



Common Data Elements

A pathway to future-oriented interoperable healthcare

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MD >15 Years of Radiation
Oncology



Passion for clinical informatics



Passion for clinical informatics



Founder (2020) Medical Advisor
(Q3 2024)

Agenda

- 1 Background and Context
- 2 Problem Statement
- 3 Definitions and Characteristics
- 4 Technological Aspects
- 5 Adoption
- 6 Next Steps
- 7 Q&A

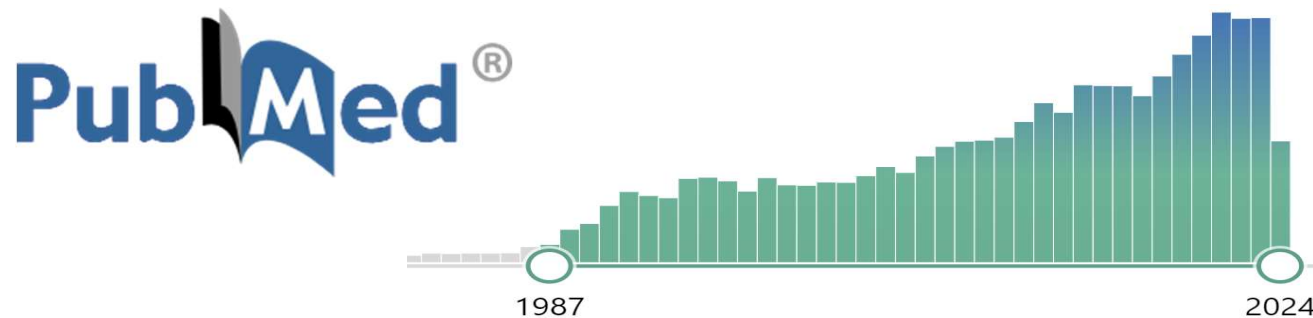
Background and context.



The CDE is a “new” concept in the healthcare IT environment.

The CDE approach promises to change the world of healthcare informatics and clinical data management.

ISROI is at the forefront of the development and implementation.



Why do we need change?

	Challenge
Interoperability	Poor
Data Quality and Standardization	Unsatisfactory
Integration of New Technologies	Hard to implement and expensive to maintain from the perspective of data integration (<i>think about AI and adaptive RT evidence generation</i>)
EHR/ROKIS Development, Implementation, and Adoption	Very problematic, painful, and expensive
Data Governance	Heavily dependent on previous aspects
Health Data Analytics	Heavily dependent on previous aspects
Data Overload	Endanger patient safety

Which problem do we need to solve in healthcare data management?

COMMON

Interorganizational Interoperability
(sit together and agree)

DATA

Semantic
(shared common meaning)

ELEMENTS

Syntactic Structure
(data transfer medium)

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 Tumour Stage with permissible values for the given clinical context.

What does a CDE look like?

 Central Compartment Lymph Nodes 

Number of lymph nodes examined*

Number of lymph nodes positive*

ENE**

- Not identified
- ENEmi (≤ 2 mm)
- ENEm_a (> 2 mm)

What does a CDE look like, in a background?

The screenshot displays a web-based interface for designing a Clinical Data Element (CDE). The breadcrumb navigation at the top reads "Home / Designer / Carcinomas of the Nodal Excisions and Neck Dissection Specimens for Head and Neck". In the top right corner, there are two buttons: "Change state" and "Administrative data".

The left pane, titled "Back to tree", shows a hierarchical tree view of the CDE structure. The root node is "object {21}", which contains several sub-objects:

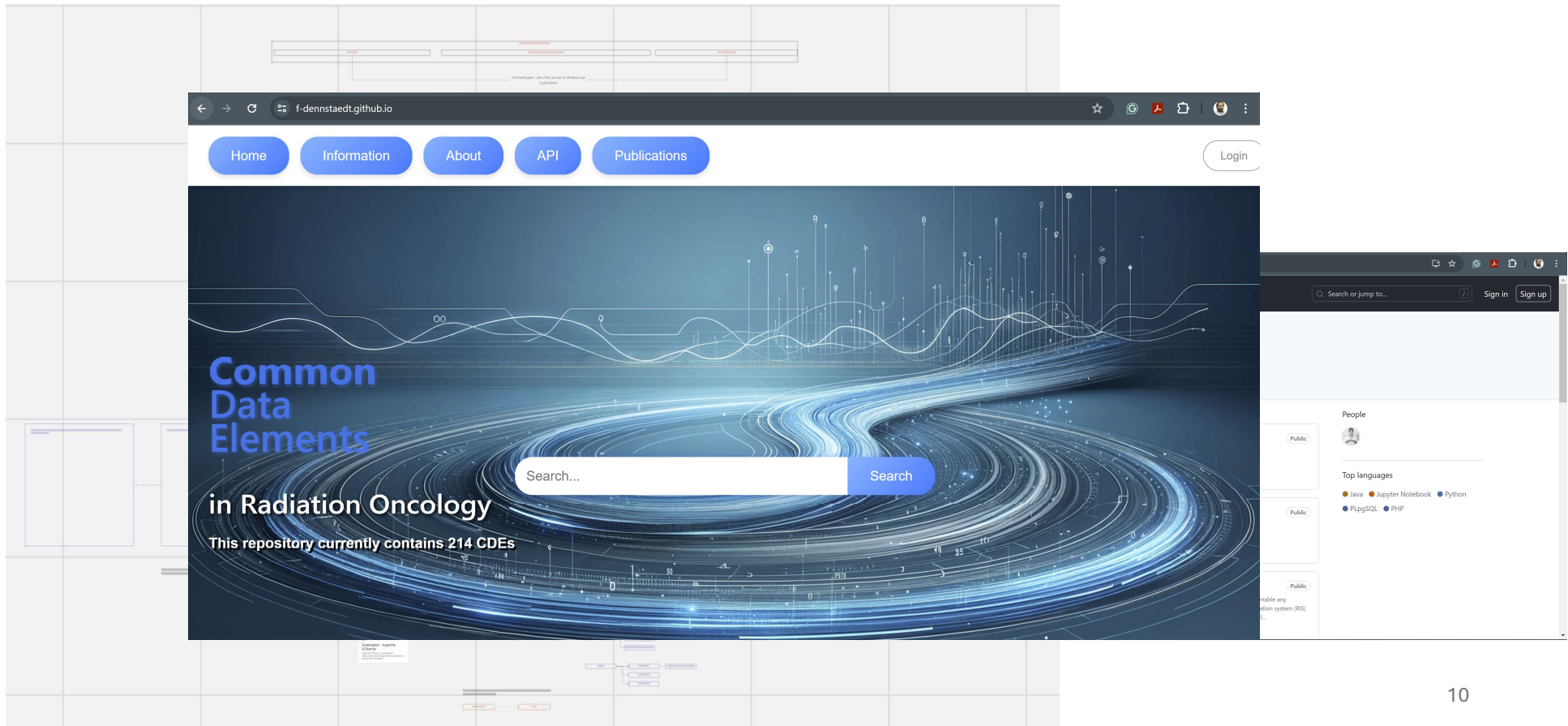
- customHeaderFields [0]
- parentFieldInstanceDependencies {0}
- id : 60b9ed55073a3502b26252f9
- title : Carcinomas of the Nodal Excisions and Neck Dissection Specimens for Head and Neck
- version {3}
- lastUpdate : 2024-05-10T08:48:26.7587818Z
- chapters [1]
- state : ReadyForDataCapture
- language : en
- thesaurusId : 1661
- documentProperties {5}
- episodeOfCare {3}
- workflowHistory [0]
- disablePatientData : true
- omniaId : {value: }

The right pane, titled "powered by ace", shows a JSON editor with the following content:

```
1 {
2   "customHeaderFields": [],
3   "parentFieldInstanceDependencies": {},
4   "id": "60b9ed55073a3502b26252f9",
5   "title": "Carcinomas of the Nodal Excisions and Neck Dissection Specimens for Head
6   and Neck",
7   "version": {
8     "id": "c2471158-7d02-4747-821d-09d2c580a794",
9     "major": 1,
10    "minor": 0
11  },
12  "lastUpdate": "2024-05-10T08:48:26.7587818Z",
13  "chapters": [
14    {
15      "id": "0309d36c-4f26-48db-a7d3-49dbd05c4bbc",
16      "title": "Carcinomas of the Nodal Excisions and Neck Dissection Specimens for Head
17      and Neck",
18      "description": "Carcinomas of the Nodal Excisions and Neck Dissection
19      Specimens for Head and Neck",
20      "thesaurusId": 1661,
21      "isReadOnly": false,
22      "pages": [
23        {
24          "id": "a58cd76bbe284d619c632689070e934c",
25          "title": "Page 1",
26          "isVisible": false,
27          "description": "Carcinomas of the Nodal Excisions and Neck Dissection
```

The status bar at the bottom of the JSON editor shows "Ln: 1 Col: 1".

What have we done already?



Adoption

An official website of the United States government [Here's how you know](#) ✓

NIH National Library of Medicine

NIH CDE Repository

CDEs Forms My Boards About Help Sign In

Use of CDEs Supports the NIH Data Management and Sharing Policy

Common data elements (CDEs) help researchers share and combine datasets, **meet funding requirements** and save time. [Learn More...](#)

Search All CDEs Search NIH-Endorsed CDEs Search Forms

Search by topic, keyword, or organization

CDEs in the Repository have been submitted by NIH recognized bodies.

Next Steps

f-dennstaedt.github.io



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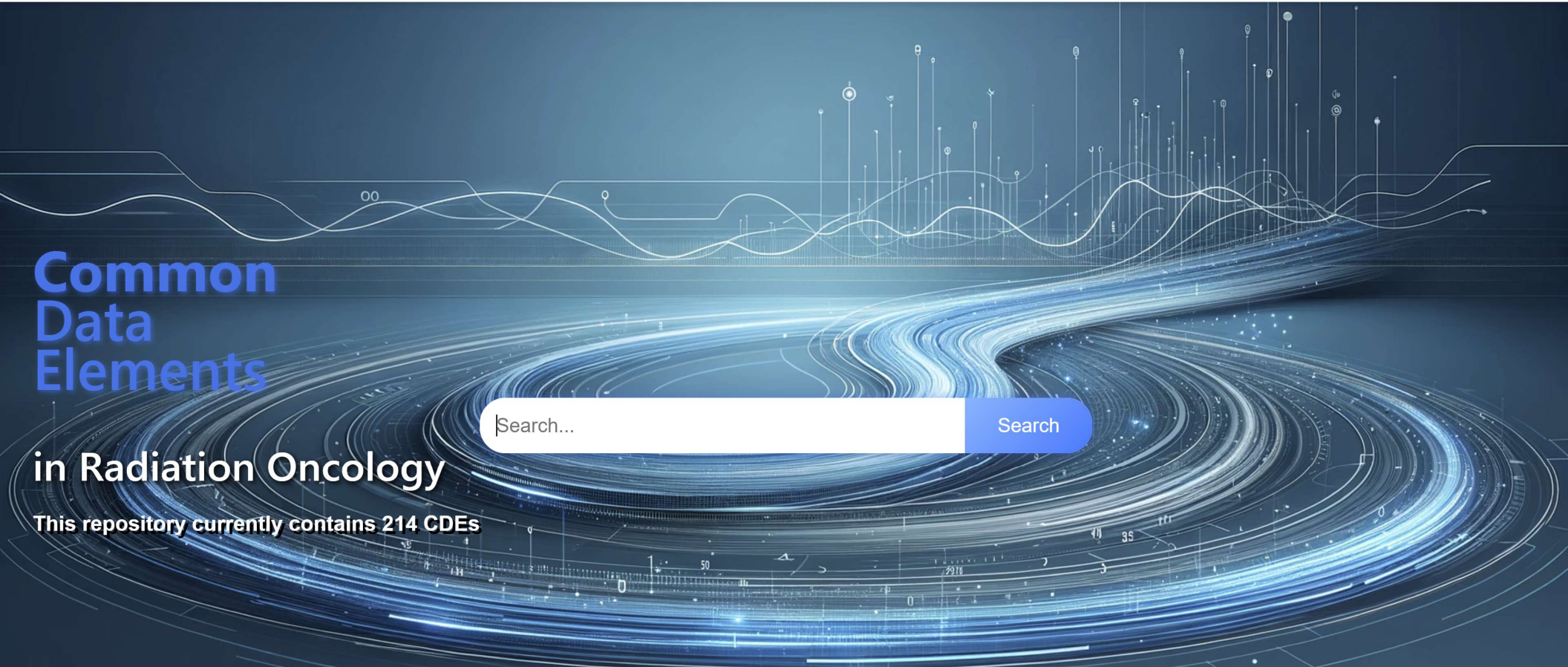
Login

Common Data Elements

in Radiation Oncology

This repository currently contains 214 CDEs

Search



Q&A