COVID-19: ICD-10 Analytical Guidance

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# Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foreword</td>
<td>2</td>
</tr>
<tr>
<td>General Information</td>
<td>3</td>
</tr>
<tr>
<td>ICD-10 Coding of COVID-19</td>
<td>4</td>
</tr>
<tr>
<td>Discharges up to 31 March 2020</td>
<td>4</td>
</tr>
<tr>
<td>Discharges from 01 April 2020</td>
<td>6</td>
</tr>
<tr>
<td>Summary</td>
<td>10</td>
</tr>
<tr>
<td>Document Control Sheet</td>
<td>12</td>
</tr>
<tr>
<td>Contact</td>
<td>12</td>
</tr>
</tbody>
</table>
Foreword

This document is designed to provide general information and instruction on analysis of COVID-19 recorded in Scottish Morbidity Records (SMR) using ICD-10 codes for the duration of the COVID-19 pandemic in Scotland. Analysts are encouraged to contact the Terminology Services helpdesk for assistance with specific COVID-19 queries and/or if they have further questions on COVID-19 related coding.

ICD-10 is an internationally recognised system used by healthcare providers to classify and code all diagnoses and symptoms recorded in conjunction with hospital care. It allows consistency when performing analysis for epidemiological purposes, health service planning and clinical audit. ICD-10 was created by and is maintained by the World Health Organisation (WHO), an agency of the United Nations responsible for international public health.

This guidance was correct as of June 2020 and may be subject to change. Please check Terminology Services website for updates at www.isdscotland.org/Products-and-Services/Terminology-Services/Coding-Information-for-Analysts
General Information

This document is designed to provide general information and instruction on analysis of COVID-19 recorded in Scottish Morbidity Records (SMR) using ICD-10 codes for the duration of the COVID-19 pandemic in Scotland. Analysts are encouraged to contact the Terminology Services helpdesk for assistance with specific COVID-19 queries and/or if they have further questions on COVID-19 related coding.

ICD-10 codes are used on SMR types: 01 – General / Acute Inpatient and Day Case, 02 – Maternity Inpatient and Day Case and 04 – Mental Health Inpatient and Day Case, to translate diagnoses of diseases and other health problems from words into an alphanumeric code and permit systematic recording, analysis, interpretation and comparison of data.

Chapter XXII Codes for Special Purposes (U00-U85) contains codes that are to be used for the provisional assignment of new diseases of uncertain aetiology as instructed by the WHO in emergency situations.

COVID-19, the clinical syndrome caused by the novel coronavirus ‘Severe Acute Respiratory Syndrome Coronavirus-2’ (SARS-CoV-2), (formerly known as 2019-nCoV) has been declared a pandemic by the WHO.

In February 2020, the WHO announced that ICD-10 Emergency use code U07.1. Emergency use of U07.1 must be assigned for confirmed cases of novel Coronavirus (2019-nCoV). As the pandemic situation developed, in March 2020, the WHO revised this definition and released a further emergency use code. As such, as of March 2020, COVID-19 codes and descriptions are:

- **U07.1 COVID-19, virus identified** is assigned to a disease diagnosis of COVID-19 confirmed by laboratory testing
- **U07.2 COVID-19, virus not identified** is assigned to a clinical or epidemiological diagnosis of COVID-19 where laboratory confirmation is inconclusive or not available

The **Scottish Clinical Coding Standards** (SCCS) provide a reference source primarily aimed at clinical coders to assist in the consistent application of codes at a national level. Currently (as of May 2020), there are three SCCS applicable to COVID-19 (SCCS 22, SCCS 24 and SCCS 25) which provide guidance on the use of COVID-19 codes. The guidance in the standards was updated as the codes and the definitions were released and changed by the WHO.

This guide has been created for analysts to aid in the accurate interpretation of COVID-19 related SMR data in relation to these changes in guidance.
ICD-10 Coding of COVID-19

For any time period, the external cause code Y95X Nosocomial condition may also be recorded in cases of confirmed hospital-acquired COVID-19. However, this code may appear in the record in relation to other conditions so please seek further guidance before performing analysis using this code.

Discharges up to 31 March 2020

In brief
To identify COVID-19 in SMR episodes for discharges up 31 March 2020, search for U07.1 in all diagnosis positions, B34.2 in all diagnosis positions and B97.2 in diagnosis positions 2–6 (caveats for use of B34.2 / B97.2 codes detailed below).

Rationale
SCCS 22 was released in February 2020 and applies for discharges up to and including 31 March 2020.

Please note: In accordance with WHO updates the code description of U07.1 in the reference files is ‘COVID-19, virus identified’. However, for discharges prior to 01 April, U07.1 represents all confirmed cases of COVID-19, either by a positive laboratory test (virus identified) or clinical diagnosis. The code description should be disregarded for this time period and guidance on analysis below followed.

U07.1 – COVID-19, virus identified

- Identifies confirmed cases of novel Coronavirus Severe Acute Respiratory Syndrome Coronavirus-2 (SARS-CoV-2) / COVID-19
- Confirmed cases could be either as result of positive laboratory test or clinical diagnosis by a responsible healthcare professional
- This code should be assigned in the primary diagnosis field for SMR01 as per SCCS 22. However, all positions on SMR01, SMR02 and SMR04 should be searched (see Note 1 below)

Note
1. U07.1 should not be in diagnosis position 1 (DG1) for SMR02 or SMR04, however, it is possible that it may appear in DG1 position in error.

Manifestation / Symptom coding

Manifestations or symptoms of the virus (if known) must also be recorded, such as pneumonia (for example J12.8) or cough (R05.X) and pyrexia (R50.9).
Sign / symptom codes from Chapter XVIII (aka ‘R’ codes) are not normally recorded when a definitive diagnosis is made, therefore analysts may see a rise in the number of non-specific sign and symptom coding for this period.

**B34.2 – Coronavirus infection, unspecified site**

- Identifies:
  - Other specified types of coronavirus, that is, not COVID-19 coronavirus, causing infection at a non-specified body site
  - Coronavirus, not otherwise specified (NOS): diagnostic term ‘coronavirus’ without any further specification that is, coronavirus where there is no information to specify what sub-type of virus it is, causing infection at a non-specified body site

- Search all positions on SMR01, SMR02 and SMR04 (see Note 2 below)

**Note**

2. B34.2 should not be in DG1 position for SMR02 or SMR04, however, it is possible that it may appear in DG1 position in error.

**B97.2 – Coronavirus as the cause of diseases classified to other chapters**

- Identifies:
  - Other specified types of coronavirus, that is, not COVID-19 coronavirus, as the cause of other diseases, for example, viral pneumonia
  - Coronavirus, not otherwise specified (NOS): diagnostic term where there is no information to specify what strain of coronavirus it is, as the cause of other diseases

- Search diagnosis positions 2–6 on SMR01, SMR02 and SMR04

**Why include B34.2 and B97.2 for COVID-19 analysis?**

For the duration of the pandemic it is likely that mention of ‘coronavirus’ without any further specification will relate to the pandemic strain. Therefore, it is advised that for this duration B34.2 and B97.2 should be included in the analysis of COVID-19.

Please be aware B34.2 and B97.2 also classify non-COVID-19 coronaviruses, therefore by including these codes in the count, this may inflate the COVID-19 figures and this data will have to be caveated as ‘possible’ COVID-19 (or similar). This is particularly true for paediatric patients as non-COVID-19 coronavirus infections are common in this group. As such, for paediatric admissions, the assumption that B34.2 or B97.2 represents COVID-19 may overestimate cases, which must be taken into consideration during analysis with further clinical guidance sought if required.
Be aware:

- Guidance for this time period states that manifestations of COVID-19 (if present) should be followed by B97.2. As such if U07.1 and B97.2 are recorded in the same SMR episode, this should be counted as one COVID-19 case.

- If U07.1 and B34.2 are recorded in the same SMR episode, this may represent a concurrent COVID-19 and non-COVID-19 coronavirus infection. This should be counted as one COVID-19 case.

**Discharges from 01 April 2020**

**In brief**

To identify COVID-19 in SMR episodes for discharges from 01 April 2020, search for U07.1 in all diagnosis positions, U07.2 in all diagnosis positions, B34.2 in all diagnosis positions and B97.2 in diagnosis positions 2–6 (caveats for use of B34.2 / B97.2 codes detailed below).

**Rationale**

SCCS 24 was released in April 2020 and applies for discharges from 01 April 2020. Due to further advice from WHO, SCCS 25 was released in May 2020 and superseded SCCS 24.

**U07.1 – COVID-19, virus identified**

- Code description updated to U07.1 COVID-19, virus identified
- Identifies COVID-19 confirmed by laboratory testing
- This code is likely to be assigned in the primary diagnosis field for SMR01, but it is acceptable in any position (dependant on the clinical situation). Therefore, all positions on SMR01, SMR02 and SMR04 should be searched (see Note 3 below)

**Note**

3. U07.1 should not be in DG1 position for SMR02 or SMR04, however, it is possible that it may appear in DG1 position in error.

**U07.2 COVID-19, virus not identified**

- Code description updated to U07.2 COVID-19, virus not identified
- Identifies COVID-19 diagnosed clinically or epidemiologically where laboratory confirmation is negative (see Note 4 below), inconclusive or not available / performed
- Clinical confirmation means that the healthcare professional (for example doctor, nurse) has made a clinical decision from the patient’s history, signs and symptoms that the patient has COVID-19
- Search all positions on SMR01, SMR02 & SMR04 (see Note 5 below)
For the duration of the pandemic U07.2 can be assigned even if the terms used by the responsible care professional to describe COVID-19 (or any synonymous terms for COVID-19, see Note 6 below) do not provide a definitive diagnosis, for example, ‘possible COVID-19’ or ‘suspected COVID-19’. This is to allow as many COVID-19 cases to coded, including suspect cases that would normally be assigned symptom codes in the absence of a definitive diagnosis.

**Note**

4. The inclusion of guidance on the use of U07.2 for clinical diagnosis with a negative test laboratory result was the principal guidance update between SCCS 24 and SCCS 25. There is a possibility in the 2–3 weeks between releases that some cases falling into this definition may have been not been coded with U07.2.

5. U07.2 should not be in DG1 position for SMR02 or SMR04, however, it is possible that it may appear in DG1 position in error.

6. Synonymous terms:
   - COVID-19 (various versions in terms of capital letters and small letters)
   - COVID/Covid (no number specification)
   - 2019 Coronavirus
   - SARS-CoV-2
   - 2019-nCoV
   - Novel Coronavirus
   - Severe acute respiratory syndrome coronavirus 2
   - Pandemic coronavirus
   - Wuhan Virus (WHO have advised this term should not be used, but it may be seen in earlier cases)

**Manifestation / Symptom coding**

Manifestations or symptoms of the virus (if known) must also be recorded such as pneumonia (for example J12.8) or cough (R05.X) and pyrexia (R50.9).

Sign / symptom codes from Chapter XVIII (aka ‘R’ codes) are not normally recorded when a definitive diagnosis is made therefore analysts may see a rise in the number of non-specific sign and symptom coding for this period.

**B34.2 – Coronavirus infection, unspecified site**

- Identifies:
  - Other specified types of coronavirus, that is, not COVID-19 coronavirus, causing infection at a non-specified body site
- Coronavirus, not otherwise specified (NOS): diagnostic term ‘coronavirus’ without any further specification that is, coronavirus where there is no information to specify what sub-type of virus it is, causing infection at a non-specified body site

- Search all positions on SMR01, SMR02 & SMR04 (see Note 7 below)

Note

7. B34.2 should not be in DG1 position for SMR02 or SMR04, however, it is possible that it may appear in DG1 position in error.

B97.2 Coronavirus as the cause of diseases classified to other chapters

- Identifies:
  - Other specified types of coronavirus, that is, not COVID-19 coronavirus, as the cause of other diseases, for example, viral pneumonia
  - Coronavirus, not otherwise specified (NOS): diagnostic term ‘coronavirus’ where there is no information to specify what strain of coronavirus it is, as the cause of other diseases

- Search positions 2–6 on SMR01, SMR02 and SMR04

Why include B34.2 and B97.2 for COVID-19 analysis?

For the duration of the pandemic it is likely that mention of ‘coronavirus’ without any further specification will relate to the pandemic strain. Therefore, it is advised that for this duration B34.2 and B97.2 should be included in the analysis of COVID-19.

Please be aware B34.2 and B97.2 also classify non-COVID-19 coronaviruses, therefore by including these codes in the count, this may inflate the COVID-19 figures and this data will have to be caveated as ‘possible’ COVID-19 (or similar). This is particularly true for paediatric patients as non-COVID-19 coronavirus infections are common in this group. As such, for paediatric admissions, the assumption that B34.2 or B97.2 represents COVID-19 may overestimate cases, which must be taken into consideration during analysis with further clinical guidance sought if required.

In addition, for discharges from 01 April 2020, for the duration of the pandemic, B34.2 and B97.2 can be assigned even if the terms used by the responsible care professional to describe coronavirus NOS do not provide a definitive diagnosis, for example, ‘possible coronavirus’ or ‘suspected coronavirus’. This is to allow as many cases as possible to be captured, including suspect cases, that would normally be assigned symptoms codes in the absence of a definitive diagnosis.
Be aware:

- Guidance for this time period states that manifestations of COVID-19 (if present) should be NOT followed by B97.2

- If U07.1 or U07.2 is recorded with B34.2 or B97.2 in the same SMR episode, this may represent a concurrent COVID-19 and non-COVID-19 coronavirus infection. This should be counted as one COVID-19 case
Summary

The following ICD-10 codes – and criteria / caveats clarifying what they classify – must be used when analysing COVID-19 for the duration of the COVID-19 pandemic in Scotland.

Reminder: it is likely that ‘coronavirus’ without any further specification will relate to the COVID-19 strain. Therefore, it is advised that B34.2 and B97.2 should be included in analysis, but please be aware that these codes also classify non-COVID-19 coronaviruses and as such this data will have to be caveated, particularly for paediatric admissions.

Discharges up to 31 March 2020

<table>
<thead>
<tr>
<th>ICD-10 code</th>
<th>Criteria/Caveats</th>
<th>SMR type and position</th>
</tr>
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<tbody>
<tr>
<td>U07.1</td>
<td>Confirmed cases of novel Coronavirus (2019-nCoV) / COVID-19</td>
<td>SMR01 – all positions&lt;br&gt;SMR02 – all positions (see Note * below)&lt;br&gt;SMR04 – all positions (see Note * below)</td>
</tr>
<tr>
<td>B34.2</td>
<td>The term ‘coronavirus’ without any further specification&lt;br&gt;Other specified types of coronavirus, that is, not COVID-19 coronavirus</td>
<td>SMR01 – all positions&lt;br&gt;SMR02 – all positions (see Note * below)&lt;br&gt;SMR04 – all positions (see Note * below)</td>
</tr>
<tr>
<td>B97.2</td>
<td>The term ‘coronavirus’ without any further specification (as the cause of other diseases)&lt;br&gt;Other specified types of coronavirus, that is, not COVID-19 coronavirus (as the cause of other diseases)</td>
<td>SMR01 – positions 2–6&lt;br&gt;SMR02 – positions 2–6&lt;br&gt;SMR04 – positions 2–6</td>
</tr>
</tbody>
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Note

* U07.1, U07.2 and B34.2 should not be in DG1 position for SMR02 or SMR04, however, it is possible that it may appear in DG1 position in error.
### Discharges from 01 April 2020

<table>
<thead>
<tr>
<th>ICD-10 code</th>
<th>Criteria/Caveats</th>
<th>SMR type and position</th>
</tr>
</thead>
</table>
| **U07.1**   | COVID-19 confirmed by laboratory testing | SMR01 – all positions  
SMR02 – all positions (see Note * below)  
SMR04 – all positions (see Note * below) |
| **U07.2**   | COVID-19 diagnosed clinically or epidemiologically where laboratory confirmation is negative, inconclusive or not available / performed | SMR01 – all positions  
SMR02 – all positions (see Note * below)  
SMR04 – all positions (see Note * below) |
| **B34.2**   | The term ‘coronavirus’ without any further specification | SMR01 – all positions  
SMR02 – all positions (see Note * below)  
SMR04 – all positions (see Note * below) |
|             | Other specified types of coronavirus, that is, not COVID-19 coronavirus | |
| **B97.2**   | The term ‘coronavirus’ without any further specification (as the cause of other diseases) | SMR01 – positions 2–6  
SMR02 – positions 2–6  
SMR04 – positions 2–6 |
|             | Other specified types of coronavirus, that is, not COVID-19 coronavirus (as the cause of other diseases) | |

**Note**

* **U07.1, U07.2 and B34.2** should not be in DG1 position for SMR02 or SMR04, however, it is possible that it may appear in DG1 position in error.*
Document Control Sheet

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Version History

<table>
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<th>Version</th>
<th>Date</th>
<th>Summary of changes</th>
<th>Author</th>
</tr>
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<tr>
<td>V0.1-0.3</td>
<td>27 April 2020</td>
<td>Initial early drafts and team discussion</td>
<td>Murray Bell</td>
</tr>
<tr>
<td>V0.4</td>
<td>14 May 2020</td>
<td>Draft sent to CPHMs/ Principle Information Analyst for comment</td>
<td>Morag Christie</td>
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<tr>
<td>V0.5</td>
<td>09 May 2020</td>
<td>Draft amended to incorporate comments and sent round for further comment</td>
<td>Morag Christie</td>
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<tr>
<td>1.0</td>
<td>15 June 2020</td>
<td>Finalised version for publications</td>
<td>Morag Christie</td>
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<tr>
<td>1.1</td>
<td>18 August 2020</td>
<td>Amended summary tables (pages 10 and 11)</td>
<td>Morag Christie</td>
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<tr>
<td>1.2</td>
<td>19 August 2020</td>
<td>Amended incorrect text on pages 5, 6, 8 and 9 (code B34.9 changed to B34.2)</td>
<td>Morag Christie</td>
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