Emerging Contaminants and Issues of Concern Program

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Emerging Contaminants and Issues of Concern (ECIC)

Program Management Team

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DNTP Strategic Areas of Focus

- Health Effects Innovation Programs
- Exposure-based Research Programs
- Strengthening Capabilities Programs
- Responsive Research Programs

Emerging Contaminants and Issues of Concern (ECIC) Program

Problem Statement

• Emerging issues and emergencies arise unexpectedly, yet regularly that require high-quality, actionable data to protect public health.

• Rapid mobilization of scientific resources in response to such situations can be challenging.

• Responsive programs would need to communicate translationally relevant data in timely manner for public health decision making.
ECIC Program Definitions

*Emerging contaminants or issues of concern (ECIC)* for which there is insufficient toxicological information available for understanding key aspects of risk to human health for contemporary environmental concerns requiring a *prioritized* response.

*Emergencies* that require a *rapid* response when the public has been exposed to a toxicological hazard for which there are insufficient data to adequately characterize potential harm.

Sauvé & Desrosiers, 2014
Why Now?

- Accidental Exposures
- Industrial Contamination
- Natural Disasters
- Public Health Protection
- Limited Resources
- Increased Substance Exposures
- Limited Toxicological Data
Coordinated and Successful Response, Capabilities and Tools, Preparedness, Communication, Awareness, Breaking Silos…
Why Us?

Expertise and Capabilities

Diversity
Toxicology
Knowledge
Tools

Stakeholders
Communication

Strategies
Data Gaps
Products
Feedback
Outreach
Impact

NTP Mission

Lessons Learned

Synthetic Turf
Crumb Rubber
Complex Mixture

Elk River Spill
Emergency
Response

Expertise and Capabilities

Strategies
Data Gaps
Products
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NTP Mission

Lessons Learned

Synthetic Turf
Crumb Rubber
Complex Mixture

Elk River Spill
Emergency
Response
Conceptual Connectivity

Carcinogenesis

Combined Exposures and Mixtures

Herbals

Novel Tools And Approaches

EO CRC: Early Onset Colorectal Cancer
EO CRC: Emerging Contaminants and Issues of Concern;
EHD: Environmental Health Disparities
PFAS: Per- and Polyfluoroalkyl Substances

Consumer Products and Therapeutics

Safe and Sustainable Alternatives

Occupational and Inhalation

Boron Sunscreens

PFAS Ionic Liquids

Nanomaterials Mold
ECIC Program Objectives

1. Address emerging issues where DNTP may apply capabilities and expertise to effectively respond to public health issues in a timely way using a ‘Decision Framework’.

2. Use ‘horizon scanning’ or scoping activities to proactively identify emerging contaminants and issues of concern, especially pertaining to historically marginalized populations.

3. Formulate and apply strategic approaches, leveraging the breadth of DNTP capabilities, that allow for fit-for-purpose research responses to emerging contaminants, diseases, disasters, or other concerns.
Objective 1: Decision Framework

What
Does it meet the ECIC definition for emergency, emerging contaminants, or issue of concern?

How
Does it require “responsive research” (e.g., consistent with ECIC problem statement)?

A Top Down
B Bottom Up
C Horizon Scanning

Insufficient toxicological information?
Concern for potential harm?
Contemporary problem?
Rapid, timely, prioritized response? Have available tools?
Fit for purpose/tailored response?
Coordinated response and alignment of resources?
Objective 1: Decision Framework

Alignment
- Mission
- Vision
- Translational Pipeline
- DNTP provides unique contributions

Value proposition
- Stakeholder interest
- Potential impacts outweigh risk
- Scope of work is manageable
- Outcomes are achievable

ECIC project?
- Yes
  - Should DNTP study this?
    - Yes
      - Sent to other Programs
    - No
  - No

A
B
C
Objective 2: Horizon Scanning and Scoping

Proactive Identification of Future Issues

- What is constant?
- What changes?
- What constantly changes?
Objective 3: Strategies for Prioritized Response

Formulate and Apply Strategic Approaches
Objective 3: Strategies for Prioritized Response

Formulate and Apply Strategic Approaches

Assess ➔ Choose ➔ Network ➔ Homework

- Homework
- E=mc²
- Network
Objective 3: Strategies for Prioritized Response

Coordination and Regular Communication

Board of Scientific Counselors Advice → Stakeholder Engagement → Lessons Learned → Disaster Research Response

Consult with other Programs

ECIC Prioritized Project Plan
Selected DNTP Responses to ECIC

**Chronic Kidney Disease of Unknown Origin (CKDu)**
Multiple causes in rural agriculture populations

**Glyphosate**
Issue of concern
Widely used herbicide

**Boron**
Drinking water contaminant lacking developmental exposure data

**Sulfolane**
Emerging Drinking water contaminant
Stakeholder Engagement
Program Stakeholder Engagement
Program Stakeholders Identified
CKDu: Chronic Kidney Disease of unknown origins
EHD: Environmental Health Disparities
TCPMe: Tris(4-chlorophenyl)methanol
PCB 11: 3,3’-dichlorobiphenyl
*Multiple studies are associated with the same chemical/issue of concern
ECIC Program Strategic Projects

Develop Guidance
- Prioritized Response
- Rapid Response
- Fit-for-Purpose Response
- Project Review Protocol

Tools and Approaches
- Characterize
- Identify
- Integrate
- Utilize

Capabilities

Strategies
- Decision Framework
- Horizon Scanning and Scoping
- ECIC Identification
- Workshop
- Communication
Strategic Objective Milestones

**Objective 1: Selection/Review of Projects in ECIC Program**
- Request Input for the Decision Framework
- Testing the Effectiveness
- Revise and Finalize the Decision Framework
- Standardized Application of the Decision Framework

**Objective 2: Horizon Scanning and Scoping Activities**
- Communication with the Stakeholders and Project Leads
- Develop Methods to Conduct Horizon Scanning and Scoping Activities
- Apply Methods to Identify ECIC
- Develop Systems for Communication w/ Stakeholders

**Objective 3: Strategies for Prioritized Response**
- Draft Rapid Response Plan
- Communication
- Characterize Tools/Capabilities, Identify Gaps and Develop Guidance
- Prepare Cross agency Publication on Strategies for Rapid Responses
Program Stakeholders

Project Leads
Christopher Weis (NECRI)
Aubrey Miller (DR2 Team)
Alex Merrick (Fire Drill, Novel Tools and Approaches Program)
Steve Ferguson (Safe and Sustainable Alternatives Program)
Scott Auerbach (Lessons Learned, Elk River Spill)
Thank You!
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Stephanie Smith-Roe