Overview of EPA's NATA 1996 National-Scale Air Toxics Assessment

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Overview

- Context of the assessment
  - Clean Air Act Air Toxics Strategy
  - EPA's Air Toxics Program
  - Focus on NATA
  - Focus on the National-Scale Assessment
  - Charge for Science Advisory Board review

1990 Clean Air Act Amendments: Air Toxics Strategy

- **Main principles**
  - **First phase: technology-based actions**
  - **Second phase: risk-based actions to fill gaps left by first phase**
- **First phase focused on major stationary sources**
  - **Also smaller "area" sources clustered in urban areas**
  - **Integrated with mobile source regulations and indoor air strategies**

The Air Toxics Program

- **Designed to characterize, prioritize, and equitably address the serious impacts of hazardous air pollutants on public health and the environment through a strategic combination of:**
  - **Regulatory approaches**
  - **Voluntary partnerships**
  - **Ongoing research and assessments**
  - **Educational outreach**

Components of the Air Toxics Program

- Source-specific standards and sector-based standards (e.g., MACTs, Utilities Study)
- Initiatives to focus on multimedia and cumulative risks (e.g., Great Waters, Mercury initiatives, Urban Air Program)
- Educational outreach
- National air toxics assessments (NATA)

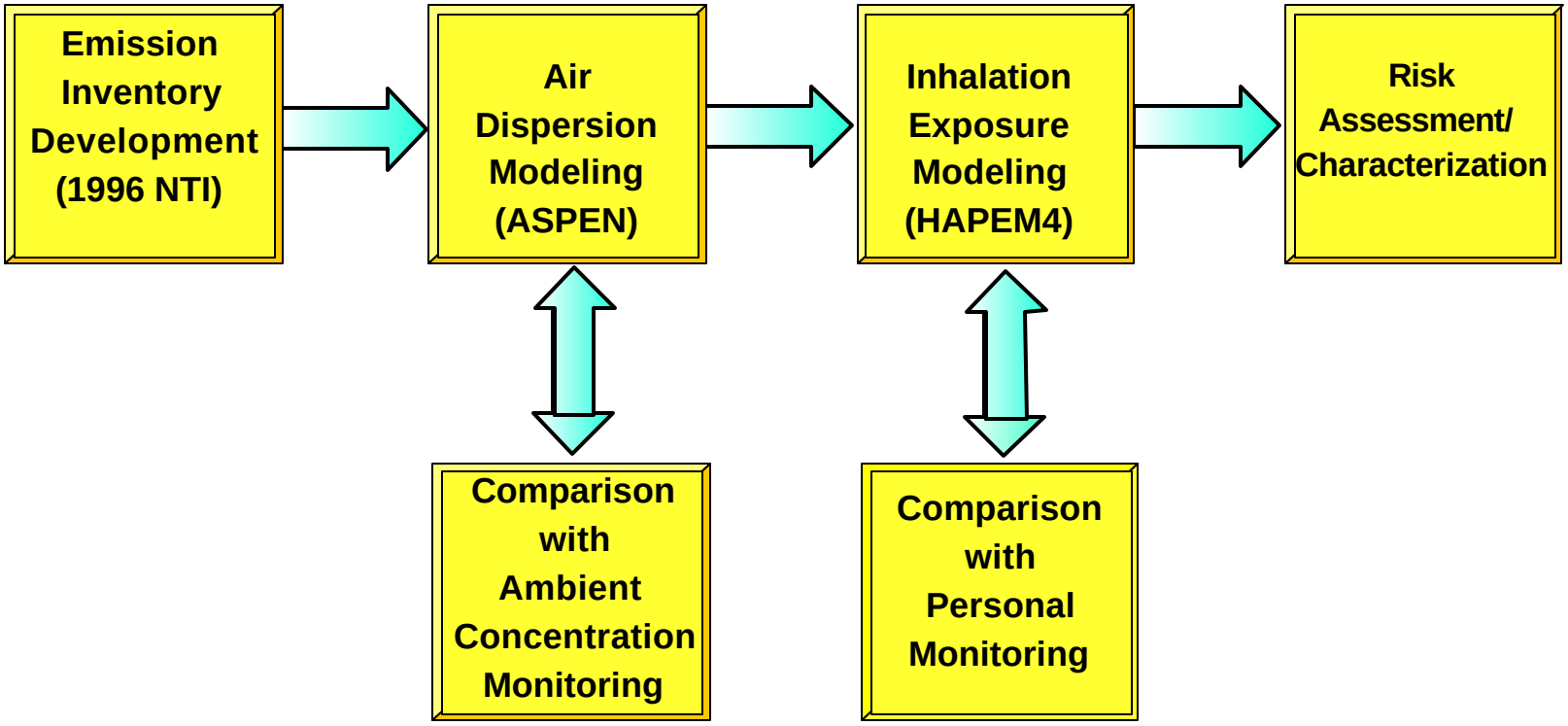
NATA activities are...

- ...a number of technical support activities designed to provide all parts of EPA's Air Toxics Program with the following quantitative, policy-relevant, and consistent information:
  - Emissions inventories
  - Monitoring network
  - Air quality, exposure, and risk modeling
  - Research on effects and assessment tools

NATA encompasses:

- National-scale assessments
- Regional-scale assessments
- Urban-scale assessments
- Local-scale assessments

NATA 1996 National Scale Assessment



Scope of the National-Scale Assessment

- Inhalation exposure only
- Chronic exposures only
- 1996 emissions data
- Indoor sources excluded
- Focuses on average exposures, not individual extremes
- Census tract-level calculations; county-level and higher presentations
- 34 HAPs only

Scope of the National-Scale Assessment: 34 Pollutants

- acetaldehyde
- acrolein
- acrylonitrile
- arsenic compounds
- benzene
- beryllium compounds
- 1,3-butadiene
- cadmium compounds
- carbon tetrachloride
- chloroform
- chromium compounds
- coke oven emissions
- 1,2-dibromoethane (ethylene dibromide)
- 1,2-dichloropropane (propylene dichloride)
- 1,3-dichloropropene
- ethylene dichloride (1,2-dichloroethane)
- ethylene oxide
- formaldehyde
- hexachlorobenzene
- hydrazine
- lead compounds
- manganese compounds
- mercury compounds
- methylene chloride (dichloromethane)
- nickel compounds
- polychlorinated biphenyls (PCBs)
- polycyclic organic matter (POM)
- quinoline
- 2,3,7,8-tetrachlorodibenzo-p-dioxin (including CDD add CDF congeners)
- 1,1,2,2-tetrachloroethane
- tetrachloroethylene (perchloroethylene)
- trichloroethylene
- vinyl chloride
- diesel particulate matter

The NATA National Scale Assessment is...

- ...being used to identify priority air toxics and sources
- ...being used to identify potential national-scale air toxics problems
- ...being used to prioritize future data collection and localized modeling efforts
- ...being used to inform air toxics program development
- ...*NOT* being used to make specific regulatory decisions

Peer Review for the National-Scale Assessment

- National Toxics Inventory (NTI) and modeled ambient concentrations:
  - State / local government review (July 2000)
- Modeled exposure estimates:
  - State / local government review (prior to public release).
- AQ model evaluation methods (model:monitor comparison):
  - SAB peer review (spring 2000).
- HAPEM microenvironment factors and assessment methodology:
  - External peer review (spring / summer 2000)
- Risk characterization
  - SAB peer review (spring 2001)

Important Limitations of the National-Scale Assessment

- Does not currently include CDDs/CDFs
- Background levels approximate; need more research
- Model evaluation indicates tendency to underpredict; means risks may be underestimated
- Bottom-up uncertainty analysis was not possible
  - Report provides illustration of top-down approach
  - OAQPS is developing a plan for full uncertainty analysis over the next year

EPA will use the SAB's review of the NATA National-Scale Assessment to...

- ...shape EPA's risk communication efforts to educate the public about the Air Toxics Program
- ...improve the analysis and presentation of the initial assessment under review
- ...improve the design of future National-Scale Assessments
  - EPA will repeat every three years to track trends
- ...prioritize EPA resources to develop risk assessment tools and information

Charge for SAB Review

- **Scope:**
  - **Overall approach**
  - **Each element of the approach**
- **Areas of interest:**
  - **Use of data**
  - **Integration of models**
  - **How to improve individual elements**
  - **Methods used to summarize and communicate results**
  - **Consistency with CASAC (diesel PM) and potential for benefits analysis**
  - **Any other areas of concern to SAB**