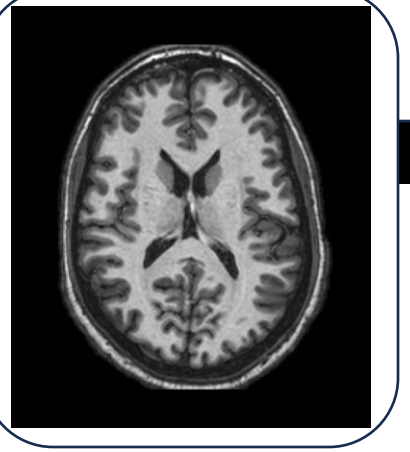
2025 Imaging OHDSI WG

From pixels to Phenotypes

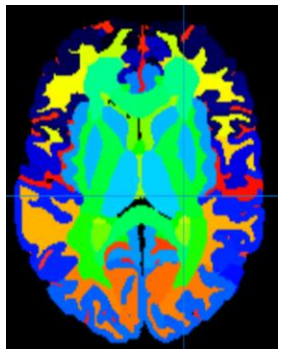
Every other Wednesday 7 AM EST and then 7 PM EST

WG co-leads Seng Chan You and Paul Nagy



Image_occurrence

Image_feature



Standardized clinical data

- Person
- Observation_period
- Death
- Visit_occurrence
- Visit_detail
- Condition_occurrence
- Drug_exposure
- Procedure_occurrence
- Device_exposure
- Measurement
- Observation
- Note
- Note_NLP
- Episode
- Specimen
- Episode_event
- Fact_relationship

Standardized health system

- Location
- Care_site
- Provider

Standardized vocabularies

- Concept
- Vocabulary
- Domain
- Concept_class
- Concept_synonym
- Concept_relationship
- Relationship
- Concept_ancestor
- Source_to_concept_map
- Drug_strength

Standardized health economics

- Cost
- Payer_plan_period

Standardized derived elements

- Condition_era
- Drug_era
- Dose_era

Results schema

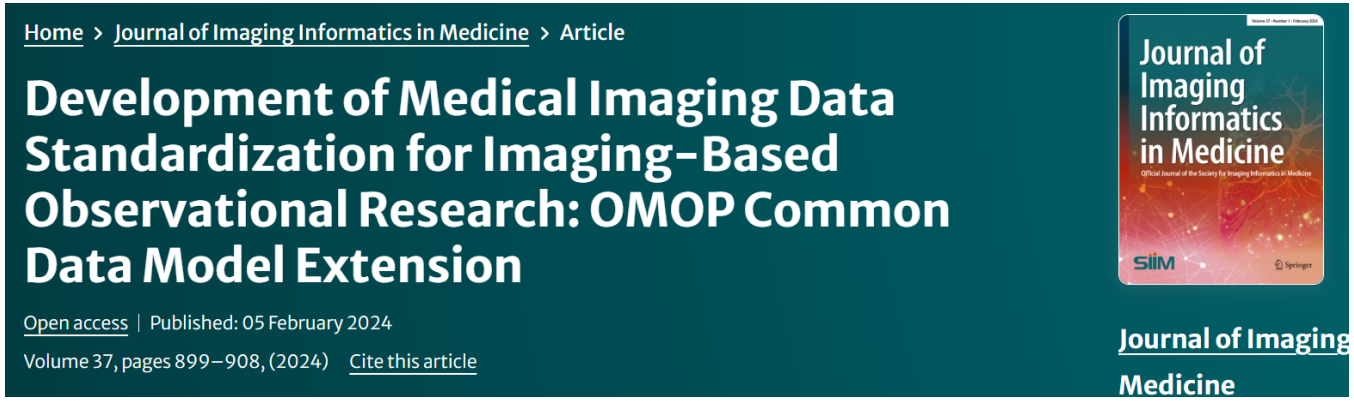
- Cohort
- Cohort_definition

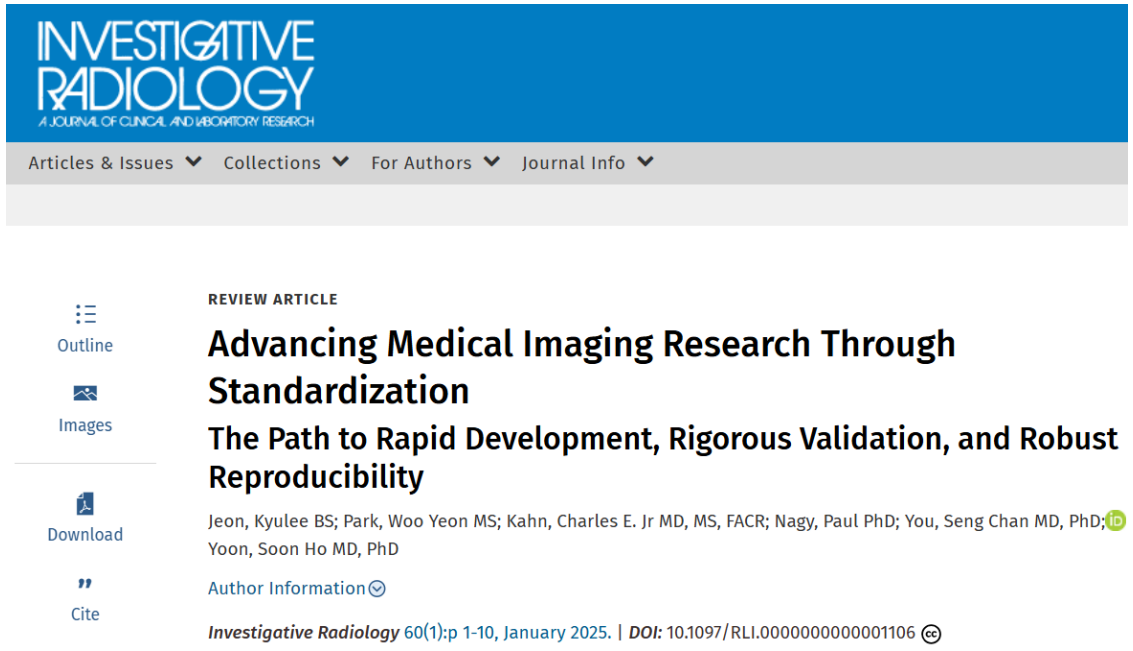
Standardized metadata

- CDM_source
- Metadata

OHDSI Medical Imaging Workgroup

- Created in Fall 2021
- Bi-weekly meetings
- 219 Current Members
- Seminal paper Feb 2024
  - 3800 downloads
  - 8 citations
  - 3 vendors implemented
    - MSFT Azure DICOM to OMOP





What we have done so far

1. Created an architecture to integrate imaging into OMOP and published it for the OMOP extension.
2. Demonstrated the extension with Alzheimer's data to create cohort definitions based on DICOM attributes
3. Create cohort projections with imaging pipelines for segmentation algorithms
4. Harvesting of the DICOM standard into the OMOP vocabulary (3rd paper) Semantic
5. Demonstration project of data characterization in Alzheimer's of brain hippocampal volume correlation to neurocognitive (4th paper)
6. Described the heterogeneity of DICOM tags in South Korea.
7. NEI is funding a challenge grant aligning with medical imaging in OHDSI
8. Commitment to reference implementations in 2025 from 3 sites.

Imaging WG Goals

- OKR #1. Reference implementations of RWD into OMOP CDM
  - Guidelines on linking GUID/accession numbers to procedure occurrences
  - Guideline on high-value DICOM tags (don't swamp measurement table)
  - Education on different DICOM tags (Private)
  - Study description/series description standardization
- OKR #2. Reference implementation on RWD in multiple locations and multiple modalities
- OKR #3. Education - Implementation guide for the imaging extension
  - Publish 3rd and 4th paper
  - Software guide to do the ETL harvesting
  - Chapter in the book of OHDSI – maybe republishing of the chapter in JIIM
  - Raise awareness with grant sponsors through presentations.