

HL7v2 Message Conversion to OMOP using OMOPonFHIR

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INTRODUCTION:

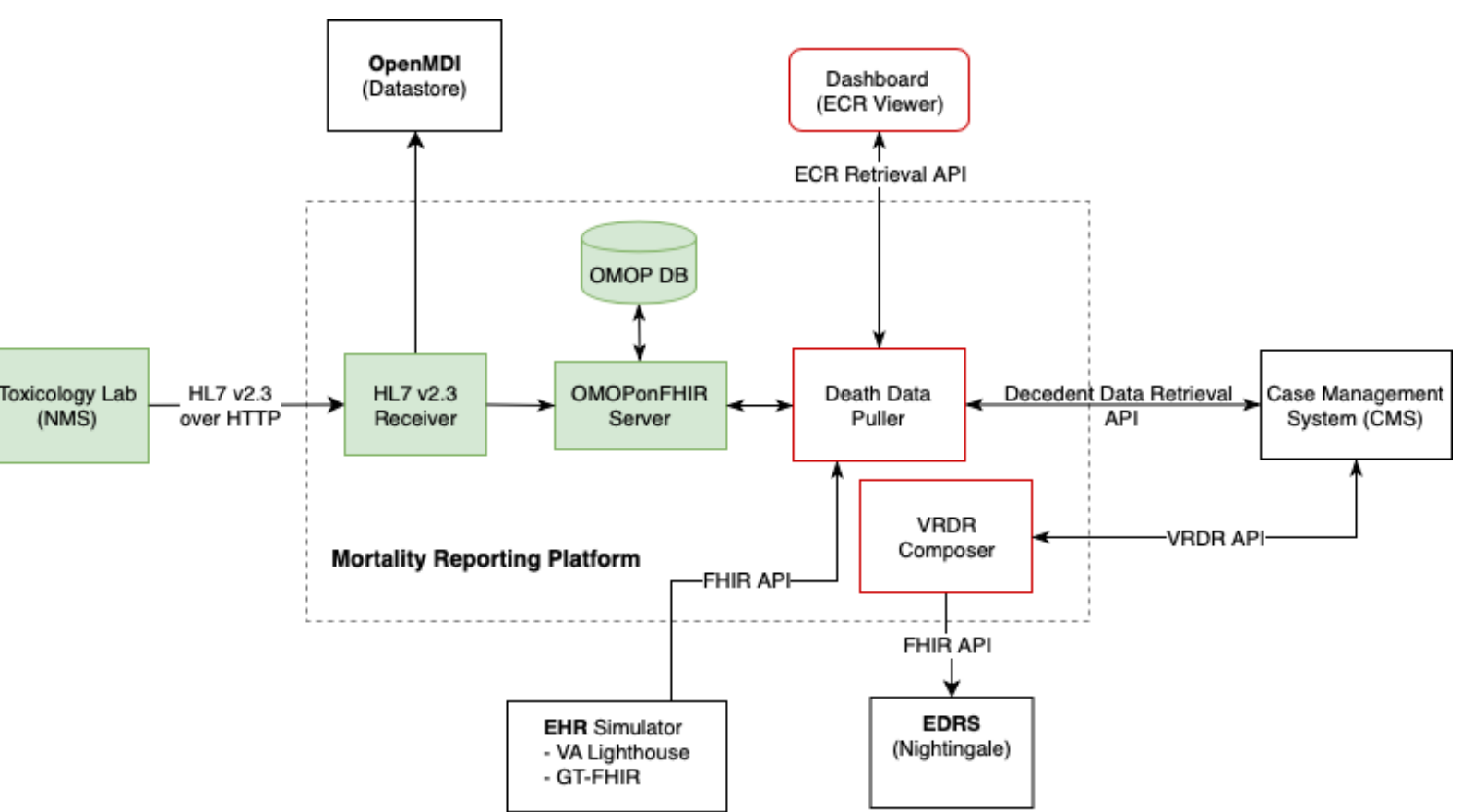
- HL7 version 2 (HL7v2) is a standard messaging protocol used between labs and health providers (or systems)
- OMOP CDM is used for data analytics
- FHIR is a standard for health interoperability
- HL7v2 → OMOP using OMOPonFHIR allows observation/measurement data in the lab reports to be stored into OMOP CDM in real-time.

METHODS

- HL7v2 Parsing for Context
- Conversion to FHIR Message
- Submitting to OMOPonFHIR for Mapping to OMOP CDM
- Storing to OMOP CDM Database

RESULTS

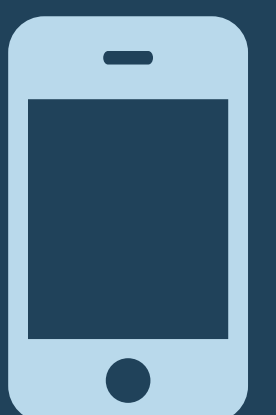
- ELR Receiver developed for FHIR Conversion from HL7v2
- OMOPonFHIR upgraded to lab measurement mapping
- This approach used in Mortality Report Project funded by CDC



Mapping Electronic Lab Reports in HL7 v2 to OMOP CDM.

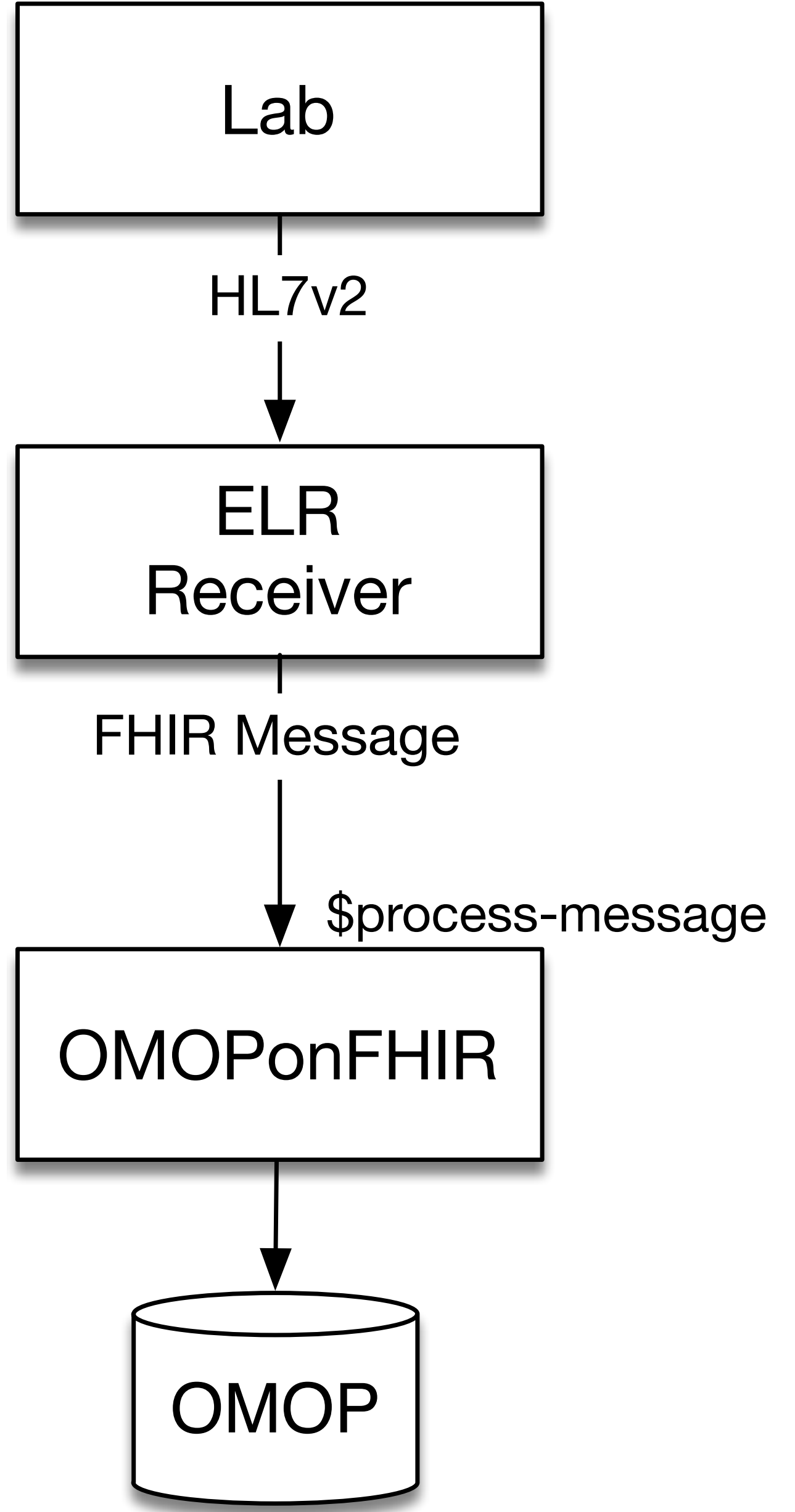
HL7 v2 is converted to FHIR, then submitted to OMOPonFHIR to be mapped to OMOP CDM.

Result: HL7v2 → FHIR



Take a picture to download related documents

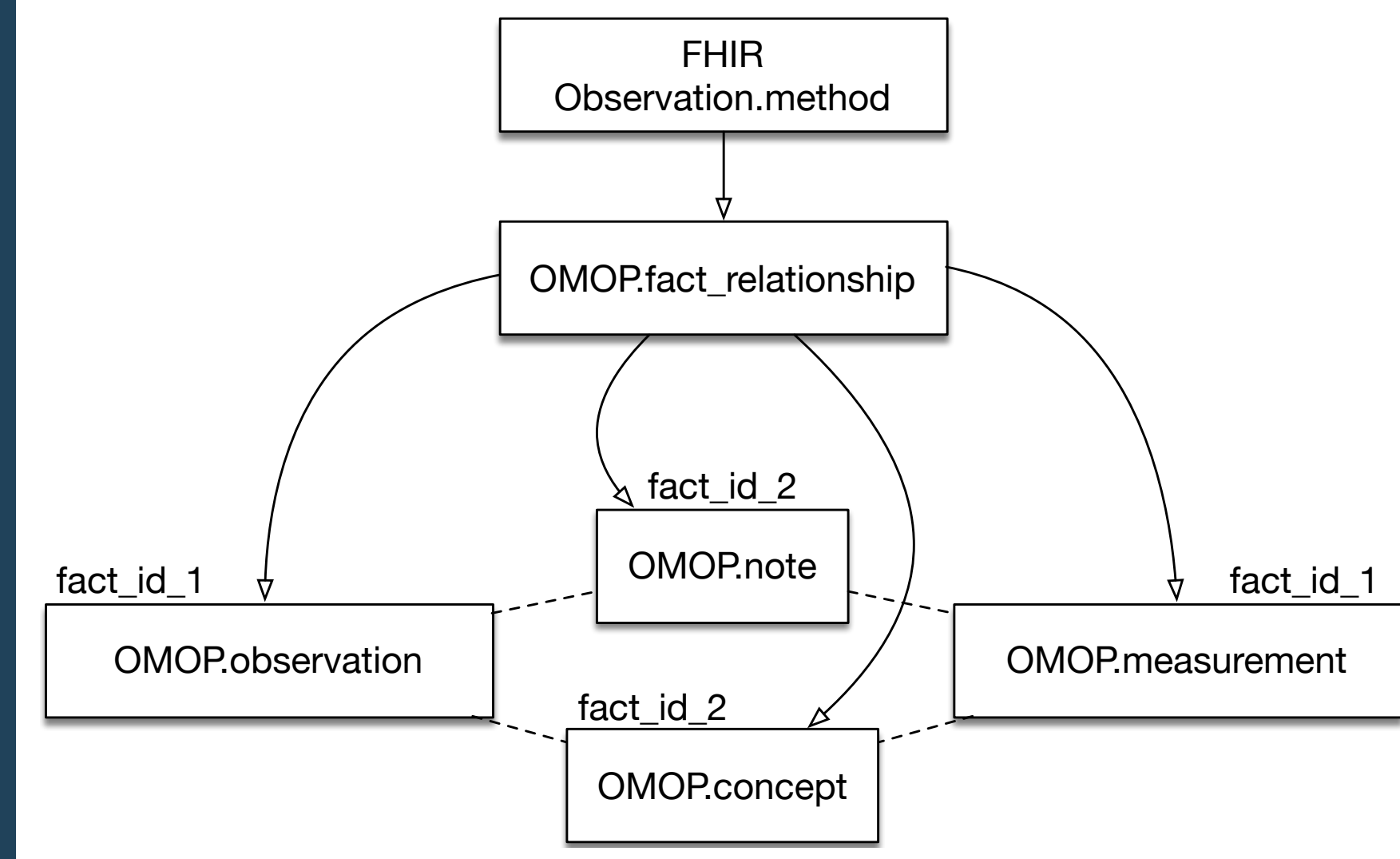
Data Flow



HL7v2 to FHIR Mapping

HL7 v2.3	FHIR STU3
LAB ORU_R01 (Observation Message)	Bundle * Each RESPONSE in ORU_R01 generate a Bundle resource.
MSH-9-1 ORU	type message
MSH-9-2 ORU_R01	entry[0].resource MessageHeader
MSH-9-3 ORU_R01	MessageHeader.event.system http://hl7.org/fhir/message-events
MSH-9-2 R01	MessageHeader.event.code observation-provide
OBX-5 <Observation Value>	Observation.valueQuantity.value <Observation Value>
OBX-6-1 <Unit Code>	Observation.valueQuantity.code <Unit Code>
OBX-6-2 <Unit Text>	Observation.valueQuantity.unit <Unit Text>
OBX-6-3 <Unit System>	Observation.valueQuantity.system <Unit Coding System Name>
NTE-2 if equal to "METHOD"	Observation.method.text NTE-3 Comment
NTE-3 if NTE-2 is not called	Observation.comment NTE-3 Comment

FHIR Observation Method to OMOP Mapping



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