



Fostering Radiation Safety Culture

Occupational Radiation Protection for Health Care

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Outline

- **First Line: Context; Monitoring; Aprons.** Mainly DR/NM; Interaction and Presence. Training, Optimization, and Technical Issues
- **Shielding** : Risk Assessment; Walk and Talk
- **Interventional** Radiology
- **RP Culture** /Ethics in Medical ORP
- **To Finish** -----



First Line

Context:

- Blood and air borne pathogens
Hep/HIV/Ebola.

Monitoring: A Partnership

- WALK and TALK
- PET/*Interventional*

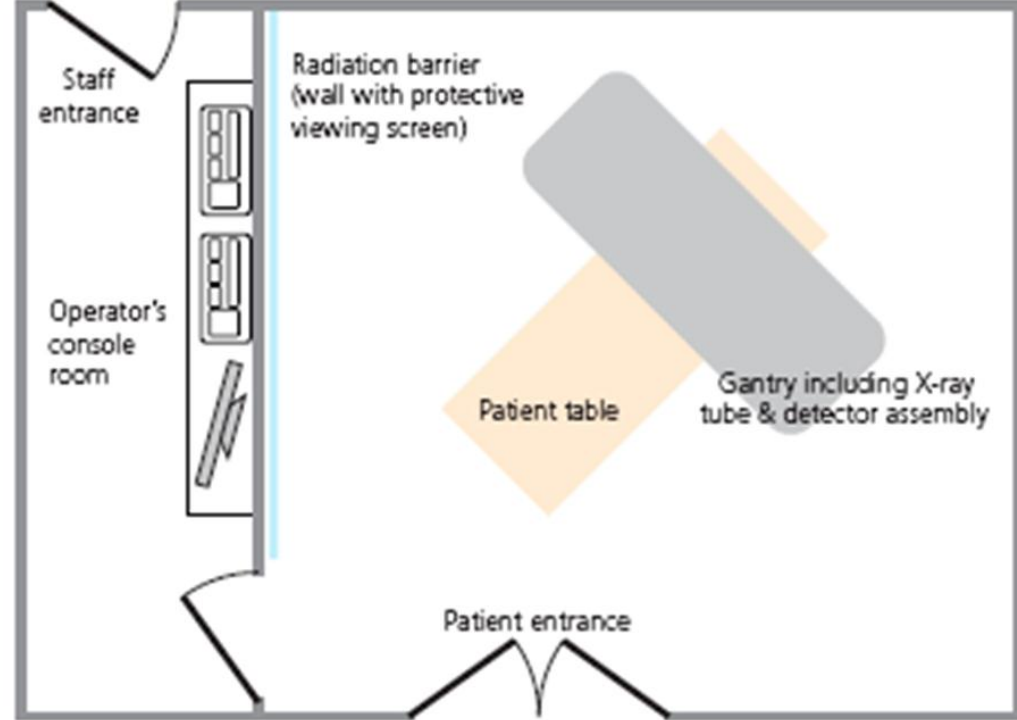
Aprons etc:

- Uncomfortable, Distracting,
Degrade performance
- *Customise.*



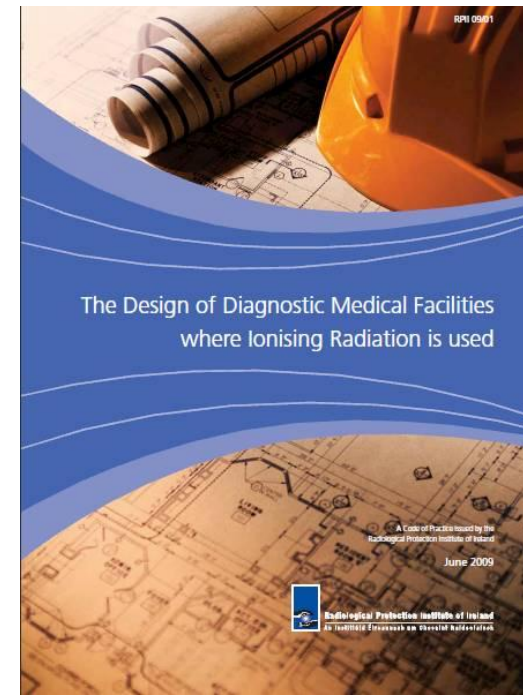
Staff includes cleaners, service engineers, trainees et al.

Shielding



- Shielding OBJECTIVE
- Global design constraint
- Objective, Workload, and Occupancy
- Walk about, learn; Risk Assessments
- Ceiling suspended shielding
- Introductory Incident. NCH incident.

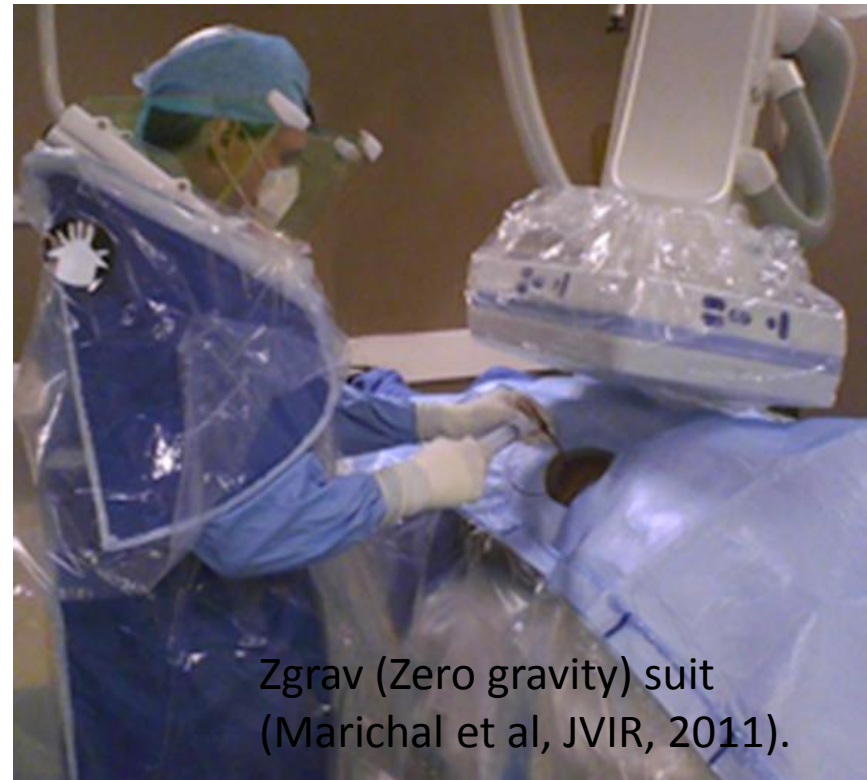
http://www.epa.ie/pubs/advice/radiation/RPII_Code_Design_Medical_Facilities_09.pdf





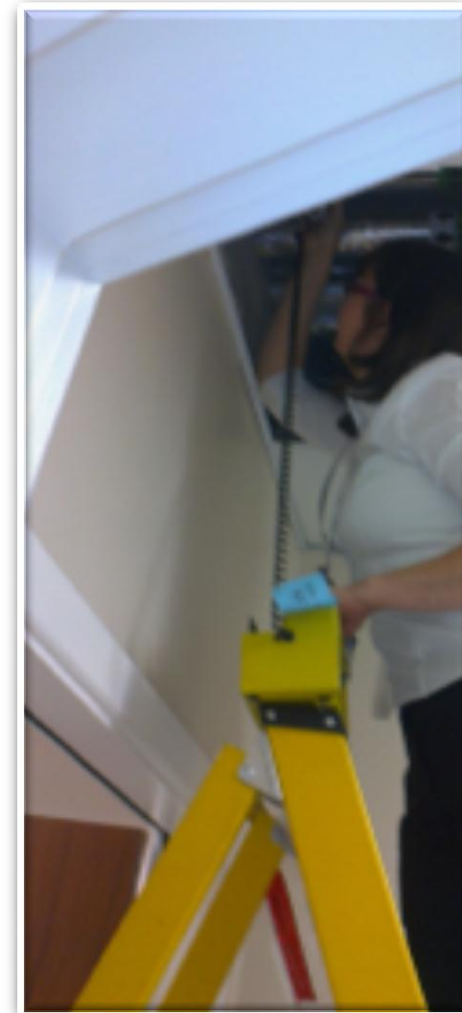
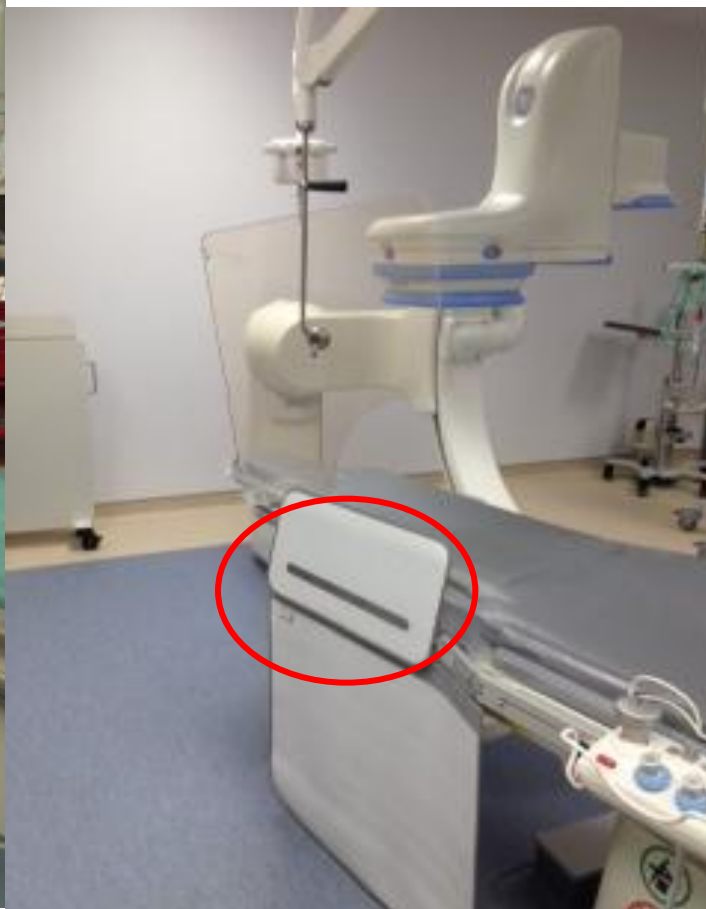
Interventional Radiology

- Equipment/Devices (IEC Standards) and Room Shielding
- Engineer as much as possible. IEC Stds and RP 162
- Distance
- Protective Clothing: Personalise.
- Liaise regularly with ALL staff.
- INTERACTIVE monitoring.
- Incidents



Zgrav (Zero gravity) suit
(Marichal et al, JVIR, 2011).

Interventional Radiology Examples & Area/Environmental Monitoring

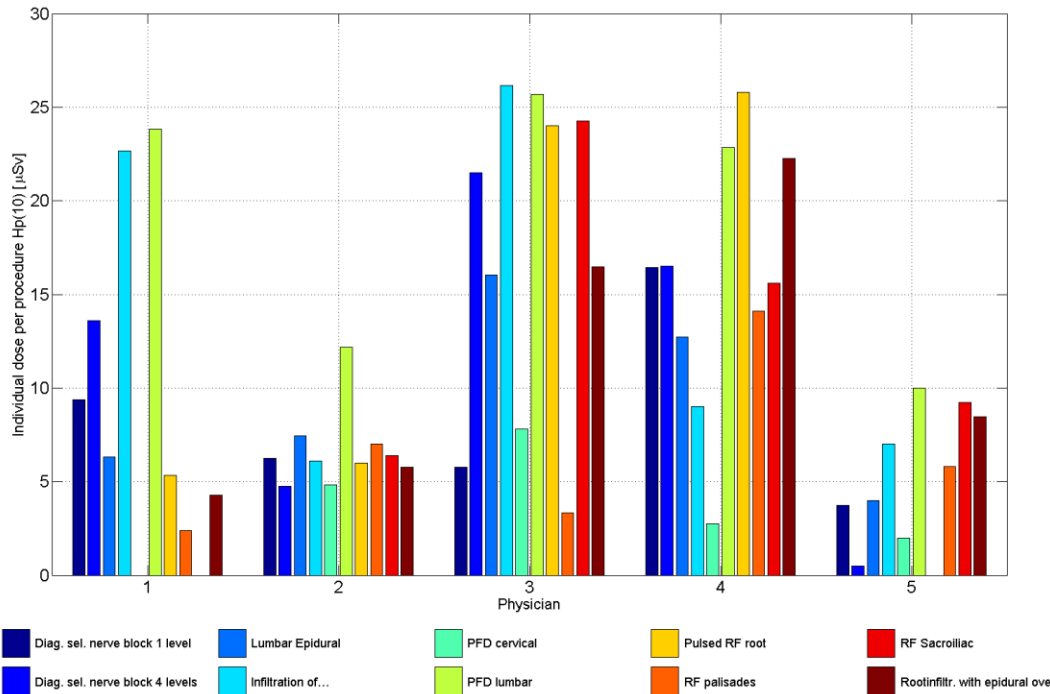


Two Cath Labs, side by side.
✓ Lab 1: Table Pb skirt

✓✓ Lab 2: Make it better
(more table-side shields)

X-ray Guided Pain Therapy

W.A. Mahn et al @IRPA Geneva 2014



Lowest and highest individual doses for procedure: x5 apart.



Ethics: RP Values and Themes for Medicine

Core

Themes/Values

Dignity and
Autonomy

Non-
Maleficence
including
Beneficence

Justice, access,
etc.

Beauchamp's
and Childress

7th edition since 1979
The values are a set.

Additional Themes

Prudential/
Precautionary

Openness,
Transparency
etc

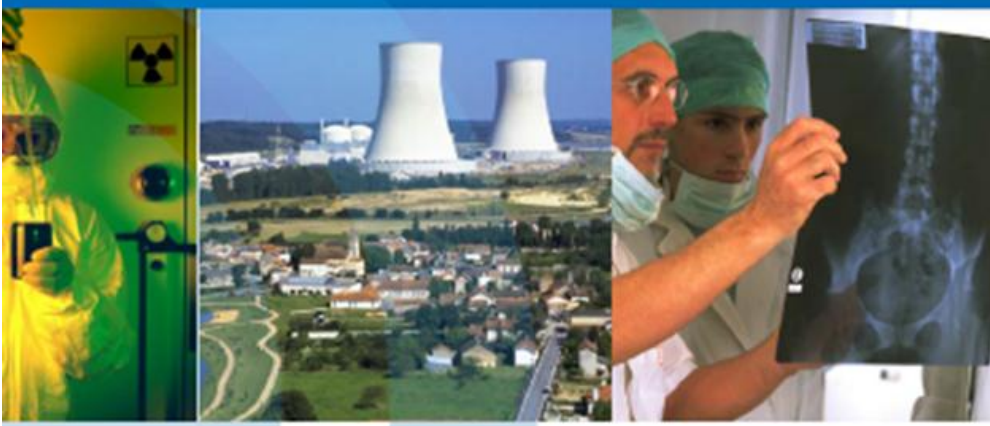
RP purpose built VALUES; Ethics
Implied; not explicit.

Somewhat Isolated +/-

Cousins, Lochard, Malone, Oughton, Sia, Zolzer.



IRPA GUIDING PRINCIPLES FOR ESTABLISHING A RADIATION PROTECTION CULTURE



RP Culture/System

- Work out of a CULTURE: Habits and routines of a profession.
- Often unconscious. Must bring to awareness. IRPA/SRP.

• New BSS. Law is good; A Culture is better.

• Examine, reflect and spread through presence. Pervasive

• We concentrate on technical and are not pervasive in institution

• Borowski recommendations

• RPE Contract consistent with role

• FACILITATION, not COMPLAINEE.

To Finish ----

IRPA GUIDING PRINCIPLES FOR ESTABLISHING A RADIATION PROTECTION



- Culture and Stakeholders
Unions / Professional/Community /Patients
- Creative monitoring; Custom shielding; & Compliant Equip.
- Presence, Presence, Presence consolidates advice. Recall can be poor.
- Learn language of Health care system including Med Ethics

- Standards for Equipment
- Shielding purpose designed
- Skill and knowledge in practice

CALL FOR ACTION
Improve Radiation Protection
in the Next Decade

