AGENDA

• Ethics, ICRP, Values and the Law
• Medical Exposures/Screening and IHA

• Screening, Values, Problems, Regulation, Overdiagnosis, and IHA
• An Example of IHA

• Conclusions
Ethics, Values Medicine and ICRP

ICRP advice and legal systems:
- (Incomplete) science
- Value judgments
- Experience

- ICRP detached from MEDICAL ethical scholarship and practice

- Be aware that for medicine the origins, history, practices and scholarship are sufficiently different

- Revisited in ICRP 138.
### Pragmatic Value Set for RP in Medicine

<table>
<thead>
<tr>
<th>Core Values</th>
<th>Two Additional Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dignity/Autonomy</td>
<td>Prudence/Precaution</td>
</tr>
<tr>
<td>Non-Maleficence/ and Beneficence</td>
<td>Honesty/ Transparency</td>
</tr>
<tr>
<td>Justice</td>
<td>Society, ICRP 138, &amp; High Level UN Conferences</td>
</tr>
</tbody>
</table>

*World Medical Association, 2017*

*ICRP 138*

*Beauchamp and Childress*

* + SOLIDARITY ?*
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>Dignity/Autonomy</td>
<td>Respect for Autonomy</td>
<td>Dignity</td>
</tr>
<tr>
<td>Beneficence and Non Maleficence</td>
<td>Non Maleficence</td>
<td>Beneficence and Non Maleficence</td>
</tr>
<tr>
<td>Justice</td>
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<td>Prudence / Precaution</td>
<td>Prudence</td>
<td>Prudence</td>
</tr>
<tr>
<td>Honesty/ Transparency</td>
<td>(Veracity)</td>
<td>(Transparency)</td>
</tr>
</tbody>
</table>
ICRP 105 Chapter 6
Unique aspects of RP of Patients

**Medical Exposures Deliberate and Voluntary**

- Deliberate for diagnostic or therapeutic purposes
- Expectation of direct medical benefit
- Informed Consent +/-
- Information +/- in radiol
- No dose limit for patients

**Asymptomatic Screening**

- Benefits and Harms. No expectation of benefit
- Early diagnosis/ treatment
- Formal programmes selection + evidence base
- IHA, opportunistic screening in practice, often no evidence base
Examples of General

Part of Public Health

• Colon Ca (blood loss)
• Cervical Ca
• Prostate Ca
• Blood Pressure
• Diabetes
• Thyroid Ca (populations)
• Migrants

Radiological

• Mammography in formal programmes
• Lung Ca
• Colon Ca
• Opportunistic or IHA Mammography
• Migrants (Chest X-Ray)
### Benefits

- Incidence ↓
- Mortality ↓
- Morbidity ↓
- 5-year survival
- Detection of “true positives”
- Less aggressive treatment
- Reassurance
- (Incidental findings)

### Harms

- Overdiagnosis
- More time as patient
- Mortality ↑ & Morbidity ↑
- More treatment
- Overtreatment
- Complications
- Induced fear/worry
- False positives
- False negatives
- Incidental findings
Screening Programmes and Values

- Full information about Benefits and Harms: Dignity/Autonomy and Honesty (1, 5)
- Balance Benefits/Harms framed broadly (2)
- Cost effective re other health priorities (3)
- Harms fully assessed (4)
- Social gain (6 Solidarity)

- Generally Benefits oversold and harms inadequately treated
- Advocacy from enthusiasts and the professions involved
- Inadequate framing of benefits v harms, individual v social, real value for money
3.159 Justification for health screening programme for asymptomatic populations --- by health authority/ professional bodies.

3.160 -- not part of approved health screening programme:

• specific justification for individual -- in accordance with the guidelines -
• ---- individual informed in advance of the benefits, risks, --limitations.
When things go Wrong
Cervical Screening

• Screening must be embedded in a comprehensive system, including technical and clinical quality issues, and directly feed into healthcare continuum of diagnosis/ therapy(4)

Cervical Screening 2018

• During 2017 legal process Vicky Phelan, terminal cervix cancer, discovered “clear” 2011 smear was positive on audit. She was not told.
• At least 221 women now involved similarly, of whom 18 are dead.
### Imaging Asymptomatic Individuals

<table>
<thead>
<tr>
<th>categories of screening</th>
<th>benefit: individual</th>
<th>benefit: society</th>
</tr>
</thead>
<tbody>
<tr>
<td>I Health screening programme for a national or regional population → national breast screening programme</td>
<td>little</td>
<td>Evidence available</td>
</tr>
<tr>
<td>II Health screening provided within a programme for a national or regional population → lung cancer screening provided to the standard of a national or regional programme</td>
<td>little</td>
<td>Evidence available</td>
</tr>
<tr>
<td>III Individual health assessment (A) → virtual CT colonoscopy, CT CAD screening</td>
<td>possible</td>
<td>vague</td>
</tr>
<tr>
<td>IV Individual health assessment (A-)</td>
<td>vague</td>
<td>vague</td>
</tr>
<tr>
<td>V Individual health assessment (B)</td>
<td>vague</td>
<td>vague</td>
</tr>
</tbody>
</table>

*specific justification for the individual*
Overdiagnosis/ Treatment

--- challenges include direct harms to patients and citizens, misallocation of resources, and, --- threaten sustainability of -- healthcare systems -----.

- Copenhagen Conference 2018
Scenario: Dr Salmon
Cardiologist in Private Practice

- Dr Salmon, Interventional Cardiologist. Private rooms. Imaging facility.
- Explains the radiation (and other) harms. Rad risk unproven.
- Accepts IHA and unreferred worried well
- Procedure on request with consent
- Fee for consultation, separate charge for imaging.
- Dr Salmon is shareholder in imaging facility and does not advise patients of her financial interest.

<table>
<thead>
<tr>
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<th>Prudence Precaution</th>
<th>Honesty Transparency</th>
<th>SOLIDARITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Y)</td>
<td>(-)</td>
<td>(-)</td>
<td>(-)</td>
<td>(Y)</td>
<td>(-)</td>
</tr>
<tr>
<td>(n)</td>
<td>(N)</td>
<td>(N)</td>
<td>(N)</td>
<td>(n)</td>
<td>(N)</td>
</tr>
</tbody>
</table>
Can be Overlooked by Professionals

How does ethical reasoning proceed?

• Screening, well done, is very complex
• Almost any fact will matter some of time
• In screening must consider complexity in sufficient detail

• Ethics is Essentially Practical
• Obligations very ordinary
• And very numerous (compared with the law ++)
Ethics for Radiation Protection in Medicine

This book presents an up to date ethical framework for radiological protection in medicine. It is consistent with the requirements of the International System of units protection and with the expectations of medical ethics. It presents an approach rooted in the medical tradition, and alert to contemporary social expectations. It provides readers with a practical framework against which they can assess the safety and acceptability of medical procedures, including patients' concerns.

It will be an invaluable reference for radiologists, radiation oncologists, regulators, medical physicists, technologists, other practitioners, as well as academics, researchers and students of radiation protection in medicine.

Features

- An authoritative and accessible guide
- Includes numerous practical examples/clinical scenarios that illustrate the approach
- Informed by the latest developments in the thinking of international organizations
- Authored by a team who have contributed to defining the area internationally
- Presents a pragmatic approach, rather than dwelling on philosophical theories
- Provides reflection on a novel approach to the uncertainty in radiation risk estimates

Jim Malone is Robert Boyle Professor (Emeritus) of Medical Physics, Trinity College Dublin.

Friedo Zölzer is Professor and Head of the Institute of Radiology, Toxicology and Civil Protection at the University of South Bohemia in the Czech Republic.

Gaston Meskens works part-time with the Centre for Ethics and Value Inquiry of the Faculty of Arts and Philosophy of the University of Ghent and with the Science and Technology Studies group of the Belgian Nuclear Research Centre SCK•CEN.

Christina Skourou was a PhD student in the Netherlands and at Keele University in the UK. She worked as a radiation safety officer for the Greater Manchester Health Authority in the UK. She holds postgraduate degrees in Biomedical engineering (Dartmouth College, US) and Medical Ethics (University of Ghent, Belgium).