



Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Swiss Confederation

Federal Department of Home Affairs FDHA
Federal Office of Public Health FOPH

NACR - National Agency
for Cancer Registration

Foundation National
Institute for Cancer
Epidemiology and
Registration (NICER)

c/o University of Zurich
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Exchange format for cancer registration

Draft version

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1 Introduction

This document specifies the exchange format for cancer registration.

On January 1st 2020 the new National Law on Cancer Registration (NLCR) and the according Ordinance on Cancer Registration (OCR) enters into force. In order to achieve data completeness on a national level, institutions involved in diagnosing or treating cancer are required to report cases of cancer to a cancer registry. For further information on the legal framework, please consult the website of the National Agency for Cancer Registration (NACR; www.nicer.org > cancer registration > cancer registration according to the cancer registration act from 1.1.2020) or the website of the Federal Office of Public Health (FOPH; www.bag.admin.ch, keyword “Krebsregistrierung”, “Enregistrement du cancer”, “Registrazione delle malattie tumorali”).

2 Keywords

The normative specification uses the following keywords, each written in capital letters, to specify constraints.

- **MUST** means an obligation to comply with a regulation.
- **NOT PERMITTED** formulates an obligation to comply with the prohibition.
- **SHOULD** stands for a pragmatic recommendation. It is desirable and recommended that the requirement be implemented, but there may be reasons why this is not done.
- **MAY** or **OPTIONAL**. The implementation of the requirement is optional, it can also be omitted without compelling reason.

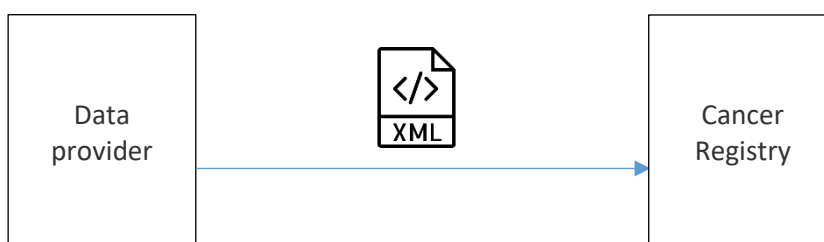
3 Use cases

Four use cases are defined below. Use cases 1a (sect. 3.1) and 1b (sect. 3.2) are valid, use cases 2 to 4 are still under consideration.

3.1 Use Case 1a

Purpose: Notification from data provider to cancer registry with unstructured data. The resource *Binary* **MUST** be used. The resource *Observation* **MAY** be used. See example for use case 1a.

Actors:



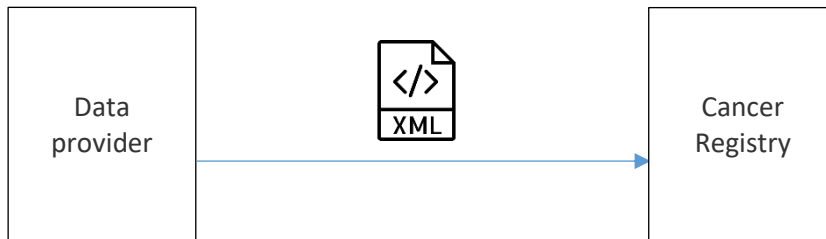
Resources:

- *Bundle*
- *Patient*
- *Organization*
- *Communication*
- *Binary*
- *Observation (Optional)*

3.2 Use Case 1b

Purpose: Notification from data provider to cancer registry with structured data. One or more *Observations* MUST be used. The resource *Binary* MAY be used. See example for use case 1b.

Actors:



Resources:

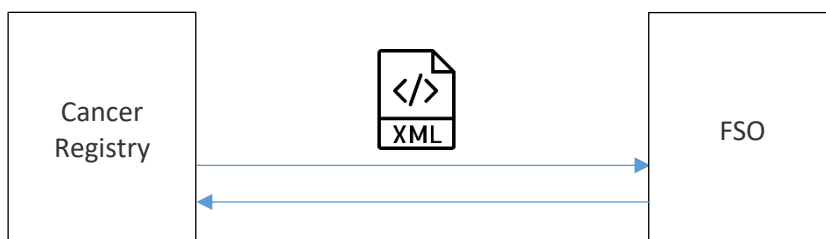
- *Bundle*
- *Patient*
- *Organization*
- *Communication*
- *Binary (Optional)*
- *Observation*

3.3 Use Case 2 (provisional)

Request Federal Statistical Office (FSO)

Purpose: Request to FSO with response to cancer registry (Art. 9 and 22 NLCR, Art 20 OCR).

Actors:



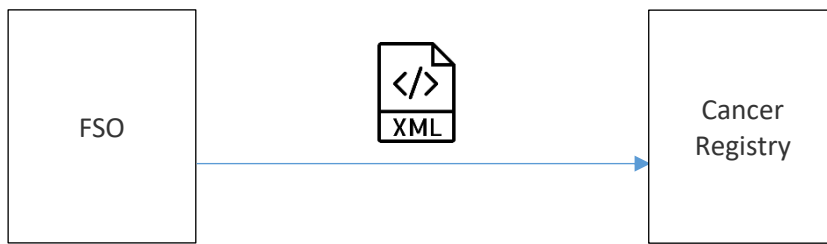
Resources:

- *Bundle*
- *Patient*
- *Organization*
- *Binary (response only)*
- *Observation*

3.4 Use Case 3 (provisional)

Purpose: Notification from FSO to cancer registry (Art. 11 and 22 NLCR, Art 10 OCR)

Actors:



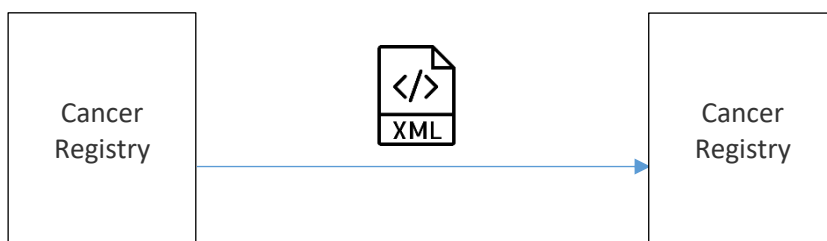
Resources:

- *Bundle*
- *Patient*
- *Organization*
- *Binary*
- *Observation*

3.5 Use Case 4 (provisional)

Purpose: Case forwarding from cancer registry to cancer registry (Art. 8 and 9 NLCR).

Actors:



Resources:

- *Bundle*
- *Patient*
- *Organization*
- *Communication*
- *Binary (Optional)*
- *Observation*

4 Specification (normative)

This specification is based on the following principles: HL7 FHIR.

<https://www.hl7.org/fhir/index.html>

4.1 Administrative Data

The following administrative data **MUST** be transmitted in a structured manner.

Patient data (Art. 3 NLCR)

- Name and first name
- Insured person's number pursuant to Article 50c of the Federal Act of 20 December on Old-age and Survivors' Insurance (Insured person's number)¹
- Residential address

¹ AHVN13

- Date of birth
- Sex

Data on the reporting person (Art. 3 NLCR, Art. 7 OCR)

- First name and surname
- Telephone number
- Address and e-mail

Data on the reporting institution (Art. 3 NLCR, Art. 7 OCR)

- Name of the institution
- First name, surname and function of the responsible contact person
- Telephone number
- Address and e-mail

Data on patient information (Art. 5 NLCR, Art. 13 OCR)

- Date of the patient's information

4.2 Medical Data

Medical data can be delivered structured or unstructured. For unstructured data, the resource *Binary* is provided so that a PDF document can be integrated into the notification. Structured data can be transmitted as single observations.

Medical data to be transmitted (Art. 3 and 4 NLCR, Art. 1 to 4 OCR)

- Diagnostic data on cancer
- Primary treatment data
- Type of cancer: type and characteristics of the tumour
- Tumour spread at the time of diagnosis, disease stage and tumour-specific prognostic factors
- Method and cause of investigation
- Occurrence of metastases and recurrences and their localization
- Type of treatment and treatment objective
- Basics of the treatment decision
- Treatment initiation
- Predispositions
- Pre-existing conditions and comorbidities

4.3 FHIR Structure

FHIR® – Fast Healthcare Interoperability Resources (hl7.org/fhir) – is a next generation standards framework created by HL7. FHIR combines the best features of HL7's [v2](#), [HL7 v3](#) and [CDA](#) product lines while leveraging the latest web standards and applying a tight focus on implementability.

FHIR solutions are built from a set of modular components called "Resources". These resources can easily be assembled into working systems that solve real world clinical and administrative problems at a fraction of the price of existing alternatives. FHIR is suitable for use in a wide variety of contexts – mobile phone apps, cloud communications, EHR-based data sharing, server communication in large institutional healthcare providers, and much more.

4.3.1 Resources

FHIR consists of individual resources, e.g. *Patient*.



4.3.2 Bundle

The *Bundle* is a set of resources collected into a single package for ease of distribution.
















```
<Bundle xmlns="http://hl7.org/fhir">  
  
  <resource>  
    <Patient />  
  </resource>  
  
  <resource>  
    <Patient />  
  </resource>  
  
  <resource>  
    <Patient />  
  </resource>  
  
  <resource>  
    <Patient />  
  </resource>  
  
  <resource>  
    <Patient />  
  </resource>  
  
</Bundle>
```


4.4 Specification of the individual resources

4.4.1 Name

The name of the element in the resource (manifests as XML element name or JSON or RDF property name). In addition, this column contains an icon that denotes the underlying type of the content.

Key to Type Icons

- : The base element for a resource (see [Resources](#))
- : An element that is part of the resource and has elements within it defined in the same resource or profile
- : An element which can have one of several different types (see below)
- : An element of a data type which describes an element that has a value attribute/property. These are also known as primitive types. All primitive type names start with a lower case letter
- : An element of a data type which describes an element that has other elements. These are known as complex types. All complex type names defined in this specification start with an uppper case letter
- : An element that contains a reference to another resource (see [references](#))
- : This element has the same content as another element defined within this resource or profile
- : Introduction of a set of slices (see [Slicing](#))
- : A complex extension - one with nested extensions (see [Extensibility](#))
- : An extension that has a value and no nested extensions (see [Extensibility](#))
- : A complex modifier extension - one with nested extensions (see [Extensibility](#))
- : A modifier extension that has a value and no nested extensions (see [Extensibility](#))
- : The root of a logical profile

4.4.2 Flags

A set of information about the element that impacts how implementers handle them.

Key to Flags

- **?!:** This element is a modifying element - see [Modifier Elements](#)
- **S:** This element is an element that must be supported - see [MustSupport Elements](#)
- **Σ:** This element is an element that is part of the summary set - see [Summary Searches](#)
- **I:** This element defines or is affected by constraints - see [Constraints](#)
- **NE:** This element cannot have extensions (some infrastructural elements only)
- **TU:** This element has a [standards status of Trial Use](#) (for discussion about mixing standards status in a resource, see [Mixed Normative content](#))
- **N:** This element has a [standards status of Normative](#)
- **D:** This element has a [standards status of Draft](#)

4.4.3 Cardinality

The lower and upper bounds on how many times this element is allowed to appear in the resource





4.4.4 Type

The type of the element (hyperlinked to the definition of the type). Note that the type of the element has one of two meanings, depending on whether the element has defined children. If the element has children, then the element has an anonymous type that specializes the given type. If the element has no children, then the element has properties and children as specified by the nominated type

4.4.5 Description and Constraints










A description of the element, and details about constraints that are applied to it. Particularly, for coded elements, information about which codes can be used.

4.4.6 Specification of the Resource Bundle

<u>Name</u>	<u>Flags</u>	<u>Card.</u>	<u>Type</u>	<u>Description & Constraints</u>	
 Bundle	Σ IN		Resource	Contains a collection of resources Elements defined in Ancestors: id , meta , text	
 identifier	Σ	0..1	Identifier	Persistent identifier for the bundle	
 type	Σ	1..1	code	document message transaction transaction-response batch batch-response history searchset collection BundleType (Required)	BundleType MUST be collection
 timestamp	Σ	0..1	instant	When the bundle was assembled	










4.4.7 Specification of the Resource Patient

The resource *Patient* is used to specify the patient. The resource is **MUST**.

Name	Flags	Card.	Type	Description & Constraints
 Patient	<u>N</u>		DomainResource	Information about an individual or animal receiving health care services Elements defined in Ancestors: id , meta , text
 identifier	<u>Σ</u>	1..*	Identifier	An identifier for this patient. + Rule: MUST use AHVN13
 name	<u>Σ</u>	1..*	HumanName	A name associated with the patient
 gender	<u>Σ</u>	1..1	code	male female other unknown AdministrativeGender (Required)
 birthDate	<u>Σ</u>	1..1	date	The date of birth for the individual
 deceased[x]	<u>?!Σ</u>	0..1		Indicates if the individual is deceased or not + Rule: FSO MUST provide deceasedDateTime
 deceasedBoolean			boolean	
 deceasedDateTime			dateTime	
 address	<u>Σ</u>	1..*	Address	An address for the individual





4.4.8 Specification of the Resource Organization

The resource *Organization* is used to specify the source organization. The resource is **MUST**.

Name	Flags	Card.	Type	Description & Constraints
 Organization	<u>I</u> TU		DomainResource	A grouping of people or organizations with a common purpose Elements defined in Ancestors: id , meta , text
 identifier	<u>Σ</u> I	0..*	Identifier	Identifies this organization across multiple systems
 type	<u>Σ</u>	1..*	CodeableConcept	Kind of organization Organization type (Example) + Rule: Organization MUST be prov for Hospital, pract for practitioner and govt for BFS
 name	<u>Σ</u> I	1..1	string	Name used for the organization
 telecom	<u>I</u>	1..*	ContactPoint	A contact detail for the organization + Rule: The telecom of an organization can never be of use 'home'
 address	<u>I</u>	1..*	Address	An address for the organization + Rule: An address of an organization can never be of use 'home'
 contact		0..*	BackboneElement	Contact for the organization for a certain purpose
 purpose		0..1	CodeableConcept	The type of contact Contact entity type (Extensible)
 name		0..1	HumanName	A name associated with the contact





4.4.9 Specification of the Resource Communication

The resource *Communication* is used to transmit the date of patient information. The resource is SHOULD.

Name	Flags	Card.	Type	Description & Constraints
 Communication	<u>TU</u>		DomainResource	A record of information transmitted from a sender to a receiver Elements defined in Ancestors: id , text
 identifier	<u>Σ</u>	0..*	Identifier	Unique identifier
 status	<u>?!Σ</u>	1..1	code	preparation in-progress not-done suspended aborted completed entered-in-error EventStatus (Required)
 sent		0..1	dateTime	When sent

4.4.10 Specification of the Resource Binary

The resource *Binary* is used to transmit a document. The resource is OPTIONAL.


















Name	Flags	Card.	Type	Description & Constraints
 Binary	N		Resource	Pure binary content defined by a format other than FHIR Elements defined in Ancestors: id , meta , implicitRules , language
 contentType	Σ	1..1	code	MimeType of the binary content MimeType (Required)
 securityContext	Σ	0..1	Reference(Any)	Identifies another resource to use as proxy when enforcing access control
 data		0..1	base64Binary	The actual content

4.4.11 Specification of the Resource Observation

The resource *Observation* is used to transmit observations. The resource is OPTIONAL for UC 1a (sect. 3.1) and MUST for 1b (sect. 3.2).

Possible *Observations* for UC 1b see Basic Data Variables:

<https://www.nicer.org/de/krebsregistrierung/krebsregistrierung-nach-krig-ab-112020/> (German and French) (referenced in examples as www.nicer.org/Basisdatensatz)

<u>Name</u>	<u>Flags</u>	<u>Card.</u>	<u>Type</u>	<u>Description & Constraints ?</u>
 Observation	IN		DomainResource	Measurements and simple assertions Elements defined in Ancestors: id , text
 identifier	Σ	0..*	Identifier	Business Identifier for observation
 status	?!Σ	1..1	code	registered preliminary final amended + ObservationStatus (Required)
 code	Σ	1..1	CodeableConcept	Type of observation (code / type) LOINC Codes (Example)
 subject	Σ	0..1	Reference(Patient Group Device Location)	Who and/or what the observation is about
 value[x]	ΣI	0..1		Actual result
 valueQuantity			Quantity	
 valueCodeableConcept			CodeableConcept	
 valueString			string	
 valueBoolean			boolean	
 valueInteger			integer	
 valueRange			Range	
 valueRatio			Ratio	
 valueSampledData			SampledData	
 valueTime			time	
 valueDateTime			dateTime	
 valuePeriod			Period	

5 Appendix

Example for use case 1a, see sect. 1

Example for use case 1b, see sect. 2

1. Example for use case 1a

```
<?xml version="1.0" encoding="UTF-8"?>
<Bundle xmlns="http://hl7.org/fhir">
  <id value="UC1a"/>
  <meta>
    <versionId value="1"/>
    <lastUpdated value="2019-07-10T12:00:46Z"/>
  </meta>
  <type value="collection"/>

  <!-- Patient -->
  <entry>
    <resource>
      <Patient>
        <id value="Patient001"/>
        <name>
          <family value="Patient"/>
          <given value="Krg"/>
        </name>
        <identifier>
          <system value="urn:oid:2.16.756.5.32"/>
          <value value="756.1234.5678.90"/>
        </identifier>
        <address>
          <use value="home"/>
          <line value="Bahnhofstrasse 1"/> <!-- Adresse -->
          <line value="Bahnhofstrasse 1"/> <!-- Postfach etc. -->
          <postalCode value="8001"/>
          <city value="Zürich"/>
        </address>
        <birthDate value="1950-01-01"/>
        <gender value="male"/>
      </Patient>
    </resource>
  </entry>

  <!-- Organization if Spital -->
  <entry>
    <resource>
      <Organization>
        <identifier>
          <system value="https://www.uid.admin.ch"/> <!-- bur? -->
          <value value="CHE-105.983.423"/>
        </identifier>
        <type>
          <coding>
            <system value="http://hl7.org/fhir/ValueSet/organization-type"/>
            <code value="prov"/> <!-- = healthcare provider govt für
bfs-->
          </coding>
        </type>
        <name value="Inselspital"/>
        <telecom>
          <system value="phone"/>
          <use value="work"/>
          <value value="031 311 11 11"/>
        </telecom>
      </Organization>
    </resource>
  </entry>
</Bundle>
```

```

        <system value="email"/>
        <use value="work"/>
        <value value="info@insel.ch"/>
    </telecom>
    <address>
        <use value="business"/>
        <line value="Bahnhofstrasse 1"/> <!-- Adresse -->
        <line value="Bahnhofstrasse 1"/> <!-- Postfach etc. -->
        <postalCode value="8001"/>
        <city value="Zürich"/>
    </address>
    </contact>
    <purpose value="admin"/>
    <name>
        <family value="Doctor"/>
        <given value="Krg"/>
    </name>
    <gender value="male"/>
    </contact>
</Organization>
</resource>
</entry>

<!-- Organization if Arztpraxis -->
<entry>
    <resource>
        <Practitioner>
            <identifier>
                <system value="urn:oid:2.51.1.3"/> <!-- gln oid? -->
                <value value="7601000974334"/>
            </identifier>
            <name>
                <family value="Doctor"/>
                <given value="Praxis"/>
            </name>
            <telecom>
                <system value="phone"/>
                <use value="work"/>
                <value value="031 512 75 98"/>
            </telecom>
            <telecom>
                <system value="email"/>
                <use value="work"/>
                <value value="praxis@privatpraxis.ch"/>
            </telecom>
            <address>
                <use value="business"/>
                <line value="Bahnhofstrasse 1"/> <!-- Adresse -->
                <line value="Bahnhofstrasse 1"/> <!-- Postfach etc. -->
                <postalCode value="8001"/>
                <city value="Zürich"/>
            </address>
            <gender value="female"/>
        </Practitioner>
    </resource>
</entry>

<!-- Datum der Patienteninformation -->
<entry>
    <resource>
        <Communication>
            <id value="Patienteninformation"/>
            <status value="completed"/>
            <sent value="[dateTime]"/><!-- 0..1 When sent -->
        </Communication>
    </resource>

```

```

    </entry>
<!-- PDF -->
  <entry>
    <resource>
      <Binary>
        <id value="namedokument"/>
        <id value="uniqueidentifier"/>
        <contentType value="application/PDF"/>
        <data value="base64Binary"/>
      </Binary>
    </resource>
  </entry>

<!-- OPTIONAL Klinische Angaben -->
<!-- cT -->
  <entry>
    <resource>
      <Observation>
        <id value="cT"/>
        <status value="final"/>
        <code>
          <coding>
            <system value="http://loinc.org"/>
            <code value="21905-5"/>
            <display value="Primary tumor.clinical"/>
          </coding>
        </code>
        <valueCodeableConcept>
          <coding>
            <system value="{TNM8}"/>
            <code>1</code>
            <display value="T1"/>
          </coding>
        </valueCodeableConcept>
        <subject>
          <reference value="Patient/Patient001"/>
        </subject>
      </Observation>
    </resource>
  </entry>

<!-- cN -->
  <entry>
    <resource>
      <Observation>
        <id value="cN"/>
        <status value="final"/>
        <code>
          <coding>
            <system value="http://loinc.org"/>
            <code value="21906-3"/>
            <display value="Regional lymph nodes.clinical"/>
          </coding>
        </code>
        <valueCodeableConcept>
          <coding>
            <system value="{TNM8}"/>
            <code>1</code>
            <display value="N1"/>
          </coding>
        </valueCodeableConcept>
        <subject>
          <reference value="Patient/Patient001"/>
        </subject>
      </Observation>
    </resource>
  </entry>

```

```
</entry>
<!-- cM -->
<entry>
  <resource>
    <Observation>
      <id value="cM"/>
      <status value="final"/>
      <code>
        <coding>
          <system value="http://loinc.org"/>
          <code value="21907-1"/>
          <display value="Distant metastases.clinical"/>
        </coding>
      </code>
      <valueCodeableConcept>
        <coding>
          <system value="{TNM8}"/>
          <code>1</code>
          <display value="M1"/>
        </coding>
      </valueCodeableConcept>
      <subject>
        <reference value="Patient/Patient001"/>
      </subject>
    </Observation>
  </resource>
</entry>
</Bundle>
```

2. Example for use case 1b

```
<?xml version="1.0" encoding="UTF-8"?>
<Bundle xmlns="http://hl7.org/fhir">
  <id value="Todesursachen Beispiel"/>
  <meta>
    <versionId value="1"/>
    <lastUpdated value="2019-07-10T12:00:46Z"/>
  </meta>
  <type value="collection"/>

  <!-- Patient -->
  <entry>
    <resource>
      <Patient>
        <id value="Patient001"/>
        <name>
          <family value="Patient"/>
          <given value="Krg"/>
        </name>
        <identifier>
          <system value="urn:oid:2.16.756.5.32"/>
          <value value="756.1234.5678.90"/>
        </identifier>
        <address>
          <use value="home"/>
          <line value="Bahnhofstrasse 1"/> <!-- Adresse -->
          <line value="Bahnhofstrasse 1"/> <!-- Postfach etc. -->
          <postalCode value="8001"/>
          <city value="Zürich"/>
        </address>
        <birthDate value="1950-01-01"/>
        <gender value="male"/>
      </Patient>
    </resource>
  </entry>

  <!-- Spital -->
  <entry>
    <resource>
      <Organization>
        <identifier>
          <system value="https://www.uid.admin.ch"/> <!-- bur? -
          <value value="CHE-105.983.423"/>
        </identifier>
        <type>
          <coding>
            <system
value="http://hl7.org/fhir/ValueSet/organization-type"/>
            <code value="prov"/> <!-- = healthcare
provider govt für bfs-->
          </coding>
        </type>
        <name value="Inselspital"/>
        <telecom>
          <system value="phone"/>
          <use value="work"/>
          <value value="031 311 11 11"/>
        </telecom>
        <telecom>
          <system value="email"/>
          <use value="work"/>
          <value value="info@insel.ch"/>
        </telecom>
      </Organization>
    </resource>
  </entry>
</Bundle>
```

```

        <address>
            <use value="business"/>
            <line value="Bahnhofstrasse 1"/> <!-- Adresse -->
            <line value="Bahnhofstrasse 1"/> <!-- Postfach etc. -->
        </address>
        <postalCode value="8001"/>
        <city value="Zürich"/>
    </address>
    <contact>
        <purpose value="admin"/>
        <name>
            <family value="Doctor"/>
            <given value="Krg"/>
        </name>
        <gender value="male"/>
    </contact>
</Organization>
</resource>
</entry>

<!-- Arztpraxis -->
<entry>
    <resource>
        <Practitioner>
            <identifier>
                <system value="urn:oid:2.51.1.3"/> <!-- gln oid? -->
                <value value="7601000974334"/>
            </identifier>
            <name>
                <family value="Doctor"/>
                <given value="Praxis"/>
            </name>
            <telecom>
                <system value="phone"/>
                <use value="work"/>
                <value value="031 512 75 98"/>
            </telecom>
            <telecom>
                <system value="email"/>
                <use value="work"/>
                <value value="praxis@privatpraxis.ch"/>
            </telecom>
            <address>
                <use value="business"/>
                <line value="Bahnhofstrasse 1"/> <!-- Adresse -->
                <line value="Bahnhofstrasse 1"/> <!-- Postfach etc. -->
            </address>
            <postalCode value="8001"/>
            <city value="Zürich"/>
            <gender value="female"/>
        </Practitioner>
    </resource>
</entry>

<!-- Datum der Patienteninformation -->
<entry>
    <resource>
        <Communication>
            <id value="Patienteninformation"/>
            <status value="completed"/>
            <sent value="[datedateTime]"/><!-- 0..1 When sent -->
        </Communication>
    </resource>
</entry>

```

```

<!-- PDF -->
<entry>
  <resource>
    <Binary>
      <id value="namedokument"/>
      <id value="uniqueidentifier"/>
      <contentType value="application/PDF"/>
      <data value="base64Binary"/>
    </Binary>
  </resource>
</entry>

<!-- Klinische Angaben -->
<entry>
  <resource>
    <Observation>
      <id value="Endgültige Todesursache"/>
      <status value="final"/>
      <code>
        <coding>
          <system value="http://loinc.org"/>
          <code value="86255-7"/>
          <display value="Primary diagnosis ICD code"/>
        </coding>
      </code>
      <valueCodeableConcept>
        <coding>

          <system>urn:oid:2.16.756.5.30.1.126.3.2.2014</system>
          <code>c34.1</code>
          <display value="Bösartige Neubildung der
Bronchien und der Lunge"/>
        </coding>
      </valueCodeableConcept>
      <subject>
        <reference value="Patient/Patient001"/>
      </subject>
    </Observation>
  </resource>
</entry>
<entry>
  <resource>
    <Observation>
      <id value="Grundkrankheit"/>
      <status value="final"/>
      <code>
        <coding>
          <system value="http://loinc.org"/>
          <code value="86255-7"/>
          <display value="Primary diagnosis ICD code"/>
        </coding>
      </code>
      <valueCodeableConcept>
        <coding>

          <system>urn:oid:2.16.756.5.30.1.126.3.2.2014</system>
          <code>c34.1</code>
          <display value="Bösartige Neubildung der
Bronchien und der Lunge"/>
        </coding>
      </valueCodeableConcept>
      <subject>
        <reference value="Patient/Patient001"/>
      </subject>
    </Observation>
  </resource>
</entry>

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<entry>
  <resource>
    <Observation>
      <id value="Folgekrankheit"/>
      <status value="final"/>
      <code>
        <coding>
          <system value="http://loinc.org"/>
          <code value="86255-7"/>
          <display value="Primary diagnosis ICD code"/>
        </coding>
      </code>
      <valueCodeableConcept>
        <coding>

          <system>urn:oid:2.16.756.5.30.1.126.3.2.2014</system>
          <code>c34.1</code>
          <display value="Bösartige Neubildung der
Bronchien und der Lunge"/>
        </coding>
      </valueCodeableConcept>
      <subject>
        <reference value="Patient/Patient001"/>
      </subject>
    </Observation>
  </resource>
</entry>
<entry>
  <resource>
    <Observation>
      <id value="Begleiterkrankung A"/>
      <status value="final"/>
      <code>
        <coding>
          <system value="http://loinc.org"/>
          <code value="86255-7"/>
          <display value="Primary diagnosis ICD code"/>
        </coding>
      </code>
      <valueCodeableConcept>
        <coding>

          <system>urn:oid:2.16.756.5.30.1.126.3.2.2014</system>
          <code>c34.1</code>
          <display value="Bösartige Neubildung der
Bronchien und der Lunge"/>
        </coding>
      </valueCodeableConcept>
      <subject>
        <reference value="Patient/Patient001"/>
      </subject>
    </Observation>
  </resource>
</entry>
<entry>
  <resource>
    <Observation>
      <id value="Begleiterkrankung B"/>
      <status value="final"/>
      <code>
        <coding>
          <system value="http://loinc.org"/>
          <code value="86255-7"/>
          <display value="Primary diagnosis ICD code"/>
        </coding>
      </code>
      <valueCodeableConcept>

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        <coding>
          <system>urn:oid:2.16.756.5.30.1.126.3.2.2014</system>
          <code>c34.1</code>
          <display value="Bösartige Neubildung der
Bronchien und der Lunge"/>
        </coding>
      </valueCodeableConcept>
      <subject>
        <reference value="Patient/Patient001"/>
      </subject>
    </Observation>
  </resource>
</entry>

<!-- Date of incidence -->
<entry>
  <resource>
    <Observation>
      <id value="dateofincidence"/>
      <status value="final"/>
      <code>
        <coding>
          <system value="www.nicer.org/Basisdatensatz"/>
          <code value="2.3.1"/>
          <display value="Date of incidence"/>
        </coding>
      </code>
      <valueDateTime>
        <incidence date value="2019-05-12"/>
      </valueDateTime>
      <subject>
        <reference value="Patient/Patient001"/>
      </subject>
    </Observation>
  </resource>
</entry>

<!-- cT -->
<entry>
  <resource>
    <Observation>
      <id value="cT"/>
      <status value="final"/>
      <code>
        <coding>
          <system value="http://loinc.org"/>
          <code value="21905-5"/>
          <display value="Primary tumor.clinical"/>
        </coding>
      </code>
      <valueCodeableConcept>
        <coding>
          <system value="{TNM8}"/>
          <code>1</code>
          <display value="T1"/>
        </coding>
      </valueCodeableConcept>
      <subject>
        <reference value="Patient/Patient001"/>
      </subject>
    </Observation>
  </resource>
</entry>

<!-- cN -->
<entry>

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    <resource>
      <Observation>
        <id value="cN"/>
        <status value="final"/>
        <code>
          <coding>
            <system value="http://loinc.org"/>
            <code value="21906-3"/>
            <display value="Regional lymph nodes.clinical"/>
          </coding>
        </code>
        <valueCodeableConcept>
          <coding>
            <system value="{TNM8}"/>
            <code>1</code>
            <display value="N1"/>
          </coding>
        </valueCodeableConcept>
        <subject>
          <reference value="Patient/Patient001"/>
        </subject>
      </Observation>
    </resource>
  </entry>

  <!-- cM -->
  <entry>
    <resource>
      <Observation>
        <id value="cM"/>
        <status value="final"/>
        <code>
          <coding>
            <system value="http://loinc.org"/>
            <code value="21907-1"/>
            <display value="Distant metastases.clinical"/>
          </coding>
        </code>
        <valueCodeableConcept>
          <coding>
            <system value="{TNM8}"/>
            <code>1</code>
            <display value="M1"/>
          </coding>
        </valueCodeableConcept>
        <subject>
          <reference value="Patient/Patient001"/>
        </subject>
      </Observation>
    </resource>
  </entry>

  <!-- pT -->
  <entry>
    <resource>
      <Observation>
        <id value="pT"/>
        <status value="final"/>
        <code>
          <coding>
            <system value="http://loinc.org"/>
            <code value="21899-0"/>
            <display value="Primary tumor.pathology"/>
          </coding>
        </code>
        <valueCodeableConcept>
          <coding>

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                <system value="{TNM8}"/>
                <code>1</code>
                <display value="T1"/>
            </coding>
        </valueCodeableConcept>
        <subject>
            <reference value="Patient/Patient001"/>
        </subject>
    </Observation>
</resource>
</entry>

<!-- pN -->
<entry>
    <resource>
        <Observation>
            <id value="pN"/>
            <status value="final"/>
            <code>
                <coding>
                    <system value="http://loinc.org"/>
                    <code value="21900-6"/>
                    <display value="Regional lymph
nodes.pathology"/>
                </coding>
            </code>
            <valueCodeableConcept>
                <coding>
                    <system value="{TNM8}"/>
                    <code>1</code>
                    <display value="N1"/>
                </coding>
            </valueCodeableConcept>
            <subject>
                <reference value="Patient/Patient001"/>
            </subject>
        </Observation>
    </resource>
</entry>

<!-- pM -->
<entry>
    <resource>
        <Observation>
            <id value="pM"/>
            <status value="final"/>
            <code>
                <coding>
                    <system value="http://loinc.org"/>
                    <code value="21901-4"/>
                    <display value="Distant metastases.pathology"/>
                </coding>
            </code>
            <valueCodeableConcept>
                <coding>
                    <system value="{TNM8}"/>
                    <code>1</code>
                    <display value="M1"/>
                </coding>
            </valueCodeableConcept>
            <subject>
                <reference value="Patient/Patient001"/>
            </subject>
        </Observation>
    </resource>
</entry>

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<!-- ICD-10 -->
<entry>
  <resource>
    <Observation>
      <id value="icd10"/>
      <status value="final"/>
      <code>
        <coding>
          <system value="http://loinc.org"/>
          <code value="86255-7"/>
          <display value="Primary diagnosis ICD code"/>
        </coding>
      </code>
      <valueCodeableConcept>
        <coding>
          <system
value="urn:oid:2.16.756.5.30.1.126.3.2.2014"/>
          <code>C50</code>
          <display value="Breast"/>
        </coding>
      </valueCodeableConcept>
      <subject>
        <reference value="Patient/Patient001"/>
      </subject>
    </Observation>
  </resource>
</entry>

<!-- ICD-O Morphology -->
<entry>
  <resource>
    <Observation>
      <id value="icdo3morpho"/>
      <status value="final"/>
      <code>
        <coding>
          <system value="http://loinc.org"/>
          <code value="59848-2"/>
          <display value="Morphology.ICD-O-3 "/>
        </coding>
      </code>
      <valueCodeableConcept>
        <coding>
          <system
value="urn:oid:2.16.840.1.113883.6.43.1"/>
          <code>8000</code>
          <display value="Neubildung"/>
        </coding>
      </valueCodeableConcept>
      <subject>
        <reference value="Patient/Patient001"/>
      </subject>
    </Observation>
  </resource>
</entry>

<!-- ICD-O-3 Topography -->
<entry>
  <resource>
    <Observation>
      <id value="icdo3topo"/>
      <status value="final"/>
      <code>
        <coding>
          <system value="http://loinc.org"/>
          <code value="21855-2"/>
          <display value="Primary site"/>
        </coding>
      </code>
    </Observation>
  </resource>
</entry>

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        </coding>
      </code>
    </valueCodeableConcept>
    <coding>
      <system value="2.16.840.1.113883.6.43.1"/>
      <code>C50.0</code>
      <display value="Breast"/>
    </coding>
  </valueCodeableConcept>
  <subject>
    <reference value="Patient/Patient001"/>
  </subject>
</Observation>
</resource>
</entry>

<!-- ICD-0-3 Behavior -->
<entry>
  <resource>
    <Observation>
      <id value="icdo3behavior"/>
      <status value="final"/>
      <code>
        <coding>
          <system value="http://loinc.org"/>
          <code value="31206-6"/>
          <display value="Behavior ICD-0-3 "/>
        </coding>
      </code>
      <valueCodeableConcept>
        <coding>
          <system value="2.16.840.1.113883.6.43.1"/>
          <code>3</code>
          <display value="maligne"/>
        </coding>
      </valueCodeableConcept>
      <subject>
        <reference value="Patient/Patient001"/>
      </subject>
    </Observation>
  </resource>
</entry>

<!-- Laterality -->
<entry>
  <resource>
    <Observation>
      <id value="icdo3laterality"/>
      <status value="final"/>
      <code>
        <coding>
          <system value="http://loinc.org"/>
          <code value="63930-2"/>
          <display value="Laterality"/>
        </coding>
      </code>
      <valueCodeableConcept>
        <coding>
          <system value="2.16.840.1.113883.6.43.1"/>
          <code>1</code>
          <display value="rechts"/>
        </coding>
      </valueCodeableConcept>
      <subject>
        <reference value="Patient/Patient001"/>
      </subject>
    </Observation>
  </resource>
</entry>

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    </resource>
  </entry>

  <!-- ICD-O Histological grade -->
  <entry>
    <resource>
      <Observation>
        <id value="icdo3grade"/>
        <status value="final"/>
        <code>
          <coding>
            <system value="http://loinc.org"/>
            <code value="33732-9"/>
            <display value="Histology grade"/>
          </coding>
        </code>
        <valueCodeableConcept>
          <coding>
            <system value="2.16.840.1.113883.6.43.1"/>
            <code>3</code>
            <display value="3"/>
          </coding>
        </valueCodeableConcept>
        <subject>
          <reference value="Patient/Patient001"/>
        </subject>
      </Observation>
    </resource>
  </entry>

  <!-- y-Prefix of cTNM -->
  <entry>
    <resource>
      <Observation>
        <id value="yctnm"/>
        <status value="final"/>
        <code>
          <coding>
            <system value="www.nicer.org/Basisdatensatz"/>
            <code value="4.2"/>
            <display value="y-Prefix of cTNM"/>
          </coding>
        </code>
        <valueCodeableConcept>
          <coding>
            <system value="www.nicer.org/Basisdatensatz"/>
            <code>1</code>
            <display value="Yes"/>
          </coding>
        </valueCodeableConcept>
        <subject>
          <reference value="Patient/Patient001"/>
        </subject>
      </Observation>
    </resource>
  </entry>

  <!-- a-Prefix of pTNM -->
  <entry>
    <resource>
      <Observation>
        <id value="aptnm"/>
        <status value="final"/>
        <code>
          <coding>
            <system value="www.nicer.org/Basisdatensatz"/>
            <code value="4.6"/>

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        <display value="a-Prefix of pTNM"/>
      </coding>
    </code>
  <valueCodeableConcept>
    <coding>
      <system value="www.nicer.org/Basisdatensatz"/>
      <code>1</code>
      <display value="Yes"/>
    </coding>
  </valueCodeableConcept>
  <subject>
    <reference value="Patient/Patient001"/>
  </subject>
</Observation>
</resource>
</entry>

<!-- y-Prefix of pTNM -->
<entry>
  <resource>
    <Observation>
      <id value="yptnm"/>
      <status value="final"/>
      <code>
        <coding>
          <system value="www.nicer.org/Basisdatensatz"/>
          <code value="4.7"/>
          <display value="y-Prefix of pTNM"/>
        </coding>
      </code>
      <valueCodeableConcept>
        <coding>
          <system value="www.nicer.org/Basisdatensatz"/>
          <code>1</code>
          <display value="Yes"/>
        </coding>
      </valueCodeableConcept>
      <subject>
        <reference value="Patient/Patient001"/>
      </subject>
    </Observation>
  </resource>
</entry>

<!-- m-Suffix of pT -->
<entry>
  <resource>
    <Observation>
      <id value="msuffix"/>
      <status value="final"/>
      <code>
        <coding>
          <system value="www.nicer.org/Basisdatensatz"/>
          <code value="4.9"/>
          <display value="m-Suffix of pT"/>
        </coding>
      </code>
      <valueCodeableConcept>
        <coding>
          <system value="www.nicer.org/Basisdatensatz"/>
          <code>4</code>
          <display value="4"/>
        </coding>
      </valueCodeableConcept>
      <subject>
        <reference value="Patient/Patient001"/>
      </subject>
    </Observation>
  </resource>
</entry>

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        </Observation>
    </resource>
</entry>

<!-- Number of involved regional lymph nodes -->
<entry>
    <resource>
        <Observation>
            <id value="involvedln"/>
            <status value="final"/>
            <code>
                <coding>
                    <system value="http://loinc.org"/>
                    <code value="21893-3"/>
                    <display value="Regional lymph nodes positive"/>
                </coding>
            </code>
            <valueCodeableConcept>
                <coding>
                    <system value="www.nicer.org/Basisdatensatz"/>
                    <code>10</code>
                    <display value="10"/>
                </coding>
            </valueCodeableConcept>
            <subject>
                <reference value="Patient/Patient001"/>
            </subject>
        </Observation>
    </resource>
</entry>

<!-- Number of examined regional lymph nodes -->
<entry>
    <resource>
        <Observation>
            <id value="examinedln"/>
            <status value="final"/>
            <code>
                <coding>
                    <system value="http://loinc.org"/>
                    <code value="21894-1"/>
                    <display value="Regional lymph nodes examined"/>
                </coding>
            </code>
            <valueCodeableConcept>
                <coding>
                    <system value="www.nicer.org/Basisdatensatz"/>
                    <code>4</code>
                    <display value="4"/>
                </coding>
            </valueCodeableConcept>
            <subject>
                <reference value="Patient/Patient001"/>
            </subject>
        </Observation>
    </resource>
</entry>

<!-- Lymphatic invasion -->
<entry>
    <resource>
        <Observation>
            <id value="lymphinvasion"/>
            <status value="final"/>
            <code>
                <coding>
                    <system value="www.nicer.org/Basisdatensatz"/>

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        <code value="4.14"/>
        <display value="Lymphatic invasion"/>
      </coding>
    </code>
    <valueCodeableConcept>
      <coding>
        <system value="www.nicer.org/Basisdatensatz"/>
        <code>1</code>
        <display value="L1"/>
      </coding>
    </valueCodeableConcept>
    <subject>
      <reference value="Patient/Patient001"/>
    </subject>
  </Observation>
</resource>
</entry>

<!-- Venous invasion -->
<entry>
  <resource>
    <Observation>
      <id value="venousinvasion"/>
      <status value="final"/>
      <code>
        <coding>
          <system value="www.nicer.org/Basisdatensatz"/>
          <code value="4.14"/>
          <display value="Venous invasion"/>
        </coding>
      </code>
      <valueCodeableConcept>
        <coding>
          <system value="www.nicer.org/Basisdatensatz"/>
          <code>1</code>
          <display value="V1"/>
        </coding>
      </valueCodeableConcept>
      <subject>
        <reference value="Patient/Patient001"/>
      </subject>
    </Observation>
  </resource>
</entry>

<!-- Perineural invasion -->
<entry>
  <resource>
    <Observation>
      <id value="perineuralinvasion"/>
      <status value="final"/>
      <code>
        <coding>
          <system value="http://loinc.org"/>
          <code value="92837-4"/>
          <display value="Perineural invasion"/>
        </coding>
      </code>
      <valueCodeableConcept>
        <coding>
          <system value="www.nicer.org/Basisdatensatz"/>
          <code>1</code>
          <display value="Pn1"/>
        </coding>
      </valueCodeableConcept>
      <subject>
        <reference value="Patient/Patient001"/>
      </subject>
    </Observation>
  </resource>
</entry>

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        </subject>
      </Observation>
    </resource>
  </entry>

  <!-- TNM stage group -->
  <entry>
    <resource>
      <Observation>
        <id value="tnmstage"/>
        <status value="final"/>
        <code>
          <coding>
            <system value="www.nicer.org/Basisdatensatz"/>
            <code value="4.17"/>
            <display value="TNM stage group"/>
          </coding>
        </code>
        <valueCodeableConcept>
          <coding>
            <system value="www.nicer.org/Basisdatensatz"/>
            <code>I</code>
            <display value="I"/>
          </coding>
        </valueCodeableConcept>
        <subject>
          <reference value="Patient/Patient001"/>
        </subject>
      </Observation>
    </resource>
  </entry>

  <!-- Sentinel lymph node assessment -->
  <entry>
    <resource>
      <Observation>
        <id value="sentinelassessment"/>
        <status value="final"/>
        <code>
          <coding>
            <system value="www.nicer.org/Basisdatensatz"/>
            <code value="6.5"/>
            <display value="Sentinel lymph node assessment"/>
          </coding>
        </code>
        <valueCodeableConcept>
          <coding>
            <system value="www.nicer.org/Basisdatensatz"/>
            <code>1</code>
            <display value="N1"/>
          </coding>
        </valueCodeableConcept>
        <subject>
          <reference value="Patient/Patient001"/>
        </subject>
      </Observation>
    </resource>
  </entry>

  <!-- Number of examined sentinel lymph nodes -->
  <entry>
    <resource>
      <Observation>
        <id value="sentinelexamined"/>
        <status value="final"/>
        <code>
          <coding>

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                <system value="http://loinc.org"/>
                <code value="85347-3"/>
                <display value="Sentinel lymph nodes examined"/>
            </coding>
        </code>
        <valueCodeableConcept>
        <coding>
            <system value="www.nicer.org/Basisdatensatz"/>
            <code>5</code>
            <display value="5"/>
        </coding>
    </valueCodeableConcept>
    <subject>
        <reference value="Patient/Patient001"/>
    </subject>
</Observation>
</resource>
</entry>

<!-- Number of positive sentinel lymph nodes -->
<entry>
    <resource>
        <Observation>
            <id value="sentinelpositive"/>
            <status value="final"/>
            <code>
                <coding>
                    <system value="http://loinc.org"/>
                    <code value="92832-5"/>
                    <display value="Sentinel lymph nodes with
metastasis"/>
                </coding>
            </code>
            <valueCodeableConcept>
            <coding>
                <system value="www.nicer.org/Basisdatensatz"/>
                <code>5</code>
                <display value="5"/>
            </coding>
        </valueCodeableConcept>
        <subject>
            <reference value="Patient/Patient001"/>
        </subject>
    </Observation>
</resource>
</entry>

<!-- Clinical tumour size -->
<entry>
    <resource>
        <Observation>
            <id value="clinicalsize"/>
            <status value="final"/>
            <code>
                <coding>
                    <system value="http://loinc.org"/>
                    <code value="21889-1"/>
                    <display value="Size"/>
                </coding>
            </code>
            <valueQuantity>
                <value value="10"/>
                <unit value="mm"/>
            </valueQuantity>
            <subject>
                <reference value="Patient/Patient001"/>
            </subject>
        </Observation>
    </resource>
</entry>

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        </Observation>
    </resource>
</entry>

<!-- Pathological tumour size -->
<entry>
    <resource>
        <Observation>
            <id value="pathologicalsize"/>
            <status value="final"/>
            <code>
                <coding>
                    <system value="http://loinc.org"/>
                    <code value="21889-1"/>
                    <display value="Size"/>
                </coding>
            </code>
            <valueQuantity>
                <value value="10"/>
                <unit value="mm"/>
            </valueQuantity>
            <subject>
                <reference value="Patient/Patient001"/>
            </subject>
        </Observation>
    </resource>
</entry>

<!-- Metastases at diagnosis indicator -->
<entry>
    <resource>
        <Observation>
            <id value="metastasisindicator"/>
            <status value="final"/>
            <code>
                <coding>
                    <system value="www.nicer.org/Basisdatensatz"/>
                    <code value="4.41"/>
                    <display value="Metastases at diagnosis indicator"/>
                </coding>
            </code>
            <valueCodeableConcept>
                <coding>
                    <system value="www.nicer.org/Basisdatensatz"/>
                    <code>1</code>
                    <display value="Yes"/>
                </coding>
            </valueCodeableConcept>
            <subject>
                <reference value="Patient/Patient001"/>
            </subject>
        </Observation>
    </resource>
</entry>

<!-- Topography of metastases at diagnosis -->
<entry>
    <resource>
        <Observation>
            <id value="metastasestopography"/>
            <status value="final"/>
            <code>
                <coding>
                    <system value="www.nicer.org/Basisdatensatz"/>
                    <code value="4.42"/>
                    <display value="Topography of metastases at diagnosis"/>
                </coding>
            </code>
        </Observation>
    </resource>
</entry>

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        </code>
        <valueCodeableConcept>
          <coding>
            <system value="{TNM8}"/>
            <code>1</code>
            <display value="PUL"/>
          </coding>
        </valueCodeableConcept>
        <subject>
          <reference value="Patient/Patient001"/>
        </subject>
      </Observation>
    </resource>
  </entry>

  <!-- Associated in situ tumour -->
  <entry>
    <resource>
      <Observation>
        <id value="associatedinsitu"/>
        <status value="final"/>
        <code>
          <coding>
            <system value="www.nicer.org/Basisdatensatz"/>
            <code value="3.6.2"/>
            <display value="Associated in situ tumour"/>
          </coding>
        </code>
        <valueCodeableConcept>
          <coding>
            <system value="www.nicer.org/Basisdatensatz"/>
            <code>0</code>
            <display value="No"/>
          </coding>
        </valueCodeableConcept>
        <subject>
          <reference value="Patient/Patient001"/>
        </subject>
      </Observation>
    </resource>
  </entry>

  <!-- ICC3-3 -->
  <entry>
    <resource>
      <Observation>
        <id value="iccc3"/>
        <status value="final"/>
        <code>
          <coding>
            <system value="https://seer.cancer.gov/iccc/iccc3_ext.html"/>
            <code value="ICCC-3"/>
            <display value="Extended Classification Table from the ICC3-3 based
on ICD-0-3"/>
          </coding>
        </code>
        <valueCodeableConcept>
          <coding>
            <system
value="https://seer.cancer.gov/iccc/iccc3_ext.html"/>
            <code>I.a.4</code>
            <display value="Lymphoid leukemia, NOS"/>
          </coding>
        </valueCodeableConcept>
        <subject>
          <reference value="Patient/Patient001"/>
        </subject>
      </Observation>
    </resource>
  </entry>

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        </Observation>
    </resource>
</entry>

<!-- Method of first detection -->
<entry>
    <resource>
        <Observation>
            <id value="methodfirstdetection"/>
            <status value="final"/>
            <code>
                <coding>
                    <system value="www.nicer.org/Basisdatensatz"/>
                    <code value="2.6"/>
                    <display value="Method of first detection"/>
                </coding>
            </code>
            <valueCodeableConcept>
                <coding>
                    <system value="www.nicer.org/Basisdatensatz"/>
                    <code>1</code>
                    <display value="Clinical symptoms"/>
                </coding>
            </valueCodeableConcept>
            <subject>
                <reference value="Patient/Patient001"/>
            </subject>
        </Observation>
    </resource>
</entry>

<!-- Diagnostic method(s) used -->
<entry>
    <resource>
        <Observation>
            <id value="diagnosticmethodused"/>
            <status value="final"/>
            <code>
                <coding>
                    <system value="www.nicer.org/Basisdatensatz"/>
                    <code value="2.8"/>
                    <display value="Diagnostic method(s) used"/>
                </coding>
            </code>
            <valueCodeableConcept>
                <coding>
                    <system value="www.nicer.org/Basisdatensatz"/>
                    <code>7</code>
                    <display value="CT scan of tumour"/>
                </coding>
            </valueCodeableConcept>
            <subject>
                <reference value="Patient/Patient001"/>
            </subject>
        </Observation>
    </resource>
</entry>

<!-- Residual invasive tumour -->
<entry>
    <resource>
        <Observation>
            <id value="residualinvasive"/>
            <status value="final"/>
            <code>
                <coding>
                    <system value="http://loinc.org"/>

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                <code value="84892-9"/>
                <display value="Residual tumor classification"/>
            </coding>
        </code>
        <valueCodeableConcept>
            <coding>
                <system value="1.3.6.1.4.1.12009.10.1.2690"/>
                <code>1</code>
                <display value="R0"/>
            </coding>
        </valueCodeableConcept>
        <subject>
            <reference value="Patient/Patient001"/>
        </subject>
    </Observation>
</resource>
</entry>

<!-- Residual in-situ tumour -->
<entry>
    <resource>
        <Observation>
            <id value="residualinsitu"/>
            <status value="final"/>
            <code>
                <coding>
                    <system value="http://loinc.org"/>
                    <code value="84892-9"/>
                    <display value="Residual tumor classification"/>
                </coding>
            </code>
            <valueCodeableConcept>
                <coding>
                    <system value="1.3.6.1.4.1.12009.10.1.2690"/>
                    <code>1</code>
                    <display value="R0"/>
                </coding>
            </valueCodeableConcept>
            <subject>
                <reference value="Patient/Patient001"/>
            </subject>
        </Observation>
    </resource>
</entry>

<!-- Resection margin invasive tumour -->
<entry>
    <resource>
        <Observation>
            <id value="resectioninvasive"/>
            <status value="final"/>
            <code>
                <coding>
                    <system value="http://loinc.org"/>
                    <code value="33737-8"/>
                    <display value="Distance of tumor from closest
margin "/>
                </coding>
            </code>
            <valueQuantity>
                <value value="1"/>
                <unit value="mm"/>
            </valueQuantity>
            <subject>
                <reference value="Patient/Patient001"/>
            </subject>
        </Observation>
    </resource>
</entry>

```

```

        </resource>
    </entry>

    <!-- Resection margin in-situ tumour -->
    <entry>
        <resource>
            <Observation>
                <id value="resectioninsitu"/>
                <status value="final"/>
                <code>
                    <coding>
                        <system value="http://loinc.org"/>
                        <code value="33737-8"/>
                        <display value="Distance of tumor from closest
margin "/>
                    </coding>
                </code>
                <valueQuantity>
                    <value value="1"/>
                    <unit value="mm"/>
                </valueQuantity>
                <subject>
                    <reference value="Patient/Patient001"/>
                </subject>
            </Observation>
        </resource>
    </entry>
    <!-- Ann Arbor Staging -->
    <entry>
        <resource>
            <Observation>
                <id value="annarbor"/>
                <status value="final"/>
                <code>
                    <coding>
                        <system value="www.nicer.org/Basisdatensatz/Variable"/>
                        <code value="4.18"/>
                        <display value="Ann Arbor Staging"/>
                    </coding>
                </code>
                <valueCodeableConcept>
                    <coding>
                        <system value="www.nicer.org/Basisdatensatz/ValuesetvonVariable"/>
                        <code>I</code>
                        <display value="Stage I"/>
                    </coding>
                </valueCodeableConcept>
                <subject>
                    <reference value="Patient/Patient001"/>
                </subject>
            </Observation>
        </resource>
    </entry>

    <!-- COG staging -->
    <entry>
        <resource>
            <Observation>
                <id value="cog"/>
                <status value="final"/>
                <code>
                    <coding>
                        <system value="www.nicer.org/Basisdatensatz"/>
                        <code value="4.19"/>
                        <display value="COG staging"/>
                    </coding>
                </code>
            </Observation>
        </resource>
    </entry>

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        <valueCodeableConcept>
          <coding>
            <system value="www.nicer.org/Basisdatensatz"/>
            <code>I</code>
            <display value="Stage I"/>
          </coding>
        </valueCodeableConcept>
      </subject>
    </Observation>
  </resource>
</entry>

<!-- COG ALL staging -->
<entry>
  <resource>
    <Observation>
      <id value="cogall"/>
      <status value="final"/>
      <code>
        <coding>
          <system value="www.nicer.org/Basisdatensatz"/>
          <code value="4.20"/>
          <display value="COG ALL staging"/>
        </coding>
      </code>
      <valueCodeableConcept>
        <coding>
          <system value="www.nicer.org/Basisdatensatz"/>
          <code>I</code>
          <display value="Stage I"/>
        </coding>
      </valueCodeableConcept>
      <subject>
        <reference value="Patient/Patient001"/>
      </subject>
    </Observation>
  </resource>
</entry>

<!-- FIGO staging -->
<entry>
  <resource>
    <Observation>
      <id value="figo"/>
      <status value="final"/>
      <code>
        <coding>
          <system value="www.nicer.org/Basisdatensatz"/>
          <code value="4.21"/>
          <display value="FIGO Staging"/>
        </coding>
      </code>
      <valueCodeableConcept>
        <coding>
          <system value="www.nicer.org/Basisdatensatz"/>
          <code>I</code>
          <display value="Stage I"/>
        </coding>
      </valueCodeableConcept>
      <subject>
        <reference value="Patient/Patient001"/>
      </subject>
    </Observation>
  </resource>
</entry>

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<!-- INRGSS staging -->
  <entry>
    <resource>
      <Observation>
        <id value="inrgss"/>
        <status value="final"/>
        <code>
          <coding>
            <system value="www.nicer.org/Basisdatensatz"/>
            <code value="4.22"/>
            <display value="INRGSS staging"/>
          </coding>
        </code>
        <valueCodeableConcept>
          <coding>
            <system value="www.nicer.org/Basisdatensatz"/>
            <code>I</code>
            <display value="Stage I"/>
          </coding>
        </valueCodeableConcept>
        <subject>
          <reference value="Patient/Patient001"/>
        </subject>
      </Observation>
    </resource>
  </entry>

<!-- IRSS staging -->
  <entry>
    <resource>
      <Observation>
        <id value="irss"/>
        <status value="final"/>
        <code>
          <coding>
            <system value="www.nicer.org/Basisdatensatz"/>
            <code value="4.23"/>
            <display value="IRSS staging"/>
          </coding>
        </code>
        <valueCodeableConcept>
          <coding>
            <system value="www.nicer.org/Basisdatensatz"/>
            <code>I</code>
            <display value="Stage I"/>
          </coding>
        </valueCodeableConcept>
        <subject>
          <reference value="Patient/Patient001"/>
        </subject>
      </Observation>
    </resource>
  </entry>

<!-- Lugano staging -->
  <entry>
    <resource>
      <Observation>
        <id value="lugano"/>
        <status value="final"/>
        <code>
          <coding>
            <system value="www.nicer.org/Basisdatensatz"/>
            <code value="4.24"/>
            <display value="Lugano staging"/>
          </coding>
        </code>
      </Observation>
    </resource>
  </entry>

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        </code>
        <valueCodeableConcept>
          <coding>
            <system value="www.nicer.org/Basisdatensatz"/>
            <code>I</code>
            <display value="Stage I"/>
          </coding>
        </valueCodeableConcept>
        <subject>
          <reference value="Patient/Patient001"/>
        </subject>
      </Observation>
    </resource>
  </entry>

<!-- PRETEXT staging -->
  <entry>
    <resource>
      <Observation>
        <id value="pretext"/>
        <status value="final"/>
        <code>
          <coding>
            <system value="www.nicer.org/Basisdatensatz"/>
            <code value="4.25"/>
            <display value="PRETEXT staging"/>
          </coding>
        </code>
        <valueCodeableConcept>
          <coding>
            <system value="www.nicer.org/Basisdatensatz"/>
            <code>I</code>
            <display value="Stage I"/>
          </coding>
        </valueCodeableConcept>
        <subject>
          <reference value="Patient/Patient001"/>
        </subject>
      </Observation>
    </resource>
  </entry>

<!-- Rai staging -->
  <entry>
    <resource>
      <Observation>
        <id value="rai"/>
        <status value="final"/>
        <code>
          <coding>
            <system value="www.nicer.org/Basisdatensatz"/>
            <code value="4.26"/>
            <display value="RAI Staging"/>
          </coding>
        </code>
        <valueCodeableConcept>
          <coding>
            <system value="www.nicer.org/Basisdatensatz"/>
            <code>I</code>
            <display value="Stage I"/>
          </coding>
        </valueCodeableConcept>
        <subject>
          <reference value="Patient/Patient001"/>
        </subject>
      </Observation>
    </resource>
  </entry>

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</entry>
<!-- Binet staging -->
<entry>
  <resource>
    <Observation>
      <id value="binet"/>
      <status value="final"/>
      <code>
        <coding>
          <system value="www.nicer.org/Basisdatensatz"/>
          <code value="4.27"/>
          <display value="Binet Staging"/>
        </coding>
      </code>
      <valueCodeableConcept>
        <coding>
          <system value="www.nicer.org/Basisdatensatz"/>
          <code>I</code>
          <display value="Stage I"/>
        </coding>
      </valueCodeableConcept>
      <subject>
        <reference value="Patient/Patient001"/>
      </subject>
    </Observation>
  </resource>
</entry>

<!-- Rhabdomyosarcoma site staging -->
<entry>
  <resource>
    <Observation>
      <id value="rhabdomyosarcoma"/>
      <status value="final"/>
      <code>
        <coding>
          <system value="www.nicer.org/Basisdatensatz"/>
          <code value="4.28"/>
          <display value="Rhabdomyosarcoma site staging"/>
        </coding>
      </code>
      <valueCodeableConcept>
        <coding>
          <system value="www.nicer.org/Basisdatensatz"/>
          <code>I</code>
          <display value="Stage I"/>
        </coding>
      </valueCodeableConcept>
      <subject>
        <reference value="Patient/Patient001"/>
      </subject>
    </Observation>
  </resource>
</entry>

<!-- ISS staging -->
<entry>
  <resource>
    <Observation>
      <id value="iss"/>
      <status value="final"/>
      <code>
        <coding>
          <system value="www.nicer.org/Basisdatensatz"/>
          <code value="4.29"/>
          <display value="ISS Staging"/>
        </coding>
      </code>
    </Observation>
  </resource>
</entry>

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        </coding>
      </code>
    <valueCodeableConcept>
      <coding>
        <system value="www.nicer.org/Basisdatensatz"/>
        <code>I</code>
        <display value="Stage I"/>
      </coding>
    </valueCodeableConcept>
  </subject>
  <reference value="Patient/Patient001"/>
</subject>
</Observation>
</resource>
</entry>
<!-- DSSplus -->
<entry>
  <resource>
    <Observation>
      <id value="dssplus"/>
      <status value="final"/>
      <code>
        <coding>
          <system value="www.nicer.org/Basisdatensatz"/>
          <code value="4.30"/>
          <display value="DSSplus"/>
        </coding>
      </code>
      <valueCodeableConcept>
        <coding>
          <system value="www.nicer.org/Basisdatensatz"/>
          <code>I</code>
          <display value="Stage I"/>
        </coding>
      </valueCodeableConcept>
    </subject>
    <reference value="Patient/Patient001"/>
  </subject>
</Observation>
</resource>
</entry>
<!-- SIOP staging -->
<entry>
  <resource>
    <Observation>
      <id value="siop"/>
      <status value="final"/>
      <code>
        <coding>
          <system value="www.nicer.org/Basisdatensatz"/>
          <code value="4.31"/>
          <display value="SIOP Staging"/>
        </coding>
      </code>
      <valueCodeableConcept>
        <coding>
          <system value="www.nicer.org/Basisdatensatz"/>
          <code>I</code>
          <display value="Stage I"/>
        </coding>
      </valueCodeableConcept>
    </subject>
    <reference value="Patient/Patient001"/>
  </subject>
</Observation>

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    </resource>
  </entry>

<!-- St. Jude / Murphy staging -->
  <entry>
    <resource>
      <Observation>
        <id value="stjudemurphy"/>
        <status value="final"/>
        <code>
          <coding>
            <system value="www.nicer.org/Basisdatensatz"/>
            <code value="4.32"/>
            <display value="St. Jude/Murphy Staging"/>
          </coding>
        </code>
        <valueCodeableConcept>
          <coding>
            <system value="www.nicer.org/Basisdatensatz"/>
            <code>I</code>
            <display value="Stage I"/>
          </coding>
        </valueCodeableConcept>
        <subject>
          <reference value="Patient/Patient001"/>
        </subject>
      </Observation>
    </resource>
  </entry>

<!-- Toronto Tier II staging -->
  <entry>
    <resource>
      <Observation>
        <id value="toronto2"/>
        <status value="final"/>
        <code>
          <coding>
            <system value="www.nicer.org/Basisdatensatz"/>
            <code value="4.33"/>
            <display value="Toronto Tier II Staging"/>
          </coding>
        </code>
        <valueCodeableConcept>
          <coding>
            <system value="www.nicer.org/Basisdatensatz"/>
            <code>I</code>
            <display value="Stage I"/>
          </coding>
        </valueCodeableConcept>
        <subject>
          <reference value="Patient/Patient001"/>
        </subject>
      </Observation>
    </resource>
  </entry>

<!-- Toronto Tier II (manual) staging -->
  <entry>
    <resource>
      <Observation>
        <id value="toronto2manual"/>
        <status value="final"/>
        <code>
          <coding>
            <system value="www.nicer.org/Basisdatensatz"/>
            <code value="4.34"/>

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        <display value="Toronto Tier II (manual) Staging"/>
      </coding>
    </code>
    <valueCodeableConcept>
      <coding>
        <system value="www.nicer.org/Basisdatensatz"/>
        <code>I</code>
        <display value="Stage I"/>
      </coding>
    </valueCodeableConcept>
    <subject>
      <reference value="Patient/Patient001"/>
    </subject>
  </Observation>
</resource>
</entry>

<!-- Creasman grading system -->
<entry>
  <resource>
    <Observation>
      <id value="creasman"/>
      <status value="final"/>
      <code>
        <coding>
          <system value="www.nicer.org/Basisdatensatz"/>
          <code value="4.35"/>
          <display value="Creasman grading system"/>
        </coding>
      </code>
      <valueCodeableConcept>
        <coding>
          <system value="www.nicer.org/Basisdatensatz"/>
          <code>I</code>
          <display value="Stage I"/>
        </coding>
      </valueCodeableConcept>
      <subject>
        <reference value="Patient/Patient001"/>
      </subject>
    </Observation>
  </resource>
</entry>

<!-- Elston/Ellis grading system -->
<entry>
  <resource>
    <Observation>
      <id value="elstonellis"/>
      <status value="final"/>
      <code>
        <coding>
          <system value="www.nicer.org/Basisdatensatz"/>
          <code value="4.36"/>
          <display value="Elston/Ellis grading system"/>
        </coding>
      </code>
      <valueCodeableConcept>
        <coding>
          <system value="www.nicer.org/Basisdatensatz"/>
          <code>I</code>
          <display value="Stage I"/>
        </coding>
      </valueCodeableConcept>
      <subject>
        <reference value="Patient/Patient001"/>
      </subject>
    </Observation>
  </resource>
</entry>

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        </Observation>
      </resource>
    </entry>
<!-- SalzerKuntschik grading system -->
  <entry>
    <resource>
      <Observation>
        <id value="salzerkuntschik"/>
        <status value="final"/>
        <code>
          <coding>
            <system value="www.nicer.org/Basisdatensatz"/>
            <code value="4.37"/>
            <display value="SalzerKuntschik grading system"/>
          </coding>
        </code>
        <valueCodeableConcept>
          <coding>
            <system value="www.nicer.org/Basisdatensatz"/>
            <code>I</code>
            <display value="Stage I"/>
          </coding>
        </valueCodeableConcept>
        <subject>
          <reference value="Patient/Patient001"/>
        </subject>
      </Observation>
    </resource>
  </entry>
<!-- Shimada grading system -->
  <entry>
    <resource>
      <Observation>
        <id value="shimada"/>
        <status value="final"/>
        <code>
          <coding>
            <system value="www.nicer.org/Basisdatensatz"/>
            <code value="4.38"/>
            <display value="Shimada grading system"/>
          </coding>
        </code>
        <valueCodeableConcept>
          <coding>
            <system value="www.nicer.org/Basisdatensatz"/>
            <code>I</code>
            <display value="Stage I"/>
          </coding>
        </valueCodeableConcept>
        <subject>
          <reference value="Patient/Patient001"/>
        </subject>
      </Observation>
    </resource>
  </entry>
<!-- WHO(CNS) grading system -->
  <entry>
    <resource>
      <Observation>
        <id value="whocns"/>
        <status value="final"/>
        <code>
          <coding>
            <system value="www.nicer.org/Basisdatensatz"/>

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        <code value="4.39"/>
        <display value="WHO(CNS) grading system"/>
      </coding>
    </code>
    <valueCodeableConcept>
      <coding>
        <system value="www.nicer.org/Basisdatensatz"/>
        <code>I</code>
        <display value="Stage I"/>
      </coding>
    </valueCodeableConcept>
    <subject>
      <reference value="Patient/Patient001"/>
    </subject>
  </Observation>
</resource>
</entry>

<!-- BREAST CANCER: tumour related prognostic factors -->
<!-- Oestrogen receptor status -->
<entry>
  <resource>
    <Observation>
      <id value="estrogen"/>
      <status value="final"/>
      <code>
        <coding>
          <system value="http://loinc.org"/>
          <code value="85329-1"/>
          <display value="Cells.estrogen receptor/100
cells"/>
        </coding>
      </code>
      <valueQuantity>
        <value value="1"/>
        <unit value=""/>
      </valueQuantity>
      <subject>
        <reference value="Patient/Patient001"/>
      </subject>
    </Observation>
  </resource>
</entry>

<!-- Progesterone receptor status -->
<entry>
  <resource>
    <Observation>
      <id value="progesterone"/>
      <status value="final"/>
      <code>
        <coding>
          <system value="http://loinc.org"/>
          <code value="85325-9"/>
          <display value="Cells.progesterone receptor/100
cells"/>
        </coding>
      </code>
      <valueQuantity>
        <value value="1"/>
        <unit value=""/>
      </valueQuantity>
      <subject>
        <reference value="Patient/Patient001"/>
      </subject>
    </Observation>
  </resource>
</entry>

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</entry>

<!-- TODO Her2 receptor status -->
<entry>
  <resource>
    <Observation>
      <id value="her2"/>
      <status value="final"/>
      <code>
        <coding>
          <system value="http://loinc.org"/>
          <code value="31150-6"/>
          <display value="HER2"/>
        </coding>
      </code>
      <valueQuantity>
        <value value="1"/>
        <unit value="mm"/>
      </valueQuantity>
      <subject>
        <reference value="Patient/Patient001"/>
      </subject>
    </Observation>
  </resource>
</entry>

<!-- TODO ab hier Tumour proliferation labeling -->
<entry>
  <resource>
    <Observation>
      <id value="resectioninsitu"/>
      <status value="final"/>
      <code>
        <coding>
          <system value="http://loinc.org"/>
          <code value="33737-8"/>
          <display value="Distance of tumor from closest
margin "/>
        </coding>
      </code>
      <valueQuantity>
        <value value="1"/>
        <unit value="mm"/>
      </valueQuantity>
      <subject>
        <reference value="Patient/Patient001"/>
      </subject>
    </Observation>
  </resource>
</entry>

<!-- PROSTATE CANCER: tumour related prognostic factors -->
<!-- Pretreatment Prostate Specific Antigen (PSA) -->
<entry>
  <resource>
    <Observation>
      <id value="resectioninsitu"/>
      <status value="final"/>
      <code>
        <coding>
          <system value="http://loinc.org"/>
          <code value="33737-8"/>
          <display value="Distance of tumor from closest
margin "/>
        </coding>
      </code>
      <valueQuantity>

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                <value value="1"/>
                <unit value="mm"/>
            </valueQuantity>
            <subject>
                <reference value="Patient/Patient001"/>
            </subject>
        </Observation>
    </resource>
</entry>

<!-- Gleason biopsy most common grade -->
<entry>
    <resource>
        <Observation>
            <id value="resectioninsitu"/>
            <status value="final"/>
            <code>
                <coding>
                    <system value="http://loinc.org"/>
                    <code value="33737-8"/>
                    <display value="Distance of tumor from closest
margin "/>
                </coding>
            </code>
            <valueQuantity>
                <value value="1"/>
                <unit value="mm"/>
            </valueQuantity>
            <subject>
                <reference value="Patient/Patient001"/>
            </subject>
        </Observation>
    </resource>
</entry>

<!-- Gleason biopsy second most common or highest grade -->
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margin "/>
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</entry>

<!-- Gleason excision most common grade -->
<entry>
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```

                                <coding>
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                                <code value="33737-8"/>
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margin "/>
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<!-- Gleason excision second most common or highest grade -->
<entry>
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margin "/>
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  </entry>

<!-- Gleason score -->
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margin "/>
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<!-- WHO grade group -->
<entry>
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margin "/>
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        <unit value="mm"/>
      </valueQuantity>
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        <reference value="Patient/Patient001"/>
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    </Observation>
  </resource>
</entry>

<!-- MELANOMA: tumour related prognostic factors -->
<!-- Breslow thickness -->
<entry>
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margin "/>
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      </valueQuantity>
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    </Observation>
  </resource>
</entry>

<!-- COLORECTAL CANCER: tumour related prognostic factors -->
<!-- Circumferential resection margins -->
<entry>
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      <code>
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margin "/>
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        <subject>
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        </subject>
      </Observation>
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  </entry>

  <!-- Microsatellite instability -->
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        <status value="final"/>
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margin "/>
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        </valueQuantity>
        <subject>
          <reference value="Patient/Patient001"/>
        </subject>
      </Observation>
    </resource>
  </entry>

  <!-- TESTICULAR CANCER: tumour related prognostic factors -->
  <!-- α-fetoprotein -->
  <entry>
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        <status value="final"/>
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        </subject>
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  </entry>

  <!-- hCG -->
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        <status value="final"/>

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</resource>
</entry>

<!-- LDH -->
<entry>
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margin "/>
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                <unit value="mm"/>
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            <subject>
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</entry>

<!-- Serum tumour markers -->
<entry>
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</entry>

<!-- TESTICULAR CANCER: tumour related prognostic factors -->
<!-- HPV/p16 -->
<entry>
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</entry>

<!-- EBV -->
<entry>
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<!-- Oestrogen receptor status -->
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margin "/>
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    </resource>
  </entry>

  <!-- TODO First treatment complex -->
  <!-- TODO Supplementary Data Variables -->
</Bundle>
```