# DICOM Format

## DICOM structure
Digital Imaging and Communications in Medicine

## Tags and metadata
Patient info, acquisition parameters

## PACS systems
Picture Archiving and Communication Systems

## Anonymization
Removing protected health information

## Viewer software
Horos, 3D Slicer, RadiAnt

### DICOM File Structure

.dcm

- Header (128B)
- DICM
- Metadata
  (Tags & Values)
  Patient, Study,
  Series, Image info
- Pixel Data
  (7FE0, 0010)
  Image matrix

### Tag Structure

| (0010,0010) | PN | John^Doe |
|---|---|---|
| Group,Element | VR | Value |

Example: Patient Name

### PACS Workflow

CT  MRI  US  XR

Imaging Modalities

DICOM

**PACS Server**
Storage & Archive
Database + Image files

Radiologist    Clinician    Researcher

√ Fast retrieval √ Secure access
√ Backup √ HL7 integration

### Common DICOM Tags

| Patient Level | Study Level | Series Level | Image Level |
|---|---|---|---|
| (0010,0010) Name | (0020,000D) UID | (0020,000E) UID | (0020,0013) Instance |
| (0010,0020) ID | (0008,0020) Date | (0008,0060) Modality | (0028,0010) Rows |
| (0010,0030) DOB | (0008,1030) Description | (0020,0011) Number | (7FE0,0010) PixelData |