



# **Status of Medical Events FY 2011**

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# Medical Events 2011

- **49 Medical events reported - FY 2010**
- **58 Medical events reported - FY 2011**

	<u>FY10</u>	<u>FY11</u>
35.200	1	3
35.300	4	6
35.400	25	26 (2?)
35.600	12	12
35.1000	7	11

# Medical Events 2011

## Diagnostic Medical Event

35.200 3

I-123 contaminated with I-131 1

- Oral I-123 capsule given
- Excessive image background observed
- Both I-123 and I-131 peaks seen
- Vial cap contaminated with I-131
- 380 cGy (rad) to thyroid of child

# Medical Events 2011

## 35.200 (continued)

I-123 intended I-131 given 1

- 5 mCi I-131 given instead of prescribed 5 mCi I-123

In-111 (Octreotide) intended Sr-89 1

- Picked up expired Sr-89 syringe
- 63 cGy (rem) dose to bone marrow

# Medical Events 2011

**35.300 Medical events**

**6**

- Phosphorus 32 (2 patients) 1
  - Treating Cystic Craniopharyngioma
  - Notices inflammation surrounding cyst and drainage catheter
  - Expected doses of 30,000 and 20,000 rads received 56,500 and 50,700 rads
  - Drug manufacturer measurement issue

# Medical Events 2011

35.300 (continued)

– Samarium-153 1

- Syringe connected to 3 way stopcock
- Removed syringe at wrong time
- Lost some activity before reconnecting syringe
- Prescribed 25.6 mCi delivered 14.8 mCi



# Medical Events 2011

**35.400 Medical events**

**26 (2?)**

- Biliary Duct 1
- Prostate 25
- Prostate undetermined 2

# 35.400 Medical Events

**Biliary Duct**      Ir-192      1

- Intended dose of 20,000cGy (rad) delivered 124 cGy (rad)
- Guide wire moved 5 cm during administration

# 35.400 Medical Events

**Prostate (81 Patients) 25**

**8 licensees had multiple medical events -**

- Our Lady of Bellefonte Hospital - 35
- Highlands Regional Medical Center – 3
- Western Baptist Hospital - 3
- Saint Nicholas Hospital – 6
- Saint Vincent Hospital - 9
- Saint Mary’s Hospital – 2
- Gundersen Lutheran Medical Center - 3
- Saint Elizabeth Hospital - 3

# 35.400 Medical Events

## **Prostate (continued)**

### **8 licensees had multiple medical events –**

- Poor records, no written directives, no post-implant CT, no post implant doses recorded
- Not reviewing cases against medical event criteria
- Poor image quality post-operative CT
- Clinical limitations of the techniques working on improving processes
- No reason given

# 35.400 Medical Events

## **Prostate** (Other 17 licensees)

- 8 Suboptimal dose distribution, poor placement, poor/no visualization, incorrect identification of prostate
- 3 Tumor volume increase due to edema
- 2 under dose to the prostate, no definitive reason
- 1 Air kerma - over dose
- 1 Prescribed partial treatment gave full
- 1 Two sets of seed for one patient
- 1 Anatomy issues



# **35.400 Medical Events**

## **Prostate Undetermined**

**2 licensees with overdoses (8 patients) –**

- NRC is reviewing

# Medical Events 2010

**35.600 Medical events** **12**

– HDR 10

- Savi 8 (15 patients) 4

- Breast Balloon 1

- Broncial 2

- Other 3

– Gammaknife 2

# 35.600 Medical Events

## **HDR Savi-8 (15 patients) 4**

- Did not reset default dwell positions - 5mm steps prescribed gave 2.5 mm (11 patients)
- Did not reset start position default from connector end
- Wrong catheter length – wire marker stopped at maximum curvature not end (2 patients)
- source punched through catheter 500-5,00 cGy (rad) to the skin

# 35.600 Medical Events

## HDR (continued)

Breast Balloon

1

- Ultrasound was used to image the balloon before one fraction – inoperable CT scanner
- Drainage was observed at the surgical incision
- Balloon discovered to be drained at next visit
- Possibly 680 cGy (rad) double dose

# 35.600 Medical Events

## HDR Bronchial

2

- Wrong site – orientation error – 1,500 to 2,000 cGy (rad) to larynx region.
- Wrong site - Dwell positions in treatment plan misrepresented – larynx received 233 cGy (rad) intended 42 cGy (rad)

# 35.600 Medical Events

## **HDR Other (6 patients) 3**

- 60% under dose - physicist did not calculate effect of tube used to deliver
- Wrong transfer tube – length was 12 cm longer than treatment length – skin reddening 270 to 450cGy (rad) (4 patients)
- Wrong transfer tubes on 3 of 4 catheters for 3 fractions - overdose to skin – 59% under dose to treatment site

# 35.600 Medical Events

## Gammaknife

2

- Computer screen froze due to computer programming problem - patient removed
- Prescribed 1,600 cGy (rad) delivered 85 cGy (rad) – physicist forgot to adjust weight factor

# Medical Events 2011

**35.1000 Medical events 11**

– TheraSphere Microspheres 8

– SirSphere Microspheres 3

# 35.1000 Medical Events

## Theraspheres

8

- Shunting to duodenum 9,000 cGy (rad)
- Wrong site – intended right lobe treated left
- Transcription error in order did not compare activity to written directive intended 11,600 cGy (rad) received 25,700cGy (rad)

## **35.1000 Medical Events**

### **TheraSpheres (continued)**

- Physicist used wrong segment volume – prescribed 7,440 cGy (rad) received 15,940 cGy (rad)
- Plunger accidentally rotated – pause resulted in microspheres settling in catheter prescribed 9,400 cGy (rad) received 7,000 cGy (rad)
- Microsphere clump visualized – could not flush prescribed 9,750 cGy (rad) received 3,760 cGy (rad)

# 35.1000 Medical Events

## TheraSpheres (continued)

- Saline leak in administration line – received 64% of intended dose
- Failure of septum of vial – prescribed 8,000 cGy (rad) received 4,900 cGy (rad)

# 35.1000 Medical Events

## SirSpheres

3

- Treatment terminated patient pain – 50 % of prescribed dose
- Occlusion of the micro-catheter – sphere concentration too high - prescribed 6,300 cGy (rad) received 1,480 cGy (rad)
- Medical physicist read written directive incorrectly

# Acronyms

- FY – Fiscal Year
- HDR – High Dose Rate Remote Afterloader
- Sr - Strontium



**QUESTIONS?**