The Precautionary Principle & EMF

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Precaution

? Growing movement to adopt *precautionary approaches* to manage health risks with scientific uncertainty

? WHO does not normally advise national authorities to set policies that go beyond established knowledge

? At Ministerial Conference on Environment and Health in London 1999, WHO encouraged to take into account “the need to rigorously apply the Precautionary Principle in assessing risks and to adopt a more preventive, pro-active approach to hazards.”
The Precautionary Principle (PP)

“Take prudent action when there is sufficient scientific evidence (but not necessarily absolute proof) that inaction could lead to harm and where action can be justified on reasonable judgments of cost-effectiveness.”

Treaty of Maastricht quoted by WHO 1999
“...the precautionary principle is neither a politicisation of science [nor] the acceptance of zero-risk but that it provides a basis for action when science is unable to give a clear answer... the precautionary principle is not a justification for ignoring scientific evidence and taking protectionist decisions.”
Differences that Make the Difference

• Strength of evidence
  – Possible cause
  – No conclusive scientific proof
  – Sufficient evidence
• Requirement to act
  – Consider action
  – Take cost-effective action
  – Prevent or eliminate exposure
• Burden of proof
  – Opponents
  – Proponents
Application of PP to EMF

- Prudent Avoidance

  - Prudent avoidance means taking simple, easily achievable, low cost measures to minimize exposure, even in the absence of a demonstrable risk.

  - “An example of using incomplete science to make a reasoned judgment in the face of uncertainty” — G. Morgan
Application of PP to EMF

- Prudent avoidance adopted in Australia, Sweden, and several U.S. states (California, Colorado, Hawaii, New York, Ohio, Texas, Wisconsin)
  - Low-cost steps (less than 4% of project budget) in constructing new lines in California
  - Best available practices
“If measures generally reducing exposure can be taken at reasonable expense and with reasonable consequences in all other respects, an effort should be made to reduce fields radically deviating from what could be deemed normal in the environment concerned. Where new electrical installations and buildings are concerned, efforts should be made to design and position them in such a way that exposure is limited.”

National Authorities
Sweden, 1996
Scientific Uncertainty and Application of PP to EMF

• Small risk to all vs. large risk to few

• Unknown aspect of exposure that might be harmful
  – Some actions might increase risk

• Clear benefit of electricity to health
Specifics of Application of PP to EMF

- Benchmark using existing exposure levels
- Distinguish new and existing facilities
- Distinguish voluntary and involuntary sources of exposure
- Distinguish exposure to children and adults
Criticisms of PP as it Applies to EMF

- Too far
  - Abandonment of science
  - Setting precedent
  - Slippery slope
- Not enough
  - Too utilitarian
  - Environmental justice
- Not well defined
PP: Define, Refine or Replace?

- Risks are always present and there are always some uncertainties
  - Possibility of risk in itself does not justify action
  - Uncertainty in itself does not justify inaction
- One must consider tradeoffs
  - Other risks
  - Risk to others
  - Benefits
  - Costs
PP: Define, Refine or Replace?

PP General principle in need of framework

- Who is practicing PP
  - Individual
  - Industry
  - Society
- What is the setting
  - Health
  - Occupational
  - Environment
- Who pays and who benefits
PP: Define, Refine or Replace?

PP General principle in need of framework

- Should not undermine scientific evaluations and science-based guidelines
- Unified terminology with risk evaluations
- Means to reduce uncertainty
- Ways to monitor and refine consequences of action
- Admit that evaluation of risk is based
  - on science
  - and judgment