

**Protocol for the
Clostridioides difficile
snapshot programme**

**Version 4.0
September 2024**

Background

The Enteric Bacterial Infections Service (EBIS) at Scottish Microbiology Reference Laboratories (SMiRL, Glasgow), types isolates of *Clostridioides difficile* (*C. difficile*) sent from all NHS boards in Scotland as part of a representative typing surveillance – also known as the snapshot programme.

The snapshot programme was implemented in order to gain a better understanding of the epidemiology of *C. difficile* in Scotland by obtaining a representative collection of isolates originating from patients with mild, moderate and severe disease. The results have been reported in the quarterly and annual reports published by Antimicrobial and Resistance and Healthcare Associated Infection (ARHAI).¹

This protocol advises laboratories on how the isolates should be collected and submitted.

Culture of *C. difficile*

***C. difficile* should be cultured only from faecal diarrhoeal specimens that have tested positive for *C. difficile* toxin from symptomatic patients.**

Further advice on culturing *C. difficile* from faeces can be found in the **UK Standards for Microbiology Investigations Processing of Faeces for *Clostridium difficile***

Collection of *C. difficile* isolates

At the start of each quarter all laboratories should submit a defined number of consecutive isolates (see **Table 1** for individual laboratories) for ***C. difficile* infection (CDI)** patients aged 15 years and above. For example, if your laboratory has been assigned to submit 7 isolates per quarter, you should culture *C. difficile* from the first 7 **symptomatic** patients that have tested **toxin positive**. If isolates are culture negative (i.e. isolates are not *C. difficile* or not cultivable) additional isolates should be submitted until the defined number has been reached for the laboratory.

The Scottish Microbiology and Virology Network (SMVN) recommend testing for *C. difficile* in children aged 3 years and above.² Due to this recommendation, **all isolates from children aged 3-14 years** who test positive for CDI are requested to be **sent for typing** until further notice.

Request forms should be clearly labelled as “**snapshot**” by ticking the appropriate box.

In some instances, isolates might have been cultured to meet the outbreak/severe case criteria given in the national **CDI surveillance protocol**³. **If this is the case, please tick the appropriate boxes for the clinical submission and for the snapshot submission.**

Should there be no CDI cases during the collection period, or there are fewer cases than are required by the quota, please inform ARHAI and EBIS. Arrangements will be made to try to collect the necessary isolates outwith the designated collection period.

Collection periods

The collection periods start on the following dates:

- 1 January (QT1)
- 1 April (QT2)
- 1 July (QT3)
- 1 September (QT4)

Collection of isolates and submissions from the diagnostic laboratories is staggered to spread the workload for the reference laboratory. Thus, for the first collection period (QT1) some laboratories will collect and submit isolates in January, some in February and some in March (similar schedules will be followed in QT2, QT3 and QT4). See **Table 2** for time schedule.

At the beginning of each collection period, ARHAI will alert the technical head of each laboratory via email.

Storage of faecal specimens

Faecal specimens from which *C. difficile* has been isolated should be stored at -20°C. This will make a second culture possible if the first isolate is of insufficient quality for typing.

Submission of isolates for the snapshot programme

Pure cultures on Robertson's cooked meat medium should be submitted.

Turnaround time for snapshot isolates

As isolates submitted for routine surveillance purposes (severe disease and/or outbreaks) will have priority over isolates for the snapshot programme. **It is important to indicate on the request form what type of analysis is requested (routine typing, snapshot typing or both).**

The turnaround time for typing the isolates for the snapshot programme is estimated as 4 weeks.

Results from the snapshot programme will be analysed and presented in the **ARHAI quarterly epidemiological data commentaries** and **ARHAI Scotland annual reports**.

Further information

Further information about submission of isolates to the snapshot programme can be obtained from the EBIS website: <https://www.nhsggc.scot/downloads/ebis-c-difficile-request-form/>

Table 1: Number of isolates in patients aged 15 years and above each laboratory/hospital should submit to the CDI snapshot programme per quarter.

Laboratory/Hospital	NHS Board	Number of Isolates to submit*
Crosshouse Hospital	Ayrshire and Arran	10
Borders General Hospital	Borders	2
Dumfries & Galloway Royal Infirmary	Dumfries and Galloway	3
Fife Area Laboratory	Fife	8
Forth Valley Royal Hospital	Forth Valley	7
Aberdeen Royal Infirmary	Grampian	13
Queen Elizabeth University Hospital	Greater Glasgow & Clyde	14
Glasgow Royal Infirmary (incl. Clyde)	Greater Glasgow & Clyde	15
Raigmore Hospital	Highland	6
Monkland's Hospital	Lanarkshire	6
Hairmyres Hospital	Lanarkshire	4
Wishaw General Hospital	Lanarkshire	4
Royal Infirmary of Edinburgh	Lothian	15
St John's Hospital	Lothian	2
Balfour Hospital	Orkney	2
Gilbert Bain Hospital	Shetland	2
Perth Royal Infirmary	Tayside	2
Ninewells Hospital	Tayside	8
Western Isles Hospital	Western Isles	2
Golden Jubilee National Hospital	National Waiting Times	2

* This number **does not** include isolates for CDI in children aged 3-14 years, of which **all** should be submitted for typing in each submission period.

Table 2. Time schedule for submissions of isolates to the snapshot programme.

Submission group	Laboratories	Collection periods
Group A	Crosshouse Hospital Borders General Hospital Fife Area Laboratory Forth Valley Royal Hospital Aberdeen Royal Infirmary (incl. Orkney/Shetland isolates) Balfour Hospital Gilbert Bain Hospital	QT1: January QT2: April QT3: July QT4: October
Group B	Dumfries & Galloway Royal Infirmary Queen Elizabeth University Hospital Glasgow Royal Infirmary (incl. Clyde isolates) Golden Jubilee National Hospital Raigmore Hospital (incl. Oban isolates)	QT1: February QT2: May QT3: August QT4: November
Group C	Monkland's Hospital Hairmyres Hospital Wishaw General Hospital Royal Infirmary of Edinburgh St John's Hospital Perth Royal Infirmary Ninewells Hospital Western Isles Hospital	QT1: March QT2: June QT3: September QT4: December

References:

1. ARHAI Scotland. Quarterly epidemiological data commentaries. Available from: <https://www.nss.nhs.scot/antimicrobial-resistance-and-healthcare-associated-infection/data-and-intelligence/guidance-protocols-and-reports/>
2. Scottish Microbiology and Virology Network. SMVN Review of Clostridioides difficile diagnostic testing in NHS Scotland: Best practice recommendations Available from: [SMVN Guidelines – Scottish Microbiology and Virology Network \(nhs.scot\)](#)
3. ARHAI Scotland. Protocol for the Scottish Surveillance Programme for Clostridioides difficile infection: user manual. Available from: <https://www.nss.nhs.scot/publications/protocol-for-the-scottish-surveillance-programme-for-clostridioides-difficile-infection-user-manual/>