

IRPA Task Group on the Revision of the System of Radiological Protection

Fourth feedback – Review on the list of priorities defined by ICRP

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Approach. From 14 to 19 October, SFRP members were invited to express their views whether the topics identified by the ICRP at the Main Commission meeting in April 2022 are deemed a 'priority' or 'not a priority'. An online survey collected the views of 23 Members – making the results not "representative" (under a statistical definition) but interesting to separate the topics considered important vs. those less important.

1. Results of the survey

Topics	Priority	Not a priority
Effects and risks for biota and ecosystems	50%	50%
Exposure situations and exposure categories	76%	24%
Implication of taking into account the individualisation of effect, dose and risk in the radiation protection system (1) (2) (3)	70%	30%
Revision of the radiation detriment	67%	33%
Radiation protection in space	11%	89%
Application of the justification principle in medicine (4)	79%	21%
Application of the principle of justification and optimisation for the foetus, the premature baby and the new-born	80%	20%
Optimisation, including constraints and reference level	90%	10%
Application of the (new) radiation detriment	56%	44%
Non-cancer effects of radiation (in addition to cardiovascular effects) (5)	58%	42%
Consolidation of dosimetry recommendations	75%	25%
New weighting factors (tissue, ...) for cancer and other effects	68%	32%
New dose coefficients	53%	47%
Alignment of voxelised and mesh approaches	12%	88%
Exposure level and risk coefficients for molecular radiotherapy	56%	44%
Protection of animals other than those already included in the protection system	18%	82%
Reconciling human and environmental objectives	82%	18%
Dose limit and protection of individuals - the concept of limit	90%	10%
Practical implications of ethics in radiation protection	56%	44%
New publication on radiation protection in medicine (Publication 105) including individualisation of effect	75%	25%
New compendium of dose coefficients	28%	72%
Sources of uncertainty in the protection system and sensitivity analysis	63%	37%
Education and training	80%	20%
Communication	80%	20%

Translation of the comments.

(1) The concept of the individualisation of the exposure should undergo a ethical review first given its potential implications at work such as a workers denied of working, another allowed to be more exposed than others because of their genetic background.

(2) Individual sensitivity/susceptibility are core subjects that need more research.

(3) Elaborating more on the individualisation also depends on the objective and the situation of exposure especially if this should apply in planned or in emergency).

(4) Justification is particularly at stake for remote operated radiology.

(5) Not forgetting cardiovascular effects at low dose!

2. Synthesis

The method and the data collected allows to identify which topics are regarded a 'priority' (N=14) and those who are considered of 'lower priority' (N=10) from the point of view of the SFRP Members who answered the survey.

Notwithstanding with the quantitative results (and also the feedbacks from the other IRPA AS), it is clear (and logical) that ICRP will give priority to several topics not necessarily because they are more important than others, but because the elements (principles, science, ...) to address them are available and because their outputs are needed for other topics. Consider for example TG122 on new detriment (considered as a priority) which needs the results of TGs 118, 119, 121 and 122 (not all regarded as a priority) to move forward.

Globally and from these results obtained here, the revealed 'priorities' (which are maybe a surrogate of the preoccupations of the professionals?) lie more in the application of the system than in its foundations considering that

- 'Applications of the justification', the 'dose constraints and reference level' and the 'dose limit' have obtained the higher scores, followed by 'education, training' and 'communication' and all being at the very end of the RP process.
- The other priorities are linked with the environment (partly) and research topics, mainly on the effect of ionizing radiation (detriment, individualisation, uncertainties).
- Non-priorities are associated with very specific topic: space, molecular radiology etc.

This survey supports the idea that the transparency and the clarity/explicability of the next ICRP system are more important for the RP professionals than the inclusion of the scientific evolutions and research discoveries. Finally, the topic of the implication of the individualisation of the effect has received most of the written comments, who insisted not so much on the science but rather on the (ethical) consequences .
