Cancer Moonshot Biobank Date Handling

Introduction

Biobank radiology imaging data on TCIA contains the "days from enrollment (registration)" for each scan, embedded in the DICOM files (DICOM tag (0012,0053)).   This allows for temporal alignment between the imaging on TCIA and clinical events data found on the Biobank Catalog.
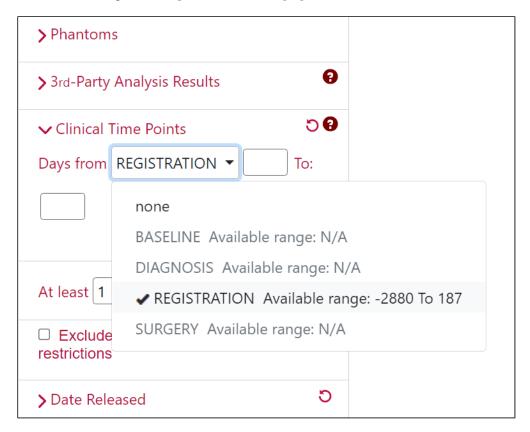
Note: In order that the images display properly in DICOM readers, the radiology imaging data also contains de-identified dates that preserve the temporal sequence relationship between scans in a given study.

Days from enrollment (registration)

In addition to modifying the actual date fields in the DICOM header, the "days from registration" values are calculated and stored in the DICOM tag **(0012,0052) Longitudinal Temporal Offset from Event** with the associated tag **(0012,0053) Longitudinal Temporal Event Type** set to "REGISTRATION".   Here is an example DICOM header from a scan where the patient's imaging was performed 2 days before the registration, resulting in a negative offset value.

(0012,0052)	Longitudinal Temporal Offset from Event	-2.0
(0012,0053)	Longitudinal Temporal Event Type	REGISTRATION

If you would like to filter your search results using this information, you can leverage the "Clinical Trial Time Points" filter via our data portal at https://nbia.cancerimagingarchive.net/nbia-search/.

De-identification of DICOM dates

De-identification of dates for this dataset uses the DICOM Part 3.15 Annex E standard "Retain Longitudinal With Modified Dates Option" which allows dates to be retained as long as they are modified from the original date. TCIA implements this using a technique which de-identifies the dates while preserving the longitudinal relationship between them. Original dates will be first normalized to January 1, 1960 and then offset relative to the date of registration for each patient. This normalized date system was chosen in order to make it obvious that the dates are not real, and to make it easy to quickly determine how much time has passed between the date of registration and the patients' related imaging studies.

For example, if the real date of a patient's registration was 03/27/2018 and the original imaging Study Date was 03/29/2018 then the anonymized TCIA Study Date would become 01/03/1960 (two days after the base date of 1/1/1960).