

Involvement of medical physicists in imaging departments in France

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In 2010, IRSN (French institute for radiation protection and nuclear safety) issued a report on medical ionising radiation exposure of the French population in 2007. It raised that the mean effective dose has grown from 0.83 mSv to 1.3 mSv/year/inhabitant between 2002 and 2007.

Année	Nombre d'actes		Dose efficace individuelle moyenne annuelle
	Total	par individu	
2002	73,3 millions	1,2	0,83 mSv ¹
2007	74,6 millions	1,2	1,3 mSv

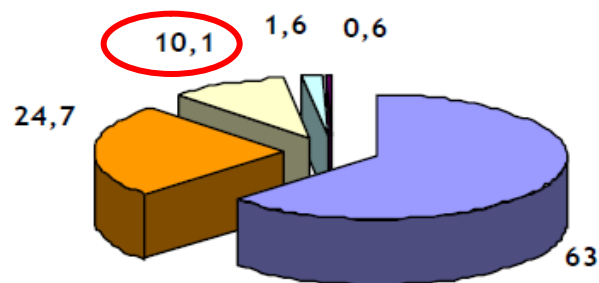
¹ Scanff et al., 2006

*Présentation B Aubert, IRSN,
SFPM mai 2010*

Résultats

Répartition des actes et de la dose efficace individuelle moyenne en 2007

Fréquence des actes (%)

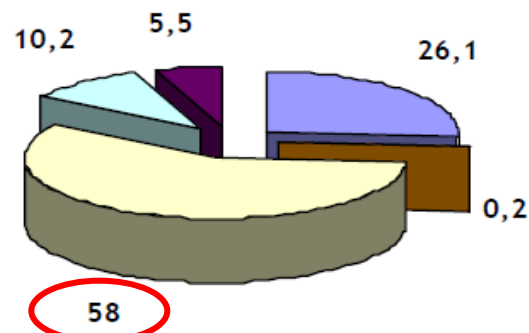


■ Radiologie conventionnelle (hors dentaire)

■ Radiologie dentaire

■ Scanographie

Dose efficace individuelle moyenne (%)



■ Médecine nucléaire

■ Radiologie interventionnelle diagnostique

Présentation B Aubert, IRSN, SFPM mai 2010

The control of the dose increase in medicine (imaging) is one of the concern of ASN.

Medical physicists play a key role in optimisation of the dose for the radiation protection of patients.

Current situation in France : no staffing level requirement for medical physicists involved in imaging departments (nuclear medicine, radiology, ...) and too few MP in imaging depts.

To develop guidelines for both imaging departments and inspectors of ASN, a common working group ASN – SFPM (French society of medical physics) was launched in December 2010.

Aim: for nuclear medicine (diagnostic + treatment), interventional radiology, and conventional radiology, to identify the tasks of MP + give guidelines on staffing levels

1. State of the art of the existing recommendations

- AAPM, EFOMP, IPEM, SSRPM, SFPM, ...

Difficult to analyse on a common basis due to the use of different criteria

- And a synthesis from the European project “Guidelines on MPE”

Unit	Medical Physicists fraction of WTE per unit					Average	Median	StDev
	Swiss2009	DGMP2009	EFOMP97	IAEA2009	NGH2010*			
CT	0,030	0,035		0,080	0,028	0,043	0,033	0,025
Fluoroscopy (I)	0,005			0,015	0,020	0,013	0,015	0,008
Fluoroscopy (II)	0,030			0,020	0,029	0,026	0,029	0,006
Mammography	0,010			0,015	0,012	0,012	0,012	0,003
CR/DR radiography	0,005	0,017	0,010	0,015	0,014	0,012	0,014	0,005
SUB-TOTAL DR	0,080			0,145	0,103	0,109	0,103	0,033
Gamma camera unit	0,010	0,237	0,060	0,150	0,184	0,128	0,150	0,092
SPECT/CT, PET/CT	0,250	0,271	0,110	0,350	0,369	0,270	0,271	0,103
SUB-TOTAL NM	0,260	0,508	0,170	0,500	0,553	0,398	0,500	0,172
Duty	Medical Physicists fraction of WTE							
Involvement in metabolic radiation therapy	0,050	0,270				0,160	0,160	0,156
Radiation protection training	0,100	0,187				0,144	0,144	0,062

2. Organisation in other European countries

The WG has answers from Belgium and Spain

on hierarchical attachement of MP, education, existing regulation regarding the roles, missions and involvement of MP in imaging department

3. Specific competences and exhaustive list of tasks devoted to MP in France

4. Survey in France sent to MP involved in imaging department to have an idea of the WTE of MP per machine, patient etc.

Nuclear medicine : 26 responses for about 236 units in France

Mean staffing level of MP: 0.8 WTE per unit

for a mean equipment of : 2 SPECT, 0.9 SPECT-CT, 0.8 PET-CT

Knowing that these responses come from departments with a quite high technical level (total number of 22 PET-CT, 23 SPECT-CT, 44 SPECT, 85% have a therapeutic activity)

Tasks of the WG

4. Survey in France sent to MP involved in imaging department to have an idea of the WTE of MP per machine, patient etc.

Radiodiagnosis : 19 responses only one from a private unit (905 CT in France at the end of 2009 + 531 MRI)

Mean staffing level of MP: 0.24 WTE per unit including 0.10 WTE for the supervision of students

5. The group is now working on staffing levels giving WTE per type of tasks and domain (nuclear medicine (diagnostic + treatment), interventional radiology, and conventional radiology)

Difficulties

- **State of the art of the existing recommendations** : large variety of criteria
- **Organisation in other European countries** : low number of responses
- **Survey in France** : low number of responses due to low number of MP in that field + given by largest departments
- **Staffing levels** : difficulties to propose one figure per type of tasks due to the variety of practice