



*ALARA, The ICRP System, Ethics and Innovation: Aligned?*

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# GENDA/CONTEXTS

Ethics Sensibilities, Moral Compass, Collective and Individual.

Ethics; Law, Protocols, Guidelines, ICRP et al.

Examples: Imaging.

Note: ICRP System based on incomplete science



# What is Ethics?

- Not abstract discipline discussed in University departments. Practical. How should Dr X deal with Project Y today?

Ethics is:

- Essentially practical
- Obligations v ordinary
- And v numerous
- What I ought to be doing right now ...?
- Personal Moral Compass
- Not sufficient





# RP Principles (ICRP)

## *Principles*

- System (ICRP) consists of:
  - (Incomplete) science
  - Value judgments
  - Experience
- Purpose built; detached from MEDICAL ethics
- Change: ICRP 138 published in 2018, plus additional report (TG 109) on medical in progress..

SERIES IN MEDICAL PHYSICS AND BIOMEDICAL ENGINEERING

## Ethics for Radiation Protection in Medicine



Jim Malone, Friedo Zölzer,  
Gaston Meskens, and Christina Skourou

# ICRP 138, and the “pragmatic value set”.



## Pragmatic Set (Malone & Zolzer 2016)

Dignity/Autonomy

Beneficence and Non  
Maleficence

Justice

Prudence / Precaution

Honesty/ Transparency

# Value Sets for RP in Medicine

Dignity/Autonomy

Non-Maleficence/ and  
Beneficence

Justice

Prudence/Precaution

Honesty/ Transparency

+



**Additional Values  
(under review)**

**Solidarity,  
Inclusiveness**

**Empathy**

Medical Ethics  
ICRP/UN/WMA.

Social Expectation

# Prudence and Precaution



- UN: Action required. Minus full knowledge. “Potential serious irreversible harm – lack of full scientific knowledge shall not ---”
- Rooted in “common morality” -- “not relative to cultures ----”. Common to all wisdom literatures

Need to recalibrate the manner in which we exercise prudence

# Professor Russet, Cardiologist

## (Cardiac CT request for Mr Golden)

- Terrence Golden's tennis partner dies of heart attack. He is less fit and his children suggest CT at Prof Russet's private Clinic.
- Facility has Imaging Centre (CT & Interventional). She is shareholder.
- Provides info on dose and risks, but explains latter not proven.
- Terry G: no symptoms/ risk factors/referral. Accepted for CT at Prof Russet's Imaging Centre, subject only to consent. Contrary to CIC.
- Doesn't mention shareholder role or that CT older high dose model.
- Ethics, Legal and enforcement issues. How to evaluate.

Dignity  
Autonomy

Beneficence,  
Non-  
Maleficence

Justice

Prudence  
Precaution

Honesty  
Transparency



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# CT Dose Dilemma

## (Public and Private Facilities)

- St Aran's, a public facility, adjoins a private hospital.
- Both have CT scanners. The equipment in the private is newer and has better low dose facilities.
- Public hospital lacks capacity for its imaging needs, and some patients referred to the private for CT imaging
- Audit shows older patients preferentially referred private.
- Further investigation indicates older patients also have better private insurance.

Dignity Autonomy	Beneficence, Non- Maleficence	Justice	Prudence Precaution	Honesty Transparency
-	-	-	-	-
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# Two Optimisation Problems

- Survey finds underuse of Imaging in Nursing home.
- Patients must be referred to hospital.
- Mobile units improve this situation.
- Local Radiology Dept objects to use of mobile units on quality grounds.
- EU Survey: large disparity in dose/ exam (and frequency) between countries.
- Professions note this, and note that this has been the situation since first surveys in the 1980's.
- No Concerted action.
- Patient advocates horrified.

# Ethics Essential

- Where what ought to be done (possibly?) can't be done
- Evaluation of situations where Law/ Protocols / lack maturity.
- Collective responsibilities
- Working on Culture of Profession
- Accidental/Inadvertent exposures
- Patient centred focus





# Moral Compass Professions & Ethics

- Ethics reasoning: obligations are ordinary & v numerous
- AAPM Survey (N = 969)
  - 49% never met Ethics dilemma in workplace
  - 31.5% rely on personal moral compass only
- For professions/policy values cannot be just personal



Guidelines, protocols and law,  
determine culture we work in.

**NOT ETHICS,**

# SUMMARY

←  
LAW CODES ETHICS  
→

PERSONAL  
↓ ↑  
PROFESSIONAL  
Collective







COLLECTIVE & INDIVIDUAL



