High Level Expert Group
on
European Low Dose Risk Research

(HLEG)

Background

The magnitude of risks from exposure to low and protracted doses of ionising radiation, typical of those encountered in the workplace, the environment and in diagnostic medicine, is an important policy issue. If these risks are overestimated, undue resources are being allocated to dose reduction and practices are being unnecessarily restricted; if the risks are underestimated, the level of health protection achieved is less than intended, both for the public and at work and also in medical procedures. The uncertainties in the magnitude of risks at low doses are considerable, as are the associated social and economic implications. These uncertainties are further exacerbated by increasing evidence that the magnitude of risk may vary considerably between some individuals depending on their genetic makeup.

For protection purposes, a generally cautious assumption is adopted that the risk of radiation increases linearly with increasing dose, with risks at higher doses having been assessed directly from epidemiological studies. The scientific evidence, however, is equivocal and would support various interpretations at low doses, ranging from a linear relationship between risk and dose, curvilinear relationships of a variety of forms (both supra- and sub-linear), the existence of a threshold, to radiation having a beneficial effect at low doses.

Better quantification of risks at low dose and how they vary between individuals will impact policy in many areas, for example:

- the management of spent fuel or high level waste where the concern is potential exposure of populations to very small doses over extremely long time periods
- decisions on screening programmes (e.g. mammography) where a balance must be sought between the benefits and the potential harm
- the identification of those who are more "radiosensitive", through genetic screening, etc.

Better understanding of the magnitude and variability of the risks will, in each case, have major benefits for public health and resource utilisation.

The importance of low dose risk research is increasingly being recognised globally, in particular because of its policy implications. The US Department of Energy launched an ambitious programme in the late 1990s and Japan is carrying out extensive research in this area. Many of the larger Members States of the EU have significant research activities on this topic and a few have dedicated programmes. Notwithstanding this, there has been little effort or commitment to integrate these national activities/programmes. The exception has been the inherent structuring and integration in projects implemented under the EURATOM research programme. This limited degree of collaboration has curtailed progress in the past and has prevented best use being made of limited resources. This needs to change in future given

the nature, scale and importance of the challenges to be addressed in low dose risk research and the competition for scarce resources. Without effective collaboration at a European, if not international, level, progress will be far slower than policy needs dictate and this may have health and economic implications.

There has been a substantial decline in expertise both in the areas of radiation research and in academic teaching during the past decade throughout Europe, and internationally. Given the current plans to establish new built of NPPs and the increasing application of ionising radiation in medicine, there is an urgent need to maintain competence in radiation risk assessment, including training, and regain expertise in many areas of radiation research.

With the progress of science, new techniques have become available and new concepts have been developed in recent years. It is now timely to address the above issues in radiation protection with innovative approaches based on the latest knowledge and technical advances.

In this context, a HLEG on low dose risk research is be established in order to better structure and integrate European research in this area and link it with similar research being carried out elsewhere.

Objectives

The objectives of the HLEG are:

- To formulate and agree the policy goals to be addressed by low dose risk research
- To develop a strategic research agenda and road map for low dose risk research in Europe
- To specify the essential elements of and next steps for establishing a sustainable operational framework for low dose risk research in Europe.

It is envisaged that this framework will enable interested parties to:

- programme and implement their research activities in accordance with the strategic research agenda and road map ("**structuring** European research")
- better integrate national and Commission research activities and exploit synergies ("**integrating** European research")
- revise periodically the research agenda/road map and ensure that it remains fully responsive to emerging needs
- achieve effective collaboration with low dose risk research programmes/activities elsewhere ("**international collaboration**")

Composition

The HLEG will comprise:

- representatives of national funding (or regulatory) bodies with a significant programme/activities or with a policy interest in low dose risk research or of national institutes with a substantial research programme in this area;
- the European Commission and
- representatives of the research community with recognised high level expertise in low dose risk research.

The number of members (excluding the Secretariat) should not exceed fifteen and will be selected as follows:

- Five Member States (Finland, France, Germany, Italy and the United Kingdom), with significant low dose risk research activities/programmes, have expressed an interest in participating in the HLEG. The nominated members are
  - Finland: STUK, S. Salomaa
  - France: CEA, P. Legrain and IRSN, J. Repussard
  - Germany: BfS, W. Weiss
  - Italy: ISS, M. Belli
  - UK: Department of Health, H. Walker

- The EC, DG Research, nominates G.N Kelly.

- These seven members (representing the five Member States and the European Commission) will propose candidates for membership of the HLEG from the low dose risk research community (in general from Europe but not exclusively). Based on these proposals, the final composition of the HLEG will be agreed by representatives of the five above Member States and the European Commission. Ensuring an appropriate balance between expertise in radiobiology, epidemiology and modelling will be the main criterion in the selection process.

A Secretariat will be established to ensure the effective operation of the HLEG and the delivery of its foreseen outputs. The Secretariat functions will be carried out by BfS under a grant from the European Commission. As the grant-holder, BfS will be responsible for chairing the HLEG and ensuring that it achieves the objectives set out above; the latter will be incorporated into the Grant Agreement.

D. Goodhead will be invited to join the Secretariat to provide technical support, in particular to draft the research agenda, road map and a sustainable operational framework **on behalf of** the HLEG.

The US has a major low dose risk research programmes and the programme manager will be invited to give a formal presentation to contribute to the work of the HLEG in an observational capacity.[1]

Modus operandi

The HLEG will be formally established, at the latest by the end of January 2008 and will complete its work by the autumn of 2008, with the publication of the strategic research agenda, road map and further steps necessary for setting up a sustainable operational framework. A kick-off meeting with the representing the five Member States and the European Commission has been organised on 10 January. The HLEG will carry out its work through a series of meetings to be held at mutually convenient venues and times.

The costs of participation in the HLEG of members nominated to represent a funding agency/regulatory body, or the Commission, shall be met by the nominating entity. The costs of participation of members, nominated because of their high level expertise in low dose risk research, will be determined by their nationality/origin: the costs of experts from one or other of the five countries identified above will be covered by the respective country; for all other members, the Secretariat will reimburse the costs of travel and subsistence in accordance

[1] In the future, additional countries with substantial low dose research, such as Japan, may also contribute.

with its usual administrative provisions – exceptionally and where justified, an honorarium can be paid as compensation for the time spent by a member on the work of the HLEG. The costs of the Secretariat (including administrative and technical effort, travel, subsistence, etc) will be reimbursed under a grant from the Commission.

Composition of the HLEG

Country/Function	Representative of funding/regulatory body or national organisations with major programmes on low dose risk research
France	Legrain, Pierre; Repussard, Jacques
Finland	Salomaa, Sisko
Germany	Weiss, Wolfgang (Chairman)
Italy	Belli, Mauro
UK	Walker, Hilary
EC	Kelly, George Neale
Additional high level experts	Atkinson, Michael J.
	Cardis, Elisabeth
	Cox, Roger
	Elliott, A.T.
	Hall, Janet
	Harms-Ringdahl, Mats
	Jourdain, Jean-René
	Ottolenghi, Andrea
Technical support for the Secretariat	Goodhead, Dudley