TG94: The Ethical Foundations of the ICRP System of Radiological Protection

Deborah OUGHTON

Ethics Workshop
4-6 February 2015

Terms of Reference/Scope

To develop an ICRP Publication presenting the ethical foundations of the system of radiological protection.
To clarify the rationale for recommendations, to assist in implementation, identify potential conflicts and to provide a basis for communication on radiation risk.

Central focus on values underpining the system, rather than the development and implementation of the system
Full Members

- Deborah Oughton, Norway (Chair)
- Marie-Claire Cantone, Italy
- Kunwoo Cho, Korea
- Sven Ove Hansson, Sweden
- Chieko Kurihara-Saio, Japan
- Thierry Schneider, France
- Friedo Zölzer, Czech Republic
- Richard Toohey, USA
- Sidika Wambani, Kenya

Where are we now?
Draft Report Structure

Historical Context
Common Values
Core Ethical Values Underpinning the System
  • Beneficence/Non.maleficence
  • Dignity
  • Justice
  • Prudence/Acting Prudently
Applications
  • Medical
  • Worker and Nuclear Safety
  • Waste Management
  • Accidents
  • Environmental Protection

Important “Floaters”

• Reasonableness and Tolerability
• Transparency and Accountability

• Part of development and implementation of the system rather than key values underpinning the system?
Inherent in the system

Implementing the system

Developing the system

ICRP Code of Ethics

IRPA Code of Ethics

Committed to public benefit: ICRP acts to protect humans and the environment from the harmful effects of radiation

Independent: ICRP acts independently of governments and organisations, including industry and other users of radiation

Impartial: ICRP acts impartially in its development of recommendations and guidance

Transparent: ICRP engages stakeholders and strives to be transparent in its actions and judgements

Accountable: ICRP is accountable to the framework that governs the activities of a charity
Historical Context

Evolution of the System of Radiological Protection: Science, Ethical Values, and Experience

- Influence of scientific developments
- Influence of different applications – medical, energy, accidents, ...
- Influence of changes in societal and cultural attitudes

"Radiation protection is not only a matter for science. It is a problem of philosophy, and morality, and the utmost wisdom."

Lauriston S. Taylor (1902 – 2004)

The Philosophy Underlying Radiation Protection
Am. J. Roent. Vol. 77, No 5, 914-919, 1957
From address on 7 Nov. 1956
Implicit Values

- "the dangers of over-exposure ... can be avoided by the provision of adequate protection" ICRP 1928
- "every effort be made to reduce exposures to all types of ionizing radiation to the lowest possible level". ICRP 1951

- “... to contribute to an **appropriate level of protection** against the detrimental effects of ionising radiation exposure without unduly limiting the **benefits associated** with the use of radiation.” ICRP 103, § 26

- “... to manage and control exposures to ionizing radiation so that **deterministic effects are prevented**, and the risks of stochastic effects are reduced to the extent **reasonably achievable**.” ICRP 103, § 29

---

... implicit values

- **The principle of justification.** Any decision that alters the radiation exposure situation should **do more good than harm**
- **The principle of optimisation of protection.** All exposures should be kept **as low as reasonably achievable**, taking into account **economic and societal factors** with restrictions on individual exposure to avoid **inequities** between individuals
- **The principle of application of dose limits.** The total dose to any individual from **deliberately introduced sources** other than medical exposure of patients should **not exceed the appropriate limits** recommended by the Commission
Behind the System of Protection

Ethical schools of thought

Primary Aim
Protection Goals
“Fundamental” Principles
Tools

Not grounded in Western Ethical Theories, “but by a study of the oral and written traditions which have guided people in different cultures over the ages (Friedo Zoelzer, 2011)” … including the values implicit in the ICRP Recommendations
Biomedical Ethics - Beauchamp and Childress, 1979 (1st edition)

- **Respect for autonomy** (a norm of respecting the free-will and decision-making capacities of self-governing persons)
- **Nonmaleficence** (a norm of avoiding the causation of harm)
- **Beneficence** (a group of norms for providing benefits)
- **Justice** (a group of norms for distributing benefits, risks and costs fairly)

**Utilitarianism** | **Deontology**  
---|---

Broadly compatible with the principles of:

- Autonomy
- Beneficence
- Non-Maleficence
- Justice

Widely adapted in other areas: public health and environmental ethics, technology assessment, etc
First Asian workshop on the ethical dimensions of the radiological protection system
Daejeon, Korea, August 2013

1st European workshop on the ethical dimensions of the radiological protection system
16-18 December 2013, Milan, Italy
UK Workshop on the ethical dimensions of the radiological protection system
11 June 2014, London, United Kingdom

2nd International symposium on ethics of environmental health
15-19 June 2014, Budweis, Czech Republic
Core Ethical Values Underpinning the System

- Beneficence/Non-maleficence
- Dignity
- Justice
- Prudence

In no particular order or hierarchy. Balance will depend on case and context.

Values or principles (or norms or...)

Beneficence/Non-Malificence

Definition in ethics
Beneficence (and non maleficence) – promoting or doing good as well as preventing, removing or avoiding evil or harm (Frankena, 1963)

Relevance in RP
Beneficence – health benefits of radiotherapy; indirect benefits of other applications involving radiation exposure; benefits of reducing exposure
Non-Malificence – all exposures have an inherent risk of causing harm

Challenges – distribution of risks, harms and benefits; measurement of benefits and harms
WHO definition of health – well being
Dignity

Definition in ethics
*Respecting Autonomy* – the capacity to choose freely for oneself and be able to direct one’s own life; to be treated as an end, and not only as a means
Recognition of human dignity a cornerstone of Human Rights (UN, 1948)

Relevance in RP
Dose limits and constraints – individual rights
Consent – patients, workers (public)
Stakeholder engagement – empowerment

Justice

Definition in ethics
Fair distribution of resources, risks and benefits
Focus on the vulnerable/worst-off (Rawls)
Distributive Justice and Corrective/Reciprocal Justice
Equity – equal opportunity/equal treatment or equal status

Relevance in RP
ALARA and constraints
Distribution of risks and benefits
Differences across age, gender time and space
Future generations
Prudence/Acting Prudently

Definition in ethics
Long ethical tradition: Aristotle, Buddhism, Confucianism, ancient peoples of Oceania and America
OED: “to recognize and follow the most suitable or sensible course of action … caution”

Rio 1992: “the precautionary approach … where there are threats of serious or irreversible damage, lack of full scientific certainty shall be not used as a reason for postponing cost-effective measures to prevent environmental degradation”

Relevance in RP
Cornerstone of radiation protection
ALARA, LNT, etc

Where to next?

Evaluation of core values against applications/examples
Forthcoming Meeting

- Harvard workshop 10-12 March 2015
- 2nd Asian Ethics Workshop 2-4 June 2015
- ICRP Main Meeting Seoul

www.icrp.org
Corresponding Members and Reviewers

**Corresponding Members:**
- Renate Czarwinski (IRPA)
- Emilie Van Deventer (WHO)

**Critical reviewers C4:**
- François Bochud, Switzerland
- John Takala, Canada

**Critical reviewers MC:**
- Carl-Magnus Larsson
- Eliseo Vano