

Update on Exposure Assessment Guidelines

*Gary Bangs, Office of the Science Advisor
Marian Olsen, Region 2*





Presentation Overview

- Guideline Goals
- Input for Draft Exposure Assessment Guidelines
- EPA Guidelines Since 1992
- Expanded Emphasis on Planning, Scoping, and Communication
- Focus on Lifestages and Populations
- Final Chapter: New and Emerging Science
- Special Peer Review Expertise



Guideline Goals

- Provide general principles and approaches to exposure assessment for new assessors and current practitioners
- Outline overall principles and approaches with reference to more technical exposure documents
- Provide more information for particular areas of exposure assessment
- Direct exposure assessors to available guidance, policies, and practices in exposure assessment
- Provide a link to other Guidelines



Input for Draft Exposure Assessment Guidelines

Input from internal stakeholders

- EPA Colloquium – April 2005
- Regional Risk Assessors – May 2005
- SPC Steering Committee Briefing – March 2006

Dialogue with external stakeholders

- Panel (State, Tribal, Academic, Industry) at ISEA Annual Meeting – November 2005
- NGO Comments – December 2005
- Briefed CENR and exposure scientists from other Federal Agencies – Spring 2006
- SAB IHEC – September 2006



EPA Guidelines Since 1992

- 1997: Planning and Scoping
- 1997: Guiding Principles for Monte Carlo Analysis
- 2000: Risk Characterization Handbook
- 2003: Framework for Cumulative Risk Assessment
- 2004: RAGS Part E
- 2005: Revised Cancer Guidelines and Supplemental Guidance for Children
- 2005: Guidance on Selecting Age Groups for Monitoring and Assessing Childhood Exposures to Environmental Contaminants

Focus on Lifestages and Populations

- Lifestages
 - Children
 - Others including the elderly
 - Identify sources of exposure information
- Differentially Exposed Populations
- Aggregate and Cumulative Assessments
 - Multi-Stressor, multi-pathway
 - Acute or Catastrophic Events

Expanded Emphasis on Planning, Scoping, and Communication

- Outreach to communities/Community Involvement
- Presentation of exposure information
- Planning and conducting observational human exposure measurement studies
- Integrated assessments:
 - Linking exposure and toxicity information
- Identify, analyze and communicate uncertainties



Final Chapter: New and Emerging Science

- Exposure modeling/monitoring
- Bioinformatics (interpreting biomonitoring, health statistics)
- New Technologies
 - Genomics, other -omics
 - Computational Toxicology
 - Nanomaterials

Special Peer Review Expertise

- Observational Human Exposure Measurement
 - Epidemiological Studies
 - Biomonitoring Data
- Probabilistic Risk Analysis
 - Variability and Uncertainty
 - Communication
- Exposure Modeling
- Communication and Community Based Risk Assessment

Special Peer Review Expertise (Cont.)

- Aggregating Exposures and Cumulative risk
- Dermal exposure / surface contact and transfer
- Emerging Trends Areas
 - Use of -omics data
 - Nanoscale materials
 - Variability and susceptibility in populations