



Integrating
the Healthcare
Enterprise

Introduction to Results Distribution (RD)

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Value Proposition

- The radiology imaging result (i.e., the report) is the product of radiologists which provides value to the ordering physicians
- Today, very few radiology reports are structured and/or coded (i.e., free format text, not easily computer processable)
- Structured, or at least **key** structured data, in a radiology report can trigger downstream activities and provide benefits

Benefits of semi-structured, coded reporting

Enough information to automate trigger of:

- Follow up of non-critical actionable findings
- Additional billing
- Consults
- Submission to Population Health registries/analysis
- Submission to REM registries
- Clinical decision support (CDS) feedback loop
- Submission to cancer registries
- Submission for inquiries to clinical trials
- Business analysis including IHE Standardized Operational Log of Events (SOLE) profile

RD Focus: installed base

- **RD Decision: Focus on Installed base and adoption:**
 - ~~HL7 FHIR Diagnostic Imaging Report Resource~~
 - ~~DICOM Part 20 Imaging Reports in CDA (xml)~~
 - ~~IHE/FHIR Structured Data Capture (SDC)~~
 - ~~DICOM SR -> often used for measurements, also used for final radiology reports~~
 - HL7 v2.x ORU -> **FOCUS!**
- Enable SOME structured, coded data to begin to move industry
- Gap solution, not end game
 - Bridge/gap solution solution towards CDA or SDC
 - Important “baby steps” towards computer processable data

Actors and Simple Use Case

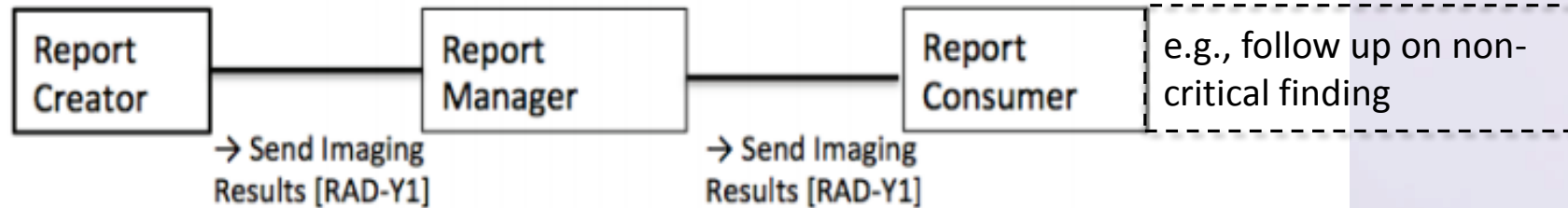


Figure X.1-1: RD Actor Diagram

Report Creator examples:

- Voice dictation system
- Point and click reporting
- Natural language processing
- Template driven or text
- Radiology or cardiology, etc

Report Manager examples:

- Reporting systems
- PACS system
- EMR

Report Consumer examples:

- Report Viewer
- EMR
- Research database
- Regulatory (ACC NCDR)
- Follow-up Actionable Finding Mgr

RD Use Cases (X.4.2)

The RD profiles specifies two primary use cases:

1. Send an imaging result to an EMR
2. Send an imaging result to a Follow-Up Source (i.e., Non-Critical Actionable Findings)

RD Concepts Section (X.4)

The RD profiles makes extensive use of the **Concepts** section:

- DICOM Part 20 and CDA Level 1/2/3
- Reports v. Results (and the role of DICOM SR)
- ACR/ESR Clinical Reporting Guidelines
- Report Templates and Classification systems (MRRT, BI-RADS, etc)
- Actionable Findings, Timing, and Results Priority
- Voice Dictation
- Coded Results, Structured and Synoptic Reports
- Imaging Results Payload Formats

READ THE X.4 CONCEPTS SECTION!

RD Profile HL7 v2.5.1 ORU

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Table 4.Y1.4.1.2-1: HL7 v2.5.1 Send Imaging Results (ORU) Message



ORU^R01 Segments	Message Content	HL7 v2.5.1 Chapter	Reference
MSH	Message Header	2	4.Y1.4.1.2.1 MSH Segment
EVN	Event Type	3	4.Y1.4.1.2.2 EVN Segment
PID	Patient Identification	3	4.Y1.4.1.2.3 PID Segment
PV1	Patient Visit	3	4.Y1.4.1.2.4 PV1 Segment
{ROL}	Role	15	4.Y1.4.1.2.5 ROL Segment
[ORC]	Order Common	4	4.Y1.4.1.2.6 ORC Segment
OBR	Order Detail	4	4.Y1.4.1.2.7 OBR Segment
TQ1	Timing/Quantity	4	4.Y1.4.1.2.8 TQ1 Segment
{OBX}	Observation/Result (See Note 1)	7	4.Y1.4.1.2.9-11 OBX Segments

Adapted from the HL7 Standard, version 2.5.1

Note 1: The OBX segment may repeat because there are different types of OBX segments defined in this transaction, independently identified by coded values in *OBX-3 Observation Identifier*.

Profiled OBX Segments

Identified by LOINC Codes in *Observation Identifier (OBX-3)*:

1. OBX – DICOM Study Instance UID
-  2. OBX – Finding
3. OBX – Radiologist's Recommendation
4. OBX – Radiologist Requests Consultation
5. OBX - Radiologist Requests Feedback
-  6. OBX - Imaging Result Payload



OBX segments with actionable findings and priority flags

Review: ACR Actionable Findings Categories

Finding type	ACR Actionable Finding Category	Meaning
Normal	Normal	As expected or unremarkable
Non-actionable	Non-Actionable	Not quite normal, but no action to be taken (e.g., “the spleen is slightly enlarged”)
Non-critical	ACR Category 3	Medical attention required within days to months; “incidental” (e.g., lung nodule)
Urgent	ACR Category 2	Medical attention required within hours (e.g., diverticulitis)
Emergent	ACR Category 1	Medical attention required within minutes (e.g., large pneumothorax)

See CONCEPTS section for more information!

Mapping of Actionable Finding Codes and Priority

Subset of
complete table:

	Finding OBX		Imaging Result Payload OBX (i.e., the complete imaging result as text, CDA, or by reference)		OBR
Name and code of segment:	Finding OBX (OBX-3 = "59776- 5^Procedure Findings^LN")		Result Content OBX(OBX-3 = "18748- 4^Diagnostic Imaging Report^LN")		OBR segment
Multiplicity of segment:	repeating		single		single
Optionality of segment:	optional		required		required
Key Field	Abnormal Flag	Category	Abnormal Flag	Category	Priority
Segment fields:	<i>OBX-8.1 - 8.3 Abnormal Flag</i>		<i>OBX-15.1 - 15.3 Producer's Reference</i>		<i>OBR-27.6 and TQ1-9.1 Priority</i>
Value Set:	<i>HL7 v.2.5.1 Table 0078</i>		<i>HL7 v.2.5.1 Table 0078</i>		<i>HL7 v2.5.1 Table 0485</i>
Normal observation:	N^ Normal^ HL70078	RID13173^ Normal^ RadLex	N^ Normal^ HL70078	RID13173^ Normal^ RadLex	R^ Routine^ HL70078
Non- actionable observation: (see Note 2)	N^Normal^ HL70078	RID50261^ Non-actionable^ RadLex	N^Normal^ HL70078	RID50261^ Non-actionable^ RadLex	R^Routine^ HL70078
Non-critical Actionable Finding observation:	A^Abnormal^HL7 0078	RID49482^ Category 3 Non- critical Actionable Finding^ RadLex	A^Abnormal^HL70 078	RID49482^ Category 3 Non- critical Actionable Finding^ RadLex	R^ Routine^ HL70078
Urgent Actionable Finding observation:	AA^Critical Abnormal^ HL70078	RID49481^ Category 2 Urgent Actionable Finding^ RadLex	AA^Critical Abnormal^ HL70078	RID49481^ Category 2 Urgent Actionable Finding^ RadLex	A^ASAP^ HL70078

Public Comment Period

- IHE Rad Results Distribution (RD) Public Comment period:
 - Profile: http://ihe.net/Public_Comment/#radiology
 - Public Comment period: June 21 – July 21, 2017
 - Submit link: http://ihe.net/Radiology_Public_Comments/

Radiology

Supplements for Public Comment

The IHE Radiology Technical Committee has published the following supplement for public comment in the period from **June 21 through July 21, 2017**:

- [Results Distribution \(RD\)](#) - Published 2017-06-21

Comments on this document should be submitted by **July 21, 2017**. [Submit your comments here »](#)

- IHE Rad Follow-up of Non-Critical Actionable Findings (FUNC) still in development

Questions?

- Any questions?
- Questions later?:
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