

Part II – Development and Practical Examples

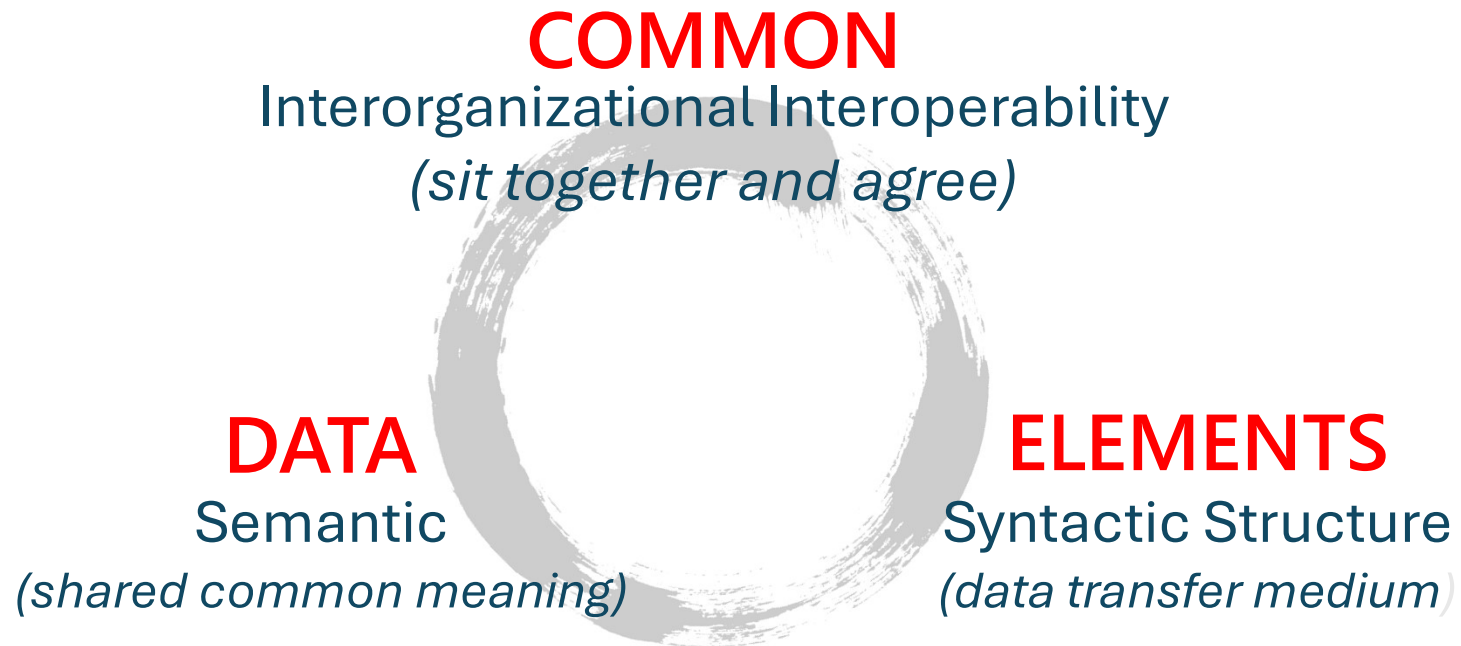
Common Data Elements

A pathway to future-oriented interoperable healthcare

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Just as a reminder?



What are Common Data Elements?



Common Data Elements are **content standards** that can be applied to various data collection models and are intended to be dynamic and may evolve.



Common Data Elements are clinical questions paired with a set of allowable answers.



Clinical Tumor Stage with permissible values for the given clinical context.

About THE BIG PICTURE – Technical

Content and validation rules

```
{  
Name,  
  
Variable_Type [int,str,set],  
  
Permissible_Values,  
  
Unit_of_Measurement,  
  
Clinical_Decision_Limits,  
}
```

Representation and Layout

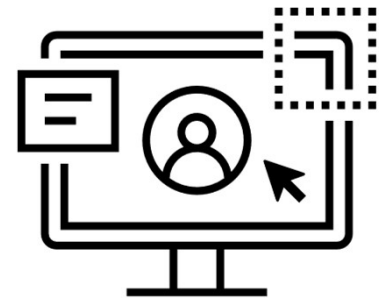
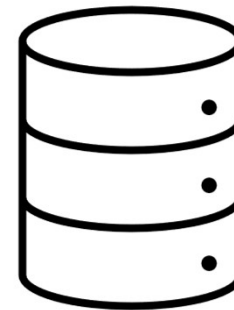
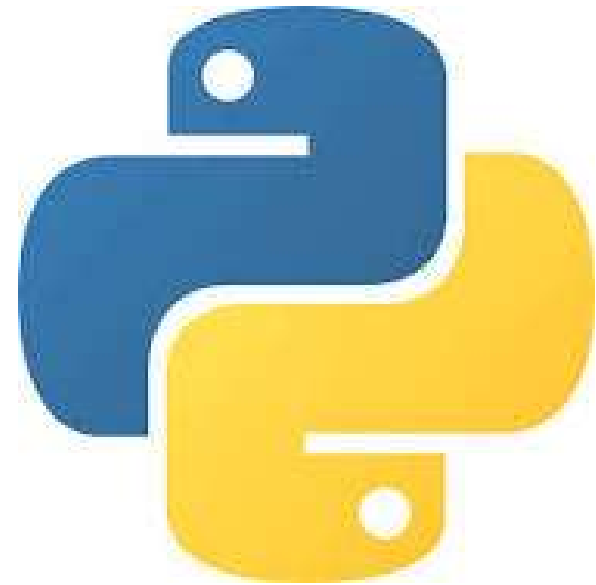
```
{  
Input_Type [num, radio, file],  
Representation  
}
```

Computation Logic

```
{  
Dependencies,  
Calculation_Rules  
}
```

About THE BIG PICTURE - Packages

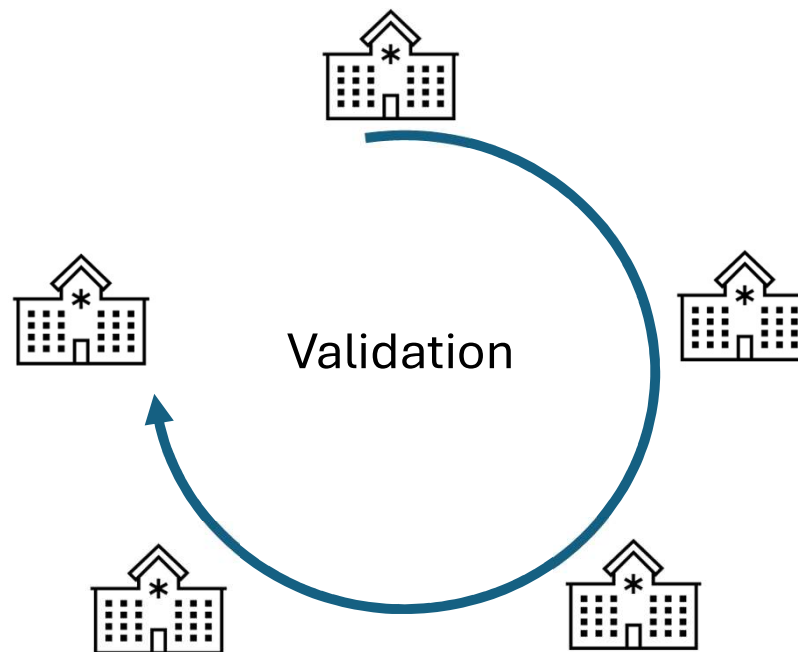
```
{  
  ...  
  ...  
  ...  
  ...  
}
```



The critical step



Public Global CDE Repository



General Workflow



{
CDE JSON Templates
}

Easy mapping to
other formats

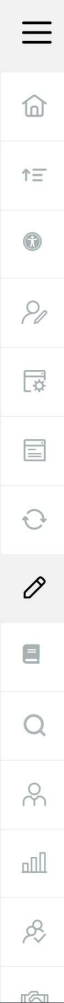
For example, FHIR
Questionnaires



Hospital
Infrastructure



Design



opus **Wemedoo**
Clinical Information Specialists

Home / Designer / Ear and Temporal Bone Tumours

nikola.cihoric **EN**
weMedoo AG

[Change state](#) [Administrative data](#)

[Expand All](#) [Collapse All](#) [Show Json](#)

Ear and Temporal Bone Tumours

- Ear And Temporal Bone Tumours
 - Page 1
 - Operative Procedure
 - Biopsy
 - Incisional
 - Excisional
 - Diagnostic sampling
 - Add New option
 - Operative Procedure (select all)
 - Temporal bone resection
 - Not specified
 - Sleeve resection
 - Lateral temporal bone

[Find Consensus](#) [Comments](#)

Drag and drop

- Chapter Title
- Page
- Field Set
- Text Field
- Paragraph Field
- Link Field
- Audio Field
- Calculative Field
- Date Field
- Date time Field
- Email Field
- File Field
- Long Text Field

"Library" Integration

Home / Designer / Ear and Temporal Bone Tumours

Change state Administrative data

Back to tree

Select a node...

- object {21}
 - customHeaderFields [0]
 - parentFieldInstanceDependencies {0}
 - id : 60b72b70073a3502b26252f2
 - title : Ear and Temporal Bone Tumours
 - version {3}
 - lastUpdate : 2024-05-10T08:48:26.6431974Z
 - chapters [1]
 - state : ReadyForDataCapture
 - language : en
 - thesaurusId : 1058
 - documentProperties {7}
 - episodeOfCare {3}
 - workflowHistory [0]
 - disablePatientData : true
 - omniaId :
 - isParameterize : false

```
1 {
2   "customHeaderFields": [],
3   "parentFieldInstanceDependencies": {},
4   "id": "60b72b70073a3502b26252f2",
5   "title": "Ear and Temporal Bone Tumours",
6   "version": {
7     "id": "e1217ca9-722f-4f69-8960-34585e1eb0e9",
8     "major": 1,
9     "minor": 0
10  },
11  "lastUpdate": "2024-05-10T08:48:26.6431974Z",
12  "chapters": [
13    {
14      "id": "1e7ed847-37aa-4f2a-973f-4d7b6151474e",
15      "title": "Ear and Temporal Bone Tumours",
16      "description": "Ear and Temporal Bone Tumours",
17      "thesaurusId": 1058,
18      "isReadOnly": false,
19      "pages": [
20        {
21          "id": "be7bcc6e5e3c4263ac90abb516a4d9cb",
22          "title": "Page 1",
23          "isVisible": false,
24          "description": "Ear and Temporal Bone Tumours",
25          "thesaurusId": 1059,
26          "listOffieldSets": [
27            [
```

Ln: 1 Col: 1

Validation

Primary Tumour in Bone Histopathology Reporting Guide Resection Specimens

Find Consensus

Consensus questionnaire

Form preview

Track process

Define Question Occurences for the iteration

One question for whole form

Chapter

- Same question must be answered for every Chapter
- Every Chapter has unique question

Reset

Page

- Same question must be answered for every Page
- Every Page has unique question

Reset

Field set

- Same question must be answered for every Field Set
- Every Field Set has unique question

Reset

Field

- Same question must be answered for every Field
- Every Field has unique question

Reset

Option

- Same question must be answered for every option
- Every option has unique question

Reset

< Cancel
















Proceed

Primary Tumour in Bone Histopathology Reporting Gui...

Validation


- Every Chapter has unique question
- Every Page has unique question
- Set
- Every Field Set has unique question
- Every Field has unique question
- Every option has unique question

 Terminate current iteration

- Primary Tumour in Bone Histopathology Reporting Gui... 
- Primary Tumour in Bone Histopathology Reportin... 
- Primary Tumour in Bone Histopathology Rep... 
- Primary Tumour in Bone Histopatholog...  ↔
- CLINICAL INFORMATION (select all) 
 - Information not provided 
 - Pre-existing skeletal disease 
 - Familial syndrome 
 - Multifocal disease 
 - Other 
- Pre-existing skeletal disease, 
- Familial syndrome, specify 
- Multifocal disease, specify 
- Other (e.g., prior radiation therapy, 
- NEOADJUVANT THERAPY 

Define Question

Do you agree with the proposed dataset?




Define Answers

Answer 1:

Answer 2:

Answer 3:

 Add New

[← Cancel](#) [Finalize](#)

Publication

Home

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Common Data Elements

in Radiation Oncology

This repository currently contains 214 CDEs

Search

- Radiation Dose (Number)
- Boost Radiation Dose (Number)
- Daily Dose (Number)
- Prescription Dose (Number)
- Cumulative Dose (Number)
- Dosimetry Verification (Text)

Publication

Dose per fraction

Contribute to translation

Edit

Quick Search

Browse

Knowledge in context

Connection with other ontologies

Uri of the Class: [Dose Fraction](#)
Uri of the source: [Radiation Biology Ontology](#)

The entity is found in 0 medical documents

Document Properties

O4.0MT ID: 6

Created by:
Nikola Cihoric MD

Curated by:
Nikola Cihoric

Language:

English

Preferred term:

Dose per fraction

Preferred Definition:

Dose per fraction is a term used in radiation therapy to describe the amount of radiation administered in each session (or fraction) of treatment.

Synonyms: [Fractional Dose](#) [Fraction Size](#) [Fractionation Dose](#)

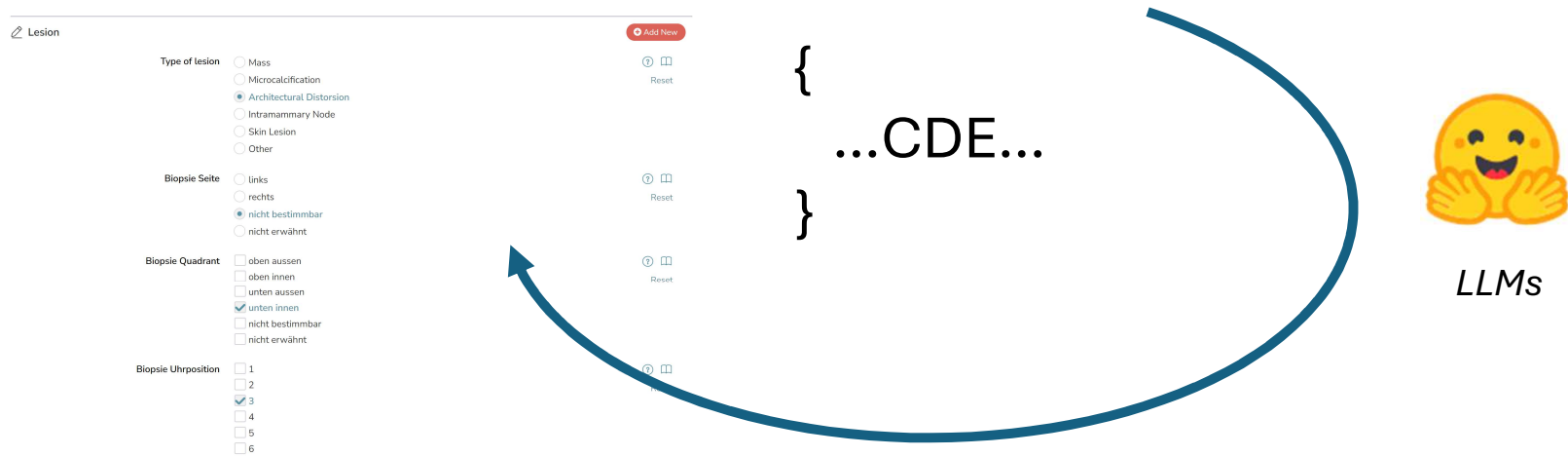
[Radiation Fraction Dose](#)

Abbreviations: [SD](#) [FD](#)



Automatic extraction of the structured data from radiology clinical narratives

Procedure reported: Film screen mammography of the left breast. Reason for the procedure: Non-bloody discharge left breast. Breast composition. The breast is almost entirely fat.
Findings: Film screen mammograms were performed. Heterogeneous calcifications are regionally distributed in the 1 o'clock upper outer quadrant, anterior region of the left breast. The number of calcifications increased from the prior exam. Impressions: BI-RADS® Category 3: Probably Benign Finding. Short interval follow-up of the left breast is recommended in 6 months.

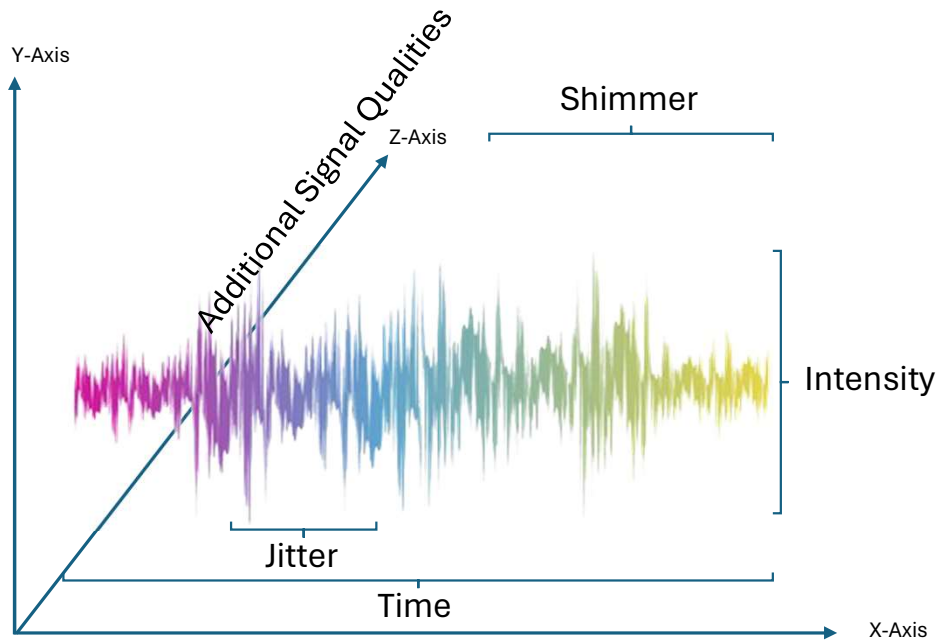


CREST (Combined ENT Study)

- Retrospective data extraction
- Prospective data collection
- Long-term
- Multi-institutional
- Multi-modal data integration
- Research Project + Clinical Practice

Collaboration between multiple departments and, soon multiple hospitals to collect and manage more than 5000 multi-modal datasets (clinical data points, voice, image, omics)

Voice detect



Detection of cancer recurrence in H&N patients by using a voice analysis.

- Prospective clinical study
- Machine learning-based voice analysis

QA