Human environmental health in the UK: Five strategic questions

Dr Ovnair Sepai
Principal Toxicologist
Toxicology Department
General Comments - not focused on flame retardants

- Weight of Evidence (Q2 & 4)
  - New methods
  - Screening
  - Work with Chem Industry
  - UK REACH

- SSbD (Q1)
  - What & why?
  - Life cycle
  - Innovation
  - UK REACH

- Prioritisation (Q3)
  - Strategy in silos!
  - Criteria
  - UK Stakeholders

- Public Awareness (Q5)
  - Constant effort
  - Strategies in many areas of work
  - UKHSA website
Strengthening the Human Environmental Health Research and Policy Interface in the UK

• Training programs in environmental health research and policy need to be established both in British universities and through regulatory agencies in the UK.

• Science continuously evolves, both as to methodologies and understanding. 21st century science needs to be utilized as well as guidelines studies if we are going to protect the public from environmental harms.

• A weight of evidence approach needs to be utilized in policy decisions including balancing of the hazards and risks with the benefits.

Linda S. Birnbaum, PhD
Scientist Emeritus and Former Director, NIEHS and NTP
Scholar in Residence, Duke University
Three Bullet Point Reactions to Challenges for 13th June Workshop

Andy Stirling, Science Policy Research Unit, University of Sussex

1: Do not succumb to fragmentation and ‘divide and rule’

Given that the only rationale responses involve substitution, the most strategically and tactically effective ways to address any particular chemical hazard (like FRs) is in the context of a regulatory framework that more comprehensively addresses all hazards.

2: Hard-won achievements on precaution need defending

By highlighting inadequacy of risk-based approaches under uncertainty, many forms of the Precautionary Principle are the most important bulwark against (Brexit-reinforced) industry-driven efforts to weaken chemical protection. This needs explicit defence.

3: Progress relies on alliances around integrative approaches

Against backdrop of globalising industry pressures, post economic crash, post Brexit, post covid, (post) Ukraine war pressures make environmental health protection position more difficult than ever, requiring broad alliances environment / health / consumer around integrative themes like precaution across different product sectors.
HEH Roundtable

Andreas Kortenkamp
Brunel University London
Questions and (some) answers

• 40,000 chemicals – chemical-by-chemical evaluation unsustainable: **Group-wise approaches to assessment** (QSAR, read-across, analogue-approach, category-approach etc.)

• Exploit mixture risk assessments for prioritisations: **Drivers of mixture risks**

• Ring-fenced, targeted funding for research
1. Aim to change the UK furniture fire regs to a smouldering cigarette test (as in US/EU)

2. How? Open letter to MP....petition.....TV news.....BSI group.... need a figurehead.

3. Need from today? A UK Scientific Consensus signed by UK scientists on flame retardants and their health, environmental and fire safety concerns.

Delythupholstery@gmail.com
Open letter at: www.delythupholstery.com/sustainability
MRC response

• Understand the interactions with human physiology → links/risks to human disease → solution/policy

• Environmental exposures – human health at the forefront

• Environment and health research in the UK – more researchers or better networking?
Key Strategic Questions – Frank Kelly

1. How do we encourage products to be designed in a way that minimises the use of chemicals that pose, or may turn out to pose, risks to human health?

Encouragement (legislation), that leads to the use of sustainable, low toxicity materials and chemicals, should provide an economic benefit to the manufacturer (penalise the bad and encourage the good).

2. How do we efficiently keep abreast of the changing evidence base for human health risks posed by chemical substances?

4. How do we ensure the full breadth of evidence is given proportionate weight in identifying chemical substances that may present risks to human health?

This cannot be brokered by any one group, or even country – the size of the challenge (number of chemicals) is too large. Generating accurate, transparent, timely summaries of the current state of, and changes to, the evidence relating to any given substance can only be achieved by an overarching international body (under UNEP or WHO). Importantly, it needs to have an inclusive scope that covers all chemical and waste and with this approach, consistency of evidence relating to any given substance can be achieved.

5. How do we promote a general, robust culture of human environmental health awareness and research in the UK?

A key underlying problem in the UK is that academics working at the science-policy interface are undervalued, in that, their work is under-recognised and rewarded, in comparison too if they use their time to publish papers or write another successful grant application (i.e. as typified by REF metrics).
Evidence & evidence synthesis

- Stages of development and use at which evidence needs to be collated and mapping robust evidence standards
- Guidance for study conduct and reporting
- Role of registries, and AI/automation in collating relevant research literature
Reaction to general themes:

- **Funding** for academic research on chemical exposures, which looks at “real-life” exposure is notoriously difficult to obtain, need a better approach to make sure evidence is balanced

- **Current toxicity assessment** - can this be improved? Is it relevant to the complexities of long term human exposure?

- Increase **public awareness** without causing panic
Roundtable on Human Environmental Health Research
Tom Woolley June 2022 tom.woolley@btconnect.com

June 14 2022, 5 years since the Grenfell fire
Fires are becoming more common and do not seem to be constrained by flame retardants.
Smoke toxicity is not regulated. Natural non-flammable materials are not supported in mainstream
building. The profits of plastic foam insulation manufacturers have gone up since Grenfell.
We can build with non-toxic non flammable materials such as hempcrete that survive fires.

Study to evaluate the need to regulate within the Framework of Regulation (EU) 305/2011 on the toxicity of
smoke produced by construction products in fires
Final Report

Kingspan increases profit 50%
In Harlow (U.K.) on 15-05-2015

Mataerials got boosted by strong demand and acquisitions
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persuading raw material producers to continue.
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profits rose by 40% in 2013/14 to 470.

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buiders, home-makers, architects, environmentalists who want to reduce
the impact of construction on the planet

Tom Woolley is an architect, educator and builder who has campaigned for the wider use of green
building materials since helping to build the Green Buildings Project in the 1970s. Following
his work in the EU and worldwide, he helped develop the sustainable architecture Awards scheme at
The Green Building Centre, where he also helps to establish hempcrete construction, and is Chair of the
UK Clear Air Campaign and a consultant to EU-EPA, the Environmental Cadastre Standards.

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www.crowood.com
Olwenn Martin
University College London

#1 Improved Product Design - Will Safe and Sustainable by Design chemicals be sufficient to support better product design? What about essential use?

# 2-4 Keeping on top of evidence - Harnessing the power of machine learning for systematic literature search, screening and annotation; Adverse Outcome Networks as organizing frameworks to deal with groups of chemicals; recognize the dynamic nature of evidence (e.g. in LCA tools)

# 5 Culture – Build (transdisciplinary) capacity, multi-stakeholder cooperation, recognise social inequalities (distributional nature of risks and impacts). Fund it and they will come!
Ways forward

- Addressing the lack of adequate information on the chemical content of products and minimising the content of certain chemicals in products
- Enhancing regulatory environment as to allow for better compilation of evidence and use of new approach methodologies
- More efficient grouping of chemicals in risk assessment