

Proposed Definition for Prostate Implant Medical Events

For the Target

- $D_{90} < 70\%$ of the clinical target volume (CTV)

AND

- Less than 5% of sources occupy any octant of the PTV, except by design (e.g. for preservation of normal tissue or escalated treatment to a particular region), as specified in the written directive.

For Normal Tissues

1. For the bladder and rectum, the D_{5cc} on post-implant dosimetry exceeds 150% of the prescription dose

OR

2. For the urethra, the D_{5cc} on post-implant dosimetry exceeds 150% of its value on the planned, approved dose distribution.

Features of the Definition

- This definition WOULD catch an event where all the sources are bunched.
- It would *not* signify as a Medical Event an implant with the sources missing an octant provided the dose coverage is above 70%.

Features of the Definition

- The $D_{90}<70\%$ is based on the RTOG 0232 where minor deviations are $90\%<D_{90}<80\%$.
- Obviously, an event is worse than a minor deviation, but a criterion of $D_{90}<60$ seems unrealistic.

Features of the Definition

- For the normal tissue, the D_{5cc} avoids the high variation in dose sometimes seen in point doses and has literature to support it being an relevant quantity for toxicity.