Precaution and scientific evidence on health effects: Recent developments in Europe

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Rationale

• Support policies that are
  – Mindful of all society’s needs but with health as first priority
  – Based on evidence
  – Effective and equitable
  – Sustainable, no hidden costs (e.g., to future generations)

• Advancement of technology outpaces scientific progress

• Organisation of society increasingly complex

• Multiple, complex pathways to health

• Potential for far-reaching health effects
1989 to 2004: 4 Ministerial Conferences

- Frankfurt, 1989
- Helsinki, 1994
- Budapest, 2004
- London, 1999
Budapest, June 2004: “The future for our children”

- 1200 delegates and observers from 50 Member States, 11 international organizations and 11 NGOs
- 48 Ministers from both Health and Environment sectors, 21 Deputy Ministers and 10 State Secretaries
The evidence base to identify priorities: the environmental burden of disease study

About 30% of deaths and DALYs under 19 are attributable to outdoor air pollution, indoor air pollution, water and sanitation, lead, and injuries.
CEHAPE identifies 4 Regional Priority Goals

RPG 1 to prevent and significantly reduce the morbidity and mortality arising from gastrointestinal disorders and other health effects, by ensuring that adequate measures are taken to improve access to safe water and adequate sanitation for all children.

RPG 2 to prevent and substantially reduce health consequences from accidents and injuries and pursue a decrease in morbidity from lack of adequate physical activity by promoting safe, secure and supportive human settlements for all children.
CEHAPE identifies 4 Regional Priority Goals (ctd)

RPG 3 to prevent and reduce respiratory disease due to outdoor and indoor air pollution, thereby contributing to a reduction in the frequency of asthmatic attacks in order to ensure that children can live in an environment with clean air.

RPG 4 we commit ourselves to reducing the risk of disease and disability arising from exposure to hazardous chemicals (such as heavy metals), physical agents (e.g. excessive noise) and biological agents and to hazardous working environments during pregnancy, childhood and adolescence.
17a. We welcome the work done in WHO on the precautionary principle and more generally on precautionary considerations. We [acknowledge] [note] the WHO document *Dealing with uncertainty – how can the precautionary principle help protect the future of our children?*

17c. We call upon WHO to ensure that guidelines are developed with the aim of balancing the distribution of benefits and costs of environmental health measures and weighing up the health improvements and other benefits against anticipated costs, as well as possible legal constraints and impediments to free trade.
17b. The proposed approach in the WHO document has relevance to the whole risk assessment, management and communication process, and can be based on simple steps and policy actions such as:

- improving and expanding the range of scientific tools;
- increasing the transparency of decision-making, expanding the range of stakeholders and legitimate factors involved in decision-making processes;
- increasing our ability to identify early warnings of risks;
- establishing research and education programmes to address gaps in knowledge;
- developing and implementing safer and cleaner production and sustainable consumption patterns.
The “modern” model: risk assessment

• Expert job of estimating strength of evidence, prevalence of exposures, and magnitude of risks

• Currently applied in many fields, e.g., air quality (“What is the safe level of agent X?”)

• Feeds into risk management

• Some strengths: Rigourous, structured, logical, esp for established determinants

• Strong basis for utilitarian strategies in policy making (e.g., cost-benefit policy analysis, setting safety standards)
Some limitations

- Entry point is risk factor, not policy option
- Does not capture the reality of policy making
- Partial: only measurable, established health impacts. Not suitable for uncertain determinants.
- Reactive, focused on damage limitation (epidemiological roots), limited emphasis on benefits
- Narrow model of health
5th Ministerial Conference on HE

- Parma, Italy, February 2010
- PP not nominally in agenda
- Economic assessment in HE
  - Uncertainty
  - “Insurance” models
  - Distributional issues
Science-policy: bridging the gap

• International Symposium, Madrid, October 2009
• Paradigms should be changed to capture complexity and interdependence
• Assessment should be broadened to consider all implications, including transboundary and unintended effects
Science-policy: bridging the gap

- Risk assessment should be strengthened to deal with multiple exposures and mixtures of chemicals, and focus on vulnerable groups.
- Scientists should:
  - while working to reduce uncertainty, learn how to make decisions in its presence.
  - reframe the sufficiency of evidence required for action, applying the precautionary principle in situations involving potentially irreversible effects and uncertainty.
- Greater integration and collaboration should be promoted between ministries of health and the environment.
Integrated RA

• INTARESE, HEIMTSA, …
• Assumptions relaxed, better methods
  – Proportional hazards
  – Distribution mixing
• Broader scoping
  – Uncertainty
  – Mixtures of exposures
  – Vulnerability
  – Expert opinion elicitation
  – Competing ethical frameworks
Integrated RA: novelty

- Relax simplifying assumptions
- Holistic, e.g. full-chain approach
- Aim for policy relevant questions, i.e. sector-wide
- Critically assess knowledge quality
- Accept values and context
- Expert opinion can be formally incorporated
- Stretches current paradigm
Integrated RA: continuity

- Roles: experts and stakeholders
- Rigorous methodology
- High specificity, low sensitivity
- Assessment as a product (e.g., can be peer reviewed and published)
- Demand for more data and broader evidence base
Trans-scientific questions

- GMOs and food security
- Energy and waste policy
- Climate change and ecosystem health
- Social determinants of health
- Nanotechnology
Alternative models

- Roles: experts and stakeholders
- Rigourous methodology
- High specificity, low sensitivity
- Assessment as a *product* (e.g., can be peer reviewed and published)
- Demand for more data and broader evidence base

- “Community of peers”
- Operating deliberately in imperfection
- Low specificity, high sensitivity
- Assessment as a *process* (e.g., measured by policy achievement)
- Not necessarily so: emphasis on action
Example: HIA

- Health Impact Assessment (HIA) (“A combination of procedures, methods, and tools by which a policy, programme, or plan may be judged as to its potential effects on the health of population and the distribution of those effects within the population”)

- More similar to health promotion
  - Empowerment
  - Participation
  - Advocacy
HIA in practice

• Not a “discipline”
• Impressive results, but not always so
• Sustainable in some settings, not in others
• Emphasis on action and process may hinder production of evidence
• Institutional difficulties
• It may be a new paradigm, but is it a good idea?
Example: WHO CSHD

• Rejects the utility argument (“an issue of justice”)
• Some actions are right or wrong, regardless of consequences (deontological, as opposed to utilitarian, ethics)
Conclusions

• Critical analysis of different approaches desirable (PAVEL project)
• WHO interested in different approaches, but IRA and HIA, for example, do not mix
• Need to reflect on role of science in society
• “Reality check”