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| <a href="#">Service Request</a>  | <a href="#">FHIR R4 v4.0.1</a> |
| <a href="#">Specimen</a>   | <a href="#">FHIR R4 v4.0.1</a> |

**Comment:**

\* 3.1.0 Version cited in 21 st Centuries Cures Act  
<https://www.federalregister.gov/documents/2020/05/01/2020-07419/21st-century-cures-act-interoperability-information-blocking-and-the-onc-health-it-certification>

FHIR R4:

<http://hl7.org/fhir/R4/downloads.html>

**CDC NHSN dQM IG Profile - Monthly**

[Acute Care Hospital Reporting Condition](#)

[Acute Care Hospital Reporting Coverage](#)

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[Acute Care Hospital Laboratory Diagnostic Re](#)

[Acute Care Hospital Note Diagnostic Report](#)

[Acute Care Hospital Reporting Report Encour](#)

[Acute Care Hospital Implantable Device](#)

[Acute Care Hospital Reporting Lab Observati](#)

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[Acute Care Hospital Reporting Medication](#)

[Acute Care Hospital Reporting MedicationAdr](#)

[Acute Care Hospital Reporting Report Medica](#)

[Acute Care Hospital Reporting Observation](#)

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[Acute Care Hospital Reporting Procedure](#)

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|   |
|---|
| <b>ACH dQM</b>  |
| <b>MS</b>   |
| <b>MS</b>   |
| <b>MS</b>   |
| <b>MS</b>   |
| <b>MS</b>   |
| <b>R</b>  |
| <b>MS</b>   |
| <b>MS</b>   |
| <b>R</b>  |
| <b>MS</b>   |
| <b>MS</b>   |
| <b>MS</b>   |
| <b>MS</b>   |
| <b>MS</b><br>In the ACH dQM, the CQL logic for the Observation Supplemental Data Element (SDE) is constrained to the following categories: lab, social history, vital signs, survey, imaging, and procedure |
| <b>MS</b>   |
| <b>R</b>  |
| <b>MS</b>   |
| <b>MS</b>   |
| <b>MS</b>   |

| Details                     |   | FHIR Master Data Dictionary |
|-----------------------------|---|-----------------------------|
| <b>Version of Document:</b> | 2.0                                       |                             |
| <b>Date of Document</b>     | 3/4/2024                                  |                             |
| <b>Draft Purpose</b>        | This FHIR Master Data Dictionary document |                             |
| <b>Authors</b>              | dQM Leads, Protocol Leads                 |                             |
| <b>Scope</b>                | All monthly NHSN Measures                 |                             |
| Abbreviation                | Name                                      |                             |
| <b>MS</b>                   | Must Support                              |                             |
| <b>R</b>                    | Required                                  |                             |
| <b>NR</b>                   | Not Required                              |                             |
| <b>NRT</b>                  | Not Required by Technical Team            |                             |
| <b>AI</b>                   | Action Item                               |                             |
| <b>CQL</b>                  | Clinical Quality Language                 |                             |

### Key for use of colors, fonts, and tabs

|                   |  |
|-------------------|--|
| <b>Red Font</b>   | Cardinality differs from FHIR R4 or US Co  |
| <b>Bold Font</b>  | In the FHIR Resource tabs, it indicates th |
| <b>Teal Tab</b>   | FHIR R4 v.4.0.1 Profiles                   |
| <b>Maroon Tab</b> | US Core v.3.1.1 Profiles                   |

### NHSN Technical Guidance

- Mark all **{Resource}.{dataElement}.identifiers** as NRT.
- Mark all **{Resource}.contained** as NRT.
- Mark all **{Resource}.meta** as NRT.
- Mark all **{Resource}.text** as NRT.

ents the NHSN specific measure requirements to inform the development of the CI

## Details

If available, it will be queried by NHSNLink for measure calculation or risk adjustment.

Required to be queried by NHSNLink for the NHSN Application to determine initial population.

Queried by NHSNLink but not required to calculate the measures.

Queried by NHSNLink but determined by the technical team as not needed.


In the change log tab, the dQM leads will indicate if an update requires an action item.

CQL is machine-readable and structured on the FHIR data model.

The NHSN dQM CQL defines the following items:

- The initial population eligible for the measure
- Line-level data required to calculate measure metrics
- Additional line-level data for stratification, risk adjustment, social determinants of health, and patient matching

are standards or conformance is more constrained against FHIR R4 or US Core profile parent data elements.



DC NHSN dQM IG for monthly measures.



**Comments**

Must be designated as MS or R if wanted in the Silver table.

Must be designated as MS or R if wanted in the Silver table.

Elements designated as NR will go into the Bronze table but will not progress to Silver.

NRT elements will not be copied to Bronze and will only exist in the bundle itself, which are archived by NHSN.

If an AI is identified, a Jira ticket is typically assigned to a responsible party.

FHIR bundle validation will occur against the CDC NHSN dQM IG, version 3.1.1 of US Core Profiles, and version 4.0.1 of FHIR R4.



iles.



| Date of Request | Data Element   |
|-----------------|--|
| 4/4/2023        | DiagnosticReport.id  |
| 4/4/2023        | Observation.id   |
| 4/4/2023        | Observation.subject  |
| 4/4/2023        | Medication.ingredient.item[x]                                |
| 4/4/2023        | Encounter.identifier.system                                  |
| 4/13/2023       | MedicationRequest.status                                     |
| 4/14/2023       | NA   |
| 4/14/2023       | Encounter.location   |
| 4/14/2023       | Encounter.location.location                                  |
| 4/18/2023       | {Resource}.language  |
| 4/18/2023       | {Resource}.implicitRules                                     |
| 4/18/2023       | {Resource}.Identifier.period                                 |
| 4/18/2023       | {Resource}.Identifier.assigner                               |
| 4/18/2023       | Encounter.EpisodeOfCare                                      |
| 4/18/2023       | Encounter.BasedOn  |
| 4/18/2023       | Encounter.serviceProvider                                    |
| 4/18/2023       | Encounter.appointment  |
| 4/18/2023       | Condition.recorder   |
| 4/18/2023       | Condition.asserter   |
| 4/18/2023       | Coverage.type  |
| 4/18/2023       | Coverage.dependent   |
| 4/18/2023       | Coverage.costToBeneficiary                                   |
| 4/18/2023       | Observation.category.extension                               |
| 4/18/2023       | Medication.ingredient.isActive                               |
| 4/18/2023       | MedicationRequest.statusReason                               |
| 4/18/2023       | MedicationRequest.supportingInformation                      |
| 4/18/2023       | MedicationRequest.performer                                  |
| 4/18/2023       | MedicationRequest.performerType                              |
| 4/18/2023       | MedicationRequest.instantiatesCanonical                      |
| 4/18/2023       | MedicationRequest.instantiatesUri                            |
| 4/18/2023       | MedicationRequest.basedOn                                    |
| 4/18/2023       | MedicationRequest.groupIdentifier                            |
| 4/18/2023       | MedicationRequest.insurance                                  |
| 4/18/2023       | MedicationRequest.note                                       |
| 4/18/2023       | MedicationRequest.dosageInstruction.sequence                 |
| 4/18/2023       | MedicationRequest.dosageInstruction.additionalInstruction    |
| 4/18/2023       | MedicationRequest.dosageInstruction.site                     |
| 4/18/2023       | MedicationRequest.dosageInstruction.maxDosePerPeriod         |
| 4/18/2023       | MedicationRequest.dosageInstruction.maxDosePerAdministration |



|           |   |
|-----------|---|
| 4/18/2023 | MedicationRequest.dosageInstruction.maxDosePerLifetime    |
| 4/18/2023 | MedicationRequest.substitution                            |
| 4/18/2023 | MedicationRequest.dispenseRequest                         |
| 4/18/2023 | MedicationRequest.priorPrescription                       |
| 4/18/2023 | MedicationRequest.detectedIssue                           |
| 4/18/2023 | MedicationRequest.eventHistory                            |
| 4/17/2023 | Device.patient  |
| 4/18/2023 | Observation.dateAbsentReason                              |
| 5/1/2023  | MedicationRequest.statusReason                            |
| 5/1/2023  | MedicationRequest.authoredOn                              |
| 5/1/2023  | MedicationRequest.instantiatesCanonical                   |
| 5/1/2023  | MedicationRequest.courseOfTherapyType                     |
| 5/1/2023  | MedicationRequest.dosageInstruction                       |
| 5/1/2023  | MedicationRequest.dosageInstruction.doseAndRate.id        |
| 5/1/2023  | MedicationRequest.dosageInstruction.doseAndRate.extension |
| 5/1/2023  | MedicationRequest.dosageInstruction.doseAndRate.type      |
| 5/1/2023  | Medication.status   |
| 5/1/2023  | Medication.ingredient.itemCodeableConcept                 |
| 5/1/2023  | Medication.ingredient.itemReference                       |
| 5/2/2023  | MedicationRequest.requester                               |

|          |   |
|----------|---|
| 5/3/2023 | Encounter.episodeOfCare                                 |
| 5/8/2023 | MedicationRequest.dosageInstruction.doseAndRate.dose[x] |
| 5/8/2023 | MedicationRequest.priority                              |
| 5/8/2023 | MedicationRequest.reasonReference                       |
| 5/8/2023 | MedicationRequest.instantiatesCanonical                 |

|           |  |
|-----------|--|
| 5/8/2023  | MedicationRequest.instantiatesUri  |
| 5/15/2023 | Medication.ingredient.itemCodeableConcept<br>Medication.ingredient.itemReference   |
| 5/15/2023 | NA   |
| 5/15/2023 | Condition.onset.onsetDateTime<br>Condition.onset.onsetAge<br>Condition.onset.Period<br>Condition.onset.Range<br>Condition.onset.String                     |
| 5/15/2023 | Condition.abatement.onsetDateTime<br>Condition.abatement.onsetAge<br>Condition.abatement.Period<br>Condition.abatement.Range<br>Condition.abatement.String |
| 5/15/2023 | Observation.encounter NR to MS   |
| 5/15/2023 | Observation.hasMember NR to MS   |
| 5/16/2023 | DiagnosticReport.effective.effectiveDateTime<br>DiagnosticReport.effective.Period  |
| 5/22/2023 | Observation.category   |
| 6/4/2023  | Encounter.episodeOfCare  |
| 6/5/2023  | Procedure.subject  |
| 6/5/2023  | Procedure.encounter  |
| 6/5/2023  | Procedure.location   |
| 6/5/2023  | Procedure.reasonCode   |
| 6/6/2023  | Observation.encounter  |
| 6/6/2023  | Observation.dataAbsentReason   |
| 6/6/2023  | Location   |
| 6/6/2023  | MedicationRequest.dosageInstruction.doseAndRate  |
| 6/6/2023  | MedicationRequest.dosageInstruction.doseAndRate  |
| 6/6/2023  | Specimen.type (not required for Hypo, but if necessary for alignment)  |
| 6/6/2023  | Medication.status  |
| 6/6/2023  | Condition.encounter  |
| 6/6/2023  | Condition.onset[x]   |
| 6/6/2023  | Condition.abatement[x]   |
| 6/6/2023  | Condition.recordedDate   |
| 6/21/2023 | Location resource designation in TOC   |
| 6/28/2023 | Medication.code  |
| 7/5/2023  | TOC, dQM Measure Lead/Back-up Clinical Analyst<br>Row  |

|           |   |
|-----------|---|
| 7/5/2023  | Initial Population-CQL on TOC           |
| 7/10/2023 | Specimen.subject                        |
| 7/10/2023 | Specimen.collection                     |
| 7/10/2023 | Specimen.collection.id                  |
| 7/10/2023 | Specimen.collection.extension           |
| 7/10/2023 | Specimen.collection.modifierExtension   |
| 7/31/2023 | MedicationAdministration.context        |
| 7/31/2023 | MedicationAdministration.request        |
| 7/31/2023 | Condition.clinicalStatus                |
| 7/31/2023 | Condition.verificationStatus            |
| 8/1/2023  | Patient.contact.modifierExtension       |
| 8/1/2023  | Patient.communication.modifierExtension |
| 8/1/2023  | Patient.identifier.period               |
| 8/1/2023  | Specimen.processing.modifierExtension   |
| 8/1/2023  | Specimen.container.modifierExtension    |
| 8/1/2023  | Specimen.container.identifier           |
| 8/1/2023  | Specimen.text                           |
| 8/1/2023  | Specimen.contained                      |
| 8/1/2023  | Specimen.extension                      |
| 8/1/2023  | Specimen.processing.id                  |
| 8/1/2023  | Specimen.processing.extension           |
| 8/1/2023  | Specimen.container.id                   |
| 8/1/2023  | Specimen.container.extension            |
| 8/1/2023  | N/A                                     |
| 8/1/2023  | Specimen.meta                           |
| 8/1/2023  | Specimen.modifierExtension              |
| 8/1/2023  | Specimen.collection.id                  |
| 8/1/2023  | Specimen.collection.extension           |
| 8/1/2023  | Specimen.collection.modifierExtension   |
| 8/1/2023  | (Abbreviation Tab)                      |
| 8/1/2023  | Condition.meta                          |
| 8/1/2023  | Condition.text                          |
| 8/1/2023  | Condition.contained                     |
| 8/1/2023  | Condition.extension                     |
| 8/1/2023  | Condition.modifierExtension             |
| 8/1/2023  | Condition.identifier                    |
| 8/1/2023  | Condition.stage.id                      |
| 8/1/2023  | Condition.stage.extension               |
| 8/1/2023  | Condition.stage.modifierExtension       |
| 8/1/2023  | Condition.evidence.id                   |
| 8/1/2023  | Condition.evidence.extension            |
| 8/1/2023  | Condition.evidence.modifierExtension    |
| 8/1/2023  | Coverage.meta                           |

|          |  |
|----------|--|
| 8/1/2023 | Coverage.text  |
| 8/1/2023 | Coverage.contained                                     |
| 8/1/2023 | Coverage.extension                                     |
| 8/1/2023 | Coverage.modifierExtension                             |
| 8/1/2023 | Coverage.identifier                                    |
| 8/1/2023 | Coverage.class.id                                      |
| 8/1/2023 | Coverage.class.extension                               |
| 8/1/2023 | Coverage.class.modifierExtension                       |
| 8/1/2023 | DiagnosticReport.meta                                  |
| 8/1/2023 | DiagnosticReport.implicitRules                         |
| 8/1/2023 | DiagnosticReport.language                              |
| 8/1/2023 | DiagnosticReport.contained                             |
| 8/1/2023 | DiagnosticReport.extension                             |
| 8/1/2023 | DiagnosticReport.modifierExtension                     |
| 8/1/2023 | DiagnosticReport.identifier                            |
| 8/1/2023 | DiagnosticReport.category:LaboratorySlice.id           |
| 8/1/2023 | DiagnosticReport.category:LaboratorySlice.id.extension |
| 8/1/2023 | DiagnosticReport.category:LaboratorySlice.coding.id    |
| 8/1/2023 | DiagnosticReport.media.id                              |
| 8/1/2023 | DiagnosticReport.media.extension                       |
| 8/1/2023 | DiagnosticReport.media.modifierExtension               |
| 8/1/2023 | DocumentReference.meta                                 |
| 8/1/2023 | DocumentReference.text                                 |
| 8/1/2023 | DocumentReference.contained                            |
| 8/1/2023 | DocumentReference.extension                            |
| 8/1/2023 | DocumentReference.modifierExtension                    |
| 8/1/2023 | DocumentReference.masterIdentifier                     |
| 8/1/2023 | DocumentReference.identifier                           |
| 8/1/2023 | DocumentReference.relatesTo.id                         |
| 8/1/2023 | DocumentReference.relatesTo.extension                  |
| 8/1/2023 | DocumentReference.relatesTo.modifierExtension          |
| 8/1/2023 | DocumentReference.content.id                           |
| 8/1/2023 | DocumentReference.content.extension                    |
| 8/1/2023 | DocumentReference.content.modifierExtension            |
| 8/1/2023 | DocumentReference.content.attachment.id                |
| 8/1/2023 | DocumentReference.content.attachment.extension         |
| 8/1/2023 | DocumentReference.content.attachment.language          |
| 8/1/2023 | DocumentReference.context.id                           |
| 8/1/2023 | DocumentReference.context.extension                    |
| 8/1/2023 | DocumentReference.context.modifierExtension            |
| 8/1/2023 | Encounter.meta   |

|          |  |
|----------|--|
| 8/1/2023 | Encounter.text                                 |
| 8/1/2023 | Encounter.contained                            |
| 8/1/2023 | Encounter.extension                            |
| 8/1/2023 | Encounter.modifierExtension                    |
| 8/1/2023 | Encounter.identifier.id                        |
| 8/1/2023 | Encounter.identifier.extension                 |
| 8/1/2023 | Encounter.statusHistory.id                     |
| 8/1/2023 | Encounter.statusHistory.extension              |
| 8/1/2023 | Encounter.statusHistory.modifierExtension      |
| 8/1/2023 | Encounter.classHistory.id                      |
| 8/1/2023 | Encounter.classHistory.extension               |
| 8/1/2023 | Encounter.classHistory.modifierExtension       |
| 8/1/2023 | Encounter.participant.id                       |
| 8/1/2023 | Encounter.participant.extension                |
| 8/1/2023 | Encounter.participant.modifierExtension        |
| 8/1/2023 | Encounter.diagnosis.id                         |
| 8/1/2023 | Encounter.diagnosis.extension                  |
| 8/1/2023 | Encounter.diagnosis.modifierExtension          |
| 8/1/2023 | Encounter.diagnosis.condition                  |
| 8/1/2023 | Encounter.hospitalization.id                   |
| 8/1/2023 | Encounter.hospitalization.extension            |
| 8/1/2023 | Encounter.hospitalization.modifierExtension    |
| 8/1/2023 | Encounter.location.id                          |
| 8/1/2023 | Encounter.location.extension                   |
| 8/1/2023 | Encounter.location.modifierExtension           |
| 8/1/2023 | Immunization.meta                              |
| 8/1/2023 | Immunization.implicitRules                     |
| 8/1/2023 | Immunization.language                          |
| 8/1/2023 | Immunization.text                              |
| 8/1/2023 | Immunization.contained                         |
| 8/1/2023 | Immunization.extension                         |
| 8/1/2023 | Immunization.modifierExtension                 |
| 8/1/2023 | Immunization.performer.id                      |
| 8/1/2023 | Immunization.performer.extension               |
| 8/1/2023 | Immunization.performer.modifierExtension       |
| 8/1/2023 | Immunization.education.id                      |
| 8/1/2023 | Immunization.education.extension               |
| 8/1/2023 | Immunization.education.modifierExtension       |
| 8/1/2023 | Immunization.reaction.id                       |
| 8/1/2023 | Immunization.reaction.extension                |
| 8/1/2023 | Immunization.reaction.modifierExtension        |
| 8/1/2023 | Immunization.protocolApplied.id                |
| 8/1/2023 | Immunization.protocolApplied.extension         |
| 8/1/2023 | Immunization.protocolApplied.modifierExtension |
| 8/1/2023 | Device.meta                                    |
| 8/1/2023 | Device.implicitRules                           |
| 8/1/2023 | Device.language                                |
| 8/1/2023 | Device.text                                    |
| 8/1/2023 | Device.contained                               |

|          |  |
|----------|--|
| 8/1/2023 | Device.extension                             |
| 8/1/2023 | Device.modifierExtension                     |
| 8/1/2023 | Device.identifier                            |
| 8/1/2023 | Device.deviceName.id                         |
| 8/1/2023 | Device.deviceName.extension                  |
| 8/1/2023 | Device.deviceName.modifierExtension          |
| 8/1/2023 | Device.specialization.id                     |
| 8/1/2023 | Device.specialization.extension              |
| 8/1/2023 | Device.specialization.modifierExtension      |
| 8/1/2023 | Device.version.id                            |
| 8/1/2023 | Device.version.extension                     |
| 8/1/2023 | Device.version.modifierExtension             |
| 8/1/2023 | Device.property.id                           |
| 8/1/2023 | Device.property.extension                    |
| 8/1/2023 | Device.property.modifierExtension            |
| 8/1/2023 | Observation.meta                             |
| 8/1/2023 | Observation.text                             |
| 8/1/2023 | Observation.contained                        |
| 8/1/2023 | Observation.extension                        |
| 8/1/2023 | Observation.modifierExtension                |
| 8/1/2023 | Observation.identifier                       |
| 8/1/2023 | Observation.category.id                      |
| 8/1/2023 | Observation.referenceRange.id                |
| 8/1/2023 | Observation.referenceRange.extension         |
| 8/1/2023 | Observation.referenceRange.modifierExtension |
| 8/1/2023 | Observation.component.id                     |
| 8/1/2023 | Observation.component.extension              |
| 8/1/2023 | Observation.component.modifierExtension      |
| 8/1/2023 | Location.meta                                |
| 8/1/2023 | Location.text                                |
| 8/1/2023 | Location.contained                           |
| 8/1/2023 | Location.extension                           |
| 8/1/2023 | Location.modifierExtension                   |
| 8/1/2023 | Location.address.id                          |
| 8/1/2023 | Location.address.extension                   |
| 8/1/2023 | Location.position.id                         |
| 8/1/2023 | Location.position.extension                  |
| 8/1/2023 | Location.position.modifierExtension          |
| 8/1/2023 | Location.hoursOfOperation.id                 |
| 8/1/2023 | Location.hoursOfOperation.extension          |
| 8/1/2023 | Location.hoursOfOperation.modifierExtension  |
| 8/1/2023 | Medication.meta                              |
| 8/1/2023 | Medication.text                              |
| 8/1/2023 | Medication.contained                         |
| 8/1/2023 | Medication.extension                         |
| 8/1/2023 | Medication.modifierExtension                 |
| 8/1/2023 | Medication.identifier                        |
| 8/1/2023 | Medication.ingredient.id                     |

|          |   |
|----------|---|
| 8/1/2023 | Medication.ingredient.extension                       |
| 8/1/2023 | Medication.ingredient.modifierExtension               |
| 8/1/2023 | Medication.batch.id                                   |
| 8/1/2023 | Medication.batch.extension                            |
| 8/1/2023 | Medication.batch.modifierExtension                    |
| 8/1/2023 | MedicationAdministration.meta                         |
| 8/1/2023 | MedicationAdministration.text                         |
| 8/1/2023 | MedicationAdministration.contained                    |
| 8/1/2023 | MedicationAdministration.extension                    |
| 8/1/2023 | MedicationAdministration.modifierExtension            |
| 8/1/2023 | MedicationAdministration.identifier                   |
| 8/1/2023 | MedicationAdministration.performer.id                 |
| 8/1/2023 | MedicationAdministration.performer.extension          |
| 8/1/2023 | MedicationAdministration.performer.modifierExtension  |
| 8/1/2023 | MedicationAdministration.dosage.id                    |
| 8/1/2023 | MedicationAdministration.dosage.extension             |
| 8/1/2023 | MedicationAdministration.dosage.modifierExtension     |
| 8/1/2023 | MedicationRequest.meta                                |
| 8/1/2023 | MedicationRequest.text                                |
| 8/1/2023 | MedicationRequest.contained                           |
| 8/1/2023 | MedicationRequest.extension                           |
| 8/1/2023 | MedicationRequest.modifierExtension                   |
| 8/1/2023 | MedicationRequest.identifier                          |
| 8/1/2023 | MedicationRequest.dosageInstruction.id                |
| 8/1/2023 | MedicationRequest.dosageInstruction.extension         |
| 8/1/2023 | MedicationRequest.dosageInstruction.modifierExtension |
| 8/1/2023 | MedicationRequest.substitution.id                     |
| 8/1/2023 | MedicationRequest.substitution.extension              |
| 8/1/2023 | MedicationRequest.substitution.modifierExtension      |
| 8/1/2023 | Observation.meta                                      |
| 8/1/2023 | Observation.implicitRules                             |
| 8/1/2023 | Observation.language                                  |
| 8/1/2023 | Observation.text                                      |
| 8/1/2023 | Observation.contained                                 |
| 8/1/2023 | Observation.extension                                 |
| 8/1/2023 | Observation.modifierExtension                         |
| 8/1/2023 | Observation.identifier                                |
| 8/1/2023 | Observation.referenceRange.id                         |
| 8/1/2023 | Observation.referenceRange.extension                  |
| 8/1/2023 | Observation.referenceRange.modifierExtension          |
| 8/1/2023 | Observation.component.id                              |
| 8/1/2023 | Observation.component.extension                       |
| 8/1/2023 | Observation.component.modifierExtension               |

|           |  |
|-----------|--|
| 8/1/2023  | Procedure.meta   |
| 8/1/2023  | Procedure.implicitRules                                |
| 8/1/2023  | Procedure.language                                     |
| 8/1/2023  | Procedure.text   |
| 8/1/2023  | Procedure.contained                                    |
| 8/1/2023  | Procedure.extension                                    |
| 8/1/2023  | Procedure.modifierExtension                            |
| 8/1/2023  | Procedure.identifier                                   |
| 8/1/2023  | Procedure.performer.id                                 |
| 8/1/2023  | Procedure.performer.extension                          |
| 8/1/2023  | Procedure.performer.modifierExtension                  |
| 8/1/2023  | Procedure.focalDevice.id                               |
| 8/1/2023  | Procedure.focalDevice.extension                        |
| 8/1/2023  | Procedure.focalDevice.modifierExtension                |
| 8/1/2023  | ServiceRequest.meta                                    |
| 8/1/2023  | ServiceRequest.text                                    |
| 8/1/2023  | ServiceRequest.contained                               |
| 8/1/2023  | ServiceRequest.extension                               |
| 8/1/2023  | ServiceRequest.modifierExtension                       |
| 8/1/2023  | ServiceRequest.identifier                              |
| 8/2/2023  | Patient.meta   |
| 8/2/2023  | Patient.implicitRules                                  |
| 8/2/2023  | Patient.language                                       |
| 8/2/2023  | Patient.text   |
| 8/2/2023  | Patient.contained                                      |
| 8/2/2023  | Patient.modifierExtension                              |
| 8/2/2023  | Patient.telecom.id                                     |
| 8/2/2023  | Patient.telecom.extension                              |
| 8/4/2023  | Observation.code                                       |
|           |  |
| 8/7/2023  | MedicationRequest.dosageInstruction.site               |
| 8/7/2023  | Encounter.diagnosis.condition                          |
| 8/7/2023  | Encounter.diagnosis.condition                          |
| 8/8/2023  | Device R4 Resource                                     |
| 8/9/2023  | Diagnostic Report Profile for Report and Note Exchange |
| 8/17/2023 | MedicationRequest.dosageInstruction.text               |
| 8/18/2023 | MedicationRequest.statusReason                         |
| 9/6/2023  | NA   |
| 10/2/2023 | All data element alignment analysis                    |



|            |  |
|------------|--|
| 10/2/2023  | All data element alignment analysis                                |
| 10/3/2023  | NHSN IG - Cross Measure, Monthly Column                            |
| 10/4/2023` | Added an "ACH dQM" column with requirements                        |
| 1010/2023  | Medication and Medication Request Resources in ACH dQM             |
| 10/18/2023 | Medication.status  |
| 10/18/2023 | Specimen.status  |
| 10/20/2023 | Observation - Vital Signs Resource/Profile                         |
| 10/25/2023 | Observation.component.code   |
| 10/30/2023 | Encounter.status   |
| 10/31/2023 | Encounter.status   |
| 11/1/2023  | Observation.specimen (in Lab Result Observation - US Core)         |
| 11/7/2023  | Patient.extension (gender identity)                                |
| 11/8/2023  | Observation-Vital Signs R4   |
| 11/8/2023  | Observation.referenceRange<br>Observation-Vital Signs R4           |
| 11/8/2023  | Observation.component.referenceRange<br>Observation-R4             |
| 11/8/2023  | Observation.referenceRange<br>Observation-R4                       |
| 11/9/2023  | Observation.component.referenceRange<br>Observation-Vital Signs R4 |
| 11/9/2023  | Observation.referenceRange.age<br>Observation-R4                   |
| 11/9/2023  | Observation.referenceRange.age<br>Observation-R4                   |
| 11/9/2023  | Observation-R4<br>Observation.referenceRange.low                   |

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|------------|---|
| 11/9/2023  | Observation-Vital Signs R4<br>Observation.referenceRange.low                              |
| 11/9/2023  | Observation-R4<br>Observation.referenceRange.high   |
| 11/9/2023  | Observation-Vital Signs R4<br>Observation.referenceRange.high                             |
| 11/9/2023  | Observation-R4<br>Observation.component.referenceRange.low                                |
| 11/9/2023  | Observation-Vital Signs R4<br>Observation.component.referenceRange.low                    |
| 11/9/2023  | Observation-R4<br>Observation.component.referenceRange.high                               |
| 11/9/2023  | Observation-Vital Signs R4<br>Observation.component.referenceRange.high                   |
| 11/13/2023 | DiagnosticReport.imagingStudy<br>DiagnosticReport.media<br>DiagnosticReport.presentedForm |
| 11/21/2023 | Encounter.type  |
| 11/21/2023 | Encounter.diagnosis.use   |
| 11/21/2023 | Encounter.hospitalization.admitSource   |
| 11/21/2023 | Encounter.location.status   |
| 11/21/2023 | Device.status   |
| 11/21/2023 | Device.deviceName.type  |
| 11/21/2023 | Observation.category  |
| 11/21/2023 | Observation.interpretation  |

|            |  |
|------------|--|
| 11/21/2023 | Observation.component.interpretation   |
| 11/30/2023 | MedicationRequest-US Core  |
| 12/6/2023  | DiagnosticReport.status  |
| 12/13/2023 | Implantable Device (US Core)<br>Device.owner                                   |
| 12/13/2023 | Implantable Device (UsCore)<br>Device.contact                                  |
| 12/13/2023 | Implantable Device (UsCore)<br>Device.location                                 |
| 12/13/2023 | Implantable Device (UsCore)<br>Device.url                                      |
| 12/13/2023 | Implantable Device (UsCore)<br>Device.note                                     |
| 12/13/2023 | Implantable Device (UsCore)<br>Device.safety                                   |
| 12/13/2023 | Implantable Device (UsCore)<br>Device.parent                                   |
| 12/13/2023 | Observation Vital Signs (R4)<br>Observation.component.referenceRange.low       |
| 12/13/2023 | Observation Vital Signs (R4)<br>Observation.component.referenceRange.high      |
| 12/13/2023 | Observation Vital Signs (R4)<br>Observation.component.referenceRange.type      |
| 12/13/2023 | Observation Vital Signs (R4)<br>Observation.component.referenceRange.appliesTo |
| 12/13/2023 | Observation Vital Signs (R4)<br>Observation.component.referenceRange.age       |
| 12/13/2023 | Observation Vital Signs (R4)<br>Observation.component.referenceRange.text      |
| 1/2/2024   | Observation.component.id   |
| 1/2/2024   | Observation.component.extension  |
| 1/2/2024   | Observation.component.modifierExtension  |
| 1/2/2024   | Observation.component.dataAbsentReason   |
| 1/2/2024   | Observation.value[x]   |
| 1/2/2024   | Observation.note   |
| 1/2/2024   | Condition.onset[x]   |

|           |   |
|-----------|---|
| 1/2/2024  | Condition.abatement[x]                                  |
| 1/2/2024  | Condition.recordedDate                                  |
| 1/2/2024  | Location.alias  |
| 1/2/2024  | <b>Medication</b>                                       |
| 1/2/2024  | <b>Medication.form</b>                                  |
| 1/2/2024  | <b>Medication.amount</b>                                |
| 1/2/2024  | <b>Medication.ingredient</b>                            |
| 1/2/2024  | Encounter.statusHistory                                 |
| 1/4/2024  | Observation.encounter (Lab Result Observation)          |
| 1/4/2024  | DiagnosticReport.specimen                               |
| 1/4/2024  | <b>Location.partOf</b>                                  |
| 1/4/2024  | <b>MedicationAdministration</b>                         |
| 1/4/2024  | <b>MedicationAdministration.statusReason</b>            |
| 1/4/2024  | <b>MedicationAdministration.category</b>                |
| 1/4/2024  | <b>MedicationAdministration.reasonCode</b>              |
| 1/4/2024  | <b>MedicationAdministration.reasonReference</b>         |
| 1/4/2024  | MedicationRequest.dosageInstruction.method              |
| 1/4/2024  | <b>MedicationRequest.dosageInstruction.doseAndRate</b>  |
| 1/4/2024  | MedicationRequest.dosageInstruction.doseAndRate.type    |
| 1/4/2024  | MedicationRequest.dosageInstruction.doseAndRate.dose[x] |
| 1/4/2024  | MedicationRequest.dosageInstruction.doseAndRate.rate[x] |
| 1/4/2024  | Procedure   |
| 1/4/2024  | Procedure.encounter                                     |
| 1/4/2024  | Procedure.location                                      |
| 1/4/2024  | ServiceRequest  |
| 1/4/2024  | ServiceRequest.category                                 |
| 1/4/2024  | ServiceRequest.priority                                 |
| 1/4/2024  | ServiceRequest.doNotPerform                             |
| 1/4/2024  | ServiceRequest.code                                     |
| 1/4/2024  | ServiceRequest.encounter                                |
| 1/4/2024  | ServiceRequest.occurrence[x]                            |
| 1/4/2024  | ServiceRequest.asNeeded[x]                              |
| 1/4/2024  | ServiceRequest.reasonReference                          |
| 1/4/2024  | ServiceRequest.specimen                                 |
| 1/16/2024 | DiagnosticReport.imagingStudy                           |
| 1/16/2024 | DiagnosticReport.media                                  |
| 1/16/2024 | DiagnosticReport.presentedForm                          |
| 1/24/2024 | Diagnostic Report Report and Note                       |
|           | DiagnosticReport.text                                   |
| 1/24/2024 | Diagnostic Report- Lab                                  |
|           | DiagnosticReport.text                                   |

|           |   |
|-----------|---|
| 1/24/2024 | Location.identifier                       |
| 1/29/2024 | location.managingOrg                      |
| 1/29/2024 | patient.managingOrganization              |
| 1/30/2024 | DiagnosticReport.media.link               |
| 1/30/2024 | DiagnosticReport.media.comment            |
| 1/30/2024 | MedicationRequest.substitution.allowed[x] |
| 1/30/2024 | MedicationRequest.substitution.reason     |
| 2/9/2024  | DiagnosticReport.presentedForm            |
| 2/15/2023 | <b>Implantable Device</b>                 |
|           | Device.deviceName                         |
| 2/15/2024 | Updates to binding strengths for ACH      |
| 3/1/2024  | Encounter.participant                     |
| 3/1/2024  | Encounter.participant.id                  |
| 3/1/2024  | Encounter.participant.extension           |
| 3/1/2024  | Encounter.participant.modifierExtension   |
| 3/1/2024  | Encounter.participant.type                |
| 3/1/2024  | Encounter.participant.period              |
| 3/1/2024  | Encounter.participant.individual          |



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| NR   | NRT  |
| NR   | NRT  |
| NR   | NRT  |
| NR   | NRT  |
| NR   | NRT  |
| NR   | NRT  |
| NR   | R [1..1]   |
| NR   | MS [0..1]  |
| NR   | NRT  |
| MS [0..*]  | R [1..1]   |
| MS [0..*]  | NRT  |
| MS [0..1]  | NRT  |
| R [1..1]   | MS [0..*]  |
| NR   | NRT  |
| NR   | NRT  |
| NR   | MS [0..1]  |
| R [1..1]   | NR   |
| NR   | MS [0..1]  |
| NR   | MS [0..1]  |
| Reference( <a href="http://hl7.org/fhir/us/core/StructureDefinition/us-core-practitioner">http://hl7.org/fhir/us/core/StructureDefinition/us-core-practitioner</a>   <a href="http://hl7.org/fhir/us/core/StructureDefinition/us-core-patient">http://hl7.org/fhir/us/core/StructureDefinition/us-core-patient</a>   <a href="http://hl7.org/fhir/us/core/StructureDefinition/us-core-organization">http://hl7.org/fhir/us/core/StructureDefinition/us-core-organization</a>   <a href="http://hl7.org/fhir/us/core/StructureDefinition/us-core-practitionerrole">http://hl7.org/fhir/us/core/StructureDefinition/us-core-practitionerrole</a>   <a href="http://hl7.org/fhir/us/core/StructureDefinition/us-core-relatedperson">http://hl7.org/fhir/us/core/StructureDefinition/us-core-relatedperson</a>   Device) | Reference(US Core Practitioner Profile   US Core Organization Profile   US Core Patient Profile) |
| MS [0..1]  | NRT  |
| NR   | MS [0..1]  |
| NR   | MS [0..1]  |
| NR   | MS [0..1]  |
| NR   | MS [0..*]  |
| NRT  | MS [0..*]  |

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| NRT       | MS [0..*]          |
| MS [0..1] | Removed from table |
| NA        | N/A                |
| NR        | Removed from table |
| N/A       | Removed from table |
| NR        | MS [0..1]          |
| NR        | MS [0..1]          |
| NR        | N/A                |
| NR        | R [1..*]           |
| MS [0..1] | NRT                |
| NR        | R [1..1]           |
| NR        | MS [0..1]          |
| NR        | MS [0..1]          |
| NR        | MS [0..*]          |
| NR        | MS [0..1]          |
| NR        | MS [0..1]          |
| MS [0..*] | R [1..*]           |
| NR        | MS [0..1]          |
| NR        | MS [0..1]          |
| MS [0..1] | R [1..1]           |
| R [1..1]  | NR                 |
| MS [0..1] | MS [0..1]          |
| MS [0..1] | MS [0..1]          |
| MS [0..1] | MS [0..1]          |
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| MS [0..1] | MS [0..1]          |
| MS        | R                  |
| N/A       | Updated            |





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|----|-----|
| NR | NRT |
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| NR | NRT |



NA  
NA

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NA

NR  
NR  
NA  
MS [1..1]  
R [1..1]

MS[0..\*]  
MS[0..1]  
NA  
R [1..1]  
R [1..1]

The following constraints  
are written into the CQL:  
'in-progress', 'finished',  
'triaged'

The following  
constraints are written  
into the CQL:  
'in-progress', 'finished',  
'triaged', 'onleave',  
'entered-in-error'

R [1..1]

R [1..1]

The following constraints  
are written into the CQL:  
'in-progress', 'finished',  
'triaged', 'entered-in-  
error'

The following  
constraints are written  
into the CQL:  
'in-progress', 'finished',  
'triaged', 'onleave',  
'entered-in-error'

MS [0..\*]

MS [0..1]

MS [0..1]  
NR

MS [0..\*]  
MS [0..\*]

NR

MS[0..\*]

NR

MS [0..\*]

NR

MS [0..1]

NR

MS [0..1]

NR

MS [0..1]

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MS [0..1]

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NR MS [0..1]

NR NRT

<http://hl7.org/fhir/us/core/https://hl7.org/fhir/us/cor>

<http://hl7.org/fhir/ValueSehttps://hl7.org/fhir/R4/va>

<http://hl7.org/fhir/ValueSehttps://hl7.org/fhir/R4/va>

<http://hl7.org/fhir/ValueSehttps://hl7.org/fhir/R4/va>

<http://hl7.org/fhir/ValueSehttps://hl7.org/fhir/R4/va>

<http://hl7.org/fhir/ValueSehttps://hl7.org/fhir/R4/va>

<http://hl7.org/fhir/ValueSehttps://hl7.org/fhir/R4/va>

<http://hl7.org/fhir/ValueSehttps://hl7.org/fhir/R4/va>



<http://hl7.org/fhir/ValueSethttps://hl7.org/fhir/R4/va>

R MS  
R[1..] R[1..1]  
N/A N/A

N/A N/A

N/A N/A

N/A N/A

N/A N/A

N/A N/A

N/A N/A

N/A N/A

N/A N/A

N/A N/A

N/A N/A

N/A N/A

N/A N/A

R [1..1] NRT  
MS [0..1] NRT  
MS [0..\*] NRT  
MS [0..\*] NR

MS [0..1] MS [0..1]

(could have a null if lab  
result/status is not yet  
finalized)

MS [0..1] NR  
MS [0..1] MS [0..1]

|           |           |
|-----------|-----------|
| MS [0..1] | MS [0..1] |
| MS [0..1] | MS [0..1] |
| MS [0..*] | MS [0..*] |
| MS [0..*] | MS [0..*] |
| MS [0..1] | MS [0..1] |
| MS [0..1] | MS [0..1] |
| MS [0..*] | MS [0..*] |
| MS [0..1] | NR        |
| MS [0..1] | MS [0..1] |
| MS [0..*] | MS [0..*] |
| MS [0..1] | MS [0..1] |
| MS [0..*] | MS [0..*] |
| MS [0..*] | MS [0..*] |
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| MS [0..*] | MS [0..*] |
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| MS [0..*] | MS [0..*] |
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| MS [0..1] | MS [0..1] |
| MS [0..*] | MS [0..*] |
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| MS [0..1] | MS [0..1] |
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| MS [0..1] | MS [0..1] |
| MS [0..1] | MS [0..1] |
| MS [0..*] | MS [0..*] |
| MS [0..*] | MS [0..*] |
| NR        | NRT       |
| NR        | NRT       |
| NR        | NRT       |
| NR        | NRT       |
| NR        | NRT       |

NR  
MS  
MS  
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NR  
NR  
MS [0..1\*]

NRT  
NRT  
MS [0..\*]

NA  
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NR

NA  
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NRT

[Link to TOC](#)

[Link to Lab Result Observation tab](#)

[Link to Lab Result Observation](#)

[Link to Lab Result Observation](#)

[Link to Location](#)

[Link to MedicationRequest](#)

[Link to MedicationRequest](#)

[Link to Specimen](#)

[Link to Medication](#)

[Back to TOC](#)

| <b>FHIR Path</b>               | <b>Min</b> | <b>Max</b> | <b>Must Support?</b> |
|--------------------------------|------------|------------|----------------------|
| <b>Condition</b>               | 0          | *          |                      |
| <b>Condition.id</b>            | 0          | 1          |                      |
| <b>Condition.meta</b>          | 0          | 1          |                      |
| <b>Condition.implicitRules</b> | 0          | 1          |                      |
| <b>Condition.language</b>      | 0          | 1          |                      |
| <b>Condition.text</b>          | 0          | 1          |                      |
| <b>Condition.contained</b>     | 0          | *          |                      |
| <b>Condition.extension</b>     | 0          | *          |                      |

|                                     |   |   |   |
|-------------------------------------|---|---|---|
| <b>Condition.modifierExtension</b>  | 0 | * |   |
| <b>Condition.identifier</b>         | 0 | * |   |
| <b>Condition.clinicalStatus</b>     | 0 | 1 | Y |
| <b>Condition.verificationStatus</b> | 0 | 1 | Y |
| <b>Condition.category</b>           | 1 | * | Y |
| <b>Condition.severity</b>           | 0 | 1 |   |
| <b>Condition.code</b>               | 1 | 1 | Y |
| <b>Condition.bodySite</b>           | 0 | * |   |

|                               |   |   |   |
|-------------------------------|---|---|---|
| <b>Condition.subject</b>      | 1 | 1 | Y |
| <b>Condition.encounter</b>    | 0 | 1 |   |
| <b>Condition.onset[x]</b>     | 0 | 1 |   |
| <b>Condition.abatement[x]</b> | 0 | 1 |   |
| <b>Condition.recordedDate</b> | 0 | 1 |   |
| <b>Condition.recorder</b>     | 0 | 1 |   |
| <b>Condition.asserter</b>     | 0 | 1 |   |
| <b>Condition.stage</b>        | 0 | * |   |
| Condition.stage.id            | 0 | 1 |   |
| Condition.stage.extension     | 0 | * |   |



|                                   |   |   |  |
|-----------------------------------|---|---|--|
| Condition.stage.modifierExtension | 0 | * |  |
| Condition.stage.summary           | 0 | 1 |  |
| Condition.stage.assessment        | 0 | * |  |
| Condition.stage.type              | 0 | 1 |  |
| <b>Condition.evidence</b>         | 0 | * |  |
| Condition.evidence.id             | 0 | 1 |  |
| Condition.evidence.extension      | 0 | * |  |

|                                      |   |   |  |
|--------------------------------------|---|---|--|
| Condition.evidence.modifierExtension | 0 | * |  |
| Condition.evidence.code              | 0 | * |  |
| Condition.evidence.detail            | 0 | * |  |
| <b>Condition.note</b>                | 0 | * |  |

| Data Type(s) | FHIR Short Description  |
|--------------|---|
| Condition    | Detailed information about conditions, problems or diagnoses<br><b>us-core-1:</b> A code in Condition.category SHOULD be from US Core Condition Category Codes value set. |
| string       | Logical id of this artifact   |
| Meta         | Metadata about the resource   |
| uri          | A set of rules under which this content was created   |
| code         | Language of the resource content  |
| Narrative    | Text summary of the resource, for human interpretation  |
| Resource     | Contained, inline Resources   |
| Extension    | Additional content defined by implementations   |

|                 |   |
|-----------------|---|
| Extension       | Extensions that cannot be ignored   |
| Identifier      | External Ids for this condition   |
| CodeableConcept | active   recurrence   relapse   inactive   remission   resolved                   |
| CodeableConcept | unconfirmed   provisional   differential   confirmed   refuted   entered-in-error |
| CodeableConcept | problem-list-item   encounter-diagnosis   health-concern                          |
| CodeableConcept | Subjective severity of condition  |
| CodeableConcept | Identification of the condition, problem or diagnosis                             |
| CodeableConcept | Anatomical location, if relevant  |

|  |   |
|--|---|
| Reference( <a href="http://hl7.org/fhir/us/core/StructureDefinition/us-core-patient">http://hl7.org/fhir/us/core/StructureDefinition/us-core-patient</a> )     | Who has the condition?                        |
| Reference( <a href="http://hl7.org/fhir/us/core/StructureDefinition/us-core-encounter">http://hl7.org/fhir/us/core/StructureDefinition/us-core-encounter</a> ) | Encounter created as part of                  |
| dateTime<br>Age<br>Period<br>Range<br>String   | Estimated or actual date, date-time, or age   |
| dateTime<br>Age<br>Period<br>Range<br>String   | When in resolution/remission                  |
| dateTime   | Date record was first recorded                |
| Reference(Practitioner PractitionerRole Patient RelatedPerson)   | Who recorded the condition                    |
| Reference(Practitioner PractitionerRole Patient RelatedPerson)   | Person who asserts this condition             |
| BackboneElement  | Stage/grade, usually assessed formally        |
| string   | Unique id for inter-element referencing       |
| Extension  | Additional content defined by implementations |

|  |  |
|--|--|
| Extension  | Extensions that cannot be ignored even if unrecognized |
| CodeableConcept  | Simple summary (disease specific)                      |
| Reference(ClinicalImpression DiagnosticReport Observation) | Formal record of assessment                            |
| CodeableConcept  | Kind of staging  |
| BackboneElement  | Supporting evidence                                    |
| string   | Unique id for inter-element referencing                |
| Extension  | Additional content defined by implementations          |

|                     |  |
|---------------------|--|
| Extension           | Extensions that cannot be ignored even if unrecognized |
| CodeableConcept     | Manifestation/symptom                                  |
| Reference(Resource) | Supporting information found elsewhere                 |
| Annotation          | Additional information about the Condition             |

| FHIR Definition   | Binding Strength |
|---|------------------|
|   |                  |
| The logical id of the resource, as used in the URL for the resource. Once assigned, this value never changes.   |                  |
| The metadata about the resource. This is content that is maintained by the infrastructure. Changes to the content might not always be associated with version changes to the resource.  |                  |
| A reference to a set of rules that were followed when the resource was constructed, and which must be understood when processing the content. Often, this is a reference to an implementation guide that defines the special rules along with other profiles etc.   |                  |
| The base language in which the resource is written.   | preferred        |
| A human-readable narrative that contains a summary of the resource and can be used to represent the content of the resource to a human. The narrative need not encode all the structured data, but is required to contain sufficient detail to make it "clinically safe" for a human to just read the narrative. Resource definitions may define what content should be represented in the narrative to ensure clinical safety. |                  |
| These resources do not have an independent existence apart from the resource that contains them - they cannot be identified independently, and nor can they have their own independent transaction scope.   |                  |
| An Extension  |                  |



|  |            |
|--|------------|
| <p>May be used to represent additional information that is not part of the basic definition of the resource and that modifies the understanding of the element that contains it and/or the understanding of the containing element's descendants. Usually modifier elements provide negation or qualification. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer is allowed to define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension. Applications processing a resource are required to check for modifier extensions.</p> <p>Modifier extensions SHALL NOT change the meaning of any elements on Resource or DomainResource (including cannot change the meaning of modifierExtension itself).</p> |            |
| <p>Business identifiers assigned to this condition by the performer or other systems which remain constant as the resource is updated and propagates from server to server.</p>  |            |
| <p>The clinical status of the condition.<br/> <b>NOTE (7/31/2023): This is an invariant. When <i>clinicalStatus</i> is not present (empty), then a <i>verificationStatus</i> of "entered in error" is required. This will not be captured in FHIR validation.</b></p>  | required   |
| <p>The verification status to support the clinical status of the condition.<br/> <b>NOTE (7/31/2023): This is an invariant. When <i>clinicalStatus</i> is not present (empty), then a <i>verificationStatus</i> of "entered in error" is required. This will not be captured in FHIR validation.</b></p>   | required   |
| <p>A category assigned to the condition.</p>   | extensible |
| <p>A subjective assessment of the severity of the condition as evaluated by the clinician.</p>   | preferred  |
| <p>Identification of the condition, problem or diagnosis.</p>  | extensible |
| <p>The anatomical location where this condition manifests itself.</p>  | example    |

|   |  |
|---|--|
| Indicates the patient or group who the condition record is associated with.   |  |
| The Encounter during which this Condition was created or to which the creation of this record is tightly associated.  |  |
| Estimated or actual date or date-time the condition began, in the opinion of the clinician.   |  |
| The date or estimated date that the condition resolved or went into remission. This is called "abatement" because of the many overloaded connotations associated with "remission" or "resolution" - Conditions are never really resolved, but they can abate.   |  |
| The recordedDate represents when this particular Condition record was created in the system, which is often a system-generated date.  |  |
| Individual who recorded the record and takes responsibility for its content.  |  |
| Individual who is making the condition statement.   |  |
| Clinical stage or grade of a condition. May include formal severity assessments.  |  |
| Unique id for the element within a resource (for internal references). This may be any string value that does not contain spaces.   |  |
| May be used to represent additional information that is not part of the basic definition of the element. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension. |  |

|   |         |
|---|---------|
| <p>May be used to represent additional information that is not part of the basic definition of the element and that modifies the understanding of the element in which it is contained and/or the understanding of the containing element's descendants. Usually modifier elements provide negation or qualification. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension. Applications processing a resource are required to check for modifier extensions.</p> <p>Modifier extensions SHALL NOT change the meaning of any elements on Resource or DomainResource (including cannot change the meaning of modifierExtension itself).</p> |         |
| <p>A simple summary of the stage such as "Stage 3". The determination of the stage is disease-specific.</p>   | example |
| <p>Reference to a formal record of the evidence on which the staging assessment is based.</p>   |         |
| <p>The kind of staging, such as pathological or clinical staging.</p>   | example |
| <p>Supporting evidence / manifestations that are the basis of the Condition's verification status, such as evidence that confirmed or refuted the condition.</p>  |         |
| <p>Unique id for the element within a resource (for internal references). This may be any string value that does not contain spaces.</p>  |         |
| <p>May be used to represent additional information that is not part of the basic definition of the element. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension.</p>  |         |

|   |                |
|---|----------------|
| <p>May be used to represent additional information that is not part of the basic definition of the element and that modifies the understanding of the element in which it is contained and/or the understanding of the containing element's descendants. Usually modifier elements provide negation or qualification. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension. Applications processing a resource are required to check for modifier extensions.</p> <p>Modifier extensions SHALL NOT change the meaning of any elements on Resource or DomainResource (including cannot change the meaning of modifierExtension itself).</p> |                |
| <p>A manifestation or symptom that led to the recording of this condition.</p>  | <p>example</p> |
| <p>Links to other relevant information, including pathology reports.</p>  |                |
| <p>Additional information about the Condition. This is a general notes/comments entry for description of the Condition, its diagnosis and prognosis.</p>  |                |

| Binding Description | FHIR Binding Value Set  | ACH dQM  |
|---------------------|---|----------|
|                     |   | MS [0.*] |
|                     |   | R [1..1] |
|                     |   | NRT      |
|                     |   | NRT      |
| Common Languages.   | <a href="http://hl7.org/fhir/R4/valueset-lan">http://hl7.org/fhir/R4/valueset-lan</a> | NRT      |
|                     |   | NRT      |
|                     |   | NRT      |
|                     |   | NRT      |

|                                  |   |           |
|----------------------------------|---|-----------|
|                                  |   | NRT       |
|                                  |   | NRT       |
| ConditionClinicalStatusCodes     | <a href="http://hl7.org/fhir/R4/ValueSet/condition-clinical-status-codes">http://hl7.org/fhir/R4/ValueSet/condition-clinical-status-codes</a>                           | MS [0..1] |
| ConditionVerificationStatus      | <a href="http://hl7.org/fhir/R4/ValueSet/condition-verification-status">http://hl7.org/fhir/R4/ValueSet/condition-verification-status</a>                               | MS [0..1] |
| US Core Condition Category Codes | <a href="http://hl7.org/fhir/us/core/STU3.1/ValueSet/us-core-condition-category-codes">http://hl7.org/fhir/us/core/STU3.1/ValueSet/us-core-condition-category-codes</a> | R [1..*]  |
| Condition/DagnosisSeverity       | <a href="http://hl7.org/fhir/R4/ValueSet/condition-diagnosis-severity">http://hl7.org/fhir/R4/ValueSet/condition-diagnosis-severity</a>                                 | NR        |
| US Core Condition Code           | <a href="http://hl7.org/fhir/us/core/ValueSet/us-core-condition-code">http://hl7.org/fhir/us/core/ValueSet/us-core-condition-code</a>                                   | R [1..1]  |
| SNOMEDCTBodyStructures           | <a href="https://hl7.org/fhir/valueset-body-structures">https://hl7.org/fhir/valueset-body-structures</a>   | NR        |

|  |  |           |
|--|--|-----------|
|  |  | R [1..1]  |
|  |  | MS [0.1]  |
|  |  | MS [0..1] |
|  |  | MS [0..1] |
|  |  | MS [0..1] |
|  |  | NRT       |
|  |  | NRT       |
|  |  | NR        |
|  |  | NRT       |
|  |  | NRT       |

|                        |   |     |
|------------------------|---|-----|
|                        |   | NRT |
| ConditionStage         | <a href="https://hl7.org/fhir/valueset-condi">https://hl7.org/fhir/valueset-condi</a> | NR  |
|                        |   | NR  |
| ConditionStage<br>Type | <a href="https://hl7.org/fhir/valueset-condi">https://hl7.org/fhir/valueset-condi</a> | NR  |
|                        |   | NR  |
|                        |   | NRT |
|                        |   | NRT |



|                              |   |     |
|------------------------------|---|-----|
|                              |   | NRT |
| ManifestationAndSymptomCodes | <a href="https://hl7.org/fhir/valueset-manif">https://hl7.org/fhir/valueset-manif</a> | NR  |
|                              |   | NR  |
|                              |   | NR  |

[Back to TOC](#)

| <b>FHIR Path</b>       | <b>Min</b> | <b>Max</b> | <b>Type(s)</b> |
|------------------------|------------|------------|----------------|
| <b>Coverage</b>        |            |            | DomainResource |
| Coverage.id            | 0          | 1          | id             |
| Coverage.meta          | 0          | 1          | Meta           |
| Coverage.implicitRules | 0          | 1          | uri            |
| Coverage.language      | 0          | 1          | code           |

|                    |   |   |           |
|--------------------|---|---|-----------|
| Coverage.text      | 0 | 1 | Narrative |
| Coverage.contained | 0 | * | Resource  |

|                    |   |   |           |
|--------------------|---|---|-----------|
| Coverage.extension | 0 | * | Extension |
|--------------------|---|---|-----------|

|                            |   |   |                 |
|----------------------------|---|---|-----------------|
| Coverage.modifierExtension | 0 | * | Extension       |
| <b>Coverage.identifier</b> | 0 | * | Identifier      |
| <b>Coverage.status</b>     | 1 | 1 | code            |
| <b>Coverage.type</b>       | 0 | 1 | CodeableConcept |

|                              |   |   |   |
|------------------------------|---|---|---|
| <b>Coverage.policyHolder</b> | 0 | 1 | Reference(Patient <br>RelatedPerson <br>Organization) |
| <b>Coverage.subscriber</b>   | 0 | 1 | Reference(Patient <br>RelatedPerson)                  |
| <b>Coverage.subscriberId</b> | 0 | 1 | string  |
| <b>Coverage.beneficiary</b>  | 1 | 1 | Reference(Patient)                                    |
| <b>Coverage.dependent</b>    | 0 | 1 | string  |
| <b>Coverage.relationship</b> | 0 | 1 | CodeableConcept                                       |
| <b>Coverage.period</b>       | 0 | 1 | Period  |

|                          |   |   |   |
|--------------------------|---|---|---|
| <b>Coverage.payor</b>    | 1 | * | Reference(Organization Patient RelatedPerson) |
| <b>Coverage.class</b>    | 0 | * | BackboneElement                               |
| Coverage.class.id        | 0 | 1 | string  |
| Coverage.class.extension | 0 | * | Extension                                     |

|                                  |   |   |                 |
|----------------------------------|---|---|-----------------|
| Coverage.class.modifierExtension | 0 | * | Extension       |
| <b>Coverage.class.type</b>       | 1 | 1 | CodeableConcept |
| <b>Coverage.class.value</b>      | 1 | 1 | string          |
| <b>Coverage.class.name</b>       | 0 | 1 | string          |



|                                   |   |   |                 |
|-----------------------------------|---|---|-----------------|
| <b>Coverage.order</b>             | 0 | 1 | positiveInt     |
| <b>Coverage.network</b>           | 0 | 1 | string          |
| <b>Coverage.costToBeneficiary</b> | 0 | * | BackboneElement |
| Coverage.costToBeneficiary.id     | 0 | 1 | string          |

|  |   |   |           |
|--|---|---|-----------|
| Coverage.costToBeneficiary<br>.extension | 0 | * | Extension |
|--|---|---|-----------|

|   |   |   |                         |
|---|---|---|-------------------------|
| Coverage.costToBeneficiary<br>.modifierExtension                          | 0 | * | Extension               |
| <b>Coverage.costToBeneficiary.type</b>                                    | 0 | 1 | CodeableConcept         |
| <b>Coverage.costToBeneficiary.value[x]</b><br>valueQuantity<br>valueMoney | 1 | 1 | SimpleQuantity<br>Money |
| <b>Coverage.costToBeneficiary.exception</b>                               | 0 | * | BackboneElement         |

|  |   |   |           |
|--|---|---|-----------|
| Coverage.costToBeneficiary<br>.exception.id        | 0 | 1 | string    |
| Coverage.costToBeneficiary<br>.exception.extension | 0 | * | Extension |

|  |   |   |                     |
|--|---|---|---------------------|
| Coverage.costToBeneficiary<br>.exception.modifierExtension | 0 | * | Extension           |
| <b>Coverage.costToBeneficiary.exception.type</b>           | 1 | 1 | CodeableConcept     |
| <b>Coverage.costToBeneficiary.exception.period</b>         | 0 | 1 | Period              |
| <b>Coverage.subrogation</b>                                | 0 | 1 | boolean             |
| <b>Coverage.contract</b>                                   | 0 | * | Reference(Contract) |

| FHIR Short Description   | FHIR Definition  | Binding Strength |
|--|--|------------------|
| <p>Insurance or medical plan or a payment agreement</p> <p>Elements defined in Ancestors: id, meta, implicitRules, language, text, contained, extension, modifierExtension</p> | <p>Financial instrument which may be used to reimburse or pay for health care products and services. Includes both insurance and self-payment.</p>   |                  |
| <p>Logical id of this artifact</p>   | <p>The logical id of the resource, as used in the URL for the resource. Once assigned, this value never changes.</p>   |                  |
| <p>Metadata about the resource</p>   | <p>The metadata about the resource. This is content that is maintained by the infrastructure. Changes to the content might not always be associated with version changes to the resource.</p>  |                  |
| <p>A set of rules under which this content was created</p>   | <p>A reference to a set of rules that were followed when the resource was constructed, and which must be understood when processing the content. Often, this is a reference to an implementation guide that defines the special rules along with other profiles etc.</p> |                  |
| <p>Language of the resource content</p>  | <p>The base language in which the resource is written.</p>   | <p>preferred</p> |

|   |  |  |
|---|--|--|
| <p>Text summary of the resource, for human interpretation</p> | <p>A human-readable narrative that contains a summary of the resource and can be used to represent the content of the resource to a human. The narrative need not encode all the structured data, but is required to contain sufficient detail to make it "clinically safe" for a human to just read the narrative. Resource definitions may define what content should be represented in the narrative to ensure clinical safety.</p> |  |
| <p>Contained, inline Resources</p>                            | <p>These resources do not have an independent existence apart from the resource that contains them - they cannot be identified independently, and nor can they have their own independent transaction scope.</p>   |  |

|   |  |  |
|---|--|--|
| Additional content defined by implementations | May be used to represent additional information that is not part of the basic definition of the resource. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension. |  |
|---|--|--|



|   |   |                         |
|---|---|-------------------------|
| Extensions that cannot be ignored             | May be used to represent additional information that is not part of the basic definition of the resource and that modifies the understanding of the element that contains it and/or the understanding of the containing element's descendants. Usually modifier elements provide negation or qualification. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer is allowed to define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension. Applications processing a resource are required to check |                         |
| Business Identifier for the coverage          | A unique identifier assigned to this coverage.  |                         |
| active   cancelled   draft   entered-in-error | The status of the resource instance.  | Required                |
| Coverage category such as medical or accident | The type of coverage: social program, medical plan, accident coverage (workers compensation, auto), group health or payment by an individual or organization.   | Preferred<br>Extensible |

|  |   |            |
|--|---|------------|
| Owner of the policy                        | The party who 'owns' the insurance policy.  |            |
| Subscriber to the policy                   | The party who has signed-up for or 'owns' the contractual relationship to the policy or to whom the benefit of the policy for services rendered to them or their family is due.   |            |
| ID assigned to the subscriber              | The insurer assigned ID for the Subscriber.   |            |
| Plan beneficiary                           | The party who benefits from the insurance coverage; the patient when products and/or services are provided.   |            |
| Dependent number                           | A unique identifier for a dependent under the coverage.   |            |
| Beneficiary relationship to the subscriber | The relationship of beneficiary (patient) to the subscriber.  | Extensible |
| Coverage start and end dates               | Time period during which the coverage is in force. A missing start date indicates the start date isn't known, a missing end date means the coverage is continuing to be in force. |            |

|  |  |  |
|--|--|--|
| <p>Issuer of the policy</p>                          | <p>The program or plan underwriter or payor including both insurance and non-insurance agreements, such as patient-pay agreements.</p>   |  |
| <p>Additional coverage classifications</p>           | <p>A suite of underwriter specific classifiers.</p>  |  |
| <p>Unique id for inter-element referencing</p>       | <p>Unique id for the element within a resource (for internal references). This may be any string value that does not contain spaces.</p>   |  |
| <p>Additional content defined by implementations</p> | <p>May be used to represent additional information that is not part of the basic definition of the element. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension.</p> |  |

|  |   |            |
|--|---|------------|
| Extensions that cannot be ignored even if unrecognized | May be used to represent additional information that is not part of the basic definition of the element and that modifies the understanding of the element in which it is contained and/or the understanding of the containing element's descendants. Usually modifier elements provide negation or qualification. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension. Applications processing a resource are required to check for modifier |            |
| Type of class such as 'group' or 'plan'                | The type of classification for which an insurer-specific class label or number and optional name is provided, for example may be used to identify a class of coverage or employer group, Policy, Plan.  | Extensible |
| Value associated with the type                         | The alphanumeric string value associated with the insurer issued label.   |            |
| Human readable description of the type and value       | A short description for the class.  |            |

|   |   |  |
|---|---|--|
| Relative order of the coverage          | The order of applicability of this coverage relative to other coverages which are currently in force. Note, there may be gaps in the numbering and this does not imply primary, secondary etc. as the specific positioning of coverages depends upon the episode of care. |  |
| Insurer network                         | The insurer-specific identifier for the insurer-defined network of providers to which the beneficiary may seek treatment which will be covered at the 'in-network' rate, otherwise 'out of network' terms and conditions apply.   |  |
| Patient payments for services/products  | A suite of codes indicating the cost category and associated amount which have been detailed in the policy and may have been included on the health card.   |  |
| Unique id for inter-element referencing | Unique id for the element within a resource (for internal references). This may be any string value that does not contain spaces.   |  |

|   |   |  |
|---|---|--|
| Additional content defined by implementations | May be used to represent additional information that is not part of the basic definition of the element. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension. |  |
|---|---|--|

|  |   |            |
|--|---|------------|
| Extensions that cannot be ignored even if unrecognized | May be used to represent additional information that is not part of the basic definition of the element and that modifies the understanding of the element in which it is contained and/or the understanding of the containing element's descendants. Usually modifier elements provide negation or qualification. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension. Applications processing a resource are required to check for modifier |            |
| Cost category  | The category of patient centric costs associated with treatment.  | Extensible |
| The amount or percentage due from the beneficiary      | The amount due from the patient for the cost category.  |            |
| Exceptions for patient payments                        | A suite of codes indicating exceptions or reductions to patient costs and their effective periods.  |            |

|   |   |  |
|---|---|--|
| Unique id for inter-element referencing       | Unique id for the element within a resource (for internal references). This may be any string value that does not contain spaces.   |  |
| Additional content defined by implementations | May be used to represent additional information that is not part of the basic definition of the element. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension. |  |



|  |   |         |
|--|---|---------|
| Extensions that cannot be ignored even if unrecognized | May be used to represent additional information that is not part of the basic definition of the element and that modifies the understanding of the element in which it is contained and/or the understanding of the containing element's descendants. Usually modifier elements provide negation or qualification. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension. Applications processing a resource are required to check for modifier |         |
| Exception category                                     | The code for the specific exception.  | Example |
| The effective period of the exception                  | The timeframe during when the exception is in force.  |         |
| Reimbursement to insurer                               | When 'subrogation=true' this insurance instance has been included not for adjudication but to provide insurers with the details to recover costs.   |         |
| Contract details                                       | The policy(s) which constitute this insurance coverage.   |         |

| Binding Description | Binding Value Set   | ACH dQM   |
|---------------------|---|-----------|
|                     |   | MS [0..*] |
|                     |   | R[1..1]   |
|                     |   | NRT       |
|                     |   | NRT       |
| IETF language tag   | <a href="https://hl7.org/fhir/valu">https://hl7.org/fhir/valu</a> | NRT       |

|  |  |     |
|--|--|-----|
|  |  | NRT |
|  |  | NRT |

|  |  |     |
|--|--|-----|
|  |  | NRT |
|--|--|-----|

|                                  |   |  |
|----------------------------------|---|--|
|                                  |   | NRT  |
|                                  |   | NRT  |
| FinancialResourceStat<br>usCodes | <a href="http://hl7.org/fhir/Value">http://hl7.org/fhir/Value</a>       | R[1..1]  |
| CoverageTypeAndSelf-<br>PayCodes | <a href="http://hl7.org/fhir/R4/Value">http://hl7.org/fhir/R4/Value</a> | MS [0..1]<br><br>Binding<br>strength=extensible<br>using value set:<br><br>https://<br>vsac.nlm.nih.gov/<br>valueset/<br>2.16.840.1.114222.4.11<br>.3591/expansion |

|                              |   |           |
|------------------------------|---|-----------|
|                              |   | MS [0..1] |
|                              |   | MS [0..1] |
|                              |   | MS [0..1] |
|                              |   | R[1..1]   |
|                              |   | MS [0..1] |
| SubscriberRelationship Codes | <a href="http://hl7.org/fhir/Value">http://hl7.org/fhir/Value</a> | MS [0..1] |
|                              |   | MS [0..1] |

|  |  |         |
|--|--|---------|
|  |  | R[1..*] |
|  |  | NR      |
|  |  | NRT     |
|  |  | NRT     |

|                    |   |     |
|--------------------|---|-----|
|                    |   | NRT |
| CoverageClassCodes | <a href="http://hl7.org/fhir/Value">http://hl7.org/fhir/Value</a> | NRT |
|                    |   | NR  |
|                    |   | NR  |



|  |  |     |
|--|--|-----|
|  |  | NR  |
|  |  | NR  |
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|------------------------|---|-----|
|                        |   | NRT |
| CoverageCopayTypeCodes | <a href="http://hl7.org/fhir/Value">http://hl7.org/fhir/Value</a> | NRT |
|                        |   | NRT |
|                        |   | NRT |

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|--|--|-----|
|  |  | NRT |
|  |  | NRT |

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|--|---|-----|
|  |   | NRT |
| ExampleCoverageFinancialExceptionCodes | <a href="http://hl7.org/fhir/Value">http://hl7.org/fhir/Value</a> | NRT |
|  |   | NRT |
|  |   | NR  |
|  |   | NR  |

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| <b>Path</b>                 | <b>Min</b> | <b>Max</b> | <b>Data Type(s)</b> |
|-----------------------------|------------|------------|---------------------|
| <b>Device</b>               | 0          | *          |                     |
| <b>Device.id</b>            | 0          | 1          | id                  |
| <b>Device.meta</b>          | 0          | 1          | Meta                |
| <b>Device.implicitRules</b> | 0          | 1          | uri                 |

|                        |   |   |           |
|------------------------|---|---|-----------|
| <b>Device.language</b> | 0 | 1 | code      |
| <b>Device.text</b>     | 0 | 1 | Narrative |

|                                 |   |   |           |
|---------------------------------|---|---|-----------|
| <b>Device.contained</b>         | 0 | * | Resource  |
| <b>Device.extension</b>         | 0 | * | Extension |
| <b>Device.modifierExtension</b> | 0 | * | Extension |



|                             |   |   |   |
|-----------------------------|---|---|---|
| <b>Device.identifier</b>    | 0 | * | Identifier                              |
| <b>Device.definition</b>    | 0 | 1 | CodeableReference(D<br>eviceDefinition) |
| <b>Device.udiCarrier</b>    | 0 | * | BackboneElement                         |
| <b>Device.udiCarrier.id</b> | 0 | 1 | string                                  |

|  |   |   |           |
|--|---|---|-----------|
| <b>Device.udiCarrier.extension</b>         | 0 | * | Extension |
| <b>Device.udiCarrier.modifierExtension</b> | 0 | * | Extension |
| <b>Device.udiCarrier.deviceIdentifier</b>  | 0 | 1 | string    |
| <b>Device.udiCarrier.issuer</b>            | 0 | 1 | uri       |

|                                       |   |   |                                |
|---------------------------------------|---|---|--------------------------------|
| <b>Device.udiCarrier.jurisdiction</b> | 0 | 1 | uri                            |
| <b>Device.udiCarrier.carrierAIDC</b>  | 0 | 1 | base64Binary                   |
| <b>Device.udiCarrier.carrierHRF</b>   | 0 | 1 | string                         |
| <b>Device.udiCarrier.entryType</b>    | 0 | 1 | code                           |
| <b>Device.status</b>                  | 0 | 1 | code                           |
| <b>Device.statusReason</b>            | 0 | * | Extensible/Codeable<br>Concept |
| <b>Device.distinctIdentifier</b>      | 0 | 1 | string                         |
| <b>Device.manufacturer</b>            | 0 | 1 | string                         |
| <b>Device.manufactureDate</b>         | 0 | 1 | dateTime                       |
| <b>Device.expirationDate</b>          | 0 | 1 | dateTime                       |
| <b>Device.lotNumber</b>               | 0 | 1 | string                         |

|                                    |   |   |                 |
|------------------------------------|---|---|-----------------|
| <b>Device.serialNumber</b>         | 0 | 1 | string          |
| <b>Device.deviceName</b>           | 0 | * | BackboneElement |
| <b>Device.deviceName.id</b>        | 0 | 1 | string          |
| <b>Device.deviceName.extension</b> | 0 | * | Extension       |

|  |   |   |                 |
|--|---|---|-----------------|
| <b>Device.deviceName.modifierExtension</b> | 0 | * | Extension       |
| <b>Device.deviceName.name</b>              | 1 | 1 | string          |
| <b>Device.deviceName.type</b>              | 1 | 1 | code            |
| <b>Device.modelNumber</b>                  | 0 | 1 | string          |
| <b>Device.partNumber</b>                   | 0 | 1 | string          |
| <b>Device.type</b>                         | 0 | 1 | CodeableConcept |

**FHIR Short Description**

Item used in healthcare

Logical id of this artifact

Metadata about the resource

A set of rules under which this content was created

Language of the resource content

Text summary of the resource, for human interpretation

Contained, inline Resources

Additional content defined by implementations

Extensions that cannot be ignored



Instance identifier

The reference to the definition for the device

Unique Device Identifier (UDI) Barcode string

Unique id for inter-element referencing

Additional content defined by implementations

Extensions that cannot be ignored even if unrecognized

Mandatory fixed portion of UDI

UDI Issuing Organization

|   |
|---|
| Regional UDI authority  |
| UDI Machine Readable Barcode String   |
| UDI Human Readable Barcode String   |
| barcode   rfid   manual   card   self-reported  <br>electronic-transmission   unknown |
|   |
|   |
|   |
| Name of device manufacturer   |
| Date when the device was made   |
| Date and time of expiry of this device (if applicable)                                |
| Lot number of manufacture   |

Serial number assigned by the manufacturer

The name or names of the device as known to the manufacturer and/or patient

Unique id for inter-element referencing

Additional content defined by implementations

Extensions that cannot be ignored even if unrecognized

The name of the device.

The manufacturer's model number for the device

The part number or catalog number of the device

The kind or type of device

| FHIR Definition  | Comments   |
|--|--|
| <p>A type of a manufactured item that is used in the provision of healthcare without being substantially changed through that activity. The device may be a medical or non-medical device.</p>   |  |
| <p>The logical id of the resource, as used in the URL for the resource. Once assigned, this value never changes.</p>   | <p>Within the context of the FHIR RESTful interactions, the resource has an id except for cases like the create and conditional update. Otherwise, the use of the resource id depends on the given use case.</p>   |
| <p>The metadata about the resource. This is content that is maintained by the infrastructure. Changes to the content might not always be associated with version changes to the resource.</p>  |  |
| <p>A reference to a set of rules that were followed when the resource was constructed, and which must be understood when processing the content. Often, this is a reference to an implementation guide that defines the special rules along with other profiles etc.</p> | <p>Asserting this rule set restricts the content to be only understood by a limited set of trading partners. This inherently limits the usefulness of the data in the long term. However, the existing health eco-system is highly fractured, and not yet ready to define, collect, and exchange data in a generally computable sense. Wherever possible, implementers and/or specification writers should avoid using this element. Often, when used, the URL is a reference to an implementation guide that defines these special rules as part of its narrative along with other profiles, value sets, etc.</p> |

|  |   |
|--|---|
| <p>The base language in which the resource is written.</p>   | <p>Language is provided to support indexing and accessibility (typically, services such as text to speech use the language tag). The html language tag in the narrative applies to the narrative. The language tag on the resource may be used to specify the language of other presentations generated from the data in the resource. Not all the content has to be in the base language. The Resource.language should not be assumed to apply to the narrative automatically. If a language is specified, it should it also be specified on the div element in the html (see rules in HTML5 for information about the relationship between xml:lang and the html lang attribute).</p> |
| <p>A human-readable narrative that contains a summary of the resource and can be used to represent the content of the resource to a human. The narrative need not encode all the structured data, but is required to contain sufficient detail to make it "clinically safe" for a human to just read the narrative. Resource definitions may define what content should be represented in the narrative to ensure clinical safety.</p> | <p>Contained resources do not have a narrative. Resources that are not contained SHOULD have a narrative. In some cases, a resource may only have text with little or no additional discrete data (as long as all minOccurs=1 elements are satisfied). This may be necessary for data from legacy systems where information is captured as a "text blob" or where text is additionally entered raw or narrated and encoded information is added later.</p>  |

|   |  |
|---|--|
| <p>These resources do not have an independent existence apart from the resource that contains them - they cannot be identified independently, nor can they have their own independent transaction scope. This is allowed to be a Parameters resource if and only if it is referenced by a resource that provides context/meaning.</p>   | <p>This should never be done when the content can be identified properly, as once identification is lost, it is extremely difficult (and context dependent) to restore it again. Contained resources may have profiles and tags in their meta elements, but SHALL NOT have security labels.</p>                  |
| <p>May be used to represent additional information that is not part of the basic definition of the resource. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension.</p>   | <p>There can be no stigma associated with the use of extensions by any application, project, or standard - regardless of the institution or jurisdiction that uses or defines the extensions. The use of extensions is what allows the FHIR specification to retain a core level of simplicity for everyone.</p> |
| <p>May be used to represent additional information that is not part of the basic definition of the resource and that modifies the understanding of the element that contains it and/or the understanding of the containing element's descendants. Usually modifier elements provide negation or qualification. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer is allowed to define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension. Applications processing a resource are required to check for modifier extensions.</p> | <p>There can be no stigma associated with the use of extensions by any application, project, or standard - regardless of the institution or jurisdiction that uses or defines the extensions. The use of extensions is what allows the FHIR specification to retain a core level of simplicity for everyone.</p> |



|   |  |
|---|--|
| <p>Unique instance identifiers assigned to a device by manufacturers other organizations or owners.</p>   | <p>Certain attributes, like serial number and UDI Carrier (the HRF or AIDC barcode string) are not device instance identifiers as they are not consistently able to uniquely identify the instance of a device, thus are not appropriate to be used to value Device.identifier. The barcode string from a barcode present on a device label or package may identify the instance, include names given to the device in local usage, or may identify the type of device. If the identifier identifies the type of device, Device.type element should be used. The identifier is typically valued if the serialNumber or lotNumber is not valued and represents a different type of identifier. However, it is permissible to still include those identifiers in DeviceDefinition.identifier with the appropriate identifier.type.</p> |
| <p>The reference to the definition for the device.</p>  |  |
| <p>Unique device identifier (UDI) assigned to device label or package. Note that the Device may include multiple udiCarriers as it either may include just the udiCarrier for the jurisdiction it is sold, or for multiple jurisdictions it could have been sold.</p> | <p>UDI may identify an unique instance of a device, or it may only identify the type of the device. See [UDI mappings](device-mappings.html#udi) for a complete mapping of UDI parts to Device.</p>  |
| <p>Unique id for the element within a resource (for internal references). This may be any string value that does not contain spaces.</p>  |  |

|  |  |
|--|--|
| <p>May be used to represent additional information that is not part of the basic definition of the element. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension.</p>   | <p>There can be no stigma associated with the use of extensions by any application, project, or standard - regardless of the institution or jurisdiction that uses or defines the extensions. The use of extensions is what allows the FHIR specification to retain a core level of simplicity for everyone.</p> |
| <p>May be used to represent additional information that is not part of the basic definition of the element and that modifies the understanding of the element in which it is contained and/or the understanding of the containing element's descendants. Usually modifier elements provide negation or qualification. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension. Applications processing a resource are required to check for modifier extensions.</p>   | <p>There can be no stigma associated with the use of extensions by any application, project, or standard - regardless of the institution or jurisdiction that uses or defines the extensions. The use of extensions is what allows the FHIR specification to retain a core level of simplicity for everyone.</p> |
| <p>The device identifier (DI) is a mandatory, fixed portion of a UDI that identifies the labeler and the specific version or model of a device.</p> <p>Organization that is charged with issuing UDIs for devices. For example, the US FDA issuers include:</p> <ol style="list-style-type: none"> <li>1) GS1: <a href="http://hl7.org/fhir/NamingSystem/gs1-di">http://hl7.org/fhir/NamingSystem/gs1-di</a>,</li> <li>2) HIBCC: <a href="http://hl7.org/fhir/NamingSystem/hibcc-dil">http://hl7.org/fhir/NamingSystem/hibcc-dil</a>,</li> <li>3) ICCBBA for blood containers: <a href="http://hl7.org/fhir/NamingSystem/iccbba-blood-di">http://hl7.org/fhir/NamingSystem/iccbba-blood-di</a>,</li> <li>4) ICCBA for other devices: <a href="http://hl7.org/fhir/NamingSystem/iccbba-other-di">http://hl7.org/fhir/NamingSystem/iccbba-other-di</a> #</li> </ol> <p>Informationsstelle für Arzneispezialitäten (IFA GmbH) (EU only): <a href="http://hl7.org/fhir/NamingSystem/ifa-gmbh-di">http://hl7.org/fhir/NamingSystem/ifa-gmbh-di</a>.</p> |  |

|  |  |
|--|--|
| <p>The identity of the authoritative source for UDI generation within a jurisdiction. All UDIs are globally unique within a single namespace with the appropriate repository uri as the system. For example, UDIs of devices managed in the U.S. by the FDA, the value is <a href="http://hl7.org/fhir/NamingSystem/us-fda-udi">http://hl7.org/fhir/NamingSystem/us-fda-udi</a> or in the European Union by the European Commission <a href="http://hl7.org/fhir/NamingSystem/eu-ec-udi">http://hl7.org/fhir/NamingSystem/eu-ec-udi</a>.</p> |  |
| <p>The full UDI carrier of the Automatic Identification and Data Capture (AIDC) technology representation of the barcode string as printed on the packaging of the device - e.g., a barcode or RFID. Because of limitations on character sets in XML and the need to round-trip JSON data through XML, AIDC Formats *SHALL* be base64 encoded.</p>   | <p>The AIDC form of UDIs should be scanned or otherwise used for the identification of the device whenever possible to minimize errors in records resulting from manual transcriptions. If separate barcodes for DI and PI are present, concatenate the string with DI first and in order of human readable expression on label.</p> |
| <p>The full UDI carrier as the human readable form (HRF) representation of the barcode string as printed on the packaging of the device.</p>   | <p>If separate barcodes for DI and PI are present, concatenate the string with DI first and in order of human readable expression on label.</p>  |
| <p>A coded entry to indicate how the data was entered.</p>   |  |
| <p>Status of the Device availability.</p>  |  |
| <p>Reason for the status of the Device availability.</p>   |  |
| <p>The distinct identification string as required by regulation for a human cell, tissue, or cellular and tissue-based product.</p>  | <p>For example, this applies to devices in the United States regulated under Code of Federal Regulation 21CFR§1271.290(c).</p>   |
| <p>A name of the manufacturer or entity legally responsible for the device.</p>  |  |
| <p>The date and time when the device was manufactured.</p>   |  |
| <p>The date and time beyond which this device is no longer valid or should not be used (if applicable).</p>  |  |
| <p>Lot number assigned by the manufacturer.</p>  |  |

|  |   |
|--|---|
| <p>The serial number assigned by the organization when the device was manufactured.</p>  | <p>Alphanumeric Maximum 20. While a serial number is a type of identifier, in the context of devices for which a UDI is required, thus a serial number may be part of the production identifier, it is more informative to have the serial number as a dedicated attribute together with the other UDI production identifier. When the device is not subject to including the UDI (e.g., its presence and exchange is not mandated by local regulatory requirements or specific use case at hand), thus the concept of production identifiers is not relevant as a set, it remains helpful for consistency to still use Device.serialNumber rather than using Device.identifier with an appropriate type. Systems that do not realize an identifier is a serial number may place it in Device.identifier or if the identifier.system is known for the serial number, it may</p> |
| <p>This represents the manufacturer's name of the device as provided by the device, from a UDI label, or by a person describing the Device. This typically would be used when a person provides the name(s) or when the device represents one of the names available from DeviceDefinition.</p>  |   |
| <p>Unique id for the element within a resource (for internal references). This may be any string value that does not contain spaces.</p>   |   |
| <p>May be used to represent additional information that is not part of the basic definition of the element. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension.</p> | <p>There can be no stigma associated with the use of extensions by any application, project, or standard - regardless of the institution or jurisdiction that uses or defines the extensions. The use of extensions is what allows the FHIR specification to retain a core level of simplicity for everyone.</p>  |

|   |  |
|---|--|
| <p>May be used to represent additional information that is not part of the basic definition of the element and that modifies the understanding of the element in which it is contained and/or the understanding of the containing element's descendants. Usually modifier elements provide negation or qualification. To make the use of extensions safe and managable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension. Applications processing a resource are required to check for modifier extensions.</p> | <p>There can be no stigma associated with the use of extensions by any application, project, or standard - regardless of the institution or jurisdiction that uses or defines the extensions. The use of extensions is what allows the FHIR specification to retain a core level of simplicity for everyone.</p> |
| <p>Name of the device</p>   |  |
| <p>udi-label-name   user-friendly-name   patient-reported-name   manufacturer-name   model-name   other</p>   |  |
| <p>The manufacturer's model number for the device.</p>  |  |
| <p>The part number or catalog number of the device.</p>   | <p>Alphanumeric Maximum 20.</p>  |
| <p>The kind or type of device. A device instance may have more than one type - in which case those are the types that apply to the specific instance of the device.</p>   | <p>Multiple device types are use when a device is categorized in more than one context - for example, hybrid devices in which the device is both of type</p>   |

| Binding Strength | Binding Description | FHIR Binding Value Set | ACH dQM  |
|------------------|---------------------|------------------------|----------|
|                  |                     |                        | MS[0..*] |
|                  |                     |                        | R[1..1]  |
|                  |                     |                        | NRT      |
|                  |                     |                        | NRT      |

|          |  |   |     |
|----------|--|---|-----|
| required | IETF language tag for a human language | <a href="https://hl7.org/fhir/values">https://hl7.org/fhir/values</a> | NRT |
|          |  |   | NRT |

|  |  |  |     |
|--|--|--|-----|
|  |  |  | NRT |
|  |  |  | NRT |
|  |  |  | NRT |



|  |  |  |          |
|--|--|--|----------|
|  |  |  | NRT      |
|  |  |  | NR       |
|  |  |  | MS[0..*] |
|  |  |  | NRT      |

|  |  |  |          |
|--|--|--|----------|
|  |  |  | NRT      |
|  |  |  | NRT      |
|  |  |  | MS[0..1] |
|  |  |  | NR       |

|          |   |   |          |
|----------|---|---|----------|
|          |   |   | NR       |
|          |   |   | MS[0..1] |
|          |   |   | MS[0..1] |
| required | Codes to identify how UDI data was entered. | <a href="http://hl7.org/fhir/R4/va">http://hl7.org/fhir/R4/va</a> | MS[0..1] |
| required | The record status of the device.            | <a href="http://hl7.org/fhir/R4/va">http://hl7.org/fhir/R4/va</a> | MS[0..1] |
|          |   |   | NR       |
|          |   |   | MS[0..1] |
|          |   |   | NR       |
|          |   |   | NR       |
|          |   |   | NR       |
|          |   |   | NR       |

|  |  |  |           |
|--|--|--|-----------|
|  |  |  | NR        |
|  |  |  | MS [0..*] |
|  |  |  | NRT       |
|  |  |  | NRT       |

|                       |                                    |   |  |
|-----------------------|------------------------------------|---|--|
|                       |                                    |   | NRT  |
|                       |                                    |   | R[1..1]  |
| required              | Device Name Type                   | <a href="https://hl7.org/fhir/R4/v">https://hl7.org/fhir/R4/v</a> | R[1..1]  |
|                       |                                    |   | NR   |
|                       |                                    |   | NR   |
| example<br>extensible | Codes to identify medical devices. | <a href="https://hl7.org/fhir/R4/v">https://hl7.org/fhir/R4/v</a> | R[1..1]<br><br>Binding strength=<br>extensible |

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| <b>FHIR Path</b>             | <b>Min</b> | <b>Max</b> | <b>Must Support?</b> |
|------------------------------|------------|------------|----------------------|
| <b>DiagnosticReport</b>      | 0          | *          |                      |
| <b>DiagnosticReport.id</b>   | 0          | 1          |                      |
| <b>DiagnosticReport.meta</b> | 0          | 1          |                      |

| <b>DiagnosticReport.implicitRules</b> | 0 | 1 |  |
|---------------------------------------|---|---|--|
|                                       |   |   |  |

|                                  |   |   |  |
|----------------------------------|---|---|--|
| <b>DiagnosticReport.language</b> | 0 | 1 |  |
| <b>DiagnosticReport.text</b>     | 0 | 1 |  |



|   |   |   |   |
|---|---|---|---|
| <b>DiagnosticReport.contained</b>         | 0 | * |   |
| <b>DiagnosticReport.extension</b>         | 0 | * |   |
| <b>DiagnosticReport.modifierExtension</b> | 0 | * |   |
| <b>DiagnosticReport.identifier</b>        | 0 | * |   |
| <b>DiagnosticReport.basedOn</b>           | 0 | * |   |
| <b>DiagnosticReport.status</b>            | 1 | 1 | Y |

|   |   |   |   |
|---|---|---|---|
| <b>DiagnosticReport.category</b>                              | 1 | * | Y |
| <b>DiagnosticReport.category:LaboratorySlice</b>              | 1 | 1 | Y |
| DiagnosticReport.category:LaboratorySlice.id                  | 0 | 1 |   |
| DiagnosticReport.category:LaboratorySlice.id.extension        | 0 | * |   |
| DiagnosticReport.category:LaboratorySlice.coding              | 1 | * |   |
| DiagnosticReport.category:LaboratorySlice.coding.id           | 0 | 1 |   |
| DiagnosticReport.category:LaboratorySlice.coding.system       | 1 | 1 |   |
| DiagnosticReport.category:LaboratorySlice.coding.version      | 0 | 1 |   |
| DiagnosticReport.category:LaboratorySlice.coding.code         | 0 | 2 |   |
| DiagnosticReport.category:LaboratorySlice.coding.display      | 0 | 1 |   |
| DiagnosticReport.category:LaboratorySlice.coding.userSelected | 0 | 1 |   |

|                                      |   |   |   |
|--------------------------------------|---|---|---|
| <b>DiagnosticReport.code</b>         | 1 | 1 | Y |
| <b>DiagnosticReport.subject</b>      | 1 | 1 | Y |
| <b>DiagnosticReport.encounter</b>    | 0 | 1 |   |
| <b>DiagnosticReport.effective[x]</b> | 1 | 1 | Y |

|                                      |   |   |   |
|--------------------------------------|---|---|---|
| <b>DiagnosticReport.issued</b>       | 1 | 1 | Y |
| <b>DiagnosticReport.performer</b>    | 0 | * | Y |
| DiagnosticReport.resultsInterpreter  | 0 | * |   |
| DiagnosticReport.specimen            | 0 | * |   |
| DiagnosticReport.result              | 0 | * | Y |
| <b>DiagnosticReport.imagingStudy</b> | 0 | * |   |

|                                  |   |   |  |
|----------------------------------|---|---|--|
| <b>DiagnosticReport.media</b>    | 0 | * |  |
| DiagnosticReport.media.id        | 0 | 1 |  |
| DiagnosticReport.media.extension | 0 | * |  |

|  |   |   |  |
|--|---|---|--|
| DiagnosticReport.media.modifierExtension | 0 | * |  |
| DiagnosticReport.media.comment           | 0 | 1 |  |
| DiagnosticReport.media.link              | 1 | 1 |  |
| <b>DiagnosticReport.conclusion</b>       | 0 | 1 |  |

|  |   |   |  |
|--|---|---|--|
| <b>DiagnosticReport.conclusionCode</b> | 0 | * |  |
| <b>DiagnosticReport.presentedForm</b>  | 0 | * |  |

| <b>Data Type(s)</b> | <b>FHIR Short Description</b>  |
|---------------------|--|
|                     | A Diagnostic report - a combination of request information, atomic results, images, interpretation, as well as formatted reports |
| string              | Logical id of this artifact  |
| Meta                | Metadata about the resource  |



uri

A set of rules under which this content was created

|           |  |
|-----------|--|
| code      | Language of the resource content                       |
| Narrative | Text summary of the resource, for human interpretation |

|  |   |
|--|---|
| Resource   | Contained, inline Resources                     |
| Extension  | Additional content defined by implementations   |
| Extension  | Extensions that cannot be ignored               |
| Identifier   | Business identifier for report                  |
| Reference(CarePlan  ImmunizationRecommendation  MedicationRequest  NutritionOrder  ServiceRequest) | What was requested                              |
| code   | registered   partial   preliminary   final<br>+ |

|                 |  |
|-----------------|--|
| CodeableConcept | Service category                               |
| CodeableConcept | Service category                               |
| string          | Unique id for inter-element referencing        |
| Extension       | Additional content defined by implementations  |
| Coding          | Code defined by a terminology system           |
| string          | Unique id for inter-element referencing        |
| url             | identity of the terminology system             |
| string          | Version of the system - if relevant            |
| code            | Symbol in syntax defined by the system         |
| string          | Representation defined by the system           |
| boolean         | If this coding was chosen directly by the user |

|  |  |
|--|--|
| CodeableConcept  | US Core Laboratory Report Order Code                             |
| Reference( <a href="http://hl7.org/fhir/us/core/StructureDefinition/us-core-patient">http://hl7.org/fhir/us/core/StructureDefinition/us-core-patient</a> ) | The subject of the report - usually, but not always, the patient |
| Reference(Encounter)   | Health care event when test ordered                              |
| dateTime<br>Period   | Specimen Collection Datetime or Period                           |

|  |  |
|--|--|
| instant  | DateTime this version was made   |
| Reference(US Core Practitioner Profile   US Core Organization Profile) | Responsible Diagnostic Service   |
| Reference(Practitioner PractitionerRole Organization CareTeam)         | Primary result interpreter   |
| Reference(Specimen)  | Specimens this report is based on  |
| Reference(US Core Laboratory Result Observation Profile)               | Observations   |
| Reference(ImagingStudy)  | Reference to full details of imaging associated with the diagnostic report |

|                 |   |
|-----------------|---|
| BackboneElement | Key images associated with this report        |
| string          | Unique id for inter-element referencing       |
| Extension       | Additional content defined by implementations |

|                  |  |
|------------------|--|
| Extension        | Extensions that cannot be ignored even if unrecognized |
| string           | Comment about the image (e.g. explanation)             |
| Reference(Media) | Reference to the image source                          |
| string           | Clinical conclusion (interpretation) of test results   |



|                 |   |
|-----------------|---|
| CodeableConcept | Codes for the clinical conclusion of test results |
| Attachment      | Entire report as issued                           |

| FHIR Definition   | Comments  | Binding Strength |
|---|---|------------------|
| <p>The US Core Diagnostic Report Profile is based upon the core FHIR DiagnosticReport Resource and created to meet the 2015 Edition Common Clinical Data Set 'Laboratory test(s) and Laboratory value(s)/result(s)' requirements.</p> | <p>This is intended to capture a single report and is not suitable for use in displaying summary information that covers multiple reports. For example, this resource has not been designed for laboratory cumulative reporting formats nor detailed structured reports for sequencing.</p> |                  |
| <p>The logical id of the resource, as used in the URL for the resource. Once assigned, this value never changes.</p>  | <p>The only time that a resource does not have an id is when it is being submitted to the server using a create operation.</p>  |                  |
| <p>The metadata about the resource. This is content that is maintained by the infrastructure. Changes to the content might not always be associated with version changes to the resource.</p>   |   |                  |

|  |   |  |
|--|---|--|
| <p>A reference to a set of rules that were followed when the resource was constructed, and which must be understood when processing the content. Often, this is a reference to an implementation guide that defines the special rules along with other profiles etc.</p> | <p>Asserting this rule set restricts the content to be only understood by a limited set of trading partners. This inherently limits the usefulness of the data in the long term. However, the existing health eco-system is highly fractured, and not yet ready to define, collect, and exchange data in a generally computable sense. Wherever possible, implementers and/or specification writers should avoid using this element. Often, when used, the URL is a reference to an implementation guide that defines these special rules as part of it's narrative along with other profiles, value sets, etc.</p> |  |
|--|---|--|

|  |   |                  |
|--|---|------------------|
| <p>The base language in which the resource is written.</p>   | <p>Language is provided to support indexing and accessibility (typically, services such as text to speech use the language tag). The html language tag in the narrative applies to the narrative. The language tag on the resource may be used to specify the language of other presentations generated from the data in the resource. Not all the content has to be in the base language. The Resource.language should not be assumed to apply to the narrative automatically. If a language is specified, it should it also be specified on the div element in the html (see rules in HTML5 for information about the relationship between xml:lang and the html lang attribute).</p> | <p>preferred</p> |
| <p>A human-readable narrative that contains a summary of the resource and can be used to represent the content of the resource to a human. The narrative need not encode all the structured data, but is required to contain sufficient detail to make it "clinically safe" for a human to just read the narrative. Resource definitions may define what content should be represented in the narrative to ensure clinical safety.</p> | <p>Contained resources do not have narrative. Resources that are not contained SHOULD have a narrative. In some cases, a resource may only have text with little or no additional discrete data (as long as all minOccurs=1 elements are satisfied). This may be necessary for data from legacy systems where information is captured as a "text blob" or where text is additionally entered raw or narrated and encoded information is added later.</p>  |                  |

|   |  |                 |
|---|--|-----------------|
| <p>These resources do not have an independent existence apart from the resource that contains them - they cannot be identified independently, and nor can they have their own independent transaction scope.</p>  | <p>This should never be done when the content can be identified properly, as once identification is lost, it is extremely difficult (and context dependent) to restore it again. Contained resources may have profiles and tags in their meta elements, but SHALL NOT have security labels.</p>                  |                 |
| <p>May be used to represent additional information that is not part of the basic definition of the resource. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension.</p> | <p>There can be no stigma associated with the use of extensions by any application, project, or standard - regardless of the institution or jurisdiction that uses or defines the extensions. The use of extensions is what allows the FHIR specification to retain a core level of simplicity for everyone.</p> |                 |
| <p>May be used to represent additional information that is not part of the basic definition of the</p>  | <p>There can be no stigma associated with the use of extensions by any</p>   |                 |
| <p>Identifiers assigned to this report by the performer or other systems</p>  | <p>Usually assigned by the Information System of the diagnostic service provider</p>   |                 |
| <p>Details concerning a service requested.</p>  | <p>Note: Usually there is one test request for each result, however in some circumstances multiple test requests may be represented using a single test result resource. Note that there are also cases where one request leads to multiple reports.</p>   |                 |
| <p>The status of the diagnostic report.</p>   |  | <p>required</p> |

|   |  |                    |
|---|--|--------------------|
| <p>A code that classifies the clinical discipline, department or diagnostic service that created the report (e.g. cardiology, biochemistry, hematology, MRI). This is used for searching, sorting and display purposes.</p> | <p>Multiple categories are allowed using various categorization schemes. The level of granularity is defined by the category concepts in the value set. More fine-grained filtering can be performed using the metadata and/or terminology hierarchy in DiagnosticReport.code.</p> | <p>example</p>     |
| <p>A code that classifies the clinical discipline, department or diagnostic service that created the report (e.g. cardiology, biochemistry, hematology, MRI). This is used for searching, sorting and display purposes.</p> | <p>Multiple categories are allowed using various categorization schemes. The level of granularity is defined by the category concepts in the value set. More fine-grained filtering can be performed using the metadata and/or terminology hierarchy in DiagnosticReport.code.</p> | <p>example</p>     |
|   |  |                    |
|   |  |                    |
|   |  | <p>Complex</p>     |
|   |  |                    |
|   |  | <p>Fixed Value</p> |
|   |  |                    |
|   |  | <p>Fixed Value</p> |
|   |  |                    |
|   |  |                    |

|  |  |                   |
|--|--|-------------------|
| <p>The test, panel or battery that was ordered.</p>  | <p>UsageNote= The typical patterns for codes are: 1) a LOINC code either as a translation from a "local" code or as a primary code, or 2) a local code only if no suitable LOINC exists, or 3) both the local and the LOINC translation. Systems SHALL be capable of sending the local code if one exists.</p>   | <p>extensible</p> |
| <p>The subject of the report. Usually, but not always, this is a patient. However, diagnostic services also perform analyses on specimens collected from a variety of other sources.</p>   |  |                   |
| <p>The healthcare event (e.g. a patient and healthcare provider interaction) which this DiagnosticReport is about.</p>   | <p>This will typically be the encounter the event occurred within, but some events may be initiated prior to or after the official completion of an encounter but still be tied to the context of the encounter (e.g. pre-admission laboratory tests).</p>   |                   |
| <p>The time or time-period the observed values are related to. When the subject of the report is a patient, this is usually either the time of the procedure or of specimen collection(s), but very often the source of the date/time is not known, only the date/time itself.</p> | <p>If the diagnostic procedure was performed on the patient, this is the time it was performed. If there are specimens, the diagnostically relevant time can be derived from the specimen collection times, but the specimen information is not always available, and the exact relationship between the specimens and the diagnostically relevant time is not always automatic.</p> |                   |

|  |  |  |
|--|--|--|
| <p>The date and time that this version of the report was made available to providers, typically after the report was reviewed and verified.</p>  | <p>May be different from the update time of the resource itself, because that is the status of the record (potentially a secondary copy), not the actual release time of the report.</p>   |  |
| <p>The diagnostic service that is responsible for issuing the report.</p>  | <p>This is not necessarily the source of the atomic data items or the entity that interpreted the results. It is the entity that takes responsibility for the clinical report.</p>   |  |
| <p>The practitioner or organization that is responsible for the report's conclusions and interpretations.</p>  | <p>Might not be the same entity that takes responsibility for the clinical report.</p>   |  |
| <p>Details about the specimens on which this diagnostic report is based.</p>   | <p>If the specimen is sufficiently specified with a code in the test result name, then this additional data may be redundant. If there are multiple specimens, these may be represented per observation or group.</p>  |  |
| <p>[Observations](<a href="http://hl7.org/fhir/R4/observation.html">http://hl7.org/fhir/R4/observation.html</a>) that are part of this diagnostic report.</p>  | <p>Observations can contain observations.</p>  |  |
| <p>One or more links to full details of any imaging performed during the diagnostic investigation. Typically, this is imaging performed by DICOM enabled modalities, but this is not required. A fully enabled PACS viewer can use this information to provide views of the source images.</p> | <p>ImagingStudy and the image element are somewhat overlapping - typically, the list of image references in the image element will also be found in one of the imaging study resources. However, each caters to different types of displays for different types of purposes. Neither, either, or both may be provided.</p> |  |



|  |  |  |
|--|--|--|
| <p>A list of key images associated with this report. The images are generally created during the diagnostic process, and may be directly of the patient, or of treated specimens (i.e. slides of interest).</p>  |  |  |
| <p>Unique id for the element within a resource (for internal references). This may be any string value that does not contain spaces.</p>   |  |  |
| <p>May be used to represent additional information that is not part of the basic definition of the element. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension.</p> | <p>There can be no stigma associated with the use of extensions by any application, project, or standard - regardless of the institution or jurisdiction that uses or defines the extensions. The use of extensions is what allows the FHIR specification to retain a core level of simplicity for everyone.</p> |  |

|   |  |  |
|---|--|--|
| <p>May be used to represent additional information that is not part of the basic definition of the element and that modifies the understanding of the element in which it is contained and/or the understanding of the containing element's descendants. Usually modifier elements provide negation or qualification. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension. Applications processing a resource are required to check for modifier extensions.</p> <p>Modifier extensions SHALL NOT change the meaning of any elements on Resource or DomainResource (including cannot change the meaning of modifierExtension itself).</p> | <p>There can be no stigma associated with the use of extensions by any application, project, or standard - regardless of the institution or jurisdiction that uses or defines the extensions. The use of extensions is what allows the FHIR specification to retain a core level of simplicity for everyone.</p> |  |
| <p>A comment about the image. Typically, this is used to provide an explanation for why the image is included, or to draw the viewer's attention to important features.</p>   | <p>The comment should be displayed with the image. It would be common for the report to include additional discussion of the image contents in other sections such as the conclusion.</p>  |  |
| <p>Reference to the image source.</p>   |  |  |
| <p>Concise and clinically contextualized summary conclusion (interpretation/impression) of the diagnostic report.</p>   |  |  |

|  |  |         |
|--|--|---------|
| One or more codes that represent the summary conclusion (interpretation/impression) of the diagnostic report.  |  | example |
| Rich text representation of the entire result as issued by the diagnostic service. Multiple formats are allowed but they SHALL be semantically equivalent. | "application/pdf" is recommended as the most reliable and interoperable in this context. |         |

| Binding Description | FHIR Binding Value Set | ACH dQM   |
|---------------------|------------------------|-----------|
|                     |                        | MS [0..*] |
|                     |                        | R [1..1]  |
|                     |                        | NRT       |

|  |  |     |
|--|--|-----|
|  |  | NRT |
|--|--|-----|

|   |   |     |
|---|---|-----|
| CommonLanguages<br>Max Binding: All Languages | <a href="http://hl7.org/fhir/Value">http://hl7.org/fhir/Value</a> | NRT |
|   |   | NRT |

|  |   |          |
|--|---|----------|
|  |   | NRT      |
|  |   | NRT      |
|  |   | NRT      |
|  |   | NRT      |
|  |   | NR       |
|  | <a href="http://hl7.org/fhir/R4/Value">http://hl7.org/fhir/R4/Value</a> | R [1..1] |

|  |   |          |
|--|---|----------|
| Codes for diagnostic service sections.   | <a href="http://hl7.org/fhir/R4/ValueSet">http://hl7.org/fhir/R4/ValueSet</a>   | R [1..*] |
| Required Pattern: At least the following |   | R [1..1] |
|  |   | NRT      |
|  |   | NRT      |
| Fixed Value: (complex)                   |   | NR       |
|  |   | NRT      |
| diagnostiServiceSectionID                | <a href="https://terminology.hl7.org/5.2.0/CodeSystem-v2-0074.html">https://terminology.hl7.org/5.2.0/CodeSystem-v2-0074.html</a> | NR       |
|  |   | NR       |
|  |   | NR       |
|  |   | NR       |
|  |   | NR       |



|  |   |          |
|--|---|----------|
| US Core Diagnostic Report Laboratory Codes (LOINC codes) | <a href="https://www.hl7.org/fhir">https://www.hl7.org/fhir</a> | R [1..1] |
|  |   | R [1..1] |
|  |   | NR       |
|  |   | R [1..1] |

|  |  |           |
|--|--|-----------|
|  |  | R [1..1]  |
|  |  | NR        |
|  |  | NR        |
|  |  | MS [0..*] |
|  |  | MS [0..*] |
|  |  | NRT       |

|  |  |     |
|--|--|-----|
|  |  | NRT |
|  |  | NRT |
|  |  | NRT |

|  |  |     |
|--|--|-----|
|  |  | NRT |
|  |  | NRT |
|  |  | NRT |
|  |  | NR  |

|                          |   |     |
|--------------------------|---|-----|
| SNOMEDCTClinicalFindings | <a href="http://hl7.org/fhir/Value">http://hl7.org/fhir/Value</a> | NR  |
|                          |   | NRT |

[Back to TOC](#)

| <b>Path</b>                  | <b>Min</b> | <b>Max</b> | <b>Must Support?</b> |
|------------------------------|------------|------------|----------------------|
| <b>DiagnosticReport</b>      | 0          | *          |                      |
| <b>DiagnosticReport.id</b>   | 0          | 1          |                      |
| <b>DiagnosticReport.meta</b> | 0          | 1          |                      |

|                                       |   |   |  |
|---------------------------------------|---|---|--|
| <b>DiagnosticReport.implicitRules</b> | 0 | 1 |  |
|---------------------------------------|---|---|--|

|                                  |   |   |  |
|----------------------------------|---|---|--|
| <b>DiagnosticReport.language</b> | 0 | 1 |  |
| <b>DiagnosticReport.text</b>     | 0 | 1 |  |



|                                   |   |   |  |
|-----------------------------------|---|---|--|
| <b>DiagnosticReport.contained</b> | 0 | * |  |
| <b>DiagnosticReport.extension</b> | 0 | * |  |

|   |   |   |   |
|---|---|---|---|
| <b>DiagnosticReport.modifierExtension</b> | 0 | * |   |
| <b>DiagnosticReport.identifier</b>        | 0 | * |   |
| <b>DiagnosticReport.basedOn</b>           | 0 | * |   |
| <b>DiagnosticReport.status</b>            | 1 | 1 | Y |

|                                   |   |   |   |
|-----------------------------------|---|---|---|
| <b>DiagnosticReport.category</b>  | 0 | * | Y |
| <b>DiagnosticReport.code</b>      | 1 | 1 | Y |
| <b>DiagnosticReport.subject</b>   | 1 | 1 | Y |
| <b>DiagnosticReport.encounter</b> | 0 | 1 | Y |

|  |   |   |   |
|--|---|---|---|
| <b>DiagnosticReport.effective[x]</b>       | 1 | 1 | Y |
| <b>DiagnosticReport.issued</b>             | 0 | 1 | Y |
| <b>DiagnosticReport.performer</b>          | 0 | * | Y |
| <b>DiagnosticReport.resultsInterpreter</b> | 0 | * |   |
| <b>DiagnosticReport.specimen</b>           | 0 | * |   |
| <b>DiagnosticReport.result</b>             | 0 | * | Y |

|   |   |   |   |
|---|---|---|---|
| <b>DiagnosticReport.imagingStudy</b>    | 0 | * | Y |
| <b>DiagnosticReport.media</b>           | 0 | * | Y |
| <b>DiagnosticReport.media.id</b>        | 0 | 1 |   |
| <b>DiagnosticReport.media.extension</b> | 0 | * |   |

|   |   |   |   |
|---|---|---|---|
| <b>DiagnosticReport.media.modifierExtension</b> | 0 | * |   |
| <b>DiagnosticReport.media.comment</b>           | 0 | 1 |   |
| <b>DiagnosticReport.media.link</b>              | 1 | 1 | Y |
| <b>DiagnosticReport.conclusion</b>              | 0 | 1 |   |
| <b>DiagnosticReport.conclusionCode</b>          | 0 | * |   |

|                                       |   |   |   |
|---------------------------------------|---|---|---|
| <b>DiagnosticReport.presentedForm</b> | 0 | * | Y |
|---------------------------------------|---|---|---|

| Data Type(s) | FHIR Short Description   | FHIR Definition  |
|--------------|--|--|
|              | US Core Diagnostic Report Profile for Report and Note exchange | Clinical Testing and Imaging tests performed on a patient that results in structured or unstructured (narrative) findings specific to the patient.                                     |
| string       | Logical id of this artifact                                    | The logical id of the resource, as used in the URL for the resource. Once assigned, this value never changes.  |
| Meta         | Metadata about the resource                                    | The metadata about the resource. This is content that is maintained by the infrastructure. Changes to the content might not always be associated with version changes to the resource. |



|     |   |   |
|-----|---|---|
| uri | A set of rules under which this content was created | A reference to a set of rules that were followed when the resource was constructed, and which must be understood when processing the content. Often, this is a reference to an implementation guide that defines the special rules along with other profiles etc. |
|-----|---|---|

|           |  |   |
|-----------|--|---|
| code      | Language of the resource content                       | The base language in which the resource is written.   |
| Narrative | Text summary of the resource, for human interpretation | A human-readable narrative that contains a summary of the resource and can be used to represent the content of the resource to a human. The narrative need not encode all the structured data, but is required to contain sufficient detail to make it "clinically safe" for a human to just read the narrative. Resource definitions may define what content should be represented in the narrative to ensure clinical safety. |

|           |   |  |
|-----------|---|--|
| Resource  | Contained, inline Resources                   | These resources do not have an independent existence apart from the resource that contains them - they cannot be identified independently, and nor can they have their own independent transaction scope.  |
| Extension | Additional content defined by implementations | May be used to represent additional information that is not part of the basic definition of the resource. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension. |

|  |  |   |
|--|--|---|
| Extension  | Extensions that cannot be ignored            | <p>May be used to represent additional information that is not part of the basic definition of the resource and that modifies the understanding of the element that contains it and/or the understanding of the containing element's descendants. Usually modifier elements provide negation or qualification. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer is allowed to define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension. Applications processing a resource are required to check for modifier extensions.</p> <p>Modifier extensions SHALL NOT change the</p> |
| Identifier   | Business identifier for report               | Identifiers assigned to this report by the performer or other systems.  |
| Reference(CarePlan ImmunizationRecommendation MedicationRequest NutritionOrder ServiceRequest) | What was requested                           | Details concerning a service requested.   |
| code   | registered   partial   preliminary   final + | The status of the diagnostic report.  |

|  |  |  |
|--|--|--|
| CodeableConcept  | Service category   | A code that classifies the clinical discipline, department or diagnostic service that created the report (e.g. cardiology, biochemistry, hematology, MRI). This is used for searching, sorting and display purposes. |
| CodeableConcept  | US Core Report Code  | The test, panel, report, or note that was ordered.   |
| Reference( <a href="http://hl7.org/fhir/us/core/StructureDefinition/us-core-patient">http://hl7.org/fhir/us/core/StructureDefinition/us-core-patient</a> )     | The subject of the report - usually, but not always, the patient | The subject of the report. Usually, but not always, this is a patient. However, diagnostic services also perform analyses on specimens collected from a variety of other sources.                                    |
| Reference( <a href="http://hl7.org/fhir/us/core/StructureDefinition/us-core-encounter">http://hl7.org/fhir/us/core/StructureDefinition/us-core-encounter</a> ) | Health care event when test ordered                              | The healthcare event (e.g. a patient and healthcare provider interaction) which this DiagnosticReport is about.  |

|  |   |   |
|--|---|---|
| dateTime<br>Period   | Clinically relevant<br>time/time-period<br>for report | The time or time-period<br>the observed values are<br>related to. When the<br>subject of the report is a<br>patient, this is usually<br>either the time of the<br>procedure or of specimen<br>collection(s), but very<br>often the source of the<br>date/time is not known,<br>only the date/time itself. |
| instant  | DateTime this<br>version was<br>made                  | The date and time that<br>this version of the report<br>was made available to<br>providers, typically after<br>the report was reviewed<br>and verified.   |
| Reference(US Core Practitioner<br>Profile   US Core Organization<br>Profile) | Responsible<br>Diagnostic<br>Service                  | The diagnostic service<br>that is responsible for<br>issuing the report.  |
| Reference(Practitioner <br>PractitionerRole Organization <br>CareTeam)       | Primary result<br>interpreter                         | The practitioner or<br>organization that is<br>responsible for the<br>report's conclusions and<br>interpretations.  |
| Reference(Specimen)  | Specimens this<br>report is based<br>on               | Details about the<br>specimens on which this<br>diagnostic report is<br>based.  |
| Reference(US Core Laboratory<br>Result Observation Profile)                  | Observations  | [Observations]( <a href="http://hl7.org/fhir/R4/observation.html">http://hl7.org/fhir/R4/observation.html</a> ) that<br>are part of this diagnostic<br>report.  |

|                         |  |   |
|-------------------------|--|---|
| Reference(ImagingStudy) | Reference to full details of imaging associated with the diagnostic report | One or more links to full details of any imaging performed during the diagnostic investigation. Typically, this is imaging performed by DICOM enabled modalities, but this is not required. A fully enabled PACS viewer can use this information to provide views of the source images.   |
| BackboneElement         | Key images associated with this report                                     | A list of key images associated with this report. The images are generally created during the diagnostic process, and may be directly of the patient, or of treated specimens (i.e. slides of interest).  |
| string                  | Unique id for inter-element referencing                                    | Unique id for the element within a resource (for internal references). This may be any string value that does not contain spaces.   |
| Extension               | Additional content defined by implementations                              | May be used to represent additional information that is not part of the basic definition of the element. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension. |

|                  |  |   |
|------------------|--|---|
| Extension        | Extensions that cannot be ignored even if unrecognized | <p>May be used to represent additional information that is not part of the basic definition of the element and that modifies the understanding of the element in which it is contained and/or the understanding of the containing element's descendants. Usually modifier elements provide negation or qualification. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension. Applications processing a resource are required to check for modifier extensions.</p> <p>Modifier extensions</p> |
| string           | Comment about the image (e.g. explanation)             | A comment about the image. Typically, this is used to provide an explanation for why the image is included, or to draw the viewer's attention to important features.  |
| Reference(Media) | Reference to the image source                          | Reference to the image source.  |
| string           | Clinical conclusion (interpretation) of test results   | Concise and clinically contextualized summary conclusion (interpretation/impression) of the diagnostic report.  |
| CodeableConcept  | Codes for the clinical conclusion of test results      | One or more codes that represent the summary conclusion (interpretation/impression) of the diagnostic report.   |



|            |                         |  |
|------------|-------------------------|--|
| Attachment | Entire report as issued | Rich text representation of the entire result as issued by the diagnostic service. Multiple formats are allowed but they SHALL be semantically |
|------------|-------------------------|--|

| Comments  | Binding Strength | Binding Description | FHIR Binding Value Set |
|---|------------------|---------------------|------------------------|
| <p>This is intended to capture a single report and is not suitable for use in displaying summary information that covers multiple reports. For example, this resource has not been designed for laboratory cumulative reporting formats nor detailed structured reports for sequencing.</p> |                  |                     |                        |
| <p>The only time that a resource does not have an id is when it is being submitted to the server using a create operation.</p>  |                  |                     |                        |
|   |                  |                     |                        |

|   |  |  |  |
|---|--|--|--|
| <p>Asserting this rule set restricts the content to be only understood by a limited set of trading partners. This inherently limits the usefulness of the data in the long term. However, the existing health eco-system is highly fractured, and not yet ready to define, collect, and exchange data in a generally computable sense. Wherever possible, implementers and/or specification writers should avoid using this element. Often, when used, the URL is a reference to an implementation guide that defines these special rules as part of it's narrative along with other profiles, value sets, etc.</p> |  |  |  |
|---|--|--|--|

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|---|------------------|--------------------------|--|
| <p>Language is provided to support indexing and accessibility (typically, services such as text to speech use the language tag). The html language tag in the narrative applies to the narrative. The language tag on the resource may be used to specify the language of other presentations generated from the data in the resource. Not all the content has to be in the base language. The Resource.language should not be assumed to apply to the narrative automatically. If a language is specified, it should it also be specified on the div element in the html (see rules in HTML5 for information about the relationship between xml:lang and the html lang attribute).</p> | <p>preferred</p> | <p>A human language.</p> | <p><a href="http://hl7.org/fhir/">http://hl7.org/fhir/</a></p> |
| <p>Contained resources do not have narrative. Resources that are not contained SHOULD have a narrative. In some cases, a resource may only have text with little or no additional discrete data (as long as all minOccurs=1 elements are satisfied). This may be necessary for data from legacy systems where information is captured as a "text blob" or where text is additionally entered raw or narrated and encoded information is added later.</p>  |                  |                          |  |

|  |  |  |  |
|--|--|--|--|
| <p>This should never be done when the content can be identified properly, as once identification is lost, it is extremely difficult (and context dependent) to restore it again. Contained resources may have profiles and tags in their meta elements, but SHALL NOT have security labels.</p>                  |  |  |  |
| <p>There can be no stigma associated with the use of extensions by any application, project, or standard - regardless of the institution or jurisdiction that uses or defines the extensions. The use of extensions is what allows the FHIR specification to retain a core level of simplicity for everyone.</p> |  |  |  |

|  |                 |  |  |
|--|-----------------|--|--|
| <p>There can be no stigma associated with the use of extensions by any application, project, or standard - regardless of the institution or jurisdiction that uses or defines the extensions. The use of extensions is what allows the FHIR specification to retain a core level of simplicity for everyone.</p> |                 |  |  |
| <p>Usually assigned by the Information System of the diagnostic service provider (filler id).</p>  |                 |  |  |
| <p>Note: Usually there is one test request for each result, however in some circumstances multiple test requests may be represented using a single test result resource. Note that there are also cases where one request leads to multiple reports.</p>   |                 |  |  |
|  | <p>required</p> |  | <p><a href="http://hl7.org/fhir/">http://hl7.org/fhir/</a></p> |

|   |                   |                    |  |
|---|-------------------|--------------------|--|
| <p>Multiple categories are allowed using various categorization schemes. The level of granularity is defined by the category concepts in the value set. More fine-grained filtering can be performed using the metadata and/or terminology hierarchy in DiagnosticReport.code.</p>                  | <p>required</p>   |                    | <p><a href="http://hl7.org/fhir/">http://hl7.org/fhir/</a></p> |
| <p>The typical patterns for codes are: 1) a LOINC code either as a translation from a "local" code or as a primary code, or 2) a local code only if no suitable LOINC exists, or 3) both the local and the LOINC translation. Systems SHALL be capable of sending the local code if one exists.</p> | <p>extensible</p> | <p>LOINC codes</p> | <p><a href="http://hl7.org/fhir/">http://hl7.org/fhir/</a></p> |
|   |                   |                    |  |
| <p>This will typically be the encounter the event occurred within, but some events may be initiated prior to or after the official completion of an encounter but still be tied to the context of the encounter (e.g. pre-admission laboratory tests).</p>  |                   |                    |  |

|  |  |  |  |
|--|--|--|--|
| <p>If the diagnostic procedure was performed on the patient, this is the time it was performed. If there are specimens, the diagnostically relevant time can be derived from the specimen collection times, but the specimen information is not always available, and the exact relationship between the specimens and the diagnostically relevant time is not always automatic.</p> |  |  |  |
| <p>May be different from the update time of the resource itself, because that is the status of the record (potentially a secondary copy), not the actual release time of the report.</p>   |  |  |  |
| <p>This is not necessarily the source of the atomic data items or the entity that interpreted the results. It is the entity that takes responsibility for the clinical report.</p>   |  |  |  |
| <p>Might not be the same entity that takes responsibility for the clinical report.</p>   |  |  |  |
| <p>If the specimen is sufficiently specified with a code in the test result name, then this additional data may be redundant. If there are multiple specimens, these may be represented per observation or group.</p>  |  |  |  |
| <p>Observations can contain observations.</p>  |  |  |  |



|  |  |  |  |
|--|--|--|--|
| <p>ImagingStudy and the image element are somewhat overlapping - typically, the list of image references in the image element will also be found in one of the imaging study resources. However, each caters to different types of displays for different types of purposes. Neither, either, or both may be provided.</p> |  |  |  |
|  |  |  |  |
|  |  |  |  |
| <p>There can be no stigma associated with the use of extensions by any application, project, or standard - regardless of the institution or jurisdiction that uses or defines the extensions. The use of extensions is what allows the FHIR specification to retain a core level of simplicity for everyone.</p>           |  |  |  |

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|--|----------------|--|--|
| <p>There can be no stigma associated with the use of extensions by any application, project, or standard - regardless of the institution or jurisdiction that uses or defines the extensions. The use of extensions is what allows the FHIR specification to retain a core level of simplicity for everyone.</p> |                |  |  |
| <p>The comment should be displayed with the image. It would be common for the report to include additional discussion of the image contents in other sections such as the conclusion.</p>  |                |  |  |
|  |                |  |  |
|  |                |  |  |
|  | <p>example</p> | <p>Diagnosis codes provided as adjuncts to the report.</p> | <p><a href="http://hl7.org/fhir/">http://hl7.org/fhir/</a></p> |

|   |  |  |  |
|---|--|--|--|
| <p>"application/pdf" is recommended as the most reliable and interoperable in this context.</p> |  |  |  |
|---|--|--|--|

**ACH dQM**

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| <b>FHIR Path</b>               | <b>Min</b> | <b>Max</b> | <b>Must Support?</b> | <b>Data Type(s)</b> |
|--------------------------------|------------|------------|----------------------|---------------------|
| <b>Encounter</b>               | 0          | *          |                      | Encounter           |
| <b>Encounter.id</b>            | 0          | 1          |                      | string              |
| <b>Encounter.meta</b>          | 0          | 1          |                      | Meta                |
| <b>Encounter.implicitRules</b> | 0          | 1          |                      | uri                 |
| <b>Encounter.language</b>      | 0          | 1          |                      | code                |
| <b>Encounter.text</b>          | 0          | 1          |                      | Narrative           |

|                                    |   |   |   |            |
|------------------------------------|---|---|---|------------|
| <b>Encounter.contained</b>         | 0 | * |   | Resource   |
| <b>Encounter.extension</b>         | 0 | * |   | Extension  |
| <b>Encounter.modifierExtension</b> | 0 | * |   | Extension  |
| <b>Encounter.identifier</b>        | 0 | * | Y | Identifier |

|                                       |   |   |   |                     |
|---------------------------------------|---|---|---|---------------------|
| <b>Encounter.identifier.id</b>        | 0 | 1 |   | string              |
| <b>Encounter.identifier.extension</b> | 0 | * |   | Extension           |
| <b>Encounter.identifier.use</b>       | 0 | 1 |   | code                |
| <b>Encounter.identifier.type</b>      | 0 | 1 |   | CodeableCo<br>ncept |
| <b>Encounter.identifier.system</b>    | 1 | 1 | Y | uri                 |
| <b>Encounter.identifier.value</b>     | 1 | 1 | Y | string              |



|                                      |   |   |   |                         |
|--------------------------------------|---|---|---|-------------------------|
| <b>Encounter.identifier.period</b>   | 0 | 1 |   | Period                  |
| <b>Encounter.identifier.assigner</b> | 0 | 1 |   | Reference(Organization) |
| <b>Encounter.status</b>              | 1 | 1 | Y | code                    |
| <b>Encounter.statusHistory</b>       | 0 | * |   | BackboneElement         |
| <b>Encounter.statusHistory.id</b>    | 0 | 1 |   | string                  |

|  |   |   |  |           |
|--|---|---|--|-----------|
| <b>Encounter.statusHistory.extension</b>         | 0 | * |  | Extension |
| <b>Encounter.statusHistory.modifierExtension</b> | 0 | * |  | Extension |
| <b>Encounter.statusHistory.status</b>            | 1 | 1 |  | code      |
| <b>Encounter.statusHistory.period</b>            | 1 | 1 |  | Period    |

|   |   |   |   |                 |
|---|---|---|---|-----------------|
| <b>Encounter.class</b>                  | 1 | 1 | Y | Coding          |
| <b>Encounter.classHistory</b>           | 0 | * |   | BackboneElement |
| <b>Encounter.classHistory.id</b>        | 0 | 1 |   | string          |
| <b>Encounter.classHistory.extension</b> | 0 | * |   | Extension       |

|   |   |   |  |           |
|---|---|---|--|-----------|
| <b>Encounter.classHistory.modifierExtension</b> | 0 | * |  | Extension |
| <b>Encounter.classHistory.class</b>             | 1 | 1 |  | Coding    |
| <b>Encounter.classHistory.period</b>            | 1 | 1 |  | Period    |

|                              |   |   |   |  |
|------------------------------|---|---|---|--|
| <b>Encounter.type</b>        | 1 | * | Y | CodeableCo<br>ncept                          |
| <b>Encounter.serviceType</b> | 0 | 1 |   | CodeableCo<br>ncept                          |
| <b>Encounter.priority</b>    | 0 | 1 |   | CodeableCo<br>ncept                          |
| <b>Encounter.subject</b>     | 1 | 1 | Y | Reference(U<br>S Core<br>Patient<br>Profile) |

|  |   |   |   |                                   |
|--|---|---|---|-----------------------------------|
| <b>Encounter.episodeOfCare</b>         | 0 | * |   | Reference(E<br>pisodeOfCar<br>e)  |
| <b>Encounter.basedOn</b>               | 0 | * |   | Reference(S<br>erviceReque<br>st) |
| <b>Encounter.participant</b>           | 0 | * | Y | BackboneEle<br>ment               |
| <b>Encounter.participant.id</b>        | 0 | 1 |   | string                            |
| <b>Encounter.participant.extension</b> | 0 | * |   | Extension                         |

|  |   |   |   |   |
|--|---|---|---|---|
| <b>Encounter.participant.modifierExtension</b> | 0 | * |   | Extension                               |
| <b>Encounter.participant.type</b>              | 0 | * | Y | CodeableConcept                         |
| <b>Encounter.participant.period</b>            | 0 | 1 | Y | Period                                  |
| <b>Encounter.participant.individual</b>        | 0 | 1 | Y | Reference(US Core Practitioner Profile) |

|                                  |   |   |   |   |
|----------------------------------|---|---|---|---|
| <b>Encounter.appointment</b>     | 0 | * |   | Reference(A<br>ppointment)  |
| <b>Encounter.period</b>          | 0 | 1 | Y | Period  |
| <b>Encounter.length</b>          | 0 | 1 |   | Duration  |
| <b>Encounter.reasonCode</b>      | 0 | * | Y | CodeableCo<br>ncept   |
| <b>Encounter.reasonReference</b> | 0 | * | Y | Reference(C<br>ondition  <br>Procedure  <br>Observation<br> <br>Immunizatio<br>nRecommen<br>dation) |
| <b>Encounter.diagnosis</b>       | 0 | * |   | BackboneEle<br>ment   |
| <b>Encounter.diagnosis.id</b>    | 0 | 1 |   | string  |



|  |   |   |  |                                |
|--|---|---|--|--------------------------------|
| <b>Encounter.diagnosis.extension</b>         | 0 | * |  | Extension                      |
| <b>Encounter.diagnosis.modifierExtension</b> | 0 | * |  | Extension                      |
| <b>Encounter.diagnosis.condition</b>         | 1 | 1 |  | Reference(Condition Procedure) |

|  |   |   |   |                    |
|--|---|---|---|--------------------|
| <b>Encounter.diagnosis.use</b>             | 0 | 1 |   | CodeableConcept    |
| <b>Encounter.diagnosis.rank</b>            | 0 | 1 |   | positiveInt        |
| <b>Encounter.account</b>                   | 0 | * |   | Reference(Account) |
| <b>Encounter.hospitalization</b>           | 0 | 1 | Y | BackboneElement    |
| <b>Encounter.hospitalization.id</b>        | 0 | 1 |   | string             |
| <b>Encounter.hospitalization.extension</b> | 0 | * |   | Extension          |

|   |   |   |  |                                  |
|---|---|---|--|----------------------------------|
| <b>Encounter.hospitalization.modifierExtension</b>      | 0 | * |  | Extension                        |
| <b>Encounter.hospitalization.preAdmissionIdentifier</b> | 0 | 1 |  | Identifier                       |
| <b>Encounter.hospitalization.origin</b>                 | 0 | 1 |  | Reference(Location Organization) |
| <b>Encounter.hospitalization.admitSource</b>            | 0 | 1 |  | CodeableConcept                  |

|   |   |   |   |                                  |
|---|---|---|---|----------------------------------|
| <b>Encounter.hospitalization.reAdmission</b>          | 0 | 1 |   | CodeableConcept                  |
| <b>Encounter.hospitalization.dietPreference</b>       | 0 | * |   | CodeableConcept                  |
| <b>Encounter.hospitalization.specialCourtesy</b>      | 0 | * |   | CodeableConcept                  |
| <b>Encounter.hospitalization.specialArrangement</b>   | 0 | * |   | CodeableConcept                  |
| <b>Encounter.hospitalization.destination</b>          | 0 | 1 |   | Reference(Location Organization) |
| <b>Encounter.hospitalization.dischargeDisposition</b> | 0 | 1 | Y | CodeableConcept                  |

|                                     |   |   |   |                 |
|-------------------------------------|---|---|---|-----------------|
| <b>Encounter.location</b>           | 0 | * | Y | BackboneElement |
| <b>Encounter.location.id</b>        | 0 | 1 |   | string          |
| <b>Encounter.location.extension</b> | 0 | * |   | Extension       |

|   |   |   |   |                     |
|---|---|---|---|---------------------|
| <b>Encounter.location.modifierExtension</b> | 0 | * |   | Extension           |
| <b>Encounter.location.location</b>          | 1 | 1 | Y | Reference(Location) |
| <b>Encounter.location.status</b>            | 0 | 1 |   | code                |
| <b>Encounter.location.physicalType</b>      | 0 | 1 |   | CodeableConcept     |

|                                  |   |   |   |                         |
|----------------------------------|---|---|---|-------------------------|
| <b>Encounter.location.period</b> | 0 | 1 |   | Period                  |
| <b>Encounter.serviceProvider</b> | 0 | 1 | Y | Reference(Organization) |
| <b>Encounter.partOf</b>          | 0 | 1 |   | Reference(Encounter)    |

| <b>FHIR Short Description</b>                                    | <b>FHIR Definition</b>  | <b>Binding Strength</b>  |
|--|---|--------------------------|
| An interaction during which services are provided to the patient | This is basic constraint on Encounter for use in US Core resources.   |                          |
| Logical id of this artifact                                      | The logical id of the resource, as used in the URL for the resource. Once assigned, this value never changes.   |                          |
| Metadata about the resource                                      | The metadata about the resource. This is content that is maintained by the infrastructure. Changes to the content might not always be associated with version changes to the resource.  |                          |
| A set of rules under which this content was created              | A reference to a set of rules that were followed when the resource was constructed, and which must be understood when processing the content. Often, this is a reference to an implementation guide that defines the special rules along with other profiles etc.   |                          |
| Language of the resource content                                 | The base language in which the resource is written.   | Preferred<br>Max Binding |
| Text summary of the resource, for human interpretation           | A human-readable narrative that contains a summary of the resource and can be used to represent the content of the resource to a human. The narrative need not encode all the structured data, but is required to contain sufficient detail to make it "clinically safe" for a human to just read the narrative. Resource definitions may define what content should be represented in the narrative to ensure clinical safety. |                          |



|   |  |  |
|---|--|--|
| Contained, inline Resources                   | These resources do not have an independent existence apart from the resource that contains them - they cannot be identified independently, and nor can they have their own independent transaction scope.  |  |
| Additional content defined by implementations | May be used to represent additional information that is not part of the basic definition of the resource. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension.   |  |
| Extensions that cannot be ignored             | <p>May be used to represent additional information that is not part of the basic definition of the resource and that modifies the understanding of the element that contains it and/or the understanding of the containing element's descendants. Usually modifier elements provide negation or qualification. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer is allowed to define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension. Applications processing a resource are required to check for modifier extensions.</p> <p>Modifier extensions SHALL NOT change the meaning of any elements on Resource or DomainResource (including cannot change the meaning of modifierExtension itself).</p> |  |
| Identifier(s) by which this                   | Identifier(s) by which this encounter is known.  |  |

|  |   |            |
|--|---|------------|
| Unique id for inter-element referencing              | Unique id for the element within a resource (for internal references). This may be any string value that does not contain spaces.   |            |
| Additional content defined by implementations        | May be used to represent additional information that is not part of the basic definition of the element. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension. |            |
| usual   official   temp   secondary   old (If known) | The purpose of this identifier.   | required   |
| Description of identifier                            | A coded type for the identifier that can be used to determine which identifier to use for a specific purpose.   | extensible |
| The namespace for the identifier value               | Establishes the namespace for the value - that is, a URL that describes a set values that are unique.   |            |
| The value that is unique                             | The portion of the identifier typically relevant to the user and which is unique within the context of the system.  |            |

|  |  |          |
|--|--|----------|
| Time period when id is/was valid for use                                     | Time period during which identifier is/was valid for use.  |          |
| Organization that issued id (may be just text)                               | Organization that issued/manages the identifier.   |          |
| planned   arrived   triaged   in-progress   onleave   finished   cancelled + | planned   arrived   triaged   in-progress   onleave   finished   cancelled +.  | required |
| List of past encounter statuses  | The status history permits the encounter resource to contain the status history without needing to read through the historical versions of the resource, or even have the server store them. |          |
| Unique id for inter-element referencing                                      | Unique id for the element within a resource (for internal references). This may be any string value that does not contain spaces.  |          |

|  |   |          |
|--|---|----------|
| Additional content defined by implementations                                | May be used to represent additional information that is not part of the basic definition of the element. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension.   |          |
| Extensions that cannot be ignored even if unrecognized                       | May be used to represent additional information that is not part of the basic definition of the element and that modifies the understanding of the element in which it is contained and/or the understanding of the containing element's descendants. Usually modifier elements provide negation or qualification. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension. Applications processing a resource are required to check for modifier extensions. |          |
| planned   arrived   triaged   in-progress   onleave   finished   cancelled + | planned   arrived   triaged   in-progress   onleave   finished   cancelled +.   | required |
| The time that the episode was in the specified status                        | The time that the episode was in the specified status.  |          |

|   |   |            |
|---|---|------------|
| Classification of patient encounter           | Concepts representing classification of patient encounter such as ambulatory (outpatient), inpatient, emergency, home health or others due to local variations.   | extensible |
| List of past encounter classes                | The class history permits the tracking of the encounters transitions without needing to go through the resource history. <b>This would be used for a case where an admission starts of as an emergency encounter, then transitions into an inpatient scenario.</b> Doing this and not restarting a new encounter ensures that any lab/diagnostic results can more easily follow the patient and not require re-processing and not get lost or cancelled during a kind of discharge from emergency to inpatient. |            |
| Unique id for inter-element referencing       | Unique id for the element within a resource (for internal references). This may be any string value that does not contain spaces.   |            |
| Additional content defined by implementations | May be used to represent additional information that is not part of the basic definition of the element. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension.   |            |

|   |   |                   |
|---|---|-------------------|
| <p>Extensions that cannot be ignored even if unrecognized</p> | <p>May be used to represent additional information that is not part of the basic definition of the element and that modifies the understanding of the element in which it is contained and/or the understanding of the containing element's descendants. Usually modifier elements provide negation or qualification. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension. Applications processing a resource are required to check for modifier extensions.</p> <p>Modifier extensions SHALL NOT change the meaning of any elements on Resource or DomainResource (including cannot change the meaning of modifierExtension itself).</p> |                   |
| <p>inpatient   outpatient   ambulatory   emergency +</p>      | <p>inpatient   outpatient   ambulatory   emergency +.</p>   | <p>extensible</p> |
| <p>The time that the episode was in the specified class</p>   | <p>The time that the episode was in the specified class.</p>  |                   |

|   |  |            |
|---|--|------------|
| Specific type of encounter                    | Specific type of encounter (e.g. e-mail consultation, surgical day-care, skilled nursing, rehabilitation). | extensible |
| Specific type of service                      | Broad categorization of the service that is to be provided (e.g. cardiology).                              | example    |
| Indicates the urgency of the encounter        | Indicates the urgency of the encounter.  | example    |
| The patient or group present at the encounter | The patient or group present at the encounter.   |            |

|  |   |  |
|--|---|--|
| <p>Episode(s) of care that this encounter should be recorded against</p> | <p>Where a specific encounter should be classified as a part of a specific episode(s) of care this field should be used. This association can facilitate grouping of related encounters together for a specific purpose, such as government reporting, issue tracking, association via a common problem. The association is recorded on the encounter as these are typically created after the episode of care and grouped on entry rather than editing the episode of care to append another encounter to it (the episode of care could span years).</p> |  |
| <p>The ServiceRequest that initiated this encounter</p>                  | <p>The request this encounter satisfies (e.g. incoming referral or procedure request).</p>  |  |
| <p>List of participants involved in the encounter</p>                    | <p>The list of people responsible for providing the service.</p>  |  |
| <p>Unique id for inter-element referencing</p>                           | <p>Unique id for the element within a resource (for internal references). This may be any string value that does not contain spaces.</p>  |  |
| <p>Additional content defined by implementations</p>                     | <p>May be used to represent additional information that is not part of the basic definition of the element. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension.</p>  |  |



|  |   |                   |
|--|---|-------------------|
| <p>Extensions that cannot be ignored even if unrecognized</p>                | <p>May be used to represent additional information that is not part of the basic definition of the element and that modifies the understanding of the element in which it is contained and/or the understanding of the containing element's descendants. Usually modifier elements provide negation or qualification. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension. Applications processing a resource are required to check for modifier extensions.</p> <p>Modifier extensions SHALL NOT change the meaning of any elements on Resource or DomainResource (including cannot change the meaning of modifierExtension itself).</p> |                   |
| <p>Role of participant in encounter</p>                                      | <p>Role of participant in encounter.</p>  | <p>extensible</p> |
| <p>Period of time during the encounter that the participant participated</p> | <p>The period of time that the specified participant participated in the encounter. These can overlap or be sub-sets of the overall encounter's period.</p>   |                   |
| <p>Persons involved in the encounter other than the patient</p>              | <p>Persons involved in the encounter other than the patient.</p>  |                   |

|  |   |           |
|--|---|-----------|
| The appointment that scheduled this encounter            | The appointment that scheduled this encounter.  |           |
| The start and end time of the encounter                  | The start and end time of the encounter.  |           |
| Quantity of time the encounter lasted (less time absent) | Quantity of time the encounter lasted. This excludes the time during leaves of absence.   |           |
| Coded reason the encounter takes place                   | Reason the encounter takes place, expressed as a code. For admissions, this can be used for a coded admission diagnosis.          | preferred |
| Reason the encounter takes place (reference)             | Reason the encounter takes place, expressed as a code. For admissions, this can be used for a coded admission diagnosis.          |           |
| The list of diagnosis relevant to this encounter         | The list of diagnosis relevant to this encounter.   |           |
| Unique id for inter-element referencing                  | Unique id for the element within a resource (for internal references). This may be any string value that does not contain spaces. |           |

|  |   |  |
|--|---|--|
| Additional content defined by implementations          | <p>May be used to represent additional information that is not part of the basic definition of the element. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension.</p>  |  |
| Extensions that cannot be ignored even if unrecognized | <p>May be used to represent additional information that is not part of the basic definition of the element and that modifies the understanding of the element in which it is contained and/or the understanding of the containing element's descendants. Usually modifier elements provide negation or qualification. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension. Applications processing a resource are required to check for modifier extensions.</p> <p>Modifier extensions SHALL NOT change the meaning of any elements on Resource or DomainResource (including cannot change the meaning of modifierExtension itself).</p> |  |
| The diagnosis or procedure relevant to the encounter   | <p>Reason the encounter takes place, as specified using information from another resource. For admissions, this is the admission diagnosis. The indication will typically be a Condition (with other resources referenced in the evidence.detail), or a Procedure.</p>  |  |

|  |   |           |
|--|---|-----------|
| Role that this diagnosis has within the encounter (e.g. admission, billing, discharge ...) | Role that this diagnosis has within the encounter (e.g. admission, billing, discharge ...).   | preferred |
| Ranking of the diagnosis (for each role type)  | Ranking of the diagnosis (for each role type).  |           |
| The set of accounts that may be used for billing for this Encounter                        | The set of accounts that may be used for billing for this Encounter.  |           |
| Details about the admission to a healthcare service  | Details about the admission to a healthcare service.  |           |
| Unique id for inter-element referencing  | Unique id for the element within a resource (for internal references). This may be any string value that does not contain spaces.   |           |
| Additional content defined by implementations  | May be used to represent additional information that is not part of the basic definition of the element. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension. |           |

|   |   |                  |
|---|---|------------------|
| <p>Extensions that cannot be ignored even if unrecognized</p>                 | <p>May be used to represent additional information that is not part of the basic definition of the element and that modifies the understanding of the element in which it is contained and/or the understanding of the containing element's descendants. Usually modifier elements provide negation or qualification. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension. Applications processing a resource are required to check for modifier extensions.</p> <p>Modifier extensions SHALL NOT change the meaning of any elements on Resource or DomainResource (including cannot change the meaning of modifierExtension itself).</p> |                  |
| <p>Pre-admission identifier</p>   | <p>Pre-admission identifier.</p>  |                  |
| <p>The location/organization from which the patient came before admission</p> | <p>The location/organization from which the patient came before admission.</p>  |                  |
| <p>From where patient was admitted (physician referral, transfer)</p>         | <p>From where patient was admitted (physician referral, transfer).</p>  | <p>preferred</p> |

|  |   |                   |
|--|---|-------------------|
| The type of hospital re-admission that has occurred (if any). If the value is absent, then this is not identified as a readmission | Whether this hospitalization is a readmission and why if known.   | example preferred |
| Diet preferences reported by the patient   | Diet preferences reported by the patient.   | example preferred |
| Special courtesies (VIP, board member)   | Special courtesies (VIP, board member).   | preferred         |
| Wheelchair, translator, stretcher, etc.  | Any special requests that have been made for this hospitalization encounter, such as the provision of specific equipment or other things. | preferred         |
| Location/organization to which the patient is discharged   | Location/organization to which the patient is discharged.   |                   |
| Category or kind of location after discharge   | Category or kind of location after discharge.   | example preferred |

|   |   |  |
|---|---|--|
| List of locations where the patient has been  | List of locations where the patient has been during this encounter.   |  |
| Unique id for inter-element referencing       | Unique id for the element within a resource (for internal references). This may be any string value that does not contain spaces.   |  |
| Additional content defined by implementations | May be used to represent additional information that is not part of the basic definition of the element. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension. |  |

|  |   |                               |
|--|---|-------------------------------|
| <p>Extensions that cannot be ignored even if unrecognized</p>  | <p>May be used to represent additional information that is not part of the basic definition of the element and that modifies the understanding of the element in which it is contained and/or the understanding of the containing element's descendants. Usually modifier elements provide negation or qualification. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension. Applications processing a resource are required to check for modifier extensions.</p> <p>Modifier extensions SHALL NOT change the meaning of any elements on Resource or DomainResource (including cannot change the meaning of modifierExtension itself).</p> |                               |
| <p>Location the encounter takes place</p>  | <p>The location where the encounter takes place.</p>  |                               |
| <p>planned   active   reserved   completed</p>   | <p>The status of the participants' presence at the specified location during the period specified. If the participant is no longer at the location, then the period will have an end date/time.</p>   | <p>required</p>               |
| <p>The physical type of the location (usually the level in the location hierachy - bed room ward etc.)</p> | <p>This will be used to specify the required levels (bed/ward/room/etc.) desired to be recorded to simplify either messaging or query.</p>  | <p>example<br/>extensible</p> |



|  |   |  |
|--|---|--|
| Time period during which the patient was present at the location | Time period during which the patient was present at the location.   |  |
| The organization (facility) responsible for this encounter       | The organization that is primarily responsible for this Encounter's services. This MAY be the same as the organization on the Patient record, however it could be different, such as if the actor |  |
| Another Encounter this encounter is part of                      | Another Encounter of which this encounter is a part of (administratively or in time).   |  |

| Binding Description             | FHIR Binding Value Set  | ACH dQM  |
|---------------------------------|---|----------|
|                                 |   | R [1..*] |
|                                 |   | R [1..1] |
|                                 |   | NRT      |
|                                 |   | NRT      |
| CommonLanguages<br>AllLanguages | <a href="http://hl7.org/fhir/ValueSet">http://hl7.org/fhir/ValueSet</a> | NRT      |
|                                 |   | NRT      |

|  |  |          |
|--|--|----------|
|  |  | NRT      |
|  |  | NRT      |
|  |  | NRT      |
|  |  | R [1..*] |

|                |   |           |
|----------------|---|-----------|
|                |   | NRT       |
|                |   | NRT       |
| IdentifierUse  | <a href="http://hl7.org/fhir/Value">http://hl7.org/fhir/Value</a> | MS [0..1] |
| IdentifierType | <a href="http://hl7.org/fhir/Value">http://hl7.org/fhir/Value</a> | MS[0..1]  |
|                |   | R[1..1]   |
|                |   | R [1..1]  |

|                 |   |   |
|-----------------|---|---|
|                 |   | MS [0..1]   |
|                 |   | NRT   |
| EncounterStatus | <a href="https://hl7.org/fhir/R4/v">https://hl7.org/fhir/R4/v</a> | R [1..1]<br><br><b>The following constraints are written into the CQL:</b><br>'in-progress', 'finished',<br>'triaged', 'onleave',<br>'entered-in-error' |
|                 |   | NR  |
|                 |   | NRT   |

|                 |   |     |
|-----------------|---|-----|
|                 |   | NRT |
|                 |   | NRT |
| EncounterStatus | <a href="http://hl7.org/fhir/Value">http://hl7.org/fhir/Value</a> | NR  |
|                 |   | NR  |

|                  |   |   |
|------------------|---|---|
| ActEncounterCode | <a href="http://hl7.org/fhir/R4/v3">http://hl7.org/fhir/R4/v3</a> | R [1..1]<br><br><b>The following constraints are written into the CQL:</b><br>'inpatient acute',<br>'inpatient encounter',<br>'inpatient non-acute'<br>'observation encounter', short stay',<br>'emergency' |
|                  |   | MS [0..*]   |
|                  |   | NRT   |
|                  |   | NRT   |

|                  |   |          |
|------------------|---|----------|
|                  |   | NRT      |
| ActEncounterCode | <a href="http://terminology.hl7.org">http://terminology.hl7.org</a> | R [1..1] |
|                  |   | R [1..1] |



|                     |   |  |
|---------------------|---|--|
| USCoreEncounterType | <a href="https://hl7.org/fhir/us/core">https://hl7.org/fhir/us/core</a> | R [1..*]<br><br><b>The following constraints are written into the CQL:</b><br>"Emergency Department Visit":<br>'http://cts.nlm.nih.gov/fhir/ValueSet/2.16.840.1.113883.3.17.1.7.1.292'<br>"Observation Services":<br>'http://cts.nlm.nih.gov/fhir/ValueSet/2.16.840.1.113762.1.4.1111.143'<br>"Encounter Inpatient":<br>'http://cts.nlm.nih.gov/fhir/ValueSet/2.16.840.1.113883.3.666.5.307' |
| ServiceType         | <a href="http://hl7.org/fhir/ValueSet">http://hl7.org/fhir/ValueSet</a> | NR   |
| ActPriority         | <a href="http://terminology.hl7.org">http://terminology.hl7.org</a>     | NR   |
|                     |   | R [1..1]   |

|  |  |     |
|--|--|-----|
|  |  | NRT |
|  |  | NRT |
|  |  | NRT |
|  |  | NRT |
|  |  | NRT |

|                 |   |     |
|-----------------|---|-----|
|                 |   | NRT |
| ParticipantType | <a href="http://hl7.org/fhir/Value">http://hl7.org/fhir/Value</a> | NRT |
|                 |   | NRT |
|                 |   | NRT |

|                      |   |           |
|----------------------|---|-----------|
|                      |   | NRT       |
|                      |   | R[1..1]   |
|                      |   | NR        |
| EncounterReasonCodes | <a href="http://hl7.org/fhir/Value">http://hl7.org/fhir/Value</a> | MS [0..*] |
|                      |   | NR        |
|                      |   | MS [0..*] |
|                      |   | NRT       |

|  |  |          |
|--|--|----------|
|  |  | NRT      |
|  |  | NRT      |
|  |  | R [1..1] |

|               |   |           |
|---------------|---|-----------|
| DiagnosisRole | <a href="https://hl7.org/fhir/R4/v">https://hl7.org/fhir/R4/v</a> | MS [0..1] |
|               |   | MS [0..1] |
|               |   | NR        |
|               |   | MS [0..1] |
|               |   | NRT       |
|               |   | NRT       |

|             |   |           |
|-------------|---|-----------|
|             |   | NRT       |
|             |   | NR        |
|             |   | MS [0..1] |
| AdmitSource | <a href="https://hl7.org/fhir/R4/v">https://hl7.org/fhir/R4/v</a> | MS [0..1] |

|                           |   |   |
|---------------------------|---|---|
| HI7VSReAdmissionIndicator | <a href="http://terminology.hl7.org">http://terminology.hl7.org</a>     | MS [0..1]<br>Binding strength=preferred |
| Diet                      | <a href="http://hl7.org/fhir/Value">http://hl7.org/fhir/Value</a>       | MS [0..1]<br>Binding strength=preferred |
| SpecialCourtesy           | <a href="http://hl7.org/fhir/Value">http://hl7.org/fhir/Value</a>       | NR                                      |
| SpecialArrangements       | <a href="http://hl7.org/fhir/Value">http://hl7.org/fhir/Value</a>       | NR                                      |
|                           |   | NR                                      |
| DischargeDisposition      | <a href="http://hl7.org/fhir/R4/Value">http://hl7.org/fhir/R4/Value</a> | MS [0..1]<br>Binding strength=preferred |



|  |  |  |
|--|--|--|
|  |  | <b>R [1..*]</b><br><b>The following constraints are written into the CQL:</b><br>Inpatient, Emergency, and Observation Locations<br>2.16.840.1.113762.1.4.1046.265 |
|  |  | NRT  |
|  |  | NRT  |

|                         |   |   |
|-------------------------|---|---|
|                         |   | NRT   |
|                         |   | R [1..1]                                    |
| EncounterLocationStatus | <a href="http://hl7.org/fhir/Value">http://hl7.org/fhir/Value</a> | MS [0..1]                                   |
| LocationType            | <a href="http://hl7.org/fhir/R4/va">http://hl7.org/fhir/R4/va</a> | MS [0..1]<br>Binding<br>strength=extensible |

|  |  |          |
|--|--|----------|
|  |  | R [1..1] |
|  |  | NRT      |
|  |  | NR       |

[Back to TOC](#)

| FHIR Path            | Min | Max | Must Support? |
|----------------------|-----|-----|---------------|
| Device               | 0   | *   |               |
| Device.id            | 0   | 1   |               |
| Device.meta          | 0   | 1   |               |
| Device.implicitRules | 0   | 1   |               |

|                  |   |   |  |
|------------------|---|---|--|
| Device.language  | 0 | 1 |  |
| Device.text      | 0 | 1 |  |
| Device.contained | 0 | * |  |
| Device.extension | 0 | * |  |

|                          |   |   |   |
|--------------------------|---|---|---|
| Device.modifierExtension | 0 | * |   |
| Device.identifier        | 0 | * |   |
| Device.definition        | 0 | 1 |   |
| Device.udiCarrier        | 0 | 1 | Y |

|                                    |   |   |   |
|------------------------------------|---|---|---|
| Device.udiCarrier.carrierAIDC      | 0 | 1 | Y |
| Device.udiCarrier.carrierHRF       | 0 | 1 | Y |
| Device.udiCarrier.deviceIdentifier | 1 | 1 | Y |
| Device.udiCarrier.entryType        | 0 | 1 |   |
| Device.udiCarrier.issuer           | 0 | 1 |   |
| Device.udiCarrier.jurisdiction     | 0 | 1 |   |

|                             |   |   |   |
|-----------------------------|---|---|---|
| Device.status               | 0 | 1 |   |
| Device.statusReason         | 0 | * |   |
| Device.distinctIdentifier   | 0 | 1 |   |
| Device.manufacturer         | 0 | 1 |   |
| Device.manufactureDate      | 0 | 1 | Y |
| Device.expirationDate       | 0 | 1 | Y |
| Device.lotNumber            | 0 | 1 | Y |
| Device.serialNumber         | 0 | 1 | Y |
| Device.deviceName           | 0 | * |   |
| Device.deviceName.extension | 0 | * |   |



|                                     |   |   |   |
|-------------------------------------|---|---|---|
| Device.deviceName.id                | 0 | 1 |   |
| Device.deviceName.modifierExtension | 0 | * |   |
| Device.deviceName.name              | 1 | 1 |   |
| Device.deviceName.type              | 1 | 1 |   |
| Device.modelNumber                  | 0 | 1 |   |
| Device.partNumber                   | 0 | 1 |   |
| Device.type                         | 1 | 1 | Y |

|                                 |   |   |  |
|---------------------------------|---|---|--|
| Device.specialization           | 0 | * |  |
| Device.specialization.id        | 0 | 1 |  |
| Device.specialization.extension | 0 | * |  |

|   |   |   |  |
|---|---|---|--|
| Device.specialization.modifierExtension | 0 | * |  |
| Device.specialization.systemType        | 1 | 1 |  |
| Device.specialization.version           | 0 | 1 |  |
| Device.version                          | 0 | * |  |
| Device.version.id                       | 0 | 1 |  |

|                                  |   |   |  |
|----------------------------------|---|---|--|
| Device.version.extension         | 0 | * |  |
| Device.version.modifierExtension | 0 | * |  |
| Device.version.type              | 0 | 1 |  |
| Device.version.component         | 0 | 1 |  |
| Device.version.value             | 1 | 1 |  |

|                           |   |   |  |
|---------------------------|---|---|--|
| Device.property           | 0 | * |  |
| Device.property.id        | 0 | 1 |  |
| Device.property.extension | 0 | * |  |

|                                   |   |   |   |
|-----------------------------------|---|---|---|
| Device.property.modifierExtension | 0 | * |   |
| Device.property.type              | 1 | 1 |   |
| Device.property.valueQuantity     | 0 | * |   |
| Device.property.valueCode         | 0 | * |   |
| Device.patient                    | 1 | 1 | Y |
| Device.owner                      | 0 | 1 |   |
| Device.contact                    | 0 | * |   |

|                 |   |   |  |
|-----------------|---|---|--|
| Device.location | 0 | 1 |  |
| Device.url      | 0 | 1 |  |
| Device.note     | 0 | * |  |
| Device.safety   | 0 | * |  |
| Device.parent   | 0 | 1 |  |

| Data Type(s) | FHIR Short Description                              | FHIR Definition   |
|--------------|---|---|
|              | Item used in healthcare                             | The US Core Implantable Device Profile is based upon the core FHIR Device Resource and created to meet the 2015 Edition Common Clinical Data Set 'Unique device identifier(s) for a patient's implantable device(s)' requirements.                                |
| string       | Logical id of this artifact                         | The logical id of the resource, as used in the URL for the resource. Once assigned, this value never changes.   |
| Meta         | Metadata about the resource                         | The metadata about the resource. This is content that is maintained by the infrastructure. Changes to the content might not always be associated with version changes to the resource.  |
| uri          | A set of rules under which this content was created | A reference to a set of rules that were followed when the resource was constructed, and which must be understood when processing the content. Often, this is a reference to an implementation guide that defines the special rules along with other profiles etc. |



|           |  |   |
|-----------|--|---|
| code      | Language of the resource content                       | The base language in which the resource is written.   |
| Narrative | Text summary of the resource, for human interpretation | A human-readable narrative that contains a summary of the resource and can be used to represent the content of the resource to a human. The narrative need not encode all the structured data, but is required to contain sufficient detail to make it "clinically safe" for a human to just read the narrative. Resource definitions may define what content should be represented in the narrative to ensure clinical safety. |
| Resource  | Contained, inline Resources                            | These resources do not have an independent existence apart from the resource that contains them - they cannot be identified independently, and nor can they have their own independent transaction scope.   |
| Extension | Additional content defined by implementations          | May be used to represent additional information that is not part of the basic definition of the resource. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension.                                  |

|                             |  |  |
|-----------------------------|--|--|
| Extension                   | Extensions that cannot be ignored              | <p>May be used to represent additional information that is not part of the basic definition of the resource and that modifies the understanding of the element that contains it and/or the understanding of the containing element's descendants. Usually modifier elements provide negation or qualification. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer is allowed to define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension. Applications processing a resource are required to check for modifier extensions.</p> <p>Modifier extensions SHALL NOT change the meaning of any elements on Resource or DomainResource (including cannot change the meaning of modifierExtension itself).</p> |
| Identifier                  | Instance identifier                            | Unique instance identifiers assigned to a device by manufacturers other organizations or owners.   |
| Reference(DeviceDefinition) | The reference to the definition for the device | The reference to the definition for the device.  |
| BackboneElement             | Unique Device Identifier (UDI) Barcode string  | Unique device identifier (UDI) assigned to device label or package. Note that the Device may include multiple udiCarriers as it either may include just the udiCarrier for the jurisdiction it is sold, or for multiple jurisdictions it could have been sold.   |

|              |                                     |   |
|--------------|-------------------------------------|---|
| base64Binary | UDI Machine Readable Barcode String | The full UDI carrier of the Automatic Identification and Data Capture (AIDC) technology representation of the barcode string as printed on the packaging of the device - e.g., a barcode or RFID. Because of limitations on character sets in XML and the need to round-trip JSON data through XML, AIDC Formats *SHALL* be base64 encoded.   |
| string       | UDI Human Readable Barcode String   | The full UDI carrier as the human readable form (HRF) representation of the barcode string as printed on the packaging of the device.   |
| string       | Mandatory fixed portion of UDI      | The device identifier (DI) is a mandatory, fixed portion of a UDI that identifies the labeler and the specific version or model of a device.  |
| code         | barcode   rfid   manual +           | A coded entry to indicate how the data was entered.   |
| uri          | UDI Issuing Organization            | Organization that is charged with issuing UDIs for devices. For example, the US FDA issuers include :<br>1) GS1:<br><a href="http://hl7.org/fhir/NamingSystem/gs1-di">http://hl7.org/fhir/NamingSystem/gs1-di</a> ,<br>2) HIBCC:<br><a href="http://hl7.org/fhir/NamingSystem/hibcc-di">http://hl7.org/fhir/NamingSystem/hibcc-di</a> ,<br>3) ICCBBA for blood containers:<br><a href="http://hl7.org/fhir/NamingSystem/iccbba-blood-di">http://hl7.org/fhir/NamingSystem/iccbba-blood-di</a> ,<br>4) ICCBA for other devices:<br><a href="http://hl7.org/fhir/NamingSystem/iccbba-other-di">http://hl7.org/fhir/NamingSystem/iccbba-other-di</a> . |
| uri          | Regional UDI authority              | The identity of the authoritative source for UDI generation within a jurisdiction. All UDIs are globally unique within a single namespace with the appropriate repository uri as the system. For example, UDIs of devices managed in the U.S. by the FDA, the value is <a href="http://hl7.org/fhir/NamingSystem/fda-udi">http://hl7.org/fhir/NamingSystem/fda-udi</a> .  |

|                 |   |   |
|-----------------|---|---|
| code            | active   inactive   entered-in-error   unknown                                      | Status of the Device availability.  |
| CodeableConcept | online   paused   standby   offline   not-ready   transduc-discon   hw-discon   off | Reason for the status of the Device availability.   |
| string          | The distinct identification string  | The distinct identification string as required by regulation for a human cell, tissue, or cellular and tissue-based product.  |
| string          | Name of device manufacturer   | A name of the manufacturer.   |
| dateTime        | Date when the device was made   | The date and time when the device was manufactured.   |
| dateTime        | Date and time of expiry of this device (if applicable)                              | The date and time beyond which this device is no longer valid or should not be used (if applicable).  |
| string          | Lot number of manufacture   | Lot number assigned by the manufacturer.  |
| string          | Serial number assigned by the manufacturer  | The serial number assigned by the organization when the device was manufactured.  |
| BackboneElement | The name of the device as given by the manufacturer                                 | This represents the manufacturer's name of the device as provided by the device, from a UDI label, or by a person describing the Device. This typically would be used when a person provides the name(s) or when the device represents one of the names available from DeviceDefinition.  |
| Extension       | Additional content defined by implementations                                       | May be used to represent additional information that is not part of the basic definition of the element. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension. |

|                 |  |   |
|-----------------|--|---|
| string          | Unique id for inter-element referencing  | Unique id for the element within a resource (for internal references). This may be any string value that does not contain spaces.   |
| Extension       | Extensions that cannot be ignored even if unrecognized   | <p>May be used to represent additional information that is not part of the basic definition of the element and that modifies the understanding of the element in which it is contained and/or the understanding of the containing element's descendants. Usually modifier elements provide negation or qualification. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension. Applications processing a resource are required to check for modifier extensions.</p> <p>Modifier extensions SHALL NOT change the meaning of any elements on Resource or DomainResource (including cannot change the meaning of modifierExtension itself).</p> |
| string          | The name of the device   | The name of the device.   |
| code            | udi-label-name   user-friendly-name   patient-reported-name   manufacturer-name   model-name   other | The type of deviceName.<br>UDILabelName   UserFriendlyName   PatientReportedName   ManufactureDeviceName   ModelName.   |
| string          | The model number for the device  | The model number for the device.  |
| string          | The part number of the device  | The part number of the device.  |
| CodeableConcept | The kind or type of device   | The kind or type of device.   |

|                 |   |   |
|-----------------|---|---|
| BackboneElement | The capabilities supported on a device, the standards to which the device conforms for a particular purpose, and used for the communication | The capabilities supported on a device, the standards to which the device conforms for a particular purpose, and used for the communication.  |
| string          | Unique id for inter-element referencing   | Unique id for the element within a resource (for internal references). This may be any string value that does not contain spaces.   |
| Extension       | Additional content defined by implementations   | May be used to represent additional information that is not part of the basic definition of the element. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension. |

|                 |   |   |
|-----------------|---|---|
| Extension       | Extensions that cannot be ignored even if unrecognized                    | <p>May be used to represent additional information that is not part of the basic definition of the element and that modifies the understanding of the element in which it is contained and/or the understanding of the containing element's descendants. Usually modifier elements provide negation or qualification. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension. Applications processing a resource are required to check for modifier extensions.</p> <p>Modifier extensions SHALL NOT change the meaning of any elements on Resource or DomainResource (including cannot change the meaning of modifierExtension itself).</p> |
| CodeableConcept | The standard that is used to operate and communicate                      | The standard that is used to operate and communicate.   |
| string          | The version of the standard that is used to operate and communicate       | The version of the standard that is used to operate and communicate.  |
| BackboneElement | The actual design of the device or software version running on the device | The actual design of the device or software version running on the device.  |
| string          | Unique id for inter-element referencing                                   | Unique id for the element within a resource (for internal references). This may be any string value that does not contain spaces.   |

|                 |  |   |
|-----------------|--|---|
| Extension       | Additional content defined by implementations          | May be used to represent additional information that is not part of the basic definition of the element. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension.   |
| Extension       | Extensions that cannot be ignored even if unrecognized | <p>May be used to represent additional information that is not part of the basic definition of the element and that modifies the understanding of the element in which it is contained and/or the understanding of the containing element's descendants. Usually modifier elements provide negation or qualification. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension. Applications processing a resource are required to check for modifier extensions.</p> <p>Modifier extensions SHALL NOT change the meaning of any elements on Resource or DomainResource (including cannot change the meaning of modifierExtension itself).</p> |
| CodeableConcept | The type of the device version                         | The type of the device version.   |
| Identifier      | A single component of the device version               | A single component of the device version.   |
| string          | The version text                                       | The version text.   |



|                 |   |   |
|-----------------|---|---|
| BackboneElement | The actual configuration settings of a device as it actually operates, e.g., regulation status, time properties | The actual configuration settings of a device as it actually operates, e.g., regulation status, time properties.  |
| string          | Unique id for inter-element referencing   | Unique id for the element within a resource (for internal references). This may be any string value that does not contain spaces.   |
| Extension       | Additional content defined by implementations   | May be used to represent additional information that is not part of the basic definition of the element. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension. |

|  |  |   |
|--|--|---|
| Extension  | Extensions that cannot be ignored even if unrecognized                     | <p>May be used to represent additional information that is not part of the basic definition of the element and that modifies the understanding of the element in which it is contained and/or the understanding of the containing element's descendants. Usually modifier elements provide negation or qualification. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension. Applications processing a resource are required to check for modifier extensions.</p> <p>Modifier extensions SHALL NOT change the meaning of any elements on Resource or DomainResource (including cannot change the meaning of modifierExtension itself).</p> |
| CodeableConcept  | Code that specifies the property DeviceDefinitionPropertyCode (Extensible) | Code that specifies the property DeviceDefinitionPropertyCode (Extensible).   |
| Quantity   | Property value as a quantity   | Property value as a quantity.   |
| CodeableConcept  | Property value as a code, e.g., NTP4 (synced to NTP)                       | Property value as a code, e.g., NTP4 (synced to NTP).   |
| Reference( <a href="http://hl7.org/fhir/us/core/StructureDefinition/us-core-patient">http://hl7.org/fhir/us/core/StructureDefinition/us-core-patient</a> ) | Patient to whom Device is affixed  | Patient information, If the device is affixed to a person.  |
| Reference( <a href="http://hl7.org/fhir/R4/organization.html">http://hl7.org/fhir/R4/organization.html</a> )   | Organization responsible for device  | An organization that is responsible for the provision and ongoing maintenance of the device.  |
| contactPoint   | Details for human/organization for support                                 | Contact details for an organization or a particular human that is responsible for the device.   |

|  |                                   |   |
|--|-----------------------------------|---|
| Reference( <a href="http://hl7.org/fhir/R4/location.html">http://hl7.org/fhir/R4/location.html</a> ) | Where the device is found         | The place where the device can be found.  |
| uri  | Network address to contact device | A network address on which the device may be contacted directly.  |
| Annotation   | Device notes and comments         | Descriptive information, usage information or implantation information that is not captured in an existing element. |
| CodeableConcept  | Safety Characteristics of Device  | Provides additional safety characteristics about a medical device. For example devices containing latex.            |
| Reference( <a href="http://hl7.org/fhir/R4/device.html">http://hl7.org/fhir/R4/device.html</a> )     | The parent device                 | The parent device.  |

| Comments  | Binding Strength | Binding Description |
|---|------------------|---------------------|
|   |                  |                     |
| <p>The only time that a resource does not have an id is when it is being submitted to the server using a create operation.</p>  |                  |                     |
|   |                  |                     |
| <p>Asserting this rule set restricts the content to be only understood by a limited set of trading partners. This inherently limits the usefulness of the data in the long term. However, the existing health eco-system is highly fractured, and not yet ready to define, collect, and exchange data in a generally computable sense. Wherever possible, implementers and/or specification writers should avoid using this element. Often, when used, the URL is a reference to an implementation guide that defines these special rules as part of it's narrative along with other profiles, value sets, etc.</p> |                  |                     |

|   |                  |                          |
|---|------------------|--------------------------|
| <p>Language is provided to support indexing and accessibility (typically, services such as text to speech use the language tag). The html language tag in the narrative applies to the narrative. The language tag on the resource may be used to specify the language of other presentations generated from the data in the resource. Not all the content has to be in the base language. The Resource.language should not be assumed to apply to the narrative automatically. If a language is specified, it should it also be specified on the div element in the html (see rules in HTML5 for information about the relationship between xml:lang and the html lang attribute).</p> | <p>preferred</p> | <p>A human language.</p> |
| <p>Contained resources do not have narrative. Resources that are not contained SHOULD have a narrative. In some cases, a resource may only have text with little or no additional discrete data (as long as all minOccurs=1 elements are satisfied). This may be necessary for data from legacy systems where information is captured as a "text blob" or where text is additionally entered raw or narrated and encoded information is added later.</p>  |                  |                          |
| <p>This should never be done when the content can be identified properly, as once identification is lost, it is extremely difficult (and context dependent) to restore it again. Contained resources may have profiles and tags in their meta elements, but SHALL NOT have security labels.</p>   |                  |                          |
| <p>There can be no stigma associated with the use of extensions by any application, project, or standard - regardless of the institution or jurisdiction that uses or defines the extensions. The use of extensions is what allows the FHIR specification to retain a core level of simplicity for everyone.</p>  |                  |                          |

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| <p>There can be no stigma associated with the use of extensions by any application, project, or standard - regardless of the institution or jurisdiction that uses or defines the extensions. The use of extensions is what allows the FHIR specification to retain a core level of simplicity for everyone.</p> |  |  |
| <p>The barcode string from a barcode present on a device label or package may identify the instance, include names given to the device in local usage, or may identify the type of device. If the identifier identifies the type of device, Device.type element should be used.</p>                              |  |  |
|  |  |  |
| <p>Some devices may not have UDI information (for example. historical data or patient reported data).</p>  |  |  |

|  |                 |  |
|--|-----------------|--|
| <p>The AIDC form of UDIs should be scanned or otherwise used for the identification of the device whenever possible to minimize errors in records resulting from manual transcriptions. If separate barcodes for DI and PI are present, concatenate the string with DI first and in order of human readable expression on label.</p> |                 |  |
| <p>If separate barcodes for DI and PI are present, concatenate the string with DI first and in order of human readable expression on label.</p>  |                 |  |
|  |                 |  |
|  | <p>required</p> | <p>Codes to identify how UDI data was entered.</p> |
|  |                 |  |
|  |                 |  |

|   |            |   |
|---|------------|---|
| This element is labeled as a modifier because the status contains the codes inactive and entered-in-error that mark the device (record)as not currently valid.  | required   | The availability status of the device.        |
|   | extensible | The availability status reason of the device. |
| For example, this applies to devices in the United States regulated under <i>Code of Federal Regulation 21CFR§1271.290(c)</i> .   |            |   |
|   |            |   |
|   |            |   |
|   |            |   |
|   |            |   |
| Alphanumeric Maximum 20.  |            |   |
|   |            |   |
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|   |            |   |
|   | required   | The type of name the device is referred by. |
|   |            |   |
| Alphanumeric Maximum 20.  |            |   |
|   | extensible | Codes to identify medical devices           |

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| <p>There can be no stigma associated with the use of extensions by any application, project, or standard - regardless of the institution or jurisdiction that uses or defines the extensions. The use of extensions is what allows the FHIR specification to retain a core level of simplicity for everyone.</p> |  |  |

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| <p>There can be no stigma associated with the use of extensions by any application, project, or standard - regardless of the institution or jurisdiction that uses or defines the extensions. The use of extensions is what allows the FHIR specification to retain a core level of simplicity for everyone.</p> |  |  |

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| <p>There can be no stigma associated with the use of extensions by any application, project, or standard - regardless of the institution or jurisdiction that uses or defines the extensions. The use of extensions is what allows the FHIR specification to retain a core level of simplicity for everyone.</p> |  |  |
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|  |  |  |
| <p>used for troubleshooting etc.</p>   |  |  |

|   |         |  |
|---|---------|--|
|   |         |  |
| If the device is running a FHIR server, the network address should be the Base URL from which a conformance statement may be retrieved. |         |  |
|   |         |  |
|   | Example |  |
|   |         |  |

| <b>Binding Value Set</b><br><br><i>Note: if the binding strength is an example, the binding value set in this column is not required to be used.</i> | <b>ACH dQM</b> |
|--|----------------|
|  | MS [0..*]      |
|  | R [1..1]       |
|  | NRT            |
|  | NRT            |



|   |     |
|---|-----|
| <a href="http://hl7.org/fhir/Va">http://hl7.org/fhir/Va</a> | NRT |
|   | NRT |
|   | NRT |
|   | NRT |

|  |           |
|--|-----------|
|  | NRT       |
|  | NRT       |
|  | NR        |
|  | MS [0..1] |

|  |           |
|--|-----------|
|  | MS [0..1] |
|  | MS [0..1] |
|  | R [1..1]  |
| <a href="http://hl7.org/fhir/ValueSet/udi-entry-type">http://hl7.org/fhir/ValueSet/udi-entry-type</a>  4.0.1 | NR        |
|  | NR        |
|  | NR        |

|   |           |
|---|-----------|
| <a href="https://hl7.org/fhir/R4">https://hl7.org/fhir/R4</a> | MS [0..1] |
| <a href="http://hl7.org/fhir/R4">http://hl7.org/fhir/R4</a>   | NR        |
|   | MS[0..1]  |
|   | NR        |
|   | MS [0..1] |
|   | MS [0..1] |
|   | MS [0..1] |
|   | MS [0..1] |
|   | MS [0..1] |
|   | MS [0..*] |
|   | NRT       |

|   |          |
|---|----------|
|   | NRT      |
|   | NRT      |
|   | R [1..1] |
| <a href="https://hl7.org/fhir/R4">https://hl7.org/fhir/R4</a> | R [1..1] |
|   | NR       |
|   | NR       |
| <a href="http://hl7.org/fhir/R4">http://hl7.org/fhir/R4</a>   | R [1..1] |
|   |          |

|  |     |
|--|-----|
|  | NR  |
|  | NRT |
|  | NRT |

|  |     |
|--|-----|
|  | NRT |
|  | NR  |
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|  | NR  |
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|  | NR  |
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|  | NR  |
|  | NRT |
|  | NRT |

|  |          |
|--|----------|
|  | NRT      |
|  | NR       |
|  | NR       |
|  | NR       |
|  | R [1..1] |
|  | NR       |
|  | NR       |

|   |    |
|---|----|
|   | NR |
|   | NR |
|   | NR |
| <a href="https://hl7.org/fhir/S">https://hl7.org/fhir/S</a> | NR |
|   | NR |

[Back to TOC](#)

| <b>FHIR Path</b>                 | <b>Min</b> | <b>Max</b> |
|----------------------------------|------------|------------|
| <b>Observation</b>               | 0          | *          |
| <b>Observation.id</b>            | 0          | 1          |
| <b>Observation.meta</b>          | 0          | 1          |
| <b>Observation.implicitRules</b> | 0          | 1          |
| <b>Observation.language</b>      | 0          | 1          |
| <b>Observation.text</b>          | 0          | 1          |
| <b>Observation.contained</b>     | 0          | *          |

|                                      |   |   |
|--------------------------------------|---|---|
| <b>Observation.extension</b>         | 0 | * |
| <b>Observation.modifierExtension</b> | 0 | * |
| <b>Observation.identifier</b>        | 0 | * |
| <b>Observation.basedOn</b>           | 0 | * |

|  |   |   |
|--|---|---|
| <b>Observation.partOf</b>                        | 0 | * |
| <b>Observation.status</b>                        | 1 | 1 |
| <b>Observation.category</b>                      | 1 | * |
| <b>Observation.category:Laboratory</b>           | 1 | 1 |
| <b>Observation.category:Laboratory.id</b>        | 0 | 1 |
| <b>Observation.category:Laboratory.extension</b> | 0 | * |
| <b>Observation.category:Laboratory.coding</b>    | 1 | * |
| <b>Observation.category:Laboratory.coding.id</b> | 0 | 1 |

|  |   |   |
|--|---|---|
| <b>Observation.category:Laboratory.coding.extension</b>    | 0 | * |
| <b>Observation.category:Laboratory.coding.system</b>       | 1 | 1 |
| <b>Observation.category:Laboratory.coding.version</b>      | 0 | 1 |
| <b>Observation.category:Laboratory.coding.code</b>         | 1 | 1 |
| <b>Observation.category:Laboratory.coding.display</b>      | 0 | 1 |
| <b>Observation.category:Laboratory.coding.userSelected</b> | 0 | 1 |

|   |   |   |
|---|---|---|
| <b>Observation.category:Laboratory.text</b> | 0 | 1 |
| <b>Observation.code</b>                     | 1 | 1 |
| <b>Observation.subject</b>                  | 1 | 1 |
| <b>Observation.focus</b>                    | 0 | * |
| <b>Observation.encounter</b>                | 0 | 1 |



|                                     |   |   |
|-------------------------------------|---|---|
| <b>Observation.effective[x]</b>     | 0 | 1 |
| <b>Observation.issued</b>           | 0 | 1 |
| <b>Observation.performer</b>        | 0 | * |
| <b>Observation.value[x]</b>         | 0 | 1 |
| <b>Observation.dataAbsentReason</b> | 0 | 1 |
| <b>Observation.interpretation</b>   | 0 | * |
| <b>Observation.note</b>             | 0 | * |
| <b>Observation.bodySite</b>         | 0 | 1 |
| <b>Observation.method</b>           | 0 | 1 |
| <b>Observation.specimen</b>         | 0 | 1 |

|   |   |   |
|---|---|---|
| <b>Observation.device</b>                   | 0 | 1 |
| <b>Observation.referenceRange</b>           | 0 | * |
| <b>Observation.referenceRange.id</b>        | 0 | 1 |
| <b>Observation.referenceRange.extension</b> | 0 | * |

|   |   |   |
|---|---|---|
| <b>Observation.referenceRange.modifierExtension</b> | 0 | * |
| <b>Observation.referenceRange.low</b>               | 0 | 1 |
| <b>Observation.referenceRange.high</b>              | 0 | 1 |
| <b>Observation.referenceRange.type</b>              | 0 | 1 |

|   |   |   |
|---|---|---|
| <b>Observation.referenceRange.appliesTo</b> | 0 | * |
| <b>Observation.referenceRange.age</b>       | 0 | 1 |
| <b>Observation.referenceRange.text</b>      | 0 | 1 |
| <b>Observation.hasMember</b>                | 0 | * |
| <b>Observation.derivedFrom</b>              | 0 | * |
| <b>Observation.component</b>                | 0 | * |

|  |   |   |
|--|---|---|
| <b>Observation.component.id</b>                | 0 | 1 |
| <b>Observation.component.extension</b>         | 0 | * |
| <b>Observation.component.modifierExtension</b> | 0 | * |
| <b>Observation.component.code</b>              | 1 | 1 |

|   |   |   |
|---|---|---|
| <b>Observation.component.value[x]</b>         | 0 | 1 |
| <b>Observation.component.dataAbsentReason</b> | 0 | 1 |
| <b>Observation.component.interpretation</b>   | 0 | * |
| <b>Observation.component.referenceRange</b>   | 0 | * |
|   |   |   |
|   |   |   |

| <b>Must Support?</b> | <b>Data Type(s)</b> | <b>FHIR Short Description</b>                          |
|----------------------|---------------------|--|
|                      | Observation         | Measurements and simple assertions                     |
|                      | string              | Logical id of this artifact                            |
|                      | Meta                | Metadata about the resource                            |
|                      | uri                 | A set of rules under which this content was created    |
|                      | code                | Language of the resource content                       |
|                      | Narrative           | Text summary of the resource, for human interpretation |
|                      | Resource            | Contained, inline Resources                            |

|  |   |   |
|--|---|---|
|  | Extension   | Additional content defined by implementations |
|  | Extension   | Extensions that cannot be ignored             |
|  | Identifier  | Business Identifier for observation           |
|  | Reference(CarePlan  DeviceRequest  ImmunizationRecommendation  MedicationRequest  NutritionOrder  ServiceRequest) | Fulfills plan, proposal or order              |



|   |  |   |
|---|--|---|
|   | Reference(MedicationAdministration MedicationDispense MedicationStatement Procedure Immunization ImagingStudy) | Part of referenced event  |
| Y | code   | registered   preliminary   final   amended +  |
| Y | Slice Definition   | Classification of type of observation<br><b>Slice:</b> Unordered,<br>Open by pattern:\$this |
| Y | CodeableConcept  | Classification of type of observation   |
|   | string   | Unique id for inter-element referencing   |
|   | Extension  | Additional content defined by implementations   |
| Y | Coding   | Code defined by a terminology system  |
|   | string   | Unique id for inter-element referencing   |

|   |           |   |
|---|-----------|---|
|   | Extension | Additional content defined by implementations   |
| Y | uri       | Identity of the terminology system<br>Fixed Value:<br><a href="http://terminology.hl7.org/CodeSystem/observation-category">http://terminology.hl7.org/CodeSystem/observation-category</a> |
|   | string    | Version of the system - if relevant   |
| Y | code      | Symbol in syntax defined by the system<br>Fixed Value:<br>laboratory  |
|   | string    | Representation defined by the system  |
|   | boolean   | If this coding was chosen directly by the user  |

|   |                                    |   |
|---|------------------------------------|---|
|   | string                             | Plain text representation of the concept                                  |
| Y | CodeableConcept                    | Laboratory Test Name  |
| Y | Reference(US Core Patient Profile) | Who and/or what the observation is about                                  |
|   | Reference(Resource)                | What the observation is about, when it is not about the subject of record |
|   | Reference(Encounter)               | Healthcare event during which this observation is made                    |

|   |  |  |
|---|--|--|
| Y | dateTime<br>Period   | Clinically relevant time/time-period for observation<br>us-core-1: Datetime must be at least to day. |
|   | instant  | Date/Time this version was made available  |
|   | Reference(Practitioner PractitionerRole Organization CareTeam Patient RelatedPerson)                                       | Who is responsible for the observation   |
| Y | Quantity<br>CodeableConcept<br>string<br>boolean<br>integer<br>Range<br>Ratio<br>SampledData<br>time<br>dateTime<br>Period | Result Value   |
| Y | CodeableConcept  | Why the result is missing  |
|   | CodeableConcept  | High, low, normal, etc.  |
|   | Annotation   | Comments about the observation   |
|   | CodeableConcept  | Observed body part   |
|   | CodeableConcept  | How it was done  |
|   | Reference(Specimen)  | Specimen used for this observation   |

|  |                                    |   |
|--|------------------------------------|---|
|  | Reference(Device <br>DeviceMetric) | (Measurement) Device                                |
|  | BackboneElement                    | Provides guide for<br>interpretation                |
|  | string                             | Unique id for inter-<br>element referencing         |
|  | Extension                          | Additional content<br>defined by<br>implementations |

|  |                 |  |
|--|-----------------|--|
|  | Extension       | Extensions that cannot be ignored even if unrecognized |
|  | SimpleQuantity  | Low Range, if relevant                                 |
|  | SimpleQuantity  | High Range, if relevant                                |
|  | CodeableConcept | Reference range qualifier                              |

|  |   |  |
|--|---|--|
|  | CodeableConcept   | Reference range population                             |
|  | Range   | Applicable age range, if relevant                      |
|  | string  | Text based reference range in an observation           |
|  | Reference(Observation QuestionnaireResponse MolecularSequence)                                      | Related resource that belongs to the Observation group |
|  | Reference(DocumentReference ImagingStudy Media QuestionnaireResponse Observation MolecularSequence) | Related measurements the observation is made from      |
|  | BackboneElement   | Component results                                      |

|  |                 |  |
|--|-----------------|--|
|  | string          | Unique id for inter-element referencing                |
|  | Extension       | Additional content defined by implementations          |
|  | Extension       | Extensions that cannot be ignored even if unrecognized |
|  | CodeableConcept | Type of component observation (code / type)            |



|  |  |   |
|--|--|---|
|  | Quantity<br>CodeableConcept<br>string<br>boolean<br>integer<br>Range<br>Ratio<br>SampledData<br>time<br>dateTime<br>Period | Actual component result                               |
|  | CodeableConcept  | Why the component result is missing                   |
|  | CodeableConcept  | High, low, normal, etc.                               |
|  |  | Provides guide for interpretation of component result |
|  |  |   |
|  |  |   |

| <b>FHIR Definition</b>  | <b>Binding Strength</b> | <b>Binding Description (Value Set Name)</b> |
|---|-------------------------|---|
| This profile is created to meet the 2015 Edition Common Clinical Data Set 'Laboratory test(s) and Laboratory value(s)/result(s)' requirements.  |                         |   |
| The logical id of the resource, as used in the URL for the resource. Once assigned, this value never changes.   |                         |   |
| The metadata about the resource. This is content that is maintained by the infrastructure. Changes to the content might not always be associated with version changes to the resource.  |                         |   |
| A reference to a set of rules that were followed when the resource was constructed, and which must be understood when processing the content. Often, this is a reference to an implementation guide that defines the special rules along with other profiles etc.   |                         |   |
| The base language in which the resource is written.   | preferred               | CommonLanguages                             |
| A human-readable narrative that contains a summary of the resource and can be used to represent the content of the resource to a human. The narrative need not encode all the structured data, but is required to contain sufficient detail to make it "clinically safe" for a human to just read the narrative. Resource definitions may define what content should be represented in the narrative to ensure clinical safety. |                         |   |
| These resources do not have an independent existence apart from the resource that contains them - they cannot be identified independently, and nor can they have their own independent transaction scope.   |                         |   |

|  |  |  |
|--|--|--|
| <p>May be used to represent additional information that is not part of the basic definition of the resource. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension.</p>  |  |  |
| <p>May be used to represent additional information that is not part of the basic definition of the resource and that modifies the understanding of the element that contains it and/or the understanding of the containing element's descendants. Usually modifier elements provide negation or qualification. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer is allowed to define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension. Applications processing a resource are required to check for modifier extensions.</p> <p>Modifier extensions SHALL NOT change the meaning of any elements on Resource or DomainResource (including cannot change the meaning of modifierExtension itself).</p> |  |  |
| <p>A unique identifier assigned to this observation.</p>   |  |  |
| <p>A plan, proposal or order that is fulfilled in whole or in part by this event. For example, a MedicationRequest may require a patient to have laboratory test performed before it is dispensed.</p>   |  |  |

|   |           |                          |
|---|-----------|--------------------------|
| A larger event of which this particular Observation is a component or step. For example, an observation as part of a procedure.   |           |                          |
| The status of the result value.   | required  | ObservationStatus        |
| A code that classifies the general type of observation being made.  | preferred | ObservationCategoryCodes |
| A code that classifies the general type of observation being made.  | preferred | ObservationCategoryCodes |
| Unique id for the element within a resource (for internal references). This may be any string value that does not contain spaces.   |           |                          |
| May be used to represent additional information that is not part of the basic definition of the element. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension. |           |                          |
| A reference to a code defined by a terminology system.  |           |                          |
| Unique id for the element within a resource (for internal references). This may be any string value that does not contain spaces.   |           |                          |

|  |  |  |
|--|--|--|
| <p>May be used to represent additional information that is not part of the basic definition of the element. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension.</p> |  |  |
| <p>The identification of the code system that defines the meaning of the symbol in the code.</p>   |  |  |
| <p>The version of the code system which was used when choosing this code. Note that a well-maintained code system does not need the version reported, because the meaning of codes is consistent across versions. However this cannot consistently be assured, and when the meaning is not guaranteed to be consistent, the version SHOULD be exchanged.</p>   |  |  |
| <p>A symbol in syntax defined by the system. The symbol may be a predefined code or an expression in a syntax defined by the coding system (e.g. post-coordination).</p>   |  |  |
| <p>A representation of the meaning of the code in the system, following the rules of the system.</p>   |  |  |
| <p>Indicates that this coding was chosen by a user directly - e.g. off a pick list of available items (codes or displays).</p>   |  |  |

|   |                   |                   |
|---|-------------------|-------------------|
| <p>A human language representation of the concept as seen/selected/uttered by the user who entered the data and/or which represents the intended meaning of the user.</p>   |                   |                   |
| <p>The test that was performed. A LOINC <b>**SHALL**</b> be used if the concept is present in LOINC.</p>  | <p>extensible</p> | <p>LOINCCodes</p> |
| <p>The patient, or group of patients, location, or device this observation is about and into whose record the observation is placed. If the actual focus of the observation is different from the subject (or a sample of, part, or region of the subject), the `focus` element or the `code` itself specifies the actual focus of the observation.</p>   |                   |                   |
| <p>The actual focus of an observation when it is not the patient of record representing something or someone associated with the patient such as a spouse, parent, fetus, or donor. For example, fetus observations in a mother's record. The focus of an observation could also be an existing condition, an intervention, the subject's diet, another observation of the subject, or a body structure such as tumor or implanted device. An example use case would be using the Observation resource to capture whether the mother is trained to change her child's tracheostomy tube. In this example, the child is the patient of record and the mother is the focus.</p> |                   |                   |
| <p>The healthcare event (e.g. a patient and healthcare provider interaction) during which this observation is made.</p>   |                   |                   |

|   |                       |                                |
|---|-----------------------|--------------------------------|
| For lab tests this is the specimen collection date. For Ask at Order Entry Questions (AOE)'s this is the date the question was asked.   |                       |                                |
| The date and time this version of the observation was made available to providers, typically after the results have been reviewed and verified.   |                       |                                |
| Who was responsible for asserting the observed value as "true".   |                       |                                |
| The Laboratory result value. If a coded value, the valueCodeableConcept.code <b>**SHOULD**</b> be selected from [SNOMED CT](http://hl7.org/fhir/ValueSet/uslab-obs-codedresults) if the concept exists. If a numeric value, valueQuantity.code <b>**SHALL**</b> be selected from [UCUM] (http://unitsofmeasure.org). A FHIR [UCUM Codes value set](http://hl7.org/fhir/STU3/valueset-ucum-units.html) that defines all UCUM codes is in the FHIR specification. |                       |                                |
| Provides a reason why the expected value in the element Observation.value[x] is missing.  | extensible            | DataAbsentReason               |
| A categorical assessment of an observation value. For example, high, low, normal.   | extensible            | ObservationInterpretationCodes |
| Comments about the observation or the results.  |                       |                                |
| Indicates the site on the subject's body where the observation was made (i.e. the target site).   | example               | SNOMEDCTBodyStructures         |
| Indicates the mechanism used to perform the observation.  | example<br>extensible | ObservationMethods             |
| The specimen that was used when this observation was made.  |                       |                                |

|   |  |  |
|---|--|--|
| The device used to generate the observation data.   |  |  |
| Guidance on how to interpret the value by comparison to a normal or recommended range. Multiple reference ranges are interpreted as an "OR". In other words, to represent two distinct target populations, two `referenceRange` elements would be used.   |  |  |
| Unique id for the element within a resource (for internal references). This may be any string value that does not contain spaces.   |  |  |
| May be used to represent additional information that is not part of the basic definition of the element. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension. |  |  |



|   |           |                                       |
|---|-----------|---------------------------------------|
| <p>May be used to represent additional information that is not part of the basic definition of the element and that modifies the understanding of the element in which it is contained and/or the understanding of the containing element's descendants. Usually modifier elements provide negation or qualification. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension. Applications processing a resource are required to check for modifier extensions.</p> <p>Modifier extensions SHALL NOT change the meaning of any elements on Resource or DomainResource (including cannot change the meaning of modifierExtension itself).</p> |           |                                       |
| <p>The value of the low bound of the reference range. The low bound of the reference range endpoint is inclusive of the value (e.g. reference range is <math>\geq 5</math> - <math>\leq 9</math>). If the low bound is omitted, it is assumed to be meaningless (e.g. reference range is <math>\leq 2.3</math>).</p>  |           |                                       |
| <p>The value of the high bound of the reference range. The high bound of the reference range endpoint is inclusive of the value (e.g. reference range is <math>\geq 5</math> - <math>\leq 9</math>). If the high bound is omitted, it is assumed to be meaningless (e.g. reference range is <math>\geq 2.3</math>).</p>   |           |                                       |
| <p>Codes to indicate the what part of the targeted reference population it applies to. For example, the normal or therapeutic range.</p>  | preferred | ObservationReferenceRangeMeaningCodes |

| Codes to indicate the target population this reference range applies to. For example, a reference range may be based on the normal population or a particular sex or race. Multiple `appliesTo` are interpreted as an "AND" of the target populations. For example, to represent a target population of African American females, both a code of female and a code for African American would be used. | example | ObservationReferenceRangeAppliesToCodes |
|--|---------|---|
| The age at which this reference range is applicable. This is a neonatal age (e.g. number of weeks at term) if the meaning says so.   |         |   |
| Text based reference range in an observation which may be used when a quantitative range is not appropriate for an observation. An example would be a reference value of "Negative" or a list or table of "normals".   |         |   |
| This observation is a group observation (e.g. a battery, a panel of tests, a set of vital sign measurements) that includes the target as a member of the group.  |         |   |
| The target resource that represents a measurement from which this observation value is derived. For example, a calculated anion gap or a fetal measurement based on an ultrasound image.   |         |   |
| Some observations have multiple component observations. These component observations are expressed as separate code value pairs that share the same attributes. Examples include systolic and diastolic component observations for blood pressure measurement and multiple component observations for genetics observations.   |         |   |

|   |                               |                   |
|---|-------------------------------|-------------------|
| <p>Unique id for the element within a resource (for internal references). This may be any string value that does not contain spaces.</p>  |                               |                   |
| <p>May be used to represent additional information that is not part of the basic definition of the element. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension.</p>  |                               |                   |
| <p>May be used to represent additional information that is not part of the basic definition of the element and that modifies the understanding of the element in which it is contained and/or the understanding of the containing element's descendants. Usually modifier elements provide negation or qualification. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension. Applications processing a resource are required to check for modifier extensions.</p> <p>Modifier extensions SHALL NOT change the meaning of any elements on Resource or DomainResource (including cannot change the meaning of modifierExtension itself).</p> |                               |                   |
| <p>Describes what was observed. Sometimes this is called the observation "code".</p>  | <p>example<br/>extensible</p> | <p>LOINCCodes</p> |

|  |                   |                                       |
|--|-------------------|---------------------------------------|
| <p>The information determined as a result of making the observation, if the information has a simple value.</p>        |                   |                                       |
| <p>Provides a reason why the expected value in the element <code>Observation.component.value[x]</code> is missing.</p> | <p>extensible</p> | <p>DataAbsentReason</p>               |
| <p>A categorical assessment of an observation value. For example, high, low, normal.</p>                               | <p>extensible</p> | <p>ObservationInterpretationCodes</p> |
| <p>Guidance on how to interpret the value by comparison to a normal or recommended range.</p>                          |                   |                                       |
|  |                   |                                       |
|  |                   |                                       |

| Binding Value Set   | ACH dQM   |
|---|-----------|
|   | MS [0..*] |
|   | R [1..1]  |
|   | NRT       |
|   | NRT       |
| <a href="http://hl7.org/fhir/ValueSet/language">http://hl7.org/fhir/ValueSet/language</a> | NRT       |
|   | NRT       |
|   | NRT       |

|  |     |
|--|-----|
|  | NRT |
|  | NRT |
|  | NRT |
|  | NR  |

|   |          |
|---|----------|
|   | NR       |
| <a href="http://hl7.org/fhir/R4/ValueSet/observed">http://hl7.org/fhir/R4/ValueSet/observed</a>   | R [1..1] |
| <a href="https://hl7.org/fhir/R4/valueset-observed">https://hl7.org/fhir/R4/valueset-observed</a> | R [1..*] |
| <a href="http://hl7.org/fhir/ValueSet/observed">http://hl7.org/fhir/ValueSet/observed</a>         | R [1..1] |
|   | NRT      |
|   | NRT      |
|   | NR       |
|   | NR       |





|   |           |
|---|-----------|
|   | NR        |
| <a href="http://hl7.org/fhir/ValueSet/observation">http://hl7.org/fhir/ValueSet/observation</a> | R [1..1]  |
|   | R [1..1]  |
|   | NR        |
|   | MS [0..1] |

|   |                                |
|---|--------------------------------|
|   | R [1..1]                       |
|   | MS [0..1]                      |
|   | NR                             |
|   | MS [0..1]                      |
| <a href="http://hl7.org/fhir/R4/ValueSet/data">http://hl7.org/fhir/R4/ValueSet/data</a>         | MS [0..1]                      |
| <a href="https://hl7.org/fhir/R4/valueset-obs">https://hl7.org/fhir/R4/valueset-obs</a>         | MS [0..*]                      |
|   | NR                             |
| <a href="http://hl7.org/fhir/ValueSet/body-site">http://hl7.org/fhir/ValueSet/body-site</a>     | MS [0..1]                      |
| <a href="http://hl7.org/fhir/ValueSet/observation">http://hl7.org/fhir/ValueSet/observation</a> | MS [0..1]                      |
|   | Binding<br>strength=extensible |
|   | MS [0..1]                      |

|  |     |
|--|-----|
|  | NR  |
|  | NR  |
|  | NRT |
|  | NRT |

|   |     |
|---|-----|
|   | NRT |
|   | NR  |
|   | NR  |
| <a href="http://hl7.org/fhir/ValueSet/referen">http://hl7.org/fhir/ValueSet/referen</a> | NR  |



|   |  |
|---|--|
|   | NRT  |
|   | NRT  |
|   | NRT  |
| <a href="http://hl7.org/fhir/R4/valueset-obs">http://hl7.org/fhir/R4/valueset-obs</a> | R [1..1]<br>Binding<br>strength=extensible |

|   |           |
|---|-----------|
|   | MS [0..1] |
| <a href="http://hl7.org/fhir/R4/ValueSet/data">http://hl7.org/fhir/R4/ValueSet/data</a> | NR        |
| <a href="https://hl7.org/fhir/R4/valueset-obs">https://hl7.org/fhir/R4/valueset-obs</a> | MS [0..*] |
|   | NR        |
|   |           |
|   |           |

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| <b>FHIR Path</b>       | <b>Min</b> | <b>Max</b> | <b>Must Support</b> |
|------------------------|------------|------------|---------------------|
| <b>Location</b>        | 0          | *          |                     |
| Location.id            | 0          | 1          | Y                   |
| Location.meta          | 0          | 1          |                     |
| Location.implicitRules | 0          | 1          |                     |
| Location.language      | 0          | 1          |                     |
| Location.text          | 0          | 1          |                     |
| Location.contained     | 0          | *          |                     |
| Location.extension     | 0          | *          |                     |



|                                   |   |   |   |
|-----------------------------------|---|---|---|
| Location.modifierExtension        | 0 | * |   |
| <b>Location.identifier</b>        | 0 | * |   |
| <b>Location.status</b>            | 0 | 1 | Y |
| <b>Location.operationalStatus</b> | 0 | 1 |   |
| <b>Location.name</b>              | 1 | 1 | Y |
| <b>Location.alias</b>             | 0 | * |   |

|                             |   |   |   |
|-----------------------------|---|---|---|
| <b>Location.description</b> | 0 | 1 |   |
| <b>Location.mode</b>        | 0 | 1 |   |
| <b>Location.type</b>        | 0 | * |   |
| <b>Location.telecom</b>     | 0 | * | Y |
| <b>Location.address</b>     | 0 | 1 | Y |
| Location.address.id         | 0 | 1 |   |

|                              |   |   |   |
|------------------------------|---|---|---|
| Location.address.extension   | 0 | * |   |
| Location.address.use         | 0 | 1 |   |
| Location.address.type        | 0 | 1 |   |
| Location.address.text        | 0 | 1 |   |
| Location.address.line        | 0 | * | Y |
| Location.address.city        | 0 | 1 | Y |
| Location.address.district    | 0 | 1 |   |
| Location.address.state       | 0 | 1 | Y |
| Location.address.postalCode  | 0 | 1 | Y |
| Location.address.country     | 0 | 1 |   |
| Location.address.period      | 0 | 1 |   |
| <b>Location.physicalType</b> | 0 | 1 |   |
| <b>Location.position</b>     | 0 | 1 |   |

|                                      |   |   |   |
|--------------------------------------|---|---|---|
| Location.position.id                 | 0 | 1 |   |
| Location.position.extension          | 0 | * |   |
| Location.position.modifierExtension  | 0 | * |   |
| Location.position.longitude          | 1 | 1 |   |
| Location.position.latitude           | 1 | 1 |   |
| Location.position.altitude           | 0 | 1 |   |
| <b>Location.managingOrganization</b> | 0 | 1 | Y |
| <b>Location.partOf</b>               | 0 | 1 |   |

|   |   |   |  |
|---|---|---|--|
| <b>Location.hoursOfOperation</b>            | 0 | * |  |
| Location.hoursOfOperation.id                | 0 | 1 |  |
| Location.hoursOfOperation.extension         | 0 | * |  |
| Location.hoursOfOperation.modifierExtension | 0 | * |  |
| Location.hoursOfOperation.daysOfWeek        | 0 | * |  |
| Location.hoursOfOperation.allDay            | 0 | 1 |  |
| Location.hoursOfOperation.openingTime       | 0 | 1 |  |
| Location.hoursOfOperation.closingTime       | 0 | 1 |  |
| Location.availabilityExceptions             | 0 | 1 |  |
| <b>Location.endpoint</b>                    | 0 | * |  |

| Data Type(s) | FHIR Short Description                                 |
|--------------|--|
|              | Details and position information for a physical place  |
| string       | Logical id of this artifact                            |
| Meta         | Metadata about the resource                            |
| uri          | A set of rules under which this content was created    |
| code         | Language of the resource content                       |
| Narrative    | Text summary of the resource, for human interpretation |
| Resource     | Contained, inline Resources                            |
| Extension    | Additional content defined by implementations          |

|            |   |
|------------|---|
| Extension  | Extensions that cannot be ignored   |
| Identifier | Unique code or number identifying the location to its users                           |
| code       | active   suspended   inactive   |
| Coding     | The operational status of the location (typically only for a bed/room)                |
| string     | Name of the location as used by humans  |
| string     | A list of alternate names that the location is known as, or was known as, in the past |

|                 |   |
|-----------------|---|
| string          | Additional details about the location that could be displayed as further information to identify the location beyond its name |
| code            | instance   kind   |
| CodeableConcept | Type of function performed  |
| ContactPoint    | Contact details of the location   |
| Address         | Physical location   |
| string          | Unique id for inter-element referencing   |



|                 |  |
|-----------------|--|
| Extension       | Additional content defined by implementations                |
| code            | home   work   temp   old   billing - purpose of this address |
| code            | postal   physical   both                                     |
| string          | Text representation of the address                           |
| string          | Street name, number, direction & P.O. Box etc.               |
| string          | Name of city, town etc.                                      |
| string          | District name (aka county)                                   |
| string          | Sub-unit of country (abbreviations ok)                       |
| string          | US Zip Codes   |
| string          | Country (e.g. can be ISO 3166 2 or 3 letter code)            |
| Period          | Time period when address was/is in use                       |
| CodeableConcept | Physical form of the location                                |
| BackboneElement | The absolute geographic location                             |

|  |  |
|--|--|
| string   | Unique id for inter-element referencing                |
| Extension  | Additional content defined by implementations          |
| Extension  | Extensions that cannot be ignored even if unrecognized |
| decimal  | Longitude with WGS84 datum                             |
| decimal  | Latitude with WGS84 datum                              |
| decimal  | Altitude with WGS84 datum                              |
| Reference( <a href="http://hl7.org/fhir/us/core/StructureDefinition/us-core-organization">http://hl7.org/fhir/us/core/StructureDefinition/us-core-organization</a> ) | Organization responsible for provisioning and upkeep   |
| Reference(Location)  | Another Location this one is physically a part of      |

|                     |  |
|---------------------|--|
| BackboneElement     | What days/times during a week is this location usually open                |
| string              | Unique id for inter-element referencing                                    |
| Extension           | Additional content defined by implementations                              |
| Extension           | Extensions that cannot be ignored even if unrecognized                     |
| code                | mon   tue   wed   thu   fri   sat   sun                                    |
| boolean             | The Location is open all day   |
| time                | Time that the Location opens   |
| time                | Time that the Location closes  |
| string              | Description of availability exceptions                                     |
| Reference(Endpoint) | Technical endpoints providing access to services operated for the location |

| <b>FHIR Definition</b>  | <b>Binding Strength</b> |
|---|-------------------------|
| Details and position information for a physical place where services are provided and resources and participants may be stored, found, contained, or accommodated.  |                         |
| The logical id of the resource, as used in the URL for the resource. Once assigned, this value never changes.   |                         |
| The metadata about the resource. This is content that is maintained by the infrastructure. Changes to the content might not always be associated with version changes to the resource.  |                         |
| A reference to a set of rules that were followed when the resource was constructed, and which must be understood when processing the content. Often, this is a reference to an implementation guide that defines the special rules along with other profiles etc.   |                         |
| The base language in which the resource is written.   | preferred               |
| A human-readable narrative that contains a summary of the resource and can be used to represent the content of the resource to a human. The narrative need not encode all the structured data, but is required to contain sufficient detail to make it "clinically safe" for a human to just read the narrative. Resource definitions may define what content should be represented in the narrative to ensure clinical safety. |                         |
| These resources do not have an independent existence apart from the resource that contains them - they cannot be identified independently, and nor can they have their own independent transaction scope.   |                         |
| May be used to represent additional information that is not part of the basic definition of the resource. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension.                                  |                         |

|  |           |
|--|-----------|
| <p>May be used to represent additional information that is not part of the basic definition of the resource and that modifies the understanding of the element that contains it and/or the understanding of the containing element's descendants. Usually modifier elements provide negation or qualification. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer is allowed to define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension. Applications processing a resource are required to check for modifier extensions.</p> <p>Modifier extensions SHALL NOT change the meaning of any elements on Resource or DomainResource (including cannot change the meaning of modifierExtension itself).</p> |           |
| <p>Unique code or number identifying the location to its users.</p>  |           |
| <p>The status property covers the general availability of the resource, not the current value which may be covered by the operationStatus, or by a schedule/slots if they are configured for the location.</p>   | required  |
| <p>The operational status covers operation values most relevant to beds (but can also apply to rooms/units/chairs/etc. such as an isolation unit/dialysis chair). This typically covers concepts such as contamination, housekeeping, and other activities like maintenance.</p>   | preferred |
| <p>Name of the location as used by humans. Does not need to be unique.</p>   |           |
| <p>A list of alternate names that the location is known as, or was known as, in the past.</p>  |           |

|  |                   |
|--|-------------------|
| <p>Description of the Location, which helps in finding or referencing the place.</p>   |                   |
| <p>Indicates whether a resource instance represents a specific location or a class of locations.</p>   | <p>required</p>   |
| <p>Indicates the type of function performed at the location.</p>   | <p>extensible</p> |
| <p>The contact details of communication devices available at the location. This can include phone numbers, fax numbers, mobile numbers, email addresses and web sites.</p> |                   |
| <p>Physical location.</p>  |                   |
| <p>Unique id for the element within a resource (for internal references). This may be any string value that does not contain spaces.</p>                                   |                   |

|   |                       |
|---|-----------------------|
| May be used to represent additional information that is not part of the basic definition of the element. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension. |                       |
| The purpose of this address.  | required              |
| Distinguishes between physical addresses (those you can visit) and mailing addresses (e.g. PO Boxes and care-of addresses). Most addresses are both.  | required              |
| Specifies the entire address as it should be displayed e.g. on a postal label. This may be provided instead of or as well as the specific parts.  |                       |
| This component contains the house number, apartment number, street name, street direction, P.O. Box number, delivery hints, and similar address information.  |                       |
| The name of the city, town, suburb, village or other community or delivery center.  |                       |
| The name of the administrative area (county).   |                       |
| Sub-unit of a country with limited sovereignty in a federally organized country. A code may be used if codes are in common use (e.g. US 2 letter state codes).  | extensible            |
| A postal code designating a region defined by the postal service.   |                       |
| Country - a nation as commonly understood or generally accepted.  |                       |
| Time period when address was/is in use.   |                       |
| Physical form of the location, e.g. building, room, vehicle, road.  | example<br>extensible |
| The absolute geographic location of the Location, expressed using the WGS84 datum (This is the same co-ordinate system used in KML).  |                       |

|   |  |
|---|--|
| <p>Unique id for the element within a resource (for internal references). This may be any string value that does not contain spaces.</p>  |  |
| <p>May be used to represent additional information that is not part of the basic definition of the element. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension.</p>  |  |
| <p>May be used to represent additional information that is not part of the basic definition of the element and that modifies the understanding of the element in which it is contained and/or the understanding of the containing element's descendants. Usually modifier elements provide negation or qualification. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension. Applications processing a resource are required to check for modifier extensions.</p> <p>Modifier extensions SHALL NOT change the meaning of any elements on Resource or DomainResource (including cannot change the meaning of modifierExtension itself).</p> |  |
| <p>Longitude. The value domain and the interpretation are the same as for the text of the longitude element in KML (see notes below).</p>   |  |
| <p>Latitude. The value domain and the interpretation are the same as for the text of the latitude element in KML (see notes below).</p>   |  |
| <p>Altitude. The value domain and the interpretation are the same as for the text of the altitude element in KML (see notes below).</p>   |  |
| <p>The organization responsible for the provisioning and upkeep of the location.</p>  |  |
| <p>Another Location of which this Location is physically a part of.</p>   |  |



|  |          |
|--|----------|
| What days/times during a week is this location usually open.   |          |
| Unique id for the element within a resource (for internal references). This may be any string value that does not contain spaces.  |          |
| May be used to represent additional information that is not part of the basic definition of the element. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension.  |          |
| May be used to represent additional information that is not part of the basic definition of the element and that modifies the understanding of the element in which it is contained and/or the understanding of the containing element's descendants. Usually modifier elements provide negation or qualification. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension. Applications processing a resource are required to check for modifier extensions.<br><br>Modifier extensions SHALL NOT change the meaning of any elements on Resource or DomainResource (including cannot change the meaning of modifierExtension itself). |          |
| Indicates which days of the week are available between the start and end Times.  | required |
| The Location is open all day.  |          |
| Time that the Location opens.  |          |
| Time that the Location closes.   |          |
| A description of when the locations opening ours are different to normal, e.g. public holiday availability. Succinctly describing all possible exceptions to normal site availability as detailed in the opening hours Times.  |          |
| Technical endpoints providing access to services operated for the location.  |          |

| Binding Description | Binding Value Set   | ACH dQM  |
|---------------------|---|----------|
|                     |   | R [1..*] |
|                     |   | R [1..1] |
|                     |   | NRT      |
|                     |   | NRT      |
| CommonLanguages     | <a href="http://hl7.org/fhir/ValueSet">http://hl7.org/fhir/ValueSet</a> | NRT      |
|                     |   | NRT      |
|                     |   | NRT      |
|                     |   | NRT      |

|                 |   |           |
|-----------------|---|-----------|
|                 |   | NRT       |
|                 |   | NRT       |
| LocationStatus  | <a href="http://hl7.org/fhir/ValueSet">http://hl7.org/fhir/ValueSet</a> | MS [0..1] |
| hl7VS-bedStatus | <a href="http://terminology.hl7.org">http://terminology.hl7.org</a>     | NR        |
|                 |   | R [1..1]  |
|                 |   | MS [0..*] |

|                                 |   |  |
|---------------------------------|---|--|
|                                 |   | NR   |
| LocationMode                    | <a href="http://hl7.org/fhir/ValueSet">http://hl7.org/fhir/ValueSet</a> | NR   |
| ServiceDeliveryLocationRoleType | <a href="http://terminology.hl7.org">http://terminology.hl7.org</a>     | <p>R [1..*]</p> <p><b>The following constraint is written into the CQL:</b></p> <pre> valueset   "Inpatient,   Emergency, and   Observation   Locations":   'http://cts.nlm.nih.gov/fhir/ValueSet/2.16.840.1.113762.1.4.1046.265' </pre> |
|                                 |   | MS [0..*]  |
|                                 |   | MS [0..1]  |
|                                 |   | NRT  |

|                                  |   |   |
|----------------------------------|---|---|
|                                  |   | NRT                                       |
| AddressUse                       | <a href="http://hl7.org/fhir/ValueSe">http://hl7.org/fhir/ValueSe</a>   | MS [0..1]                                 |
| AddressType                      | <a href="http://hl7.org/fhir/ValueSe">http://hl7.org/fhir/ValueSe</a>   | NR  |
|                                  |   | NR  |
|                                  |   | NR  |
|                                  |   | NR  |
|                                  |   | NR  |
| USPS Two Letter Alphabetic Codes | <a href="http://hl7.org/fhir/us/core/">http://hl7.org/fhir/us/core/</a> | NR  |
|                                  |   | NR  |
|                                  |   | NR  |
|                                  |   | NR  |
| Physical form of the location.   | <a href="http://hl7.org/fhir/ValueSe">http://hl7.org/fhir/ValueSe</a>   | MS [0..1]<br>Binding strength= extensible |
|                                  |   | NR  |

|  |  |           |
|--|--|-----------|
|  |  | NRT       |
|  |  | NRT       |
|  |  | NRT       |
|  |  | NR        |
|  |  | NR        |
|  |  | NR        |
|  |  | NR        |
|  |  | MS [0..1] |

|                       |   |     |
|-----------------------|---|-----|
|                       |   | NR  |
|                       |   | NRT |
|                       |   | NRT |
|                       |   | NRT |
| The days of the week. | <a href="http://hl7.org/fhir/ValueSet">http://hl7.org/fhir/ValueSet</a> | NR  |
|                       |   | NR  |
|                       |   | NR  |
|                       |   | NR  |
|                       |   | NR  |
|                       |   | NR  |

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| <b>FHIR Path</b>                | <b>Min</b> | <b>Max</b> | <b>Must Support?</b> |
|---------------------------------|------------|------------|----------------------|
| <b>Medication</b>               | 0          | *          |                      |
| <b>Medication.id</b>            | 0          | 1          |                      |
| <b>Medication.meta</b>          | 0          | 1          |                      |
| <b>Medication.implicitRules</b> | 0          | 1          |                      |
| <b>Medication.language</b>      | 0          | 1          |                      |



|                             |   |   |  |
|-----------------------------|---|---|--|
| <b>Medication.text</b>      | 0 | 1 |  |
| <b>Medication.contained</b> | 0 | * |  |
| <b>Medication.extension</b> | 0 | * |  |

|                                     |   |   |   |
|-------------------------------------|---|---|---|
| <b>Medication.modifierExtension</b> | 0 | * |   |
| <b>Medication.identifier</b>        | 0 | * |   |
| <b>Medication.code</b>              | 1 | 1 | Y |
| <b>Medication.status</b>            | 0 | 1 |   |

|                                 |   |   |  |
|---------------------------------|---|---|--|
| <b>Medication.manufacturer</b>  | 0 | 1 |  |
| <b>Medication.form</b>          | 0 | 1 |  |
| <b>Medication.amount</b>        | 0 | 1 |  |
| <b>Medication.ingredient</b>    | 0 | * |  |
| Medication.ingredient.id        | 0 | 1 |  |
| Medication.ingredient.extension | 0 | * |  |

|   |   |   |  |
|---|---|---|--|
| Medication.ingredient.modifierExtension | 0 | * |  |
| <b>Medication.ingredient.item[x]</b>    | 1 | 1 |  |
| Medication.ingredient.isActive          | 0 | 1 |  |
| Medication.ingredient.strength          | 0 | 1 |  |

|                                    |   |   |  |
|------------------------------------|---|---|--|
| <b>Medication.batch</b>            | 0 | 1 |  |
| Medication.batch.id                | 0 | 1 |  |
| Medication.batch.extension         | 0 | * |  |
| Medication.batch.modifierExtension | 0 | * |  |
| Medication.batch.lotNumber         | 0 | 1 |  |
| Medication.batch.expirationDate    | 0 | 1 |  |

| Data Type(s) | FHIR Short Description                              | FHIR Definition   | Binding Strength |
|--------------|---|---|------------------|
| Medication   | Definition of a Medication                          | The US Core Medication Profile is based upon the core FHIR Medication Resource and created to meet the 2015 Edition Common Clinical Data Set 'Medications' requirements.  |                  |
| string       | Logical id of this artifact                         | The logical id of the resource, as used in the URL for the resource. Once assigned, this value never changes.   |                  |
| Meta         | Metadata about the resource                         | The metadata about the resource. This is content that is maintained by the infrastructure. Changes to the content might not always be associated with version changes to the resource.  |                  |
| uri          | A set of rules under which this content was created | A reference to a set of rules that were followed when the resource was constructed, and which must be understood when processing the content. Often, this is a reference to an implementation guide that defines the special rules along with other profiles etc. |                  |
| code         | Language of the resource content                    | The base language in which the resource is written. (ex English)  | preferred        |

|           |  |   |  |
|-----------|--|---|--|
| Narrative | Text summary of the resource, for human interpretation | A human-readable narrative that contains a summary of the resource and can be used to represent the content of the resource to a human. The narrative need not encode all the structured data, but is required to contain sufficient detail to make it "clinically safe" for a human to just read the narrative. Resource definitions may define what content should be represented in the narrative to ensure clinical safety. |  |
| Resource  | Contained, inline Resources                            | These resources do not have an independent existence apart from the resource that contains them - they cannot be identified independently, and nor can they have their own independent transaction scope.   |  |
| Extension | Additional content defined by implementations          | May be used to represent additional information that is not part of the basic definition of the resource. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension.                                  |  |

|                 |   |  |            |
|-----------------|---|--|------------|
| Extension       | Extensions that cannot be ignored       | <p>May be used to represent additional information that is not part of the basic definition of the resource and that modifies the understanding of the element that contains it and/or the understanding of the containing element's descendants. Usually modifier elements provide negation or qualification. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer is allowed to define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension. Applications processing a resource are required to check for modifier extensions.</p> <p>Modifier extensions SHALL NOT change the meaning of any elements on Resource or DomainResource (including cannot change the meaning of modifierExtension itself).</p> |            |
| Identifier      | Business identifier for this medication | Business identifier for this medication.   |            |
| CodeableConcept | Codes that identify this medication     | A code (or set of codes) that specify this medication, or a textual description if no code is available. Usage note: This could be a standard medication code such as a code from RxNorm, SNOMED CT, IDMP etc. It could also be a national or local formulary code, optionally with translations to other code systems.  | extensible |
| code            | active   inactive   entered-in-error    | A code to indicate if the medication is in active use.   | required   |



|                             |   |  |                       |
|-----------------------------|---|--|-----------------------|
| Reference(Organizati<br>on) | Manufacturer of the<br>item                         | Describes the details of the<br>manufacturer of the medication<br>product. This is not intended to<br>represent the distributor of a<br>medication product.  |                       |
| CodeableConcept             | powder   tablets  <br>capsule +                     | Describes the form of the item.<br>Powder; tablets; capsule.   | example<br>extensible |
| Ratio                       | Amount of drug in<br>package                        | Specific amount of the drug in<br>the packaged product. For<br>example, when specifying a<br>product that has the same<br>strength (For example, Insulin<br>glargine 100 unit per mL<br>solution for injection), this<br>attribute provides additional<br>clarification of the package<br>amount (For example, 3 mL,<br>10mL, etc.).   |                       |
| BackboneElement             | Active or inactive<br>ingredient                    | Identifies a particular<br>constituent of interest in the<br>product.  |                       |
| string                      | Unique id for inter-<br>element referencing         | Unique id for the element<br>within a resource (for internal<br>references). This may be any<br>string value that does not<br>contain spaces.  |                       |
| Extension                   | Additional content<br>defined by<br>implementations | May be used to represent<br>additional information that is<br>not part of the basic definition<br>of the element. To make the<br>use of extensions safe and<br>manageable, there is a strict<br>set of governance applied to<br>the definition and use of<br>extensions. Though any<br>implementer can define an<br>extension, there is a set of<br>requirements that SHALL be<br>met as part of the definition of<br>the extension. |                       |

|  |  |   |  |
|--|--|---|--|
| Extension                                      | Extensions that cannot be ignored even if unrecognized | <p>May be used to represent additional information that is not part of the basic definition of the element and that modifies the understanding of the element in which it is contained and/or the understanding of the containing element's descendants. Usually modifier elements provide negation or qualification. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension. Applications processing a resource are required to check for modifier extensions.</p> <p>Modifier extensions SHALL NOT change the meaning of any elements on Resource or DomainResource (including cannot change the meaning of modifierExtension itself).</p> |  |
| CodeableConcept Reference(SubstanceMedication) | The actual ingredient or content                       | The actual ingredient - either a substance (simple ingredient) or another medication of a medication.   |  |
| boolean  | Active ingredient indicator                            | Indication of whether this ingredient affects the therapeutic action of the drug.   |  |
| Ratio  | Quantity of ingredient present                         | Specifies how many (or how much) of the items there are in this Medication. For example, 250 mg per tablet. This is expressed as a ratio where the numerator is 250mg and the denominator is 1 tablet.  |  |

|                 |  |   |  |
|-----------------|--|---|--|
| BackboneElement | Details about packaged medications                     | Information that only applies to packages (not products).   |  |
| string          | Unique id for inter-element referencing                | Unique id for the element within a resource (for internal references). This may be any string value that does not contain spaces.   |  |
| Extension       | Additional content defined by implementations          | May be used to represent additional information that is not part of the basic definition of the element. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension. |  |
| Extension       | Extensions that cannot be ignored even if unrecognized | May be used to represent additional information that is not part of the basic definition of the element and that modifies the understanding of the element in which it is   |  |
| string          | Identifier assigned to batch                           | The assigned lot number of a batch of the specified product.  |  |
| dateTime        | When batch will expire                                 | When this specific batch of product will expire.  |  |

| Binding Description | Binding Value Set   | ACH dQM   |
|---------------------|---|-----------|
|                     |   | MS [0..*] |
|                     |   | R [1..1]  |
|                     |   | NRT       |
|                     |   | NRT       |
| CommonLanguages     | <a href="http://hl7.org/fhir/ValueSet/language">http://hl7.org/fhir/ValueSet/language</a> | NRT       |

|  |  |     |
|--|--|-----|
|  |  | NRT |
|  |  | NRT |
|  |  | NRT |

|                         |   |           |
|-------------------------|---|-----------|
|                         |   | NRT       |
|                         |   | NRT       |
| USCoreMedication Codes  | <a href="http://hl7.org/fhir/us/core/STU3">http://hl7.org/fhir/us/core/STU3</a> | R [1..1]  |
| Medication Status Codes | <a href="http://hl7.org/fhir/ValueSet/med">http://hl7.org/fhir/ValueSet/med</a> | MS [0..*] |

|                            |   |  |
|----------------------------|---|--|
|                            |   | NR   |
| 4.0.1<br>SNOMEDCTFormCodes | <a href="http://hl7.org/fhir/ValueSet/med">http://hl7.org/fhir/ValueSet/med</a> | MS [0..1]<br>Binding strength=<br>extensible |
|                            |   | MS [0..1]                                    |
|                            |   | MS [0..*]                                    |
|                            |   | NRT  |
|                            |   | NRT  |

|  |  |          |
|--|--|----------|
|  |  | NRT      |
|  |  | R [1..1] |
|  |  | NRT      |
|  |  | NR       |



|  |  |     |
|--|--|-----|
|  |  | NR  |
|  |  | NRT |
|  |  | NRT |
|  |  | NRT |
|  |  | NR  |
|  |  | NR  |

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| <b>FHIRPath</b>                               | <b>Min</b> | <b>Max</b> |
|---|------------|------------|
| <b>MedicationAdministration</b>               | 0          | *          |
| <b>MedicationAdministration.id</b>            | 0          | 1          |
| <b>MedicationAdministration.meta</b>          | 0          | 1          |
| <b>MedicationAdministration.implicitRules</b> | 0          | 1          |
| <b>MedicationAdministration.language</b>      | 0          | 1          |

|   |   |   |
|---|---|---|
| <b>MedicationAdministration.text</b>      | 0 | 1 |
| <b>MedicationAdministration.contained</b> | 0 | * |
| <b>MedicationAdministration.extension</b> | 0 | * |

|   |   |   |
|---|---|---|
| <b>MedicationAdministration.modifierExtension</b> | 0 | * |
| <b>MedicationAdministration.identifier</b>        | 0 | * |
| <b>MedicationAdministration.instantiates</b>      | 0 | * |

|   |   |   |
|---|---|---|
| <b>MedicationAdministration.partOf</b>        | 0 | * |
| <b>MedicationAdministration.status</b>        | 1 | 1 |
| <b>MedicationAdministration.statusReason</b>  | 0 | * |
| <b>MedicationAdministration.category</b>      | 0 | 1 |
| <b>MedicationAdministration.medication[x]</b> | 1 | 1 |
| <b>MedicationAdministration.subject</b>       | 1 | 1 |
| <b>MedicationAdministration.context</b>       | 0 | 1 |

|   |   |   |
|---|---|---|
| <b>MedicationAdministration.supportingInformation</b> | 0 | * |
| <b>MedicationAdministration.effective[x]</b>          | 1 | 1 |
| <b>MedicationAdministration.performer</b>             | 0 | * |
| <b>MedicationAdministration.performer.id</b>          | 0 | 1 |
| <b>MedicationAdministration.performer.extension</b>   | 0 | * |

|   |   |   |
|---|---|---|
| <b>MedicationAdministration.performer.modifierExtension</b> | 0 | * |
| <b>MedicationAdministration.performer.function</b>          | 0 | 1 |
| <b>MedicationAdministration.performer.actor</b>             | 1 | 1 |
| <b>MedicationAdministration.reasonCode</b>                  | 0 | * |
| <b>MedicationAdministration.reasonReference</b>             | 0 | * |
| <b>MedicationAdministration.request</b>                     | 0 | 1 |

|  |   |   |
|--|---|---|
| <b>MedicationAdministration.device</b>           | 0 | * |
| <b>MedicationAdministration.note</b>             | 0 | * |
| <b>MedicationAdministration.dosage</b>           | 0 | 1 |
| <b>MedicationAdministration.dosage.id</b>        | 0 | 1 |
| <b>MedicationAdministration.dosage.extension</b> | 0 | * |



|  |   |   |
|--|---|---|
| <b>MedicationAdministration.dosage.modifierExtension</b> | 0 | * |
| <b>MedicationAdministration.dosage.text</b>              | 0 | 1 |
| <b>MedicationAdministration.dosage.site</b>              | 0 | 1 |

|  |   |   |
|--|---|---|
| <b>MedicationAdministration.dosage.route</b>   | 0 | 1 |
| <b>MedicationAdministration.dosage.method</b>  | 0 | 1 |
| <b>MedicationAdministration.dosage.dose</b>    | 0 | 1 |
| <b>MedicationAdministration.dosage.rate[x]</b> | 0 | 1 |
| <b>MedicationAdministration.eventHistory</b>   | 0 | * |

| <b>Data Type(s)</b> | <b>FHIR Short Description</b>                       |
|---------------------|---|
|                     | Administration of medication to a patient           |
| id                  | Logical id of this artifact                         |
| Meta                | Metadata about the resource                         |
| uri                 | A set of rules under which this content was created |
| code                | Language of the resource content                    |

|           |  |
|-----------|--|
| Narrative | Text summary of the resource, for human interpretation |
| Resource  | Contained, inline Resources                            |
| Extension | Additional content defined by implementations          |

|            |                                     |
|------------|-------------------------------------|
| Extension  | Extensions that cannot be ignored   |
| Identifier | External identifier                 |
| uri        | Instantiates protocol or definition |

|   |   |
|---|---|
| Reference(MedicationAdministration Procedure) | Part of referenced event  |
| code  | in-progress   not-done   on-hold   completed   entered-in-error   stopped   unknown |
| CodeableConcept                               | Reason administration not performed   |
| CodeableConcept                               | Type of medication usage  |
| CodeableConcept<br>Reference(Medication)      | What was administered   |
| Reference(Patient Group)                      | Who received medication   |
| Reference(Encounter EpisodeOfCare)            | Encounter or Episode of Care administered as part of                                |

|                    |   |
|--------------------|---|
| Reference(Any)     | Additional information to support administration              |
| dateTime<br>Period | Start and end time of administration                          |
| BackboneElement    | Who performed the medication administration and what they did |
| string             | Unique id for inter-element referencing                       |
| Extension          | Additional content defined by implementations                 |

|   |  |
|---|--|
| Extension   | Extensions that cannot be ignored even if unrecognized                     |
| CodeableConcept   | Type of performance  |
| Reference(Practitioner PractitionerRole Patient RelatedPerson Device) | Who performed the medication administration                                |
| CodeableConcept   | Reason administration performed  |
| Reference(Condition Observation DiagnosticReport)                     | Condition or observation that supports why the medication was administered |
| Reference(MedicationRequest)  | Request administration performed against                                   |



|                   |   |
|-------------------|---|
| Reference(Device) | Device used to administer   |
| Annotation        | Information about the administration  |
| BackboneElement   | Details of how medication was taken<br><br>+ Rule: SHALL have at least one of dosage.dose or dosage.rate[x] |
| string            | Unique id for inter-element referencing   |
| Extension         | Additional content defined by implementations   |

|                 |  |
|-----------------|--|
| Extension       | Extensions that cannot be ignored even if unrecognized |
| string          | Free text dosage instructions e.g. SIG                 |
| CodeableConcept | Body site administered to                              |

|                         |   |
|-------------------------|---|
| CodeableConcept         | Path of substance into body                   |
| CodeableConcept         | How drug was administered                     |
| SimpleQuantity          | Amount of medication per dose                 |
| Ratio<br>SimpleQuantity | Dose quantity per unit of time                |
| Reference(Provenance)   | A list of events of interest in the lifecycle |

| <b>FHIR Definition</b>  | <b>Binding Strength</b>                      | <b>Binding Description (Value Set Name)</b> |
|---|--|---|
| <p>Describes the event of a patient consuming or otherwise being administered a medication. This may be as simple as swallowing a tablet or it may be a long running infusion. Related resources tie this event to the authorizing prescription, and the specific encounter between patient and health care practitioner.</p> |  |   |
| <p>The logical id of the resource, as used in the URL for the resource. Once assigned, this value never changes.</p>  |  |   |
| <p>The metadata about the resource. This is content that is maintained by the infrastructure. Changes to the content might not always be associated with version changes to the resource.</p>   |  |   |
| <p>A reference to a set of rules that were followed when the resource was constructed, and which must be understood when processing the content. Often, this is a reference to an implementation guide that defines the special rules along with other profiles etc.</p>  |  |   |
| <p>The base language in which the resource is written.</p>  | <p>preferred but limited to AllLanguages</p> | <p>CommonLanguages</p>                      |

|  |  |  |
|--|--|--|
| <p>A human-readable narrative that contains a summary of the resource and can be used to represent the content of the resource to a human. The narrative need not encode all the structured data, but is required to contain sufficient detail to make it "clinically safe" for a human to just read the narrative. Resource definitions may define what content should be represented in the narrative to ensure clinical safety.</p> |  |  |
| <p>These resources do not have an independent existence apart from the resource that contains them - they cannot be identified independently, and nor can they have their own independent transaction scope.</p>   |  |  |
| <p>May be used to represent additional information that is not part of the basic definition of the resource. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension.</p>                                  |  |  |

|  |  |  |
|--|--|--|
| <p>May be used to represent additional information that is not part of the basic definition of the resource and that modifies the understanding of the element that contains it and/or the understanding of the containing element's descendants. Usually modifier elements provide negation or qualification. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer is allowed to define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension. Applications processing a resource are required to check for modifier extensions.</p> <p>Modifier extensions SHALL NOT change the meaning of any elements on Resource or DomainResource (including cannot change the meaning of modifierExtension itself).</p> |  |  |
| <p>Identifiers associated with this Medication Administration that are defined by business processes and/or used to refer to it when a direct URL reference to the resource itself is not appropriate. They are business identifiers assigned to this resource by the performer or other systems and remain constant as the resource is updated and propagates from server to server.</p>  |  |  |
| <p>A protocol, guideline, orderset, or other definition that was adhered to in whole or in part by this event.</p>   |  |  |

|  |                         |   |
|--|-------------------------|---|
| A larger event of which this particular event is a component or step.  |                         |   |
| Will generally be set to show that the administration has been completed. For some long running administrations such as infusions, it is possible for an administration to be started but not completed or it may be paused while some other process is under way. | required                | MedicationAdministration Status Codes   |
| A code indicating why the administration was not performed.  | example<br>extensible   | SNOMEDCTReasonMedicationNotGivenCodes   |
| Indicates where the medication is expected to be consumed or administered.   | preferred<br>extensible | MedicationAdministration Category Codes |
| Identifies the medication that was administered. This is either a link to a resource representing the details of the medication or a simple attribute carrying a code that identifies the medication from a known list of medications.                             | example<br>extensible   | SNOMEDCTMedicationCodes                 |
| The person or animal or group receiving the medication.  |                         |   |
| The visit, admission, or other contact between patient and health care provider during which the medication administration was performed.  |                         |   |

|  |  |  |
|--|--|--|
| <p>Additional information (for example, patient height and weight) that supports the administration of the medication.</p>   |  |  |
| <p>A specific date/time or interval of time during which the administration took place (or did not take place, when the 'notGiven' attribute is true). For many administrations, such as swallowing a tablet the use of dateTime is more appropriate.</p>  |  |  |
| <p>Indicates who or what performed the medication administration and how they were involved.</p>   |  |  |
| <p>Unique id for the element within a resource (for internal references). This may be any string value that does not contain spaces.</p>   |  |  |
| <p>May be used to represent additional information that is not part of the basic definition of the element. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension.</p> |  |  |



|   |                |  |
|---|----------------|--|
| <p>May be used to represent additional information that is not part of the basic definition of the element and that modifies the understanding of the element in which it is contained and/or the understanding of the containing element's descendants. Usually modifier elements provide negation or qualification. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension. Applications processing a resource are required to check for modifier extensions.</p> <p>Modifier extensions SHALL NOT change the meaning of any elements on Resource or DomainResource (including cannot change the meaning of modifierExtension itself).</p> |                |  |
| <p>Distinguishes the type of involvement of the performer in the medication administration.</p>   | <p>example</p> | <p>MedicationAdministration Performer Function Codes</p> |
| <p>Indicates who or what performed the medication administration.</p>   |                |  |
| <p>A code indicating why the medication was given.</p>  | <p>example</p> | <p>ReasonMedicationGivenCodes</p>                        |
| <p>Condition or observation that supports why the medication was administered.</p>  |                |  |
| <p>The original request, instruction or authority to perform the administration.</p>  |                |  |

|  |  |  |
|--|--|--|
| <p>The device used in administering the medication to the patient. For example, a particular infusion pump.</p>  |  |  |
| <p>Extra information about the medication administration that is not conveyed by the other attributes.</p>   |  |  |
| <p>Describes the medication dosage information details e.g. dose, rate, site, route, etc.</p>  |  |  |
| <p>Unique id for the element within a resource (for internal references). This may be any string value that does not contain spaces.</p>   |  |  |
| <p>May be used to represent additional information that is not part of the basic definition of the element. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension.</p> |  |  |

|   |                |  |
|---|----------------|--|
| <p>May be used to represent additional information that is not part of the basic definition of the element and that modifies the understanding of the element in which it is contained and/or the understanding of the containing element's descendants. Usually modifier elements provide negation or qualification. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension. Applications processing a resource are required to check for modifier extensions.</p> <p>Modifier extensions SHALL NOT change the meaning of any elements on Resource or DomainResource (including cannot change the meaning of modifierExtension itself).</p> |                |  |
| <p>Free text dosage can be used for cases where the dosage administered is too complex to code. When coded dosage is present, the free text dosage may still be present for display to humans. <code>__x000D__x000D_</code>The dosage instructions should reflect the dosage of the medication that was administered.</p>   |                |  |
| <p>A coded specification of the anatomic site where the medication first entered the body. For example, "left arm".</p>   | <p>example</p> | <p>SNOMEDCTAnatomicalStructureForAdministrationSiteCodes</p> |

|   |                               |  |
|---|-------------------------------|--|
| <p>A code specifying the route or physiological path of administration of a therapeutic agent into or onto the patient. For example, topical, intravenous, etc.</p>   | <p>example<br/>extensible</p> | <p>SNOMEDCTRouteCodes</p>                |
| <p>A coded value indicating the method by which the medication is intended to be or was introduced into or on the body. This attribute will most often NOT be populated. It is most commonly used for injections. For example, Slow Push, Deep IV.</p>  | <p>example</p>                | <p>SNOMEDCTAdministrationMethodCodes</p> |
| <p>The amount of the medication given at one administration event. Use this value when the administration is essentially an instantaneous event such as a swallowing a tablet or giving an injection.</p>   |                               |  |
| <p>Identifies the speed with which the medication was or will be introduced into the patient. Typically, the rate for an infusion e.g. 100 ml per 1 hour or 100 ml/hr. May also be expressed as a rate per unit of time, e.g. 500 ml per 2 hours. Other examples: 200 mcg/min or 200 mcg/1 minute; 1 liter/8 hours.</p> |                               |  |
| <p>A summary of the events of interest that have occurred, such as when the administration was verified.</p>  |                               |  |

| Binding Value Set   | ACH dQM   |
|---|-----------|
|   | MS [0..*] |
|   | R [1..1]  |
|   | NRT       |
|   | NRT       |
| <a href="http://hl7.org/fhir/ValueSet/la">http://hl7.org/fhir/ValueSet/la</a> | NRT       |

|  |     |
|--|-----|
|  | NRT |
|  | NRT |
|  | NRT |

|  |     |
|--|-----|
|  | NRT |
|  | NRT |
|  | NR  |

|   |   |
|---|---|
|   | NR  |
| <a href="http://hl7.org/fhir/ValueSet/m">http://hl7.org/fhir/ValueSet/m</a>   | R [1..1]  |
| <a href="http://hl7.org/fhir/ValueSet/re">http://hl7.org/fhir/ValueSet/re</a> | MS [0..*]<br>Binding strength=<br>extensible                      |
| <a href="http://hl7.org/fhir/R4/valuese">http://hl7.org/fhir/R4/valuese</a>   | MS [0..*]<br>Binding strength=<br>extensible                      |
| <a href="http://hl7.org/fhir/ValueSet/m">http://hl7.org/fhir/ValueSet/m</a>   | R [1..1]<br>Binding strength=<br>extensible<br>Using RXNorm codes |
|   | R [1..1]  |
|   | MS [0..1]   |



|  |          |
|--|----------|
|  | NR       |
|  | R [1..1] |
|  | NR       |
|  | NRT      |
|  | NRT      |

|   |           |
|---|-----------|
|   | NRT       |
| <a href="http://hl7.org/fhir/ValueSet/m">http://hl7.org/fhir/ValueSet/m</a>   | NR        |
|   | NR        |
| <a href="http://hl7.org/fhir/ValueSet/re">http://hl7.org/fhir/ValueSet/re</a> | MS [0..*] |
|   | MS [0..*] |
|   | MS [0..1] |

|  |          |
|--|----------|
|  | NR       |
|  | NR       |
|  | R [1..1] |
|  | NRT      |
|  | NRT      |

|   |     |
|---|-----|
|   | NRT |
|   | NR  |
| <a href="http://hl7.org/fhir/ValueSet/a">http://hl7.org/fhir/ValueSet/a</a> | NR  |

|   |   |
|---|---|
| <a href="http://hl7.org/fhir/ValueSet/ro">http://hl7.org/fhir/ValueSet/ro</a> | R [1..1]<br>Binding strength=<br>extensible |
| <a href="http://hl7.org/fhir/ValueSet/a">http://hl7.org/fhir/ValueSet/a</a>   | MS [0..1]                                   |
|   | R [1..1]                                    |
|   | NR  |
|   | NR  |

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| <b>FHIR Path</b>                | <b>Min</b> | <b>Max</b> | <b>Must Support?</b> |
|---------------------------------|------------|------------|----------------------|
| <b>MedicationRequest</b>        | 0          | *          |                      |
| MedicationRequest.id            | 0          | 1          |                      |
| MedicationRequest.meta          | 0          | 1          |                      |
| MedicationRequest.implicitRules | 0          | 1          |                      |

|                             |   |   |  |
|-----------------------------|---|---|--|
| MedicationRequest.language  | 0 | 1 |  |
| MedicationRequest.text      | 0 | 1 |  |
| MedicationRequest.contained | 0 | * |  |

|                                     |   |   |  |
|-------------------------------------|---|---|--|
| MedicationRequest.extension         | 0 | * |  |
| MedicationRequest.modifierExtension | 0 | * |  |



|                                     |   |   |   |
|-------------------------------------|---|---|---|
| <b>MedicationRequest.identifier</b> | 0 | * |   |
| <b>MedicationRequest.status</b>     | 1 | 1 | Y |
| MedicationRequest.statusReason      | 0 | 1 |   |
| <b>MedicationRequest.intent</b>     | 1 | 1 | Y |

|  |   |   |   |
|--|---|---|---|
| <b>MedicationRequest.category</b>      | 0 | * |   |
| <b>MedicationRequest.priority</b>      | 0 | 1 |   |
| <b>MedicationRequest.doNotPerform</b>  | 0 | 1 |   |
| <b>MedicationRequest.reported[x]</b>   | 0 | 1 | Y |
| <b>MedicationRequest.medication[x]</b> | 1 | 1 | Y |
| <b>MedicationRequest.subject</b>       | 1 | 1 | Y |

|  |   |   |   |
|--|---|---|---|
| <b>MedicationRequest.encounter</b>             | 0 | 1 | Y |
| <b>MedicationRequest.supportingInformation</b> | 0 | * |   |
| <b>MedicationRequest.authoredOn</b>            | 1 | 1 | Y |
| <b>MedicationRequest.requester</b>             | 1 | 1 | Y |
| <b>MedicationRequest.performer</b>             | 0 | 1 |   |
| <b>MedicationRequest.performerType</b>         | 0 | 1 |   |
| <b>MedicationRequest.recorder</b>              | 0 | 1 |   |
| <b>MedicationRequest.reasonCode</b>            | 0 | * |   |
| <b>MedicationRequest.reasonReference</b>       | 0 | * |   |

|  |   |   |  |
|--|---|---|--|
| <b>MedicationRequest.instantiatesCanonical</b> | 0 | * |  |
| <b>MedicationRequest.instantiatesUri</b>       | 0 | * |  |
| <b>MedicationRequest.basedOn</b>               | 0 | * |  |
| <b>MedicationRequest.groupIdentifier</b>       | 0 | 1 |  |
| <b>MedicationRequest.courseOfTherapyType</b>   | 0 | 1 |  |
| <b>MedicationRequest.insurance</b>             | 0 | * |  |
| <b>MedicationRequest.note</b>                  | 0 | * |  |

|   |   |   |   |
|---|---|---|---|
| <b>MedicationRequest.dosageInstruction</b>    | 0 | * | Y |
| MedicationRequest.dosageInstruction.id        | 0 | 1 |   |
| MedicationRequest.dosageInstruction.extension | 0 | * |   |

|   |   |   |   |
|---|---|---|---|
| MedicationRequest.dosageInstruction.modifierExtension     | 0 | * |   |
| MedicationRequest.dosageInstruction.sequence              | 0 | 1 |   |
| MedicationRequest.dosageInstruction.text                  | 0 | 1 | Y |
| MedicationRequest.dosageInstruction.additionalInstruction | 0 | * |   |
| MedicationRequest.dosageInstruction.patientInstruction    | 0 | 1 |   |

|  |   |   |  |
|--|---|---|--|
| MedicationRequest.dosageInstruction.timing             | 0 | 1 |  |
| MedicationRequest.dosageInstruction.asNeeded[x]        | 0 | 1 |  |
| MedicationRequest.dosageInstruction.site               | 0 | 1 |  |
| MedicationRequest.dosageInstruction.route              | 0 | 1 |  |
| MedicationRequest.dosageInstruction.method             | 0 | 1 |  |
| <b>MedicationRequest.dosageInstruction.doseAndRate</b> | 0 | * |  |

|   |   |   |  |
|---|---|---|--|
| MedicationRequest.dosageInstruction.doseAndRate.id        | 0 | 1 |  |
| MedicationRequest.dosageInstruction.doseAndRate.extension | 0 | * |  |
| MedicationRequest.dosageInstruction.doseAndRate.type      | 0 | 1 |  |



|   |   |   |  |
|---|---|---|--|
| MedicationRequest.dosageInstruction.doseAndRate.dose[x] | 0 | 1 |  |
|---|---|---|--|

|  |   |   |  |
|--|---|---|--|
| MedicationRequest.dosageInstruction.doseAndRate.rate[x]      | 0 | 1 |  |
| MedicationRequest.dosageInstruction.maxDosePerPeriod         | 0 | 1 |  |
| MedicationRequest.dosageInstruction.maxDosePerAdministration | 0 | 1 |  |
| MedicationRequest.dosageInstruction.maxDosePerLifetime       | 0 | 1 |  |

|   |   |   |  |
|---|---|---|--|
| <b>MedicationRequest.dispenseRequest</b>    | 0 | 1 |  |
| MedicationRequest.dispenseRequest.id        | 0 | 1 |  |
| MedicationRequest.dispenseRequest.extension | 0 | * |  |

|  |   |   |  |
|--|---|---|--|
| MedicationRequest.dispenseRequest.modifierExtension  | 0 | * |  |
| <b>MedicationRequest.dispenseRequest.initialFill</b> | 0 | 1 |  |
| MedicationRequest.dispenseRequest.initialFill.id     | 0 | 1 |  |

|   |   |   |  |
|---|---|---|--|
| MedicationRequest.dispenseRequest.initialFill.extension         | 0 | * |  |
| MedicationRequest.dispenseRequest.initialFill.modifierExtension | 0 | * |  |
| MedicationRequest.dispenseRequest.initialFill.quantity          | 0 | 1 |  |
| MedicationRequest.dispenseRequest.initialFill.duration          | 0 | 1 |  |

|  |   |   |  |
|--|---|---|--|
| MedicationRequest.dispenseRequest.dispenseInterval       | 0 | 1 |  |
| MedicationRequest.dispenseRequest.validityPeriod         | 0 | 1 |  |
| MedicationRequest.dispenseRequest.numberOfRepeatsAllowed | 0 | 1 |  |
| MedicationRequest.dispenseRequest.quantity               | 0 | 1 |  |

|  |   |   |  |
|--|---|---|--|
| MedicationRequest.dispenseRequest.expectedSupplyDuration | 0 | 1 |  |
| MedicationRequest.dispenseRequest.performer              | 0 | 1 |  |
| <b>MedicationRequest.substitution</b>                    | 0 | 1 |  |
| MedicationRequest.substitution.id                        | 0 | 1 |  |
| MedicationRequest.substitution.extension                 | 0 | * |  |

|  |   |   |  |
|--|---|---|--|
| MedicationRequest.substitution.modifierExtension | 0 | * |  |
| MedicationRequest.substitution.allowed[x]        | 1 | 1 |  |
| MedicationRequest.substitution.reason            | 0 | 1 |  |
| MedicationRequest.priorPrescription              | 0 | 1 |  |



|                                 |   |   |  |
|---------------------------------|---|---|--|
| MedicationRequest.detectedIssue | 0 | * |  |
| MedicationRequest.eventHistory  | 0 | * |  |

| <b>Data Type(s)</b> | <b>FHIR Short Description</b>                       |
|---------------------|---|
|                     | Ordering of medication for patient or group         |
| string              | Logical id of this artifact                         |
| Meta                | Metadata about the resource                         |
| uri                 | A set of rules under which this content was created |

|           |  |
|-----------|--|
| code      | Language of the resource content                       |
| Narrative | Text summary of the resource, for human interpretation |
| Resource  | Contained, inline Resources                            |

|           |   |
|-----------|---|
| Extension | Additional content defined by implementations |
| Extension | Extensions that cannot be ignored             |

|                 |  |
|-----------------|--|
| Identifier      | External ids for this request  |
| code            | active   on-hold   cancelled   completed   entered-in-error   stopped   draft   unknown          |
| CodeableConcept | Reason for current status+F14  |
| code            | proposal   plan   order   original-order   reflex-order   filler-order   instance-order   option |

|   |  |
|---|--|
| CodeableConcept   | Type of medication usage               |
| code  | routine   urgent   asap   stat         |
| boolean   | True if request is prohibiting action  |
| boolean<br>Reference( <a href="http://hl7.org/fhir/us/core/StructureDefinition/us-core-practitioner">http://hl7.org/fhir/us/core/StructureDefinition/us-core-practitioner</a>   <a href="http://hl7.org/fhir/us/core/StructureDefinition/us-core-organization">http://hl7.org/fhir/us/core/StructureDefinition/us-core-organization</a>   <a href="http://hl7.org/fhir/us/core/StructureDefinition/us-core-patient">http://hl7.org/fhir/us/core/StructureDefinition/us-core-patient</a>   <a href="http://hl7.org/fhir/us/core/StructureDefinition/us-core-practitionerrole">http://hl7.org/fhir/us/core/StructureDefinition/us-core-practitionerrole</a>   <a href="http://hl7.org/fhir/us/core/StructureDefinition/us-core-relatedperson">http://hl7.org/fhir/us/core/StructureDefinition/us-core-relatedperson</a> ) | Reported rather than primary record    |
| CodeableConcept<br><br>Reference( <a href="http://hl7.org/fhir/us/core/StructureDefinition/us-core-medication">http://hl7.org/fhir/us/core/StructureDefinition/us-core-medication</a> )   | Medication to be taken                 |
| Reference( <a href="http://hl7.org/fhir/us/core/StructureDefinition/us-core-patient">http://hl7.org/fhir/us/core/StructureDefinition/us-core-patient</a> )  | Who or group medication request is for |

|  |  |
|--|--|
| Reference( <a href="http://hl7.org/fhir/us/core/StructureDefinition/us-core-encounter">http://hl7.org/fhir/us/core/StructureDefinition/us-core-encounter</a> ) | Encounter created as part of encounter/admission/stay                        |
| Reference(Resource)  | Information to support ordering of the medication                            |
| dateTime   | When request was initially authored  |
| Reference(US Core Practitioner Profile   US Core Organization Profile   US Core Patient Profile)   | Who/What requested the Request   |
| Reference(Practitioner PractitionerRole Organization Patient Device RelatedPerson CareTeam)  | Intended performer of administration   |
| CodeableConcept  | Desired kind of performer of the medication administration                   |
| Reference(Practitioner PractitionerRole)   | Person who entered the request   |
| CodeableConcept  | Reason or indication for ordering or not ordering the medication             |
| Reference(Condition Observation)   | Condition or observation that supports why the prescription is being written |

|   |  |
|---|--|
| canonical   | Instantiates FHIR protocol or definition     |
| uri   | Instantiates external protocol or definition |
| Reference(CarePlan MedicationRequest ServiceRequest ImmunizationRecommendation) | What request fulfills                        |
| Identifier  | Composite request this is part of            |
| CodeableConcept   | Overall pattern of medication administration |
| Reference(Coverage ClaimResponse)   | Associated insurance coverage                |
| Annotation  | Information about the prescription           |



|           |   |
|-----------|---|
| Dosage    | How the medication should be taken            |
| string    | Unique id for inter-element referencing       |
| Extension | Additional content defined by implementations |

|                 |   |
|-----------------|---|
| Extension       | Extensions that cannot be ignored even if unrecognized  |
| integer         | The order of the dosage instructions  |
| string          | Free text dosage instructions e.g. SIG  |
| CodeableConcept | Supplemental instruction or warnings to the patient - e.g. "with meals", "may cause drowsiness" |
| string          | Patient or consumer oriented instructions   |

|                            |  |
|----------------------------|--|
| Timing                     | When medication should be administered |
| boolean<br>CodeableConcept | Take "as needed" (for x)               |
| CodeableConcept            | Body site to administer to             |
| CodeableConcept            | How drug should enter body             |
| CodeableConcept            | Technique for administering medication |
| Element                    | Amount of medication administered      |

|                 |   |
|-----------------|---|
| string          | Unique id for inter-element referencing       |
| Extension       | Additional content defined by implementations |
| CodeableConcept | The kind of dose or rate specified            |

| Range<br>Quantity {SimpleQuantity} | Amount of medication per dose |
|------------------------------------|-------------------------------|
|                                    |                               |

|  |   |
|--|---|
| Ratio<br>RangeQuantity<br>{SimpleQuantity} | Amount of medication per unit of time                 |
| Ratio                                      | Upper limit on medication per unit of time            |
| Quantity {SimpleQuantity}                  | Upper limit on medication per administration          |
| Quantity {SimpleQuantity}                  | Upper limit on medication per lifetime of the patient |

|                 |   |
|-----------------|---|
| BackboneElement | Medication supply authorization               |
| string          | Unique id for inter-element referencing       |
| Extension       | Additional content defined by implementations |

|                 |  |
|-----------------|--|
| Extension       | Extensions that cannot be ignored even if unrecognized |
| BackboneElement | First fill details                                     |
| string          | Unique id for inter-element referencing                |



|                           |  |
|---------------------------|--|
| Extension                 | Additional content defined by implementations          |
| Extension                 | Extensions that cannot be ignored even if unrecognized |
| Quantity {SimpleQuantity} | First fill quantity                                    |
| Duration                  | First fill duration                                    |

|                           |   |
|---------------------------|---|
| Duration                  | Minimum period of time between dispenses    |
| Period                    | Time period supply is authorized for        |
| unsignedInt               | Number of refills authorized                |
| Quantity {SimpleQuantity} | Amount of medication to supply per dispense |

|                         |   |
|-------------------------|---|
| Duration                | Number of days supply per dispense            |
| Reference(Organization) | Intended dispenser                            |
| BackboneElement         | Any restrictions on medication substitution   |
| string                  | Unique id for inter-element referencing       |
| Extension               | Additional content defined by implementations |

|                              |  |
|------------------------------|--|
| Extension                    | Extensions that cannot be ignored even if unrecognized |
| boolean<br>CodeableConcept   | Whether substitution is allowed or not                 |
| CodeableConcept              | Why should (not) substitution be made                  |
| Reference(MedicationRequest) | An order/prescription that is being replaced           |

|                          |   |
|--------------------------|---|
| Reference(DetectedIssue) | Clinical Issue with action                    |
| Reference(Provenance)    | A list of events of interest in the lifecycle |

| FHIR Definition  | Comments  | Binding Strength |
|--|---|------------------|
| <p>The US Core Medication Request (Order) Profile is based upon the core FHIR MedicationRequest Resource and created to meet the 2015 Edition Common Clinical Data Set 'Medications' requirements.</p>   |   |                  |
| <p>The logical id of the resource, as used in the URL for the resource. Once assigned, this value never changes.</p>   | <p>The only time that a resource does not have an id is when it is being submitted to the server using a create operation.</p>  |                  |
| <p>The metadata about the resource. This is content that is maintained by the infrastructure. Changes to the content might not always be associated with version changes to the resource.</p>  |   |                  |
| <p>A reference to a set of rules that were followed when the resource was constructed, and which must be understood when processing the content. Often, this is a reference to an implementation guide that defines the special rules along with other profiles etc.</p> | <p>Asserting this rule set restricts the content to be only understood by a limited set of trading partners. This inherently limits the usefulness of the data in the long term. However, the existing health eco-system is highly fractured, and not yet ready to define, collect, and exchange data in a generally computable sense. Wherever possible, implementers and/or specification writers should avoid using this element. Often, when used, the URL is a reference to an implementation guide that defines these special rules as part of it's narrative along with other profiles, value sets, etc.</p> |                  |

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| <p>The base language in which the resource is written.</p>   | <p>Language is provided to support indexing and accessibility (typically, services such as text to speech use the language tag). The html language tag in the narrative applies to the narrative. The language tag on the resource may be used to specify the language of other presentations generated from the data in the resource. Not all the content has to be in the base language. The Resource.language should not be assumed to apply to the narrative automatically. If a language is specified, it should it also be specified on the div element in the html (see rules in HTML5 for information about the relationship between xml:lang and the html lang attribute).</p> | <p>preferred</p> |
| <p>A human-readable narrative that contains a summary of the resource and can be used to represent the content of the resource to a human. The narrative need not encode all the structured data, but is required to contain sufficient detail to make it "clinically safe" for a human to just read the narrative. Resource definitions may define what content should be represented in the narrative to ensure clinical safety.</p> | <p>Contained resources do not have narrative. Resources that are not contained SHOULD have a narrative. In some cases, a resource may only have text with little or no additional discrete data (as long as all minOccurs=1 elements are satisfied). This may be necessary for data from legacy systems where information is captured as a "text blob" or where text is additionally entered raw or narrated and encoded information is added later.</p>  |                  |
| <p>These resources do not have an independent existence apart from the resource that contains them - they cannot be identified independently, and nor can they have their own independent transaction scope.</p>   | <p>This should never be done when the content can be identified properly, as once identification is lost, it is extremely difficult (and context dependent) to restore it again. Contained resources may have profiles and tags in their meta elements, but SHALL NOT have security labels.</p>   |                  |

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| <p>May be used to represent additional information that is not part of the basic definition of the resource. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension.</p>  | <p>There can be no stigma associated with the use of extensions by any application, project, or standard - regardless of the institution or jurisdiction that uses or defines the extensions. The use of extensions is what allows the FHIR specification to retain a core level of simplicity for everyone.</p> |  |
| <p>May be used to represent additional information that is not part of the basic definition of the resource and that modifies the understanding of the element that contains it and/or the understanding of the containing element's descendants. Usually modifier elements provide negation or qualification. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer is allowed to define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension. Applications processing a resource are required to check for modifier extensions.</p> <p>Modifier extensions SHALL NOT change the meaning of any elements on Resource or DomainResource (including cannot change the meaning of modifierExtension itself).</p> | <p>There can be no stigma associated with the use of extensions by any application, project, or standard - regardless of the institution or jurisdiction that uses or defines the extensions. The use of extensions is what allows the FHIR specification to retain a core level of simplicity for everyone.</p> |  |



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| <p>Identifiers associated with this medication request that are defined by business processes and/or used to refer to it when a direct URL reference to the resource itself is not appropriate. They are business identifiers assigned to this resource by the performer or other systems and remain constant as the resource is updated and propagates from server to server.</p> | <p>This is a business identifier, not a resource identifier.</p>  |                               |
| <p>A code specifying the current state of the order. Generally, this will be active or completed state.</p>  | <p>This element is labeled as a modifier because the status contains codes that mark the resource as not currently valid.</p>   | <p>required</p>               |
| <p>Captures the reason for the current state of the MedicationRequest.</p>   | <p>This is generally only used for "exception" statuses such as "suspended" or "cancelled". The reason why the MedicationRequest was created at all is captured in reasonCode, not here.</p>  | <p>example<br/>extensible</p> |
| <p>Whether the request is a proposal, plan, or an original order.</p>  | <p>It is expected that the type of requester will be restricted for different stages of a MedicationRequest. For example, Proposals can be created by a patient, relatedPerson, Practitioner or Device. Plans can be created by Practitioners, Patients, RelatedPersons and Devices. Original orders can be created by a Practitioner only.</p> <p>An instance-order is an instantiation of a request or order and may be used to populate Medication Administration Record.</p> <p>This element is labeled as a modifier because the intent alters when and how the resource is actually applicable.</p> | <p>required</p>               |

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| <p>Indicates the type of medication request (for example, where the medication is expected to be consumed or administered (i.e. inpatient or outpatient)).</p>   | <p>The category can be used to include where the medication is expected to be consumed or other types of requests.</p>   | <p>example<br/>extensible</p> |
| <p>Indicates how quickly the Medication Request should be addressed with respect to other requests.</p>  |  | <p>required</p>               |
| <p>If true indicates that the provider is asking for the medication request not to occur.</p>  | <p>If do not perform is not specified, the request is a positive request e.g. "do perform".</p>  |                               |
| <p>Indicates if this record was captured as a secondary 'reported' record rather than as an original primary source-of-truth record. It may also indicate the source of the report.</p>  |  |                               |
| <p>Identifies the medication being requested. This is a link to a resource that represents the medication which may be the details of the medication or simply an attribute carrying a code that identifies the medication from a known list of medications.</p> | <p>If only a code is specified, then it needs to be a code for a specific product. If more information is required, then the use of the Medication resource is recommended. For example, if you require form or lot number or if the medication is compounded or extemporaneously prepared, then you must reference the Medication resource.</p> | <p>extensible</p>             |
| <p>A link to a resource representing the person or set of individuals to whom the medication will be given.</p>  | <p>The subject on a medication request is mandatory. For the secondary use case where the actual subject is not provided, there still must be an anonymized subject specified.</p>   |                               |

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| <p>The Encounter during which this [x] was created or to which the creation of this record is tightly associated.</p>             | <p>This will typically be the encounter the event occurred within, but some activities may be initiated prior to or after the official completion of an encounter but still be tied to the context of the encounter." If there is a need to link to episodes of care they will be handled with an extension.</p> |                |
| <p>Include additional information (for example, patient height and weight) that supports the ordering of the medication.</p>      |  |                |
| <p>The date (and perhaps time) when the prescription was initially written or authored on.</p>                                    |  |                |
| <p>The individual, organization, or device that initiated the request and has responsibility for its activation.</p>              |  |                |
| <p>The specified desired performer of the medication treatment (e.g. the performer of the medication administration).</p>         |  |                |
| <p>Indicates the type of performer of the administration of the medication.</p>   | <p>If specified without indicating a performer, this indicates that the performer must be of the specified type. If specified with a performer then it indicates the requirements of the performer if the designated performer is not available.</p>   | <p>example</p> |
| <p>The person who entered the order on behalf of another individual for example in the case of a verbal or a telephone order.</p> |  |                |
| <p>The reason or the indication for ordering or not ordering the medication.</p>  | <p>This could be a diagnosis code. If a full condition record exists or additional detail is needed, use reasonReference.</p>  | <p>example</p> |
| <p>Condition or observation that supports why the medication was ordered.</p>   | <p>This is a reference to a condition or observation that is the reason for the medication order. If only a code exists, use reasonCode.</p>   |                |

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| <p>The URL pointing to a protocol, guideline, orderset, or other definition that is adhered to in whole or in part by this MedicationRequest.</p>                                      | <p>can include a version number (FHIR based)</p>                                  |                |
| <p>The URL pointing to an <b>externally</b> maintained protocol, guideline, orderset or other definition that is adhered to in whole or in part by this MedicationRequest.</p>         |   |                |
| <p>A plan or request that is fulfilled in whole or in part by this medication request.</p>   |   |                |
| <p>A shared identifier common to all requests that were authorized more or less simultaneously by a single author, representing the identifier of the requisition or prescription.</p> |   |                |
| <p>The description of the overall pattern of the administration of the medication to the patient.</p>  | <p>This attribute should not be confused with the protocol of the medication.</p> | <p>example</p> |
| <p>Insurance plans, coverage extensions, pre-authorizations and/or pre-determinations that may be required for delivering the requested service.</p>                                   |   |                |
| <p>Extra information about the prescription that could not be conveyed by the other attributes.</p>  |   |                |

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| <p>Indicates how the medication is to be used by the patient.</p>  | <p>There are examples where a medication request may include the option of an oral dose or an Intravenous or Intramuscular dose. For example, "Ondansetron 8mg orally or IV twice a day as needed for nausea" or "Compazine® (prochlorperazine) 5-10mg PO or 25mg PR bid prn nausea or vomiting". In these cases, two medication requests would be created that could be grouped together. The decision on which dose and route of administration to use is based on the patient's condition at the time the dose is needed.</p> |  |
| <p>Unique id for the element within a resource (for internal references). This may be any string value that does not contain spaces.</p>   |  |  |
| <p>May be used to represent additional information that is not part of the basic definition of the element. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension.</p> | <p>There can be no stigma associated with the use of extensions by any application, project, or standard - regardless of the institution or jurisdiction that uses or defines the extensions. The use of extensions is what allows the FHIR specification to retain a core level of simplicity for everyone.</p>   |  |

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| <p>Indicates the order in which the dosage instructions should be applied or interpreted.</p>   |  |                |
| <p>Free text dosage instructions e.g. SIG.</p>  |  |                |
| <p>Supplemental instructions to the patient on how to take the medication (e.g. "with meals" or "take half to one hour before food") or warnings for the patient about the medication (e.g. "may cause drowsiness" or "avoid exposure of skin to direct sunlight or sunlamps").</p>   | <p>Information about administration or preparation of the medication (e.g. "infuse as rapidly as possibly via intraperitoneal port" or "immediately following drug x") should be populated in dosage.text.</p>   | <p>example</p> |
| <p>Instructions in terms that are understood by the patient or consumer.</p>  |  |                |

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| When medication should be administered.  | This attribute might not always be populated while the Dosage.text is expected to be populated. If both are populated, then the Dosage.text should reflect the content of the Dosage.timing.   |                       |
| Indicates whether the Medication is only taken when needed within a specific dosing schedule (Boolean option), or it indicates the precondition for taking the Medication (CodeableConcept). | Can express "as needed" without a reason by setting the Boolean = True. In this case the CodeableConcept is not populated. Or you can express "as needed" with a reason by including the CodeableConcept. In this case the Boolean is assumed to be True. If you set the Boolean to False, then the dose is given according to the schedule and is not "prn" or "as needed". | example               |
| Body site to administer to.  | If the use case requires attributes from the BodySite resource (e.g. to identify and track separately) then use the standard extension [bodySite](http://hl7.org/fhir/R4/extension-bodysite.html). May be a summary code, or a reference to a very precise definition of the location, or both.  | example               |
| How drug should enter body.  |  | example<br>extensible |
| Technique for administering medication.  | Terminologies used often pre-coordinate this term with the route and or form of administration.  | example               |
| The amount of medication administered.   |  |                       |

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| <p>Unique id for the element within a resource (for internal references). This may be any string value that does not contain spaces.</p>   |  |                |
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| <p>The kind of dose or rate specified, for example, ordered or calculated.</p>   |  | <p>example</p> |



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| Amount of medication per dose. | <p>Note that this specifies the quantity of the specified medication, not the quantity for each active ingredient(s). Each ingredient amount can be communicated in the Medication resource. For example, if one wants to communicate that a tablet was 375 mg, where the dose was one tablet, you can use the Medication resource to document that the tablet was comprised of 375 mg of drug XYZ. Alternatively if the dose was 375 mg, then you may only need to use the Medication resource to indicate this was a tablet. If the example were an IV such as dopamine and you wanted to communicate that 400mg of dopamine was mixed in 500 ml of some IV solution, then this would all be communicated in the Medication resource. If the administration is not intended to be instantaneous (rate is present or timing has a duration), this can be specified to convey the total amount to be administered over the period of time as indicated by the schedule e.g. 500 ml in dose, with timing used to convey that this should be done over 4 hours.</p> |  |
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| <p>Amount of medication per unit of time.</p>                 | <p>It is possible to supply both a rate and a doseQuantity to provide full details about how the medication is to be administered and supplied. If the rate is intended to change over time, depending on local rules/regulations, each change should be captured as a new version of the MedicationRequest with an updated rate, or captured with a new MedicationRequest with the new rate. It is possible to specify a rate over time (for example, 100 ml/hour) using either the rateRatio and rateQuantity. The rateQuantity approach requires systems to have the capability to parse UCUM grammar where ml/hour is included rather than a specific ratio where the time is specified as the denominator. Where a rate such as 500ml over 2 hours is specified, the use of rateRatio may be more semantically correct than specifying using a rateQuantity of 250 mg/hour.</p> |  |
| <p>Upper limit on medication per unit of time.</p>            | <p>This is intended for use as an adjunct to the dosage when there is an upper cap. For example "2 tablets every 4 hours to a maximum of 8/day".</p>   |  |
| <p>Upper limit on medication per administration.</p>          | <p>This is intended for use as an adjunct to the dosage when there is an upper cap. For example, a body surface area related dose with a maximum amount, such as 1.5 mg/m<sup>2</sup> (maximum 2 mg) IV over 5 - 10 minutes would have doseQuantity of 1.5 mg/m<sup>2</sup> and maxDosePerAdministration of 2 mg.</p>  |  |
| <p>Upper limit on medication per lifetime of the patient.</p> |  |  |

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| <p>Indicates the specific details for the dispense or medication supply part of a medication request (also known as a Medication Prescription or Medication Order). Note that this information is not always sent with the order. There may be in some settings (e.g. hospitals) institutional or system support for completing the dispense details in the pharmacy department.</p>                 |  |  |
| <p>Unique id for the element within a resource (for internal references). This may be any string value that does not contain spaces.</p>   |  |  |
| <p>May be used to represent additional information that is not part of the basic definition of the element. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension.</p> | <p>There can be no stigma associated with the use of extensions by any application, project, or standard - regardless of the institution or jurisdiction that uses or defines the extensions. The use of extensions is what allows the FHIR specification to retain a core level of simplicity for everyone.</p> |  |

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| <p>Indicates the quantity or duration for the first dispense of the medication.</p>   | <p>If populating this element, either the quantity or the duration must be included.</p>   |  |
| <p>Unique id for the element within a resource (for internal references). This may be any string value that does not contain spaces.</p>  |  |  |

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| <p>The amount or quantity to provide as part of the first dispense.</p>   |  |  |
| <p>The length of time that the first dispense is expected to last.</p>  |  |  |

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| <p>The minimum period of time that must occur between dispenses of the medication.</p>  |   |  |
| <p>This indicates the validity period of a prescription (stale dating the Prescription).</p>  | <p>It reflects the prescribers' perspective for the validity of the prescription. Dispenses must not be made against the prescription outside of this period. The lower-bound of the Dispensing Window signifies the earliest date that the prescription can be filled for the first time. If an upper-bound is not specified then the Prescription is open-ended or will default to a stale-date based on regulations.</p> |  |
| <p>An integer indicating the number of times, in addition to the original dispense, (aka refills or repeats) that the patient can receive the prescribed medication. Usage Notes: This integer does not include the original order dispense. This means that if an order indicates dispense 30 tablets plus "3 repeats", then the order can be dispensed a total of 4 times and the patient can receive a total of 120 tablets. A prescriber may explicitly say that zero refills are permitted after the initial dispense.</p> | <p>If displaying "number of authorized fills", add 1 to this number.</p>  |  |
| <p>The amount that is to be dispensed for one fill.</p>   |   |  |

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| <p>Identifies the period time over which the supplied product is expected to be used, or the length of time the dispense is expected to last.</p>  | <p>In some situations, this attribute may be used instead of quantity to identify the amount supplied by how long it is expected to last, rather than the physical quantity issued, e.g. 90 days supply of medication (based on an ordered dosage). When possible, it is always better to specify quantity, as this tends to be more precise. expectedSupplyDuration will always be an estimate that can be influenced by external factors.</p> |  |
| <p>Indicates the intended dispensing Organization specified by the prescriber.</p>   |   |  |
| <p>Indicates whether or not substitution can or should be part of the dispense. In some cases, substitution must happen, in other cases substitution must not happen. This block explains the prescriber's intent. If nothing is specified substitution may be done.</p>   |   |  |
| <p>Unique id for the element within a resource (for internal references). This may be any string value that does not contain spaces.</p>   |   |  |
| <p>May be used to represent additional information that is not part of the basic definition of the element. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension.</p> | <p>There can be no stigma associated with the use of extensions by any application, project, or standard - regardless of the institution or jurisdiction that uses or defines the extensions. The use of extensions is what allows the FHIR specification to retain a core level of simplicity for everyone.</p>  |  |

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| <p>True if the prescriber allows a different drug to be dispensed from what was prescribed.</p>   | <p>This element is labeled as a modifier because whether substitution is allow or not, it cannot be ignored.</p>   | <p>example</p> |
| <p>Indicates the reason for the substitution, or why substitution must or must not be performed.</p>  |  | <p>example</p> |
| <p>A link to a resource representing an earlier order related order or prescription.</p>  |  | <p>Y</p>       |



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| <p>Indicates an actual or potential clinical issue with or between one or more active or proposed clinical actions for a patient; e.g. Drug-drug interaction, duplicate therapy, dosage alert etc.</p>   | <p>This element can include a detected issue that has been identified either by a decision support system or by a clinician and may include information on the steps that were taken to address the issue.</p>   | <p>Y</p> |
| <p>Links to Provenance records for past versions of this resource or fulfilling request or event resources that identify key state transitions or updates that are likely to be relevant to a user looking at the current version of the resource.</p> | <p>This might not include provenances for all versions of the request - only those deemed "relevant" or important. This SHALL NOT include the provenance associated with this current version of the resource. (If that provenance is deemed to be a "relevant" change, it will need to be added as part of a later update. Until then, it can be queried directly as the provenance that points to this version using _revinclude All Provenances should have some historical version of this Request as their subject.).</p> | <p>Y</p> |

| Binding Description | Binding Value Set | ACH dQM   |
|---------------------|-------------------|-----------|
|                     |                   | MS [0..*] |
|                     |                   | R [1..1]  |
|                     |                   | NRT       |
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| CommonLanguages | <a href="http://hl7.org/fhir/">http://hl7.org/fhir/</a> | NRT |
|                 |   | NRT |
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| medicationrequest<br>Status              | <a href="http://hl7.org/fhir/ValueSet/medicationrequest-status">http://hl7.org/fhir/ValueSet/medicationrequest-status</a>                             | R [1..1]   |
| medicationRequest<br>Status Reason Codes | <a href="http://hl7.org/fhir/ValueSet/medication-request-status-reason-codes">http://hl7.org/fhir/ValueSet/medication-request-status-reason-codes</a> | MS[0..1]<br><br>Binding<br>strength=<br>extensible |
| medicationRequest<br>Intent              | <a href="http://hl7.org/fhir/ValueSet/medication-request-intent">http://hl7.org/fhir/ValueSet/medication-request-intent</a>                           | R [1..1]   |

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| medicationRequest<br>Category Codes  | <a href="http://hl7.org/fhir/V">http://hl7.org/fhir/V</a>   | MS [0..*]<br><br>Binding<br>strength=<br>extensible |
| RequestPriority                      | <a href="http://hl7.org/fhir/V">http://hl7.org/fhir/V</a>   | MS [0..1]   |
|                                      |   | MS [0..1]   |
|                                      |   | MS [0..1]   |
| US Core Medication<br>Codes (RxNorm) | <a href="http://cts.nlm.nih.gov">http://cts.nlm.nih.gov</a> | R [1..1]  |
|                                      |   | R [1..1]  |

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|--|---|-----------|
|  |   | MS [0..1] |
|  |   | NRT       |
|  |   | R [1..1]  |
|  |   | R [1..1]  |
|  |   | NRT       |
| Procedure<br>Performer Role Codes        | <a href="http://hl7.org/fhir/V">http://hl7.org/fhir/V</a> | NRT       |
|  |   | NR        |
| Condition/<br>Problem/Diagnosis<br>Codes | <a href="http://hl7.org/fhir/V">http://hl7.org/fhir/V</a> | MS [0..*] |
|  |   | MS [0..*] |

|  |   |           |
|--|---|-----------|
|  |   | MS [0..*] |
|  |   | MS [0..*] |
|  |   | NRT       |
|  |   | NRT       |
| Medication request course of therapy codes | <a href="http://hl7.org/fhir/R">http://hl7.org/fhir/R</a> | MS[0..1]  |
|  |   | NRT       |
|  |   | NRT       |



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|--|--|-----------|
|  |  | MS [0..*] |
|  |  | NRT       |
|  |  | NRT       |

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|   |   | NRT       |
|   |   | NRT       |
|   |   | MS [0..1] |
| A coded concept identifying additional instructions such as "take with water" or "avoid operating heavy machinery". | <a href="http://hl7.org/fhir/R">http://hl7.org/fhir/R</a> | NRT       |
|   |   | NR        |

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|  |   | MS [0..1]                                |
| A coded concept identifying the precondition that should be met or evaluated prior to consuming or administering a medication dose. For example "pain", "30 minutes prior to sexual intercourse", "on flare-up" etc. | <a href="http://hl7.org/fhir/V">http://hl7.org/fhir/V</a> | MS [0..1]                                |
| A coded concept describing the site location the medicine enters into or onto the body.  | <a href="http://hl7.org/fhir/V">http://hl7.org/fhir/V</a> | MS [0..1]                                |
| A coded concept describing the route or physiological path of administration of a therapeutic agent into or onto the body of a subject.  | <a href="http://hl7.org/fhir/R">http://hl7.org/fhir/R</a> | R [1..1]<br>Binding strength= extensible |
| A coded concept describing the technique by which the medicine is administered.  | <a href="http://hl7.org/fhir/R">http://hl7.org/fhir/R</a> | MS [0..1]                                |
|  |   | MS [0..*]                                |

|                                     |   |           |
|-------------------------------------|---|-----------|
|                                     |   | NRT       |
|                                     |   | NRT       |
| The kind of dose or rate specified. | <a href="http://hl7.org/fhir/R">http://hl7.org/fhir/R</a> | MS [0..1] |

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|  |  | MS [0..1] |
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|  |  | MS [0..1] |
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|-----------------------------------|---|-----|
|                                   |   | NRT |
| ActSubstanceAdminSubstitutionCode | <a href="http://terminology.h">http://terminology.h</a> | NRT |
| SubstanceAdminSubstitutionReason  | <a href="http://terminology.h">http://terminology.h</a> | NRT |
|                                   |   | NRT |

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|  |  | NRT |
|  |  | NRT |

[Back to TOC](#)

| <b>FHIR Path</b>                 | <b>Min</b> | <b>Max</b> | <b>Data Type(s)</b> |
|----------------------------------|------------|------------|---------------------|
| <b>Observation</b>               | 0          | *          | DomainResource      |
| <b>Observation.id</b>            | 0          | 1          | id                  |
| <b>Observation.meta</b>          | 0          | 1          | Meta                |
| <b>Observation.implicitRules</b> | 0          | 1          | uri                 |
| <b>Observation.language</b>      | 0          | 1          | code                |
| <b>Observation.text</b>          | 0          | 1          | Narrative           |

|                              |   |   |           |
|------------------------------|---|---|-----------|
| <b>Observation.contained</b> | 0 | * | Resource  |
| <b>Observation.extension</b> | 0 | * | Extension |

|                                      |   |   |  |
|--------------------------------------|---|---|--|
| <b>Observation.modifierExtension</b> | 0 | * | Extension  |
| <b>Observation.identifier</b>        | 0 | * | Identifier   |
| <b>Observation.basedOn</b>           | 0 | * | Reference(CarePlan <br>DeviceRequest <br>ImmunizationRecommendation <br>MedicationRequest <br>NutritionOrder <br>ServiceRequest) |
| <b>Observation.partOf</b>            | 0 | * | Reference(MedicationAdministration <br>MedicationDispense <br>MedicationStatement <br>Procedure Immunization <br>ImagingStudy)   |
| <b>Observation.status</b>            | 1 | 1 | code   |



|                             |   |   |   |
|-----------------------------|---|---|---|
| <b>Observation.category</b> | 0 | * | CodeableConcept                                   |
| <b>Observation.code</b>     | 1 | 1 | CodeableConcept                                   |
| <b>Observation.subject</b>  | 0 | 1 | Reference(Patient   Group<br>  Device   Location) |

|                                 |   |   |   |
|---------------------------------|---|---|---|
| <b>Observation.focus</b>        | 0 | * | Reference(Any)                          |
| <b>Observation.encounter</b>    | 0 | 1 | Reference(Encounter)                    |
| <b>Observation.effective[x]</b> | 0 | 1 | dateTime<br>Period<br>Timing<br>Instant |
| <b>Observation.issued</b>       | 0 | 1 | instant                                 |

|                                     |   |   |  |
|-------------------------------------|---|---|--|
| <b>Observation.performer</b>        | 0 | * | Reference(Practitioner PractitionerRole Organization CareTeam Patient RelatedPerson)                                       |
| <b>Observation.value[x]</b>         | 0 | 1 | Quantity<br>CodeableConcept<br>string<br>boolean<br>integer<br>Range<br>Ratio<br>SampledData<br>time<br>dateTime<br>Period |
| <b>Observation.dataAbsentReason</b> | 0 | 1 | CodeableConcept  |
| <b>Observation.interpretation</b>   | 0 | * | CodeableConcept  |
| <b>Observation.note</b>             | 0 | * | Annotation   |
| <b>Observation.bodySite</b>         | 0 | 1 | CodeableConcept  |
| <b>Observation.method</b>           | 0 | 1 | CodeableConcept  |
| <b>Observation.specimen</b>         | 0 | 1 | Reference(Specimen)  |
| <b>Observation.device</b>           | 0 | 1 | Reference(Device DeviceMetric)   |

|   |   |   |                 |
|---|---|---|-----------------|
| <b>Observation.referenceRange</b>           | 0 | * | BackboneElement |
| <b>Observation.referenceRange.id</b>        | 0 | 1 | string          |
| <b>Observation.referenceRange.extension</b> | 0 | * | Extension       |

|  |   |   |                |
|--|---|---|----------------|
| <b>Observation.referenceRange.<br/>modifierExtension</b> | 0 | * | Extension      |
| <b>Observation.referenceRange.<br/>low</b>               | 0 | 1 | SimpleQuantity |
| <b>Observation.referenceRange.<br/>high</b>              | 0 | 1 | SimpleQuantity |

|   |   |   |  |
|---|---|---|--|
| <b>Observation.referenceRange.type</b>      | 0 | 1 | CodeableConcept  |
| <b>Observation.referenceRange.appliesTo</b> | 0 | * | CodeableConcept  |
| <b>Observation.referenceRange.age</b>       | 0 | 1 | Range  |
| <b>Observation.referenceRange.text</b>      | 0 | 1 | string   |
| <b>Observation.hasMember</b>                | 0 | * | Reference(Observation <br>QuestionnaireResponse <br>MolecularSequence) |

|  |   |   |   |
|--|---|---|---|
| <b>Observation.derivedFrom</b>         | 0 | * | Reference(DocumentReference ImagingStudy Media QuestionnaireResponse Observation MolecularSequence) |
| <b>Observation.component</b>           | 0 | * | BackboneElement   |
| <b>Observation.component.id</b>        | 0 | 1 | string  |
| <b>Observation.component.extension</b> | 0 | * | Extension   |

|  |   |   |  |
|--|---|---|--|
| <b>Observation.component.modifierExtension</b> | 0 | * | Extension  |
| <b>Observation.component.code</b>              | 1 | 1 | CodeableConcept  |
| <b>Observation.component.value[x]</b>          | 0 | 1 | Quantity<br>CodeableConcept<br>string<br>boolean<br>integer<br>Range<br>Ratio<br>SampledData<br>time<br>dateTime<br>Period |



|   |   |   |                 |
|---|---|---|-----------------|
| <b>Observation.component.dataAbsentReason</b> | 0 | 1 | CodeableConcept |
| <b>Observation.component.interpretation</b>   | 0 | * | CodeableConcept |
| <b>Observation.component.referenceRange</b>   | 0 | * |                 |

| FHIR Short Description                                 | FHIR Definition   |
|--|---|
| Measurements and simple assertions                     | Measurements and simple assertions made about a patient, device or other subject.   |
| Logical id of this artifact                            | The logical id of the resource, as used in the URL for the resource. Once assigned, this value never changes.   |
| Metadata about the resource                            | The metadata about the resource. This is content that is maintained by the infrastructure. Changes to the content might not always be associated with version changes to the resource.  |
| A set of rules under which this content was created    | A reference to a set of rules that were followed when the resource was constructed, and which must be understood when processing the content. Often, this is a reference to an implementation guide that defines the special rules along with other profiles etc.   |
| Language of the resource content                       | The base language in which the resource is written.   |
| Text summary of the resource, for human interpretation | A human-readable narrative that contains a summary of the resource and can be used to represent the content of the resource to a human. The narrative need not encode all the structured data, but is required to contain sufficient detail to make it "clinically safe" for a human to just read the narrative. Resource definitions may define what content should be represented in the narrative to ensure clinical safety. |

|   |  |
|---|--|
| Contained, inline Resources                   | These resources do not have an independent existence apart from the resource that contains them - they cannot be identified independently, and nor can they have their own independent transaction scope.  |
| Additional content defined by implementations | May be used to represent additional information that is not part of the basic definition of the resource. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension. |

|  |  |
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| Extensions that cannot be ignored            | <p>May be used to represent additional information that is not part of the basic definition of the resource and that modifies the understanding of the element that contains it and/or the understanding of the containing element's descendants. Usually modifier elements provide negation or qualification. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer is allowed to define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension. Applications processing a resource are required to check for modifier extensions.</p> <p>Modifier extensions SHALL NOT change the meaning of any elements on Resource or DomainResource (including cannot change the meaning of modifierExtension itself).</p> |
| Business Identifier for observation          | A unique identifier assigned to this observation.  |
| Fulfills plan, proposal or order             | A plan, proposal or order that is fulfilled in whole or in part by this event. For example, a MedicationRequest may require a patient to have laboratory test performed before it is dispensed.  |
| Part of referenced event                     | A larger event of which this particular Observation is a component or step. For example, an observation as part of a procedure.  |
| registered   preliminary   final   amended + | The status of the result value.  |

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| Classification of type of observation    | A code that classifies the general type of observation being made.   |
| Type of observation (code / type)        | Describes what was observed. Sometimes this is called the observation "name".  |
| Who and/or what the observation is about | The patient, or group of patients, location, or device this observation is about and into whose record the observation is placed. If the actual focus of the observation is different from the subject (or a sample of, part, or region of the subject), the `focus` element or the `code` itself specifies the actual focus of the observation. |

|  |   |
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| <p>What the observation is about, when it is not about the subject of record</p> | <p>The actual focus of an observation when it is not the patient of record representing something or someone associated with the patient such as a spouse, parent, fetus, or donor. For example, fetus observations in a mother's record. The focus of an observation could also be an existing condition, an intervention, the subject's diet, another observation of the subject, or a body structure such as tumor or implanted device. An example use case would be using the Observation resource to capture whether the mother is trained to change her child's tracheostomy tube. In this example, the child is the patient of record and the mother is the focus.</p> |
| <p>Healthcare event during which this observation is made</p>                    | <p>The healthcare event (e.g. a patient and healthcare provider interaction) during which this observation is made.</p>   |
| <p>Clinically relevant time/time-period for observation</p>                      | <p>The time or time-period the observed value is asserted as being true. For biological subjects - e.g. human patients - this is usually called the "physiologically relevant time". This is usually either the time of the procedure or of specimen collection, but very often the source of the date/time is not known, only the date/time itself.</p>  |
| <p>Date/Time this version was made available</p>                                 | <p>The date and time this version of the observation was made available to providers, typically after the results have been reviewed and verified.</p>  |

|  |  |
|--|--|
| Who is responsible for the observation | Who was responsible for asserting the observed value as "true".  |
| Actual result                          | The information determined as a result of making the observation, if the information has a simple value. |
| Why the result is missing              | Provides a reason why the expected value in the element Observation.value[x] is missing.                 |
| High, low, normal, etc.                | A categorical assessment of an observation value. For example, high, low, normal.                        |
| Comments about the observation         | Comments about the observation or the results.   |
| Observed body part                     | Indicates the site on the subject's body where the observation was made (i.e. the target site).          |
| How it was done                        | Indicates the mechanism used to perform the observation.   |
| Specimen used for this observation     | The specimen that was used when this observation was made.   |
| (Measurement) Device                   | The device used to generate the observation data.  |

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| <p>Provides guide for interpretation<br/>+ <i>Rule: Must have at least a low or a high or text</i></p> | <p>Guidance on how to interpret the value by comparison to a normal or recommended range. Multiple reference ranges are interpreted as an "OR". In other words, to represent two distinct target populations, two `referenceRange` elements would be used.</p>  |
| <p>Unique id for inter-element referencing</p>   | <p>Unique id for the element within a resource (for internal references). This may be any string value that does not contain spaces.</p>  |
| <p>Additional content defined by implementations</p>   | <p>May be used to represent additional information that is not part of the basic definition of the element. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that <b>SHALL</b> be met as part of the definition of the extension.</p> |



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| <p>Extensions that cannot be ignored even if unrecognized</p> | <p>May be used to represent additional information that is not part of the basic definition of the element and that modifies the understanding of the element in which it is contained and/or the understanding of the containing element's descendants. Usually modifier elements provide negation or qualification. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension. Applications processing a resource are required to check for modifier extensions.</p> <p>Modifier extensions SHALL NOT change the meaning of any elements on Resource or DomainResource (including cannot change the meaning of modifierExtension itself).</p> |
| <p>Low Range, if relevant</p>                                 | <p>The value of the low bound of the reference range. The low bound of the reference range endpoint is inclusive of the value (e.g. reference range is <math>\geq 5 - \leq 9</math>). If the low bound is omitted, it is assumed to be meaningless (e.g. reference range is <math>\leq 2.3</math>).</p>   |
| <p>High Range, if relevant</p>                                | <p>The value of the high bound of the reference range. The high bound of the reference range endpoint is inclusive of the value (e.g. reference range is <math>\geq 5 - \leq 9</math>). If the high bound is omitted, it is assumed to be meaningless (e.g. reference range is <math>\geq 2.3</math>).</p>  |

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| Reference range qualifier                              | Codes to indicate the what part of the targeted reference population it applies to. For example, the normal or therapeutic range.  |
| Reference range population                             | Codes to indicate the target population this reference range applies to. For example, a reference range may be based on the normal population or a particular sex or race. Multiple `appliesTo` are interpreted as an "AND" of the target populations. For example, to represent a target population of African American females, both a code of female and a code for African American would be used. |
| Applicable age range, if relevant                      | The age at which this reference range is applicable. This is a neonatal age (e.g. number of weeks at term) if the meaning says so.   |
| Text based reference range in an observation           | Text based reference range in an observation which may be used when a quantitative range is not appropriate for an observation. An example would be a reference value of "Negative" or a list or table of "normals".   |
| Related resource that belongs to the Observation group | This observation is a group observation (e.g. a battery, a panel of tests, a set of vital sign measurements) that includes the target as a member of the group.  |

|  |  |
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| <p>Related measurements the observation is made from</p> | <p>The target resource that represents a measurement from which this observation value is derived. For example, a calculated anion gap or a fetal measurement based on an ultrasound image.</p>  |
| <p>Component results</p>                                 | <p>Some observations have multiple component observations. These component observations are expressed as separate code value pairs that share the same attributes. Examples include systolic and diastolic component observations for blood pressure measurement and multiple component observations for genetics observations.</p>  |
| <p>Unique id for inter-element referencing</p>           | <p>Unique id for the element within a resource (for internal references). This may be any string value that does not contain spaces.</p>   |
| <p>Additional content defined by implementations</p>     | <p>May be used to represent additional information that is not part of the basic definition of the element. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension.</p> |

|   |   |
|---|---|
| <p>Extensions that cannot be ignored even if unrecognized</p> | <p>May be used to represent additional information that is not part of the basic definition of the element and that modifies the understanding of the element in which it is contained and/or the understanding of the containing element's descendants. Usually modifier elements provide negation or qualification. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension. Applications processing a resource are required to check for modifier extensions.</p> <p>Modifier extensions SHALL NOT change the meaning of any elements on Resource or DomainResource (including cannot change the meaning of modifierExtension itself).</p> |
| <p>Type of component observation (code / type)</p>            | <p>Describes what was observed. Sometimes this is called the observation "code".</p>  |
| <p>Actual component result</p>                                | <p>The information determined as a result of making the observation, if the information has a simple value.</p>   |

|   |   |
|---|---|
| Why the component result is missing                   | Provides a reason why the expected value in the element <code>Observation.component.value[x]</code> is missing. |
| High, low, normal, etc.                               | A categorical assessment of an observation value. For example, high, low, normal.                               |
| Provides guide for interpretation of component result | Guidance on how to interpret the value by comparison to a normal or recommended range.                          |

| Binding Strength                      | Binding Description (Value Set Name) |
|---------------------------------------|--------------------------------------|
|                                       |                                      |
|                                       |                                      |
|                                       |                                      |
|                                       |                                      |
| preferred but limited to AllLanguages | CommonLanguages                      |
|                                       |                                      |

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|          |                   |
| required | ObservationStatus |



|                       |                          |
|-----------------------|--------------------------|
| preferred             | ObservationCategoryCodes |
| example<br>extensible | LOINCCodes               |
|                       |                          |

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|                       |                                |
| extensible            | DataAbsentReason               |
| extensible            | ObservationInterpretationCodes |
|                       |                                |
| example<br>extensible | SNOMEDCTBodyStructures         |
| example<br>extensible | ObservationMethods             |
|                       |                                |
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|-----------|---|
| preferred | ObservationReferenceRangeMeaningCodes   |
| example   | ObservationReferenceRangeAppliesToCodes |
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|                       |            |
| example<br>extensible | LOINCCodes |
|                       |            |



|            |                                |
|------------|--------------------------------|
| extensible | DataAbsentReason               |
| extensible | ObservationInterpretationCodes |
|            |                                |

| Binding Value Set   | ACH dQM   |
|---|-----------|
|   | MS [0..*] |
|   | R[1..1]   |
|   | NRT       |
|   | NRT       |
| <a href="http://hl7.org/fhir/ValueSet/language">http://hl7.org/fhir/ValueSet/language</a> | NRT       |
|   | NRT       |

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|  | NRT |
|  | NRT |

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|---|----------|
|   | NRT      |
|   | NRT      |
|   | NRT      |
|   | MS[0..*] |
| <a href="http://hl7.org/fhir/ValueSet/observed">http://hl7.org/fhir/ValueSet/observed</a> | R [1..1] |

|   |   |
|---|---|
| <a href="http://hl7.org/fhir/ValueSet/observed">http://hl7.org/fhir/ValueSet/observed</a> | <b>R [1..*]</b><br><br><b>CQL<br/>constrains to<br/>these<br/>Categories:</b><br>Social-history,<br>vital-signs,<br>imaging,<br>laboratory,<br>procedure,<br>survey |
| <a href="http://hl7.org/fhir/ValueSet/observed">http://hl7.org/fhir/ValueSet/observed</a> | <b>R [1..1]</b><br><br>Binding<br>strength=<br>extensible   |
|   | <b>R [1..1]</b>   |

|  |           |
|--|-----------|
|  | NR        |
|  | MS [0..1] |
|  | R [1..1]  |
|  | MS [0..1] |

|   |   |
|---|---|
|   | NR  |
|   | MS [0..1]                                 |
| <a href="http://hl7.org/fhir/ValueSet/data-a">http://hl7.org/fhir/ValueSet/data-a</a>     | NR  |
| <a href="http://hl7.org/fhir/ValueSet/observed">http://hl7.org/fhir/ValueSet/observed</a> | MS [0..*]                                 |
|   | NR  |
| <a href="http://hl7.org/fhir/ValueSet/body-">http://hl7.org/fhir/ValueSet/body-</a>       | MS [0..1]<br>Binding strength= extensible |
| <a href="http://hl7.org/fhir/ValueSet/observed">http://hl7.org/fhir/ValueSet/observed</a> | MS [0..1]<br>Binding strength= extensible |
|   | NR  |
|   | NR  |

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|  | MS[0..*] |
|  | NRT      |
|  | NRT      |



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|  | NRT       |
|  | MS [0..1] |
|  | MS [0..1] |

|   |           |
|---|-----------|
| <a href="http://hl7.org/fhir/ValueSet/referenc">http://hl7.org/fhir/ValueSet/referenc</a> | NR        |
| <a href="http://hl7.org/fhir/ValueSet/referenc">http://hl7.org/fhir/ValueSet/referenc</a> | NR        |
|   | MS [0..1] |
|   | NR        |
|   | MS [0..*] |

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|  | NR        |
|  | MS [0..*] |
|  | NRT       |
|  | NRT       |

|   |  |
|---|--|
|   | NRT                                      |
| <a href="http://hl7.org/fhir/ValueSet/observation">http://hl7.org/fhir/ValueSet/observation</a> | R [1..1]<br>Binding strength= extensible |
|   | MS [0..1]                                |

|   |           |
|---|-----------|
| <a href="http://hl7.org/fhir/ValueSet/data-a">http://hl7.org/fhir/ValueSet/data-a</a>     | NR        |
| <a href="http://hl7.org/fhir/ValueSet/observed">http://hl7.org/fhir/ValueSet/observed</a> | MS [0..*] |
|   | MS [0..*] |

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| <b>FHIR Path</b>                 | <b>Min</b> | <b>Max</b> | <b>Must Support?</b> |
|----------------------------------|------------|------------|----------------------|
| <b>Observation</b>               | 0          | *          |                      |
| <b>Observation.id</b>            | 0          | 1          |                      |
| <b>Observation.meta</b>          | 0          | 1          |                      |
| <b>Observation.implicitRules</b> | 0          | 1          |                      |
| <b>Observation.language</b>      | 0          | 1          |                      |

|                              |   |   |  |
|------------------------------|---|---|--|
| <b>Observation.text</b>      | 0 | 1 |  |
| <b>Observation.contained</b> | 0 | * |  |
| <b>Observation.extension</b> | 0 | * |  |

|                                      |   |   |  |
|--------------------------------------|---|---|--|
| <b>Observation.modifierExtension</b> | 0 | * |  |
| <b>Observation.identifier</b>        | 0 | * |  |
| <b>Observation.basedOn</b>           | 0 | * |  |
| <b>Observation.partOf</b>            | 0 | * |  |



|                                       |   |   |   |
|---------------------------------------|---|---|---|
| <b>Observation.status</b>             | 1 | 1 | Y |
| <b>Observation.category</b>           | 1 | * | Y |
| <b>Observation.category(VSCat)</b>    | 1 | 1 | Y |
| <b>Observation.category.id</b>        | 0 | 1 |   |
| <b>Observation.category.extension</b> | 0 | * |   |

|  |   |   |   |
|--|---|---|---|
| <b>Observation.category.coding</b>           | 1 | * | Y |
| <b>Observation.category.coding.id</b>        | 0 | 1 | Y |
| <b>Observation.category.coding.extension</b> | 0 | * |   |
| <b>Observation.category.coding.system</b>    | 1 | 1 | Y |
| <b>Observation.category.coding.version</b>   | 0 | 1 |   |

|   |   |   |   |
|---|---|---|---|
| <b>Observation.category.coding.code</b>         | 1 | 1 | Y |
| <b>Observation.category.coding.display</b>      | 0 | 1 |   |
| <b>Observation.category.coding.userSelected</b> | 0 | 1 |   |
| <b>Observation.category.text</b>                | 0 | 1 |   |
| <b>Observation.code</b>                         | 1 | 1 | Y |

|                              |   |   |   |
|------------------------------|---|---|---|
| <b>Observation.subject</b>   | 1 | 1 | Y |
| <b>Observation.focus</b>     | 0 | * |   |
| <b>Observation.encounter</b> | 0 | 1 |   |

|                                     |   |   |   |
|-------------------------------------|---|---|---|
| <b>Observation.effective[x]</b>     | 1 | 1 | Y |
| <b>Observation.issued</b>           | 0 | 1 |   |
| <b>Observation.performer</b>        | 0 | * |   |
| <b>Observation.value[x]</b>         | 0 | 1 | Y |
| <b>Observation.dataAbsentReason</b> | 0 | 1 | Y |
| <b>Observation.interpretation</b>   | 0 | * |   |

|                                      |   |   |  |
|--------------------------------------|---|---|--|
| <b>Observation.note</b>              | 0 | * |  |
| <b>Observation.bodySite</b>          | 0 | 1 |  |
| <b>Observation.method</b>            | 0 | 1 |  |
| <b>Observation.specimen</b>          | 0 | 1 |  |
| <b>Observation.device</b>            | 0 | 1 |  |
| <b>Observation.referenceRange</b>    | 0 | * |  |
| <b>Observation.referenceRange.id</b> | 0 | 1 |  |

|   |   |   |  |
|---|---|---|--|
| <b>Observation.referenceRange.extension</b>         | 0 | * |  |
| <b>Observation.referenceRange.modifierExtension</b> | 0 | * |  |

|   |   |   |  |
|---|---|---|--|
| <b>Observation.referenceRange.low</b>       | 0 | 1 |  |
| <b>Observation.referenceRange.high</b>      | 0 | 1 |  |
| <b>Observation.referenceRange.type</b>      | 0 | 1 |  |
| <b>Observation.referenceRange.appliesTo</b> | 0 | * |  |
| <b>Observation.referenceRange.age</b>       | 0 | 1 |  |



|  |   |   |   |
|--|---|---|---|
| <b>Observation.referenceRange.text</b> | 0 | 1 |   |
| <b>Observation.hasMember</b>           | 0 | * |   |
| <b>Observation.derivedFrom</b>         | 0 | * |   |
| <b>Observation.component</b>           | 0 | * | Y |
| <b>Observation.component.id</b>        | 0 | 1 |   |

|  |   |   |   |
|--|---|---|---|
| <b>Observation.component.extension</b>         | 0 | * |   |
| <b>Observation.component.modifierExtension</b> | 0 | * |   |
| <b>Observation.component.code</b>              | 1 | 1 | Y |

|  |   |   |   |
|--|---|---|---|
| <b>Observation.component.value[x]</b>            | 0 | 1 | Y |
| <b>Observation.component.dataAbsentReason</b>    | 0 | 1 | Y |
| <b>Observation.component.interpretation</b>      | 0 | * |   |
| <b>Observation.component.referenceRange</b>      | 0 | * |   |
| <b>Observation.component.referenceRange.low</b>  | 0 | 1 |   |
| <b>Observation.component.referenceRange.high</b> | 0 | 1 |   |
| <b>Observation.component.referenceRange.type</b> | 0 | 1 |   |

|   |   |   |  |
|---|---|---|--|
| <b>Observation.component.referenceRange.appliesTo</b> | 0 | * |  |
| <b>Observation.component.referenceRange.age</b>       | 0 | 1 |  |
| <b>Observation.component.referenceRange.text</b>      | 0 | 1 |  |

| Data Type(s)   | FHIR Short Description                              | FHIR Definition   | Binding Strength                      |
|----------------|---|---|---------------------------------------|
| DomainResource | Measurements and simple assertions                  | Measurements and simple assertions made about a patient, device or other subject.   |                                       |
| id             | Logical id of this artifact                         | The logical id of the resource, as used in the URL for the resource. Once assigned, this value never changes.   |                                       |
| Meta           | Metadata about the resource                         | The metadata about the resource. This is content that is maintained by the infrastructure. Changes to the content might not always be associated with version changes to the resource.  |                                       |
| uri            | A set of rules under which this content was created | A reference to a set of rules that were followed when the resource was constructed, and which must be understood when processing the content. Often, this is a reference to an implementation guide that defines the special rules along with other profiles etc. |                                       |
| code           | Language of the resource content                    | The base language in which the resource is written.   | preferred but limited to AllLanguages |

|           |  |   |  |
|-----------|--|---|--|
| Narrative | Text summary of the resource, for human interpretation | A human-readable narrative that contains a summary of the resource and can be used to represent the content of the resource to a human. The narrative need not encode all the structured data, but is required to contain sufficient detail to make it "clinically safe" for a human to just read the narrative. Resource definitions may define what content should be represented in the narrative to ensure clinical safety. |  |
| Resource  | Contained, inline Resources                            | These resources do not have an independent existence apart from the resource that contains them - they cannot be identified independently, and nor can they have their own independent transaction scope.   |  |
| Extension | Additional content defined by implementations          | May be used to represent additional information that is not part of the basic definition of the resource. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension.                                  |  |

|  |                                     |  |  |
|--|-------------------------------------|--|--|
| Extension  | Extensions that cannot be ignored   | <p>May be used to represent additional information that is not part of the basic definition of the resource and that modifies the understanding of the element that contains it and/or the understanding of the containing element's descendants. Usually modifier elements provide negation or qualification. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer is allowed to define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension. Applications processing a resource are required to check for modifier extensions.</p> <p>Modifier extensions SHALL NOT change the meaning of any elements on Resource or DomainResource (including cannot change the meaning of modifierExtension itself).</p> |  |
| Identifier   | Business Identifier for observation | A unique identifier assigned to this observation.  |  |
| Reference(CarePlan  DeviceRequest  ImmunizationRecommendation  MedicationRequest  NutritionOrder  ServiceRequest)    | Fulfills plan, proposal or order    | A plan, proposal or order that is fulfilled in whole or in part by this event. For example, a MedicationRequest may require a patient to have laboratory test performed before it is dispensed.  |  |
| Reference(Medication Administration  MedicationDispense  MedicationStatement  Procedure  Immunization  ImagingStudy) | Part of referenced event            | A larger event of which this particular Observation is a component or step. For example, an observation as part of a procedure.  |  |

|                 |  |  |           |
|-----------------|--|--|-----------|
| code            | registered   preliminary   final   amended + | The status of the result value.  | required  |
| CodeableConcept | Classification of type of observation        | A code that classifies the general type of observation being made.   | preferred |
| CodeableConcept |  | A code that classifies the general type of observation being made  | preferred |
| string          |  | Unique id for the element within a resource (for internal references). This may be any string value that does not contain spaces.  |           |
| extension       |  | May be used to represent additional information that is not part of the basic definition of the element. To make the use of extensions safe and manageable, there is a strict set of governance applied to the |           |



|           |  |   |  |
|-----------|--|---|--|
| coding    |  | A reference to a code defined by a terminology system.  |  |
| string    |  | Unique id for the element within a resource (for internal references). This may be any string value that does not contain spaces.   |  |
| extension |  | May be used to represent additional information that is not part of the basic definition of the element. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension. |  |
| uri       |  | The identification of the code system that defines the meaning of the symbol in the code.   |  |
| string    |  | The version of the code system which was used when choosing this code. Note that a well-maintained code system does not need the version reported, because the meaning of codes is consistent across versions. However this cannot consistently be assured, and when the meaning is not guaranteed to be consistent, the version SHOULD be exchanged.   |  |

|                 |                                   |  |                       |
|-----------------|-----------------------------------|--|-----------------------|
| code            |                                   | A symbol in syntax defined by the system. The symbol may be a predefined code or an expression in a syntax defined by the coding system (e.g. post-coordination).  |                       |
| string          |                                   | A representation of the meaning of the code in the system, following the rules of the system.  |                       |
| boolean         |                                   | Indicates that this coding was chosen by a user directly - e.g. off a pick list of available items (codes or displays).  |                       |
| string          |                                   | A human language representation of the concept as seen/selected/uttered by the user who entered the data and/or which represents the intended meaning of the user. |                       |
| CodeableConcept | Type of observation (code / type) | Describes what was observed. Sometimes this is called the observation "name".  | example<br>extensible |

|  |   |  |  |
|--|---|--|--|
| Reference(Patient   Group   Device   Location) | Who and/or what the observation is about                                  | The patient, or group of patients, location, or device this observation is about and into whose record the observation is placed. If the actual focus of the observation is different from the subject (or a sample of, part, or region of the subject), the `focus` element or the `code` itself specifies the actual focus of the observation.   |  |
| Reference(Any)                                 | What the observation is about, when it is not about the subject of record | The actual focus of an observation when it is not the patient of record representing something or someone associated with the patient such as a spouse, parent, fetus, or donor. For example, fetus observations in a mother's record. The focus of an observation could also be an existing condition, an intervention, the subject's diet, another observation of the subject, or a body structure such as tumor or implanted device. An example use case would be using the Observation resource to capture whether the mother is trained to change her child's tracheostomy tube. In this example, the child is the patient of record and the mother is the focus. |  |
| Reference(Encounter)                           | Healthcare event during which this observation is made                    | The healthcare event (e.g. a patient and healthcare provider interaction) during which this observation is made.   |  |

|  |   |   |            |
|--|---|---|------------|
| dateTime<br>Period<br>Timing<br>Instant  | Clinically relevant time/time-period for observation  | The time or time-period the observed value is asserted as being true. For biological subjects - e.g. human patients - this is usually called the "physiologically relevant time". This is usually either the time of the procedure or of specimen collection, but very often the source of the date/time is not known, only the date/time itself. |            |
| instant  | Date/Time this version was made available   | The date and time this version of the observation was made available to providers, typically after the results have been reviewed and verified.   |            |
| Reference(Practitioner PractitionerRole Organization CareTeam Patient RelatedPerson)                                       | Who is responsible for the observation  | Who was responsible for asserting the observed value as "true".   |            |
| Quantity<br>CodeableConcept<br>string<br>boolean<br>integer<br>Range<br>Ratio<br>SampledData<br>time<br>dateTime<br>Period | Actual result<br><br>*Vital Signs value are recorded using the Quantity data type. For supporting observations such as Cuff size could use other datatypes such as CodeableConcept. | The information determined as a result of making the observation, if the information has a simple value.  |            |
| CodeableConcept  | Why the result is missing   | Provides a reason why the expected value in the element Observation.value[x] is missing.  | extensible |
| CodeableConcept  | High, low, normal, etc.   | A categorical assessment of an observation value. For example, high, low, normal.   | extensible |

|                                |  |   |                       |
|--------------------------------|--|---|-----------------------|
| Annotation                     | Comments about the observation   | Comments about the observation or the results.  |                       |
| CodeableConcept                | Observed body part   | Indicates the site on the subject's body where the observation was made (i.e. the target site).   | example<br>extensible |
| CodeableConcept                | How it was done  | Indicates the mechanism used to perform the observation.  | example<br>extensible |
| Reference(Specimen)            | Specimen used for this observation   | The specimen that was used when this observation was made.  |                       |
| Reference(Device DeviceMetric) | (Measurement) Device   | The device used to generate the observation data.   |                       |
| BackboneElement                | Provides guide for interpretation<br>+ <i>Rule: Must have at least a low or a high or text</i> | Guidance on how to interpret the value by comparison to a normal or recommended range. Multiple reference ranges are interpreted as an "OR". In other words, to represent two distinct target populations, two `referenceRange` elements would be used. |                       |
| string                         | Unique id for inter-element referencing  | Unique id for the element within a resource (for internal references). This may be any string value that does not contain spaces.   |                       |

|           |  |   |  |
|-----------|--|---|--|
| Extension | Additional content defined by implementations          | <p>May be used to represent additional information that is not part of the basic definition of the element. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension.</p>  |  |
| Extension | Extensions that cannot be ignored even if unrecognized | <p>May be used to represent additional information that is not part of the basic definition of the element and that modifies the understanding of the element in which it is contained and/or the understanding of the containing element's descendants. Usually modifier elements provide negation or qualification. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension. Applications processing a resource are required to check for modifier extensions.</p> <p>Modifier extensions SHALL NOT change the meaning of any elements on Resource or DomainResource (including cannot change the meaning of modifierExtension itself).</p> |  |

|                 |                                   |  |           |
|-----------------|-----------------------------------|--|-----------|
| SimpleQuantity  | Low Range, if relevant            | The value of the low bound of the reference range. The low bound of the reference range endpoint is inclusive of the value (e.g. reference range is $\geq 5 - \leq 9$ ). If the low bound is omitted, it is assumed to be meaningless (e.g. reference range is $\leq 2.3$ ).   |           |
| SimpleQuantity  | High Range, if relevant           | The value of the high bound of the reference range. The high bound of the reference range endpoint is inclusive of the value (e.g. reference range is $\geq 5 - \leq 9$ ). If the high bound is omitted, it is assumed to be meaningless (e.g. reference range is $\geq 2.3$ ).  |           |
| CodeableConcept | Reference range qualifier         | Codes to indicate the what part of the targeted reference population it applies to. For example, the normal or therapeutic range.  | preferred |
| CodeableConcept | Reference range population        | Codes to indicate the target population this reference range applies to. For example, a reference range may be based on the normal population or a particular sex or race. Multiple `appliesTo` are interpreted as an "AND" of the target populations. For example, to represent a target population of African American females, both a code of female and a code for African American would be used. | example   |
| Range           | Applicable age range, if relevant | The age at which this reference range is applicable. This is a neonatal age (e.g. number of weeks at term) if the meaning says so.   |           |

|   |   |  |  |
|---|---|--|--|
| string  | Text based reference range in an observation  | Text based reference range in an observation which may be used when a quantitative range is not appropriate for an observation. An example would be a reference value of "Negative" or a list or table of "normals".   |  |
| Reference(Observation QuestionnaireResponse MolecularSequence)                                      | Related resource that belongs to the Observation group  | This observation is a group observation (e.g. a battery, a panel of tests, a set of vital sign measurements) that includes the target as a member of the group.  |  |
| Reference(DocumentReference ImagingStudy Media QuestionnaireResponse Observation MolecularSequence) | Related measurements the observation is made from   | The target resource that represents a measurement from which this observation value is derived. For example, a calculated anion gap or a fetal measurement based on an ultrasound image.   |  |
| BackboneElement   | Component results<br><br>*Used when reporting systolic and diastolic blood pressure.<br>vs-3: If there is no a value a data absent reason must be present | Some observations have multiple component observations. These component observations are expressed as separate code value pairs that share the same attributes. Examples include systolic and diastolic component observations for blood pressure measurement and multiple component observations for genetics observations. |  |
| string  | Unique id for inter-element referencing   | Unique id for the element within a resource (for internal references). This may be any string value that does not contain spaces.  |  |



|                 |  |   |            |
|-----------------|--|---|------------|
| Extension       | Additional content defined by implementations          | May be used to represent additional information that is not part of the basic definition of the element. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension.   |            |
| Extension       | Extensions that cannot be ignored even if unrecognized | <p>May be used to represent additional information that is not part of the basic definition of the element and that modifies the understanding of the element in which it is contained and/or the understanding of the containing element's descendants. Usually modifier elements provide negation or qualification. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension. Applications processing a resource are required to check for modifier extensions.</p> <p>Modifier extensions SHALL NOT change the meaning of any elements on Resource or DomainResource (including cannot change the meaning of modifierExtension itself).</p> |            |
| CodeableConcept | Type of component observation (code / type)            | Describes what was observed. Sometimes this is called the observation "code".   | extensible |

|  |  |   |            |
|--|--|---|------------|
| Quantity<br>CodeableConcept<br>string<br>boolean<br>integer<br>Range<br>Ratio<br>SampledData<br>time<br>dateTime<br>Period | Actual<br>component<br>result                                  | The information determined as a result of making the observation, if the information has a simple value.  | required   |
| CodeableConcept  | Why the<br>component<br>result is missing                      | Provides a reason why the expected value in the element Observation.component.value[x] is missing.  | extensible |
| CodeableConcept  | High, low,<br>normal, etc.                                     | A categorical assessment of an observation value. For example, high, low, normal.   | extensible |
|  | Provides guide<br>for interpretation<br>of component<br>result | Guidance on how to interpret the value by comparison to a normal or recommended range.  |            |
| SimpleQuantity   | Low Range, if<br>relevant                                      | The value of the low bound of the reference range. The low bound of the reference range endpoint is inclusive of the value (e.g. reference range is $\geq 5 - \leq 9$ ). If the low bound is omitted, it is assumed to be meaningless (e.g. reference range is $\leq 2.3$ ).    |            |
| SimpleQuantity   | High Range, if<br>relevant                                     | The value of the high bound of the reference range. The high bound of the reference range endpoint is inclusive of the value (e.g. reference range is $\geq 5 - \leq 9$ ). If the high bound is omitted, it is assumed to be meaningless (e.g. reference range is $\geq 2.3$ ). |            |
| CodeableConcept  | Reference range<br>qualifier                                   | Codes to indicate the what part of the targeted reference population it applies to. For example, the normal or therapeutic range.   | Preferred  |

|                 |  |  |         |
|-----------------|--|--|---------|
| CodeableConcept | Reference range population                   | Codes to indicate the what part of the targeted reference population it applies to. For example, the normal or therapeutic range.  | Example |
| Range           | Applicable age range, if relevant            | The age at which this reference range is applicable. This is a neonatal age (e.g. number of weeks at term) if the meaning says so.   |         |
| String          | Text based reference range in an observation | Text based reference range in an observation which may be used when a quantitative range is not appropriate for an observation. An example would be a reference value of "Negative" or a list or table of "normals". |         |

| Binding Description (Value Set Name) | Binding Value Set   | ACH dQM   |
|--------------------------------------|---|-----------|
|                                      |   | MS [0..*] |
|                                      |   | R[1..1]   |
|                                      |   | NRT       |
|                                      |   | NRT       |
| CommonLanguages                      | <a href="http://hl7.org/fhir/ValueSet/language">http://hl7.org/fhir/ValueSet/language</a> | NRT       |

|  |  |     |
|--|--|-----|
|  |  | NRT |
|  |  | NRT |
|  |  | NRT |

|  |  |          |
|--|--|----------|
|  |  | NRT      |
|  |  | NRT      |
|  |  | NRT      |
|  |  | MS[0..*] |

|                          |   |          |
|--------------------------|---|----------|
| ObservationStatus        | <a href="http://hl7.org/fhir/R4/valueset-obs">http://hl7.org/fhir/R4/valueset-obs</a> | R [1..1] |
| ObservationCategoryCodes |   | R [1..*] |
|                          |   | R [1..1] |
|                          |   | NRT      |
|                          |   | NRT      |

|  |   |         |
|--|---|---------|
|  |   | R[1..*] |
|  |   | NRT     |
|  |   | NRT     |
|  | <a href="http://terminology.hl7.org/CodeSystem">http://terminology.hl7.org/CodeSystem</a> | R[1..1] |
|  |   | NR      |



|            |   |  |
|------------|---|--|
|            |   | R[1..1]                                  |
|            |   | NR                                       |
|            |   | NR                                       |
|            |   | NR                                       |
| LOINCCodes | <a href="http://hl7.org/fhir/R4/valueset-obs">http://hl7.org/fhir/R4/valueset-obs</a> | R [1..1]<br>Binding strength= extensible |

|  |  |           |
|--|--|-----------|
|  |  | R [1..1]  |
|  |  | NR        |
|  |  | MS [0..1] |

|                                |   |           |
|--------------------------------|---|-----------|
|                                |   | R [1..1]  |
|                                |   | MS [0..1] |
|                                |   | NR        |
|                                |   | MS [0..1] |
| DataAbsentReason               | <a href="https://hl7.org/fhir/R4/valueset-data-absent-reason">https://hl7.org/fhir/R4/valueset-data-absent-reason</a>                     | NR        |
| ObservationInterpretationCodes | <a href="http://hl7.org/fhir/ValueSet/observation-interpretation-codes">http://hl7.org/fhir/ValueSet/observation-interpretation-codes</a> | MS [0..*] |

|                        |   |   |
|------------------------|---|---|
|                        |   | NR  |
| SNOMEDCTBodyStructures | <a href="http://hl7.org/fhir/ValueSet/body-structures">http://hl7.org/fhir/ValueSet/body-structures</a>         | MS [0..1]<br>Binding strength= extensible |
| ObservationMethods     | <a href="http://hl7.org/fhir/ValueSet/observation-methods">http://hl7.org/fhir/ValueSet/observation-methods</a> | MS [0..1]<br>Binding strength= extensible |
|                        |   | NR  |
|                        |   | NR  |
|                        |   | MS[0..*]                                  |
|                        |   | NRT                                       |

|  |  |     |
|--|--|-----|
|  |  | NRT |
|  |  | NRT |

|   |   |           |
|---|---|-----------|
|   |   | MS [0..1] |
|   |   | MS [0..1] |
| ObservationReferenceRangeMeasuringCodes | <a href="http://hl7.org/fhir/ValueSet/reference-ranges">http://hl7.org/fhir/ValueSet/reference-ranges</a> | NR        |
| ObservationReferenceRangeAppliesToCodes | <a href="http://hl7.org/fhir/ValueSet/reference-ranges">http://hl7.org/fhir/ValueSet/reference-ranges</a> | NR        |
|   |   | MS [0..1] |

|  |  |           |
|--|--|-----------|
|  |  | NR        |
|  |  | MS [0..*] |
|  |  | NR        |
|  |  | MS [0..*] |
|  |  | NRT       |

|            |   |          |
|------------|---|----------|
|            |   | NRT      |
|            |   | NRT      |
| LOINCCodes | <a href="https://hl7.org/fhir/R4/valueset-ob">https://hl7.org/fhir/R4/valueset-ob</a> | R [1..1] |



|                                       |   |           |
|---------------------------------------|---|-----------|
|                                       | <a href="https://hl7.org/fhir/R4/valueset-uc">https://hl7.org/fhir/R4/valueset-uc</a>   | MS [0..1] |
| DataAbsentReason                      | <a href="https://hl7.org/fhir/R4/valueset-uc">https://hl7.org/fhir/R4/valueset-uc</a>   | NR        |
| ObservationInterpretationCodes        | <a href="http://hl7.org/fhir/ValueSet/observation-interpretation-codes">http://hl7.org/fhir/ValueSet/observation-interpretation-codes</a> | MS [0..*] |
|                                       |   | MS [0..*] |
|                                       |   | MS[0..1]  |
|                                       |   | MS[0..1]  |
| ObservationReferenceRangeMeaningCodes | <a href="https://hl7.org/fhir/R4/valueset-reference-range-meaning.html">https://hl7.org/fhir/R4/valueset-reference-range-meaning.html</a> | NR        |

|   |   |          |
|---|---|----------|
| ObservationReferenceRangeAppl<br>iesToCodes | <a href="https://hl7.org/fhir/R4/valueset-re">https://hl7.org/fhir/R4/valueset-re</a> | NR       |
|   |   | MS[0..1] |
|   |   | NR       |

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| <b>FHIR Path</b>      | <b>Min</b> | <b>Max</b> | <b>Must Support?</b> |
|-----------------------|------------|------------|----------------------|
| Patient               | 0          | *          |                      |
| Patient.id            | 0          | 1          |                      |
| Patient.meta          | 0          | 1          |                      |
| Patient.implicitRules | 0          | 1          |                      |
| Patient.language      | 0          | 1          |                      |
| Patient.text          | 0          | 1          |                      |
| Patient.contained     | 0          | *          |                      |

|                               |   |   |   |
|-------------------------------|---|---|---|
| Patient.extension             | 0 | * |   |
| Patient.extension (race)      | 0 | 1 | Y |
| Patient.extension (ethnicity) | 0 | 1 | Y |

|                                     |   |   |   |
|-------------------------------------|---|---|---|
| Patient.extension (sex at birth)    | 0 | 1 | Y |
| Patient.extension (gender identity) | 0 | 1 |   |
| Patient.modifierExtension           | 0 | * |   |
| <b>Patient.identifier</b>           | 1 | * | Y |
| Patient.identifier.id               | 0 | 1 |   |

|                              |   |   |   |
|------------------------------|---|---|---|
| Patient.identifier.extension | 0 | * |   |
| Patient.identifier.use       | 0 | 1 |   |
| Patient.identifier.type      | 0 | 1 |   |
| Patient.identifier.system    | 1 | 1 | Y |
| Patient.identifier.value     | 1 | 1 | Y |
| Patient.identifier.period    | 0 | 1 |   |
| Patient.identifier.assigner  | 0 | 1 |   |
| Patient.active               | 0 | 1 |   |

|                        |   |   |   |
|------------------------|---|---|---|
| <b>Patient.name</b>    | 1 | * | Y |
| Patient.name.id        | 0 | 1 |   |
| Patient.name.extension | 0 | * |   |
| Patient.name.use       | 0 | 1 |   |
| Patient.name.text      | 0 | 1 |   |
| Patient.name.family    | 0 | 1 | Y |
| Patient.name.given     | 0 | * | Y |
| Patient.name.prefix    | 0 | * |   |

|                           |   |   |   |
|---------------------------|---|---|---|
| Patient.name.suffix       | 0 | * |   |
| Patient.name.period       | 0 | 1 |   |
| <b>Patient.telecom</b>    | 0 | * | Y |
| Patient.telecom.id        | 0 | 1 |   |
| Patient.telecom.extension | 0 | * |   |
| Patient.telecom.system    | 1 | 1 | Y |
| Patient.telecom.value     | 1 | 1 | Y |
| Patient.telecom.use       | 0 | 1 | Y |
| Patient.telecom.rank      | 0 | 1 |   |
| Patient.telecom.period    | 0 | 1 |   |



|                           |   |   |   |
|---------------------------|---|---|---|
| Patient.gender            | 1 | 1 | Y |
| Patient.birthDate         | 0 | 1 | Y |
| Patient.deceased[x]       | 0 | 1 |   |
| <b>Patient.address</b>    | 0 | * | Y |
| Patient.address.id        | 0 | 1 |   |
| Patient.address.extension | 0 | * |   |
| Patient.address.use       | 0 | 1 |   |
| Patient.address.type      | 0 | 1 |   |
| Patient.address.text      | 0 | 1 |   |
| Patient.address.line      | 0 | * | Y |
| Patient.address.city      | 0 | 1 | Y |
| Patient.address.district  | 0 | 1 |   |

|                            |   |   |   |
|----------------------------|---|---|---|
| Patient.address.state      | 0 | 1 | Y |
| Patient.address.postalCode | 0 | 1 | Y |
| Patient.address.country    | 0 | 1 |   |
| Patient.address.period     | 0 | 1 | Y |
| Patient.maritalStatus      | 0 | 1 |   |
| Patient.multipleBirth[x]   | 0 | 1 |   |
| Patient.photo              | 0 | * |   |
| <b>Patient.contact</b>     | 0 | * |   |
| Patient.contact.id         | 0 | 1 |   |
| Patient.contact.extension  | 0 | * |   |

|                                   |   |   |  |
|-----------------------------------|---|---|--|
| Patient.contact.modifierExtension | 0 | * |  |
| Patient.contact.relationship      | 0 | * |  |
| Patient.contact.name              | 0 | 1 |  |
| Patient.contact.telecom           | 0 | * |  |
| Patient.contact.address           | 0 | 1 |  |
| Patient.contact.gender            | 0 | 1 |  |
| Patient.contact.organization      | 0 | 1 |  |

|                                 |   |   |   |
|---------------------------------|---|---|---|
| Patient.contact.period          | 0 | 1 |   |
| <b>Patient.communication</b>    | 0 | * | Y |
| Patient.communication.id        | 0 | 1 |   |
| Patient.communication.extension | 0 | * |   |

|   |   |   |   |
|---|---|---|---|
| Patient.communication.modifierExtension | 0 | * |   |
| Patient.communication.language          | 1 | 1 | Y |
| Patient.communication.preferred         | 0 | 1 |   |
| Patient.generalPractitioner             | 0 | * |   |
| Patient.managingOrganization            | 0 | 1 |   |
| <b>Patient.link</b>                     | 0 | * |   |

|                                |   |   |  |
|--------------------------------|---|---|--|
| Patient.link.id                | 0 | 1 |  |
| Patient.link.extension         | 0 | * |  |
| Patient.link.modifierExtension | 0 | * |  |
| Patient.link.other             | 1 | 1 |  |
| Patient.link.type              | 1 | 1 |  |

| Data Type(s) | FHIR Short Description   |
|--------------|--|
|              | Information about an individual or animal receiving health care services |
| string       | Logical id of this artifact  |
| Meta         | Metadata about the resource  |
| uri          | A set of rules under which this content was created                      |
| code         | Language of the resource content   |
| Narrative    | Text summary of the resource, for human interpretation                   |
| Resource     | Contained, inline Resources  |

| Extension  | Extension                          |
|--|------------------------------------|
| <p>(Complex)<br/> optional<br/> 'ombCategory',<br/> optional 'detailed'<br/> and a required<br/> 'text'.<br/> - 'ombCategory'<br/> component is<br/> optional, but allows<br/> for up to 5 races<br/> from ombCategory-<br/> race ValueSet (note<br/> this is denoted by<br/> the 0..5 cardinality<br/> on the 3.1.1<br/> definition of us-core-<br/> race<br/> o When present,<br/> the structure will<br/> always following a<br/> 'coding' datatype, as<br/> denoted by<br/> 'valueCoding'<br/> - 'detailed'<br/> component is also<br/> optional, but may be<br/> present an infinite<br/> number of times,<br/> each 'detailed'<br/> containing one of<br/> the 917 race codes<br/> o When present,</p> | <p>US Core Race Extension</p>      |
| <p>(Complex)</p>   | <p>US Core ethnicity Extension</p> |



|  |  |
|--|--|
| code   | Extension                                  |
| Extension<br>{http://hl7.org/fhir/ur<br>s/core/StructureDefi<br>nition/us-core-<br>genderIdentity} | Extension                                  |
| Extension  | Extensions that cannot be<br>ignored       |
| Identifier   | An identifier for this patient             |
| string   | Unique id for inter-element<br>referencing |

|                         |   |
|-------------------------|---|
| Extension               | Additional content defined by implementations   |
| code                    | usual   official   temp   secondary   old (If known)  |
| CodeableConcept         | Description of identifier   |
| uri                     | The namespace for the identifier value<br>Example General:<br><a href="http://www.acme.com/identifiers/patient">http://www.acme.com/identifiers/patient</a> |
| string                  | The value that is unique within the system.   |
| Period                  | Time period when id is/was valid for use  |
| Reference(Organization) | Organization that issued id (may be just text)  |
| boolean                 | Whether this patient's record is in active use  |

|           |   |
|-----------|---|
| HumanName | A name associated with the patient<br><b>us-core-8:</b> Either Patient.name.given and/or Patient.name.family SHALL be present or a Data Absent Reason Extension SHALL be present. |
| string    | Unique id for inter-element referencing   |
| Extension | Additional content defined by implementations   |
| code      | usual   official   temp   nickname   anonymous   old   maiden   |
| string    | Text representation of the full name  |
| string    | Family name (often called 'Surname')  |
| string    | Given names (not always 'first'). Includes middle names<br>This repeating element order: Given Names appear in the correct order for presenting the name                          |
| string    | Parts that come before the name<br>This repeating element order: Prefixes appear in the correct order for presenting the name   |

|              |  |
|--------------|--|
| string       | Parts that come after the name<br>This repeating element order:<br>Suffixes appear in the correct<br>order for presenting the name |
| Period       | Time period when name was/is<br>in use   |
| ContactPoint | A contact detail for the<br>individual   |
| string       | Unique id for inter-element<br>referencing   |
| Extension    | Additional content defined by<br>implementations   |
| code         | phone   fax   email   pager   url  <br>sms   other   |
| string       | The actual contact point details   |
| code         | home   work   temp   old  <br>mobile - purpose of this contact<br>point  |
| positiveInt  | Specify preferred order of use (1<br>= highest)  |
| Period       | Time period when the contact<br>point was/is in use  |

|                     |   |
|---------------------|---|
| code                | male   female   other   unknown   |
| date                | The date of birth for the individual  |
| boolean<br>dateTime | Indicates if the individual is deceased or not  |
| Address             | An address for the individual   |
| string              | Unique id for inter-element referencing   |
| Extension           | Additional content defined by implementations   |
| code                | home   work   temp   old   billing<br>- purpose of this address   |
| code                | home postal   physical   both   |
| string              | Text representation of the address  |
| string              | Street name, number, direction & P.O. Box etc.<br>This repeating element order:<br>The order in which lines should appear in an address label |
| string              | Name of city, town etc.   |
| string              | District name (aka county)  |

|                    |  |
|--------------------|--|
| string             | Sub-unit of country (abbreviations ok)                           |
| string             | US Zip Codes   |
| string             | Country (e.g. can be ISO 3166 2 or 3 letter code)                |
| Period             | Time period when address was/is in use                           |
| CodeableConcept    | Marital (civil) status of a patient                              |
| boolean<br>integer | Whether patient is part of a multiple birth                      |
| Attachment         | Image of the patient   |
| BackboneElement    | A contact party (e.g. guardian, partner, friend) for the patient |
| string             | Unique id for inter-element referencing                          |
| Extension          | Additional content defined by implementations                    |

|                         |  |
|-------------------------|--|
| Extension               | Extensions that cannot be ignored even if unrecognized |
| CodeableConcept         | The kind of relationship                               |
| HumanName               | A name associated with the contact person              |
| ContactPoint            | A contact detail for the person                        |
| Address                 | Address for the contact person                         |
| code                    | male   female   other   unknown                        |
| Reference(Organization) | Organization that is associated with the contact       |

|                 |   |
|-----------------|---|
| Period          | The period during which this contact person or organization is valid to be contacted relating to this patient |
| BackboneElement | A language which may be used to communicate with the patient about his or her health                          |
| string          | Unique id for inter-element referencing   |
| Extension       | Additional content defined by implementations   |



|   |  |
|---|--|
| Extension   | Extensions that cannot be ignored even if unrecognized                                 |
| CodeableConcept                                       | The language which can be used to communicate with the patient about his or her health |
| boolean   | Language preference indicator  |
| Reference(Organization Practitioner PractitionerRole) | Patient's nominated primary care provider  |
| Reference(Organization)                               | Organization that is the custodian of the patient record                               |
| BackboneElement                                       | Link to another patient resource that concerns the same actual person                  |

|                                  |  |
|----------------------------------|--|
| string                           | Unique id for inter-element referencing                              |
| Extension                        | Additional content defined by implementations                        |
| Extension                        | Extensions that cannot be ignored even if unrecognized               |
| Reference(Patient RelatedPerson) | The other patient or related person resource that the link refers to |
| code                             | replaced-by   replaces   refer   seealso                             |

| <b>FHIR Definition</b>  | <b>Binding Strength</b> | <b>Binding Description</b> |
|---|-------------------------|----------------------------|
| The US Core Patient Profile is based upon the core FHIR Patient Resource and designed to meet the applicable patient demographic data elements from the 2015 Edition Common Clinical Data Set.  |                         |                            |
| The logical id of the resource, as used in the URL for the resource. Once assigned, this value never changes.   |                         |                            |
| The metadata about the resource. This is content that is maintained by the infrastructure. Changes to the content might not always be associated with version changes to the resource.  |                         |                            |
| A reference to a set of rules that were followed when the resource was constructed, and which must be understood when processing the content. Often, this is a reference to an implementation guide that defines the special rules along with other profiles etc.   |                         |                            |
| The base language in which the resource is written.   | preferred               | A human language.          |
| A human-readable narrative that contains a summary of the resource and can be used to represent the content of the resource to a human. The narrative need not encode all the structured data, but is required to contain sufficient detail to make it "clinically safe" for a human to just read the narrative. Resource definitions may define what content should be represented in the narrative to ensure clinical safety. |                         |                            |
| These resources do not have an independent existence apart from the resource that contains them - they cannot be identified independently, and nor can they have their own independent transaction scope.   |                         |                            |

|   |  |                             |
|---|--|-----------------------------|
| An Extension  |  |                             |
| <p>Concepts classifying the person into a named category of humans sharing common history, traits, geographical origin or nationality. The <b>race codes</b> used to represent these concepts are based upon the [CDC Race and Ethnicity Code Set Version 1.0](<a href="http://www.cdc.gov/phn/resources/vocabulary/index.html">http://www.cdc.gov/phn/resources/vocabulary/index.html</a>) which includes over 900 concepts for representing race and ethnicity of which 921 reference race. The race concepts are grouped by and pre-mapped to the 5 OMB race categories:</p> <ul style="list-style-type: none"> <li>- American Indian or Alaska Native</li> <li>- Asian</li> <li>- Black or African American</li> <li>- Native Hawaiian or Other Pacific Islander</li> <li>- White.</li> </ul> |  | US Core Race Extension      |
| <p>Concepts classifying the person into a named category of humans sharing common history, traits, geographical origin or nationality. The <b>ethnicity codes</b> used to represent these concepts are based upon the [CDC ethnicity and Ethnicity Code Set Version 1.0](<a href="http://www.cdc.gov/phn/resources/vocabulary/index.html">http://www.cdc.gov/phn/resources/vocabulary/index.html</a>) which includes over 900 concepts for representing race and ethnicity of which 43 reference ethnicity. The ethnicity concepts are grouped by and pre-mapped to the 2 OMB ethnicity categories: - Hispanic or Latino - Not Hispanic or Latino.</p>  |  | US Core ethnicity Extension |

|   |                 |                  |
|---|-----------------|------------------|
| <p>A code classifying the person's <b>sex assigned at birth</b> as specified by the [Office of the National Coordinator for Health IT (ONC)](<a href="https://www.healthit.gov/newsroom/about-onc">https://www.healthit.gov/newsroom/about-onc</a>).</p>  | <p>required</p> | <p>Birth Sex</p> |
| <p>An Extension</p>   |                 |                  |
| <p>May be used to <b>represent additional information that is not part of the basic definition of the resource</b> and that modifies the understanding of the element that contains it and/or the understanding of the containing element's descendants. Usually modifier elements provide negation or qualification. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer is allowed to define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension. Applications processing a resource are required to check for modifier extensions.</p> <p>Modifier extensions SHALL NOT change the meaning of any elements on Resource or DomainResource (including cannot change the meaning of modifierExtension itself).</p> |                 |                  |
| <p>An identifier for this patient.</p>  |                 |                  |
| <p>Unique id for the element within a resource (for internal references). This may be any string value that does not contain spaces.</p>  |                 |                  |

|  |            |                       |
|--|------------|-----------------------|
| May be used to represent additional information that is not part of the basic definition of the element. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension.                                  |            |                       |
| The purpose of this identifier.  | required   | Identifier Use        |
| A coded type for the identifier that can be used to determine which identifier to use for a specific purpose.  | extensible | Identifier Type Codes |
| Establishes the namespace for the value - that is, a URL that describes a set values that are unique.  |            |                       |
| The portion of the identifier typically relevant to the user and which is unique within the context of the system.   |            |                       |
| Time period during which identifier is/was valid for use.  |            |                       |
| Organization that issued/manages the identifier.   |            |                       |
| Whether this patient record is in active use.<br>Many systems use this property to mark as non-current patients, such as those that have not been seen for a period of time based on an organization's business rules.<br><br>It is often used to filter patient lists to exclude inactive patients<br><br>Deceased patients may also be marked as inactive for the same reasons, but may be active for some time after death. |            |                       |

|   |          |         |
|---|----------|---------|
| A name associated with the individual.  |          |         |
| Unique id for the element within a resource (for internal references). This may be any string value that does not contain spaces.   |          |         |
| May be <b>used to represent additional information that is not part of the basic definition of the element</b> . To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension. |          |         |
| Identifies the purpose for this name.   | required | NameUse |
| Specifies the entire name as it should be displayed e.g. on an application UI. This may be provided instead of or as well as the specific parts.  |          |         |
| The part of a name that links to the genealogy. In some cultures (e.g. Eritrea) the family name of a son is the first name of his father.   |          |         |
| Given name.   |          |         |
| Part of the name that is acquired as a title due to academic, legal, employment or nobility status, etc. and that appears at the start of the name.   |          |         |

|   |          |                    |
|---|----------|--------------------|
| Part of the name that is acquired as a title due to academic, legal, employment or nobility status, etc. and that appears at the end of the name.   |          |                    |
| Indicates the period of time when this name was valid for the named person.   |          |                    |
| A contact detail (e.g. a telephone number or an email address) by which the individual may be contacted.  |          |                    |
| Unique id for the element within a resource (for internal references). This may be any string value that does not contain spaces.   |          |                    |
| May be used to represent additional information that is not part of the basic definition of the element. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension. |          |                    |
| Telecommunications form for contact point - what communications system is required to make use of the contact.  | required | ContactPointSystem |
| The actual contact point details, in a form that is meaningful to the designated communication system (i.e. phone number or email address).   |          |                    |
| Identifies the purpose for the contact point.   | required | ContactPointUse    |
| Specifies a preferred order in which to use a set of contacts. ContactPoints with lower rank values are more preferred than those with higher rank values.  |          |                    |
| Time period when the contact point was/is in use.   |          |                    |



|  |          |                     |
|--|----------|---------------------|
| Administrative Gender - the gender that the patient is considered to have for administration and record keeping purposes.  | required | AdminstrativeGender |
| The date of birth for the individual.  |          |                     |
| Indicates if the individual is deceased or not.  |          |                     |
| An address for the individual.   |          |                     |
| Unique id for the element within a resource (for internal references). This may be any string value that does not contain spaces.  |          |                     |
| May be <b>used to represent additional information that is not part of the basic definition of the element.</b> To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension. |          |                     |
| The purpose of this address.   | required | AddressUse          |
| Distinguishes between physical addresses (those you can visit) and mailing addresses (e.g. PO Boxes and care-of addresses). Most addresses are both.   | required | AddressType         |
| Specifies the entire address as it should be displayed e.g. on a postal label. This may be provided instead of or as well as the specific parts.   |          |                     |
| This component contains the house number, apartment number, street name, street direction, P.O. Box number, delivery hints, and similar address information.   |          |                     |
| The name of the city, town, suburb, village or other community or delivery center.   |          |                     |
| The name of the administrative area (county).  |          |                     |

|   |            |                                  |
|---|------------|----------------------------------|
| Sub-unit of a country with limited sovereignty in a federally organized country. A code may be used if codes are in common use (e.g. US 2 letter state codes).  | extensible | USPS Two Letter Alphabetic Codes |
| A postal code designating a region defined by the postal service.   |            |                                  |
| Country - a nation as commonly understood or generally accepted.  |            |                                  |
| Time period when address was/is in use.   |            |                                  |
| This field contains a patient's most recent marital (civil) status.   | extensible | Marital Status Codes             |
| Indicates whether the patient is part of a multiple (boolean) or indicates the actual birth order (integer).  |            |                                  |
| Image of the patient.   |            |                                  |
| A contact party (e.g. guardian, partner, friend) for the patient.   |            |                                  |
| Unique id for the element within a resource (for internal references). This may be any string value that does not contain spaces.   |            |                                  |
| May be <b><i>used to represent additional information that is not part of the basic definition of the element.</i></b> To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension. |            |                                  |

|   |                   |  |
|---|-------------------|--|
| <p>May be used to represent additional information that is not part of the basic definition of the element and that modifies the understanding of the element in which it is contained and/or the understanding of the containing element's descendants. Usually modifier elements provide negation or qualification. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension. Applications processing a resource are required to check for modifier extensions.</p> <p>Modifier extensions SHALL NOT change the meaning of any elements on Resource or DomainResource (including cannot change the meaning of modifierExtension itself).</p> |                   |  |
| <p>The nature of the relationship between the patient and the contact person.</p>   | <p>extensible</p> | <p>The nature of the relationship between a patient and a contact person for that patient.</p> |
| <p>A name associated with the contact person.</p>   |                   |  |
| <p>A contact detail for the person, e.g. a telephone number or an email address.</p>  |                   |  |
| <p>Address for the contact person.</p>  |                   |  |
| <p>Administrative Gender - the gender that the contact person is considered to have for administration and record keeping purposes.</p>   | <p>required</p>   | <p>The gender of a person used for administrative purposes.</p>                                |
| <p>Organization on behalf of which the contact is acting or for which the contact is working.</p>   |                   |  |

|   |  |  |
|---|--|--|
| <p>The period during which this contact person or organization is valid to be contacted relating to this patient.</p>   |  |  |
| <p>A language which may be used to communicate with the patient about his or her health.</p>  |  |  |
| <p>Unique id for the element within a resource (for internal references). This may be any string value that does not contain spaces.</p>  |  |  |
| <p>May be used to represent additional information that is not part of the basic definition of the element. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that <b>SHALL</b> be met as part of the definition of the extension.</p> |  |  |

|   |                   |  |
|---|-------------------|--|
| <p>May be used to represent additional information that is not part of the basic definition of the element and that modifies the understanding of the element in which it is contained and/or the understanding of the containing element's descendants. Usually modifier elements provide negation or qualification. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension. Applications processing a resource are required to check for modifier extensions.</p> <p>Modifier extensions SHALL NOT change the meaning of any elements on Resource or DomainResource (including cannot change the meaning of modifierExtension itself).</p> |                   |  |
| <p>The ISO-639-1 alpha 2 code in lower case for the language, optionally followed by a hyphen and the ISO-3166-1 alpha 2 code for the region in upper case; e.g. "en" for English, or "en-US" for American English versus "en-EN" for England English.</p>  | <p>extensible</p> |  |
| <p>Indicates whether or not the patient prefers this language (over other languages he masters up a certain level).</p>   |                   |  |
| <p>Patient's nominated care provider.</p>   |                   |  |
| <p>Organization that is the custodian of the patient record.</p>  |                   |  |
| <p>Link to another patient resource that concerns the same actual patient.</p>  |                   |  |

|  |                 |                 |
|--|-----------------|-----------------|
| <p>Unique id for the element within a resource (for internal references). This may be any string value that does not contain spaces.</p>   |                 |                 |
| <p>May be used to <b>represent additional information that is not part of the basic definition of the element.</b> To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension.</p>  |                 |                 |
| <p>May be used to <b>represent additional information that is not part of the basic definition of the element and that modifies the understanding of the element</b> in which it is contained and/or the understanding of the containing element's descendants. Usually modifier elements provide negation or qualification. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension. Applications processing a resource are required to check for modifier extensions.</p> <p>Modifier extensions SHALL NOT change the meaning of any elements on Resource or DomainResource (including cannot change the meaning of modifierExtension itself).</p> |                 |                 |
| <p>The other patient resource that the link refers to.</p>   |                 |                 |
| <p>The type of link between this patient resource and another patient resource.</p>  | <p>required</p> | <p>LinkType</p> |

| Binding Value Set   | ACH dQM<br>(cross-setting for all measures) |
|---|---|
|   | R [1..1]                                    |
|   | R [1..1]                                    |
|   | NRT   |
|   | NRT   |
| <a href="http://hl7.org/fhir/ValueSet/languages">http://hl7.org/fhir/ValueSet/languages</a> | NRT   |
|   | NRT   |
|   | NRT   |

|   |          |
|---|----------|
|   | NR       |
| <a href="http://hl7.org/fhir/us/core/StructureDefinition">http://hl7.org/fhir/us/core/StructureDefinition</a> | MS[0..*] |
| <a href="http://hl7.org/fhir/us/core/StructureDefinition">http://hl7.org/fhir/us/core/StructureDefinition</a> | MS[0..*] |



|   |           |
|---|-----------|
| <a href="http://hl7.org/fhir/us/core/Structure">http://hl7.org/fhir/us/core/Structure</a> | MS [0..1] |
|   | MS [0..*] |
|   | NRT       |
|   | R [1..*]  |
|   | NR        |

|   |           |
|---|-----------|
|   | NR        |
| <a href="http://hl7.org/fhir/ValueSet/ident">http://hl7.org/fhir/ValueSet/ident</a> | MS[0..1]  |
| <a href="http://hl7.org/fhir/ValueSet/ident">http://hl7.org/fhir/ValueSet/ident</a> | MS[0..1]  |
|   | NR        |
|   | R [1..1]  |
|   | MS [0..1] |
|   | NR        |
|   | NR        |

|   |          |
|---|----------|
|   | R [1..*] |
|   | NR       |
|   | NR       |
| <a href="http://hl7.org/fhir/ValueSet/name">http://hl7.org/fhir/ValueSet/name</a> | MS[0..1] |
|   | MS[0..1] |
|   | MS[0..1] |
|   | MS[0..*] |
|   | MS[0..*] |

|   |          |
|---|----------|
|   | MS[0..*] |
|   | MS[0..1] |
|   | MS[0..*] |
|   | NRT      |
|   | NRT      |
| <a href="http://hl7.org/fhir/ValueSet/cont">http://hl7.org/fhir/ValueSet/cont</a> | R [1..1] |
|   |          |
|   | R [1..1] |
| <a href="http://hl7.org/fhir/ValueSet/cont">http://hl7.org/fhir/ValueSet/cont</a> | MS[0..1] |
|   |          |
|   | MS[0..1] |
|   | MS[0..1] |

|   |          |
|---|----------|
| <a href="http://hl7.org/fhir/ValueSet/admin">http://hl7.org/fhir/ValueSet/admin</a>     | R [1..1] |
|   | R [1..1] |
|   | MS[0..1] |
|   | MS[0..*] |
|   | NR       |
|   | NR       |
| <a href="http://hl7.org/fhir/ValueSet/address">http://hl7.org/fhir/ValueSet/address</a> | MS[0..1] |
| <a href="http://hl7.org/fhir/ValueSet/address">http://hl7.org/fhir/ValueSet/address</a> | MS[0..1] |
|   | MS[0..1] |
|   | MS[0..*] |
|   | MS[0..1] |
|   | MS[0..1] |

|   |          |
|---|----------|
| http://hl7.org/fhir/us/core/ValueSet/us-core-usps-state | MS[0..1] |
|   | MS[0..1] |
|   | MS[0..1] |
|   | MS[0..1] |
| http://hl7.org/fhir/ValueSet/marital-status             | NR       |
|   | NR       |
|   | NR       |
|   | MS[0..*] |
|   | NR       |
|   | NR       |

|  |          |
|--|----------|
|  | NRT      |
| <a href="http://hl7.org/fhir/ValueSet/patient">http://hl7.org/fhir/ValueSet/patient</a>                                    | MS[0..*] |
|  | MS[0..1] |
|  | MS[0..*] |
|  | MS[0..1] |
| <a href="http://hl7.org/fhir/ValueSet/administrative-gender">http://hl7.org/fhir/ValueSet/administrative-gender</a>  4.0.1 | NR       |
|  | NR       |

|  |          |
|--|----------|
|  | MS[0..1) |
|  | MS[0..*] |
|  | NR       |
|  | NR       |



|   |          |
|---|----------|
|   | NRT      |
| <a href="http://hl7.org/fhir/us/core/ValueSet">http://hl7.org/fhir/us/core/ValueSet</a> | R [1..1] |
|   | MS[0..1] |
|   | NR       |
|   | NR       |
|   | MS[0..*] |

|   |           |
|---|-----------|
|   | MS [0..*] |
|   | MS [0..*] |
|   | MS [0..*] |
|   | R [1..1]  |
| <a href="http://hl7.org/fhir/ValueSet/link-t">http://hl7.org/fhir/ValueSet/link-t</a> | R [1..1]  |
|   |           |

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| <b>FHIR Path</b> | <b>Min</b> | <b>Max</b> | <b>Must Support?</b> |
|------------------|------------|------------|----------------------|
| Procedure        | 0          | *          |                      |
| Procedure.id     | 0          | 1          |                      |
| Procedure.meta   | 0          | 1          |                      |

|                         |   |   |  |
|-------------------------|---|---|--|
| Procedure.implicitRules | 0 | 1 |  |
|-------------------------|---|---|--|

|                    |   |   |  |
|--------------------|---|---|--|
| Procedure.language | 0 | 1 |  |
|--------------------|---|---|--|

|                     |   |   |  |
|---------------------|---|---|--|
| Procedure.text      | 0 | 1 |  |
| Procedure.contained | 0 | * |  |

|                             |   |   |  |
|-----------------------------|---|---|--|
| Procedure.extension         | 0 | * |  |
| Procedure.modifierExtension | 0 | * |  |

|                                 |   |   |  |
|---------------------------------|---|---|--|
| Procedure.identifier            | 0 | * |  |
| Procedure.instantiatesCanonical | 0 | * |  |
| Procedure.instantiatesUri       | 0 | * |  |
| Procedure.basedOn               | 0 | * |  |



|                  |   |   |   |
|------------------|---|---|---|
| Procedure.partOf | 0 | * |   |
| Procedure.status | 1 | 1 | Y |

|                        |   |   |   |
|------------------------|---|---|---|
| Procedure.statusReason | 0 | 1 |   |
| Procedure.category     | 0 | 1 |   |
| Procedure.code         | 1 | 1 | Y |
| Procedure.subject      | 1 | 1 | Y |
| Procedure.encounter    | 0 | 1 |   |

|                        |   |   |   |
|------------------------|---|---|---|
| Procedure.performed[x] | 1 | 1 | Y |
| Procedure.recorder     | 0 | 1 |   |
| Procedure.asserter     | 0 | 1 |   |
| Procedure.performer    | 0 | * |   |
| Procedure.performer.id | 0 | 1 |   |

|                                       |   |   |  |
|---------------------------------------|---|---|--|
| Procedure.performer.extension         | 0 | * |  |
| Procedure.performer.modifierExtension | 0 | * |  |

|                                |   |   |  |
|--------------------------------|---|---|--|
| Procedure.performer.function   | 0 | 1 |  |
| Procedure.performer.actor      | 1 | 1 |  |
| Procedure.performer.onBehalfOf | 0 | 1 |  |
| Procedure.location             | 0 | 1 |  |
| Procedure.reasonCode           | 0 | * |  |

|                           |   |   |  |
|---------------------------|---|---|--|
| Procedure.reasonReference | 0 | * |  |
| Procedure.bodySite        | 0 | * |  |
| Procedure.outcome         | 0 | 1 |  |

|                              |   |   |  |
|------------------------------|---|---|--|
| Procedure.report             | 0 | * |  |
| Procedure.complication       | 0 | * |  |
| Procedure.complicationDetail | 0 | * |  |
| Procedure.followUp           | 0 | * |  |
| Procedure.note               | 0 | * |  |
| Procedure.focalDevice        | 0 | * |  |
| Procedure.focalDevice.id     | 0 | 1 |  |

|   |   |   |  |
|---|---|---|--|
| Procedure.focalDevice.extension         | 0 | * |  |
| Procedure.focalDevice.modifierExtension | 0 | * |  |
| Procedure.focalDevice.action            | 0 | 1 |  |



|                                   |   |   |  |
|-----------------------------------|---|---|--|
| Procedure.focalDevice.manipulated | 1 | 1 |  |
| Procedure.usedReference           | 0 | * |  |
| Procedure.usedCode                | 0 | * |  |

| <b>Data Type(s)</b> | <b>FHIR Short Description</b>                         |
|---------------------|---|
|                     | An action that is being or was performed on a patient |
| string              | Logical id of this artifact                           |
| Meta                | Metadata about the resource                           |

uri

A set of rules under which this content was created

code

Language of the resource  
content

|           |   |
|-----------|---|
| Narrative | Text summary of the resource,<br>for human interpretation |
| Resource  | Contained, inline Resources                               |

|           |   |
|-----------|---|
| Extension | Additional content defined by implementations |
| Extension | Extensions that cannot be ignored             |

|  |  |
|--|--|
| Identifier   | External Identifiers for this procedure      |
| canonical(PlanDefinition ActivityDefinition Measure OperationDefinition Questionnaire) | Instantiates FHIR protocol or definition     |
| uri  | Instantiates external protocol or definition |
| Reference(CarePlan ServiceRequest)   | A request for this procedure                 |

|   |   |
|---|---|
| Reference(Procedure <br>Observation <br>MedicationAdministration) | Part of referenced event  |
| code  | preparation   in-progress   not-<br>done   on-hold   stopped  <br>completed   entered-in-error  <br>unknown |



|  |                                    |
|--|------------------------------------|
| CodeableConcept  | Reason for current status          |
| CodeableConcept  | Classification of the procedure    |
| CodeableConcept  | Identification of the procedure    |
| Reference( <a href="http://hl7.org/fhir/us/core/StructureDefinition/us-core-patient">http://hl7.org/fhir/us/core/StructureDefinition/us-core-patient</a> ) | Who the procedure was performed on |
| Reference(Encounter)   | Encounter created as part of       |

|  |   |
|--|---|
| dateTime<br>Period<br>string<br>Age<br>Range                           | When the procedure was performed        |
| Reference(Patient <br>RelatedPerson Practitioner <br>PractitionerRole) | Who recorded the procedure              |
| Reference(Patient <br>RelatedPerson Practitioner <br>PractitionerRole) | Person who asserts this procedure       |
| BackboneElement  | The people who performed the procedure  |
| string   | Unique id for inter-element referencing |

|           |  |
|-----------|--|
| Extension | Additional content defined by implementations          |
| Extension | Extensions that cannot be ignored even if unrecognized |

|  |  |
|--|--|
| CodeableConcept  | Type of performance                                    |
| Reference(Practitioner PractitionerRole Organization Patient RelatedPerson Device) | The reference to the practitioner                      |
| Reference(Organization)  | Organization the device or practitioner was acting for |
| Reference(Location)  | Where the procedure happened                           |
| CodeableConcept  | Coded reason procedure performed                       |

|   |   |
|---|---|
| Reference(Condition <br>Observation Procedure <br>DiagnosticReport <br>DocumentReference) | The justification that the<br>procedure was performed |
| CodeableConcept   | Target body sites                                     |
| CodeableConcept   | The result of procedure                               |

|   |   |
|---|---|
| Reference(DiagnosticReport DocumentReference Composition) | Any report resulting from the procedure       |
| CodeableConcept   | Complication following the procedure          |
| Reference(Condition)                                      | A condition that is a result of the procedure |
| CodeableConcept   | Instructions for follow up                    |
| Annotation  | Additional information about the procedure    |
| BackboneElement   | Manipulated, implanted, or removed device     |
| string  | Unique id for inter-element referencing       |

|                 |  |
|-----------------|--|
| Extension       | Additional content defined by implementations          |
| Extension       | Extensions that cannot be ignored even if unrecognized |
| CodeableConcept | Kind of change to device                               |

|  |                                       |
|--|---------------------------------------|
| Reference(Device)                      | Device that was changed               |
| Reference(Device Medication Substance) | Items used during procedure           |
| CodeableConcept                        | Coded items used during the procedure |



| FHIR Definition  | Comments  | Binding Strength |
|--|---|------------------|
| The US Core Condition Profile is based upon the core FHIR Procedure Resource and created to meet the 2015 Edition Common Clinical Data Set 'Procedures' requirements.                  |   |                  |
| The logical id of the resource, as used in the URL for the resource. Once assigned, this value never changes.  | The only time that a resource does not have an id is when it is being submitted to the server using a create operation. |                  |
| The metadata about the resource. This is content that is maintained by the infrastructure. Changes to the content might not always be associated with version changes to the resource. |   |                  |

|  |  |  |
|--|--|--|
| <p>A reference to a set of rules that were followed when the resource was constructed, and which must be understood when processing the content. Often, this is a reference to an implementation guide that defines the special rules along with other profiles etc.</p> | <p>Asserting this rule set restricts the content to be only understood by a limited set of trading partners. This inherently limits the usefulness of the data in the long term. However, the existing health eco-system is highly fractured, and not yet ready to define, collect, and exchange data in a generally computable sense. Wherever possible, implementers and/or specification writers should avoid using this element. Often, when used, the URL is a reference to an implementation guide that defines these special rules as part of its narrative along with other profiles, value sets, etc.</p> |  |
|--|--|--|

|  |   |                  |
|--|---|------------------|
| <p>The base language in which the resource is written.</p> | <p>Language is provided to support indexing and accessibility (typically, services such as text to speech use the language tag). The html language tag in the narrative applies to the narrative. The language tag on the resource may be used to specify the language of other presentations generated from the data in the resource. Not all the content has to be in the base language. The Resource.language should not be assumed to apply to the narrative automatically. If a language is specified, it should it also be specified on the div element in the html (see rules in HTML5 for information about the relationship between xml:lang and the html lang attribute).</p> | <p>preferred</p> |
|--|---|------------------|

|  |  |  |
|--|--|--|
| <p>A human-readable narrative that contains a summary of the resource and can be used to represent the content of the resource to a human. The narrative need not encode all the structured data, but is required to contain sufficient detail to make it "clinically safe" for a human to just read the narrative. Resource definitions may define what content should be represented in the narrative to ensure clinical safety.</p> | <p>Contained resources do not have narrative. Resources that are not contained SHOULD have a narrative. In some cases, a resource may only have text with little or no additional discrete data (as long as all minOccurs=1 elements are satisfied). This may be necessary for data from legacy systems where information is captured as a "text blob" or where text is additionally entered raw or narrated and encoded information is added later.</p> |  |
| <p>These resources do not have an independent existence apart from the resource that contains them - they cannot be identified independently, and nor can they have their own independent transaction scope.</p>   | <p>This should never be done when the content can be identified properly, as once identification is lost, it is extremely difficult (and context dependent) to restore it again. Contained resources may have profiles and tags in their meta elements, but SHALL NOT have security labels.</p>  |  |

|  |  |  |
|--|--|--|
| <p>May be used to represent additional information that is not part of the basic definition of the resource. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension.</p>  | <p>There can be no stigma associated with the use of extensions by any application, project, or standard - regardless of the institution or jurisdiction that uses or defines the extensions. The use of extensions is what allows the FHIR specification to retain a core level of simplicity for everyone.</p> |  |
| <p>May be used to represent additional information that is not part of the basic definition of the resource and that modifies the understanding of the element that contains it and/or the understanding of the containing element's descendants. Usually modifier elements provide negation or qualification. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer is allowed to define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension. Applications processing a resource are required to check for modifier extensions.</p> <p>Modifier extensions SHALL NOT change the meaning of any elements on Resource or DomainResource (including cannot change the meaning of modifierExtension itself).</p> | <p>There can be no stigma associated with the use of extensions by any application, project, or standard - regardless of the institution or jurisdiction that uses or defines the extensions. The use of extensions is what allows the FHIR specification to retain a core level of simplicity for everyone.</p> |  |

|  |   |  |
|--|---|--|
| <p>Business identifiers assigned to this procedure by the performer or other systems which remain constant as the resource is updated and is propagated from server to server.</p> | <p>This is a business identifier, not a resource identifier (see [discussion](http://hl7.org/fhir/R4/resource.html#identifiers)). It is best practice for the identifier to only appear on a single resource instance, however business practices may occasionally dictate that multiple resource instances with the same identifier can exist - possibly even with different resource types. For example, multiple Patient and Person resource instances might share the same social insurance number.</p> |  |
| <p>The URL pointing to a FHIR-defined protocol, guideline, order set or other definition that is adhered to in whole or in part by this Procedure.</p>                             |   |  |
| <p>The URL pointing to an externally maintained protocol, guideline, order set or other definition that is adhered to in whole or in part by this Procedure.</p>                   | <p>This might be an HTML page, PDF, etc. or could just be a non-resolvable URI identifier.</p>  |  |
| <p>A reference to a resource that contains details of the request for this procedure.</p>  |   |  |

|  |  |                 |
|--|--|-----------------|
| <p>A larger event of which this particular procedure is a component or step.</p>                                 | <p>The MedicationAdministration resource has a partOf reference to Procedure, but this is not a circular reference. For example, the anesthesia MedicationAdministration is part of the surgical Procedure (MedicationAdministration.partOf = Procedure). For example, the procedure to insert the IV port for an IV medication administration is part of the medication administration (Procedure.partOf = MedicationAdministration).</p> |                 |
| <p>A code specifying the state of the procedure. Generally, this will be the in-progress or completed state.</p> | <p>The "unknown" code is not to be used to convey other statuses. The "unknown" code should be used when one of the statuses applies, but the authoring system doesn't know the current state of the procedure.</p> <p>This element is labeled as a modifier because the status contains codes that mark the resource as not currently valid.</p>  | <p>required</p> |

|  |  |                   |
|--|--|-------------------|
| <p>Captures the reason for the current state of the procedure.</p>   | <p>This is generally only used for "exception" statuses such as "not-done", "suspended" or "aborted". The reason for performing the event at all is captured in reasonCode, not here.</p>                                | <p>example</p>    |
| <p>A code that classifies the procedure for searching, sorting and display purposes (e.g. "Surgical Procedure").</p>                               |  | <p>example</p>    |
| <p>The specific procedure that is performed. Use text if the exact nature of the procedure cannot be coded (e.g. "Laparoscopic Appendectomy").</p> |  | <p>extensible</p> |
| <p>The person, animal or group on which the procedure was performed.</p>   |  |                   |
| <p>The Encounter during which this Procedure was created or performed or to which the creation of this record is tightly associated.</p>           | <p>This will typically be the encounter the event occurred within, but some activities may be initiated prior to or after the official completion of an encounter but still be tied to the context of the encounter.</p> |                   |



|  |   |  |
|--|---|--|
| <p>Estimated or actual date, date-time, period, or age when the procedure was performed. Allows a period to support complex procedures that span more than one date, and also allows for the length of the procedure to be captured.</p> | <p>Age is generally used when the patient reports an age at which the procedure was performed. Range is generally used when the patient reports an age range when the procedure was performed, such as sometime between 20-25 years old. dateTime supports a range of precision due to some procedures being reported as past procedures that might not have millisecond precision while other procedures performed and documented during the encounter might have more precise UTC timestamps with timezone.</p> |  |
| <p>Individual who recorded the record and takes responsibility for its content.</p>  |   |  |
| <p>Individual who is making the procedure statement.</p>   |   |  |
| <p>Limited to "real" people rather than equipment.</p>   |   |  |
| <p>Unique id for the element within a resource (for internal references). This may be any string value that does not contain spaces.</p>   |   |  |

|   |  |  |
|---|--|--|
| <p>May be used to represent additional information that is not part of the basic definition of the element. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension.</p>  | <p>There can be no stigma associated with the use of extensions by any application, project, or standard - regardless of the institution or jurisdiction that uses or defines the extensions. The use of extensions is what allows the FHIR specification to retain a core level of simplicity for everyone.</p> |  |
| <p>May be used to represent additional information that is not part of the basic definition of the element and that modifies the understanding of the element in which it is contained and/or the understanding of the containing element's descendants. Usually modifier elements provide negation or qualification. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension. Applications processing a resource are required to check for modifier extensions.</p> <p>Modifier extensions SHALL NOT change the meaning of any elements on Resource or DomainResource (including cannot change the meaning of modifierExtension itself).</p> | <p>There can be no stigma associated with the use of extensions by any application, project, or standard - regardless of the institution or jurisdiction that uses or defines the extensions. The use of extensions is what allows the FHIR specification to retain a core level of simplicity for everyone.</p> |  |

|  |   |                    |
|--|---|--------------------|
| Distinguishes the type of involvement of the performer in the procedure. For example, surgeon, anaesthetist, endoscopist.    |   | example            |
| The practitioner who was involved in the procedure.  |   |                    |
| The organization the device or practitioner was acting on behalf of.   |   |                    |
| The location where the procedure actually happened. E.g. a newborn at home, a tracheostomy at a restaurant.                  |   |                    |
| The coded reason why the procedure was performed. This may be a coded entity of some type, or may simply be present as text. | <p>Use Procedure.reasonCode when a code sufficiently describes the reason.</p> <p>Use Procedure.reasonReference when referencing a resource, which allows more information to be conveyed, such as onset date.</p> <p>Procedure.reasonCode and Procedure.reasonReference are not meant to be duplicative. For a single reason, either Procedure.reasonCode or Procedure.reasonReference can be used.</p> <p>Procedure.reasonCode may be a summary code, or Procedure.reasonReference may be used to reference a very precise definition of the reason using Condition   Observation   Procedure   DiagnosticReport   DocumentReference.</p> <p>Both</p> | example extensible |

|  |   |                               |
|--|---|-------------------------------|
| <p>The justification of why the procedure was performed.</p>   | <p>It is possible for a procedure to be a reason (such as C-Section) for another procedure (such as an epidural). Other examples include endoscopy for dilatation and biopsy (a combination of diagnostic and therapeutic use).<br/> Use Procedure.reasonCode when a code sufficiently describes the reason.<br/> Use Procedure.reasonReference when referencing a resource, which allows more information to be conveyed, such as onset date.<br/> Procedure.reasonCode and Procedure.reasonReference are not meant to be duplicative. For a single reason, either Procedure.reasonCode or Procedure.reasonReference can be used.<br/> Procedure.reasonCode may be a summary code,</p> |                               |
| <p>Detailed and structured anatomical location information. Multiple locations are allowed - e.g. multiple punch biopsies of a lesion.</p> | <p>If the use case requires attributes from the BodySite resource (e.g. to identify and track separately) then use the standard extension [procedure-targetbodystructure] (<a href="http://hl7.org/fhir/R4/extension-procedure-targetbodystructure.html">http://hl7.org/fhir/R4/extension-procedure-targetbodystructure.html</a>)</p>   | <p>example<br/>extensible</p> |
| <p>The outcome of the procedure - did it resolve the reasons for the procedure being performed?</p>  | <p>If outcome contains narrative text only, it can be captured using the CodeableConcept.text.</p>  | <p>example</p>                |

|  |   |                |
|--|---|----------------|
| <p>This could be a histology result, pathology report, surgical report, etc.</p>   | <p>There could potentially be multiple reports - e.g. if this was a procedure which took multiple biopsies resulting in a number of anatomical pathology reports.</p> |                |
| <p>Any complications that occurred during the procedure, or in the immediate post-performance period. These are generally tracked separately from the notes, which will typically describe the procedure itself rather than any 'post procedure' issues.</p> | <p>If complications are only expressed by the narrative text, they can be captured using the CodeableConcept.text.</p>  | <p>example</p> |
| <p>Any complications that occurred during the procedure, or in the immediate post-performance period.</p>  |   |                |
| <p>If the procedure required specific follow up - e.g. removal of sutures. The follow up may be represented as a simple note or could potentially be more complex, in which case the CarePlan resource can be used.</p>                                      |   | <p>example</p> |
| <p>Any other notes and comments about the procedure.</p>   |   |                |
| <p>A device that is implanted, removed or otherwise manipulated (calibration, battery replacement, fitting a prosthesis, attaching a wound-vac, etc.) as a focal portion of the Procedure.</p>   |   |                |
| <p>Unique id for the element within a resource (for internal references). This may be any string value that does not contain spaces.</p>   |   |                |

|   |  |                  |
|---|--|------------------|
| <p>May be used to represent additional information that is not part of the basic definition of the element. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension.</p>  | <p>There can be no stigma associated with the use of extensions by any application, project, or standard - regardless of the institution or jurisdiction that uses or defines the extensions. The use of extensions is what allows the FHIR specification to retain a core level of simplicity for everyone.</p> |                  |
| <p>May be used to represent additional information that is not part of the basic definition of the element and that modifies the understanding of the element in which it is contained and/or the understanding of the containing element's descendants. Usually modifier elements provide negation or qualification. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension. Applications processing a resource are required to check for modifier extensions.</p> <p>Modifier extensions SHALL NOT change the meaning of any elements on Resource or DomainResource (including cannot change the meaning of modifierExtension itself).</p> | <p>There can be no stigma associated with the use of extensions by any application, project, or standard - regardless of the institution or jurisdiction that uses or defines the extensions. The use of extensions is what allows the FHIR specification to retain a core level of simplicity for everyone.</p> |                  |
| <p>The kind of change that happened to the device during the procedure.</p>   |  | <p>preferred</p> |

|  |  |         |
|--|--|---------|
| The device that was manipulated (changed) during the procedure.                        |  |         |
| Identifies medications, devices and any other substance used as part of the procedure. | For devices actually implanted or removed, use Procedure.device. |         |
| Identifies coded items that were used as part of the procedure.                        | For devices actually implanted or removed, use Procedure.device. | example |

| Binding Description | Binding Value Set | ACH dQM   |
|---------------------|-------------------|-----------|
|                     |                   | MS [0..*] |
|                     |                   | R [1..1]  |
|                     |                   | NRT       |



|  |  |     |
|--|--|-----|
|  |  | NRT |
|--|--|-----|

A human language.

<http://hl7.org/fhir/ValueNRT>

|  |  |     |
|--|--|-----|
|  |  | NRT |
|  |  | NRT |

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|--|--|-----|
|  |  | NRT |
|  |  | NRT |

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|--|--|-----|
|  |  | NRT |
|  |  | NR  |
|  |  | NR  |
|  |  | NR  |

|  |   |        |
|--|---|--------|
|  |   | NR     |
|  | <a href="http://hl7.org/fhir/R4R">http://hl7.org/fhir/R4R</a> | [1..1] |

|   |   |           |
|---|---|-----------|
| A code that identifies the reason a procedure was not performed.                | <a href="http://hl7.org/fhir/ValueSet">http://hl7.org/fhir/ValueSet</a>   | NR        |
| A code that classifies a procedure for searching, sorting and display purposes. | <a href="http://hl7.org/fhir/ValueSet">http://hl7.org/fhir/ValueSet</a>   | NR        |
| Codes describing the type of Procedure  | <a href="https://hl7.org/fhir/ValueSet">https://hl7.org/fhir/ValueSet</a> | UR [1..1] |
|   |   | R [1..1]  |
|   |   | MS[0..1]  |

|  |  |          |
|--|--|----------|
|  |  | R [1..1] |
|  |  | NR       |
|  |  | NR       |
|  |  | NR       |
|  |  | NRT      |



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|--|--|-----|
|  |  | NRT |
|  |  | NRT |

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|--|---|---|
| A code that identifies the role of a performer of the procedure. | <a href="http://hl7.org/fhir/ValueSet/performer-role">http://hl7.org/fhir/ValueSet/performer-role</a>     | NR  |
|  |   | NR  |
|  |   | NR  |
|  |   | MS [0..1]                                 |
| A code that identifies the reason a procedure is required.       | <a href="http://hl7.org/fhir/ValueSet/reason-procedure">http://hl7.org/fhir/ValueSet/reason-procedure</a> | MS [0..*]<br>Binding strength= extensible |

|   |   |   |
|---|---|---|
|   |   | MS [0..*]                                 |
| Codes describing anatomical locations. May include laterality.    | <a href="http://hl7.org/fhir/ValueSet/procedure-outcome">http://hl7.org/fhir/ValueSet/procedure-outcome</a> | MS [0..*]<br>Binding strength= extensible |
| An outcome of a procedure - whether it was resolved or otherwise. | <a href="http://hl7.org/fhir/ValueSet/procedure-outcome">http://hl7.org/fhir/ValueSet/procedure-outcome</a> | NR  |

|  |   |     |
|--|---|-----|
|  |   | NR  |
| Codes describing complications that resulted from a procedure.       | <a href="http://hl7.org/fhir/ValueSet/condition-code">http://hl7.org/fhir/ValueSet/condition-code</a>         | NR  |
|  |   | NR  |
| Specific follow up required for a procedure e.g. removal of sutures. | <a href="http://hl7.org/fhir/ValueSet/procedure-followup">http://hl7.org/fhir/ValueSet/procedure-followup</a> | NR  |
|  |   | NR  |
|  |   | NR  |
|  |   | NRT |

|  |   |     |
|--|---|-----|
|  |   | NRT |
|  |   | NRT |
| A kind of change that happened to the device during the procedure. | <a href="http://hl7.org/fhir/Va">http://hl7.org/fhir/Va</a> | NR  |

|   |   |    |
|---|---|----|
|   |   | NR |
|   |   | NR |
| Codes describing items used during a procedure. | <a href="http://hl7.org/fhir/R4">http://hl7.org/fhir/R4</a> | NR |

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| <b>FHIR Path</b>             | <b>Min</b> | <b>Max</b> |
|------------------------------|------------|------------|
| ServiceRequest               | 0          | *          |
| ServiceRequest.id            | 0          | 1          |
| ServiceRequest.meta          | 0          | 1          |
| ServiceRequest.implicitRules | 0          | 1          |
| ServiceRequest.language      | 0          | 1          |
| ServiceRequest.text          | 0          | 1          |
| ServiceRequest.contained     | 0          | *          |

|                                      |   |   |
|--------------------------------------|---|---|
| ServiceRequest.extension             | 0 | * |
| ServiceRequest.modifierExtension     | 0 | * |
| ServiceRequest.identifier            | 0 | * |
| ServiceRequest.instantiatesCanonical | 0 | * |
| ServiceRequest.instantiatesUri       | 0 | * |



|                             |   |   |
|-----------------------------|---|---|
| ServiceRequest.basedOn      | 0 | * |
| ServiceRequest.replaces     | 0 | * |
| ServiceRequest.requisition  | 0 | 1 |
| ServiceRequest.status       | 1 | 1 |
| ServiceRequest.intent       | 1 | 1 |
| ServiceRequest.category     | 0 | * |
| ServiceRequest.priority     | 0 | 1 |
| ServiceRequest.doNotPerform | 0 | 1 |
| ServiceRequest.code         | 0 | 1 |
| ServiceRequest.orderDetail  | 0 | * |
| ServiceRequest.quantity[x]  | 0 | 1 |

|                                  |   |   |
|----------------------------------|---|---|
| ServiceRequest.subject           | 1 | 1 |
| ServiceRequest.encounter         | 0 | 1 |
| ServiceRequest.occurrence[x]     | 0 | 1 |
| ServiceRequest.asNeeded[x]       | 0 | 1 |
| ServiceRequest.authoredOn        | 0 | 1 |
| ServiceRequest.requester         | 0 | 1 |
| ServiceRequest.performerType     | 0 | 1 |
| ServiceRequest.performer         | 0 | * |
| ServiceRequest.locationCode      | 0 | * |
| ServiceRequest.locationReference | 0 | * |
| ServiceRequest.reasonCode        | 0 | * |

|                                   |   |   |
|-----------------------------------|---|---|
| ServiceRequest.reasonReference    | 0 | * |
| ServiceRequest.insurance          | 0 | * |
| ServiceRequest.supportingInfo     | 0 | * |
| ServiceRequest.specimen           | 0 | * |
| ServiceRequest.bodySite           | 0 | * |
| ServiceRequest.note               | 0 | * |
| ServiceRequest.patientInstruction | 0 | 1 |
| ServiceRequest.relevantHistory    | 0 | * |

| Data Type(s) | FHIR Short Description                                 |
|--------------|--|
|              | A request for a service to be performed                |
| id           | Logical id of this artifact                            |
| Meta         | Metadata about the resource                            |
| uri          | A set of rules under which this content was created    |
| code         | Language of the resource content                       |
| Narrative    | Text summary of the resource, for human interpretation |
| Resource     | Contained, inline Resources                            |

|  |   |
|--|---|
| Extension                                    | Additional content defined by implementations |
| Extension                                    | Extensions that cannot be ignored             |
| Identifier                                   | Identifiers assigned to this order            |
| canonical(ActivityDefinition PlanDefinition) | Instantiates FHIR protocol or definition      |
| uri  | Instantiates external protocol or definition  |

|  |  |
|--|--|
| Reference(CarePlan ServiceRequest MedicationRequest) | What request fulfills  |
| Reference(ServiceRequest)                            | What request replaces  |
| Identifier   | Composite Request ID   |
| code   | draft   active   on-hold   revoked   completed   entered-in-error   unknown                                  |
| code   | proposal   plan   directive   order   original-order   reflex-order   filler-order   instance-order   option |
| CodeableConcept                                      | Classification of service  |
| code   | routine   urgent   asap   stat   |
| boolean  | True if service/procedure should not be performed  |
| CodeableConcept                                      | What is being requested/ordered  |
| CodeableConcept                                      | Additional order information   |
| Quantity<br>RatioRange                               | Service amount   |

|   |  |
|---|--|
| Reference(Patient Group Location Device)  | Individual or Entity the service is ordered for    |
| Reference(Encounter)  | Encounter in which the request was created         |
| dateTime<br>Period<br>Timing  | When service should occur                          |
| boolean<br>CodeableConcept  | Preconditions for service                          |
| dateTime  | Date request signed                                |
| Reference(Practitioner PractitionerRole Organization Patient RelatedPerson Device)                            | Who/what is requesting service                     |
| CodeableConcept   | Performer role                                     |
| Reference(Practitioner PractitionerRole Organization CareTeam HealthcareService Patient Device RelatedPerson) | Requested performer                                |
| CodeableConcept   | Requested location                                 |
| Reference(Location)   | Requested location                                 |
| CodeableConcept   | Explanation/Justification for procedure or service |

|   |   |
|---|---|
| Reference(Condition <br>Observation <br>DiagnosticReport <br>DocumentReference) | Explanation/Justification for<br>service or service |
| Reference(Coverage <br>ClaimResponse)   | Associated insurance coverage                       |
| Reference(Resource)   | Additional clinical information                     |
| Reference(Specimen)   | Procedure Samples                                   |
| CodeableConcept   | Location on Body                                    |
| Annotation  | Comments  |
| string  | Patient or consumer-oriented<br>instructions        |
| Reference(Provenance)   | Request provenance                                  |



| FHIR Definition   | Binding Strength | Binding Description |
|---|------------------|---------------------|
| A record of a request for service such as diagnostic investigations, treatments, or operations to be performed.   |                  |                     |
| The logical id of the resource, as used in the URL for the resource. Once assigned, this value never changes.   |                  |                     |
| The metadata about the resource. This is content that is maintained by the infrastructure. Changes to the content might not always be associated with version changes to the resource.  |                  |                     |
| A reference to a set of rules that were followed when the resource was constructed, and which must be understood when processing the content. Often, this is a reference to an implementation guide that defines the special rules along with other profiles etc.   |                  |                     |
| The base language in which the resource is written.   | preferred        | Common Languages    |
| A human-readable narrative that contains a summary of the resource and can be used to represent the content of the resource to a human. The narrative need not encode all the structured data, but is required to contain sufficient detail to make it "clinically safe" for a human to just read the narrative. Resource definitions may define what content should be represented in the narrative to ensure clinical safety. |                  |                     |
| These resources do not have an independent existence apart from the resource that contains them - they cannot be identified independently, and nor can they have their own independent transaction scope.   |                  |                     |

|  |  |  |
|--|--|--|
| <p>May be used to represent additional information that is not part of the basic definition of the resource. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension.</p>  |  |  |
| <p>May be used to represent additional information that is not part of the basic definition of the resource and that modifies the understanding of the element that contains it and/or the understanding of the containing element's descendants. Usually modifier elements provide negation or qualification. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer is allowed to define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension. Applications processing a resource are required to check for modifier extensions.</p> <p>Modifier extensions SHALL NOT change the meaning of any elements on Resource or DomainResource (including cannot change the meaning of modifierExtension itself).</p> |  |  |
| <p>Identifiers assigned to this order instance by the orderer and/or the receiver and/or order fulfiller.</p>  |  |  |
| <p>The URL pointing to a FHIR-defined protocol, guideline, orderset or other definition that is adhered to in whole or in part by this ServiceRequest.</p>   |  |  |
| <p>The URL pointing to an externally maintained protocol, guideline, orderset or other definition that is adhered to in whole or in part by this ServiceRequest.</p>   |  |  |

|  |                       |   |
|--|-----------------------|---|
| Plan/proposal/order fulfilled by this request.   |                       |   |
| The request takes the place of the referenced completed or terminated request(s).  |                       |   |
| A shared identifier common to all service requests that were authorized more or less simultaneously by a single author, representing the composite or group identifier.  |                       |   |
| The status of the order.   | required              | RequestStatus                             |
| Whether the request is a proposal, plan, an original order or a reflex order.  | required              | RequestIntent                             |
| A code that classifies the service for searching, sorting and display purposes (e.g. "Surgical Procedure").  | example<br>extensible | Service Request<br>Category Codes         |
| Indicates how quickly the ServiceRequest should be addressed with respect to other requests.   | required              | Request priority                          |
| Set this to true if the record is saying that the service/procedure should NOT be performed.   |                       |   |
| A code that identifies a particular service (i.e., procedure, diagnostic investigation, or panel of investigations) that have been requested.  | example<br>extensible | Procedure Codes<br>(SNOMED CT)            |
| Additional details and instructions about the how the services are to be delivered. For example, and order for a urinary catheter may have an order detail for an external or indwelling catheter, or an order for a bandage may require additional instructions specifying how the bandage should be applied. | example               | Service Request<br>Order Details<br>Codes |
| An amount of service being requested which can be a quantity ( for example \$1,500 home modification), a ratio ( for example, 20 half day visits per month), or a range (2.0 to 1.8 Gy per fraction).  |                       |   |

|   |         |  |
|---|---------|--|
| On whom or what the service is to be performed. This is usually a human patient, but can also be requested on animals, groups of humans or animals, devices such as dialysis machines, or even locations (typically for environmental scans). |         |  |
| An encounter that provides additional information about the healthcare context in which this request is made.   |         |  |
| The date/time at which the requested service should occur.  |         |  |
| If a CodeableConcept is present, it indicates the pre-condition for performing the service. For example "pain", "on flare-up", etc.   | example | SNOMED CT Medication As Needed Reason Codes  |
| When the request transitioned to being actionable.  |         |  |
| The individual who initiated the request and has responsibility for its activation.   |         |  |
| Desired type of performer for doing the requested service.  | example | Participant Roles                            |
| The desired performer for doing the requested service. For example, the surgeon, dermatopathologist, endoscopist, etc.  |         |  |
| The preferred location(s) where the procedure should actually happen in coded or free text form. E.g. at home or nursing day care center.   | example | V3 Value SetServiceDelivery LocationRoleType |
| A reference to the the preferred location(s) where the procedure should actually happen. E.g. at home or nursing day care center.   |         |  |
| An explanation or justification for why this service is being requested in coded or textual form. This is often for billing purposes. May relate to the resources referred to in `supportingInfo`.  | example | Procedure Reason Codes                       |

|  |         |                           |
|--|---------|---------------------------|
| Indicates another resource that provides a justification for why this service is being requested. May relate to the resources referred to in `supportingInfo`.   |         |                           |
| Insurance plans, coverage extensions, pre-authorizations and/or pre-determinations that may be needed for delivering the requested service.  |         |                           |
| Additional clinical information about the patient or specimen that may influence the services or their interpretations. This information includes diagnosis, clinical findings and other observations. In laboratory ordering these are typically referred to as "ask at order entry questions (AOEs)". This includes observations explicitly requested by the producer (filler) to provide context or supporting information needed to complete the order. For example, reporting the amount of inspired oxygen for blood gas measurements. |         |                           |
| One or more specimens that the laboratory procedure will use.  |         |                           |
| Anatomic location where the procedure should be performed. This is the target site.  | example | SNOMED CT Body Structures |
| Any other notes and comments made about the service request. For example, internal billing notes.  |         |                           |
| Instructions in terms that are understood by the patient or consumer.  |         |                           |
| Key events in the history of the request.  |         |                           |

| Binding Value Set   | ACH dQM   |
|---|-----------|
|   | MS [0..*] |
|   | R [1..1]  |
|   | NRT       |
|   | NRT       |
| <a href="http://hl7.org/fhir/ValueSet/language">http://hl7.org/fhir/ValueSet/language</a> | NRT       |
|   | NRT       |
|   | NRT       |

|  |     |
|--|-----|
|  | NRT |
|  | NRT |
|  | NRT |
|  | NR  |
|  | NR  |

|   |  |
|---|--|
|   | NR   |
|   | NR   |
|   | NR   |
| <a href="http://hl7.org/fhir/ValueSet/request">http://hl7.org/fhir/ValueSet/request</a>       | R [1..1]                                     |
|   |  |
| <a href="http://hl7.org/fhir/ValueSet/request">http://hl7.org/fhir/ValueSet/request</a>       | R [1..1]                                     |
|   |  |
| <a href="http://hl7.org/fhir/ValueSet/service">http://hl7.org/fhir/ValueSet/service</a>       | MS [0..*]<br>Binding strength=<br>extensible |
|   |  |
| <a href="http://hl7.org/fhir/ValueSet/request">http://hl7.org/fhir/ValueSet/request</a>       | MS [0..1]                                    |
|   |  |
|   | MS [0..1]                                    |
|   |  |
| <a href="http://hl7.org/fhir/ValueSet/procedure">http://hl7.org/fhir/ValueSet/procedure</a>   | MS [0..1]<br>Binding strength=<br>extensible |
|   |  |
| <a href="https://hl7.org/fhir/R4/valueset-server">https://hl7.org/fhir/R4/valueset-server</a> | NR   |
|   |  |
|   | NR   |



|   |           |
|---|-----------|
|   | R [1..1]  |
|   | MS [0..1] |
|   | MS [0..1] |
| <a href="http://hl7.org/fhir/ValueSet/medication-as-needed-reason">http://hl7.org/fhir/ValueSet/medication-as-needed-reason</a>       | MS [0..1] |
|   | R [1..1]  |
|   | NR        |
| <a href="http://terminology.hl7.org/ValueSet/action-participant-role">http://terminology.hl7.org/ValueSet/action-participant-role</a> | NR        |
|   | NR        |
| <a href="http://terminology.hl7.org/ValueSet/">http://terminology.hl7.org/ValueSet/</a>   | NR        |
|   | NR        |
| <a href="http://hl7.org/fhir/ValueSet/proced">http://hl7.org/fhir/ValueSet/proced</a>   | NR        |
|   |           |

|   |           |
|---|-----------|
|   | MS [0..*] |
|   | NR        |
|   | NR        |
|   | MS [0..*] |
| <a href="http://hl7.org/fhir/ValueSet/body-site">http://hl7.org/fhir/ValueSet/body-site</a> | NR        |
|   | NR        |
|   | NR        |
|   | NR        |

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| <b>FHIR Path</b>       | <b>Min</b> | <b>Max</b> | <b>Data Type(s)</b> |
|------------------------|------------|------------|---------------------|
| Specimen               | 0          | *          |                     |
| Specimen.id            | 0          | 1          | id                  |
| Specimen.meta          | 0          | 1          | Meta                |
| Specimen.implicitRules | 0          | 1          | uri                 |
| Specimen.language      | 0          | 1          | code                |
| Specimen.text          | 0          | 1          | Narrative           |

|                              |   |   |            |
|------------------------------|---|---|------------|
| Specimen.contained           | 0 | * | Resource   |
| Specimen.extension           | 0 | * | Extension  |
| Specimen.modifierExtension   | 0 | * | Extension  |
| Specimen.identifier          | 0 | * | Identifier |
| Specimen.accessionIdentifier | 0 | 1 | Identifier |

|                            |   |   |  |
|----------------------------|---|---|--|
| Specimen.status            | 0 | 1 | code   |
| Specimen.type              | 0 | 1 | CodeableConcept  |
| Specimen.subject           | 0 | 1 | Reference(Patient <br>Group Device <br>Substance Location) |
| Specimen.receivedTime      | 0 | 1 | dateTime   |
| Specimen.parent            | 0 | * | Reference(Specimen)  |
| Specimen.request           | 0 | * | Reference(ServiceReq<br>uest)                              |
| <b>Specimen.collection</b> | 0 | 1 | BackboneElement  |

|                                       |   |   |  |
|---------------------------------------|---|---|--|
| Specimen.collection.id                | 0 | 1 | string                                       |
| Specimen.collection.extension         | 0 | * | Extension                                    |
| Specimen.collection.modifierExtension | 0 | * | Extension                                    |
| Specimen.collection.collector         | 0 | 1 | Reference(Practitioner<br> PractitionerRole) |
| Specimen.collection.collected[x]      | 0 | 1 | dateTime<br>Period                           |
| Specimen.collection.duration          | 0 | 1 | Duration                                     |
| Specimen.collection.quantity          | 0 | 1 | Quantity<br>{SimpleQuantity}                 |
| Specimen.collection.method            | 0 | 1 | CodeableConcept                              |
| Specimen.collection.bodySite          | 0 | 1 | CodeableConcept                              |

|                                      |   |   |                             |
|--------------------------------------|---|---|-----------------------------|
| Specimen.collection.fastingStatus[x] | 0 | 1 | CodeableConcept<br>Duration |
| Specimen.processing                  | 0 | * | BackboneElement             |
| Specimen.processing.id               | 0 | 1 | string                      |
| Specimen.processing.extension        | 0 | * | Extension                   |

|                                       |   |   |                      |
|---------------------------------------|---|---|----------------------|
| Specimen.processing.modifierExtension | 0 | * | Extension            |
| Specimen.processing.description       | 0 | 1 | string               |
| Specimen.processing.procedure         | 0 | 1 | CodeableConcept      |
| Specimen.processing.additive          | 0 | * | Reference(Substance) |
| Specimen.processing.time[x]           | 0 | 1 | dateTime<br>Period   |
| <b>Specimen.container</b>             | 0 | * | BackboneElement      |
| Specimen.container.id                 | 0 | 1 | string               |



|                                      |   |   |            |
|--------------------------------------|---|---|------------|
| Specimen.container.extension         | 0 | * | Extension  |
| Specimen.container.modifierExtension | 0 | * | Extension  |
| Specimen.container.identifier        | 0 | * | Identifier |
| Specimen.container.description       | 0 | 1 | string     |

|                                     |   |   |   |
|-------------------------------------|---|---|---|
| Specimen.container.type             | 0 | 1 | CodeableConcept                         |
| Specimen.container.capacity         | 0 | 1 | Quantity<br>{SimpleQuantity}            |
| Specimen.container.specimenQuantity | 0 | 1 | Quantity<br>{SimpleQuantity}            |
| Specimen.container.additive[x]      | 0 | 1 | CodeableConcept<br>Reference(Substance) |
| Specimen.condition                  | 0 | * | CodeableConcept                         |
| Specimen.note                       | 0 | * | Annotation                              |

| <b>FHIR Short Description</b>                          | <b>FHIR Definition</b>  | <b>Binding Strength</b> |
|--|---|-------------------------|
| Sample for analysis                                    | A sample to be used for analysis.   |                         |
| Logical id of this artifact                            | The logical id of the resource, as used in the URL for the resource. Once assigned, this value never changes.   |                         |
| Metadata about the resource                            | The metadata about the resource. This is content that is maintained by the infrastructure. Changes to the content might not always be associated with version changes to the resource.  |                         |
| A set of rules under which this content was created    | A reference to a set of rules that were followed when the resource was constructed, and which must be understood when processing the content. Often, this is a reference to an implementation guide that defines the special rules along with other profiles etc.   |                         |
| Language of the resource content                       | The base language in which the resource is written.   | preferred               |
| Text summary of the resource, for human interpretation | A human-readable narrative that contains a summary of the resource and can be used to represent the content of the resource to a human. The narrative need not encode all the structured data, but is required to contain sufficient detail to make it "clinically safe" for a human to just read the narrative. Resource definitions may define what content should be represented in the narrative to ensure clinical safety. |                         |

|   |  |  |
|---|--|--|
| Contained, inline Resources                   | These resources do not have an independent existence apart from the resource that contains them - they cannot be identified independently, and nor can they have their own independent transaction scope.  |  |
| Additional content defined by implementations | May be used to represent additional information that is not part of the basic definition of the resource. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension. |  |
| Extensions that cannot be ignored             | May be used to represent additional information that is not part of the basic definition of the resource and that <del>modifies the understanding of the</del>   |  |
| External Identifier                           | Id for specimen.   |  |
| Identifier assigned by the lab                | The identifier assigned by the lab when accessioning specimen(s). This is not necessarily the same as the specimen identifier, depending on local lab procedures.  |  |

|  |   |                  |
|--|---|------------------|
| available   unavailable   unsatisfactory   entered-in-error  | The availability of the specimen.   | required         |
| Kind of material that forms the specimen   | The kind of material that forms the specimen.   | example required |
| Where the specimen came from. This may be from patient(s), from a location (e.g., the source of an environmental sample), or a sampling of a substance or a device | Where the specimen came from. This may be from patient(s), from a location (e.g., the source of an environmental sample), or a sampling of a substance or a device. |                  |
| The time when specimen was received for processing   | Time when specimen was received for processing or testing.  |                  |
| Specimen from which this specimen originated   | Reference to the parent (source) specimen which is used when the specimen was either derived from or a component of another specimen.                               |                  |
| Why the specimen was collected   | Details concerning a service request that required a specimen to be collected.  |                  |
| Collection details   | Details concerning the specimen collection.   |                  |

|  |  |                       |
|--|--|-----------------------|
| Unique id for inter-element referencing                | Unique id for the element within a resource (for internal references). This may be any string value that does not contain spaces.  |                       |
| Additional content defined by implementations          | May be used to represent additional information that is not part of the basic definition of the element. To make the   |                       |
| Extensions that cannot be ignored even if unrecognized | May be used to represent additional information that is not part of the basic definition of the element and that modifies the understanding of the element in which it is contained and/or |                       |
| Who collected the specimen                             | Person who collected the specimen.   |                       |
| Collection time  | Time when specimen was collected from subject - the physiologically relevant time.   |                       |
| How long it took to collect specimen                   | The span of time over which the collection of a specimen occurred.   |                       |
| The quantity of specimen collected                     | The quantity of specimen collected; for instance the volume of a blood sample, or the physical measurement of an anatomic pathology sample.  |                       |
| Technique used to perform collection                   | A coded value specifying the technique that is used to perform the procedure.  | example               |
| Anatomical collection site                             | Anatomical location from which the specimen was collected (if subject is a patient). This is the target site. This element is not used for environmental specimens.                        | example<br>extensible |

|  |   |            |
|--|---|------------|
| Whether or how long patient abstained from food and/or drink | Abstinence or reduction from some or all food, drink, or both, for a period of time prior to sample collection.   | extensible |
| Processing and processing step details                       | Details concerning processing and processing steps for the specimen.  |            |
| Unique id for inter-element referencing                      | Unique id for the element within a resource (for internal references). This may be any string value that does not contain spaces.   |            |
| Additional content defined by implementations                | May be used to represent additional information that is not part of the basic definition of the element. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension. |            |

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| Extensions that cannot be ignored even if unrecognized | <p>May be used to represent additional information that is not part of the basic definition of the element and that modifies the understanding of the element in which it is contained and/or the understanding of the containing element's descendants. Usually modifier elements provide negation or qualification. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension. Applications processing a resource are required to check for modifier extensions.</p> <p>Modifier extensions SHALL NOT change the meaning of any elements on Resource or DomainResource (including cannot change the meaning of modifierExtension itself).</p> |         |
| Textual description of procedure                       | Textual description of procedure.   |         |
| Indicates the treatment step applied to the specimen   | A coded value specifying the procedure used to process the specimen.  | example |
| Material used in the processing step                   | Material used in the processing step.   |         |
| Date and time of specimen processing                   | A record of the time or period when the specimen processing occurred. For example the time of sample fixation or the period of time the sample was in formalin.   |         |
| Direct container of specimen (tube/slide, etc.)        | The container holding the specimen. The recursive nature of containers; i.e. blood in tube in tray in rack is not addressed here.   |         |
| Unique id for inter-element referencing                | Unique id for the element within a resource (for internal references). This may be any string value that does not contain spaces.   |         |



|  |   |  |
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| Additional content defined by implementations          | May be used to represent additional information that is not part of the basic definition of the element. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension.   |  |
| Extensions that cannot be ignored even if unrecognized | <p>May be used to represent additional information that is not part of the basic definition of the element and that modifies the understanding of the element in which it is contained and/or the understanding of the containing element's descendants. Usually modifier elements provide negation or qualification. To make the use of extensions safe and manageable, there is a strict set of governance applied to the definition and use of extensions. Though any implementer can define an extension, there is a set of requirements that SHALL be met as part of the definition of the extension. Applications processing a resource are required to check for modifier extensions.</p> <p>Modifier extensions SHALL NOT change the meaning of any elements on Resource or DomainResource (including cannot change the meaning of modifierExtension itself).</p> |  |
| Id for the container                                   | Id for container. There may be multiple; a manufacturer's bar code, lab assigned identifier, etc. The container ID may differ from the specimen id in some circumstances.   |  |
| Textual description of the container                   | Textual description of the container.   |  |

|   |   |            |
|---|---|------------|
| Kind of container directly associated with specimen | The type of container associated with the specimen (e.g. slide, aliquot, etc.).   | example    |
| Container volume or size                            | The capacity (volume or other measure) the container may contain.   |            |
| Quantity of specimen within container               | The quantity of specimen in the container; may be volume, dimensions, or other appropriate measurements, depending on the specimen type.          |            |
| Additive associated with container                  | Introduced substance to preserve, maintain or enhance the specimen. Examples: Formalin, Citrate, EDTA.  | example    |
| State of the specimen                               | A mode or state of being that describes the nature of the specimen.   | extensible |
| Comments  | To communicate any details or issues about the specimen or during the specimen collection. (for example: broken vial, sent with patient, frozen). |            |

| Binding Description | Binding Value Set   | ACH dQM   |
|---------------------|---|-----------|
|                     |   | MS [0..*] |
|                     |   | R [1..1]  |
|                     |   | NRT       |
|                     |   | NRT       |
| Common Languages    | <a href="http://hl7.org/fhir/ValueSet">http://hl7.org/fhir/ValueSet</a> | NRT       |
|                     |   | NRT       |

|  |  |           |
|--|--|-----------|
|  |  | NRT       |
|  |  | NRT       |
|  |  | NRT       |
|  |  | MS [0..*] |
|  |  | MS [0..1] |

|                  |   |  |
|------------------|---|--|
| SpecimenStatus   | <a href="http://hl7.org/fhir/ValueSet">http://hl7.org/fhir/ValueSet</a> | MS[0..1]                               |
| V2 Specimen Type | <a href="http://terminology.hl7.org/">http://terminology.hl7.org/</a>   | R [1..1]<br>Binding strength= required |
|                  |   | MS [0..1]                              |
|                  |   | NR                                     |
|                  |   | NR                                     |
|                  |   | NR                                     |
|                  |   | R [1..1]                               |

|                                 |   |  |
|---------------------------------|---|--|
|                                 |   | NRT                                      |
|                                 |   | NRT                                      |
|                                 |   | NRT                                      |
|                                 |   | NR                                       |
|                                 |   | R [1..1]                                 |
|                                 |   | NR                                       |
|                                 |   | NR                                       |
| FHIR Specimen Collection Method | <a href="http://hl7.org/fhir/ValueSet">http://hl7.org/fhir/ValueSet</a> | NR                                       |
| SNOMED CT Body Structures       | <a href="http://hl7.org/fhir/R4/value">http://hl7.org/fhir/R4/value</a> | R [1..1]<br>Binding strength= extensible |

|                                  |   |     |
|----------------------------------|---|-----|
| v2 Relevant Clinical Information | <a href="http://terminology.hl7.org/">http://terminology.hl7.org/</a> | NR  |
|                                  |   | NR  |
|                                  |   | NRT |
|                                  |   | NRT |

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|-------------------------------|---|-----|
|                               |   | NRT |
|                               |   | NR  |
| Specimen processing procedure | <a href="https://hl7.org/fhir/R4/valueset-specimen-processing-procedure.html">https://hl7.org/fhir/R4/valueset-specimen-processing-procedure.html</a> | NR  |
|                               |   | NR  |
|                               |   | NR  |
|                               |   | NR  |
|                               |   | NRT |



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|  |  | NRT |
|  |  | NRT |
|  |  | NR  |

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|-----------------------|---|----|
| Specimen container    | <a href="http://hl7.org/fhir/ValueSet">http://hl7.org/fhir/ValueSet</a> | NR |
|                       |   | NR |
|                       |   | NR |
| v2 Additive           | <a href="http://terminology.hl7.org/">http://terminology.hl7.org/</a>   | NR |
| v2 Specimen Condition | <a href="http://terminology.hl7.org/">http://terminology.hl7.org/</a>   | NR |
|                       |   | NR |