Assessing and Managing Risk: First Things First

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22 June 2009
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Regulatory Risk Analysis

- **Quantitative risk assessment**: developed in reaction to laws and judicial decisions calling for limits on chemical exposures that protect public health.

Hazard Identification

- Dose-response assessment
- Exposure assessment

Toxicity and exposure data

Politics

- Social factors
- Risk characterization
- Economics
- Feasibility

Protect public health

*HealthRisk Strategies*
“Risk characterization should be a decision-driven activity, directed toward informing choices and solving problems.”

“The purpose of risk characterization is to enhance practical understanding and to illuminate practical choices.”
Recommended a six-step process for risk-informed decision-making:

1. Defining problem & identifying options and potential decisions with stakeholder input
2. Scoping analysis
3. Data collection
4. Risk assessment
5. Additional analysis & data collection
6. Decision
Science & Decisions
National Academy of Sciences (2009)

“. . . risk assessment should be viewed as a method for evaluating the relative merits of various options for managing risk rather than as an end in itself.”

3 phases: problem formulation, scoping, identify options; risk assessment; risk management; includes stakeholders
Characterize risk management problem & potential solutions

Perform analysis needed to decide among potential solutions

Choose & implement solution
Public Health Approach

- Emphasizes prevention & effectiveness
- Characterizes adverse health effects, identifies possible causes & their relative contribution
- Targets risk management actions
Impediments/Solutions (1)

- Problem: Defining public health goals and accomplishments in terms of permitting, numbers of enforcement actions, numbers of chemical exposure limits set
- Solution: Redefine public health goals and accomplishments in terms of public health (with encouragement from OMB); generate public-health surveillance data to help connect outcomes with exposure & other factors
Impediments/Solutions (2)

• Problem: Statutory constraints & requirements that focus on bottom-up, chemical-by-chemical approaches

• Solution: Creative statutory interpretation in terms of a top-down, public health context; regulatory effectiveness evaluation in public health terms (with encouragement from OIRA)