CodeX Radiation Therapy Treatment Data: Public Call

July 19th, 2022
# Public Call Agenda

<table>
<thead>
<tr>
<th>Time</th>
<th>Topic</th>
<th>Presenters</th>
</tr>
</thead>
<tbody>
<tr>
<td>11:00-11:05</td>
<td><strong>Background:</strong> Brief level-setting of CodeX and the RTTD project</td>
<td>Anthony DiDonato (MITRE)</td>
</tr>
<tr>
<td>11:05-11:20</td>
<td><strong>Terminology Updates:</strong> RTTD FHIR Model and Radiation Therapy (RT) Implementation Guide</td>
<td>Sharon Sebastian (MITRE)</td>
</tr>
<tr>
<td>11:20-11:35</td>
<td><strong>Technical Updates:</strong> Achievements from the May 2022 IHE-RO XRTS Workshop</td>
<td>Rishabh Kapoor (VCU, VHA)</td>
</tr>
<tr>
<td>11:35-11:40</td>
<td><strong>Next Steps &amp; Call to Action:</strong> Interested in participating in the RTTD project? Connect with members of the team</td>
<td>Anthony DiDonato (MITRE)</td>
</tr>
<tr>
<td>11:40-11:55</td>
<td><strong>Open Discussion</strong></td>
<td>All Attendees Welcome</td>
</tr>
</tbody>
</table>
The CodeX HL7 FHIR Accelerator

A Member-driven community accelerating interoperable data modeling and implementation around the FHIR and mCODE HL7 standards, leading to substantial improvements in health care and research in oncology and beyond

http://hl7.org/CodeX
Data are collected and shared via FHIR Implementation Guides, like the mCODE standard and CodeX supplemental IGs.

Ensuring every patient’s journey improves all future care.
CodeX Use-Cases

Discovery -> Planning -> Execution

https://confluence.hl7.org/display/COD/CodeX+Use+Cases

Oncology

- mCODE++ Extraction
- EHR Endpoints for Cancer Clinical Trials
  (including, future extensions of the ICAREdata study)
- Integrated Trial Matching for Cancer Patients and Providers
- Cancer Registry Reporting
- Radiation Therapy Treatment Data for Cancer
- Prior Authorization in Oncology
- Risk Evaluation and Mitigation Strategies (REMS)

Cardiovascular

- CardX - Hypertension Management

Genomics

- GenomeX - FHIR Genomics Data Exchange
- GenomeX - Enabling Access to Complex Genomic Information through FHIR Genomics Operations

-------- Stages --------

Discovery    Planning    Execution
Radiation Therapy Treatment Data for Cancer

Problem
• Treatment details – critical for care coordination – are not readily available in systems other than radiation oncology EHR modules: data is generally manually entered into summary documents, creating clinical burden and potential patient safety issues

Solution
• To develop, test and deploy open data standards that enable interoperable, multi-purpose exchange of radiation treatment summary data for care coordination and data reuse.

Desired Impact
• Enable sharing of critical radiation therapy treatment data for care coordination or data reuse (research, quality measurement, payer-required reporting)
CodeX Radiation Therapy (RT) Implementation Guide (IG) - Update
IG Goals, Actors and Use Cases

- **Goals**
  - Enable interoperable, multi-purpose exchange of radiation treatment orders, plans and summaries for care coordination and data reuse

- **Actors**
  - Patients
  - Radiation Oncology Providers
  - Other Medical Providers

- **Use Cases**
  - Prescribing, elaborating and managing radiation therapy treatment
  - Documenting delivered radiation therapy treatment
CodeX Radiation Therapy IG

- General Context
  - US Realm
  - Builds on mCODE STU2 and USCore foundations

- Development Status
  - Preparing for September STU1 Ballot
  - Technical content (profiles, extensions, value sets, etc.): near complete
  - Narrative: work in progress

- Testing Status
  - Elements tested at the Dec 2021 and May 2022 IHE-RO XRTS Workshops
  - Planning to test full IG at the December 2022 IHE-RO XRTS Workshop

- Current Build
  - http://build.fhir.org/ig/HL7/codex-radiation-therapy/
### Radiotherapy Resource Profiles

**What was prescribed?** (ordered by a physician)

- Radiotherapy Course (Cumulative) Prescription (ServiceRequest)
- Radiotherapy Phase (Cumulative) Prescription (ServiceRequest)
- Radiotherapy Single Plan Prescription (ServiceRequest)

**Which plans were created to fulfill the prescription?** (prepared by physicist/planner)

- Radiotherapy Planned Course (ServiceRequest)
- Radiotherapy Planned Phase (ServiceRequest)
- Radiotherapy Treatment Plan (ServiceRequest)

**Which treatment was delivered?**

- Radiotherapy Course Summary (Procedure)
- Radiotherapy Treated Phase (Procedure)
- Radiotherapy Treated Plan (Procedure)

Referenced from all Radiotherapy ServiceRequests and Procedures

During treatment, progress can be assessed by comparing ‘delivered’ to ‘planned’

If treatment goes as intended, then prescription, plans, and delivered treatment match eventually.
End of Treatment Summary

Course Summary
Highest level summary
(covered in mCODE STU2)

Treated Phases
How the Course was structured
(covered in the CodeX RT IG)

Treated Plans
Treatments delivered within each phase
(covered in the CodeX RT IG)

<table>
<thead>
<tr>
<th>Concept</th>
<th>Name</th>
<th>Numbering</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course</td>
<td>Bilateral Boost</td>
<td>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 Sessions</td>
</tr>
<tr>
<td>Phase</td>
<td>Left Breast Tangents</td>
<td>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 Phase Fractions</td>
</tr>
<tr>
<td>Treatment Plans</td>
<td>Breast_L_Tang</td>
<td>1 2 3 (3 delivered of 16 planned)</td>
</tr>
<tr>
<td>Phase</td>
<td>Left Breast Boost</td>
<td>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 Plan Fractions</td>
</tr>
<tr>
<td>Treatment Plans</td>
<td>Breast_L_Tang:1 Adaptation</td>
<td>1 2 3 4 5 6 7 8 9 10 11 12 13 Plan Fractions</td>
</tr>
<tr>
<td>Phase</td>
<td>Left Breast Boost</td>
<td>1 2 3 4 Plan Fractions</td>
</tr>
<tr>
<td>Treatment Plan</td>
<td>Breast_R_Tang</td>
<td>1 2 3 4 Plan Fractions</td>
</tr>
<tr>
<td>Phase</td>
<td>Right Breast Tangents</td>
<td>1 2 3 4 Plan Fractions</td>
</tr>
<tr>
<td>Treatment Plan</td>
<td>Breast_R_Tang</td>
<td>1 2 3 4 Plan Fractions</td>
</tr>
</tbody>
</table>

- Left Breast: 4256 cGy in 16 sessions
- Left Axillary Nodes, SC and IMN: 4256 cGy in 16 sessions
- Left Breast Surgical Bed: 5256 cGy in 20 sessions
- Right Breast: 4256 cGy in 16 sessions
- All treated in 20 sessions over 26 days

- Breast_L_Tang (1 delivered of 16 planned)
- Breast_L_Tang:1 Adaptation (13 fractions delivered of 13 planned)
- Breast_L_Boost (4 fractions delivered of 4 planned)
- Breast_R_Tang (16 fractions delivered of 16 planned)
mCODE STU2: New/Updated Data Elements

6.4 Profiles

- **Radiotherapy**
  - RadiotherapyCourseSummary
  - RadiotherapyVolume

6.5 Extensions

- **General**
  - BodyLocationQualifier
  - LateralityQualifier
  - ProcedureIntent
  - TreatmentTerminationReason

- **Radiotherapy**
  - RadiotherapyDoseDeliveredToVolume
  - RadiotherapyModality
  - RadiotherapyModalityAndTechnique
  - RadiotherapySessions
  - RadiotherapyTechnique
  - RelatedCondition

6.6 Value Sets

- **General**
  - ProcedureIntentVS
  - TreatmentTerminationReasonVS

- **Radiotherapy**
  - TeleradiotherapyModalityVS
  - TeleradiotherapyTechniqueVS
  - RadiotherapyModalityVS
  - RadiotherapyTechniqueVS
  - BrachytherapyModalityVS
  - BrachytherapyTechniqueVS

All codes in this table are from the system [http://snomed.info/sct](http://snomed.info/sct)

<table>
<thead>
<tr>
<th>Code</th>
<th>Display</th>
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<tbody>
<tr>
<td>113120007</td>
<td>Intermittent brachytherapy (procedure)</td>
</tr>
<tr>
<td>384692006</td>
<td>Intracavitary brachytherapy (procedure)</td>
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<tr>
<td>14473006</td>
<td>Surface brachytherapy (procedure)</td>
</tr>
<tr>
<td>1156382005</td>
<td>Intensity modulated intracavitary brachytherapy (procedure)</td>
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<tr>
<td>1156383000</td>
<td>Intravascular brachytherapy (procedure)</td>
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<tr>
<td>384691004</td>
<td>Intraluminal brachytherapy (procedure)</td>
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<tr>
<td>168524008</td>
<td>Radiation therapy - intraoperative control (procedure)</td>
</tr>
<tr>
<td>16560241000119104</td>
<td>Oral radionuclide therapy (procedure)</td>
</tr>
</tbody>
</table>
CodeX Radiation Therapy IG: New Data Elements

Extensions for Requests (Prescriptions, Plans), similar to delivered Dose and Fractions:
- Dose Planned to Volume
- Dose Prescribed to Volume
- Number of Planned Fractions
- Number of Prescribed Fractions

Extensions to describe the treatment device:
- Treatment Device
  - Treatment Device Manufacturer
  - Treatment Device Model
- Radiotherapy Treatment Applicator Type (Brachytherapy)

Extension to further describe treatment mode (in addition to Modality and Technique):
- Radiotherapy Energy or Isotope

Extension to Reference RT Plans or RT Treatment Records:
- Referenced DICOM SOP Instance

https://build.fhir.org/ig/HL7/codex-radiation-therapy/branches/master/artifacts.html
CodeX Radiation Therapy IG: New Value Sets

- **Value set development process**
  - Gather values from SMEs
  - Determine appropriate terminology to represent the values
  - Search for existing codes in the identified terminology
  - Request new codes if none exist
  - Create temporary codes in the IG until formal codes are assigned
  - Advocate SNOMED CT codes be incorporated in the Global Patient Set

- **New and developing value sets:**
  - Unit to characterize Energy in Radiotherapy
  - Radiotherapy Isotopes
  - Brachytherapy Applicator Types

https://build.fhir.org/ig/HL7/codex-radiation-therapy/branches/master/artifacts.html#terminology-value-sets

11.24.1.1 Logical Definition (CLD)

- Include these codes as defined in [http://snomed.info/sct](http://snomed.info/sct)

<table>
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<tr>
<th>Code</th>
<th>Display</th>
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</thead>
<tbody>
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<td>13237009</td>
<td>Cesium-131 (substance)</td>
</tr>
<tr>
<td>55117002</td>
<td>Cesium-137 (substance)</td>
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<tr>
<td>5405008</td>
<td>Cobalt-60 (substance)</td>
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<tr>
<td>24301009</td>
<td>Gold-198 (substance)</td>
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<tr>
<td>68630002</td>
<td>Iodine-125 (substance)</td>
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<td>1368003</td>
<td>Iodine-131 (substance)</td>
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<tr>
<td>48341001</td>
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<td>Lutetium-177 (substance)</td>
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<td>Palladium-103 (substance)</td>
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<td>80751004</td>
<td>Xenon-133 (substance)</td>
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<tr>
<td>14691008</td>
<td>Yttrium-90 (substance)</td>
</tr>
</tbody>
</table>
Which treatment was delivered?

Which plans were created to fulfill the prescription?

(prepared by physicist/planner)

What was prescribed?

(ordered by a physician)

If treatment goes as intended, then prescription, plans, and delivered treatment match eventually.

During treatment, progress can be assessed by comparing 'delivered' to 'planned'.
Which treatment was **delivered**?
(prepared by physicist/planner)

During treatment, progress can be assessed by comparing ‘delivered’ to ‘planned’

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Which **plans** were created to fulfill the prescription?
(ordered by a physician)

Referenced from all Radiotherapy ServiceRequests and Procedures

**What was prescribed?**

Radiotherapy
Course (Cumulative) Prescription
(ServiceRequest)

Radiotherapy
Phase (Cumulative) Prescription
(ServiceRequest)

Radiotherapy
Single Plan Prescription
(ServiceRequest)

Radiotherapy
Volume
(BodyStructure)

Radiotherapy
Planned Course
(ServiceRequest)

Radiotherapy
Planned Phase
(ServiceRequest)

Radiotherapy
Treatment Plan
(ServiceRequest)

Radiotherapy
Course Summary
(Procedure)

Radiotherapy
Treated Phase
(Procedure)

Radiotherapy
Treated Plan
(Procedure)
Resource Profiles: Planned Dec 2022 Workshop

What was **prescribed**? (ordered by a physician)

Which **plans** were created to fulfill the prescription? (prepared by physicist/planner)

Which treatment was **delivered**?

During treatment, progress can be assessed by comparing ‘delivered’ to ‘planned’.

If treatment goes as intended, then prescription, plans, and delivered treatment match eventually.

Referenced from all Radiotherapy ServiceRequests and Procedures

Radiotherapy
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(ServiceRequest)

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Radiotherapy
Single Plan Prescription
(ServiceRequest)

Radiotherapy
Planned Course
(ServiceRequest)

Radiotherapy
Planned Phase
(ServiceRequest)

Radiotherapy
Treatment Plan
(ServiceRequest)

Radiotherapy
Course Summary
(Procedure)

Radiotherapy
Treated Phase
(Procedure)

Radiotherapy
Treated Plan
(Procedure)

Radiotherapy
Volume
(BodyStructure)
Next Steps

- FHIR IG Development
  - Complete narrative development
  - September STU1 ballot
- Testing
  - Test full FHIR IG at the December 2022 IHE-RO XRTS Workshop
- Terminology
  - Determine next set of data elements the team will model and define
May 2022 XRTS Workshop
Integrating the Healthcare Enterprise – Radiation Oncology (IHE-RO)

- Initiative started in 2004 by ASTRO/AAPM
- IHE-RO task force addresses issues of interoperability between various healthcare systems in radiation oncology in a systematic way using established industry standards (DICOM, HL7 etc.).
- Vendors, physicists and clinicians dedicated to improving equipment and software integration issues related to radiation treatment.
- IHE-RO is currently the only formal venue for vendors of radiation oncology equipment and clinical team members to come together to solve interoperability issues.
- IHE-RO provides a mechanism for inter-manufacturer formal testing of radiation oncology product prior to clinical delivery.
IHE-RO Exchange of Radiotherapy Summaries

- **Exchange of Radiotherapy Summaries (XRTS) Work Group**
  - Moved from HL7 v2 → FHIR
  - Adopted the Radiotherapy FHIR profiles, defined in mCODE STU2 and the CodeX RT IG, in the XRTS technical specification

- **IHE-RO XRTS Workshop brought together:**
  - Data model and FHIR structures (focus of CodeX RTTD and mCODE)
  - Architecture and transactions (focus of XRTS)

- **AAPM June/July 2022 Newsletter**
  - Pages 33-34 focus on the recent successes of the IHE-RO XRTS Work Group
XRTS May 2022 Workshop Goals

Focus of the May XRTS Workshop

Test FHIR connected generation of End of Treatment and In-progress Treatment information from commercial systems.
Radiotherapy FHIR Relationship Diagram

**Phase 2 (May 2022, for in-progress)**

Radiotherapy
Planned Course (ServiceRequest)

- Body Site
- Diagnosis Reference / Code
  - <Procedure Intent>
  - <Modality/Technique>
  - <Modality>
  - <Technique>
    - <<Energy>>
    - <<Device>>
  - <No. Sessions>
    - <<Dose Planned to Volume>>
    - <<Target Volume>>
    - <<Planned No. Fractions>>
    - <<Planned Total Dose>>

Radiotherapy
Planned Phase (ServiceRequest)

- Body Site
  - <Modality/Technique>
    - <Modality>
    - <Techniques>
      - <<Energy>>
      - <<Device>>
    - <<Planned No. Fractions>>
    - <<Dose Planned to Volume>>
    - <<Target Volume>>
    - <<Planned Total Dose>>

**Phase 1 (End of Treatment)**

Radiotherapy
Course Summary (Procedure)

- Body Site
  - Diagnosis Reference / Code
    - <Procedure Intent>
    - <Termination Reason>
    - <Modality/Technique>
      - <Modality>
        - <Technique>
          - <<Energy>>
          - <<Device>>
        - <No. Sessions>
          - <<Dose Delivered to Volume>>
          - <<Target Volume>>
          - <<Delivered No. Fractions>>
          - <<Delivered Total Dose>>

Radiotherapy
Treated Phase (Procedure)

- <Modality/Technique>
  - <Modality>
    - <Techniques>
      - <<Energy>>
      - <<Device>>
    - <<Delivered No. Fractions>>
    - <<Dose Delivered to Volume>>
    - <<Target Volume>>
    - <<Delivered Total Dose>>

**Volume** (BodyStructure)

- Display Name (Identifier)
- Technical Identifier
- Volume Type
- Location
- Location Qualifier

plans dose to 1..*

summarizes treatment delivery of 1

summarizes dose delivered to 1..*

Goal for XRTS Workshop: Add ‘what was planned’ to enable in-progress treatment information

- Standards FHIR Elements
  - <Extension defined in mCODE>
  - <<Extension defined in CodeX RTTD>>

plans dose to 1..*

summarizes treatment delivery of 1

summarizes dose delivered to 1..*
XRTS Workshop Scope

- **End of Treatment Summary as covered in mCODE STU2**
  - Patient
  - Procedures (Radiotherapy Course Summary)
  - BodyStructures (Radiotherapy Volumes)

- **Phase Summary**
  - Procedures (Radiotherapy Treatment Phase)

- **Radiotherapy Planned Course**
  - ServiceRequest (CodeX RT Radiotherapy Planned Course)

- **Radiotherapy Planned Phase**
  - ServiceRequest (CodeX RT Radiotherapy Planned Phase)

- **Preparing for the IHE-RO formal Connectathon**
  - In which Participants may also be involved in the future

- **Learnings on Profile and Tooling**
May 2022 XRTS Workshop Framework

**Treatment Summary Provider**
- Varian,
- RayCare^,
- Elekta*

- Provide or Update Treatment Summary [XRTS - 01]
- Acquire Patient references [XRTS-01.a]
- Acquire Body Structure references [XRTS-01.b]
- Acquire Treatment Plan reference [XRTS-01.c]

**XRTS Validator**

**RO Resource Repository**
- EPIC,
- HAPI Server

**Treatment Observer**
- MITRE Tool,
- RayCare^,
- EPIC

- Retrieve Treatment Summary [XRTS - 02]

- Check if patient is present
- Check if Body structures are present
- Push Planned Course
- Push Planned Phase
- Push Course Summary
- Push Phase Summary

^ RayCare – only testing course summary transactions
* Elekta – testing patient resource retrieval
Test Patient Scenarios

• 01 – Prostate – Single volume treated with single treatment phase
• 02 – Prostate – Single volume treated in two treatment phases
• 03 – Prostate – Multiple volumes treated with single treatment phase
• 04 – Breast – Multiple volumes treated with multiple treatment phases
Test Case – 02 – Single volume treated in two treatment phases

Varian; RaySearch

Epic repository – unable to distribute screenshots

Epic summary report – unable to distribute screenshots

Epic; FHIR Server

Epic; RaySearch; RTTD Tool
Test Case – 02 – Single volume treated in two treatment phases (Varian – ARIA – Partial Treatments Delivered)
Test Case – 02 – Single volume treated in two treatment phases (RaySearch – RayCare – Partial Treatments Delivered)

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>Treatment Device</th>
<th>Daily Treatment</th>
<th>Dose (Gy)</th>
<th>Status</th>
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<tbody>
<tr>
<td>6 May 2022, 16:00</td>
<td>CRT-A</td>
<td>Boost</td>
<td>101.23 GY</td>
<td>Delivered</td>
</tr>
<tr>
<td>6 May 2022, 16:00</td>
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<td>CRT-A</td>
<td>Boost</td>
<td>101.23 GY</td>
<td>Delivered</td>
</tr>
</tbody>
</table>

Nominal treatment course progress:

- **Dose (Gy):**
  - Average: 1340 (Gy [RBE])

**System Details:**

- **Varian; RaySearch**
- **Epic; FHIR Server**
- **Epic; RaySearch; RTTD Tool**
Test Case – 02 – Single volume treated in two treatment phases (Epic FHIR Server)

Epic repository – unable to distribute screenshots
### IHE-RO XRTS Validator - Test Report

**Test Case** – 02 – Single volume treated in two treatment phases (XRTS Validator)

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<th><strong>IHE-RO Profile:</strong></th>
<th>XRTS</th>
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<tbody>
<tr>
<td><strong>IHE-RO Profile Version:</strong></td>
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<tr>
<td><strong>Software Version:</strong></td>
<td>2.2.0</td>
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<tr>
<td><strong>FHIR CDA/RFT</strong></td>
<td><strong>Version:</strong></td>
</tr>
<tr>
<td><strong>System Under Test:</strong></td>
<td>Transfer of end of treatment summary</td>
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<tr>
<td><strong>Test Case Scenario:</strong></td>
<td>Transfer of end of treatment summary</td>
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<tr>
<td><strong>Execution Start Date and Time:</strong></td>
<td>01.09.2021 12:45:24</td>
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<tr>
<td><strong>Execution End Date and Time:</strong></td>
<td>01.09.2021 12:47:39</td>
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<td><strong>Test Result:</strong></td>
<td>PASSED WITH WARNINGS</td>
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<td><strong>Total Number of Errors:</strong></td>
<td>0</td>
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<tr>
<td><strong>Total Number of Warnings:</strong></td>
<td>2</td>
</tr>
</tbody>
</table>

1. **IHE-RO XRTS Validation**

   **Transaction:** XRTS-03 Subscribe for Treatment Summary Updates

   **Transaction Warnings:** The validation of the optional transaction XRTS-03 - Subscribe for Treatment Summary Updates performed.

   **Transaction:** XRTS-01 Provide or Update Treatment Summary

   **Message ID:** XRTS-01-01
   **Source Actor:** Treatment Summary Provider
   **Destination Actor:** RAO Repository
   **URL:** http://10.20.38.200:8000/fhir/Patient/search
   **Request Method:** POST
   **Response Status:** 200 (OK)
   **Result:** PASSED
   **XRTS Validation:** Passed
   **Request FHIR Validation:** Passed
   **Response FHIR Validation:** Patient - Bundle item 0: Information: All OK
   **Resources:**
   http://10.20.38.200:8000/fhir/Patient/95af50c3-c40bd-168-814a-9b6d7f332f?_history=1

---

**Message ID:** XRTS-01-02
**Source Actor:** Treatment Summary Provider
**Destination Actor:** RAO Repository
**URL:** http://10.20.38.200:8000/fhir/BodyStructure_/search
**Request Method:** POST
**Response Status:** 200 (OK)
**Result:** PASSED
**XRTS Validation:** Passed
**Request FHIR Validation:** Passed
**Response FHIR Validation:** BodyStructure - Bundle item 0:
   **Information:** All OK
**Resources:**
http://10.20.38.200:8000/fhir/BodyStructure/a632e71-433f-45f5-8612-3a4646b0337?_history=1
Test Case – 02 – Single volume treated in two treatment phases (Epic – Partial Treatments Delivered)

Epic summary report – unable to distribute screenshots
Test Case – 02 – Single volume treated in two treatment phases (MITRE RTTD Tool)
Test Case – 02 – Single volume treated in two treatment phases (RaySearch – RayCare)

Varian; RaySearch  
Epic; FHIR Server  
Epic; RaySearch; RTTD Tool
RTTD – Next Steps & Call to Action
Phase 3 Next Steps

1. Continue building out the CodeX RTTD FHIR Model to include additional radiation therapy-specific concepts
   i. Refine and update the CodeX RT IG

2. Test additional radiotherapy FHIR profiles at future XRTS Workshops (targeting December 2022)
   i. Plans for Elekta, Cerner, other vendors to participate

3. Pilot radiotherapy FHIR profiles and CodeX RT IG data workflow between two systems (ROIS to another vendor system)
Prepare for Pilot Testing

Exciting News!

- RaySearch released the Radiotherapy Course Summary and Radiotherapy Volume mCODE profiles in the newest version of RayCare 6A – supports patients’ end of treatment summaries
Prepare for Pilot Testing

- **Next Steps:** pilot a real-time, end-to-end workflow between radiation oncology information system (ROIS) and EHR, using either synthetic or real patient data
  - Determine if the current radiotherapy profiles are sufficient in clinical practice
  - Timeline is to be determined for some vendors’ implementation of the radiotherapy FHIR profiles in their production systems

- RTTD team is asking organizations to continue supporting future pilot work
  - What would a pilot workflow between a health site’s ROIS and EHR look like?
  - What type of data would be shared?
  - Preparing legal agreements between ROIS and health site
Interested in Collaborating?

Data Standardization
AAPM & ASTRO & COMP BDSC/OORO

XRTS Technical Spec
AAPM IHE-RO

Adoption and Implementation of Radiotherapy FHIR Profiles
HL7/CodeX RTTD

CodeX Members

FHIR Modeling and IG Building
HL7/CodeX RTTD

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Leveraging the mCODE™ standard (minimal Common Oncology Data Elements), CodeX will expand around this core to encompass additional use cases, accelerating opportunities to create a learning health system based on interoperable data and improved patient care.

https://www.hl7.org/codex/
https://confluence.hl7.org/display/COD/CodeX+Home