

# 3D Conformal Benchmark

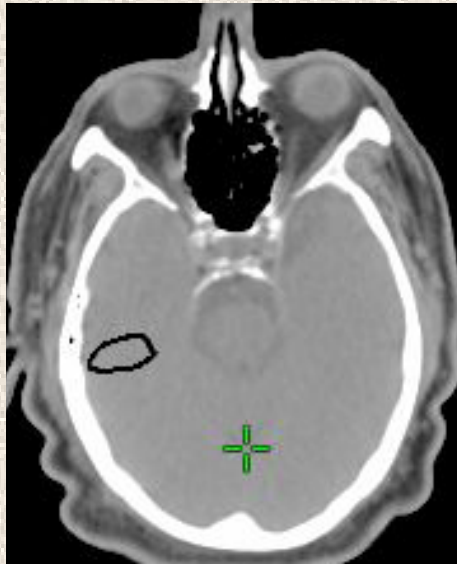


## Description of 3D Conformal Benchmark

### Purpose:

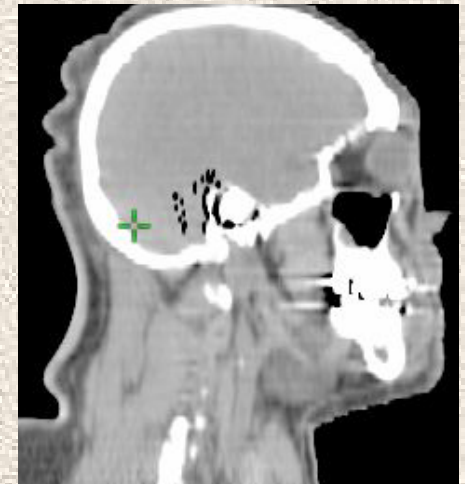
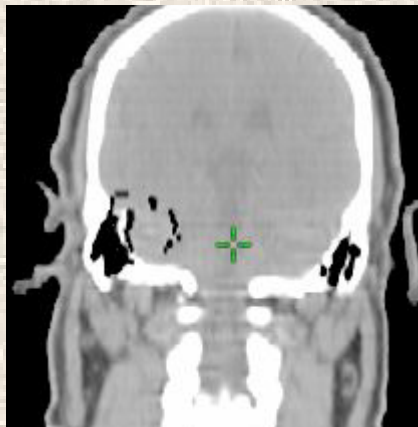
This benchmark is a sample case used to evaluate the treatment planning process at your institution, i.e., data acquisition, PTV and OAR delineation, conformal treatment planning (not IMRT), dose calculation and monitor unit calculations. The aim is to demonstrate your capability to participate fully in 3D protocol studies. This benchmark will cover all 3D protocols reviewed at QARC (Quality Assurance Review Center) and the RPC (Radiological Physics Center). You will not be expected to complete separate benchmarks for different 3D protocols, unless specified by the protocol.

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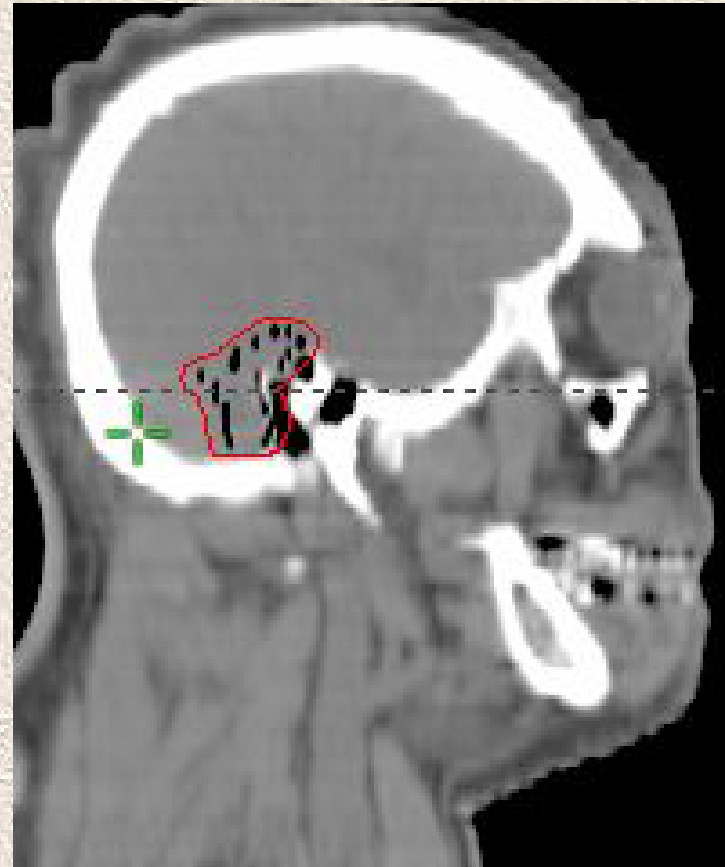
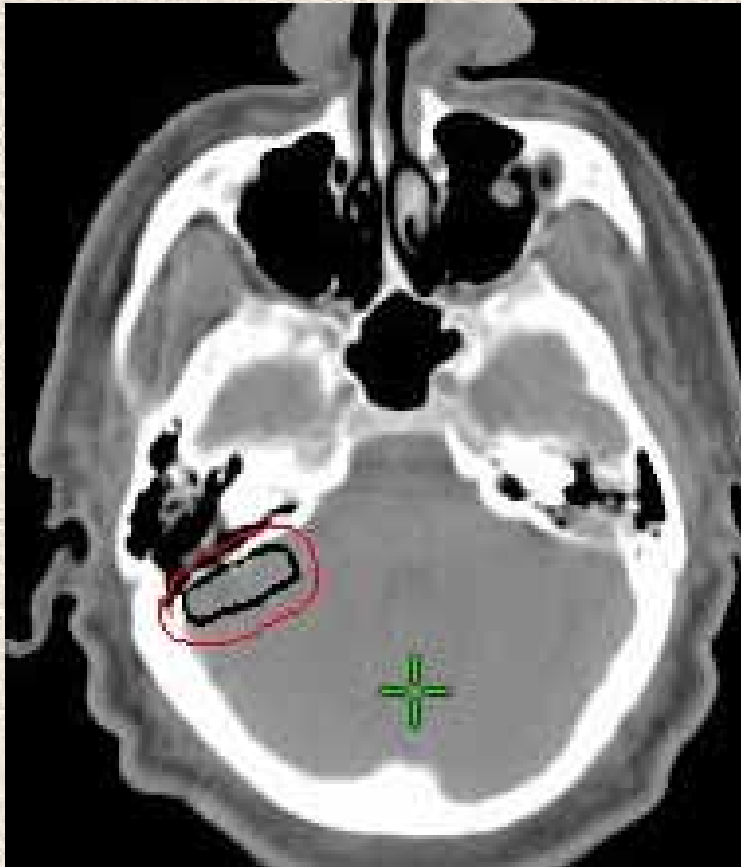
## Clinical Target Volume

- embedded in CT scan-
- to be traced on planning system



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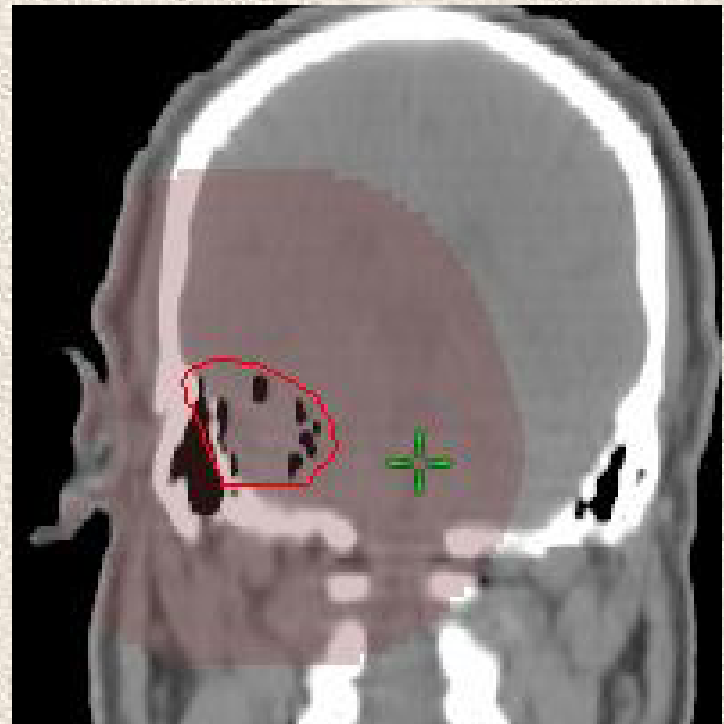
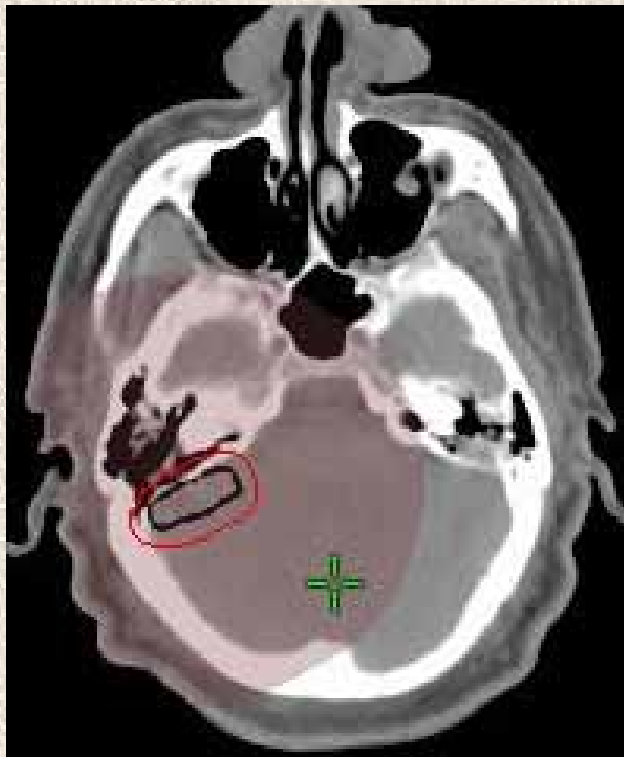
The Planning Target Volume (PTV) shall be 5 mm larger than the CTV in all directions



## 3D Conformal Benchmark

OARs: brain stem/ spinal cord  
right globe - left globe  
right optic nerve - left optic nerve

**Conformity Volume** (a structure that is 5 cm greater than the PTV in all directions, excluding all that is external to the skin)



# 3D Conformal Benchmark

Treatment Prescription:

**3D conformal** treatment plan (not IMRT)

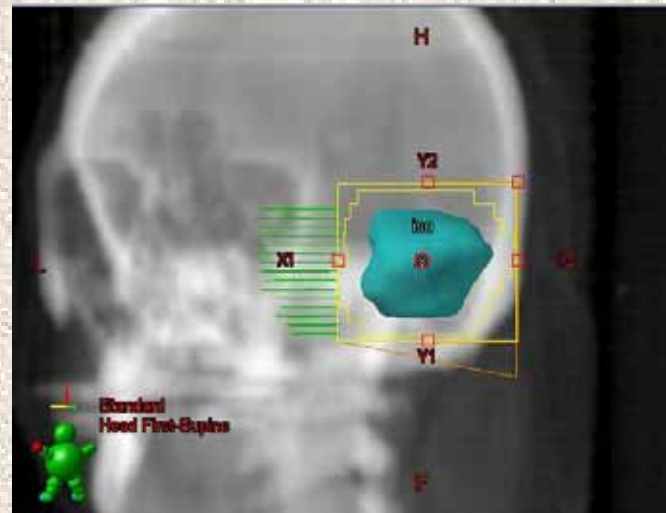
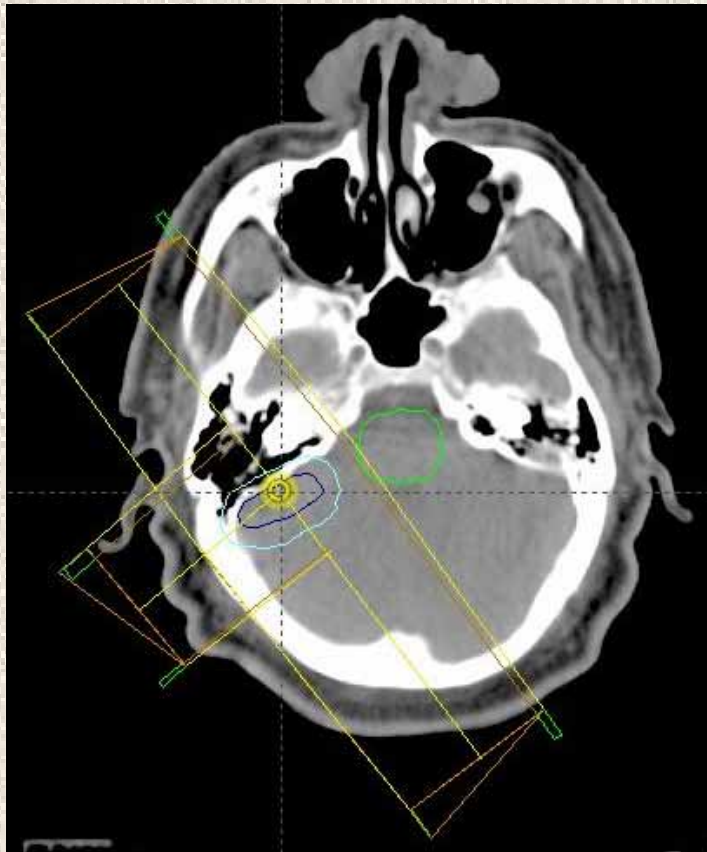
**54 Gy** in 27 fractions of 2 Gy each to the isodose surface that encompasses the PTV.

The prescription shall be no less than 95% relative to isocenter (or center of the target volume). The entire PTV must receive at least 95% of the prescribed dose and no more than 1cc shall receive greater than 107%.

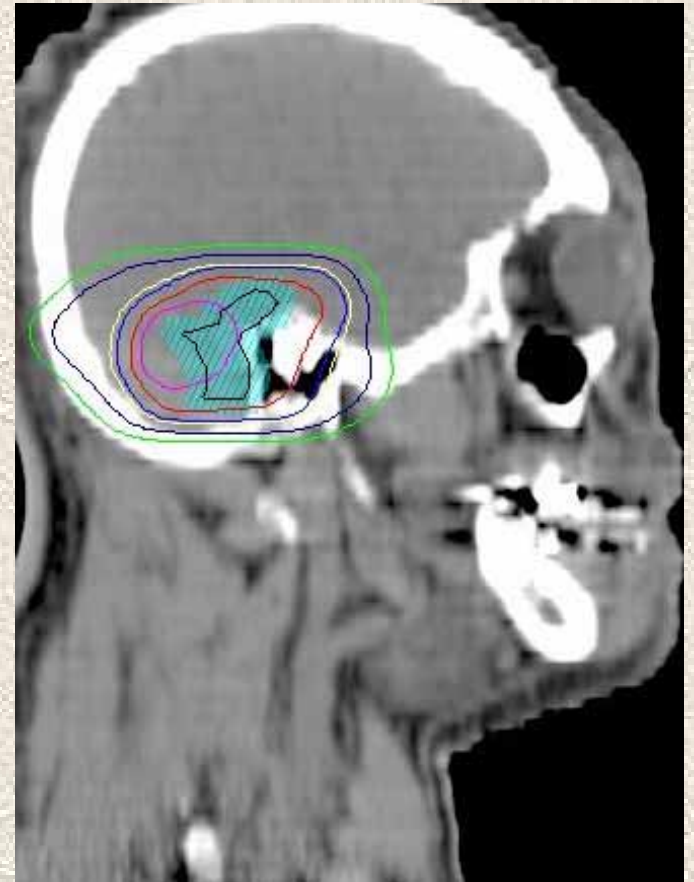
< 48 Gy to all but 0.5cc of the brainstem or spinal cord

minimal dose to the optic structures.

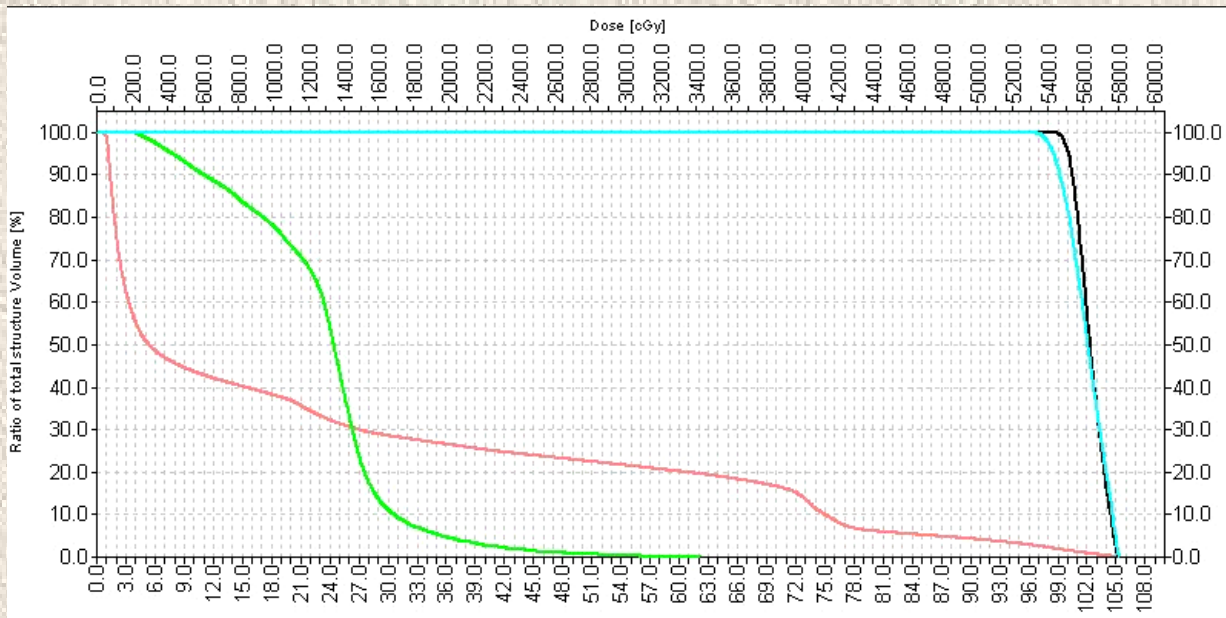
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DVHs of CTV

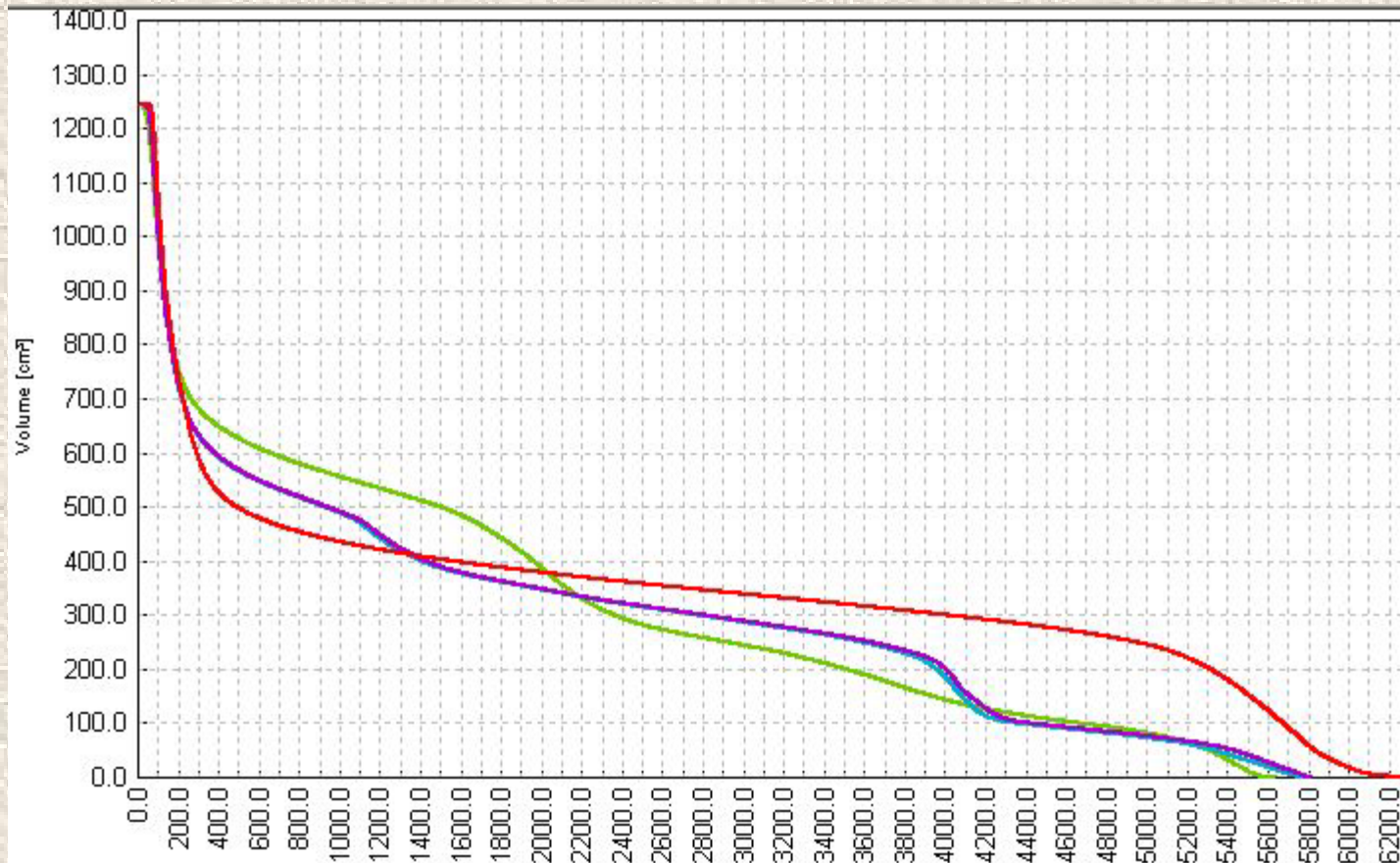
PTV (minimum 95% of the prescribed dose)  
( $\leq 1$ cc than 107%).

OARs ( $\leq 48$  Gy to all but 0.5cc of the brainstem/spinal cord)



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No more than 15 % of the conformity volume shall receive more than 45 Gy.



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## Input:

A CT scan set in DICOM format is to be loaded into the treatment planning system that is used for planning protocol patients (from [www.qarc.org](http://www.qarc.org) or on CD).

## Results:

QARC encouraging digital RT submission  
(probably CERR as viewer)