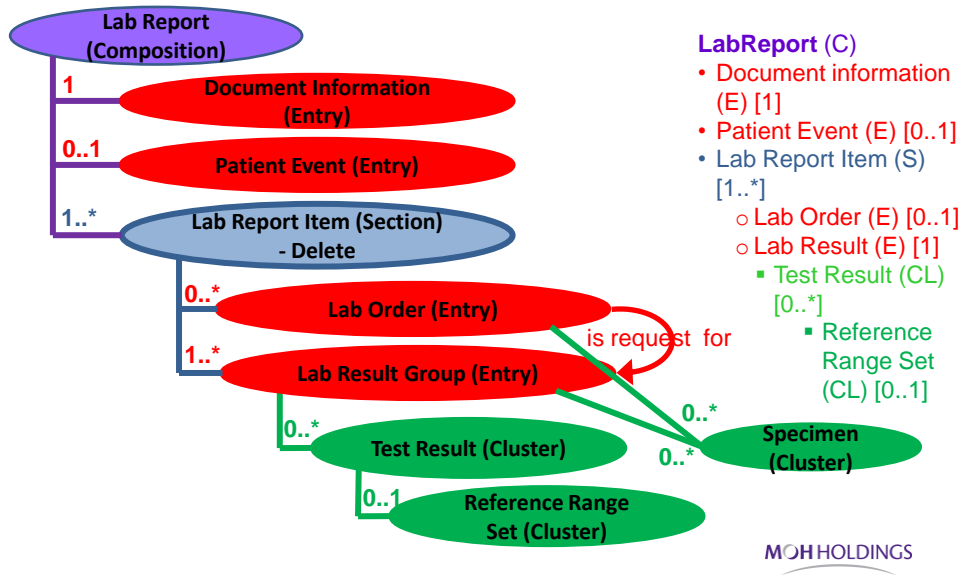


Laboratory Results Report – Possible CIMI Structure

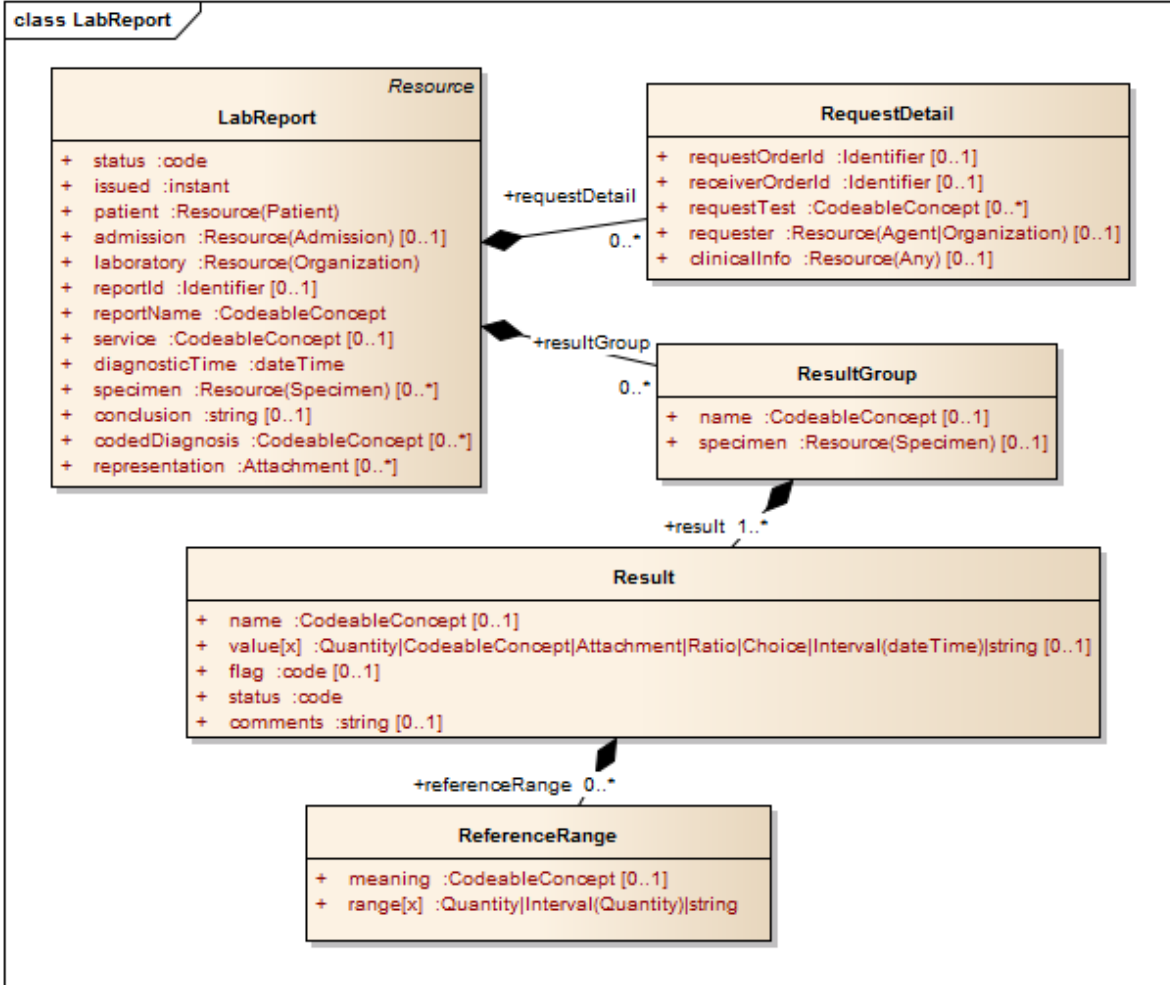


Modelling Layers

Q: ENTRY=share context/governance unit OR
Independent statements ? => Collection of statements?

	CLUSTER (not standalone)			ENTRY (Clinical statement – standalone - with context)				SECTION (navign)	COMPOS- ITION
Implemnt. Purpose Context		<i>Decisin Supprt</i>			<i>GUI</i>			<i>EHR</i>	<i>Message</i>
Care Setting Context						<i>Inpatient Admissin</i>			
Use Case Context		<i>Hemat ocrit Result</i>	<i>Hemat ocrit Ref Rg</i>	<i>Hemat ocrit Order</i>	<i>Complte Blood Count</i>	<i>Admissin</i>			
Specialty Context		<i>Hemat lgyTest Result</i>	<i>Hemat ology Ref Rg</i>	<i>Hemat ology Order</i>	<i>Hemat- ology Result</i>			<i>Microbiolgy Report Item</i>	<i>Microbiology Report</i>
Clinical Models	<i>Spec- imen</i>	<i>Test Result</i>	<i>Refere nce Range</i>	<i>Labora tory Order</i>	<i>Laborat ory Result</i>	<i>Patient Event</i>	<i>Document Informaton</i>	<i>Laboratory Report Item</i>	<i>Laboratory Report</i>
Modelling Patterns	<i>Material</i>	<i>Observation Item</i>	<i>Order</i>	<i>Observ- ation</i>	<i>Admin Entry</i>		<i>Report Item</i>	<i>Event Summary</i>	
			<i>Clinical Entry</i>					<i>Document</i>	
Reference Model									

Resource Content

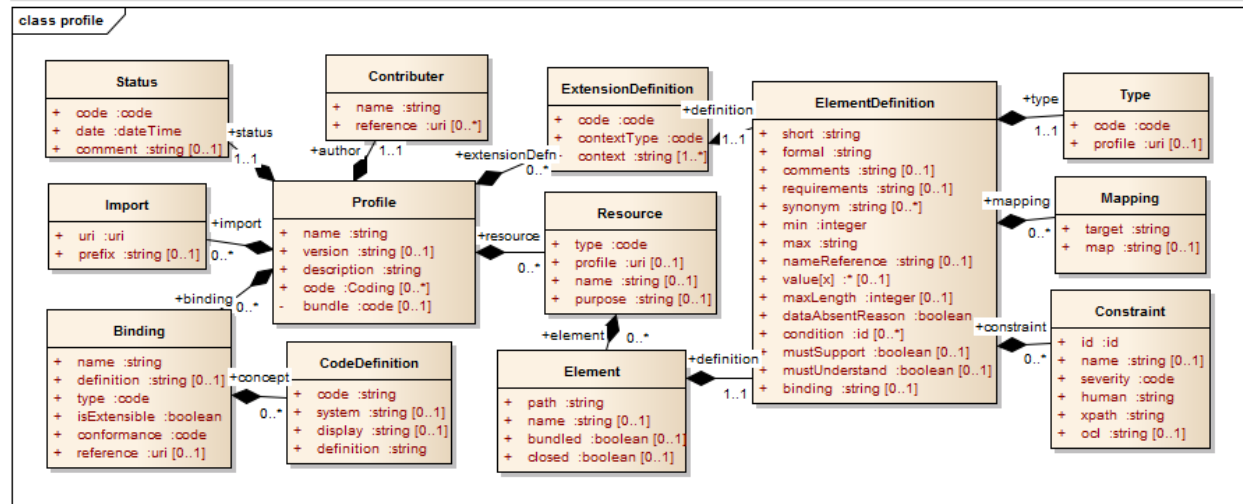


```

<LabReport xmlns="http://hl7.org/fhir">
  <id><!-- 1..1 id Master Resource Id, always first in all resources --></id>
  <status><!-- 1..1 code registered|interim|final|amended|cancelled|withdrawn --></status>
  <issued><!-- 1..1 instant date issued for current status --></issued>
  <patient><!-- 1..1 Resource(Patient) The patient the report is about --></patient>
  <admission d?><!-- 0..1 Resource(Admission) Admission Context --></admission>
  <laboratory><!-- 1..1 Resource(Organization) Responsible Laboratory --></laboratory>
  <reportId><!-- 0..1 Identifier Id for external references to this report --></reportId>
  <requestDetail> <!-- 0..* What was requested -->
    <requestOrderId d?><!-- 0..1 Identifier Id assigned by requester --></requestOrderId>
    <receiverOrderId d?><!-- 0..1 Identifier Receiver's Id for the request --></receiverOrderId>
    <requestTest d?><!-- 0..* CodeableConcept Test Requested --></requestTest>
    <requester d?><!-- 0..1 Resource(Agent|Organization) Responsible for request --></requester>
    <clinicalInfo d?><!-- 0..1 Resource(Any) Clinical information provided --></clinicalInfo>
  </requestDetail>
  <reportName><!-- 1..1 CodeableConcept Name for the entire report --></reportName>
  <service d?><!-- 0..1 CodeableConcept Biochemistry, Haematology etc --></service>
  <diagnosticTime><!-- 1..1 dateTime Effective time of diagnostic report --></diagnosticTime>
  <specimen d?><!-- 0..* Resource(Specimen) Specimen (incl. time of collection) --></specimen>
  <resultGroup> <!-- 0..* Results grouped by specimen/kind/category -->
    <name d?><!-- 0..1 CodeableConcept What defines the group --></name>
    <specimen d?><!-- 0..1 Resource(Specimen) Specimen details --></specimen>
    <result> <!-- 1..* A particular result -->
      <name><!-- 0..1 CodeableConcept Name or code of the result --></name>
      <value[x] d?><!-- 0..1 Quantity|CodeableConcept|Attachment|
        Ratio|Choice|Period|string Result. [x] = type name --></value[x]>
      <flag><!-- 0..1 code + | ++ | +++ | - | -- | --- --></flag>
      <status><!-- 1..1 code Registered|Interim|Final|Amended|Cancelled|Withdrawn --></status>
      <comments d?><!-- 0..1 string Comments about result --></comments>
      <referenceRange> <!-- 0..* Guide for interpretation -->
        <meaning d?><!-- 0..1 CodeableConcept The meaning of this range --></meaning>
        <range[x]><!-- 1..1 Quantity|Range|string Reference --></range[x]>
      </referenceRange>
    </result>
  </resultGroup>
  <conclusion d?><!-- 0..1 string Clinical Interpretation of test results --></conclusion>
  <codedDiagnosis d?><!-- 0..* CodeableConcept Codes for the conclusion --></codedDiagnosis>
  <representation><!-- 0..* Attachment Entire Report as issued --></representation>
  <extension><!-- 0..* Extension See Extensions --></extension>
  <text><!-- 1..1 Narrative Text summary of report, for human interpretation --></text>
</LabReport>

```

Resource Content



Example Lipid Profile

Describes how the lab report is used for a standard Lipid Profile - Cholesterol, Triglyceride, and Cholesterol fractions. Uses LOINC codes.

This profile was published on Sat, May 12, 2012 00:00+1000 for testing by Grahame Grieve, and profiles the LabReport Resource

The id of this profile is 15046b9c-2da0-4b80-82ef-c6af6fcd2bf

Content

```
<!-- Resources -->
<LabReport xmlns="http://hl7.org/fhir">
  <id><!-- 1..1 id Master Resource Id, always first in all resources --></id>
  <status><!-- 1..1 code registered|interim|final|amended|cancelled|withdrawn --></status>
  <issued><!-- 1..1 instant date issued for current status --></issued>
  <patient><!-- 1..1 Resource (Patient) The patient the report is about --></patient>
  <admission><!-- 0..1 Resource (Admission) Admission Context --></admission>
  <laboratory><!-- 1..1 Resource (Organisation) Responsible Laboratory --></laboratory>
  <reportId><!-- 0..1 Identifier Id for external references to this report --></reportId>
  <requestDetail> <!-- 0..* What was requested -->
    <requestOrderId><!-- 0..1 Identifier Id assigned by requester --></requestOrderId>
    <receiverOrderId><!-- 0..1 Identifier Receiver's Id for the request --></receiverOrderId>
    <requestTest><!-- 0..* CodeableConcept Test Requested --></requestTest>
    <requester><!-- 0..1 Resource (Agent|Organisation) Responsible for request --></requester>
    <clinicalInfo><!-- 0..1 Resource (Any) Clinical information provided --></clinicalInfo>
  </requestDetail>
  <
    <coding>
      <code>S7698-3</code>
      <system>http://loinc.org</system>
      <display>Lipid panel with direct LDL</display>
    </coding>
    <reportName>
      <service><!-- 0..1 CodeableConcept Biochemistry, Hematology etc --></service>
      <diagnosticTime><!-- 1..1 dateTime Effective time of diagnostic report --></diagnosticTime>
      <specimen><!-- 0..* Resource (Specimen) Specimen (incl. time of collection) --></specimen>
      <resultGroup> <!-- All the results in one group -->
        <name><!-- 0..0 CodeableConcept No name needed for the result group --></name>
        <specimen><!-- 0..1 Resource (Specimen) Specimen details --></specimen>
        <result> <!-- "Cholesterol Group" --> <!-- Cholesterol Result -->
      </resultGroup>
    </reportName>
  </
</LabReport>
```

- COREStandardLabObsQuantitative (Extends **COREStandardLabObs**)
 - Information
 - key [from valueSet StandardLabObsQuantitative_KEY_VALUESET_ECID]
 - data (PQ)
 - ReferenceRangePQ [0..1] (Extends **ReferenceRange**)
 - AccessionNumber [0..1] (Restricts ExternalId)**
 - FillerOrderNumber [0..1] (Restricts ExternalId)**
 - PlacerOrderNumber [0..1] (Restricts ExternalId)**
 - ResultStatus [0..1]**
 - ReportingPriority [0..1]**
 - LabInterpretation [0..1]**
 - DeltaFlag [0..1]**
 - ResponsibleObserver [0..unbounded]**
 - PerformingLaboratory [0..1]**
 - Comment [0..unbounded]**
 - TestMethod [0..1]**
 - ReferenceRangeNar [0..1]**
 - Subject [0..1]**
 - SpecimenCollected [0..1] (Extends Attribution)**
 - SpecimenReceivedByLab [0..1] (Restricts Attribution)**
 - Resulted [0..1] (Restricts Attribution)**
 - Verified [0..1] (Restricts Attribution)**
 - Updated [0..1] (Restricts Attribution)**

- SecondaryUseStandardLabObsQuantitative (Restricts **COREStandardLabObsQuantitative**)
 - Information
 - key [from valueSet StandardLabObsQuantitative_KEY_VALUESET_ECID]
 - data (PQ)
 - ReferenceRangePQ [0..1] (Extends ReferenceRange)**
 - AccessionNumber [0..1] (Restricts ExternalId)**
 - ResultStatus [0..1]**
 - LabInterpretation [0..1]**
 - DeltaFlag [0..1]**
 - TestMethod [0..1]**
 - ReferenceRangeNar [0..1]**
 - Subject [0..1]**
 - SpecimenCollected [0..1] (Extends Attribution)**

- StandardLabObsQuantitative (Extends **StandardLabObs**)
 - Information
 - key [from valueSet StandardLabObsQuantitative_KEY_VALUESET_ECID]
 - data (PQ)
 - ReferenceRangeNar [0..1]
 - AccessionNumber [0..1] (Restricts ExternalId)**
 - FillerOrderNumber [0..1] (Restricts ExternalId)**
 - PlacerOrderNumber [0..1] (Restricts ExternalId)**
 - ResultStatus [0..1]**
 - ReportingPriority [0..1]**
 - AbnormalInterpretation [0..1]**
 - OrdinalInterpretation [0..1]**
 - DeltaFlag [0..1]**
 - ResponsibleObserver [0..unbounded]**
 - PerformingLaboratory [0..1]**
 - Comment [0..unbounded]**
 - Subject [0..1]**
 - SpecimenCollected [0..1] (Extends Attribution)**
 - SpecimenReceivedByLab [0..1] (Restricts Attribution)**
 - Resulted [0..1] (Restricts Attribution)**
 - Verified [0..1] (Restricts Attribution)**
 - Updated [0..1] (Restricts Attribution)**

- Glucose2HPostXXXChallengeMCncPtSerPlasQnLabObs (Restricts **StandardLabObsQuantitative**)
 - Information
 - key [= Glucose2HPostXXXChallengeMCncPtSerPlasQn_KEY_ECID]
 - data (PQ) [unit = MilligramsPerDeciliter_ECID]
 - ReferenceRangeNar [0..1]
 - AccessionNumber [0..1] (Restricts ExternalId)
 - FillerOrderNumber [0..1] (Restricts ExternalId)
 - PlacerOrderNumber [0..1] (Restricts ExternalId)
 - ResultStatus [0..1]
 - ReportingPriority [0..1]
 - AbnormalInterpretation [0..1]
 - OrdinalInterpretation [0..1]
 - DeltaFlag [0..1]
 - ResponsibleObserver [0..unbounded]
 - PerformingLaboratory [0..1]
 - Comment [0..unbounded]
 - Subject [0..1]
 - SpecimenCollected [0..1] (Extends Attribution)
 - SpecimenReceivedByLab [0..1] (Restricts Attribution)
 - Resulted [0..1] (Restricts Attribution)
 - Verified [0..1] (Restricts Attribution)
 - Updated [0..1] (Restricts Attribution)

```
model StandardLabObsQuantitative is statement extends StandardLabObs {
  key domain(StandardLabObsQuantitative_KEY_VALUESET_ECID);
  data PQ primaryPQValue unit.required unit.domain (UnitsOfMeasure_VALUESET_ECID)
  alternate {
    match CD secondaryCDValue code.card(1) code.domain(LaboratoryOrdinalValues_VALUESET_ECID);
    match CD altCDValue code.card(1) code.domain(LabValue_VALUESET_ECID);
    otherwise ST altSTValue;
  };
  qualifier ReferenceRangeNar referenceRangeNar card(0..1);
  constraint primaryPQValue.isNullReasonCode.domain(LabNullFlavor_VALUESET_ECID);
  constraint abnormalInterpretation.CD.code.domain (AbnormalInterpretationNumericNom_VALUESET_ECID);
  constraint deltaFlag.CD.code.domain (DeltaFlagNumericNom_VALUESET_ECID);
}
```

Modelling Layers

Q: ENTRY=share context/governance unit OR Independent statements ? => Collection of statements?

	CLUSTER (not standalone)			ENTRY (Clinical statement – standalone - with context)				SECTION (navigt)	COMPOS- ITION
Implemnt. Purpose Context		<i>Decisin Supprt</i>			<i>GUI</i>			<i>EHR</i>	<i>Message</i>
Care Setting Context						<i>Inpatient Admissin</i>			
Use Case Context		<i>Hemat ocrit Result</i>	<i>Hemat ocrit Ref Rg</i>	<i>Hemat ocrit Order</i>	<i>Complte Blood Count</i>	<i>Admissin</i>			
Specialty Context		<i>Hemat lgyTest Result</i>	<i>Hemat ology Ref Rg</i>	<i>Hemat ology Order</i>	<i>Hemat- ology Result</i>			<i>Microbiology Report Item</i>	<i>Microbiology Report</i>
Clinical Models	<i>Spec- imen</i>	<i>Test Result</i>	<i>Refere nce Range</i>	<i>Labora tory Order</i>	<i>Laborat ory Result</i>	<i>Patient Event</i>	<i>Document Informaton</i>	<i>Laboratory Report Item</i>	<i>Laboratory Report</i>
Modelling Patterns	<i>Material</i>	<i>Observation Item</i>	<i>Order</i>	<i>Observ- ation</i>	<i>Admin Entry</i>		<i>Report Item</i>	<i>Event Summary</i>	
			<i>Clinical Entry</i>					<i>Document</i>	
Reference Model									

Modelling Layers

Q: ENTRY=share context/governance unit OR Independent statements ? => Collection of statements?

	CLUSTER (not standalone)			ENTRY (Clinical statement – standalone - with context)				SECTION (navigt)	COMPOS- ITION
Implemnt. Purpose Context		<i>Decisin Supprt</i>			<i>GUI</i>			<i>EHR</i>	<i>Message</i>
Care Setting Context						<i>Inpatient Admissin</i>			
Use Case Context		<i>Hemat ocrit Result</i>	<i>Hemat ocrit Ref Rg</i>	<i>Hemat ocrit Order</i>	<i>Complte Blood Count</i>	<i>Admissin</i>			
Specialty Context		<i>Hemat lgyTest Result</i>	<i>Hemat ology Ref Rg</i>	<i>Hemat ology Order</i>	<i>Hemat- ology Result</i>			<i>Microbiolgy Report Item</i>	<i>Microbiology Report</i>
Clinical Models	<i>Spec- imen</i>	<i>Test Result</i>	<i>Refere nce Range</i>	<i>Labora tory Order</i>	<i>Laborat ory Result</i>	<i>Patient Event</i>	<i>Document Informaton</i>	<i>Laboratory Report Item</i>	<i>Laboratory Report</i>
Modelling Patterns	<i>Material</i>	<i>Observation Item</i>	<i>Order</i>	<i>Observ- ation</i>	<i>Admin Entry</i>		<i>Report Item</i>	<i>Event Summary</i>	
			<i>Clinical Entry</i>					<i>Document</i>	
Reference Model									