Accelerating the Pace of Chemical Risk Assessment (APCRA)

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The views of this presentation are those of the authors and do not necessarily reflect the views of the US Environmental Protection Agency.

Participants

- **United States:** EPA, NTP
- **Canada:** Health Canada, ECCC
- **Europe:** EChA, EFSA, JRC, INERIS, RIVM
- **Asia:** Korea, Japan, Singapore
- **Australia:** NICNAS
- **OECD**

WORKSHOP GOALS

- To bring together international regulators to discuss progress and barriers in applying new approach methods (NAMs) to prioritization, screening, and quantitative risk assessment of differing levels of complexity.

- To discuss how collaborative case studies informed the objectives of APCRA

Key Questions

- **What are the current barriers to acceptance for successful use of NAMs in regulatory decision-making?**
  - Benchmarking NAMs against laboratory animal studies
  - Potential limitations of existing technologies and their coverage of biology
  - Lack of understanding and confidence in applying NAMs
  - Differing regulatory needs for decision making, with some requiring specific testing requirements

Key Questions

- **What are near-term efforts that can improve use of NAM data?**
  - Analysis of the uncertainties related to NAMs
  - Addressing the limitations of NAMs (e.g., metabolic competence)
  - Explore new ways of describing hazard in ways that NAMs are designed to address (e.g., bioactivity in a certain pathway) and map to risk or safety evaluation

Key Questions

- **What is needed to lead to acceptance of NAMs by regulators and the public?**
  - Increased training and education
  - Communication on the use of NAMs
  - Broader collaboration and more demonstration case studies

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- To discuss how collaborative case studies informed the objectives of APCRA.

APCRA Objectives

- Discussion of how our current and future efforts inform the APCRA objectives:
  - Prioritization
  - First tier assessment
  - Full assessments
  - Replacement of animal studies
  - Classification and Labelling

Desired Outcomes for Workshop 2

- Opportunity for case study members to have a face to face discussions
- Understanding of what case studies have done and how they support the objectives of APCRA
- Exploration of gaps in the overall effort
- Articulation of organizational commitments and timelines for progress
- Discussion on communication and sustainability of APCRA

Case Studies

- Collaborative case studies designed to inform application of NAMs to:
  - Risk Evaluation
  - Chemical Categorization
  - Exposure Evaluation

Ongoing and Proposed Case Studies: Risk Evaluation

- Examining the Utility of In Vitro Bioactivity as a Conservative Point of Departure: A Case Study – US EPA and Health Canada
  - Partners: EChA, EFSA, A*STAR
  - elucidate whether a "region of safety" (ROS), i.e. a threshold below which no bioactivity or toxicity would be anticipated, can be identified using NAMs for a list of chemicals with existing human health evaluations.

- Outline for a project proposal to assess chemicals, using and developing New Approach Methodologies (NAMs) – EChA
  - Partners: Health Canada, EPA, JRC, EC, RIVM, EFSA, A*STAR
  - assess chemicals with very limited toxicological data and significant potential exposure, using both classical toxicological studies and NAM data to use and inform the further development needs for NAM

Ongoing and Proposed Case Studies: Chemical Categorization

- Revisiting and Updating Chemical Categorizations with NAMs – US EPA and Health Canada
  - Partners: ECCC (Environment and Climate Change Canada)
  - develop the machinery to cluster and categorize chemicals based on the available bioactivity data and structural information represented in available in vitro assays.

- Application of NAMs to Chemical Category for Class of Perfluoroalkylated Substances – US EPA
  - Partners: EFSA, ECHA, HealthCanada, NTP
  - develop quantitative, health-based toxicity information, including classical toxicity values where appropriate, to inform decisions regarding public health of PFAS compounds.

Ongoing and Proposed Case Studies: Exposure Evaluation

- Triaging Exposure Data and Modeling Needs for Exogenous Chemicals – US EPA
  - Partners: HealthCanada
  - evaluate the landscape of different levels of information required for generating defensible exposure predictions for use in RA for a set of case study chemicals.

- Linking Exposure to Toxicology Using Lead as Case Study – US EPA
  - Partners: EFSA, CalEPA, INERIS
  - advancing the science and pace of multimedia chemical risk assessments using higher-tier exposure models and biomonitoring information through two data-rich case studies: aggregate multipathway lead exposures and PFOS/PFOA exposures.

Next Steps: Three Main Topic Areas

- **Exploring and addressing gaps in the understanding and acceptance of NAMs for regulatory decisions making through:**
  - Continuation and completion of collaborative case studies.
  - Development of new case studies to potentially address specific regulatory decisions:
    - Existing data gaps in use of NAMs for regulatory decision-making
    - Advancing acceptance of NAMs for use in regulatory decision-making
    - Increasing understanding of NAMs for use in exposure analysis
  - Incorporate relevant case study activities into OECD working groups for broader international engagement.
  - Continued engagement with regulators; advocating for data and knowledge sharing.

Follow-up Items

- Regular teleconferences continue to discuss case studies and collaborative efforts.
- Continuation and completion of collaborative case studies.
- Development of new case studies to potentially address:
  - Existing data gaps in use of NAMs for regulatory decision-making
  - Advancing acceptance of NAMs for use in regulatory decision-making
  - Increasing understanding of NAMs for use in exposure analysis
- On-going considerations to which extent some of these activities will be part of OECD work.

Thank you for your attention!