SQL Database Design

- Will continue this process for every point on PTV.

- Although this is a brute force method, calculation takes < 1sec per ROI on average.*

- Large contours may cause memory issues. External, skin, body, etc. ignored by default.

- Standard <u>3D</u> Euclidean distances.

PTV

OAR

* Tested on a 2016 Macbook Pro 2.6GHz i7

PTV Distance

DVH Analytics
SQL Database Design

DVH Analytics
SQL Database Design

DVHs	Plans	Prescriptions	Beams
MRN	MRN	MRN	MRN
Study Instance UID	Study Instance UID	Study Instance UID	Study Instance UID
Import Timestamp	Import Timestamp	Import Timestamp	Import Timestamp
DVH	Age at Study Date	Fractions (Fxs)	Beam Name
PTV Distance	Baseline	Fx Dose	Beam Number
PTV Overlap	Birthdate	Fx Group Name	Beam Dose
ROI Name	Dose Grid Resolution	Fx Group Number	Beam MU
ROI Type	Dose Timestamp	Fx Group Count	Beam MU per Degree
ROI Coordinates	Fractions	Norm. Method	Beam MU per Control Point
ROI Dose	Heterogeneity Correction	Norm. Object	Beam Control Point Count
ROI Institutional Category	MU (plan total)	Prescription Dose	Beam Energy (Min/Max)
ROI Physician Category	Patient Sex	Prescription Percent	Beam Radiation Type
ROI Volume	Patient Orientation		Beam Type
	Physician		Collimator Angle Information
	Plan Timestamp		Couch Angle Information
	Prescription Dose		Fx Count
	Sim Study Date		Fx Group Beam Count
	Structure Timestamp		Fx Group Number
	TPS Manufacturer		Gantry Angle Information
	TPS Software Name		Isocenter
	TPS Software Version		Scan Spot Count
	Treatment Modality		Scan Mode
	Treatment Site		SSD (Avg SSD for arcs)
	Treatment Time		Treatment Machine

1cGy Binned DVHs + >80 other DICOM variables tracked