Australian Government
Australian Digital Health Agency

Pathology Report
CDA Implementation Guide

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Document information

Key information

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Product or document version history

Product or document version	Date	Release comments
1.0	31 Dec 2014	Initial release.
2.0	26 April 2022	Introduction of support for structured pathology results. Pathology Report v2.0 issues Pathology Report with Structured Clinical Content CDA Implementation Guide v1.0 for use with amendment to allow for multiple REPORTING PATHOLOGIST in the CONTEXT.

Table of contents

1 Introduction

1.1 Document purpose

This document provides a guide to implementing the logical model detailed by the Australian Digital Health Agency's Pathology Report (PR) Structured Content Specification (SCS) as an HL7 Clinical Document Architecture (CDA) Release 2 XML document. This implementation guide is based on version 2.0 of the PR SCS [DH2022a]. The primary aim of the implementation guide is to take implementers step by step through mapping each data component of the PR SCS to a corresponding CDA attribute or element.

This implementation guide contains descriptions of both constraints on the CDA and, where necessary, custom extensions to the CDA, for the purposes of fulfilling the requirements for Australian implementations of PR. The resulting CDA document can be used for the electronic exchange of PR information between healthcare providers.

In addition, this implementation guide presents conformance requirements against which implementers can attest the conformance of their systems.

The following specification is referred to in the text in such a way that some or all of its content constitutes requirements for the purposes of this specification:

- Pathology Report with Structured Clinical Content CDA Implementation Guide v1.0 [DH2022c]

This release is intended to inform, and seek feedback from, prospective software system designers and their clinical consultants.

We value your questions, comments, and suggestions about this document. Please direct your questions or feedback to help@digitalhealth.gov.au.

1.2 Pathology Report definition

A Pathology Report is defined in the PR SCS [DH2022a] as:

> A set of one or more results of pathology tests and their associated interpretation.

1.3 HL7 Clinical Document Architecture

The CDA is a document markup standard that specifies the structure and semantics of clinical documents for the purpose of supporting interoperable exchange and use at human and system levels.

CDA has been chosen as the format for electronic clinical documents because it is consistent with the Agency's commitment to a service and document–oriented approach to electronic information exchange, which will contribute to future electronic health records.

Some of the advantages of CDA are:

- It is machine computable and human readable.
- It provides a standardised display of clinical information without loss of clinical meaning.

- It provides assurance of clinical quality and safety more effectively than message-based interfaces, by storing and displaying the clinical data as entered by the clinician.
- It provides better support than HL7 V2 messages for:
  - more complex information structures, such as pathology synoptic reporting; and
  - terminologies such as SNOMED CT®.
- It supports legal attestation by the clinician (requiring that a document has been signed manually or electronically by the responsible individual).
- It is able to be processed by unsophisticated applications (displayed in web browsers, for instance).
- It provides a number of levels of compliance to assist with technical implementation and migration.
- It aligns Australia with e-health initiatives in other countries (such as Canada, UK, USA, Brazil, Germany, and Finland).

1.4 Intended audience

This document is aimed at software development teams, architects, designers, clinicians, and informatics researchers who are responsible for the delivery of clinical applications, infrastructure components and messaging interfaces, and also for those who wish to evaluate the clinical suitability of the Agency-endorsed specifications.

This document and related artefacts are technical in nature and the audience is expected to be familiar with the language of health data specifications and to have some familiarity with health information standards and specifications, such as CDA and Standards Australia IT-014 documents. Definitions and examples are provided to clarify relevant terminology usage and intent.

1.5 Document scope

A pathology report is created by an authoring pathology provider in response to a pathology order and contains a pathologist's analysis of one or more test results. The original diagnostic report may be attached in one or more formats (e.g. PDF and MS Word) that may contain one or more pathology test results. Thus, the values of pathology report elements present in structured data elements, and present in an attached report shall be consistent.

Support for general pathology (including biochemistry, haematology, and microbiology) is provided. Other areas, such as anatomical pathology and genetics, have not been fully considered in the design and further enhancement to the model will be required to meet the full spectrum of pathology results.

Full support for structured pathology reporting as defined in RCPA's structured pathology reporting of cancer [RCPA2021] is not yet supported. It is expected that this support is best handled by a set of designs that represent the structured reporting requirements for each specific protocol.

This specification is intended to be compatible with the previous version of this specification [NEHT2013y], (which does not have structured clinical content), and with the specification of structured pathology results in Event Summary CDA Implementation Guide [NEHT2015f]. It does not include any revision to the underlying concept of pathology test result.

This document is not to be used as a guide to presentation (or rendering) of the data. It contains no information as to how the data described by it should be displayed and no such guidance should be inferred from this document.

1.6 Keywords

Where used in this document, the keywords **SHALL**, **SHOULD**, **MAY**, **SHALL NOT** and **SHOULD NOT** are to be interpreted as described in Key Words for Use in RFCs to Indicate Requirement Levels [RFC2119].

Keyword	Interpretation
SHALL	This word, or the term **REQUIRED**, means that the statement is an absolute requirement of the specification.
SHOULD	This word, or the term **RECOMMENDED**, means that there may exist valid reasons in particular circumstances to ignore a particular item, but the full implications must be understood and carefully weighed before choosing a different course.
MAY	This word, or the term **OPTIONAL**, means that an item is truly optional. One implementer may choose to include the item because a particular implementation requires it, or because the implementer determines that it enhances the implementation while another implementer may omit the same item. An implementation which does not include a particular option must be prepared to interoperate with another implementation which does include the option, perhaps with reduced functionality. In the same vein, an implementation which does include a particular option must be prepared to interoperate with another implementation which does not include the option (except of course, for the feature the option provides).
SHALL NOT	This phrase means that the statement is an absolute prohibition of the specification.
SHOULD NOT	This phrase, or the phrase **NOT RECOMMENDED** means that there may exist valid reasons in particular circumstances when the particular behaviour is acceptable or even useful, but the full implications should be understood and the case carefully weighed before implementing any behaviour described with this label.

1.7 Conformance

This document describes how the SCS is implemented as a CDA document. Conformance claims are not made against this implementation guide directly; rather, they are made against additional conformance profiles documented elsewhere. Any document that claims conformance to any derived conformance profile **SHALL** meet these base requirements:

- It **SHALL** be a valid HL7 CDA instance. In particular:
  - It **SHALL** be valid against the HL7 CDA Schema (once extensions have been removed, see W3C XML Schema).
  - It **SHALL** conform to the HL7 V3 R1 data type specification.
  - It **SHALL** conform to the semantics of the RIM and Structural Vocabulary.
- It **SHALL** be valid against the Australian Digital Health Agency CDA Schema that accompanies this implementation guide after any additional extensions not in the Australian Digital Health Agency extension namespace have been removed, along with any other CDA content not described by this implementation guide.
- It **SHALL** use the mappings as they are stated in this document.

- It **SHALL** use all fixed values specified in the mappings (e.g. @attribute="`FIXED_VALUE`").
- If the vocabulary has been explicitly stated as 'NS' it **SHALL** be interpreted as:

  NS = In the absence of national standard code sets, the code sets used SHALL be registered code sets, i.e. registered through the HL7 code set registration procedure [HL7OID] with an appropriate object identifier (OID), and **SHALL** be publicly available.

  When national standard code sets become available, they **SHALL** be used and the non-standard code sets **SHALL** be deprecated.
- It **SHALL** be valid against the additional conformance requirements that are established in this document (i.e. any normative use of the word 'shall' identified by the term presented in uppercase and bold typeface).
- The narrative **SHALL** conform to the requirements described in this implementation guide.
- The document **SHALL** conform to the requirements specified in the CDA Rendering Specification [NEHT2012s].
- The data as contained in the data types **SHALL** conform to the additional data type specification [NEHT2010c].
- Any additional content included in the CDA document that is not described by this implementation guide **SHALL NOT** qualify or negate content described by this implementation guide and it **SHALL** be clinically safe for receivers of the document to ignore the non-narrative additions when interpreting the existing content.

A system that *consumes* PR CDA documents may claim conformance if it correctly processes conformant instance documents, including correctly understanding all the information in the header. It may, but is not required to, reject non-conformant documents. Conformant systems that consume PR CDA documents are not required to process any or all of the structured data entries in the CDA document, but they **SHALL** be able to correctly render the document for end-users when appropriate.

Conformance profiles of this document **MAY** make additional rules that override this document in regard to:

- Allowing the use of alternative value sets in place of the value sets specified in this document.
- Allowing the use of alternative identifiers in place of the Healthcare Identifiers Service identifiers.
- Making required data elements and section divisions optional.

1.8 Known issues

This table lists known issues with this specification at the time of publishing. We are working on solutions to these issues and encourage comments to help us develop these solutions.

Reference	Description
Presentation and format	This specification issues an existing 2016 specification (Pathology Report with Structured Clinical Content CDA Implementation Guide v1.0) for use in 2022. Due to tooling obsolescence that specification is issued as originally constructed in 2016 with amendments specified in this specification in chapter 2. Pathology Report Document Template.
Pathology Test Result extant design issues	This specification is intentionally constrained to maximise compatibility with both Pathology Report CDA Implementation Guide [NEHT2013y] and with the specification of pathology clinical content in Event Summary CDA Implementation Guide [NEHT2015f]. Therefore, known limitations with the existing CDA mappings model have not been addressed.
Alignment with the HL7™ Fast Healthcare Interoperability Resources (FHIR®) standard	The concept of a pathology report, as modelled in this specification, is not fully consistent with HL7 FHIR resources. This specification is intentionally constrained to the 2016 Pathology Test Result DCM and as such known limitations with the underlying model in alignment to FHIR have not been addressed.
Superseded standards	The model of a pathology report, as defined in this specification, makes use of superseded standards including terminology. This specification is intentionally constrained to the 2016 Pathology Test Result DCM and as such known limitations with the model in its use of superseded standards have not been addressed.
Appendice CDA XML style colours	The colour styling applied to CDA XML in B.1 and C.1 differ slightly.

2 Pathology Report Document Template

A Pathology Report **SHALL** conform to the requirements specified in Pathology Report with Structured Clinical Content CDA Implementation Guide v1.0 [DH2022c].

1. An instance of a HL7 Clinical Document Architecture (CDA) Release 2 XML document that claims conformance to this specification **SHALL** contain exactly one `ClinicalDocument/templateId` such that it:
    a. **SHALL** contain exactly one `@root=" 1.2.36.1.2001.1001.100.1002.220"`
    b. **SHALL** contain exactly one `@extension="2.0"`

This specification, Pathology Report CDA Implementation Guide v2.0.0, grants permission to use and disclose the content of Pathology Report with Structured Clinical Content CDA Implementation Guide v1.0 [DH2022c] under the conditions and limitations in the front matter of this specification.

2.1 Amendment of Pathology Report with Structured Clinical Content CDA Implementation Guide v1.0

The following amendments to the requirements of Pathology Report with Structured Clinical Content CDA Implementation Guide v1.0 [DH2022c] apply.

3 Pathology Report with Structured Clinical Content Data Hierarchy

Replace the cardinality of the REPORTING PATHOLOGIST in the CONTEXT with "1..*".

6.1 Pathology Report with Structured Clinical Content (PATHOLOGY REPORT), CDA Mapping

In the row for Pathology Report with Structured Clinical Content > REPORTING PATHOLOGIST, replace the value in the "Card" column with "1..*".

In the row for Pathology Report with Structured Clinical Content > REPORTING PATHOLOGIST, delete the following from the "Comments" column:

> A Pathology Report **SHALL** contain one instance of REPORTING PATHOLOGIST in the CONTEXT (section/author), or contain one instance of REPORTING PATHOLOGIST in each instance of Pathology Test Result (section/component/section/participant), but not both.

7.1.1.1.1 Test Specimen Detail (SPECIMEN), CDA Mapping

In the CDA Schema Element for entryRelationship[specimen]/observation/code/@code, replace the value "102.16156.220.2.1" with "102.16156".

7.1.1.2 REPORTING PATHOLOGIST, Relationships

In the Parent table, replace the value in the " Occurrences (child within parent)" column with "1..*".

7.1.1.2 REPORTING PATHOLOGIST, CDA Mapping

In the row for REPORTING PATHOLOGIST, replace the value in the "Card" column with "1..*".

In the row for REPORTING PATHOLOGIST, delete the following from the "Comments" column:

> A Pathology Report **SHALL** contain one instance of REPORTING PATHOLOGIST in the CONTEXT (section/author), or contain one instance of REPORTING PATHOLOGIST in each instance of Pathology Test Result (section/component/section/participant), but not both.

7.1.1.1.3 REPORTING PATHOLOGIST, CDA Mapping

In the row for REPORTING PATHOLOGIST, replace the value in the "Card" column with "0..1".

In the row for REPORTING PATHOLOGIST, delete the following from the "Comments" column:

> A Pathology Report **SHALL** contain one instance of REPORTING PATHOLOGIST in the CONTEXT (section/author), or contain one instance of REPORTING PATHOLOGIST in each instance of Pathology Test Result (section/component/section/participant), but not both.

Appendix A Change history

This appendix provides a list of normative and substantive changes since the previous version of this specification.

A.1 Changes from v1.0 published , 31 December 2014

Pathology Report v2.0 issues Pathology Report with Structured Clinical Content CDA Implementation Guide v1.0 [DH2022c] for use with amendment.

Changes comprise alterations and additions to Pathology Report v1.0 by incorporating the requirements of Pathology Report with Structured Clinical Content CDA Implementation Guide v1.0 [NEHT2013y] with amendments applied.

ID	Document Section		Change Type	Change Detail
	No.	Title		
1	Throughout document		Backwards compatible	codeSystemName attribute relaxed to optional
2	5.1	ClinicalDocument	Not backwards compatible	Changed ClinicalDocument/templateId/@extension from 1.0 to 2.0
3	6.1.3	ORDER DETAILS	Backwards compatible	Added Requested Test Name (Order Name) 0..1
4	6.1.4	REQUESTER	Backwards compatible	Changed Participation Period from 1..1 to 0..1
5	7.1.1	PATHOLOGY	Backwards compatible	Added constraint from the conformance profile to the CDA Implementation Guide: The title **SHALL** only be present where narrative (section/text) is present.
6				Changed REPORTING PATHOLOGIST from 1..1 to 1..*
7				Changed RELATED DOCUMENT from 1..1 to 0..1
8	7.1.1.1	PATHOLOGY TEST RESULT	Backwards compatible	Changed advice of Pathology Test Result Name from NS to the advice that code SHOULD be from the set of codes recommended for pathology terminology by the RCPA
9				Changed Test Specimen Detail (SPECIMEN) from 1..1 to 1…*
10				Added Clinical Information Provided 0..1
11				Added Result Group (PATHOLOGY TEST RESULT GROUP) 0..*

ID	Document Section		Change Type	Change Detail
	No.	Title		
12				Added Pathological Diagnosis 0..*
13				Added Conclusion (Pathology Test Conclusion) 0..1
14				Added Test Result Representation 0..1
15				Added Test Comment 0..1
16				Added TEST REQUEST DETAILS 0..*
17				Added TEST REQUEST DETAILS > Requester Order Identifier (Order Identifier) 0..1
18				Added TEST REQUEST DETAILS > Test Requested Name 0..*
19				Added TEST REQUEST DETAILS > Laboratory Test Result Identifier 0..1
20				Added REPORTING PATHOLOGIST 0..1
21	7.1.1.1.1	Test Specimen Detail (SPECIMEN)	Backwards compatible	Changed Test Specimen Detail (SPECIMEN) from 1..1 to 1…*
22				Added Specimen Tissue Type 0..1
23				Added Collection Procedure 0..1
24				Added Anatomical Site (ANATOMICAL LOCATION) 0..*
25				Added Anatomical Site (ANATOMICAL LOCATION) > SPECIFIC LOCATION > Anatomical Location Name 0..1
26				Added Anatomical Site (ANATOMICAL LOCATION) > SPECIFIC LOCATION > Side 0..1
27				Added Anatomical Site (ANATOMICAL LOCATION) > Anatomical Location Description 0..1
28				Added Anatomical Site (ANATOMICAL LOCATION) > Anatomical Location Image 0..*
29				Added Physical Details (PHYSICAL PROPERTIES OF AN OBJECT) > Weight 0..*
30				Added Physical Details (PHYSICAL PROPERTIES OF AN OBJECT) > Description (Object Description) 0..*
31				Added Physical Details (PHYSICAL PROPERTIES OF AN OBJECT) > Image 0..*
32				Added Physical Details (PHYSICAL PROPERTIES OF AN OBJECT) > DIMENSIONS > Volume 0..*
33				Added COLLECTION AND HANDLING > Sampling Preconditions 0..1

ID	Document Section		Change Type	Change Detail
	No.	Title		
34				Added HANDLING AND PROCESSING > Collection Setting 0..1
35				Added HANDLING AND PROCESSING > Date and Time of Receipt (DateTime Received) 0..1
36				Added IDENTIFIERS > Specimen Identifier 0..1
37				Added IDENTIFIERS > Parent Specimen Identifier 0..1
38				Added IDENTIFIERS > Container Identifier 0..1
39	7.1.1.1.2	Result Group (PATHOLOGY TEST RESULT GROUP)	Backwards compatible	Added 7.1.1.1.2 Result Group (PATHOLOGY TEST RESULT GROUP)
40				Added Result Group (PATHOLOGY TEST RESULT GROUP) 0..* with the following logical children.
41				Added Pathology Test Result Group Name 1..1
42				Added Result (INDIVIDUAL PATHOLOGY TEST RESULT) 1..*
43				Added Result (INDIVIDUAL PATHOLOGY TEST RESULT) > Individual Pathology Test Result Name 1..1
44				Added Result (INDIVIDUAL PATHOLOGY TEST RESULT) > Result Value (INDIVIDUAL PATHOLOGY TEST RESULT VALUE) > Individual Pathology Test Result Value 1..1
45				Added Result (INDIVIDUAL PATHOLOGY TEST RESULT) > Result Value (INDIVIDUAL PATHOLOGY TEST RESULT VALUE) > Individual Pathology Test Result Value Reference Ranges (REFERENCE RANGE DETAILS) 0..1
46				Added Result (INDIVIDUAL PATHOLOGY TEST RESULT) > Individual Pathology Test Result Comment 0..*
47				Added Result (INDIVIDUAL PATHOLOGY TEST RESULT) > Individual Pathology Test Result Reference Range Guidance 0..1
48				Added Result (INDIVIDUAL PATHOLOGY TEST RESULT) > Individual Pathology Test Result Status 1..1
49				Added Result (INDIVIDUAL PATHOLOGY TEST RESULT) > Result Group Specimen Detail (SPECIMEN) 0..1
50	7.1.1.1.2.1	Individual Pathology Test Result Value Reference Ranges	Backwards compatible	Added 7.1.1.1.2.1 Individual Pathology Test Result Value Reference Ranges (REFERENCE RANGE DETAILS)
51				Added Individual Pathology Test Result Value Reference Ranges (REFERENCE RANGE DETAILS) 0..1 with the following logical children

ID	Document Section		Change Type	Change Detail
	No.	Title		
52		(REFERENCE RANGE DETAILS)		Added Normal Status 0..1
53				Added REFERENCE RANGE 0..*
54				Added REFERENCE RANGE > Reference Range Meaning 1..1
55				Added REFERENCE RANGE > Reference Range 1..1
56	7.1.1.1.2.2	Result Group Specimen Detail (SPECIMEN)	Backwards compatible	Added 7.1.1.1.2.2 Result Group Specimen Detail (SPECIMEN)
57				Added Result Group Specimen Detail (SPECIMEN) 0..1 with the following logical children
58				Added Specimen Tissue Type 0..1
59				Added Collection Procedure 0..1
60				Added Anatomical Site (ANATOMICAL LOCATION) 0..*
61				Added Anatomical Site (ANATOMICAL LOCATION) > SPECIFIC LOCATION > Anatomical Location Name 0..1
62				Added Anatomical Site (ANATOMICAL LOCATION) > SPECIFIC LOCATION > Side 0..1
63				Added Anatomical Site (ANATOMICAL LOCATION) > Anatomical Location Description 0..1
64				Added Anatomical Site (ANATOMICAL LOCATION) > Anatomical Location Image 0..*
65				Added Physical Details (PHYSICAL PROPERTIES OF AN OBJECT) > Weight 0..*
66				Added Physical Details (PHYSICAL PROPERTIES OF AN OBJECT) > Description (Object Description) 0..*
67				Added Physical Details (PHYSICAL PROPERTIES OF AN OBJECT) > Image 0..*
68				Added Physical Details (PHYSICAL PROPERTIES OF AN OBJECT) > DIMENSIONS > Volume 0..*
69				Added COLLECTION AND HANDLING > Sampling Preconditions 0..1
70				Added HANDLING AND PROCESSING > Date and Time of Collection (Collection DateTime) 1..1
71				Added HANDLING AND PROCESSING > Collection Setting 0..1
72				Added HANDLING AND PROCESSING > Date and Time of Receipt (DateTime Received) 0..1

ID	Document Section		Change Type	Change Detail
	No.	Title		
73				Added IDENTIFIERS > Specimen Identifier 0..1
74				Added IDENTIFIERS > Parent Specimen Identifier 0..1
75				Added IDENTIFIERS > Container Identifier 0..1
76	7.1.1.1.3	REPORTING PATHOLOGIST	Backwards compatible	Added 7.1.1.1.3 REPORTING PATHOLOGIST
77				Added REPORTING PATHOLOGIST 0..1
78				Constrained REPORTING PATHOLOGIST child data components to match the child data components of 7.1.1.2 REPORTING PATHOLOGIST
79	7.1.1.2	REPORTING PATHOLOGIST	Backwards compatible	Changed REPORTING PATHOLOGIST from 1..1 to 1..*
80	7.1.1.3	RELATED DOCUMENT	Backwards compatible	Changed RELATED DOCUMENT from 1..1 to 0..1

Appendix B Example SARS-CoV-2 (COVID-19) PCR for Mrs. Anne THOMPSON

This informative appendix provides an example report for a SARS-CoV-2 (COVID-19) PCR that conforms to the requirements for a Pathology Report CDA document defined in this implementation guide:

- B.1 shows a HL7 Clinical Document Architecture (CDA) Release 2 XML document
- B.2 shows a sample CDA Stylesheet rendering of the XML in B.1
- B.3 shows a sample PDF report, representing the attached PDF for this test

B.1 CDA XML

```
<!-- This example is provided for illustrative purposes only. It has had no clinical validation.
While every effort has been taken to ensure that the examples are consistent with the message specification, where there are conflicts with the written
message specification or schema, the specification or schema  shall be considered to take precedence -->

<!-- Clinical Document XML sample instance for COVID-19 Test Report -->
<ClinicalDocument xmlns="urn:hl7-org:v3" xmlns:ext="http://ns.electronichealth.net.au/Ci/Cda/Extensions/3.0"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
    <typeId root="2.16.840.1.113883.1.3" extension="POCD_HD000040"/>

    <!--ClinicalDocument (Pathology Report) templateId as defined in Pathology Report
    v2.0 and Pathology Report with Structured Clinical Content v1.0 -->
    <templateId root="1.2.36.1.2001.1001.100.1002.220" extension="2.0"/>
    <!--CDA Rendering Specification templateId-->
    <templateId root="1.2.36.1.2001.1001.100.149" extension="1.0"/>

    <!--Document Instance Identifier-->
    <id root="2.25.226897767863207584287684917316468756 97"/>

    <!-- Document Type -->
    <code code="100.32001" codeSystem="1.2.36.1.2001.1001.101" codeSystemName="NCTIS Data Components" displayName="Pathology Report"/>

    <!--  Document Title-->
    <title>SARS-CoV-2 (COVID-19) PCR for Mrs. Anne THOMPSON</title>

    <effectiveTime value="202102152000+1000"/>
    <confidentialityCode nullFlavor="NA"/>
    <languageCode code="en-AU"/>
    <setId root="fc7fecc0-8255-11e3-baa7-0800200c9a66"/>
    <versionNumber value="1"/>
    <ext:completionCode code="F" codeSystem="1.2.36.1.2001.1001.101.104.20104"
        codeSystemName="NCTIS Document Status Values" displayName="Final"/>

    <!-- Begin SUBJECT OF CARE - Header Part -->
    <recordTarget>
        <patientRole>
            <id root="c0afb854-3c7f-4f26-98ba-9c6fbc0d6777"/>

            <!-- Address -->
            <addr nullFlavor="MSK"/>

            <patient>
                <!-- Person Name -->
                <name>
                    <prefix>Mrs.</prefix>
                    <given>Anne</given>
```

```
                <family>THOMPSON</family>
            </name>

            <!-- Administrative Gender (Demographic Sex) = Female -->
            <administrativeGenderCode code="F" codeSystem="2.16.840.1.113883.13.68"
                codeSystemName="AS 5017-2006 Health Care Client Identifier Sex" displayName="Female"/>

            <!-- Date of Birth = 11 Oct 1978 -->
            <birthTime value="19781011120000+1000"/>

            <!-- Indigenous Status -->
            <ethnicGroupCode code="1" codeSystem="2.16.840.1.113883.3.879.291036" displayName="Aboriginal but not Torres Strait Islander origin"/>

            <!-- Entity Identifier (IHI) -->
            <ext:asEntityIdentifier classCode="IDENT">
                <ext:id assigningAuthorityName="IHI" root="1.2.36.1.2001.1003.0.8003608000228437"/>
                <ext:assigningGeographicArea classCode="PLC">
                    <ext:name>National Identifier</ext:name>
                </ext:assigningGeographicArea>
            </ext:asEntityIdentifier>

            <!-- Entity Identifier (MRN) -->
            <ext:asEntityIdentifier classCode="IDENT">
                <ext:id root="1.2.36.1.2001.1005.29.8003621566684455" extension="123456" assigningAuthorityName="Algregster Medical Center"/>
                <ext:code code="MR" codeSystem="2.16.840.1.113883.12.203" codeSystemName="Identifier Type (HL7)"/>
            </ext:asEntityIdentifier>
        </patient>
    </patientRole>
</recordTarget>
<!-- End SUBJECT OF CARE - Header Part -->

<!-- Begin DOCUMENT AUTHOR (Microbiologist) -->
<author>
    <!-- Participation Period -->
    <time value="202102152000+1000"/>
    <assignedAuthor>
        <!-- ID is used for system purposes such as matching -->
        <id root="5ae15755-07d5-42b7-ab7d-266d64391fd2"/>

        <!-- Role -->
        <code code="159138004" codeSystem="2.16.840.1.113883.6.96" codeSystemName="SNOMED CT">
            <originalText>Microbiologist</originalText>
        </code>

        <!-- Address -->
        <addr use="WP">
            <streetAddressLine>75 Hampden St</streetAddressLine>
            <city>DOOMBEN</city>
```

```
    <state>QLD</state>
    <postalCode>4007</postalCode>
</addr>

<!-- Electronic Communication Detail -->
<telecom use="WP" value="tel:(07) 7010 3453"/>

<assignedPerson>
    <!-- Person Name -->
    <name>
        <prefix>Dr.</prefix>
        <given>Adam</given>
        <family>MEYER</family>
    </name>

    <!-- Entity Identifier (HPI-I)-->
    <ext:asEntityIdentifier classCode="IDENT">
        <ext:id assigningAuthorityName="HPI-I" root="1.2.36.1.2001.1003.0.8003619900041630"/>
        <ext:assigningGeographicArea classCode="PLC">
            <ext:name>National Identifier</ext:name>
        </ext:assigningGeographicArea>
    </ext:asEntityIdentifier>

    <!-- Employment Details -->
    <ext:asEmployment classCode="EMP">

        <!-- Employer Organisation -->
        <ext:employerOrganization>
            <asOrganizationPartOf>
                <wholeOrganization>
                    <!-- Organisation Name -->
                    <name use="ORGB">Doomben Pathology QLD</name>

                    <!-- Electronic Communication Detail (Telephone) -->
                    <telecom use="WP" value="tel:(07) 5550 3427"/>
                    <!-- Electronic Communication Detail (Email) -->
                    <telecom use="WP" value="mailto:info@example.doombenpathlabs.com"/>

                    <!-- Address -->
                    <addr use="WP">
                        <streetAddressLine>75 Hampden St</streetAddressLine>
                        <city>DOOMBEN</city>
                        <state>QLD</state>
                        <postalCode>4007</postalCode>
                    </addr>

                    <!-- Entity Identifier (HPI-O)-->
                    <ext:asEntityIdentifier classCode="IDENT">
```

```
                                <ext:id assigningAuthorityName="HPI-O" root="1.2.36.1.2001.1003.0.8003623233366565"/>
                                <ext:assigningGeographicArea classCode="PLC">
                                    <ext:name>National Identifier</ext:name>
                                </ext:assigningGeographicArea>
                            </ext:asEntityIdentifier>

                            <!-- Entity Identifier (NATA Accreditation Number)-->
                            <ext:asEntityIdentifier classCode="IDENT">
                                <ext:id assigningAuthorityName="NATA" root="1.2.36.1.2001.1005.12" extension="100101"/>
                                <ext:code code="XX" codeSystem="2.16.840.1.113883.12.203"/>
                            </ext:asEntityIdentifier>

                        </wholeOrganization>
                    </asOrganizationPartOf>
                </ext:employerOrganization>
            </ext:asEmployment>
        </assignedPerson>
    </assignedAuthor>
</author>
<!-- End DOCUMENT AUTHOR -->

<!--Begin Custodian -->
<custodian>
    <assignedCustodian>
        <representedCustodianOrganization>
            <id root="c9c04faf-d7a8-4802-8c69-980b0ce4d798"/>
            <name>Doomben Pathology QLD</name>

            <telecom use="WP" value="tel:(07) 5550 3427"/>

            <addr use="WP">
                <streetAddressLine>75 Hampden St</streetAddressLine>
                <city>DOOMBEN</city>
                <state>QLD</state>
                <postalCode>4007</postalCode>
            </addr>

            <!-- Entity Identifier (HPI-O)-->
            <ext:asEntityIdentifier classCode="IDENT">
                <ext:id assigningAuthorityName="HPI-O" root="1.2.36.1.2001.1003.0.8003623233366565"/>
                <ext:assigningGeographicArea classCode="PLC">
                    <ext:name>National Identifier</ext:name>
                </ext:assigningGeographicArea>
            </ext:asEntityIdentifier>

            <!-- Entity Identifier (NATA Accreditation Number)-->
            <ext:asEntityIdentifier classCode="IDENT">
                <ext:id assigningAuthorityName="NATA" root="1.2.36.1.2001.1005.12" extension="100101"/>
```

```
                <ext:code code="XX" codeSystem="2.16.840.1.113883.12.203"/>
            </ext:asEntityIdentifier>
        </representedCustodianOrganization>
    </assignedCustodian>
</custodian>
<!-- End Custodian -->

<!-- Begin REQUESTER -->
<participant typeCode="REF">
    <associatedEntity classCode="ASSIGNED">
        <id root="3ee928c0-4100-11e3-aa6e-0800200c9a66"/>
        <code code="62247001" codeSystem="2.16.840.1.113883.6.96" codeSystemName="SNOMED CT"
            displayName="General Practitioner"/>

        <associatedPerson>
            <!-- Person Name -->
            <name>
                <prefix>Dr.</prefix>
                <given>Greg</given>
                <family>Algrester</family>
            </name>

            <!-- Employment Details -->
            <ext:asEmployment classCode="EMP">

                <!-- Employer Organisation -->
                <ext:employerOrganization>
                    <asOrganizationPartOf>
                        <wholeOrganization>
                            <!-- Organisation Name -->
                            <name use="ORGB">Algregster Medical Center</name>
                        </wholeOrganization>
                    </asOrganizationPartOf>
                </ext:employerOrganization>
            </ext:asEmployment>

        </associatedPerson>
    </associatedEntity>
</participant>
<!-- End REQUESTER -->

<!-- Begin ORDER DETAILS -->
<inFulfillmentOf typeCode="FLFS">
    <order classCode="ACT" moodCode="RQO">
        <!-- Requester Order Identifier (Order Identifier) -->
        <!-- example showing root="[HPI-O based Local Order Identifier OID][HPI-O]". Requester number value used in extension -->
        <id extension="123451" root="1.2.36.1.2001.1005.52.8003626566699742"/>
        <!-- Requested Test Name (Order Name) -->
```

```
        <code>
            <originalText>2019-Novel Coronavirus PCR</originalText>
        </code>
    </order>
</inFulfillmentOf>
<!-- End ORDER DETAILS -->
<!-- End CDA Header -->

<!-- Begin CDA Body -->
<component>
    <structuredBody>
        <!-- Begin Section Administrative Observations -->
        <component typeCode="COMP">
            <section classCode="DOCSECT" moodCode="EVN">
                <id root="88cdbca4-efd1-11df-8de4-e4cddfd72085"/>
                <code code="102.16080" codeSystem="1.2.36.1.2001.1001.101"
                    codeSystemName="NCTIS Data Components" displayName="Administrative Observations"/>
                <title>Administrative Observations</title>

                <!-- Narrative text -->
                <text mediaType="text/x-hl7-text+xml">
                    <table>
                        <tbody>
                            <tr>
                                <th>Patient Medicare Card Number</th>
                                <td>6951449601</td>
                            </tr>
                        </tbody>
                    </table>
                </text>

                <!-- Begin Subject of Care Entitlement = Medicare Benefits -->
                <ext:coverage2 typeCode="COVBY">
                    <ext:entitlement classCode="COV" moodCode="EVN">
                        <ext:id assigningAuthorityName="Medicare Card Number" extension="6951449601" root="1.2.36.1.5001.1.0.7.1"/>
                        <ext:code code="1" codeSystem="1.2.36.1.2001.1001.101.104.16047"
                            codeSystemName="NCTIS Entitlement Type Values" displayName="Medicare Benefits"/>
                        <ext:effectiveTime>
                            <high value="20220101"/>
                        </ext:effectiveTime>
                        <ext:participant typeCode="BEN">
                            <ext:participantRole classCode="PAT">
                                <ext:id root="c0afb854-3c7f-4f26-98ba-9c6fbc0d6777"/>
                            </ext:participantRole>
                        </ext:participant>
                    </ext:entitlement>
                </ext:coverage2>
                <!-- End Subject of Care Entitlement -->
```

```
    </section>
</component>
<!-- End Section Administrative Observations -->

<!-- Begin PATHOLOGY -->
<component typeCode="COMP">
    <section classCode="DOCSECT" moodCode="EVN">
        <!-- Pathology Instance Identifier -->
        <id root="50846572-efc7-11e0-8337-65094924019b"/>
        <!-- Section Type -->
        <code code="101.20018" codeSystem="1.2.36.1.2001.1001.101" codeSystemName="NCTIS Data Components" displayName="Pathology"/>
        <title>Pathology</title>

        <!-- Begin Narrative text -->
        <text mediaType="text/x-hl7-text+xml">
            <table border="1">
                <caption>Report Details</caption>
                <thead>
                    <tr>
                        <th>Report Date/Time</th>
                        <th>Report Name</th>
                        <th>Report Status</th>
                        <th>Lab No</th>
                        <th>Consultant</th>
                    </tr>
                </thead>
                <tbody>
                    <tr>
                        <td>15-Feb-2021 20:00</td>
                        <td>SARS-CoV-2 (COVID-19) PCR for Mrs. Anne THOMPSON</td>
                        <td>Final</td>
                        <td>DOO3Q978</td>
                        <td>Dr. Adam MEYER (Microbiologist) (07) 7010 3453</td>
                    </tr>
                </tbody>
            </table>
            <table border="1">
                <caption>SARS-Cov-2 (COVID-19) PCR</caption>
                <thead>
                    <tr>
                        <th>Specimen Type</th>
                        <th>Primary Specimen Site</th>
                        <th>Collection Setting</th>
                        <th>Date Collected</th>
                        <th>Time Collected</th>
                        <th>Test Name</th>
                        <th>Result</th>
```

```
                    <th>Diagnostic Service</th>
                </tr>
            </thead>
            <tbody>
                <tr>
                    <td>Swab</td>
                    <td>Nasopharyngeal</td>
                    <td>COVID HSC Assessment Clinic</td>
                    <td>15-Feb-2021</td>
                    <td>12:00</td>
                    <td>SARS-CoV-2 PCR</td>
                    <td>Not Detected</td>
                    <td>Microbiology</td>
                </tr>
            </tbody>
        </table>
        <table>
            <caption>Comments</caption>
            <tbody>
                <tr>
                    <td>Doomben Pathology QLD NATA/RCPA accreditation does not cover the SARS-CoV-2 (COVID-19) PCR test.</td>
                </tr>
                <tr>
                    <td>This test is currently under evaluation and has not been fully validated. Failure to detect
                        organism-specific nucleic acids does not exclude the presence of disease due to this agent.</td>
                </tr>
            </tbody>
        </table>
        <paragraph>
            <linkHtml href="pathresult.pdf">Link to PDF report</linkHtml>
        </paragraph>
    </text>
    <!-- End Narrative text -->

    <!-- Begin REPORTING PATHOLOGIST -->
    <author>
        <!-- Participation Period -->
        <time value="202102152000+1000"/>
        <assignedAuthor>
            <!-- ID is used for system purposes such as matching -->
            <id root="5ae15755-07d5-42b7-ab7d-266d64391fd2"/>

            <!-- Role -->
            <code code="159138004" codeSystem="2.16.840.1.113883.6.96" codeSystemName="SNOMED CT">
                <originalText>Microbiologist</originalText>
            </code>

            <!-- Address -->
```

```
<addr use="WP">
    <streetAddressLine>75 Hampden St</streetAddressLine>
    <city>DOOMBEN</city>
    <state>QLD</state>
    <postalCode>4007</postalCode>
</addr>

<!-- Electronic Communication Detail -->
<telecom use="WP" value="tel:(07) 7010 3453"/>

<assignedPerson>
    <!-- Person Name -->
    <name>
        <prefix>Dr.</prefix>
        <given>Adam</given>
        <family>MEYER</family>
    </name>

    <!-- Entity Identifier (HPI-I)-->
    <ext:asEntityIdentifier classCode="IDENT">
        <ext:id assigningAuthorityName="HPI-I" root="1.2.36.1.2001.1003.0.8003619900041630"/>
        <ext:assigningGeographicArea classCode="PLC">
            <ext:name>National Identifier</ext:name>
        </ext:assigningGeographicArea>
    </ext:asEntityIdentifier>

    <!-- Employment Details -->
    <ext:asEmployment classCode="EMP">

        <!-- Employer Organisation -->
        <ext:employerOrganization>
            <asOrganizationPartOf>
                <wholeOrganization>
                    <!-- Organisation Name -->
                    <name use="ORGB">Doomben Pathology QLD</name>

                    <!-- Electronic Communication Detail (Telephone) -->
                    <telecom use="WP" value="tel:(07) 5550 3427"/>
                    <!-- Electronic Communication Detail (Email) -->
                    <telecom use="WP" value="mailto:info@example.doombenpathlabs.com"/>

                    <!-- Address -->
                    <addr use="WP">
                      <streetAddressLine>75 Hampden St</streetAddressLine>
                      <city>DOOMBEN</city>
                      <state>QLD</state>
                      <postalCode>4007</postalCode>
                    </addr>
```

```
                                <!-- Entity Identifier (HPI-O)-->
                                <ext:asEntityIdentifier classCode="IDENT">
                                  <ext:id assigningAuthorityName="HPI-O" root="1.2.36.1.2001.1003.0.8003621566684455"/>
                                  <ext:assigningGeographicArea classCode="PLC">
                                      <ext:name>National Identifier</ext:name>
                                  </ext:assigningGeographicArea>
                                </ext:asEntityIdentifier>

                                <!-- Entity Identifier (NATA Accreditation Number)-->
                                <ext:asEntityIdentifier classCode="IDENT">
                                  <ext:id assigningAuthorityName="NATA" root="1.2.36.1.2001.1005.12" extension="100101"/>
                                  <ext:code code="XX" codeSystem="2.16.840.1.113883.12.203"/>
                                </ext:asEntityIdentifier>

                            </wholeOrganization>
                        </asOrganizationPartOf>
                    </ext:employerOrganization>
                </ext:asEmployment>
            </assignedPerson>
        </assignedAuthor>
    </author>
    <!-- End REPORTING PATHOLOGIST -->

    <!-- Begin RELATED DOCUMENT = Attached PDF Pathology Report -->
    <entry typeCode="COMP">
        <act classCode="ACT" moodCode="EVN">
            <!-- Technical Identifier to uniquely identify this act -->
            <id root="31c45290-2883-11e2-81c1-0800000c9a67"/>
            <code code="102.16971" codeSystem="1.2.36.1.2001.1001.101"
                codeSystemName="NCTIS Data Components" displayName="Related Document"/>

            <!-- Begin Report DateTime (Effective Period) 15-Feb-2021 20:00 -->
            <effectiveTime>
                <low value="202102152000+1000"/>
            </effectiveTime>

            <!-- Begin Report Name (Document Title) = SARS-CoV-2 PCR for Mrs. Anne THOMPSON-->
            <entryRelationship typeCode="COMP">
                <act classCode="ACT" moodCode="EVN">
                    <code code="103.16966" codeSystem="1.2.36.1.2001.1001.101"
                        codeSystemName="NCTIS Data Components" displayName="Document Title"/>
                    <text xsi:type="ST">SARS-CoV-2 PCR for Mr. Anne THOMPSON</text>
                </act>
            </entryRelationship>

            <!-- Begin Report Status (Document Status) = Final -->
            <entryRelationship typeCode="COMP">
```

```
                <observation classCode="OBS" moodCode="EVN">
                    <code code="103.20104" codeSystem="1.2.36.1.2001.1001.101"
                        codeSystemName="NCTIS Data Components" displayName="Document Status"/>
                    <value code="F" codeSystem="2.16.840.1.113883.12.123" codeSystemName="HL7 Result Status" xsi:type="CD">
                        <originalText>Final</originalText>
                    </value>
                </observation>
            </entryRelationship>

            <!--  Link Nature / Link Role = XCRPT-->
            <reference typeCode="XCRPT">
                <seperatableInd value="true"/>

                <!-- Begin Test Result Representation (Document Target) -->
                <externalDocument classCode="DOC" moodCode="EVN">
                    <!-- Report Identifier = DOO3Q978 -->
                    <!-- example showing root="[HPI-O based Report Identifier OID][HPI-O]".
                    Local report identifier value used in extension -->
                    <id extension="DOO3Q978" root="1.2.36.1.2001.1005.54.8003623233366565"/>
                    <!-- Document Type -->
                    <code code="11526-1" codeSystem="2.16.840.1.113883.6.1"
                        codeSystemName="LOINC" displayName="Pathology study"/>

                    <!-- attachment as encapsulated data -->
                    <text integrityCheck="WkHcYBEs1zC2WOUQdag=" integrityCheckAlgorithm="SHA-1" mediaType="application/pdf">
                        <reference value="pathresult.pdf"/>
                    </text>

                </externalDocument>
                <!-- End Test Result Representation (Document Target) -->
            </reference>

        </act>
    </entry>
    <!-- End RELATED DOCUMENT -->

    <!-- Begin PATHOLOGY TEST RESULT -->
    <component>
        <section classCode="DOCSECT" moodCode="EVN">
            <!-- Pathology Test Result Instance Identifier - used for system purposes such as matching -->
            <id root="ccf0d55c-efd0-11df-bea2-aaccdfd72085"/>
            <!-- Detailed Clinical Model Identifier -->
            <code code="102.16144" codeSystem="1.2.36.1.2001.1001.101"
                codeSystemName="NCTIS Data Components" displayName="Pathology Test Result"/>
            <entry>
                <observation classCode="OBS" moodCode="EVN">

                    <!-- Laboratory Test Result Identifier = DOO3Q978-->
```

```
<id extension="DOO3Q978" root="1.2.36.1.2001.1005.54.8003623233366565"/>

<!-- Test Result Name (Pathology Test Result Name) -->
<code code="94309-2" codeSystem="2.16.840.1.113883.6.1"
    codeSystemName="LOINC" displayName="SARS-CoV-2 RNA" xsi:type="CD">
    <originalText>SARS-CoV-2 PCR</originalText>
</code>

<!-- Test Result Representation -->
<value mediaType="application/pdf" xsi:type="ED">
    <reference value="pathresult.pdf"/>
</value>

<!-- Diagnostic Service = Microbiology -->
<entryRelationship typeCode="COMP">
    <observation classCode="OBS" moodCode="EVN">
        <code code="310074003" codeSystem="2.16.840.1.113883.6.96"
            codeSystemName="SNOMED CT" displayName="Pathology service"/>
        <value code="MB" codeSystem="2.16.840.1.113883.12.74"
            codeSystemName="HL7 Diagnostic service section ID" displayName="Microbiology" xsi:type="CD"/>
    </observation>
</entryRelationship>

<!-- Begin Test Specimen Detail (SPECIMEN) -->
<entryRelationship typeCode="SUBJ">
    <observation classCode="OBS" moodCode="EVN">
        <!-- ID is used for system purposes such as matching -->
        <id root="ccc0d55c-efd0-11df-bea2-a6ccdfd72085"/>
        <code code="102.16156" codeSystem="1.2.36.1.2001.1001.101"
            codeSystemName="NCTIS Data Components" displayName="Specimen"/>

        <!-- Date and Time of Collection (Collection DateTime) Datetime = 15-Feb-2021 12:00-->
        <effectiveTime value="202102151200+1000"/>

        <!-- Anatomical Site (ANATOMICAL LOCATION) = Nasopharyngeal -->
        <!-- SPECIFIC LOCATION > Name of Location (Anatomical Location Name) -->
        <targetSiteCode code="71836000" codeSystem="2.16.840.1.113883.6.96"
            codeSystemName="SNOMED CT" displayName="Nasopharyngeal structure">
               <originalText>Nasopharyngeal</originalText>
        </targetSiteCode>

        <specimen>
            <specimenRole>
              <specimenPlayingEntity>
                  <!-- Physical Details (PHYSICAL PROPERTIES OF AN OBJECT) >
                  Specimen Tissue Type = Swab-->
                  <code code="257261003" codeSystem="2.16.840.1.113883.6.96"
                      codeSystemName="SNOMED CT" displayName="Swab"/>
```

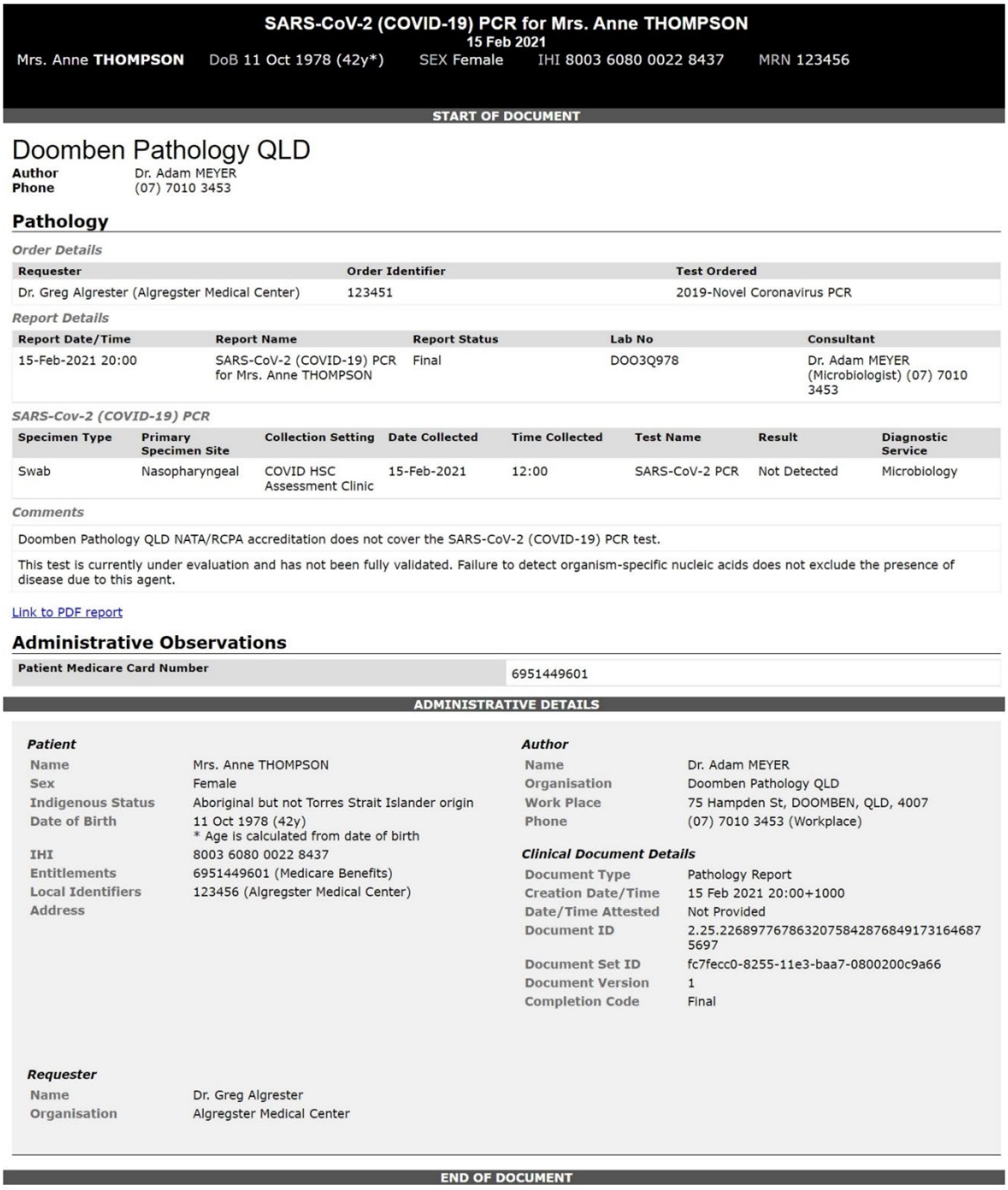
```
                    </specimenPlayingEntity>
                </specimenRole>
            </specimen>

            <!-- Collection Setting = COVID HSC Assessment Clinic-->
            <entryRelationship typeCode="COMP">
                <observation classCode="OBS" moodCode="EVN">
                  <code code="103.16529" codeSystem="1.2.36.1.2001.1001.101"
                      codeSystemName="NCTIS Data Components" displayName="Collection Setting"/>
                  <value xsi:type="ST">COVID HSC Assessment Clinic</value>
                </observation>
            </entryRelationship>

    </observation>
</entryRelationship>
<!-- End Test Specimen Detail (SPECIMEN) -->

<!-- Overall Pathology Test Result Status = Final -->
<entryRelationship typeCode="COMP">
    <observation classCode="OBS" moodCode="EVN">
        <!-- ID is used for system purposes such as matching -->
        <id root="7aa9baac-0cd0-11e0-9516-4350dfd72085"/>
        <code code="308552006" codeSystem="2.16.840.1.113883.6.96"
            codeSystemName="SNOMED CT" codeSystemVersion="20110531"
            displayName="Report status"/>
        <value code="F" codeSystem="2.16.840.1.113883.12.123" codeSystemName="HL7 Result Status" xsi:type="CD"/>
    </observation>
</entryRelationship>

<!-- Begin Result Group (PATHOLOGY TEST RESULT GROUP) Required by CDA template for panels and individual tests -->
<entryRelationship typeCode="COMP">
    <organizer classCode="BATTERY" moodCode="EVN">
        <id root="9be931d2-f085-11e0-9831-1e7c4824019b"/>

        <!-- Pathology Test Result Group Name -->
        <!-- A report for an individual test records the test name in both Pathology Test Result
        Group Name and Individual Pathology Test Result Name -->
        <code code="94309-2" codeSystem="2.16.840.1.113883.6.1"
            codeSystemName="LOINC" displayName="SARS-CoV-2 RNA" xsi:type="CD">
            <originalText>SARS-CoV-2 PCR</originalText>
        </code>
        <statusCode code="completed"/>

        <!-- Begin Result (INDIVIDUAL PATHOLOGY TEST RESULT) -->
        <component>
            <observation classCode="OBS" moodCode="EVN">
              <id root="3802ba7a-f086-11e0-8a74-147d4824019b"/>
```

```
<!-- Individual Pathology Test Result Name -->
<!-- A report for an individual test records the test name in both Pathology Test
Result Group Name and Individual Pathology Test Result Name -->
<code code="94309-2" codeSystem="2.16.840.1.113883.6.1"
    codeSystemName="LOINC" displayName="SARS-CoV-2 RNA" xsi:type="CD">
    <originalText>SARS-CoV-2 PCR</originalText>
</code>
<statusCode code="completed"/>
<!-- Individual Pathology Test Result Value -->
<value code="260415000" codeSystem="2.16.840.1.113883.6.96"
    codeSystemName="SNOMED CT" displayName="Not detected" xsi:type="CD">
    <originalText>Not Detected</originalText>
</value>

<!-- Individual Pathology Test Result Comment -->
<entryRelationship typeCode="COMP">
   <act classCode="INFRM" moodCode="EVN">
       <code code="281296001" codeSystem="2.16.840.1.113883.6.96"
          codeSystemName="SNOMED CT" displayName="Result comments"/>
       <text>Doomben Pathology QLD NATA/RCPA accreditation
          does not cover the SARS-CoV-2 (COVID-19) PCR test.</text>
   </act>
</entryRelationship>
<!-- Individual Pathology Test Result Comment -->
<entryRelationship typeCode="COMP">
    <act classCode="INFRM" moodCode="EVN">
       <code code="281296001" codeSystem="2.16.840.1.113883.6.96"
          codeSystemName="SNOMED CT" displayName="Result comments"/>
       <text>This test is currently under evaluation and has not been
       fully validated. Failure to detect organism-specific nucleic acids does
       not exclude the presence of disease due to this agent.</text>
    </act>
</entryRelationship>

<!-- Begin Individual Pathology Test Result Status -->
<entryRelationship typeCode="COMP">
    <observation classCode="OBS" moodCode="EVN">
       <!-- ID is used for system purposes such as matching -->
       <id root="7aa9baac-0cd0-11e0-9516-4350dfd72085"/>
       <code code="308552006" codeSystem="2.16.840.1.113883.6.96"
           codeSystemName="SNOMED CT" codeSystemVersion="20110531" displayName="Report status"/>
       <value code="F" codeSystem="2.16.840.1.113883.12.123"
           codeSystemName="HL7 Result Status" xsi:type="CD"/>
    </observation>
</entryRelationship>

  </observation>
</component>
```

```
                                        <!-- End Result (INDIVIDUAL PATHOLOGY TEST RESULT) -->

                                    </organizer>
                                </entryRelationship>
                                <!-- End Result Group (PATHOLOGY TEST RESULT GROUP) -->

                                <!-- Begin Observation DateTime = Specimen Collected DateTime of 15-Feb-2021 12:00-->
                                <entryRelationship typeCode="COMP">
                                    <observation classCode="OBS" moodCode="EVN">
                                        <!-- ID is used for system purposes such as matching -->
                                        <id root="ccffd55c-efd0-11df-bea2-a6ccdfd72085"/>
                                        <code code="103.16605" codeSystem="1.2.36.1.2001.1001.101"
                                            codeSystemName="NCTIS Data Components" displayName="Pathology Test Result DateTime"/>
                                        <effectiveTime value="202102151200+1000"/>
                                    </observation>
                                </entryRelationship>

                            </observation>
                        </entry>

                    </section>
                </component>
                <!-- End PATHOLOGY TEST RESULT -->

            </section>
        </component>
        <!-- End PATHOLOGY -->

    </structuredBody>
</component>
<!-- End CDA Body -->
</ClinicalDocument>
```

B.2 Sample CDA stylesheet rendering

This is intended to be an example only, to assist with understanding and review of A.1 CDA XML; it is not intended to be incorporated into any implementation design or technical specification.



SARS-CoV-2 (COVID-19) PCR for Mrs. Anne THOMPSON
15 Feb 2021

Mrs. Anne **THOMPSON** DoB 11 Oct 1978 (42y*) SEX Female IHI 8003 6080 0022 8437 MRN 123456

START OF DOCUMENT

Doomben Pathology QLD

Author Dr. Adam MEYER
Phone (07) 7010 3453

Pathology

Order Details

Requester	Order Identifier	Test Ordered
Dr. Greg Algrester (Algregster Medical Center)	123451	2019-Novel Coronavirus PCR

Report Details

Report Date/Time	Report Name	Report Status	Lab No	Consultant
15-Feb-2021 20:00	SARS-CoV-2 (COVID-19) PCR for Mrs. Anne THOMPSON	Final	DOO3Q978	Dr. Adam MEYER (Microbiologist) (07) 7010 3453

SARS-Cov-2 (COVID-19) PCR

Specimen Type	Primary Specimen Site	Collection Setting	Date Collected	Time Collected	Test Name	Result	Diagnostic Service
Swab	Nasopharyngeal	COVID HSC Assessment Clinic	15-Feb-2021	12:00	SARS-CoV-2 PCR	Not Detected	Microbiology

Comments

Doomben Pathology QLD NATA/RCPA accreditation does not cover the SARS-CoV-2 (COVID-19) PCR test.

This test is currently under evaluation and has not been fully validated. Failure to detect organism-specific nucleic acids does not exclude the presence of disease due to this agent.

Link to PDF report

Administrative Observations

Patient Medicare Card Number	6951449601

ADMINISTRATIVE DETAILS

Patient

Name	Mrs. Anne THOMPSON
Sex	Female
Indigenous Status	Aboriginal but not Torres Strait Islander origin
Date of Birth	11 Oct 1978 (42y) * Age is calculated from date of birth
IHI	8003 6080 0022 8437
Entitlements	6951449601 (Medicare Benefits)
Local Identifiers	123456 (Algregster Medical Center)
Address	

Author

Name	Dr. Adam MEYER
Organisation	Doomben Pathology QLD
Work Place	75 Hampden St, DOOMBEN, QLD, 4007
Phone	(07) 7010 3453 (Workplace)

Clinical Document Details

Document Type	Pathology Report
Creation Date/Time	15 Feb 2021 20:00+1000
Date/Time Attested	Not Provided
Document ID	2.25.226897767863207584287684917316468756697
Document Set ID	fc7fecc0-8255-11e3-baa7-0800200c9a66
Document Version	1
Completion Code	Final

Requester

Name	Dr. Greg Algrester
Organisation	Algregster Medical Center

END OF DOCUMENT

B.3 Sample PDF report

This is intended to be an example only, to assist with understanding and review of A.1 CDA XML; it is not intended to be incorporated into any implementation design or technical specification.

Doomben Pathology QLD (NATA/RCPA Corporate Accreditation Number 100101)

Doomben Pathology QLD
75 Hampden St, DOOMBEN, QLD, 4007
(07) 5550 3427
mailto:info@example.doombenpathlabs.com

Patient Location	COVID HSC Assessment Clinic	**UR No**	123456
Consultant	Dr. Adam MEYER (07) 7010 3453	**IHI**	8003 6080 0022 8437
		Medicare	6951449601
Req. Officer	Dr. Greg Algrester Algregster Medical Center Order: 123451	**Name**	THOMPSON
		Given Name	Anne
		DOB	11 Oct 1978
		Indigenous Status	Aboriginal but not Torres Strait Islander origin
		Sex	F

Time Collected	**12:00**
Date Collected	**15-Feb-21**
Year Collected	**2021**
Consultant	**Dr. Adam MEYER**
Lab No	**DOO3Q978**
Specimen Type	**Swab**

SARS-COV2 COVID-19 PCR

MICROBIOLOGY

Primary Specimen site	**Nasopharyngeal**
Specimen site	
SARS-Cov-2 (COVID-19) PCR	
SARS-CoV-2PCR	Not Detected

Comments

Lab No	DOO3Q978	Doomben Pathology QLD NATA/RCPA accreditation does not cover the SARS-CoV-2 (COVID-19) PCR test. This test is currently under evaluation and has not been fully validated. Failure to detect organism-specific nucleic acids does not exclude the presence of disease due to this agent.
12:00	15-Feb-21	

Appendix C Example Full Blood Count 07-Aug-2021

This informative appendix provides an example report for a Full Blood Count that conforms to the requirements for a Pathology Report CDA document defined in this implementation guide:

- C.1 shows a HL7 Clinical Document Architecture (CDA) Release 2 XML document
- C.2 shows a sample CDA Stylesheet rendering of the XML in C.1
- C.3 shows a sample PDF report, representing the attached PDF for this test

C.1 CDA XML

```
<!-- This example is provided for illustrative purposes only. It has had no clinical validation.
 While every effort has been taken to ensure that the examples are consistent with the message specification,
 where there are conflicts with the written message specification or schema, the specification or schema
 shall be considered to take precedence -->

<!-- Clinical Document XML sample instance for FBC Report -->
<ClinicalDocument xmlns="urn:hl7-org:v3" xmlns:ext="http://ns.electronichealth.net.au/Ci/Cda/Extensions/3.0"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
    <typeId root="2.16.840.1.113883.1.3" extension="POCD_HD000040"/>

    <!--ClinicalDocument (Pathology Report) templateId as defined in Pathology Report v2.0
    and Pathology Report with Structured Clinical Content v1.0 -->
    <templateId root="1.2.36.1.2001.1001.100.1002.220" extension="2.0"/>
    <!--CDA Rendering Specification templateId-->
    <templateId root="1.2.36.1.2001.1001.100.149" extension="1.0"/>

    <!--Document Instance Identifier-->
    <id root="2.25.107574258101880827370010091232998027497"/>

    <!-- Document Type -->
    <code code="100.32001" codeSystem="1.2.36.1.2001.1001.101" codeSystemName="NCTIS Data Components" displayName="Pathology Report"/>

    <!--  Document Title-->
    <title>Full Blood Count 07-Aug-2021</title>

    <effectiveTime value="20210807130000+1000"/>
    <confidentialityCode nullFlavor="NA"/>
    <languageCode code="en-AU"/>
    <setId root="9cb8267f-fcfd-4341-bc89-e53e4ce9646c"/>
    <versionNumber value="1"/>
    <ext:completionCode code="F" codeSystem="1.2.36.1.2001.1001.101.104.20104"
        codeSystemName="NCTIS Document Status Values" displayName="Final"/>

    <!-- Begin SUBJECT OF CARE - Header Part -->
    <recordTarget>
        <patientRole>
            <id root="314dbd89-65aa-43fa-914f-317458b91d85"/>

            <!-- Address -->
            <addr nullFlavor="MSK"/>


            <patient>
                <!-- Person Name -->
                <name>
```

```
                <prefix>Mr.</prefix>
                <given>Lenny</given>
                <family>MATTERSON</family>
            </name>

            <!-- Administrative Gender (Demographic Sex) = Male -->
            <administrativeGenderCode code="M" codeSystem="2.16.840.1.113883.13.68"
                codeSystemName="AS 5017-2006 Health Care Client Identifier Sex" displayName="Male"/>

            <!-- Date of Birth = 27/07/72 -->
            <birthTime value="19720727080000+1000"/>

            <!-- Indigenous Status -->
            <ethnicGroupCode code="3" codeSystem="2.16.840.1.113883.3.879.291036"
                displayName="Both Aboriginal and Torres Strait Islander origin"/>

            <!-- Entity Identifier (IHI) -->
            <ext:asEntityIdentifier classCode="IDENT">
                <ext:id assigningAuthorityName="IHI" root="1.2.36.1.2001.1003.0.8003608166895854"/>
                <ext:assigningGeographicArea classCode="PLC">
                    <ext:name>National Identifier</ext:name>
                </ext:assigningGeographicArea>
            </ext:asEntityIdentifier>
        </patient>
    </patientRole>
</recordTarget>
<!-- End SUBJECT OF CARE - Header Part -->

<!-- Begin DOCUMENT AUTHOR (Haematologist) -->
<author>
    <!-- Participation Period -->
    <time value="20210807130000+1000"/>
    <assignedAuthor>
        <!-- ID is used for system purposes such as matching -->
        <id root="20d2e31d-91f3-4f63-a3b3-809d21a86e4d"/>

        <!-- Role -->
        <code>
            <originalText>Haematologist</originalText>
        </code>

        <!-- Address -->
        <addr use="WP">
            <streetAddressLine>1342 Sydney St</streetAddressLine>
            <city>Randwick</city>
```

```
    <state>NSW</state>
    <postalCode>2031</postalCode>
</addr>

<!-- Electronic Communication Detail -->
<telecom use="WP" value="tel:0491 578 888"/>

<assignedPerson>
    <!-- Person Name -->
    <name>
        <prefix>Dr</prefix>
        <given>Robert</given>
        <family>BROWN</family>
    </name>

    <!-- Entity Identifier (HPI-I)-->
    <ext:asEntityIdentifier classCode="IDENT">
        <ext:id assigningAuthorityName="HPI-I" root="1.2.36.1.2001.1003.0.8003614900041243"/>
        <ext:assigningGeographicArea classCode="PLC">
            <ext:name>National Identifier</ext:name>
        </ext:assigningGeographicArea>
    </ext:asEntityIdentifier>

    <!-- Employment Details -->
    <ext:asEmployment classCode="EMP">

        <!-- Employer Organisation -->
        <ext:employerOrganization>
            <asOrganizationPartOf>
                <wholeOrganization>
                    <!-- Organisation Name -->
                    <name use="ORGB">Randwick Laboratories</name>

                    <!-- Electronic Communication Detail (Telephone) -->
                    <telecom use="WP" value="tel:(02) 5550 8994"/>
                    <!-- Electronic Communication Detail (Email) -->
                    <telecom use="WP" value="mailto:info@example.doombenpathlabs.com"/>

                    <!-- Address -->
                    <addr use="WP">
                        <streetAddressLine>1342 Sydney St</streetAddressLine>
                        <city>Randwick</city>
                        <state>NSW</state>
                        <postalCode>2031</postalCode>
                    </addr>

                    <!-- Entity Identifier (HPI-O)-->
                    <ext:asEntityIdentifier classCode="IDENT">
```

```
                                <ext:id assigningAuthorityName="HPI-O" root="1.2.36.1.2001.1003.0.8003621566699776"/>
                                <ext:assigningGeographicArea classCode="PLC">
                                    <ext:name>National Identifier</ext:name>
                                </ext:assigningGeographicArea>
                            </ext:asEntityIdentifier>

                            <!-- Entity Identifier (NATA Accreditation Number)-->
                            <ext:asEntityIdentifier classCode="IDENT">
                                <ext:id assigningAuthorityName="NATA" root="1.2.36.1.2001.1005.12" extension="100201"/>
                                <ext:code code="XX" codeSystem="2.16.840.1.113883.12.203"/>
                            </ext:asEntityIdentifier>

                        </wholeOrganization>
                    </asOrganizationPartOf>
                </ext:employerOrganization>
            </ext:asEmployment>
        </assignedPerson>
    </assignedAuthor>
</author>
<!-- End DOCUMENT AUTHOR -->

<!--Begin Custodian -->
<custodian>
    <assignedCustodian>
        <representedCustodianOrganization>
            <id root="064ca6c4-7ea1-46ad-8778-fda0f88c85c3"/>
            <name>Randwick Laboratories</name>

            <telecom use="WP" value="tel:(02) 5550 8994"/>

            <addr use="WP">
                <streetAddressLine>1342 Sydney St</streetAddressLine>
                <city>Randwick</city>
                <state>NSW</state>
                <postalCode>2031</postalCode>
            </addr>

            <!-- Entity Identifier (HPI-O)-->
            <ext:asEntityIdentifier classCode="IDENT">
                <ext:id assigningAuthorityName="HPI-O" root="1.2.36.1.2001.1003.0.8003621566699776"/>
                <ext:assigningGeographicArea classCode="PLC">
                    <ext:name>National Identifier</ext:name>
                </ext:assigningGeographicArea>
            </ext:asEntityIdentifier>

            <!-- Entity Identifier (NATA Accreditation Number)-->
            <ext:asEntityIdentifier classCode="IDENT">
                <ext:id assigningAuthorityName="NATA" root="1.2.36.1.2001.1005.12" extension="100201"/>
```

```
                <ext:code code="XX" codeSystem="2.16.840.1.113883.12.203"/>
            </ext:asEntityIdentifier>
        </representedCustodianOrganization>
    </assignedCustodian>
</custodian>
<!-- End Custodian -->

<!-- Begin REQUESTER-->
<participant typeCode="REF">
    <!-- Participation Period -->
    <time value="201080613309+1000"/>
    <associatedEntity classCode="ASSIGNED">
        <id root="6d43f606-4119-4bf5-8267-7e505e1beb31"/>
        <code>
            <originalText>General Practitioner</originalText>
        </code>

        <associatedPerson>
            <!-- Person Name -->
            <name>
                <prefix>Dr</prefix>
                <given>Sarah</given>
                <family>Bondiali</family>
            </name>

            <!-- Employment Details -->
            <ext:asEmployment classCode="EMP">

                <!-- Employer Organisation -->
                <ext:employerOrganization>
                    <asOrganizationPartOf>
                        <wholeOrganization>
                            <!-- Organisation Name -->
                            <name use="ORGB">Bondi GP Medical Center</name>
                        </wholeOrganization>
                    </asOrganizationPartOf>
                </ext:employerOrganization>
            </ext:asEmployment>

        </associatedPerson>
    </associatedEntity>
</participant>
<!-- End REQUESTER -->

<!-- Begin ORDER DETAILS -->
<inFulfillmentOf typeCode="FLFS">
    <order classCode="ACT" moodCode="RQO">
        <!-- Requester Order Identifier (Order Identifier) -->
```

```
        <!-- example showing root="[HPI-O based Local Order Identifier OID][HPI-O]". Requester number value used in extension -->
        <id extension="P617629" root="1.2.36.1.2001.1005.52.8003626566699742"/>
    </order>
</inFulfillmentOf>
<!-- End ORDER DETAILS -->
<!-- End CDA Header -->

<!-- Begin CDA Body -->
<component>
    <structuredBody>
        <!-- Begin Section Administrative Observations -->
        <component typeCode="COMP">
            <section classCode="DOCSECT" moodCode="EVN">
                <code code="102.16080" codeSystem="1.2.36.1.2001.1001.101"
                    codeSystemName="NCTIS Data Components" displayName="Administrative Observations"/>
                <title>Administrative Observations</title>

                <!-- Narrative text -->
                <text mediaType="text/x-hl7-text+xml">
                    <table>
                        <tbody>
                            <tr>
                                <th>DVA file number</th>
                                <td>NBUR9080 (Gold)</td>
                            </tr>
                        </tbody>
                    </table>
                </text>

                <!-- Begin Subject of Care Entitlement = DVA file number-->
                <ext:coverage2 typeCode="COVBY">
                    <ext:entitlement classCode="COV" moodCode="EVN">
                        <ext:id assigningAuthorityName="DVA file number" extension="NBUR9080"
                            root="2.16.840.1.113883.3.879.339127"/>
                        <ext:code code="5" codeSystem="1.2.36.1.2001.1001.101.104.16047"
                            codeSystemName="NCTIS Entitlement Type Values"
                            displayName="Repatriation Health Gold Benefits"/>
                        <ext:participant typeCode="BEN">
                            <ext:participantRole classCode="PAT">
                                <ext:id root="314dbd89-65aa-43fa-914f-317458b91d85"/>
                            </ext:participantRole>
                        </ext:participant>
                    </ext:entitlement>
                </ext:coverage2>
                <!-- End Subject of Care Entitlement -->

            </section>
        </component>
```

```
<!-- End Section Administrative Observations -->

<!-- Begin PATHOLOGY -->
<component typeCode="COMP">
    <section classCode="DOCSECT" moodCode="EVN">
        <!-- Pathology Instance Identifier -->
        <id root="af2ef394-8061-4339-87cd-109627451453"/>
        <!-- Section Type -->
        <code code="101.20018" codeSystem="1.2.36.1.2001.1001.101" codeSystemName="NCTIS Data Components" displayName="Pathology"/>
        <title>Pathology</title>

        <!-- Begin Narrative text -->
        <text mediaType="text/x-hl7-text+xml">
            <table border="1">
                <caption>Order Details</caption>
                <thead>
                    <tr>
                        <th>Requester</th>
                        <th>Requested</th>
                        <th>Order Identifier</th>
                    </tr>
                </thead>
                <tbody>
                    <tr>
                        <td><paragraph>Dr Sarah Bondiali</paragraph><paragraph>Bondi GP Medical Center</paragraph></td>
                        <td>06-Aug-21 13:30</td>
                        <td>P617629</td>
                    </tr>
                </tbody>
            </table>
            <table border="1">
                <caption>Report Details</caption>
                <thead>
                    <tr>
                        <th>Report Name</th>
                        <th>Report Status</th>
                        <th>Report Date/Time</th>
                        <th>Report No</th>
                    </tr>
                </thead>
                <tbody>
                    <tr>
                        <td>Full Blood Count 07-Aug-2021</td>
                        <td>Final</td>
                        <td>07-08-2021 13:00</td>
                        <td>21P617629</td>
                    </tr>
                </tbody>
```

```
</table>
<table border="1">
    <caption>BLOOD COUNT</caption>
    <thead>
        <tr>
            <th>Test</th>
            <th>Result</th>
            <th>Reference Range</th>
            <th>Date</th>
            <th>Time</th>
        </tr>
    </thead>
    <tbody>
        <tr>
            <td>WCC</td>
            <td>7.1 x10^9/L</td>
            <td>4.0-11.0</td>
            <td>07-Aug-2021</td>
            <td>08:50</td>
        </tr>
        <tr>
            <td>Hb</td>
            <td>141 g/L</td>
            <td>130-180</td>
            <td>07-Aug-2021</td>
            <td>08:50</td>
        </tr>
        <tr>
            <td>Plat</td>
            <td>185 x10^9/L</td>
            <td>150-450</td>
            <td>07-Aug-2021</td>
            <td>08:50</td>
        </tr>
        <tr>
            <td>HCT</td>
            <td>0.412 L/L</td>
            <td>0.39-0.52</td>
            <td>07-Aug-2021</td>
            <td>08:50</td>
        </tr>
        <tr>
            <td>RCC</td>
            <td><content styleCode="Bold">4.38L</content> x10^12/L</td>
            <td>4.5-6.0</td>
            <td>07-Aug-2021</td>
            <td>08:50</td>
        </tr>
```

```
            <tr>
                <td>MCV</td>
                <td>94.1 fL</td>
                <td>80-100</td>
                <td>07-Aug-2021</td>
                <td>08:50</td>
            </tr>
            <tr>
                <td>MCH</td>
                <td>32.2 pg</td>
                <td>27.0-33.0</td>
                <td>07-Aug-2021</td>
                <td>08:50</td>
            </tr>
            <tr>
                <td>MCHC</td>
                <td>342 g/L</td>
                <td>310-365</td>
                <td>07-Aug-2021</td>
                <td>08:50</td>
            </tr>
            <tr>
                <td>RDW</td>
                <td>12.4 %</td>
                <td>310-365</td>
                <td>07-Aug-2021</td>
                <td>08:50</td>
            </tr>
        </tbody>
    </table>
    <table border="1">
        <caption>White Cell Differential</caption>
        <tbody>
            <tr>
                <td>Neuts</td>
                <td>4.54 x10^9/L</td>
                <td>1.8-7.7</td>
                <td>07-Aug-2021</td>
                <td>08:50</td>
            </tr>
            <tr>
                <td>Lymphs</td>
                <td>1.65 x10^9/L</td>
                <td>1.0-4.0</td>
                <td>07-Aug-2021</td>
                <td>08:50</td>
            </tr>
            <tr>
```

```
                    <td>Mono</td>
                    <td>0.77 x10^9/L</td>
                    <td>0.2-1.0</td>
                    <td>07-Aug-2021</td>
                    <td>08:50</td>
                </tr>
                <tr>
                    <td>Eos</td>
                    <td>0.15 x10^9/L</td>
                    <td>0.04-0.5</td>
                    <td>07-Aug-2021</td>
                    <td>08:50</td>
                </tr>
                <tr>
                    <td>Baso</td>
                    <td>&lt; 0.01 x10^9/L</td>
                    <td>&lt; 0.15</td>
                    <td>07-Aug-2021</td>
                    <td>08:50</td>
                </tr>
                <tr>
                    <td>LeftShift</td>
                    <td>0.01 x10^9/L</td>
                    <td/>
                    <td>07-Aug-2021</td>
                    <td>08:50</td>
                </tr>
                <tr>
                    <td>LeftShift%</td>
                    <td>0.1 %</td>
                    <td>&lt;1.0</td>
                    <td>07-Aug-2021</td>
                    <td>08:50</td>
                </tr>
            </tbody>
        </table>
        <table>
            <caption>Comments</caption>
            <tbody>
                <tr>
                    <td>Automated results, blood film not reviewed</td>
                </tr>
            </tbody>
        </table>
        <paragraph>
            <linkHtml href="21P617629.pdf">Link to PDF report</linkHtml>
        </paragraph>
    </text>
```

```
<!-- End Narrative text -->

<!-- Begin REPORTING PATHOLOGIST -->
<author>
    <!-- Participation Period -->
    <time value="20210807085000+1000"/>
    <assignedAuthor>
        <!-- ID is used for system purposes such as matching -->
        <id root="20d2e31d-91f3-4f63-a3b3-809d21a86e4d"/>

        <!-- Role -->
        <code>
            <originalText>Haematologist</originalText>
        </code>

        <!-- Address -->
        <addr use="WP">
            <streetAddressLine>1342 Sydney St</streetAddressLine>
            <city>Randwick</city>
            <state>NSW</state>
            <postalCode>2031</postalCode>
        </addr>

        <!-- Electronic Communication Detail -->
        <telecom use="WP" value="tel:0491 578 888"/>

        <assignedPerson>
            <!-- Person Name -->
            <name>
                <prefix>Dr</prefix>
                <given>Robert</given>
                <family>BROWN</family>
            </name>

            <!-- Entity Identifier (HPI-I)-->
            <ext:asEntityIdentifier classCode="IDENT">
                <ext:id assigningAuthorityName="HPI-I" root="1.2.36.1.2001.1003.0.8003614900041243"/>
                <ext:assigningGeographicArea classCode="PLC">
                    <ext:name>National Identifier</ext:name>
                </ext:assigningGeographicArea>
            </ext:asEntityIdentifier>

            <!-- Employment Details -->
            <ext:asEmployment classCode="EMP">

                <!-- Employer Organisation -->
                <ext:employerOrganization>
                    <asOrganizationPartOf>
```

```
                        <wholeOrganization>
                            <!-- Organisation Name -->
                            <name use="ORGB">Randwick Laboratories</name>

                            <!-- Electronic Communication Detail (Telephone) -->
                            <telecom use="WP" value="tel:(02) 5550 8994"/>

                            <!-- Address -->
                            <addr use="WP">
                              <streetAddressLine>75 Hampden
                              St</streetAddressLine>
                              <city>Randwick</city>
                              <state>NSW</state>
                              <postalCode>2031</postalCode>
                            </addr>

                            <!-- Entity Identifier (HPI-O)-->
                            <ext:asEntityIdentifier classCode="IDENT">
                              <ext:id assigningAuthorityName="HPI-O" root="1.2.36.1.2001.1003.0.8003621566684455"/>
                              <ext:assigningGeographicArea classCode="PLC">
                              <ext:name>National Identifier</ext:name>
                              </ext:assigningGeographicArea>
                            </ext:asEntityIdentifier>

                            <!-- Entity Identifier (NATA Accreditation Number)-->
                            <ext:asEntityIdentifier classCode="IDENT">
                              <ext:id assigningAuthorityName="NATA" root="1.2.36.1.2001.1005.12" extension="100201"/>
                              <ext:code code="XX" codeSystem="2.16.840.1.113883.12.203"/>
                            </ext:asEntityIdentifier>

                        </wholeOrganization>
                    </asOrganizationPartOf>
                </ext:employerOrganization>
            </ext:asEmployment>
        </assignedPerson>
    </assignedAuthor>
</author>
<!-- End REPORTING PATHOLOGIST -->

<!-- Begin RELATED DOCUMENT = Attached PDF Pathology Report -->
<entry typeCode="COMP">
    <act classCode="ACT" moodCode="EVN">
        <!-- Technical Identifier to uniquely identify this act -->
        <id root="f749ade3-43d2-44cb-8573-5e0c9261aac9"/>
        <code code="102.16971" codeSystem="1.2.36.1.2001.1001.101" codeSystemName="NCTIS Data Components"
            displayName="Related Document"/>

        <!-- Begin Report DateTime (Effective Period) Issued 07/08/2021 13:00 -->
```

```
        <effectiveTime>
            <low value="20210807130000+1000"/>
        </effectiveTime>

        <!-- Begin Report Name (Document Title) = Full Blood Count 07-Aug-2021-->
        <entryRelationship typeCode="COMP">
            <act classCode="ACT" moodCode="EVN">
                <code code="103.16966" codeSystem="1.2.36.1.2001.1001.101" codeSystemName="NCTIS Data Components"
                    displayName="Document Title"/>
                <text xsi:type="ST">Full Blood Count 07-Aug-2021</text>
            </act>
        </entryRelationship>

        <!-- Begin Report Status (Document Status) = Final -->
        <entryRelationship typeCode="COMP">
            <observation classCode="OBS" moodCode="EVN">
                <code code="103.20104" codeSystem="1.2.36.1.2001.1001.101"
                    codeSystemName="NCTIS Data Components" displayName="Document Status"/>
                <value code="F" codeSystem="2.16.840.1.113883.12.123" codeSystemName="HL7 Result Status" xsi:type="CD">
                    <originalText>Final</originalText>
                </value>
            </observation>
        </entryRelationship>

        <!--  Link Nature / Link Role = XCRPT-->
        <reference typeCode="XCRPT">
            <seperatableInd value="true"/>

            <!-- Begin Test Result Representation (Document Target) -->
            <externalDocument classCode="DOC" moodCode="EVN">
                <!-- Report Identifier = 21P617629 -->
                <!-- example showing root="[HPI-O based Report Identifier OID][HPI-O]".
                Local report identifier value used in extension -->
                <id extension="21P617629" root="1.2.36.1.2001.1005.54.8003621566699776"/>
                <!-- Document Type -->
                <code code="11526-1" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC" displayName="Pathology study"/>

                <!-- attachment as encapsulated data -->
                <text integrityCheck="szNxDmqQ+TvlVtIsh3go+61Vo9Q=" integrityCheckAlgorithm="SHA-1"
                    mediaType="application/pdf">
                    <reference value="21P617629.pdf"/>
                </text>

            </externalDocument>
            <!-- End Test Result Representation (Document Target) -->
        </reference>

    </act>
```

```
</entry>
<!-- End RELATED DOCUMENT -->

<!-- Begin PATHOLOGY TEST RESULT -->
<component>
    <section classCode="DOCSECT" moodCode="EVN">
        <!-- Pathology Test Result Instance Identifier - used for system purposes such as matching -->
        <id root="08117ebf-194f-40b3-b631-ac3940d29d8a"/>
        <!-- Detailed Clinical Model Identifier -->
        <code code="102.16144" codeSystem="1.2.36.1.2001.1001.101" codeSystemName="NCTIS Data Components"
            displayName="Pathology Test Result"/>
        <entry>
            <observation classCode="OBS" moodCode="EVN">

                <!-- Test Result Name (Pathology Test Result Name) = Full Blood Count-->
                <code code="26604007" codeSystem="2.16.840.1.113883.6.96"
                    codeSystemName="SNOMED CT" displayName="Complete blood count" xsi:type="CD">
                    <originalText>Full Blood Count</originalText>
                </code>

                <!-- Diagnostic Service = Haematology -->
                <entryRelationship typeCode="COMP">
                    <observation classCode="OBS" moodCode="EVN">
                        <code code="310074003" codeSystem="2.16.840.1.113883.6.96"
                            codeSystemName="SNOMED CT" displayName="Pathology service"/>
                        <value code="HM" codeSystem="2.16.840.1.113883.12.74"
                            codeSystemName="HL7 Diagnostic service section ID" displayName="Haematology" xsi:type="CD"/>
                    </observation>
                </entryRelationship>

                <!-- Begin Test Specimen Detail (SPECIMEN) -->
                <entryRelationship typeCode="SUBJ">
                    <observation classCode="OBS" moodCode="EVN">
                        <code code="102.16156" codeSystem="1.2.36.1.2001.1001.101"
                            codeSystemName="NCTIS Data Components" displayName="Specimen"/>

                        <!-- Date and Time of Collection (Collection DateTime) Datetime = 07-Aug-2021 08:50-->
                        <effectiveTime value="20210807085000+1000"/>

                    </observation>
                </entryRelationship>
                <!-- End Test Specimen Detail (SPECIMEN) -->

                <!-- Overall Pathology Test Result Status = Final -->
                <entryRelationship typeCode="COMP">
                    <observation classCode="OBS" moodCode="EVN">
                        <!-- ID is used for system purposes such as matching -->
                        <id root="7aa9baac-0cd0-11e0-9516-4350dfd72085"/>
```

```
            <code code="308552006" codeSystem="2.16.840.1.113883.6.96"
                codeSystemName="SNOMED CT" codeSystemVersion="20110531" displayName="Report status"/>
            <value code="F" codeSystem="2.16.840.1.113883.12.123" codeSystemName="HL7 Result Status" xsi:type="CD"/>
        </observation>
    </entryRelationship>

    <!-- Begin Result Group (PATHOLOGY TEST RESULT GROUP) - Required by CDA template for panels and individual tests --
>
    <entryRelationship typeCode="COMP">
        <organizer classCode="BATTERY" moodCode="EVN">
            <id root="af789b97-0e42-4f94-8364-68965d95d63a"/>

            <!-- Pathology Test Result Group Name = Full Blood Count -->
            <!-- A report that contains a single panel with one or more individual test records the panel/study name in
            both Pathology Test Result Name and Pathology Test Result Group Name-->
            <code code="26604007" codeSystem="2.16.840.1.113883.6.96"
                codeSystemName="SNOMED CT" displayName="Complete blood count" xsi:type="CD">
                <originalText>Full Blood Count</originalText>
            </code>
            <statusCode code="completed"/>

            <!-- Begin Hemoglobin Result (INDIVIDUAL PATHOLOGY TEST RESULT) -->
            <component>
                <observation classCode="OBS" moodCode="EVN">
                  <id root="adf8f458-8f42-45e1-b30c-904c2a9d80ad"/>
                  <!-- Individual Pathology Test Result Name = Hemoglobin-->
                  <code code="718-7" codeSystem="2.16.840.1.113883.6.1"
                     codeSystemName="LOINC" displayName="Hemoglobin [Mass/volume] in Blood" xsi:type="CD">
                     <originalText>Hb</originalText>
                  </code>
                  <statusCode code="completed"/>
                  <!-- Individual Pathology Test Result Value = 141 g/L -->
                  <value value="141" unit="g/L" xsi:type="PQ"/>

                  <!-- Begin Individual Pathology Test Result Status = Final -->
                  <entryRelationship typeCode="COMP">
                     <observation classCode="OBS" moodCode="EVN">
                     <!-- ID is used for system purposes such as matching -->
                        <id root="41c8e7ba-ba2c-4a56-b6ce-7aedfddb9f01"/>
                        <code code="308552006" codeSystem="2.16.840.1.113883.6.96"
                           codeSystemName="SNOMED CT" codeSystemVersion="20110531"
                           displayName="Report status"/>
                        <value code="F" codeSystem="2.16.840.1.113883.12.123"
                           codeSystemName="HL7 Result Status" xsi:type="CD"/>
                     </observation>
                  </entryRelationship>

                  <!--REFERENCE RANGE = 130-180-->
```

```
      <referenceRange>
         <observationRange>
            <text>130-180</text>
            <value xsi:type="ST">130-180</value>
         </observationRange>
      </referenceRange>

    </observation>
</component>
<!-- End Hemoglobin Result (INDIVIDUAL PATHOLOGY TEST RESULT) -->

<!-- Begin Haematocrit Result (INDIVIDUAL PATHOLOGY TEST RESULT) -->
<component>
    <observation classCode="OBS" moodCode="EVN">
      <id root="a4758cb9-1de2-4b8a-8cd2-b8fe31603d77"/>
      <!-- Individual Pathology Test Result Name = Haematocrit-->
      <code code="4544-3" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"
         displayName="Hematocrit [Volume Fraction] of Blood by Automated count" xsi:type="CD">
         <originalText>HCT</originalText>
      </code>
      <statusCode code="completed"/>
      <!-- Individual Pathology Test Result Value = 0.41 L/L -->
      <value value="0.41" unit="L/L" xsi:type="PQ"/>

      <!-- Begin Individual Pathology Test Result Status = Final -->
      <entryRelationship typeCode="COMP">
         <observation classCode="OBS" moodCode="EVN">
         <!-- ID is used for system purposes such as matching -->
         <id root="fb966b2a-7c3a-4386-935e-7a0ca7870d6f"/>
         <code code="308552006" codeSystem="2.16.840.1.113883.6.96" codeSystemName="SNOMED CT"
            codeSystemVersion="20110531" displayName="Report status"/>
         <value code="F" codeSystem="2.16.840.1.113883.12.123"
            codeSystemName="HL7 Result Status" xsi:type="CD"/>
         </observation>
      </entryRelationship>

      <!--REFERENCE RANGE = 0.39-0.52-->
      <referenceRange>
         <observationRange>
            <text>0.39-0.52</text>
            <value xsi:type="ST">0.39-0.52</value>
         </observationRange>
      </referenceRange>

    </observation>
</component>
<!-- End Haematocrit Result (INDIVIDUAL PATHOLOGY TEST RESULT) -->
```

```
<!-- Begin Red Cell Count Result (INDIVIDUAL PATHOLOGY TEST RESULT) -->
<component>
    <observation classCode="OBS" moodCode="EVN">
      <id root="8e02f1d2-d050-4fcf-b140-44002da142d9"/>
      <!-- Individual Pathology Test Result Name = Red Cell Count-->
      <code code="789-8" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"
         displayName="Erythrocytes [#/volume] in Blood by Automated count" xsi:type="CD">
         <originalText>RCC</originalText>
      </code>
      <statusCode code="completed"/>
      <!-- Individual Pathology Test Result Value = 4.4 x10^9/L -->
      <value value="4.4" unit="10*9/L" xsi:type="PQ"/>


      <!-- Begin Individual Pathology Test Result Status = Final -->
      <entryRelationship typeCode="COMP">
         <observation classCode="OBS" moodCode="EVN">
            <!-- ID is used for system purposes such as matching -->
            <id root="8ee13447-1426-4ca7-b321-9054e0d890f4"/>
            <code code="308552006" codeSystem="2.16.840.1.113883.6.96" codeSystemName="SNOMED CT"
               codeSystemVersion="20110531" displayName="Report status"/>
            <value code="F" codeSystem="2.16.840.1.113883.12.123"
               codeSystemName="HL7 Result Status" xsi:type="CD"/>
         </observation>
      </entryRelationship>

      <!--REFERENCE RANGE = 4.5-6.0-->
      <referenceRange>
         <observationRange>
            <text>4.5-6.0</text>
            <value xsi:type="ST">4.5-6.0</value>
         </observationRange>
      </referenceRange>

    </observation>
</component>
<!-- End Red Cell Count Result (INDIVIDUAL PATHOLOGY TEST RESULT) -->

<!-- Begin Mean Cell Volume Result (INDIVIDUAL PATHOLOGY TEST RESULT) -->
<component>
    <observation classCode="OBS" moodCode="EVN">
      <id root="b5f88bd5-8c83-4c0a-b13b-d6cc24024496"/>
      <!-- Individual Pathology Test Result Name = Mean Cell Volume-->
      <code code="787-2" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"
         displayName="MCV [Entitic volume] by Automated count" xsi:type="CD">
         <originalText>MCV</originalText>
      </code>
      <statusCode code="completed"/>
```

```
            <!-- Individual Pathology Test Result Value = 94 fL -->
            <value value="94" unit="fL" xsi:type="PQ"/>

            <!-- Begin Individual Pathology Test Result Status = Final -->
            <entryRelationship typeCode="COMP">
               <observation classCode="OBS" moodCode="EVN">
                  <!-- ID is used for system purposes such as matching -->
                  <id root="d2380f51-10d3-48c9-bc68-3e3963b342fb"/>
                  <code code="308552006" codeSystem="2.16.840.1.113883.6.96" codeSystemName="SNOMED CT"
                     codeSystemVersion="20110531" displayName="Report status"/>
                  <value code="F" codeSystem="2.16.840.1.113883.12.123"
                     codeSystemName="HL7 Result Status" xsi:type="CD"/>
               </observation>
            </entryRelationship>

            <!--REFERENCE RANGE = 80-100-->
            <referenceRange>
               <observationRange>
                  <text>80-100</text>
                  <value xsi:type="ST">80-100</value>
               </observationRange>
            </referenceRange>

         </observation>
      </component>
      <!-- End Mean Cell Volume Result (INDIVIDUAL PATHOLOGY TEST RESULT) -->

      <!-- Begin Mean cell haemoglobin Result (INDIVIDUAL PATHOLOGY TEST RESULT) -->
      <component>
         <observation classCode="OBS" moodCode="EVN">
            <id root="e5f76eeb-9bff-44a0-aa75-47e5819fce4f"/>
            <!-- Individual Pathology Test Result Name = Mean cell haemoglobin-->
            <code code="785-6" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"
               displayName="MCH [Entitic mass] by Automated count" xsi:type="CD">
               <originalText>MCH</originalText>
            </code>
            <statusCode code="completed"/>
            <!-- Individual Pathology Test Result Value = 32.2 pg -->
            <value value="32.2" unit="pg" xsi:type="PQ"/>

            <!-- Begin Individual Pathology Test Result Status = Final -->
            <entryRelationship typeCode="COMP">
               <observation classCode="OBS" moodCode="EVN">
                  <!-- ID is used for system purposes such as matching -->
                  <id root="d2380f51-10d3-48c9-bc68-3e3963b342fb"/>
                  <code code="308552006" codeSystem="2.16.840.1.113883.6.96" codeSystemName="SNOMED CT"
                     codeSystemVersion="20110531" displayName="Report status"/>
                  <value code="F" codeSystem="2.16.840.1.113883.12.123"
```

```
                codeSystemName="HL7 Result Status" xsi:type="CD"/>
            </observation>
        </entryRelationship>

        <!--REFERENCE RANGE = 27-33-->
        <referenceRange>
            <observationRange>
                <text>27-33</text>
                <value xsi:type="ST">27-33</value>
            </observationRange>
        </referenceRange>

    </observation>
</component>
<!-- End Mean cell haemoglobin Result (INDIVIDUAL PATHOLOGY TEST RESULT) -->

<!-- Begin Mean cell haemoglobin concentration Result (INDIVIDUAL PATHOLOGY TEST RESULT) -->
<component>
    <observation classCode="OBS" moodCode="EVN">
        <id root="adf0d78d-7389-441c-b5ee-49d8db7293fd"/>
        <!-- Individual Pathology Test Result Name = Mean cell haemoglobin-->
        <code code="28540-3" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"
            displayName="MCHC [Mass/volume]" xsi:type="CD">
            <originalText>MCHC</originalText>
        </code>
        <statusCode code="completed"/>
        <!-- Individual Pathology Test Result Value = 342 g/L -->
        <value value="342" unit="g/L" xsi:type="PQ"/>

        <!-- Begin Individual Pathology Test Result Status = Final -->
        <entryRelationship typeCode="COMP">
            <observation classCode="OBS" moodCode="EVN">
            <!-- ID is used for system purposes such as matching -->
            <id root="5db89214-9849-45f4-be86-37de6805f446"/>
                <code code="308552006" codeSystem="2.16.840.1.113883.6.96" codeSystemName="SNOMED CT"
                    codeSystemVersion="20110531" displayName="Report status"/>
                <value code="F" codeSystem="2.16.840.1.113883.12.123"
                    codeSystemName="HL7 Result Status" xsi:type="CD"/>
            </observation>
        </entryRelationship>

        <!--REFERENCE RANGE = 310-365-->
        <referenceRange>
            <observationRange>
                <text>310-365</text>
                <value xsi:type="ST">310-365</value>
            </observationRange>
        </referenceRange>
```

```
    </observation>
</component>
<!-- End Mean cell haemoglobin concentration Result (INDIVIDUAL PATHOLOGY TEST RESULT) -->

<!-- Begin Platelet count Result (INDIVIDUAL PATHOLOGY TEST RESULT) -->
<component>
    <observation classCode="OBS" moodCode="EVN">
      <id root="06a1abed-c326-421d-b47d-62420c3b4975"/>
      <!-- Individual Pathology Test Result Name = Platelet count-->
      <code code="777-3" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"
         displayName="Platelets [#/volume] in Blood by Automated count" xsi:type="CD">
         <originalText>Plat</originalText>
      </code>
      <statusCode code="completed"/>
      <!-- Individual Pathology Test Result Value = 185 x10^9/L -->
      <value value="185" unit="10*9/L" xsi:type="PQ"/>

      <!-- Begin Individual Pathology Test Result Status = Final -->
      <entryRelationship typeCode="COMP">
         <observation classCode="OBS" moodCode="EVN">
            <!-- ID is used for system purposes such as matching -->
            <id root="bbf3309d-3ef7-4ca1-977f-a437d1412855"/>
            <code code="308552006" codeSystem="2.16.840.1.113883.6.96" codeSystemName="SNOMED CT"
               codeSystemVersion="20110531" displayName="Report status"/>
            <value code="F" codeSystem="2.16.840.1.113883.12.123"
               codeSystemName="HL7 Result Status" xsi:type="CD"/>
      </observation>
      </entryRelationship>

      <!--REFERENCE RANGE = 150-450-->
      <referenceRange>
         <observationRange>
            <text>150-450</text>
            <value xsi:type="ST">150-450</value>
         </observationRange>
      </referenceRange>

    </observation>
</component>
<!-- End Platelet count Result (INDIVIDUAL PATHOLOGY TEST RESULT) -->

<!-- Begin White cell count Result (INDIVIDUAL PATHOLOGY TEST RESULT) -->
<component>
    <observation classCode="OBS" moodCode="EVN">
      <id root="8e49c736-2839-413c-8fc0-5b084290e7b0"/>
      <!-- Individual Pathology Test Result Name = White cell count-->
      <code code="6690-2" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"
```

```
            displayName="Leukocytes [#/volume] in Blood by Automated count" xsi:type="CD">
            <originalText>WCC</originalText>
         </code>
         <statusCode code="completed"/>
         <!-- Individual Pathology Test Result Value = 7.1 x10^9/L -->
         <value value="7.1" unit="10*9/L" xsi:type="PQ"/>

         <!-- Begin Individual Pathology Test Result Status = Final -->
         <entryRelationship typeCode="COMP">
            <observation classCode="OBS" moodCode="EVN">
               <!-- ID is used for system purposes such as matching -->
               <id root="2070c054-6563-4b79-ba31-0bfd1e244f5a"/>
               <code code="308552006" codeSystem="2.16.840.1.113883.6.96" codeSystemName="SNOMED CT"
                  codeSystemVersion="20110531" displayName="Report status"/>
               <value code="F" codeSystem="2.16.840.1.113883.12.123"
                  codeSystemName="HL7 Result Status" xsi:type="CD"/>
            </observation>
         </entryRelationship>

         <!--REFERENCE RANGE = 4.0-11.0-->
         <referenceRange>
            <observationRange>
               <text>4.0-11.0</text>
               <value xsi:type="ST">4.0-11.0</value>
            </observationRange>
         </referenceRange>

      </observation>
   </component>
   <!-- End White cell count Result (INDIVIDUAL PATHOLOGY TEST RESULT) -->

   <!-- Begin Red cell Distribution Result (INDIVIDUAL PATHOLOGY TEST RESULT) -->
   <component>
      <observation classCode="OBS" moodCode="EVN">
         <id root="89d012e6-7179-466a-9ea4-6923cbb8b210"/>
         <!-- Individual Pathology Test Result Name = Red cell Distribution-->
         <code code="788-0" codeSystem="2.16.840.1.113883.6.1" codeSystemName="LOINC"
            displayName="Red cell Distribution" xsi:type="CD">
            <originalText>RDW</originalText>
         </code>
         <statusCode code="completed"/>
         <!-- Individual Pathology Test Result Value = 12.4% -->
         <value value="12.4" unit="%" xsi:type="PQ"/>

         <!-- Begin Individual Pathology Test Result Status = Final -->
         <entryRelationship typeCode="COMP">
            <observation classCode="OBS" moodCode="EVN">
               <!-- ID is used for system purposes such as matching -->
```

```
                <id root="2070c054-6563-4b79-ba31-0bfd1e244f5a"/>
                <code code="308552006" codeSystem="2.16.840.1.113883.6.96"
                   codeSystemName="SNOMED CT" codeSystemVersion="20110531"
                   displayName="Report status"/>
                <value code="F" codeSystem="2.16.840.1.113883.12.123"
                codeSystemName="HL7 Result Status" xsi:type="CD"/>
             </observation>
          </entryRelationship>

          <!--REFERENCE RANGE = <16.5 -->
          <referenceRange>
             <observationRange>
                <text>&lt;16.5</text>
                <value xsi:type="ST">&lt;16.5</value>
             </observationRange>
          </referenceRange>

       </observation>
    </component>
    <!-- End Red cell Distribution Result (INDIVIDUAL PATHOLOGY TEST RESULT) -->

    <!-- Begin Neutrophils Result (INDIVIDUAL PATHOLOGY TEST RESULT) -->
    <component>
       <observation classCode="OBS" moodCode="EVN">
          <id root="96b3c784-8365-4573-a0b7-4a05222b81de"/>
          <!-- Individual Pathology Test Result Name = Neutrophils-->
          <code code="26499-4" codeSystem="2.16.840.1.113883.6.1"
             codeSystemName="LOINC" displayName="Neutrophils" xsi:type="CD">
             <originalText>Neuts</originalText>
          </code>
          <statusCode code="completed"/>
          <!-- Individual Pathology Test Result Value = 4.5 x10^9/L -->
          <value value="4.5" unit="10*9/L" xsi:type="PQ"/>

          <!-- Begin Individual Pathology Test Result Status = Final -->
          <entryRelationship typeCode="COMP">
             <observation classCode="OBS" moodCode="EVN">
             <!-- ID is used for system purposes such as matching -->
             <id root="129ebd42-dafd-4a59-bc18-0213c1c48f7f"/>
             <code code="308552006" codeSystem="2.16.840.1.113883.6.96" codeSystemName="SNOMED CT"
                codeSystemVersion="20110531" displayName="Report status"/>
             <value code="F" codeSystem="2.16.840.1.113883.12.123"
                codeSystemName="HL7 Result Status" xsi:type="CD"/>
             </observation>
          </entryRelationship>

          <!--REFERENCE RANGE = 1.8-7.7 -->
          <referenceRange>
```

```
            <observationRange>
               <text>1.8-7.7</text>
               <value xsi:type="ST">1.8-7.7</value>
            </observationRange>
         </referenceRange>

      </observation>
   </component>
   <!-- End Neutrophils Result (INDIVIDUAL PATHOLOGY TEST RESULT) -->

   <!-- Begin Lymphocytes Result (INDIVIDUAL PATHOLOGY TEST RESULT) -->
   <component>
      <observation classCode="OBS" moodCode="EVN">
         <id root="b931a6d9-e2b5-4c36-8add-d7510c2cdaca"/>
         <!-- Individual Pathology Test Result Name = Lymphocytes-->
         <code code="26474-7" codeSystem="2.16.840.1.113883.6.1"
            codeSystemName="LOINC" displayName="Lymphocytes" xsi:type="CD">
            <originalText>Lymphs</originalText>
         </code>
         <statusCode code="completed"/>
         <!-- Individual Pathology Test Result Value = 1.7 x10^9/L -->
         <value value="1.7" unit="10*9/L" xsi:type="PQ"/>

         <!-- Begin Individual Pathology Test Result Status = Final -->
         <entryRelationship typeCode="COMP">
            <observation classCode="OBS" moodCode="EVN">
               <!-- ID is used for system purposes such as matching -->
               <id root="2e46dc03-23ae-45fb-95d7-5b1f7d205bf8"/>
               <code code="308552006" codeSystem="2.16.840.1.113883.6.96" codeSystemName="SNOMED CT"
                  codeSystemVersion="20110531" displayName="Report status"/>
               <value code="F" codeSystem="2.16.840.1.113883.12.123"
                  codeSystemName="HL7 Result Status" xsi:type="CD"/>
            </observation>
         </entryRelationship>

         <!--REFERENCE RANGE = 1.0-4.0 -->
         <referenceRange>
            <observationRange>
               <text>1.0-4.0</text>
               <value xsi:type="ST">1.0-4.0</value>
            </observationRange>
         </referenceRange>

      </observation>
   </component>
   <!-- End Lymphocytes Result (INDIVIDUAL PATHOLOGY TEST RESULT) -->

   <!-- Begin Monocytes Result (INDIVIDUAL PATHOLOGY TEST RESULT) -->
```

```
<component>
    <observation classCode="OBS" moodCode="EVN">
      <id root="653185ed-5e4c-4cb4-8cd2-ba73d9170ae5"/>
      <!-- Individual Pathology Test Result Name = Monocytes-->
      <code code="26484-6" codeSystem="2.16.840.1.113883.6.1"
         codeSystemName="LOINC" displayName="Monocytes" xsi:type="CD">
         <originalText>Mono</originalText>
      </code>
      <statusCode code="completed"/>
      <!-- Individual Pathology Test Result Value = 0.8 x10^9/L -->
      <value value="0.8" unit="10*9/L" xsi:type="PQ"/>

      <!-- Begin Individual Pathology Test Result Status = Final -->
      <entryRelationship typeCode="COMP">
         <observation classCode="OBS" moodCode="EVN">
         <!-- ID is used for system purposes such as matching -->
         <id root="78627c8a-f33e-428f-8b18-8bdfe59e90d3"/>
         <code code="308552006" codeSystem="2.16.840.1.113883.6.96" codeSystemName="SNOMED CT"
            codeSystemVersion="20110531" displayName="Report status"/>
         <value code="F" codeSystem="2.16.840.1.113883.12.123"
            codeSystemName="HL7 Result Status" xsi:type="CD"/>
         </observation>
      </entryRelationship>

      <!--REFERENCE RANGE = 0.2-1.0 -->
      <referenceRange>
         <observationRange>
            <text>0.2-1.0</text>
            <value xsi:type="ST">0.2-1.0</value>
         </observationRange>
      </referenceRange>

    </observation>
</component>
<!-- End Monocytes Result (INDIVIDUAL PATHOLOGY TEST RESULT) -->

<!-- Begin Eosinophils Result (INDIVIDUAL PATHOLOGY TEST RESULT) -->
<component>
    <observation classCode="OBS" moodCode="EVN">
      <id root="0cfc910e-0fde-4633-ad5b-1a12b3cde6e1"/>
      <!-- Individual Pathology Test Result Name = Eosinophils-->
      <code code="26449-9" codeSystem="2.16.840.1.113883.6.1"
         codeSystemName="LOINC" displayName="Eosinophils" xsi:type="CD">
         <originalText>Eos</originalText>
      </code>
      <statusCode code="completed"/>
      <!-- Individual Pathology Test Result Value = 0.2 x10^9/L -->
      <value value="0.2" unit="10*9/L" xsi:type="PQ"/>
```

```
            <!-- Begin Individual Pathology Test Result Status = Final -->
            <entryRelationship typeCode="COMP">
               <observation classCode="OBS" moodCode="EVN">
               <!-- ID is used for system purposes such as matching -->
               <id root="bb4e6c75-cf41-4cd2-9228-92995ac18a68"/>
               <code code="308552006" codeSystem="2.16.840.1.113883.6.96" codeSystemName="SNOMED CT"
                  codeSystemVersion="20110531" displayName="Report status"/>
               <value code="F" codeSystem="2.16.840.1.113883.12.123"
                  codeSystemName="HL7 Result Status" xsi:type="CD"/>
               </observation>
            </entryRelationship>

            <!--REFERENCE RANGE = 0.0-0.5 -->
            <referenceRange>
               <observationRange>
                  <text>0.0-0.5</text>
                  <value xsi:type="ST">0.0-0.5</value>
               </observationRange>
            </referenceRange>

         </observation>
      </component>
      <!-- End Eosinophils Result (INDIVIDUAL PATHOLOGY TEST RESULT) -->

      <!-- Begin Basophils Result (INDIVIDUAL PATHOLOGY TEST RESULT) -->
      <component>
         <observation classCode="OBS" moodCode="EVN">
            <id root="fdc2a0ce-af7d-46e5-9a15-cb6039b7e448"/>
            <!-- Individual Pathology Test Result Name = Basophils-->
            <code code="26444-0" codeSystem="2.16.840.1.113883.6.1"
               codeSystemName="LOINC" displayName="Basophils" xsi:type="CD">
               <originalText>Baso</originalText>
            </code>
            <statusCode code="completed"/>
            <!-- Individual Pathology Test Result Value = <0.01 x10^9/L -->
            <value xsi:type="IVL_PQ">
               <low value="0" unit="10*9/L"/>
               <high value="0.01" unit="10*9/L" inclusive="false"/
            </value>

            <!-- Begin Individual Pathology Test Result Status = Final -->
            <entryRelationship typeCode="COMP">
               <observation classCode="OBS" moodCode="EVN">
                  <!-- ID is used for system purposes such as matching -->
                  <id root="af4c4ea5-dcfa-4c4b-bbf9-9ca887fb1c61"/>
                  <code code="308552006" codeSystem="2.16.840.1.113883.6.96" codeSystemName="SNOMED CT"
                     codeSystemVersion="20110531" displayName="Report status"/>
```

```
            <value code="F" codeSystem="2.16.840.1.113883.12.123"
               codeSystemName="HL7 Result Status" xsi:type="CD"/>
         </observation>
      </entryRelationship>

      <!--REFERENCE RANGE = 0.0-0.15 -->
      <referenceRange>
         <observationRange>
            <text>0.0-0.15</text>
            <value xsi:type="ST">0.0-0.15</value>
         </observationRange>
      </referenceRange>

    </observation>
</component>
<!-- End Basophils Result (INDIVIDUAL PATHOLOGY TEST RESULT) -->

<!-- Begin Left shift Result (INDIVIDUAL PATHOLOGY TEST RESULT) -->
<component>
    <observation classCode="OBS" moodCode="EVN">
      <id root="86b116c2-da6a-4cd3-acf1-cef57a16c4b2"/>
      <!-- Individual Pathology Test Result Name = Left shift-->
      <code code="30411-3" codeSystem="2.16.840.1.113883.6.1"
         codeSystemName="LOINC" displayName="Left shift" xsi:type="CD">
         <originalText>LeftShift</originalText>
      </code>
      <statusCode code="completed"/>
      <!-- Individual Pathology Test Result Value = 0.01 x10^9/L -->
      <value value="0.01" unit="10*9/L" xsi:type="PQ"/>

      <!-- Begin Individual Pathology Test Result Status = Final -->
      <entryRelationship typeCode="COMP">
         <observation classCode="OBS" moodCode="EVN">
            <!-- ID is used for system purposes such as matching -->
            <id root="af4c4ea5-dcfa-4c4b-bbf9-9ca887fb1c61"/>
         <code code="308552006" codeSystem="2.16.840.1.113883.6.96" codeSystemName="SNOMED CT"
            codeSystemVersion="20110531" displayName="Report status"/>
         <value code="F" codeSystem="2.16.840.1.113883.12.123"
            codeSystemName="HL7 Result Status" xsi:type="CD"/>
         </observation>
      </entryRelationship>

    </observation>
</component>
<!-- End Left shift Result (INDIVIDUAL PATHOLOGY TEST RESULT) -->

<!-- Begin Left shift % Result (INDIVIDUAL PATHOLOGY TEST RESULT) -->
<component>
```

```
                    <observation classCode="OBS" moodCode="EVN">
                      <id root="86b116c2-da6a-4cd3-acf1-cef57a16c4b2"/>
                      <!-- Individual Pathology Test Result Name = Left shift-->
                      <code xsi:type="CD"> <originalText>LeftShift%</originalText>code>
                      <statusCode code="completed"/>
                      <!-- Individual Pathology Test Result Value = 0.1% -->
                      <value value="0.1" unit="%" xsi:type="PQ"/>

                      <!-- Begin Individual Pathology Test Result Status = Final -->
                      <entryRelationship typeCode="COMP">
                         <observation classCode="OBS" moodCode="EVN">
                            <!-- ID is used for system purposes such as matching -->
                            <id root="af4c4ea5-dcfa-4c4b-bbf9-9ca887fb1c61"/>
                            <code code="308552006" codeSystem="2.16.840.1.113883.6.96" codeSystemName="SNOMED CT"
                               codeSystemVersion="20110531" displayName="Report status"/>
                            <value code="F" codeSystem="2.16.840.1.113883.12.123"
                               codeSystemName="HL7 Result Status" xsi:type="CD"/>
                         </observation>
                      </entryRelationship>

                      <!--REFERENCE RANGE = <1.0 -->
                      <referenceRange>
                         <observationRange>
                            <text>&lt;16.5</text>
                            <value xsi:type="ST">&lt;1.0</value>
                         </observationRange>
                      </referenceRange>

                    </observation>
                </component>
                <!-- End Left shift % Result (INDIVIDUAL PATHOLOGY TEST RESULT) -->

            </organizer>
        </entryRelationship>
        <!-- End Result Group (PATHOLOGY TEST RESULT GROUP) -->

        <!-- Begin Test Comment -->
        <entryRelationship typeCode="COMP">
            <act classCode="ACT" moodCode="EVN">
                <!-- ID is used for system purposes such as matching -->
                <id root="4b3cdc9d-0300-4f71-a822-24ca0d5015a6"/>
                <code code="103.16468" codeSystem="1.2.36.1.2001.1001.101"
                    codeSystemName="NCTIS Data Components" displayName="Test Comment"/>
                <text xsi:type="ST">Automated results, blood film not reviewed</text>
            </act>
        </entryRelationship>

        <!-- Begin Observation DateTime = Specimen Collected DateTime of 07-Aug-2021 08:50-->
```

```
                                <entryRelationship typeCode="COMP">
                                    <observation classCode="OBS" moodCode="EVN">
                                        <!-- ID is used for system purposes such as matching -->
                                        <id root="7266bcce-dc60-45ad-879e-4083d5b8feb2"/>
                                        <code code="103.16605" codeSystem="1.2.36.1.2001.1001.101"
                                            codeSystemName="NCTIS Data Components" displayName="Pathology Test Result DateTime"/>
                                        <effectiveTime value="20210807085000+1000"/>
                                    </observation>
                                </entryRelationship>

                            </observation>
                        </entry>

                    </section>
                </component>
                <!-- End PATHOLOGY TEST RESULT -->

            </section>
        </component>
        <!-- End PATHOLOGY -->

    </structuredBody>
</component>
<!-- End CDA Body -->
</ClinicalDocument>
```

C.2 Sample CDA stylesheet rendering

This is intended to be an example only, to assist with understanding and review of A.1 CDA XML; it is not intended to be incorporated into any implementation design or technical specification.

Full Blood Count 07-Aug-2021
7 Aug 2021
Mr. Lenny **MATTERSON** DoB 27 Jul 1972 (49y*) SEX Male IHI 8003 6081 6689 5854

START OF DOCUMENT

Randwick Laboratories
Author Dr Robert BROWN
Phone 0491 578 888

Pathology

Order Details

Requester	Requested	Order Identifier
Dr Sarah Bondiali Bondi GP Medical Center	06-Aug-21 13:30	P617629

Report Details

Report Name	Report Status	Report Date/Time	Report No
Full Blood Count 07-Aug-2021	Final	07-08-2021 13:00	21P617629

BLOOD COUNT

Test	Result	Reference Range	Date	Time
WCC	7.1 x10^9/L	4.0-11.0	07-Aug-2021	08:50
Hb	141 g/L	130-180	07-Aug-2021	08:50
Plat	185 x10^9/L	150-450	07-Aug-2021	08:50
HCT	0.412 L/L	0.39-0.52	07-Aug-2021	08:50
RCC	**4.38L** x10^12/L	4.5-6.0	07-Aug-2021	08:50
MCV	94.1 fL	80-100	07-Aug-2021	08:50
MCH	32.2 pg	27.0-33.0	07-Aug-2021	08:50
MCHC	342 g/L	310-365	07-Aug-2021	08:50
RDW	12.4 %	310-365	07-Aug-2021	08:50
White Cell Differential				
Neuts	4.54 x10^9/L	1.8-7.7	07-Aug-2021	08:50
Lymphs	1.65 x10^9/L	1.0-4.0	07-Aug-2021	08:50
Mono	0.77 x10^9/L	0.2-1.0	07-Aug-2021	08:50
Eos	0.15 x10^9/L	0.04-0.5	07-Aug-2021	08:50
Baso	< 0.01 x10^9/L	< 0.15	07-Aug-2021	08:50
LeftShift	0.01 x10^9/L		07-Aug-2021	08:50
LeftShift%	0.1 %	<1.0	07-Aug-2021	08:50

Comments

Automated results, blood film not reviewed

Link to PDF report

Administrative Observations

DVA file number	NBUR9080 (Gold)

ADMINISTRATIVE DETAILS

Patient

Name	Mr. Lenny MATTERSON
Sex	Male
Indigenous Status	Both Aboriginal and Torres Strait Islander origin
Date of Birth	27 Jul 1972 (49y) * Age is calculated from date of birth
IHI	8003 6081 6689 5854
Entitlements	NBUR9080 (Repatriation Health Gold Benefits)
Address	

Author

Name	Dr Robert BROWN
Organisation	Randwick Laboratories
Work Place	1342 Sydney St, Randwick, NSW, 2031
Phone	0491 578 888 (Workplace)

Clinical Document Details

Document Type	Pathology Report
Creation Date/Time	7 Aug 2021 13:00+1000
Date/Time Attested	Not Provided
Document ID	2.25.10757425810188082737001009123299802749 7
Document Set ID	9cb8267f-fcfd-4341-bc89-e53e4ce9646c
Document Version	1
Completion Code	Final

Requester

Request Creation Date	61 2010 33:09+1000
Order ID	P617629
Name	Dr Sarah Bondiali
Organisation	Bondi GP Medical Center

END OF DOCUMENT

C.3 Sample PDF report

This is intended to be an example only, to assist with understanding and review of A.1 CDA XML; it is not intended to be incorporated into any implementation design or technical specification.

Randwick Laboratories

(02) 5550 8994
1342 Sydney St, Randwick, NSW, 2031
NATA Accreditation Number: 100201

Pathology Report

Dr Sarah Bondiali

Bondi GP Medical Center

Final Report

Issued 07/08/2021 13:00

Patient: **MATTERSON, Mr. Lenny** Sex: Male DOB: 27/07/72 Age: 49 Years Requested: 06/08/21 13:30

Indigenous Status: Both Aboriginal and Torres Strait Islander origin

IHI: 8003608166895854 DVA: NBUR9080 (Gold)

FULL BLOOD COUNT

Req No:	P617629		
Date:	07/08/21		
Time:	08:50	Units	Ref Range
BLOOD COUNT			
WCC	7.1	x10^9/L	4.0-11.0
Hb	141	g/L	130-180
Plat	185	x10^9/L	150-450
HCT	0.412	L/L	0.39-0.52
RCC	**4.38L**	x10^12/L	4.5-6.0
MCV	94.1	fL	80-100
MCH	32.2	pg	27.0-33.0
MCHC	342	g/L	310-365
RDW	12.4	%	<16.5
White Cell Differential			
Neuts	4.54	x10^9/L	1.8-7.7
Lymphs	1.65	x10^9/L	1.0-4.0
Mono	0.77	x10^9/L	0.2-1.0
Eos	0.15	x10^9/L	0.04-0.5
Baso	<0.01	x10^9/L	<0.15
LeftShift	0.01	x10^9/L	
LeftShift%	0.1	%	<1.0

21P617629 07/08/2021 08:50
Comments: Automated results, blood film not reviewed.

HAEMATOLOGY 07/08/2021 Dr Robert Brown (HPI-I 8003614900041243) Haematologist 0491 578 888

Randwick Laboratories

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Acronyms

Acronym	Description
CDA	Clinical Document Architecture
DCM	Detailed Clinical Model
FHIR	Fast Healthcare Interoperability Resources
HL7	Health Level Seven
HPI-I	Healthcare Provider Identifier - Individual
HPI-O	Healthcare Provider Identifier - Organisation
IHI	Individual Healthcare Identifier
NCTIS	National Clinical Terminology and Information Service
OID	Object Identifier
PR	Pathology Report
RCPA	Royal College of Pathologists of Australasia
RIM	Reference Information Model
SCS	Structured Content Specification
UUID	Universally Unique Identifier
XHTML	Extensible Hypertext Markup Language
XML	Extensible Markup Language
XSD	XML Schema Definition
XSL	Extensible Stylesheet Language

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