Mapping of ICD-O tuples to OncoTree codes using SNOMED CT post-coordination

MIE 2022 – Nizza
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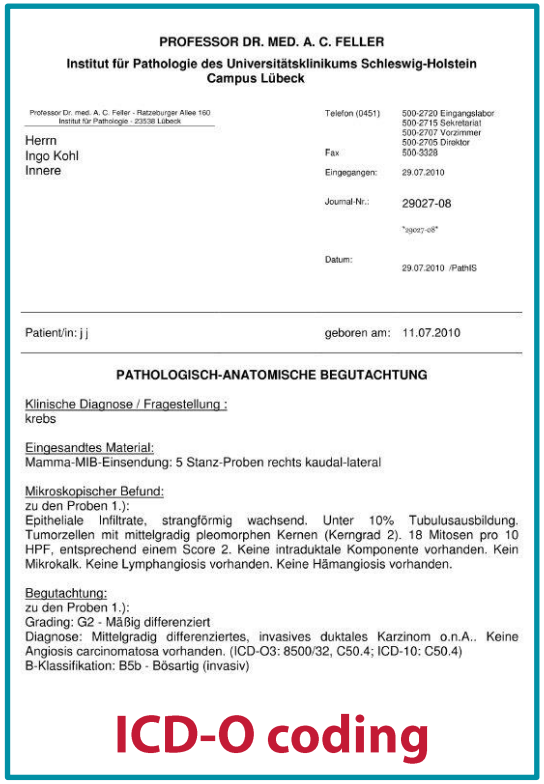
Routine healthcare in oncology
Pathological report



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Eingegangen: 29.07.2010
Journal-Nr.: 29027-08
"ejo27-08"
Datum: 29.07.2010 /PathIS

Patient/in: j j geboren am: 11.07.2010

PATHOLOGISCH-ANATOMISCHE BEGUTACHTUNG

Klinische Diagnose / Fragestellung :
krebs

Eingesandtes Material:
Mamma-MIB-Einsendung: 5 Stanz-Proben rechts kaudal-lateral

Mikroskopischer Befund:
zu den Proben 1.):
Epitheliale Infiltrate, strangförmig wachsend. Unter 10% Tubulusausbildung. Tumorzellen mit mittelgradig pleomorphen Kernen (Kerngrad 2). 18 Mitosen pro 10 HPF, entsprechend einem Score 2. Keine intraduktale Komponente vorhanden. Kein Mikrokalk. Keine Lymphangiosis vorhanden. Keine Hämangiosis vorhanden.

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B-Klassifikation: B5b - Bösartig (invasiv)

ICD-O coding

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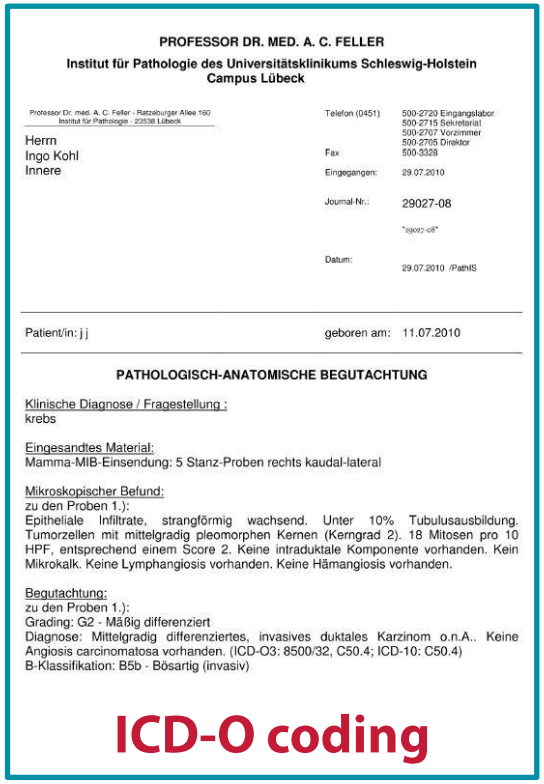

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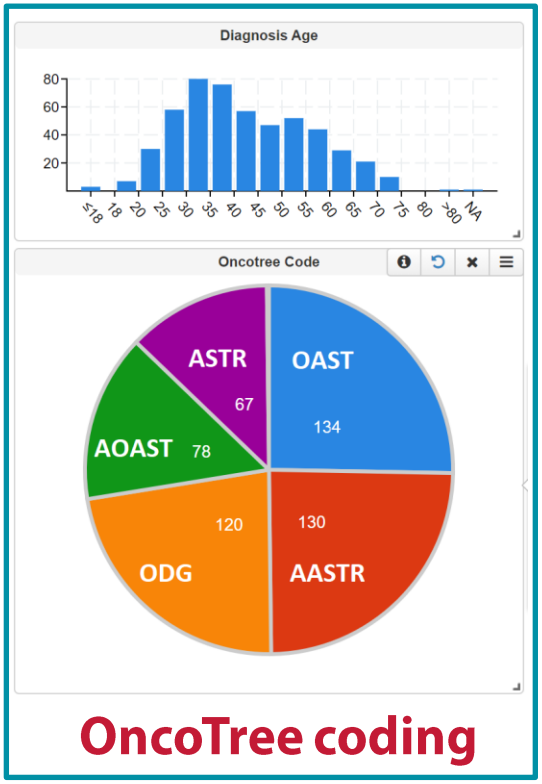
Use of cBioPortal



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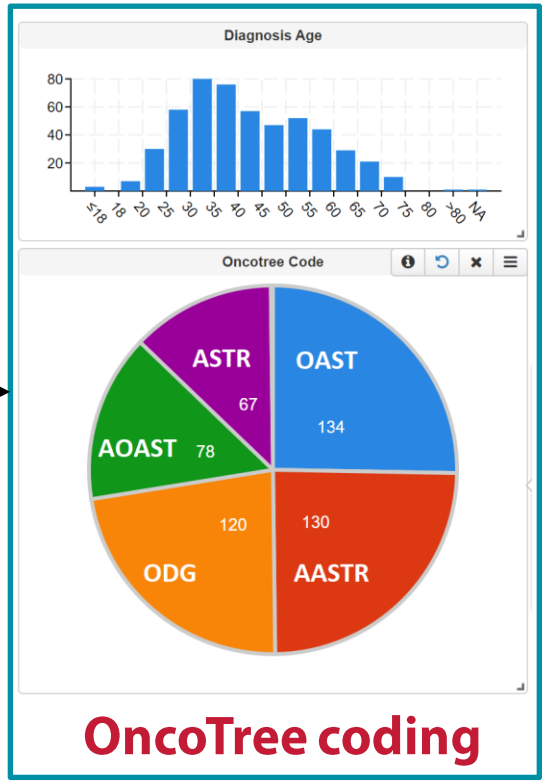

OncoTree coding

2 Mapping with intermediate step „SNOMED CT“

ICD-O tuples → **OncoTree**

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Localization

C50 BREAST *(excludes skin of breast C44.5)*

C50.0 Nipple
Areola

C50.1 Central portion of breast

C50.2 Upper-inner quadrant of breast

C50.3 Lower-inner quadrant of breast

C50.4 Upper-outer quadrant of breast

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C50.6 Axillary tail of breast
Tail of breast, NOS

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(see section 4.2.6)
Inner breast
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Midline of breast
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Upper breast

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Mammary gland

327 Codes

Morphology

850-854 Ductal and lobular neoplasms

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Intraductal adenocarcinoma, noninfiltrating, NOS
Intraductal carcinoma, NOS
Ductal carcinoma in situ, NOS (C50._)
DCIS, NOS (C50._)
DIN 3 (C50._)
Ductal intraepithelial neoplasia 3 (C50._)

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Duct adenocarcinoma, NOS
Duct carcinoma, NOS
Ductal carcinoma, NOS
Duct cell carcinoma
Infiltrating duct adenocarcinoma (C50._)

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Ductal carcinoma in situ, comedo type (C50._)
DCIS, comedo type (C50._)

1090 Codes

- 356.430 possible ICD-O tuples
- Ca. 20.000 meaningful ICD-O tuples

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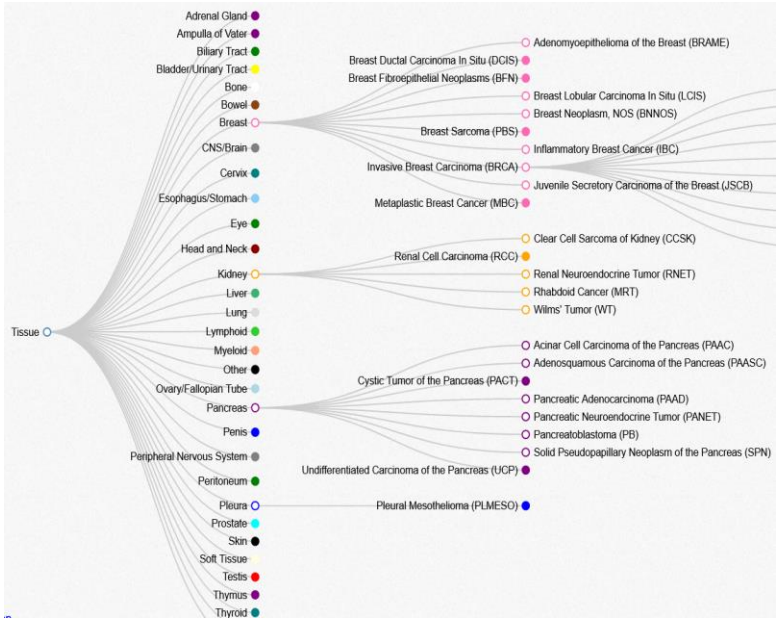

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- 31 tissue classes and rest class „other“

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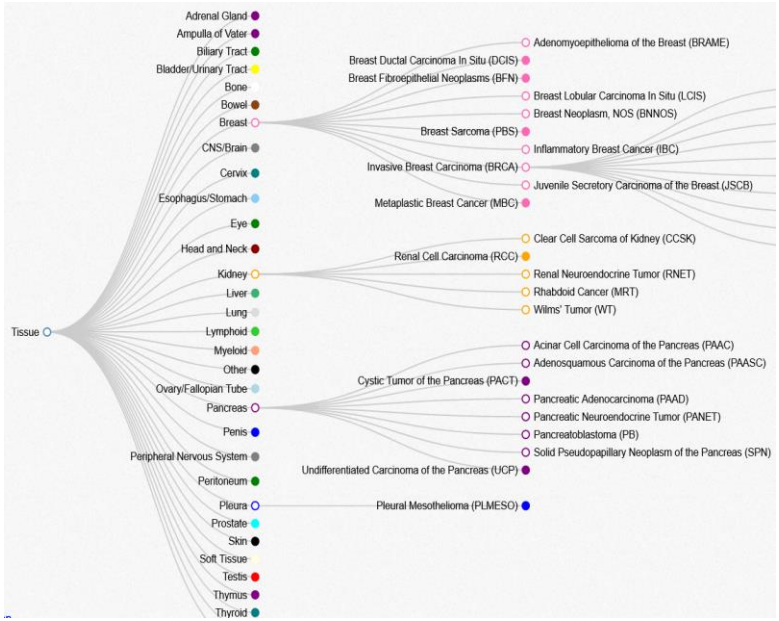

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(University Medical Center Schleswig-Holstein, Campus Lübeck)

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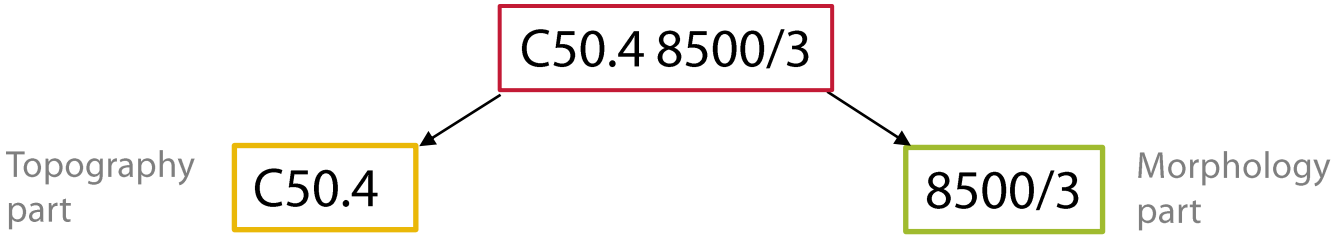

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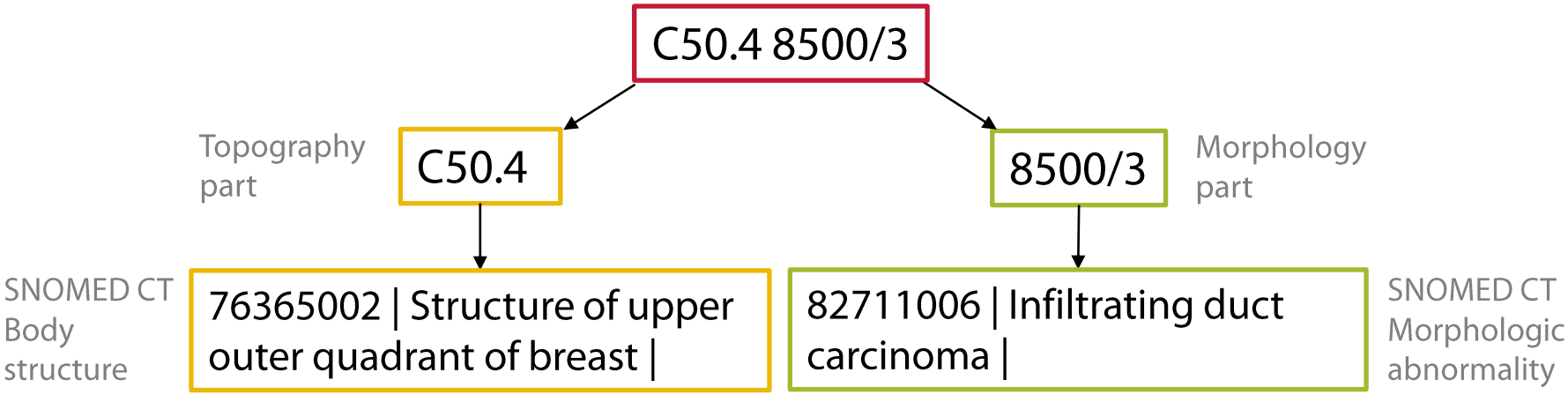

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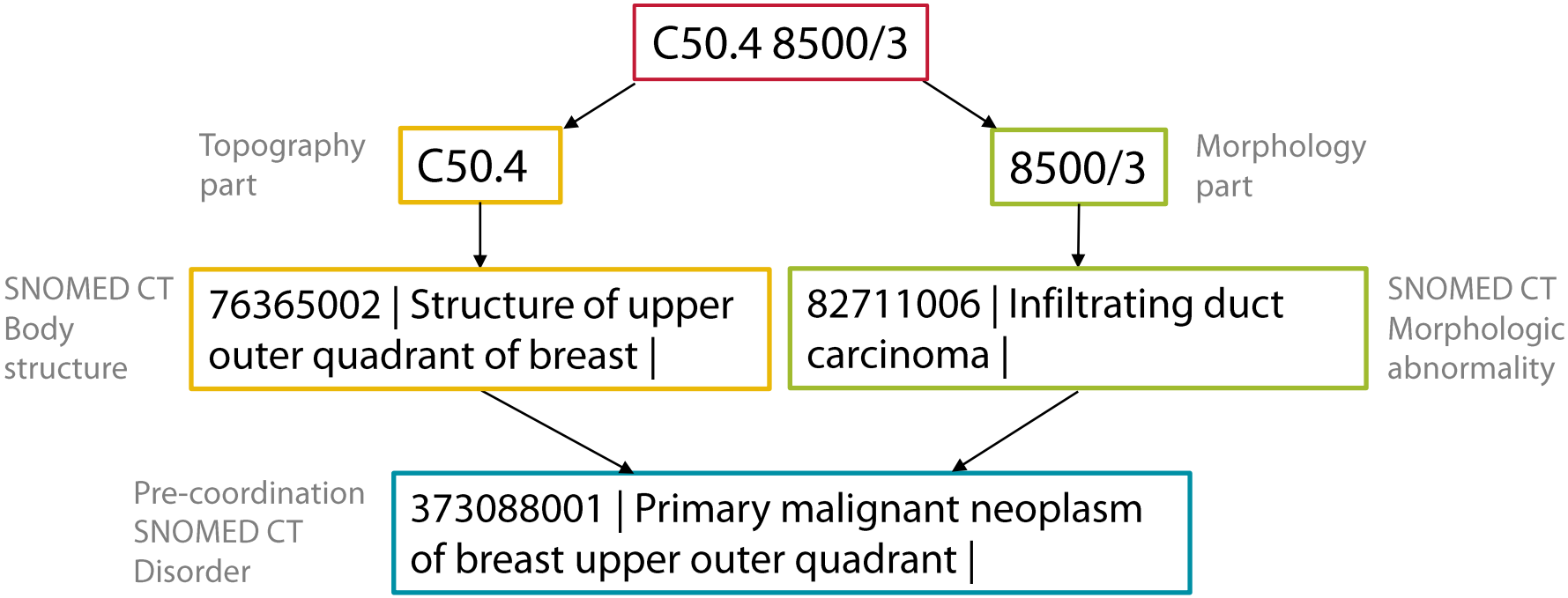

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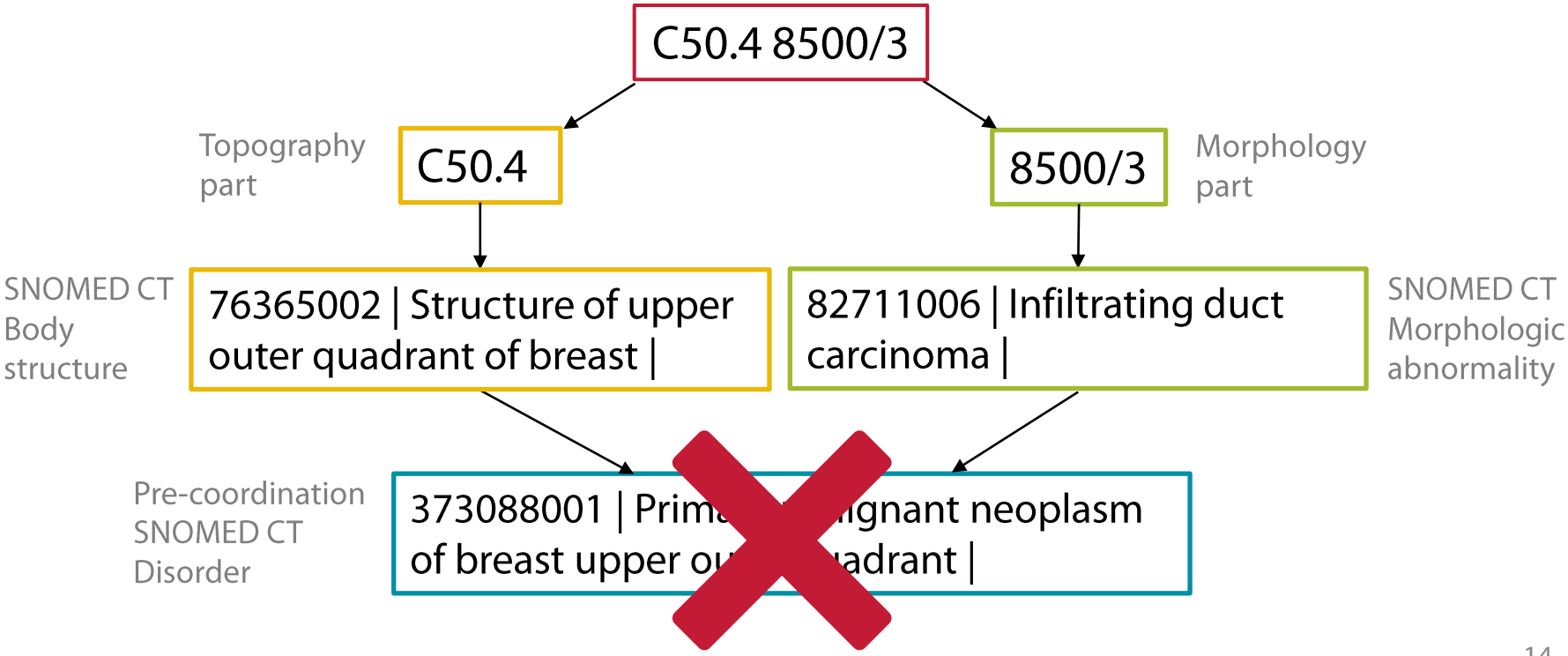

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Source — Target

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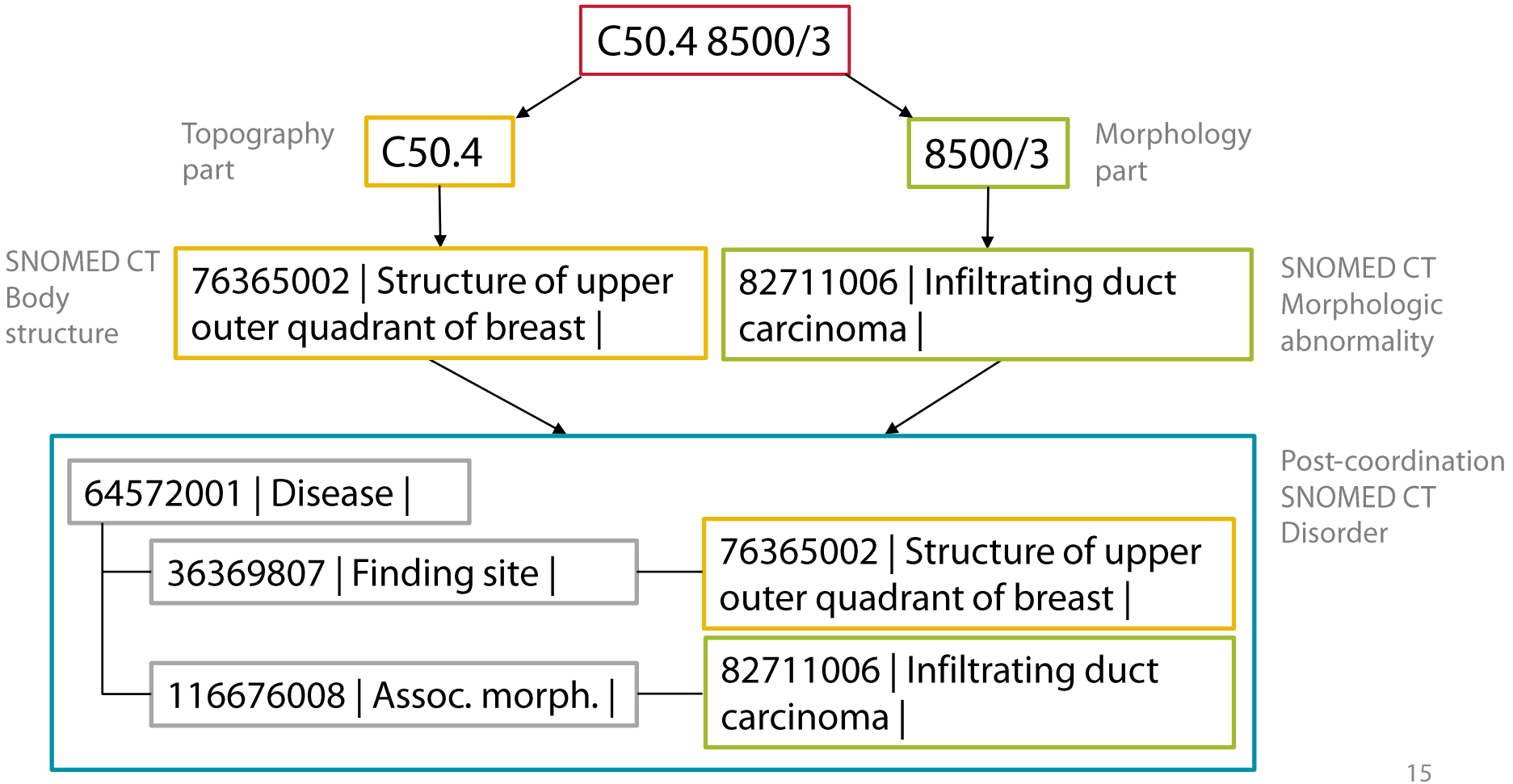

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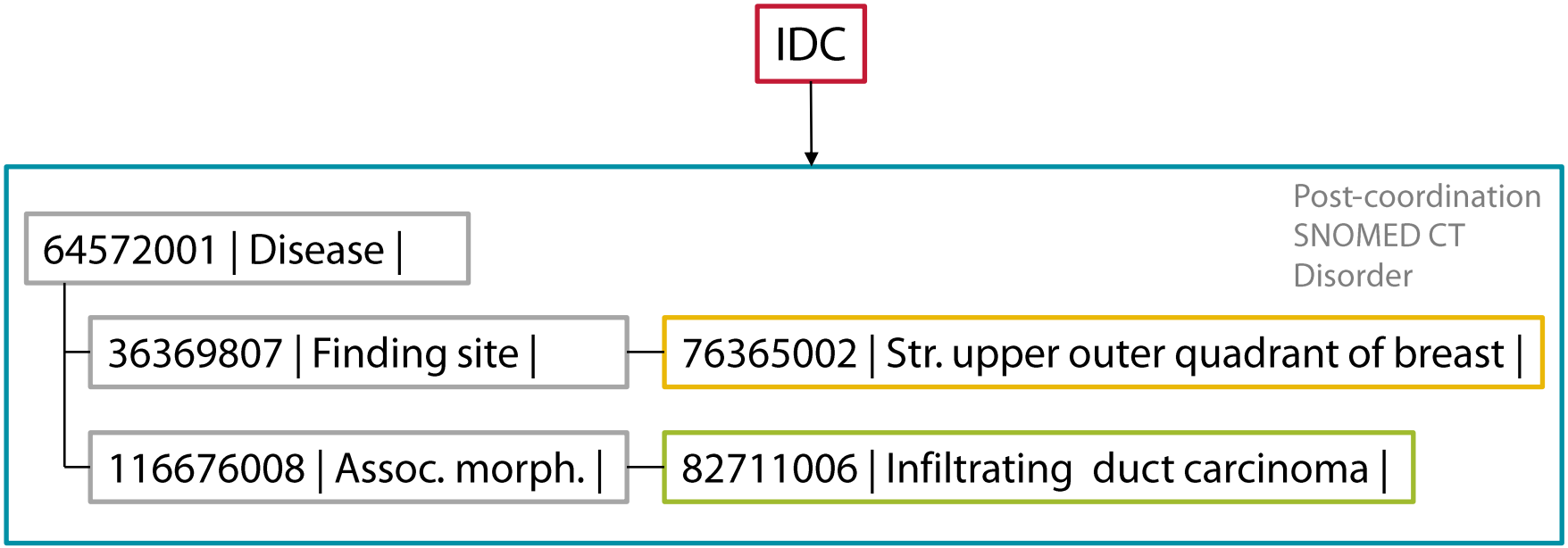
OncoTree code: IDC (Breast Invasive Ductal Carcinoma)



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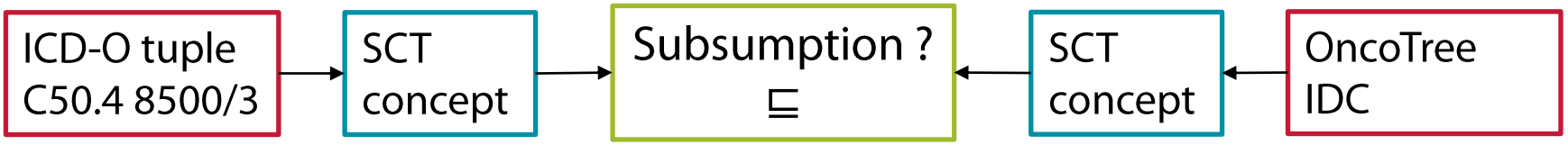
Subsumption between ICD-O tuple and OncoTree code



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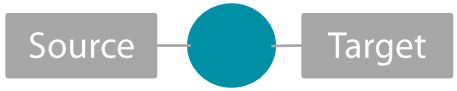

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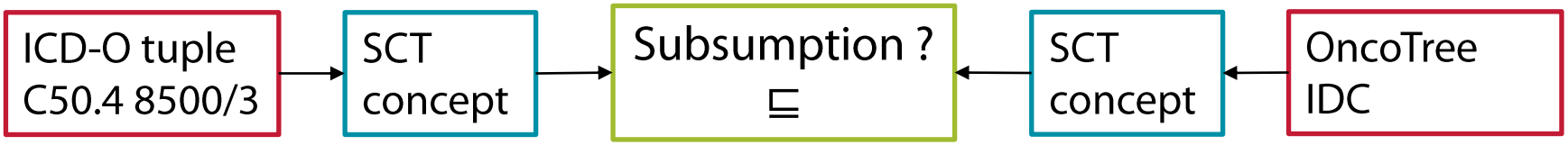

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Topography

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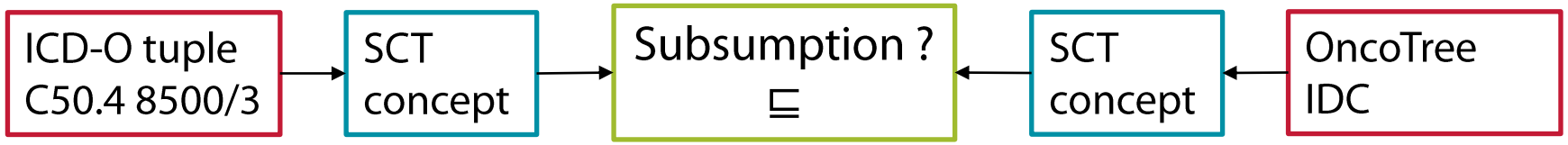

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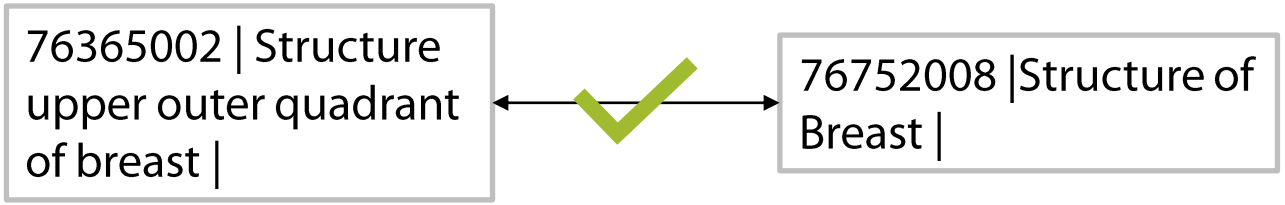

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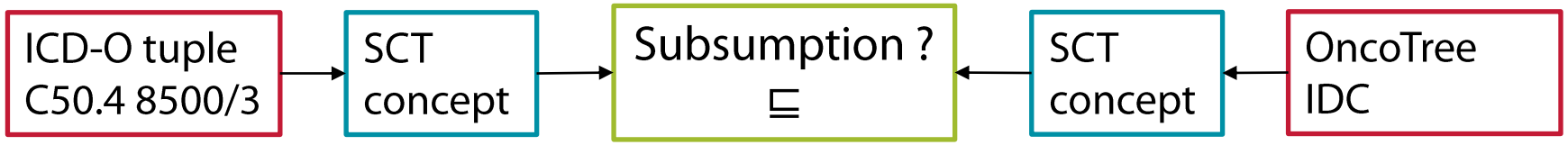

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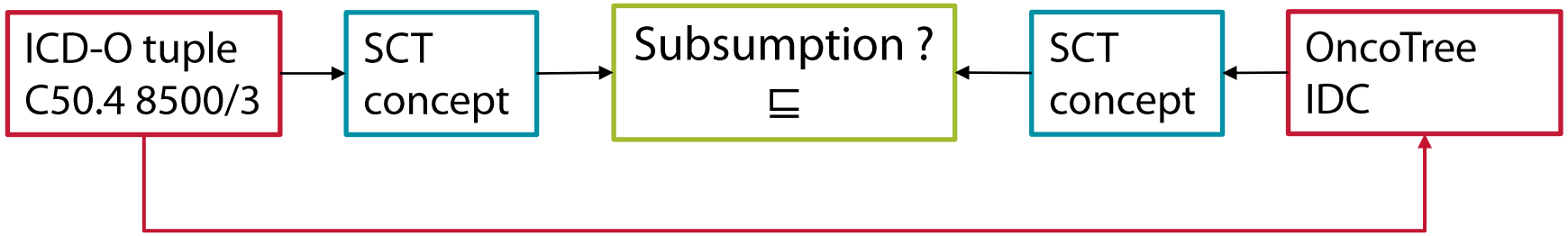

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HL7 FHIR

- Used resources: CodeSystem, ValueSet, ConceptMap
- Uses operations: $translate, $expand, $subsumes

5 Results based on post-coordination

Mapping of input data set

	ICD-O → OncoTree: **Possible**
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- Avoiding more optimal mapping results
  - Gaps in the structure of SNOMED CT
  - Discrepancies between meaning and use of a term

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6 Conclusion

- Successful implementation of the mapping
  - Use of SNOMED CT post-coordination as an intermediate step
  - Semi-automatic realization using a developed tool

- Integration of the results into the cBioPortal

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