

Merging Clinical Data for Oncology Patients

The challenge of aggregating informative data sets

Martin Zoche, PMNET Forum

Oct 12, 2023



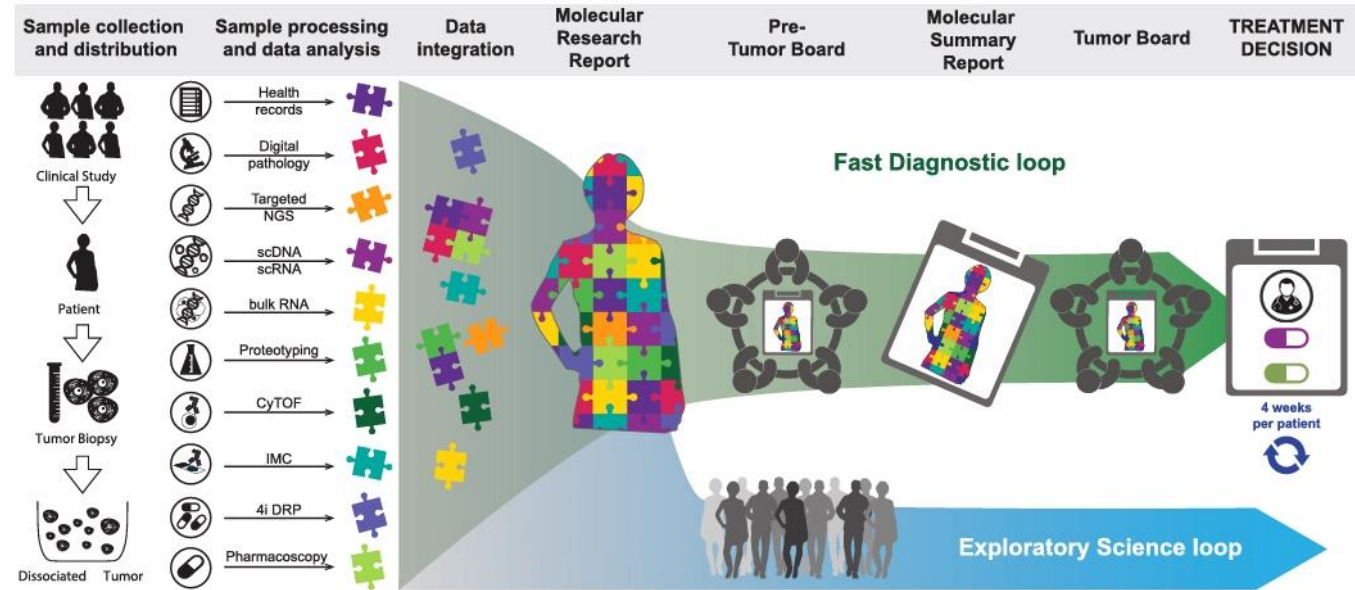
Disclosures

Martin Zoche receives research grants from F. Hoffmann-La Roche Ltd. and consulting fees from Astra Zeneca, Bayer, GSK and the Swiss Government.

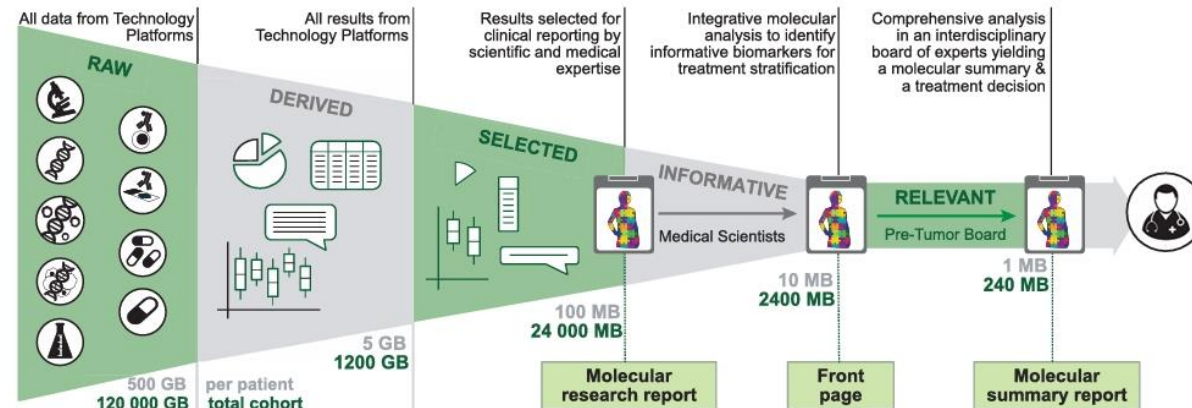
Beyond Genomics: Functional and -omics Data for Therapy Decision

The Tumor Profiler (TuPro) Study

The study workflow



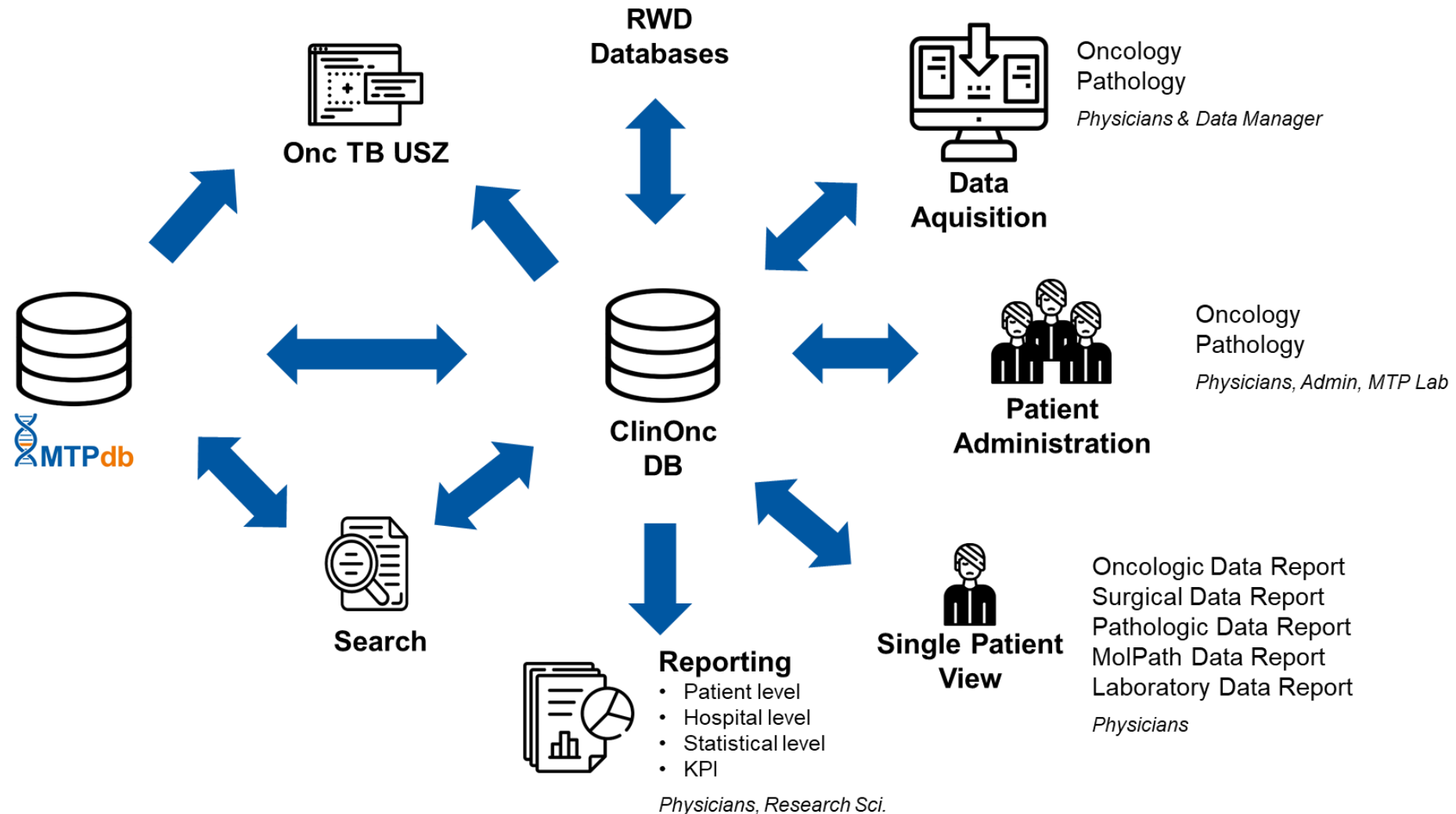
Schematic representation of the qualitative and quantitative transition from the raw data generated by all TuPro technology platforms to the molecular summary report.



4i DRP, iterative indirect immunofluorescence imaging Drug Response Profiling; CyTOF, mass cytometry; IMC, imaging CyTOF; sc, single-cell

Oncology Database

Communication with a variety of different databases in the hospital



FHIR - Fast Healthcare Interoperability Resources

A global international standard - open source



- Natural **evolution** of **HL7** standards
Combines the best of HL7 with the latest of web standards
- Full use of **terminology systems** and **coded concepts**
No free-text or unstructured data
- Already adopted or integrated in most **modern EHR systems**
EPIC and KISIM already provide FHIR interfaces
- All content is **freely available**
Open-source with no charges for licensing
- Quickly gaining **popularity** and adoption
A statistic of FHIR projects in just one popular public FHIR repository:



ORACLE



IBM

NHS

Allscripts®

MAYO CLINIC

CISTEC

Stanford HEALTH CARE



Cleveland Clinic

amazon

KAROLINSKA UNIVERSITY HOSPITAL

Roche

Microsoft



Amsterdam UMC

Epic

NIH

CODEX

MITRE



MASSACHUSETTS GENERAL HOSPITAL

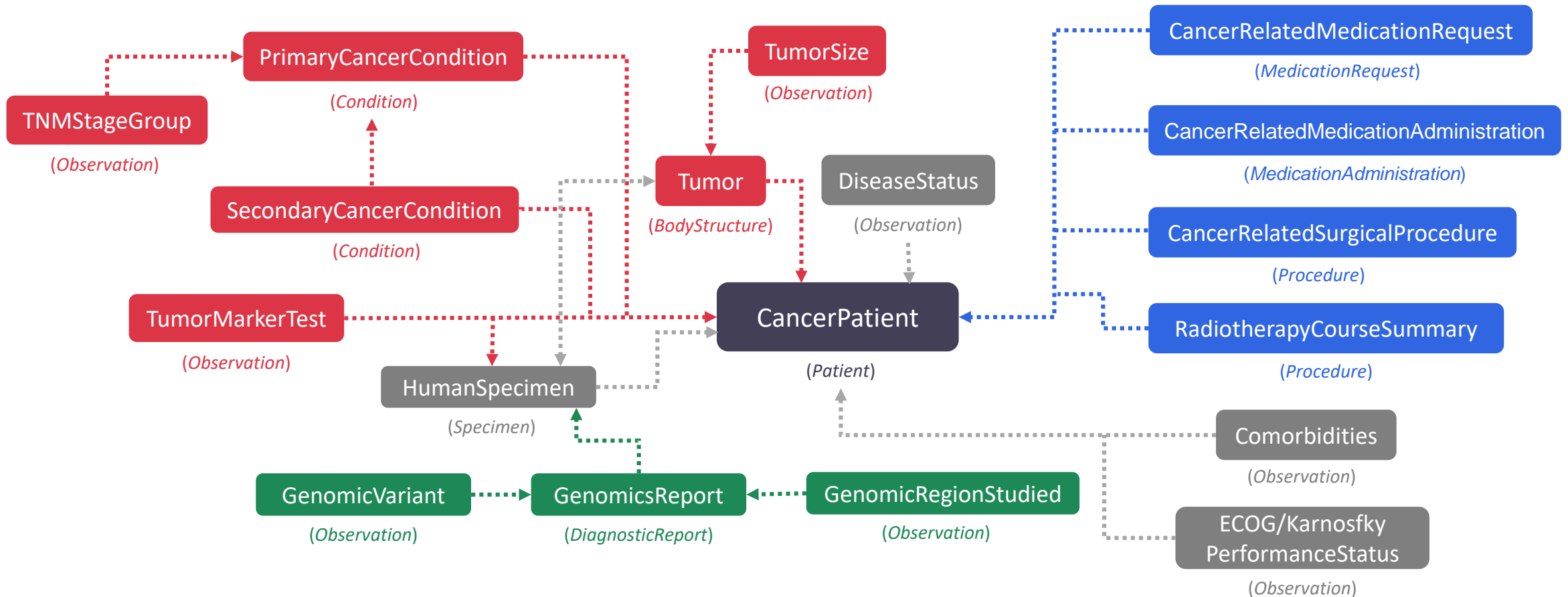


JOHNS HOPKINS MEDICINE

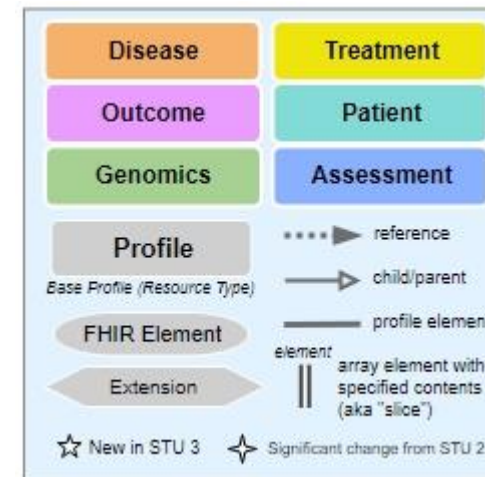
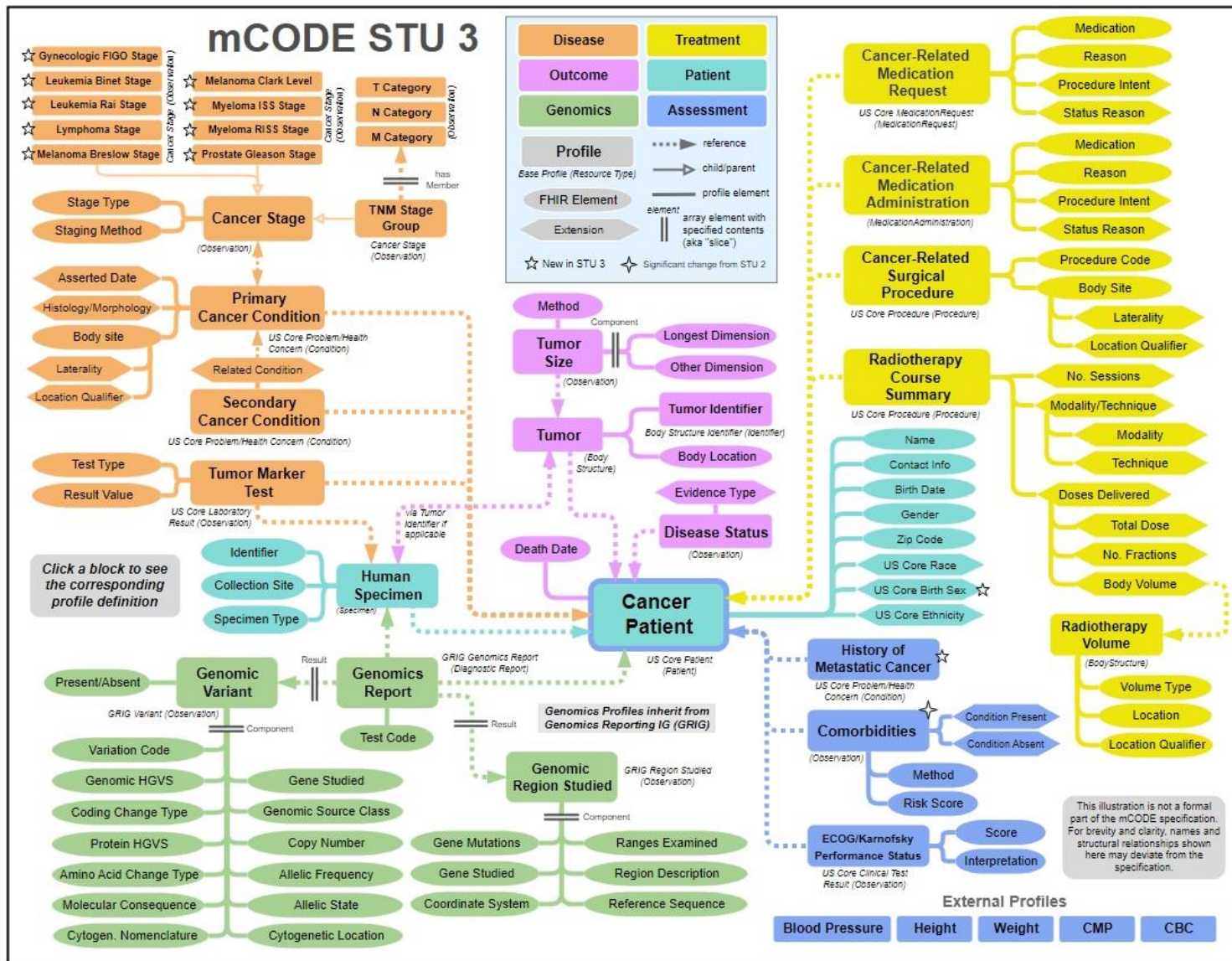
Geisinger Health Plan

mCODE - Minimal Common Oncology Data Elements

“mCODE™ is an initiative intended to assemble a core set of structured data elements for oncology electronic health records (EHRs). mCODE is a step towards capturing research-quality data from the treatment of all cancer patients.”

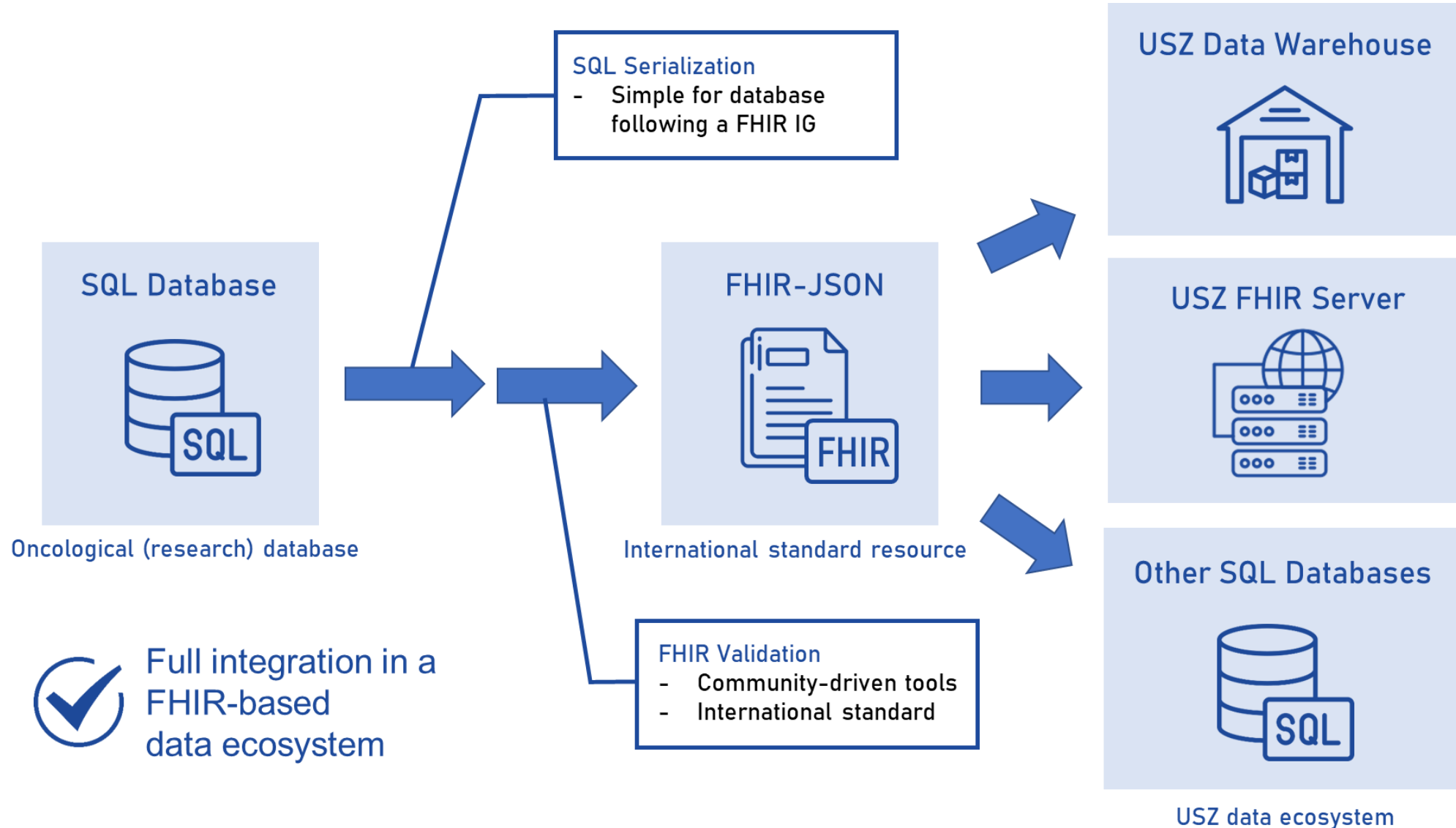


mCODE - Minimal Common Oncology Data Elements




adapted from build.fhir.org/ig/HL7/fhir-mCODE-ig/

mCODE - Integration and Interoperability



POP - Landing Page

Welcome **Martin Zoche** to the



POP

Precision Oncology Platform

Disclaimer


This platform is provided for research and informational purposes only and does not constitute providing medical advice or professional services. The information and resources provided here should not be used for diagnosing or treating a health problem or disease.

Patients
View all patients and add events.
[Start](#)

Data analysis
Analyze aggregated patient data.
[Start](#)





Future Features
To be defined...
[Start](#)

POP - Case Browser




Case Browser

Search... + New case

CASE ID ▼	DIAGNOSIS	DEMOGRAPHIC	STUDY	STUDY ID	STUDY STATUS	ENTRIES	ACCESSIONING	ACTIONS
D.3338.625.33	Skin of lower limb and hip acral lentiginous melanoma Stage IV:	20.08.1961 Female, 58 years				127	02.10.2023	 
J.7285.284.44	Lung adenocarcinoma Stage IIIB	16.08.1968 Male, 55 years	● Roche POP	POP_USZ_123	data- sent	128	02.10.2023	 

Previous 1 Next

POP - Case Overview



Case overview

J.7285.284.44
Male, 55 years

Lung adenocarcinoma
Stage IIIB

Roche-Flatiron Matching Study
POP_USZ_123

71 database entries
24 months of medical records

Roche-POP Matching Study

Next step:

[Upload matching report](#)

✓ Data Entry ✓ Data Transfer 3 Matching Report 4 Utility Assessment

Cancer Characterization

- Diagnoses 3
- Stagings 1
- Tumors 0
- Tumor Marker Tests 6

Treatments

- Medication Requests 0
- Medication Administrations 8
- Surgical Procedures 0
- Radiotherapy Courses 2

Clinical Observations

- Molecular Tumor Board Reviews 1
- Adverse Events 1
- Treatment Responses 8
- Performance Scores 6

Pathology


- Specimens 3
- Biomarkers 1
- Genomic Alterations 21
- Genomic Signatures 3

Patient Profile

- Lifestyle 2
- Family History 1
- Vitals 3
- Comorbidities 1

Other

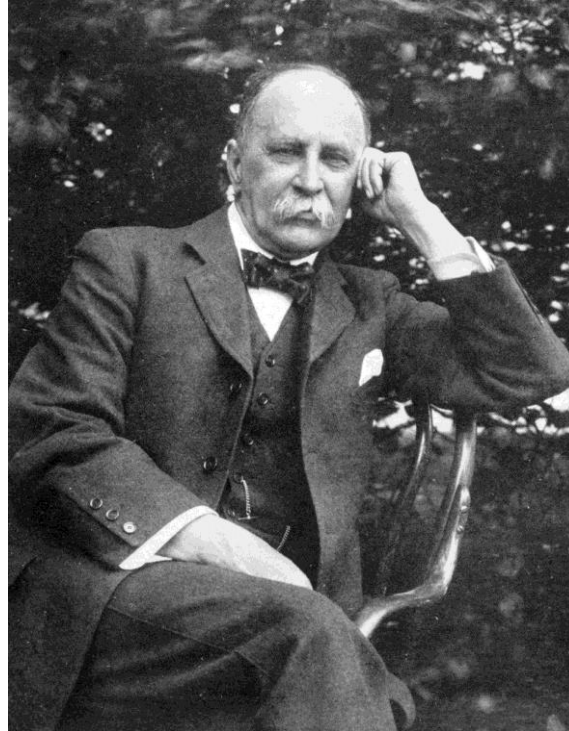
- Cause Of Death 0



Thank You for Your Attention

"If it were not for the great variability among individuals, medicine might as well be a science and not an art"

Sir William Osler, 1892



*Where molecular tumor
profiling leads oncology
to best patient care*

