

Chapter four

Results

Radiation doses were measured for 4 workers involved in nuclear medicine procedures in tumor therapy and cancer research – shendi (TTCRC). Staff doses were estimated in terms of Personal dose equivalent Hp(10) measured using calibrated electronic personal dosimeters (EPDs).The results of measurements in addition to the estimated effective dose values are presented in this section.

Table (4.1) exposures for medical physicists staff in iodine therapy

Staff	Rec _{dose}	Given _{dose}	Fir _{dose}	Sec _{dose}	Dis _{dose}	Waste _{dose}
One	1.56±0.52 (1.13 –2.26)	4.28±2.02 (2.00 –6.81)	0.25±0.00 (0.25 –0.25)	0.92±0.53 (0.28 –1.57)	1.56±1.05 (0.81 –2.30)	1.74±1.60 (0.14 –4.62)
Two	0.88±0.00 (0.88 –0.88)	2.72±2.57 (0.88 –7.73)	0.81±0.23 (0.48 –1.08)	0.72±0.20 (0.28 –1.57)	1.13±0.65 (0.40 –1.65)	1.24±1.77 (1.11 –1.36)
Total	1.47±0.54 (0.88 –2.26)	3.50±2.34 (0.88 –7.73)	0.73±0.30 (0.25 –1.08)	0.86±0.45 (0.58 –0.86)	1.30±0.74 (0.40 –2.30)	1.61±1.37 (0.14 –4.62)

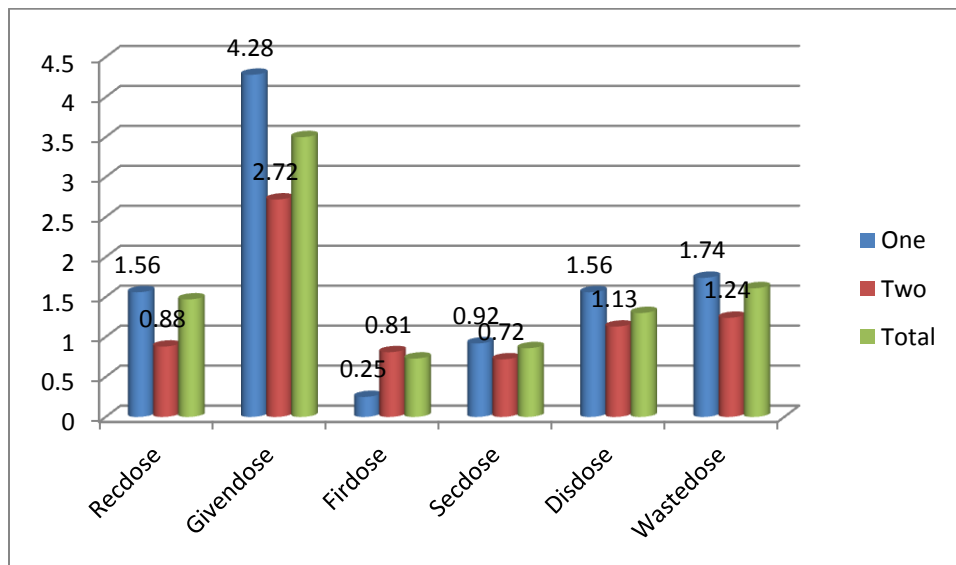


Figure (4.1) exposures for medical physicist staff in iodine therapy

Table (4.2) exposures for nurses and medical physicist per day in one dose in iodine therapy.

Staff		Fir _{day}	Sec _{day}	Third _{day}	Dis _{day}	waste	Total
Nurse	1	0.41	-	0.81	-	-	1.22
	2	-	0.81	-	0.81	-	1.62

Table (4.3) All exposures for nurses and medical physicist in the all dose in iodine therapy

Staff		Fir _{dose}	Sec _{dose}	Third _{dose}	fourth _{dose}	fifth _{dose}	Sixth _{dose}
Nurse	1	0.85	1.43	0.19	0.88	2.2	1.53
	2	2.21	0.8	1.56	0.64	2.96	2.67
Physicist	1	5.47	6.49	5.57	9.69	9.83	3.77
	2	2.85	11.11	10.09	8.38	5.26	7.11

Table (4.4) measuring doses (μSv) for nurses and MP per (period, three months and year)

Staff		Dose per period	Dose per 3 month	Dose per year	Experian per year	Total dose
Nurse	1	1.18	7.08	28.32	3	35.88
	2	1.81	10.86	43.44	1	
Physicist	1	7.48	44.88	179.52	2	172.48
	2	6.81	40.86	163.44	3	

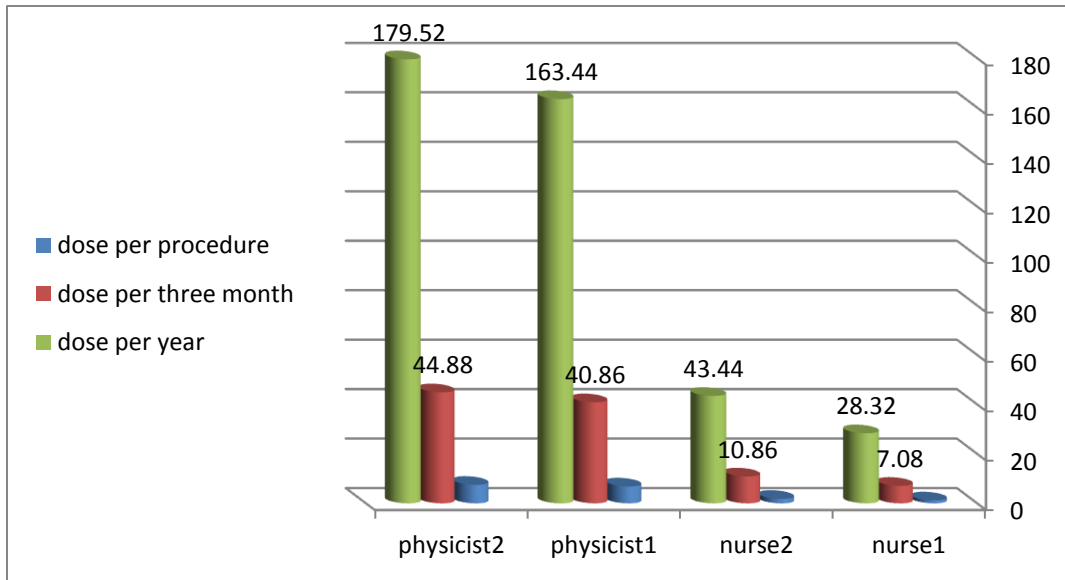


Figure 4.2 measuring doses (μSv)for nurses and MP per(period, three months and year)

Table 4.5 staff doses and their duration.

Staff	Dose 1	Dur1	Dose 2	Dur2	Dose 3	Dur3	Dose 4	Dur4	Dose 5	Dur5	Dose 6	Dur6
Phy1	5.47	63.5	6.49	65.4	5.57	69.3	9.69	72.5	9.83	67.3	3.77	71.1
Phy2	2.85	20.3	11.11	81	10.09	77.1	8.38	63.1	5.26	38.7	7.11	80.1
Nur1	0.85	1440	1.43	1440	0.19	1440	0.88	1440	2.2	1440	1.53	1440
Nur2	2.21	1440	0.8	1440	1.56	1440	0.64	1440	2.96	1440	2.67	1440

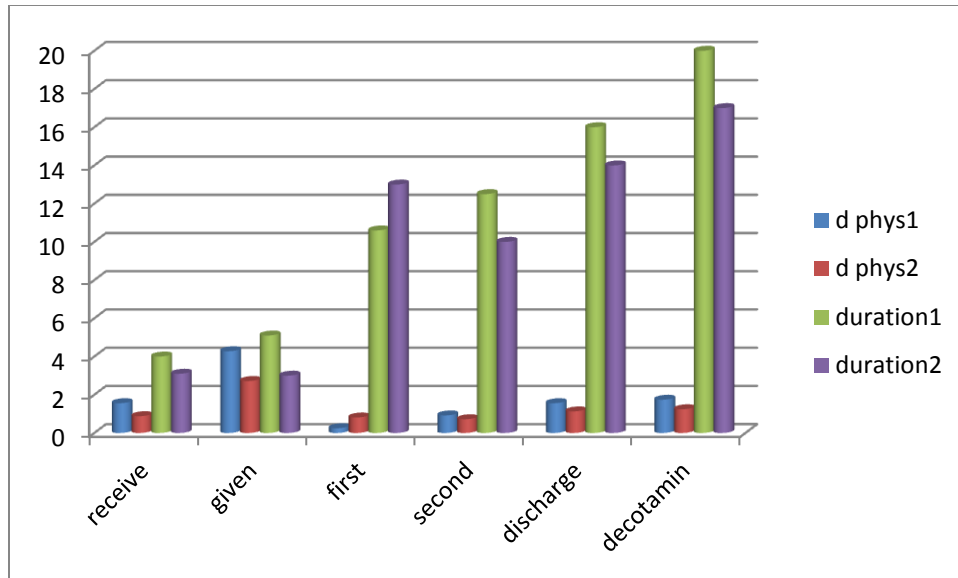


Figure 4.3 medical physicist radiation dose perceived dose, given dose, first record, second record, discharge and decotamination.