

Considerations for Longer-Term Approaches to Air Toxics Benefits Assessment

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Overview

- Outside Recommendations
- Improving Benefits Methods
- Improving Data
- Improving Models

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Outside Recommendations

- SAB feedback on benzene case study:
 - Move away from pollutant-by-pollutant approach
- NAS:
 - Develop comprehensive AQ management approach
 - Unify cancer and non-cancer risk assessment approaches

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Options to Improve Methods



- Estimating willingness to pay for risk reduction
 - Different risks, different age cohorts
 - Objective vs. subjective risk
 - WTP when there is poor risk information
 - Incorporate multiple sources and types of exposure

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Options to Improve Methods

- Better qualitative assessments
 - Improve qualitative description of benefits
 - Develop information useful for decision-makers and the public
- Better characterization of equity considerations
 - Difference in exposure and risk among demographic groups
 - Impacts of different regulatory approaches

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Options to Improve Methods

- Expand and improve multi-pollutant approaches
 - Multi-pollutant and multi-media analyses
 - Including sector-based analyses
 - Quantify co-benefits
 - Ozone and PM, for example
- Expand case studies and NATA
 - More pollutants
 - More extensive health endpoints

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Options to Improve Methods and Data

- Health Characterization
 - Epidemiology studies at environmental exposure levels
 - Non-cancer values for benefits assessment
 - Account for higher risks from childhood exposure
 - Acute effects
 - Partial lifetime probabilities
 - Changes in survival over time
 - Cessation lag estimates

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Options to Improve Data

- Inventories
 - More data from State and local governments
 - Better spatial allocation for mobile and area sources
 - Better information on start-up, shut-down, and malfunction emissions from major sources
 - More data on fast growing source categories
- Ambient Monitoring
 - Critical for model evaluation and understanding local impacts

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Options to Improve Models



- Air Quality
 - Add mechanisms for more toxics to CMAQ
 - Improved resolution
 - Hybrid models
 - Combine photochemical and dispersion models
 - Can better capture near road impacts

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Options to Improve Models

- Exposure
 - Update microenvironmental factors
 - Account for elevated exposures near roads
 - Improve approaches to account for indoor sources
 - For example, attached garage emissions
 - Account for recreational and occupational exposures
 - Assess acute exposures

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For discussion...

- What is missing?
- Are there areas that should be emphasized?
- Are there areas that should be lower priority?
- Things that should be considered?
 - Likelihood of success
 - Time
 - Money
 - ??

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