

Medical physics in Egypt

By

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Medical physics fields:

- **Radiotherapy**

Dosimetry - Treatment planning – Quality Assurance

- **Nuclear medicine**

Radiation Safety – N.M Techniques – Gamma Camera Operation

- **Radiology**

C.T & MRI Operation



- **Other Important Fields :**
- Regulatory Bodies in EORP MOH
(executive office for radiation protection in
the Ministry of Health)
- Calibration of dosimetry systems ,
radiotherapy units, survey meters
Personal doiemetry in the National
Institute of Standardization



- There are about 48 radiotherapy centers distributed over some of 28 governorates in Egypt these centers are equipped with different types of radiotherapy machines.
- Some of these centers are conjugated with a separate Medical physics department ,in other centers medical physics serves is carried out through physicists doing the job as a part of time including treatment planning.
- Q.A. and beam calibration program are unified over all the centers



- Also training program for medical physicists and radiographers are done separately in each center plus a little of national courses.



- During 50 years the radiotherapy centers devolved and multiplied , at 1982 the first linear accelerator instilled in private hospital followed tow years later by high energy linear accelerator in military hospital in Cairo .
- Then the radiotherapy in Egypt progressed rapidly more and more several new radiotherapy technique have been introduced in the last couple of years ; stereotactic radiotherapy, conformal radiotherapy , IMRT now available in many centers also the IGRT technique is implemented



- There is no national cancer registration covering all hospitals in Egypt . However a good statistics are available for individual hospital.
- **The hospitals classification:**
- University Hospitals.
- MOH Hospitals
- Military hospitals.
- Specifying Cancer Centers.
- Private hospitals



- Specifying machines added as Gamma Knife units low and high dose rate (LDR & HDR).
- All treatment planning techniques applying almost all of the radiotherapy centers including Rotation therapy , isocenteric , TBI , TSI , and HDR techniques.
- In most centers treatment planning systems 2D and 3D are available, also the dosimetry systems.
- In Egypt the (NIS) National Institute of Standardization helps all the centers for QA and Dosimetry



- The dosimetry protocol and procedure was developed to follow the last one TRS 398 which is the international protocol of IAEA..
- Most radiotherapy centers use the simulator machines and the others use the CT scanners as simulators.



- **Nuclear Medicine**
- There are about 50 Centers of NM distributed all over Egypt these centers has different machines with different types single and dual heads.
- Now Egypt has five PET-CT tow in private hospital, tow in governmental hospital and one in military hospital , also there are tow medical cyclotron to produce the FDG one in the military hospital the other in the private hospital



RADIOLOGY

There are many hundreds of CT & MRI equipments in all types of hospitals running by medical physicists.

The medical physicists are the operator of the PET-CT



Se.	Sits	No. of Equip.	quality	dosimerty	simulation	Mould Room	Planning System
1	National Cancer institute U	1 2 2 1 1	H L Co Cs Ir	yes	yes	yes	yes
2	Kaser Elenei oncology Center U	1 2 1	H L co	yes	yes	yes	yes



Se.	Sits	No. of Equip.	quality	dosimerty	simulation	Mould Room	Planning System
3	Ein-Shams oncology Center U	1 1 1	H Co Cs	yes	yes	yes	yes
4	El-Hosain oncology Center U	1 1 1	H Co Cs	yes	yes	yes	yes



Se.	Sits	No.of Equip.	quality	dosimerty	simulation	Mould Room	Planning System
5	Ismaelia oncology Center U	1 1	Co Cs	yes	yes	-	yes
6	El-Monufia oncology Center U	1 1	L Co	-	yes	-	yes



Se.	Sits	No.of Equip.	quality	dosimerty	simulation	Mould Room	Planning System
7	El-Mansora oncology Center U	1 1 1 1	H L Co Cs	yes	yes	yes	yes
8	El-Zagazig oncology Center U	1 1	H Co	yes	-	-	yes



Se.	Sits	No.of Equip.	quality	dosimerty	simulation	Mould Room	Planning System
9	Tanta oncology Center U	1	Co	-	-	-	-
10	Alexandria oncology Center U	2 1	H Cs	yes	yes	yes	yes
11	Assutie oncology Center U	1 2	H Co	yes	yes	yes	yes



Se.	Sits	Equip.	quality	dosimerty	simulation	Mould Room	Planning System
12	South egypt oncology Center U	1	H	yes	yes	yes	yes
13	Sohag oncology Center MOH	1	L	yes	-	-	-
14	Nasir Hospital oncology Center MOH	1 + G.K	H Co	yes	CT	yes	yes
15	El salam oncology Center MOH	2	H	yes	CT	yes	yes



cca	Sits	NO.of Equip.	quality	dosimerty	simulation	Mould Room	Planning System
17	Damanhor oncology Center MOH	1	H	yes	CT	yes	yes
18	EL Minia oncology Center MOH	1	H	yes	CT	yes	yes
19	Sohag oncology Center MOH	1	H	yes	CT	yes	yes
20	Aswan oncology Center MOH	1	H	yes	CT	yes	yes



cca	Sits	NO.of Equip.	quality	dosimerty	simulation	Mould Room	Planning System
21	EL Maadi oncology Center M	1 1 1	H L lr	yes	yes	yes	yes
22	EL Galaa oncology Center M	1 1 1	H Co lr	yes	yes	yes	yes
23	International Medical Center M	1 1 1 1	H L G.K lr	yes	yes	yes	yes
24	Mostafa Kamel oncology Centervv M	1 1	H lr	yes	yes	yes	yes



cca	Sits	NO.of Equip.	quality	dosimerty	simulation	Mould Room	Planning System
25	Ahamed maher oncology Cente MOH	1	Co	-	-	-	-
26	Gamal abd el-naser oncology Center MOH	1	L	-	-	-	-
27	Helioples oncology Center MOH	1	Co	-	-	-	-
28	EL salam International oncology Center	1	H	yes	yes	yes	yes



cca	Sits P	NO.of Equip.	quality	dosimerty	simulation	Mould Room	Planning System
29	Masir el dawly oncology Center	1	L	-	yes	-	yes
30	EL nil badrawy oncology Center	1	L	-	CT	-	yes
31	El sabrawichy oncology Center	1	Co	-	-	-	-
32	Prof-MA- Badrawy oncology Center	1 1	Co Cs	-	-	-	-



cca	Sits P	NO.of Equip.	quality	dosimerty	simulation	Mould Room	Planning System
33	Prof-M-mafoz oncology Center	1	Co	yes	-	-	-
34	Alex- international hospital oncology Center	2 1	Co Cs	-	-	-	-
35	Prof-Gamal el wihidy oncology Center	1	Cs	-	-	-	-
36	EL khear oncology Center	1	L	-	-	-	yes



cca	Sits P	NO.of Equip.	quality	dosimerty	simulation	Mould Room	Planning System
37	Tanta institute oncology Center	1	L	-	-	-	-
38	Facous oncology Center	1	Co	-	-	-	-
39	Dr.Osama khilil oncology Center	1	Co	-	-	-	-
40	Al solimain oncology Center	1	L	-	-	-	-



cca	Sits P	NO.of Equip.	quality	dosimerty	simulation	Mould Room	Planning System
41	EL salama oncology Center	1	Co	-	-	-	-
42	Samoha oncology Center	1	L	-	-	-	-
43	Orabi oncology Center	2	L	-	-	-	-
44	Dr.Osama kanam oncology Center	1 + GK	Co CO	-	MR	-	yes



cc a	Sits P	NO.of Equip.	quality	dosimerty	simulation	Mould Room	Planning System
45	Future hand oncology Center	1 1 1	H L lr	yes	yes	yes	yes
46	Children Hospital oncology Center	2	H	yes	yes	yes	yes



H	L	CO	CS	CS LDR	HDR	G.K	TOTAL
26	18	22	2	6	5	3	66
39.4%	27.3%	33.3%	3%	9%	7.5%	4.5%	



UNIVIRSTY	MOH	MILITRY	PRIVTE
13	10	4	19
28.3%	21.7%	8.7%	41.3%



CONFORMAL	IMRT	STEREOTATIC
14	5	12



• **THANK YOU**

