

OLD PROCEDURE

GUIDELINE: Brachytherapy/ I-125, Pd-103, Ir-192	EFFECTIVE DATE: 8/31/00
DEPARTMENT: All	REPLACES: 11/97

PURPOSE: To ensure the safe use of Iodine 125, Palladium 103 and Iridium 192

PROCEDURE:

PRE-ADMISSION TESTING:

1. PAT is encouraged, but not required.

NUCLEAR MEDICINE:

1. Nuclear Medicine will order the seeds after receiving a written directive from the radiation oncologist. Standing Purchase Order will be used. If seeds are not delivered directly to nuclear medicine, purchasing will be notified that a radioactive shipment is due and how to handle it. Nuclear Medicine personnel will be responsible for charging the patient for the seeds the day of the procedure.
2. Nuclear Medicine will store seeds not implanted in the patient.
3. If a seed is seen in the drainage system, please contact Nuclear Medicine, they will store the seed until it has decayed to background levels.
4. After the patient has been discharged from the hospital, the Nuclear Medicine technologist must perform a final room survey before anyone is allowed in the room.
5. Following the survey, Environmental Services will be notified that they have been cleared to clean the room. Nuclear Medicine will also place a "Cleared to Clean" sign on the door of the room.

NURSING:

1. The patient will be placed in a private room with appropriate signage on the door. (4E or Special Procedures)
2. Nuclear Medicine will supply the nursing unit with a radiation safety sign to be placed on the door of the patient's room.
3. Visitors are allowed, but must be over 18 years of age and not pregnant.
4. Only RN's will provide care to this patient.
5. Vital signs will be done according to the physician's orders or as per hospital policy per type of anesthesia.
6. All urine must be strained by nursing.
7. After the Foley catheter is discontinued strain urine. Place empty Foley bag in a plastic bag for survey prior to disposal.
8. If a seed is located after straining the urine, place it in a specimen cup utilizing tweezers, and cover. Call Nuclear Medicine to arrange for proper disposal of the seed.
9. Follow all other specific physician orders.
10. Nuclear Medicine must be phoned immediately following the patient's dismissal so that the room can be surveyed and released for occupancy by another patient. (Nuclear Medicine phone ext. 5781)

SURGERY:

1. Volume Study
 - a. Schedule procedure to be done in an open room.
 - b. Notify Special Procedures to borrow their prostate ultrasound machine.
 - c. Bring the tower and EHL to the room so pictures can be taken.
 - d. The patient should be scheduled for a general anesthetic.
 - e. Follow the instructions of the preference card.
2. Seeding
 - a. Schedule procedure to be done in an open room.
 - b. Surgery secretary will notify nuclear Medicine when a seeding is scheduled and verify that the seeds have been ordered.
 - c. Notify Special Procedures to avoid conflict in scheduling ultrasound machine.
 - d. The schedule should reflect a 45-minute set-up time for the radiation oncologist before the patient is brought to the room.
 - e. Follow instructions on preference card for the procedure. ←

- f. All personnel in the room will be provided with lead aprons and thyroid shields.
- g. No one who is pregnant or trying to get pregnant should be assigned to the case.
- h. Immediately before the surgery the physician or his delegate will carry the loaded applicator from the Nuclear Medicine hot lab to the surgery department.
- i. The applicator will be sterilized in the surgery department utilizing a steam autoclave. The physician or his delegate will supervise the sterilization process.
- j. The sterilized applicator will be taken directly to the operating room and used during the surgery.
- k. Only the physician will handle the applicator or sutures during surgery and will not touch the sealed sources. The open space of the applicator will be held away from all personnel.
- l. A survey will be made of the operation room at the end of the implant procedure to ensure that no seeds have been misplaced. Any seeds found outside of the patient, or unused seeds will be returned to the Nuclear Medicine hot lab for decay according to license procedures. A Geiger counter is located in the Nuclear Medicine department.

EXPIRATION OF PATIENTS CONTAINING PALLADIUM, IODINE OR IRIDIUM IMPLANT SEEDS:

If a patient with surgically implanted seeds expires while in the hospital, the following protocol should be followed so as to minimize radiation exposure to personnel:

1. If no permission for an autopsy is given, then appropriate metal shielding should be placed around the patient's implant site to reduce the radiation field to that of permissible levels for unrestricted areas (less than 2 millirems in any one hour). Personnel from the mortuary will be informed accordingly.
2. If permission for an autopsy is given, the radioactive seeds should be removed first en bloc with the tumor. Since strict inventory control of the radioactive material is required, if any doubt exists as to whether any seeds have been missed, a radiograph of the region should be taken. The radioactive seeds should be placed in a specimen jar and returned to nuclear Medicine for proper storage during the decay process. Minimum time, maximum distance and shielding, if possible should be employed to reduce exposure to a minimum. A radiation survey should be performed once the autopsy is completed to ensure that no contamination has occurred. If contamination or a loose seed(s) is present, the Radiation Safety Officer should be notified.

DOCUMENTATION/FORM:

1. Nursing education to the patient with prostate seeding. See attached.
2. Diagnostic/radiopharmaceutical therapy quality management form. See attached.

REFERENCES:

1. NRC, 10CFR35.410,75,415,420,32,33

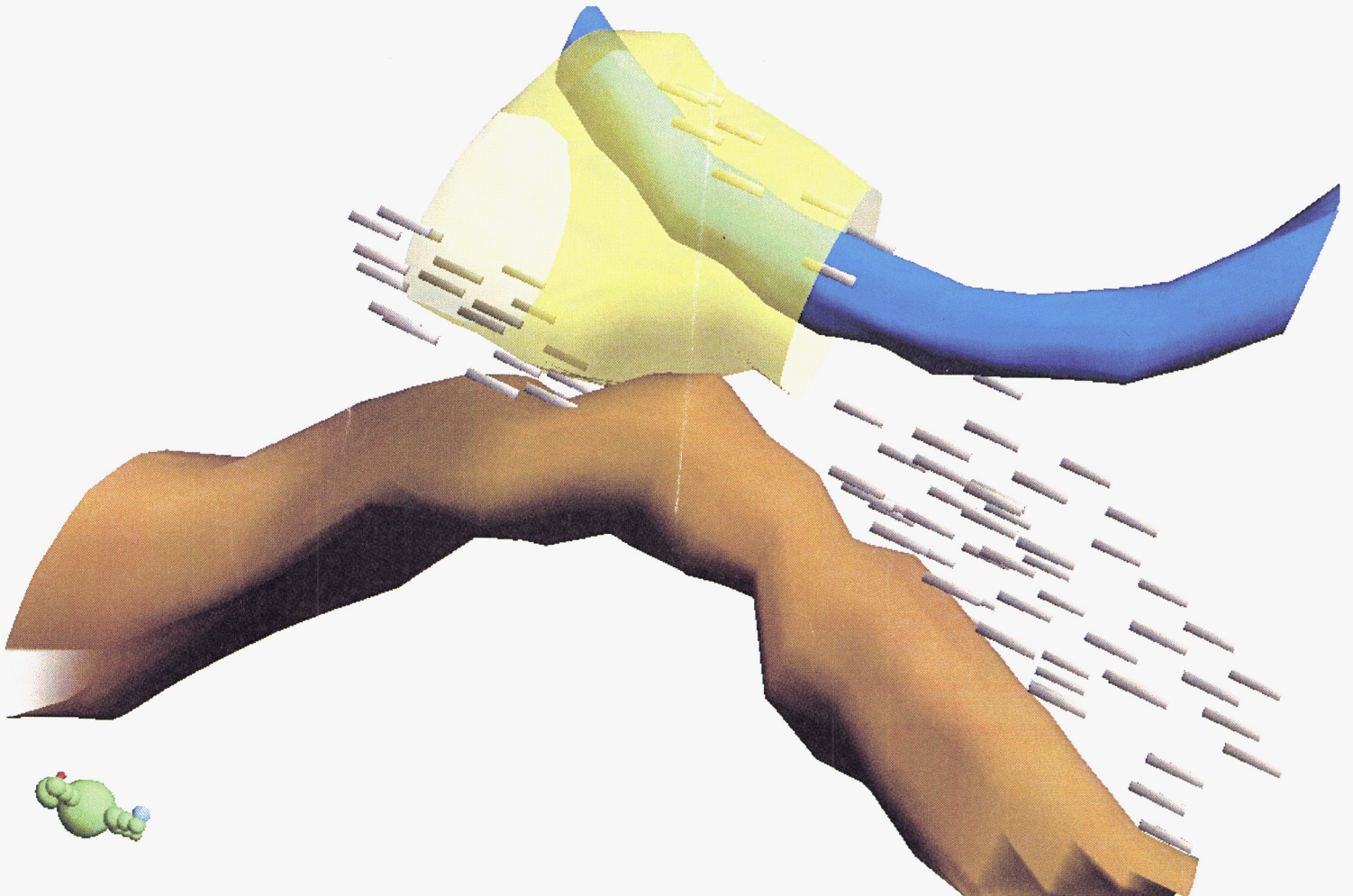
HISTORY: 11/12/97

Joseph W. Crossett, Administrator

VariSeed: 3D View Report [Page 1]

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Name: _____ PID: LR 6849 Dept. ID:	Study: post imp ct Variation: Default Images: 21	Source: Pd-103 (Mod 200) Comment: Sources: 79 Anisotropy: Factors (Point Model) Source Activity: 1.990 U [1.539 mCi]
Procedure Date: 10/6/2010	Prescription Dose: 125.0 Gy	Total Activity: 157.210 U [121.585 mCi]

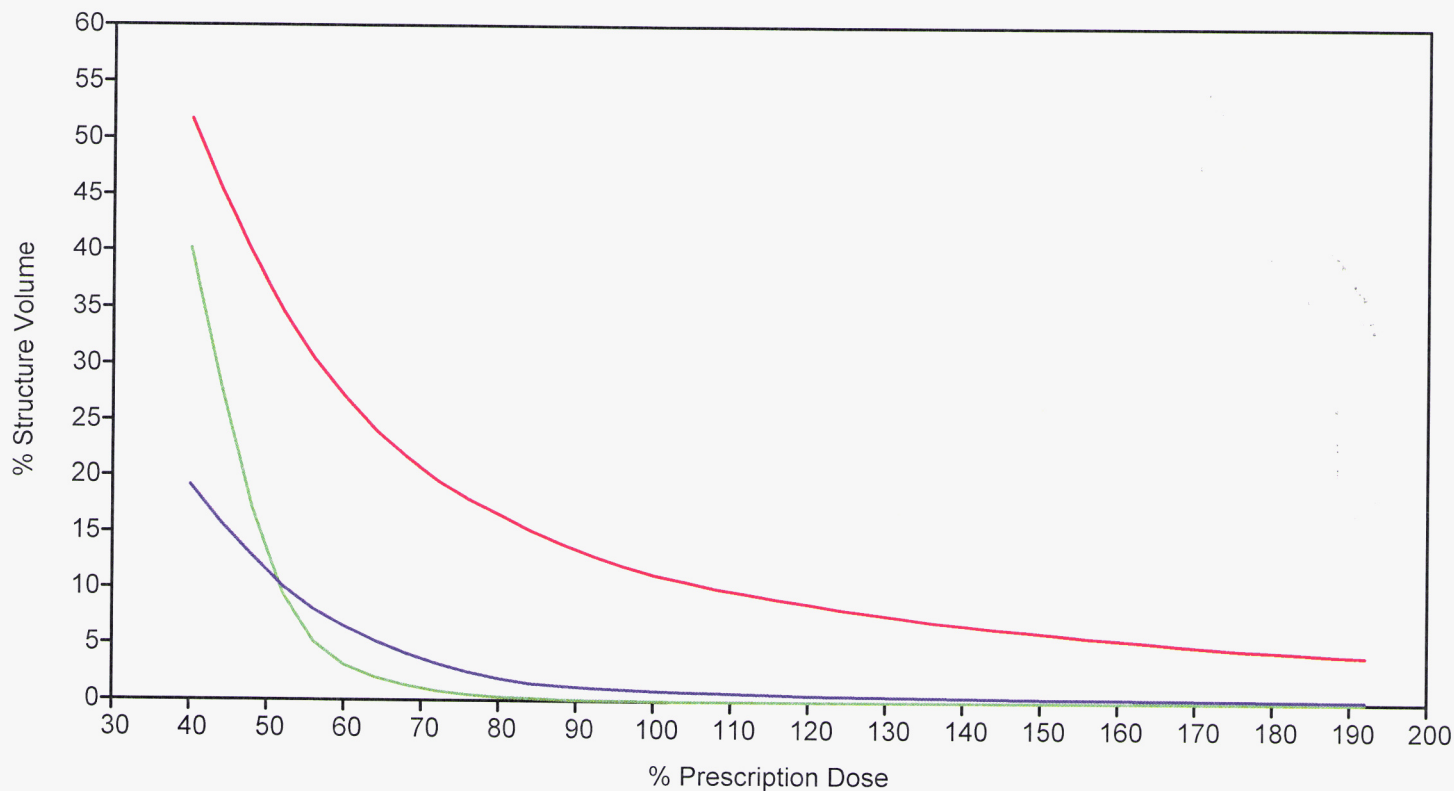


VariSeed: DVH Report [Page 1]

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Name: PID: LR 6849 Dept. ID:	Study: post imp ct Variation: Default Images: 21	Source: Pd-103 (Mod 200) Comment: Sources: 79 Anisotropy: Factors (Point Model) Source Activity: 1.990 U [1.539 mCi]
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Cumulative DVH



Cumulative DVH

Dose		Prostate		Urethra		Rectum	
Gy	%	cc	%	cc	%	cc	%
50.00	40.00	13.24	51.69	1.48	40.16	6.32	19.14
55.00	44.00	11.61	45.33	1.03	28.05	5.21	15.76
60.00	48.00	10.13	39.54	0.63	17.13	4.24	12.84
65.00	52.00	8.85	34.57	0.35	9.52	3.33	10.09
70.00	56.00	7.79	30.42	0.19	5.15	2.65	8.04

VariSeed: DVH Report [Page 2]

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Cumulative DVH

Dose		Prostate		Urethra		Rectum	
Gy	%	cc	%	cc	%	cc	%
75.00	60.00	6.93	27.06	0.12	3.13	2.14	6.47
80.00	64.00	6.17	24.09	0.07	2.02	1.70	5.16
85.00	68.00	5.54	21.62	0.05	1.34	1.36	4.11
90.00	72.00	5.01	19.57	0.03	0.82	1.07	3.23
95.00	76.00	4.59	17.94	0.02	0.51	0.83	2.51
100.00	80.00	4.25	16.60	0.01	0.30	0.64	1.93
105.00	84.00	3.88	15.16	0.01	0.24	0.50	1.51
110.00	88.00	3.58	14.00	0.00	0.13	0.43	1.30
115.00	92.00	3.32	12.96	0.00	0.06	0.38	1.14
120.00	96.00	3.08	12.02	0.00	0.05	0.34	1.02
125.00	100.00	2.88	11.23	0.00	0.04	0.30	0.90
130.00	104.00	2.73	10.66	0.00	0.00	0.27	0.83
135.00	108.00	2.57	10.03	0.00	0.00	0.25	0.75
140.00	112.00	2.45	9.58	0.00	0.00	0.23	0.69
145.00	116.00	2.33	9.10	0.00	0.00	0.21	0.63
150.00	120.00	2.22	8.68	0.00	0.00	0.18	0.55
155.00	124.00	2.10	8.20	0.00	0.00	0.17	0.52
160.00	128.00	2.01	7.84	0.00	0.00	0.16	0.48
165.00	132.00	1.91	7.47	0.00	0.00	0.15	0.46
170.00	136.00	1.81	7.08	0.00	0.00	0.14	0.44
175.00	140.00	1.74	6.80	0.00	0.00	0.13	0.40
180.00	144.00	1.66	6.48	0.00	0.00	0.12	0.37
185.00	148.00	1.60	6.26	0.00	0.00	0.11	0.35
190.00	152.00	1.53	5.99	0.00	0.00	0.11	0.32
195.00	156.00	1.46	5.72	0.00	0.00	0.10	0.32
200.00	160.00	1.41	5.52	0.00	0.00	0.10	0.31
205.00	164.00	1.36	5.32	0.00	0.00	0.10	0.29
210.00	168.00	1.30	5.06	0.00	0.00	0.09	0.27
215.00	172.00	1.24	4.85	0.00	0.00	0.09	0.26
220.00	176.00	1.20	4.67	0.00	0.00	0.08	0.24
225.00	180.00	1.16	4.54	0.00	0.00	0.08	0.23
230.00	184.00	1.13	4.40	0.00	0.00	0.08	0.23
235.00	188.00	1.09	4.24	0.00	0.00	0.07	0.21
240.00	192.00	1.05	4.11	0.00	0.00	0.07	0.21