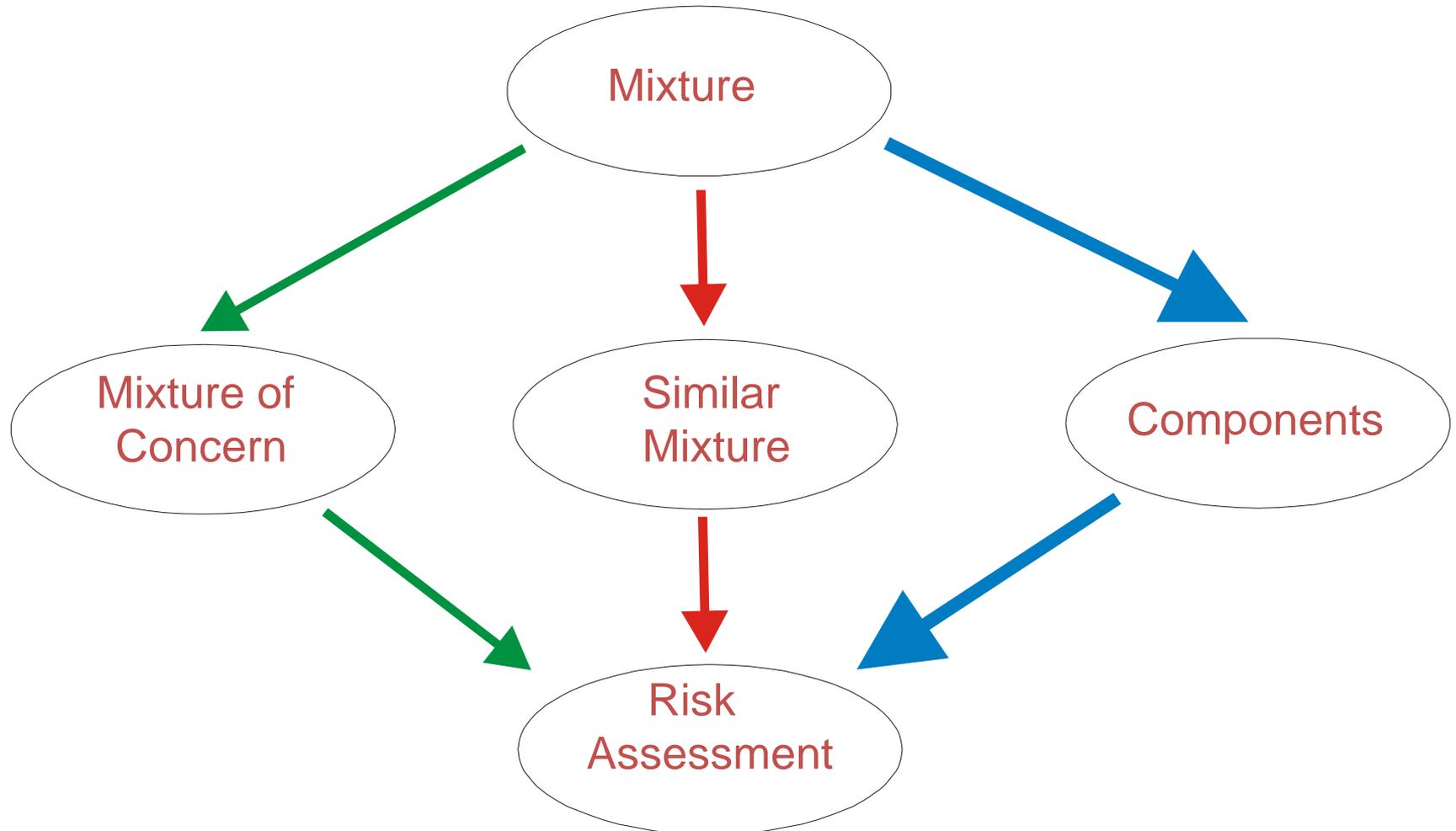


Day 1 Breakout Session: Risk Assessment

Chairperson: Moiz Mumtaz, PhD
ATSDR/CDC

Principles of Mixtures Evaluation



Underlying Scientific Knowledge Gaps (Hazard)

- Lack of toxicity data for individual compounds
- Advancing/defining methods for clustering/classification/grouping
 - E.g. sufficient similarity (substantial equivalents)
- HTS: Establishing linkage between different biological levels for bioassay data
 - E.g. Linking *in vitro* endpoints to *in vivo* endpoints
- Describing uncertainty - knowing you have interrogated enough biological dimensions
- Interventions in risk reduction

Underlying Scientific Knowledge Gaps (Exposure)

- Identification of mixture of interest/better define exposure data to identify mixtures
 - Defined mixtures: mixtures we know components of
 - Identifying mixtures we don't know about (real world mixtures)
- Lack of data on mixtures at different routes of exposures

Issues Encountered in Performing Risk Assessment of Mixtures

- Issues of uncertainty encountered in doing a risk assessment can inform underlying scientific knowledge gaps
 - Iterative process where risk assessment improves
- Life stage toxicity testing - differences in susceptibility
- Relating *in vitro* HTS assays to apical endpoints - need more case studies
- Interactions - developing methods to predict interactions that aren't dose additive

Types of Scientific Data Required

- In vitro
- Whole animal
- Epidemiological – new and better use of existing
 - Common chronic diseases across populations as an anchor for mechanistic data
- Expanding technology for detecting real-time exposures

Technologies and Innovative Approaches

- Multidisciplinary teams required through grant opportunities

Discussants

Michael Babich

George Bollweg

Mike DeVito

Bethany Hannas (rapporteur)

Andrew Hotchkiss

Ronald Lorentzen

Anna Lowit

Jennifer McPartland

Moiz Mumtaz(chairperson)

Glenn Rice

Andrew Salmon

Bill Suk

Linda Teuschler

Claudia Thompson

Nigel Walker

Tracey Woodruff