Clinical Guideline No. 3. 2014; p.38

## Background

*Clostridioides difficile* infection (CDI) has been a notifiable infectious disease in Ireland since May 2008. Prior to 2012, only new cases of CDI were notifiable. Since January 2012, both new and recurrent cases of CDI are notifiable. Weekly epidemiological data for all notifiable diseases, including CDI, are published through the National Notifiable Disease Hub:

<https://notifiabledisease.hpsc.ie/>

In August 2009 the HPSC launched a voluntary enhanced surveillance programme on all CDI cases which collects detailed epidemiological information such as origin of infection, patient location at symptom onset, severity and ribotype.. Participating hospitals are provided with quarterly local feedback reports and a national biannual report is published on the HPSC website at <https://www.hpsc.ie/a-z/microbiologyantimicrobialresistance/clostridioidesdifficile/enhancedsurveillance/quarterlyreports/>

It is the responsibility of the reporting healthcare facility to ensure that all CDI cases that meet the case definition are notified to the relevant Department of Public Health. Most laboratories reported CDI cases via CIDR(Computerised Infectious Diseases Reporting) and also report to the CDI enhanced surveillance system, which ensures consistency and accuracy across these databases.

Surveillance information about CDI in Ireland has been submitted to the European Centre for Disease Prevention and Control (ECDC) since 2017 for inclusion in the European CDI surveillance programme. Explore data via the [ECDC Surveillance Atlas overview](#).

The latest ECDC *C. difficile* annual epidemiological report at:

<https://www.ecdc.europa.eu/sites/default/files/documents/clostridioides-clostridioides-difficile-infections.pdf>

In addition to the legal requirement to notify all cases of CDI to the Department of Public Health, supported by the voluntary enhanced CDI surveillance scheme coordinated by the HPSC, acute public hospitals are also required to report data on a monthly basis about the number of new hospital-acquired cases of CDI. This information is collated by the Health Service Executive's (HSE) Business Information Unit (BIU) and is one of a suite of key performance indicators (KPIs) for acute public hospitals.

**Table 1. *C. difficile* infection (CDI) surveillance reporting in Ireland**

	HPSC	CIDR	HSE-BIU
<b>Cases</b>	All cases	All cases	New Hospital-acquired CDI cases in acute public hospitals
<b>Frequency</b>	Quarterly or biannual	Real-time reporting	Monthly
<b>Data Scope</b>	Comprehensive CDI case data	Case type only	Case type: New & Origin: Hospital-acquired only

## Methodology

### Who is included in CDI Enhanced Surveillance?

#### Case Definition of CDI:

A confirmed *C. difficile* infection (CDI) case is a patient two years or older, to whom one or more of the following criteria applies:

- Diarrhoeal\* stools or toxic megacolon, with either a positive laboratory assay for *C. difficile* toxin A (TcdA) and / or toxin B (TcdB) in stools or a toxin-producing *C. difficile* organism detected in stool via culture or other means, e.g. a positive PCR result
- Pseudomembranous colitis (PMC) revealed by lower gastrointestinal endoscopy
- Colonic histopathology characteristic of *C. difficile* infection (with or without diarrhoea) on a specimen obtained during endoscopy, colectomy or autopsy.

*\* Diarrhoea is defined as three or more loose/watery bowel movements that take up the shape of their container (which are unusual or different for the patient<sup>4</sup>) in a 24-hour period.*

Every positive *C. difficile* laboratory result should be discussed with the healthcare professional caring for the patient to ascertain whether the patient with the positive laboratory test result for *C. difficile* meets the CDI case definition.

Enhanced surveillance data should be collected on **all patients** who meet the case definition for a CDI (new or recurrent) regardless of the patient's location:

- Inpatients of acute hospitals
- Patients attending acute hospital services without overnight stay e.g. haemodialysis units, day procedure units, outpatient department, emergency department (ED) attendees etc.
- Residents of non-acute healthcare facilities (e.g. residential care, LTCF or nursing home)
- Patients attending general practitioners (GPs)

### Who should be tested for CDI?

*C. difficile* testing should be considered for any patient aged two years or older with new-onset diarrhoea that is potentially infectious in origin.

### Which specimens should be tested for *C. difficile*?

All faecal specimens submitted to the microbiology laboratory that take the shape of the specimen container (e.g. diarrhoea) should be tested for *C. difficile* irrespective of the specimen request form or the patient's location.

*C. difficile* infection (CDI) should be considered for any patient/resident aged two years or older with potentially infectious diarrhoea and a faeces specimen submitted promptly for testing for *C. difficile*. While the case definition for the surveillance of CDI requires the patient to have had at least three episodes of diarrhoea in 24 hours to be counted as a CDI case, it is not recommended to delay testing for *C. difficile* until three episodes of diarrhoea have occurred.

## What is the recommended test for CDI?

The Irish guidelines for surveillance, diagnosis and management of *C. difficile* were updated in 2014. The latest European guidelines now recommend the use of a two-step test for the detection of *C. difficile*<sup>3,6</sup>.

No single commercial test can be used as a stand-alone test for *C. difficile* detection, as a result of inadequate positive predictive values at low CDI prevalence. Therefore, the use of a two-step algorithm is recommended.

Faecal specimens with a positive result for glutamate dehydrogenase (GDH) enzyme immunoassay (EIA), nucleic acid amplification test (NAAT) or toxigenic culture, but without free toxin detected by toxins A and B EIA, need careful evaluation to differentiate active CDI from asymptomatic bowel carriage/colonisation with *C. difficile*.

## Is repeat testing recommended?

Repeat testing for *C. difficile* is **not** advised in the following situations:

- i. Where the patient has already had a positive laboratory result for *C. difficile* and is still receiving antimicrobial treatment for CDI
- ii. As a test-of-cure following completion of antimicrobial treatment for CDI. Patients who have had CDI will often continue to have detectable *C. difficile* after completing treatment. If the patient's bowel habit has returned to the usual for that patient, there is no indication to send a repeat specimen

In some instances, a patient may have had a previous positive laboratory result for *C. difficile*; however, at the time the result was obtained, the patient's diarrhoea had resolved and there was no clinical evidence of *C. difficile* infection. If diarrhoea recurs, a repeat faecal specimen for *C. difficile* testing may be indicated to determine the cause of the new-onset diarrhoea.

Recurrent CDI is not uncommon, affecting approximately 10% of patients. Recurrent CDI should always be considered when a patient with a history of CDI develops diarrhoea again, following completion of and response to the initial antimicrobial treatment course for CDI.

Such patients should have a further faecal specimen submitted to the microbiology laboratory to determine whether there is an infectious cause for the recurrent symptoms. In such circumstances, *C. difficile* testing should be included, irrespective of the specimen request form, patient's location or a prior positive laboratory result for *C. difficile*.

<sup>6</sup> Crobach, M.J.T. *et al.* European Society of Clinical Microbiology and Infectious Diseases: update of the diagnostic guidance document for *Clostridioides difficile* infection. *Clinical Microbiology and Infection*. 2016;22:S63-S81. <http://dx.doi.org/10.1016/j.cmi.2016.03.010>

## How is the Data Collected?

The enhanced surveillance data can be entered directly into the *Clostridioides* (*Clostridium*) *difficile* infection Data Reporting File( Excel format) database which may be downloaded from the HPSC website at:

<https://www.hpsc.ie/a-z/microbiologyantimicrobialresistance/clostridioidesdifficile/enhancedsurveillance/>

- Participants should complete enhanced surveillance data on all CDI cases (new, recurrent and unknown) that meet the case definition.
- The completed Excel databases should be submitted via e-mail to the following HPSC e-mail address: [cdifficiledata@hpsc.ie](mailto:cdifficiledata@hpsc.ie) either biannually (the current standard) or quarterly if preferred.. Submit only the relevant reporting period's data in each submission.
- For new participants intending to join the enhanced CDI surveillance programme, please contact [cdifficiledata@hpsc.ie](mailto:cdifficiledata@hpsc.ie) at the HPSC for encryption requirements.
- Please ensure that ALL CDI cases reported in the voluntary enhanced surveillance system have also been notified to the Department of Public Health, in keeping with Infectious Diseases (Amendment) Regulations (April 2024). Please use the **same identifiers** and **dates** when notifying a case and reporting to the enhanced CDI surveillance system, to ensure these cases can be linked in the databases.
- When a hospital is sending their isolates to the new *C. difficile* National Reference Laboratory for whole genome sequencing, please ensure **same specimen identifiers** are reported to both institutes.

## What Enhanced Information is Reported?

The following outlines the information to be collected on the enhanced surveillance file:

### Section 1 - Patient Details

Hospital Code (Mandatory)	This identifier (sent to you in advance upon joining the scheme) is unique to your hospital and should be documented on all your returns. Please use the 'H' code for CDI surveillance, rather than the identifier for EARS-Net
Patient ID	This identifier must be unique for a patient and be a valid identifier within the hospital laboratory information management system (LIMS). For patients attending an acute hospital this identifier would generally be their <b>hospital medical record number (MRN)</b>  If you are reporting a recurrent CDI, a further new or recurrent CDI case for the same patient, please ensure to <b>use the same patient identifier</b> as the previous case(s). This will ensure that these patients can be linked in the database
Sex	Male/Female/Unknown
Date of birth (Mandatory)	Please use the format DD/MM/YYYY
Was the patient admitted to hospital?	Yes, No or Information not available
Date of admission	If patient was admitted to hospital, please provide the date of admission

### Section 2 - Case Type

Case Type	The patient who meets the CDI case definition should then be categorised as either a <b>new case</b> , a <b>recurrent case</b> or an <b>unknown</b> case type. <b>*Please use the <u>specimen date</u> when calculating the interval since a previous positive <i>C. difficile</i> laboratory result **</b> <b>See Appendix 2 and Algorithm A</b>
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If the case definition is not met, the laboratory result is not notifiable and is not included in the enhanced CDI surveillance system

**Please use the Specimen date when calculating the interval since a previous positive result**

**\* The definition of a resolved case is that the patient has had no diarrhoea for at least 48 hours and has had a formed or normal stool for that patient.**

### Section 3 - Specimen Details

Specimen ID	Enter your laboratory specimen number for the specimen result. <b>** Please ensure the same identifier is used when reporting a case to CIDR, to the National Reference Laboratory if whole genome sequencing is being carried out and to the enhanced surveillance system **</b>
Specimen date (Mandatory)	Please enter date specimen was taken
Origin of Specimen	<p>Please enter where the faeces specimen was sent in from:</p> <ul style="list-style-type: none"> <li>• GP surgery</li> <li>• Residential care facility (e.g. nursing home/LTCF)</li> <li>• This hospital (reporting hospital)</li> <li>• Other hospital (another acute hospital)</li> <li>• Information not available</li> </ul>

### Section 4 - Onset of CDI Infection

Onset of CDI	<p>Onset of CDI refers to the patient's location when the symptoms of CDI began.</p> <ul style="list-style-type: none"> <li>• <b>Healthcare onset</b> » Symptoms start during a stay in a healthcare facility (HCF). This includes nursing homes and LTCFs</li> <li>• <b>Community onset</b> » Symptoms start in a community setting, outside health care facilities</li> <li>• <b>Information not available</b> » If no information was available on onset of symptoms</li> </ul>
Date of Onset	<p>Date of onset of symptoms. This requires clinical evaluation:</p> <ul style="list-style-type: none"> <li>- For inpatients – review of stool chart and discussion with staff caring for the patient</li> <li>- For patients not attending the hospital (e.g. patient attending GP or residents of residential care facilities) discussion with staff caring for the patient/resident</li> </ul>
Onset Facility (if in an HCF)	<p>Please answer this question <b><u>ONLY</u></b> if the onset of CDI is known to be <b><u>in a healthcare facility</u></b>. Note the facility the onset of symptoms were in:</p> <ul style="list-style-type: none"> <li>• <b>This hospital:</b> Please select if onset of symptoms occurred in the reporting hospital.</li> <li>• <b>Other hospital:</b> Please select if onset of symptoms occurred in another acute hospital different to the reporting hospital (i.e. a transferred patient)</li> <li>• <b>Residential care facility</b> Please select if the onset of symptoms occurred in a residential care facility (e.g. nursing home or LTCF)</li> <li>• <b>Other</b></li> <li>• <b>No information available</b></li> </ul>

## Section 5 - Origin of CDI

Origin of CDI	Please specify the origin of the CDI episode according to the definitions in <b>Appendix 3 and Algorithms B &amp; C</b> . It can be healthcare associated, community associated, healthcare exposure (see below) or unknown.
Origin Facility (if in an HCF)	<p>Please answer this question <b><u>ONLY</u></b> if the case was known to be <b><u>healthcare-associated</u></b>.</p> <p>Please note the facility the CDI case originated in:</p> <ul style="list-style-type: none"> <li>• <b>This hospital:</b> Please select if CDI case is associated with the reporting hospital</li> <li>• <b>Other hospital:</b> Please select if CDI case is associated with another acute hospital different to the reporting hospital (i.e. a transferred patient)</li> <li>• <b>Residential care facility:</b> Please select if CDI case is associated with a residential care facility (e.g. nursing home or LTCF)</li> <li>• <b>Other</b></li> <li>• <b>Information not available</b></li> </ul>
Healthcare exposure (HE)	<p>If the case is <b><u>Healthcare exposure</u></b>, please specify whether the case whether it is:</p> <p>HE: Discharged 4–12 weeks ago from a healthcare facility, or</p> <p>HE: Ambulatory care (no overnight stay). If ambulatory care, please specify:</p> <ul style="list-style-type: none"> <li>• Day hospital</li> <li>• Day surgery</li> <li>• Dental surgery</li> <li>• Oncology day ward</li> <li>• Haematology day ward</li> <li>• Haemodialysis</li> <li>• Other – please specify in the Comments section</li> </ul> <p>And date treatment commenced</p>

## Section 6 - Severity

Severity	<p>For surveillance purposes, a case of CDI is severe if the patient was either:</p> <p>(i) <b>admitted to ICU*</b> for <b>treatment of CDI or its complications?</b> (e.g. for shock requiring vasopressor therapy)</p> <p>*Admission to ICU for a reason other than CDI, with subsequent diagnosis of CDI while in the ICU is <b>not</b> included, unless the patient has severe CDI that requires ongoing ICU care for CDI management</p> <p>AND/OR</p> <p>(ii) the patient underwent <b>surgery as a consequence of CDI complications</b> (e.g. surgery for toxic megacolon (colectomy), perforation or refractory colitis)</p> <p>Please select Yes, No or Information not available</p>
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## Section 7 – Typing

Sequence type	Please enter the sequence type data if available <ul style="list-style-type: none"> <li>• Use the format 'STXX' e.g. ST11</li> <li>• Do not include additional text</li> </ul>
Ribotype	Please enter the ribotype data if available <ul style="list-style-type: none"> <li>• Only include the actual ribotype. Do not include additional text</li> <li>• Only report the ribotype if the isolate from that particular specimen was ribotyped. Please do not report the ribotype associated with a previous specimen from that patient</li> </ul>
Typing Data Is Not Yet Available	If typing data for a particular quarter is not available when returning your file, then please forward when available by email.

## Section 8 - Treatment

Treatment type	Please record if a patient was prescribed one of the following antimicrobial treatments for CDI: <ul style="list-style-type: none"> <li>• Enteral metronidazole (PO/NG/PR)</li> <li>• Enteral vancomycin (PO/NG/PR)</li> <li>• Fidaxomicin</li> <li>• Faecal Microbiota transplantation (FMT)</li> <li>• Other treatment types</li> <li>• No treatment</li> <li>• Treatment received but type unknown</li> </ul>
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## Additional Information

### Laboratory Testing Method Used:

**On biannual basis (or quarterly if preferred option for your hospital), the following additional information will be sought from participants:**

There are a variety of tests on the market for the detection of *C. difficile*. To aid in the interpretation of both local and national CDI trends, information on laboratory testing methods will be collected. If using the Excel data collection tool, a drop-down box is provided in the 'Hospital Data' worksheet.

### Information on Frequency of Testing:

To adjust for differences in the frequency of *C. difficile* testing across hospitals, information is captured on the number of faecal specimens tested for *C. difficile* in your laboratory for your hospital annually. Please select the number of specimens tested by your laboratory for each quarter of the year and include it in the reporting template.

### Information on Infection Prevention and Control Protocols:

There are ten Infection and Control Protocols listed on the 'Annual IPC return sheet'. Please complete this once a year, preferably with the Q3 and Q4 returns.

### HPSC Contact Details

We welcome comments and feedback on any aspect of this project. Please contact either Mairead O'Hanlon or HPSC Microbiology/Infection Control Team by phone or email as follows:

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## Appendix 1: Case Definitions for Enhanced Surveillance of *Clostridioides difficile* Infection

### CASE CLASSIFICATION

**A. Possible *Clostridioides difficile* infection (CDI) Case**

N/A

**B. Probable CDI Case**

N/A

**C. Confirmed CDI case**

**For surveillance purposes, a confirmed CDI case is a patient two years or older, to whom one or more of the following criteria applies:**

- Diarrhoeal\* stools or toxic megacolon, with either a:
  - Positive laboratory assay for *C. difficile* toxin A (TcdA) and/or toxin B (TcdB) in stools OR
  - Toxin-producing *C. difficile* organism detected in stool via culture or other means
- Pseudomembranous colitis (PMC) revealed by lower gastrointestinal endoscopy
- Colonic histopathology characteristic of *C. difficile* infection (with or without diarrhoea) on a specimen obtained during endoscopy, colectomy or autopsy

**\* Diarrhoea is defined as three or more loose/watery bowel movements (which are unusual or different for the patient) in a 24-hour period**

### CASE TYPE

**New Case of CDI:**

- The first episode of CDI, **OR**
- A subsequent episode of CDI with onset of symptoms more than eight weeks after the onset of a previous episode

**Recurrent Case of CDI:**

- A patient with an episode of CDI that occurs **within eight weeks** following the onset of a previous episode **provided that CDI symptoms from the earlier episode resolved with or without therapy**
- A patient with a **positive *C. difficile* test** between **3 to 8 weeks** after a previous positive specimen **AND** documented evidence that symptoms from the earlier episode had resolved, with or without therapy.

## ONSET

- **Healthcare onset** » Symptoms start during a stay in a healthcare facility
- **Community onset** » Symptoms start in a community setting, outside healthcare facilities
- **No information available** » If no information was available on onset of symptoms

## ORIGIN

- **Healthcare-associated case.** This is a CDI patient with either:
  - Onset of symptoms at least 48 hours following admission to a healthcare facility (healthcare-onset, healthcare-associated), OR
  - With onset of symptoms in the community within four weeks following discharge from a healthcare facility (community-onset, healthcare-associated).
- **Community-associated case.** This is a CDI patient with either:
  - Onset of symptoms while outside a healthcare facility, and without discharge from a healthcare facility within the previous 12 weeks (community-onset, community-associated), OR
  - With onset of symptoms within 48 hours following admission to a healthcare facility without residence in a healthcare facility within the previous 12 weeks (healthcare-onset, community-associated).
- **Healthcare exposure**
  - Onset 4-12 weeks from the last admission to a healthcare facility with at least one overnight stay ( HE: Dx 4-12 weeks HCF) OR
  - Onset within 12 weeks from outpatient procedures or day care not requiring an overnight stay ( HE: Ambulatory care)
- **No information available**

## SEVERE CDI Case

This is a CDI patient to whom any of the following criteria apply:

- Admission to an intensive care unit for treatment of CDI or its complications (e.g., for shock requiring vasopressor therapy)
- Surgery (colectomy) for toxic megacolon, perforation or refractory colitis
- Death within 30 days after diagnosis if CDI is either the primary or a contributive cause

## Appendix 2: How to Determine CDI Case Type

If the case definition is met, it is important to establish whether this is a first positive *C. difficile* test result or whether the patient has previously had a positive *C. difficile* test result:

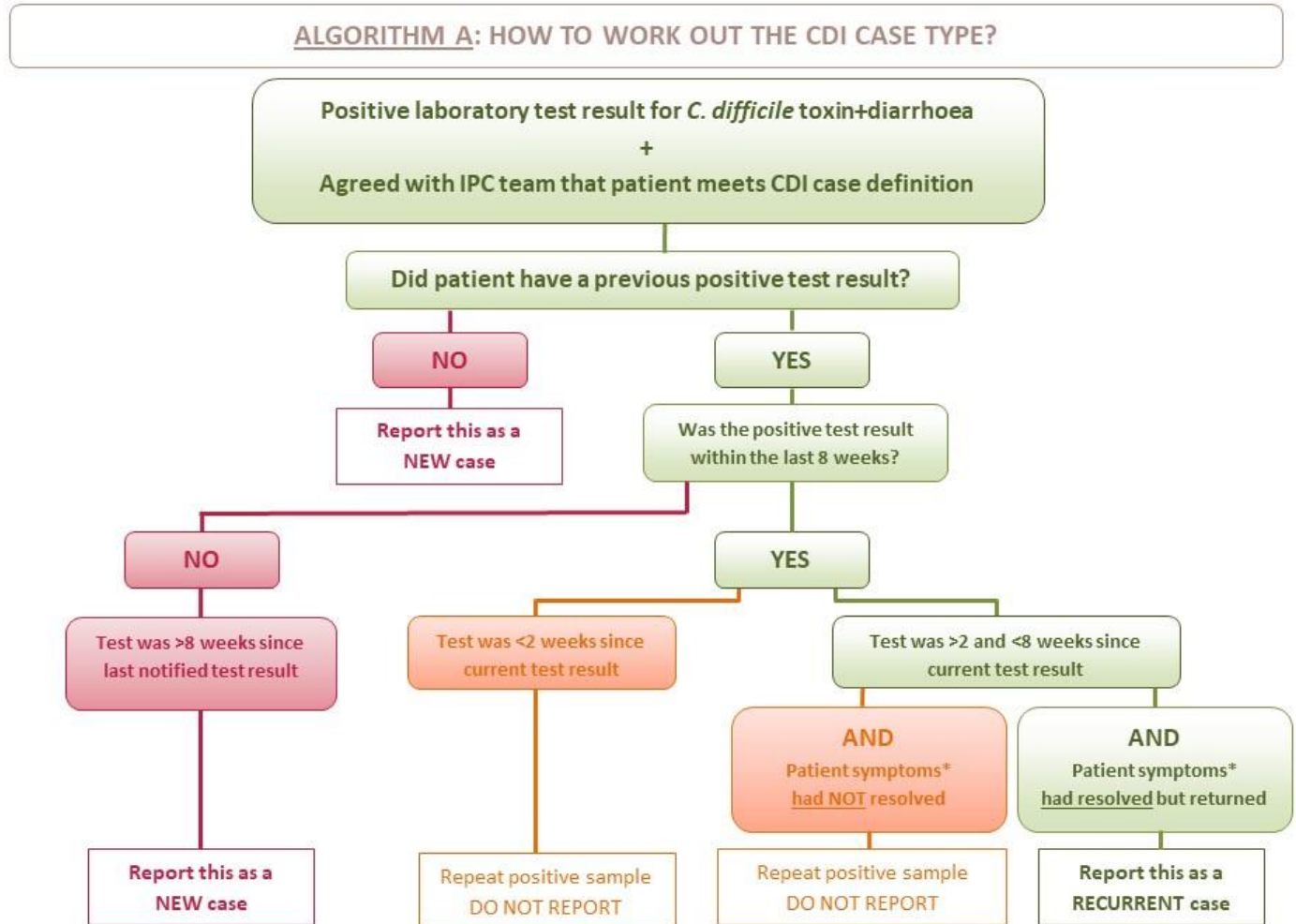
- a. if a first positive result, then this is a **notifiable new case of CDI**
- b. if the patient has previously had a positive result:
  - i. more than eight weeks prior and symptoms had resolved\* then this is a **notifiable new case of CDI**
  - ii. less than eight weeks prior and symptoms had resolved\* then this is a notifiable **recurrent case of CDI**
  - iii. and symptoms have not resolved, then this is a repeat positive specimen from the same CDI episode and is not notifiable
  - iv. less than two weeks prior, based on either the symptom end date or if that is not available, the first positive result date, then this is a repeat positive result and is not notifiable

In clinical practice, it is not possible to differentiate between a relapse involving the same strain and re-infection with a different strain. The term 'recurrent' is used as to capture both.

See **Algorithm A** of this protocol to help determine the case type of a CDI case when filling out the enhanced surveillance data.

\* The definition of a resolved case is that the patient has had no diarrhoea for at least 48 hours and has had a formed or normal stool for that patient.

## Algorithm A to Determine Case Type



\* If a patient's symptoms are not available then the specimen collected date may be used as a proxy date

## Appendix 3: How to Determine Origin of Infection

A healthcare facility is any acute care (e.g. hospital) or non-acute care (e.g. residential, long-term care, nursing home) facility in which skilled nursing care is provided and patients/residents are admitted at least overnight.

- **Healthcare-associated case (also must answer the 'Origin Facility' field)**

»This is a CDI case with either:

- Onset of symptoms at least 48 hours following admission to a healthcare facility\* (i.e. infection arising day three onwards – where date of admission = day one) (healthcare-onset, healthcare-associated)

OR

- With onset of symptoms in the community within four weeks following discharge from a healthcare facility (community-onset, healthcare-associated)

- **Healthcare Exposure case**

»This is a CDI case with either:

- Onset 4-12 weeks from the last admission to a healthcare facility with at least one overnight stay,  
OR
- Onset within 12 weeks from outpatient procedures or day care not requiring an overnight stay: e.g., day hospital, day surgery, dental surgery, oncology day wards, haematology day ward, haemodialysis.

- **Community-associated case**

»This is a CDI case with either:

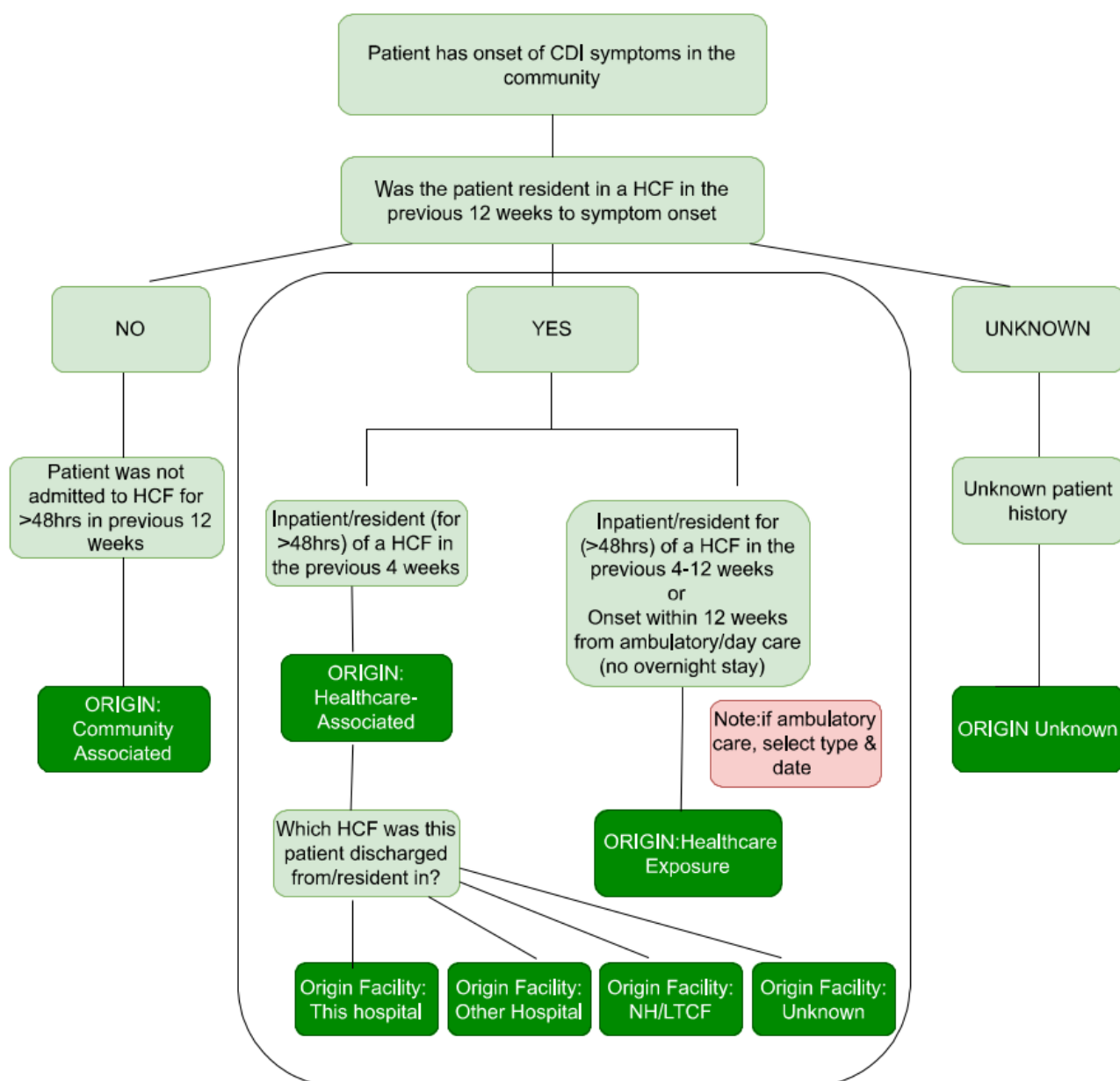
- Onset of symptoms while outside a healthcare facility and without discharge from a healthcare facility within the previous 12 weeks (community-onset, community-associated)  
OR
- With onset of symptoms within 48 hours following admission to a healthcare facility (i.e. symptom onset on day one or day two of admission) without residence in a healthcare facility within the previous 12 weeks (healthcare-onset, community-associated)

- **Information not available**

» If no information was available on a CDI case patient regarding origin of infection

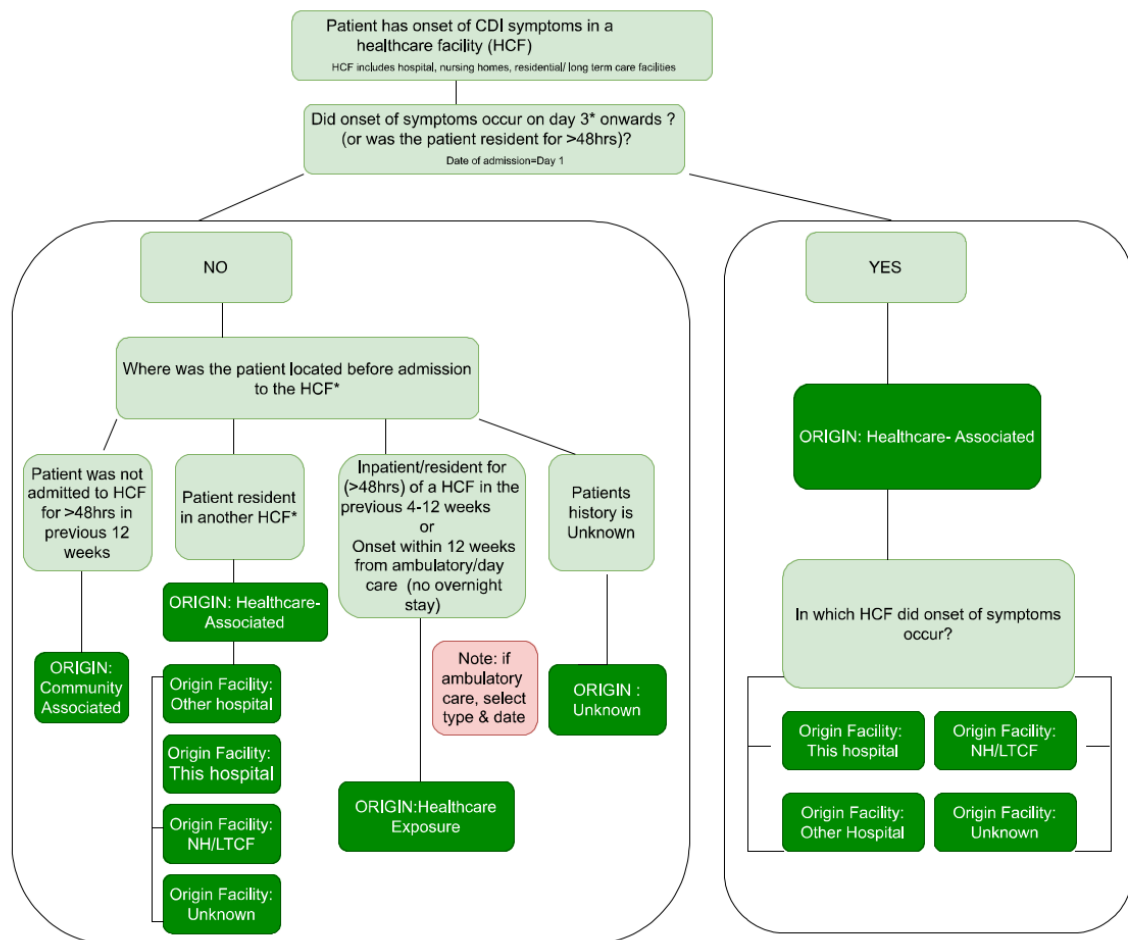
See **Algorithms B & C** on pages 18 and 19 of this protocol to help determine the origin of infection of a CDI case when filling out the enhanced surveillance data. The starting point of these algorithms is "Where did the onset of symptoms start?"

## Algorithm B - Onset of Symptoms in the Community



Ambulatory care includes day hospital, day surgery, dental surgery, oncology day wards, haematology day wards, haemodialysis. Please note also no overnight stay.

## Algorithm C - Onset of Symptoms in a Healthcare Facility



Ambulatory care includes day hospital, day surgery, dental surgery, oncology day wards, haematology day wards, haemodialysis. Please note also no overnight stay.