NAS Children's Environmental Health Workshop Highlights

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CHILDREN'S ENVIRONMENTAL HEALTH NETWORK

Our Mission and Work

Our Mission:
To protect all developing children from environmental hazards and promote a healthy environment.

Our Work:
- Promote/support preventive research
- Translate, educate, and train
- Child protective policies

Celebrating 30 years!

CEH Day October 13th!

Discussion Themes

- Day 1: Leveraging past and discoveries to inform future research & action. Filling critical scientific gaps
- Day 2: Environmental influences across the lifespan and generations
- Day 3: Harnessing data for decision making
- Day 4: Case examples

  Balancing uncertainty and prevention

Acknowledgements

- Investments in children overall are seriously lacking. Combined with an increase in chemical production.
- We have yet to effectively apply what we know is happening from available science to broadly protecting vulnerable populations, such as children.
- Life long impacts due to environmental exposures (especially in critical windows of development) continue to present in research findings
- Health Equity requires climate action (Aaron Bernstein). Climate change and chemical exposures are interconnected (surpassing planetary boundaries)
- Mental health holds high connections to environmental exposures and climate change especially. Includes self-reported diagnosis. We need to bring in biology and non-genetic components for diagnosis, other than behavioral sciences. Climate anxiety, cumulative impacts, adverse childhood experiences link to onset of mental and health and mental health conditions (Ricky Perera/Paul Juarez)

Acknowledgements

- Great appreciation for OCHP and successes within the past 25 years!
- Lots of information, best practices, opportunities and challenges have been passed along this week. For one of the smallest offices at EPA, growth in size and capacity of the office is necessary to meet the magnitude and expectation of the mission
- Still basic educational needs (connecting env. exposures to health outcomes)
  - CEH needs to be incorporated into all EPA and agency work
- We lack basic data about community health. We lack a comprehensive surveillance system to help connect the dots to exposure endpoints (Tom Burke)
- Decline of funding in CEH research (ie. Children's Center of Excellence)
- Need to work with health economists to better articulate the cost of unhealthy/unjust communities


INFLUENCE
ENTITY
ENERGY
COMPLEX
INPUT
SYSTEMS
INFORMATION
PROCESS
MATERIAL
OVERALL
SCIENCE
THINKING
PROBLEM
APPROACH
UNDERSTANDING
COMPONENTS
SYSTEM
SOLVING
OUTPUT

Discuss the state of knowledge on environmental exposures during vulnerable life stages (preconception, prenatal, infancy, early childhood, adolescence).

- Intersection between climate change, plastics production, and overall chemical production that provides a strong backdrop to the inequity realities that we as a society are challenged with (Mark Miller).
- Investing in data infrastructure is important (Tracey Woodruff).
- High chemical exposures detected during pregnancy
- Social determinants of health continue to drive disparities (ie. Hispanic women and increased exposures to chemicals during pregnancy, creating generational impacts)

Opportunities

- EPA under TSCA must now evaluate higher exposures to vulnerable infants, children, and pregnant woman.
- - Opportunity to address developmental susceptibility and requires data to better understand exposures.

  - Opportunity to look at other authoritative bodies that have increased human variability adjustment factors (ie. CA Office of Env. Health Hazard Assessment increased adjustment factor from 10 to 30 based on age-specific differences in chemical metabolism between children and adults).
- <u>EPA can expand in susceptibility during pregnancy specifically</u>
- EPA's current risk assessment process may not account for children's increased health susceptibility.
- Place-based environments where children spend majority of their time (homes, child care, schools) should not be forgotten as opportunities to leverage/showcase best practices, increase partnerships

Identify scientific areas that may be important to advance our understanding of life stage vulnerabilities, including transgenerational, and children's health

* Offered three of the largest threats to CEH and OCHP are climate change, air pollution, and chemical pollution (including pesticides and plastics, and intersections with EJ and the built environment) – Phil Landrigan

- Many other speakers spoke to the connections between CEH and climate change (ie. rising heat exposures, mental health, injustice, stress)

- Researchers have to be trained to assess and document the impacts of climate change to CEH. Have teams of investigators ready to go when climate disasters happen.

- Conducting & modeling studies with multidisciplinary teams that include climate scientists, oceanographers, and medical geographers to track short and long-term trends
  - Opportunity to further define most impacted communities in detail

* Opportunity to include economic analysis in our case, along with health, equity

* Move from singular to complex exposure pathways

Identify scientific-based opportunities critical for improving risk assessment and regulatory decision making aimed at improving children's health.

- Time to re-think risk assessment as a tool for prevention to articulate the true cumulative risks within communities for the purpose of characterizing the risk to children (Linda Birnbaum)
- Opportunities to move from singular exposure assessments to cumulative assessments, including quantitative risk considerations
- Utilizing Toxic Substances Control Act (TSCA) to move upstream and use early indicators of harm and animal/in vitro systems to identify exposure pathways
- Use of trusted messengers at the community level of toxic effects of chemical exposures. Communication of risk and uncertainty as well.
- Move to a place of classes and mixtures of chemical exposures to help move away from replacement concerns. EPA could make recommendations for how to synthesize such results (Kelly Ferguson)

Improving Risk Assessment

- It is possible to identify new and existing exposures with banked biobanked data (Chirag Patel)
- Data can be generated from non-traditional practices such as community-driven science (quantitative as well as available qualitative outcomes). More can be done to broaden the ways of measuring risk,
- Cost-benefit analysis is important to include along with health and equity assessments
- Big data can be mined for interactions such as gene-environment interactions
- Mining environmental health records (Kaiser, hospitalizations, drinking water, PFAS).
  - There are also public records from water suppliers (for example)
- IRIS (Integrated Risk Information System) at EPA looks at life stage, mapping, modeling, recognition of multiple routes of exposures. Ways to leverage?

How contemporary scientific knowledge may improve policies and programs to protect children's health

ECHO
Environmental influences on Child Health Outcomes
A program supported by the NIH

- Overall, still not effectively translating science systematically into protecti policies. Frequently, economic realities of prevention of exposures/illness a out of discussions/concepts
- Need for systemic level changes
- Need policies to reduce chemical exposures without leading to other toxic exposures
- Leverage leadership opportunities within the Presidential Task Force on Environmental Health Risks and Safety Risks to Children and current administration priorities such as the Cancer Moonshot (many of us are working to make primary prevention of cancer from environmental exposures a chief goal)

Improving Policies and Programs

- Paradigm shift is necessary to place the onus on those that financially benefit pay for cost of testing prior to use/stay on market
- Leverage strong/trusted general communicators and advocates (local officials, health care professionals, youth, community leaders, NGO partners)
- Strong support for the growth and expansion of the PEHSU program
- Communicate the need for action at the national and local levels
- Local climate actions that protect all, especially children
  - Shut down fossil-fuel-fired power plants
  - Block construction of gas and oil pipelines and forbid gas hook-ups in new construction
  - Provide tax breaks and subsidies for wind and solar at both the individual and the system level
  - Require operators of electric power grids to favor renewable energy over electricity produced by fossil fuel
    - combustion
  - Convert state and city vehicle fleets to hybrid or all-electric
  - Mandate that by 2030 75% of all new cars and trucks sold in the state be hybrid or all-electric

Improving Policies and Programs

- **Build partnerships with diverse groups** - faith-based organizations, environmental justice community, sustainable business community, health economists, youth, foundations, journalists, and grass-roots advocates
- **Air pollution research recommendations**
- Identify and quantify emissions from air pollution sources at the state and local level – both particulate emissions and toxic emissions
- Produce fine-grained, highly localized maps of air pollution levels
- Document and quantify the health consequences of air pollution at the local level
- Document the economic costs of air pollution, noting that these are “externalized” costs
- Emphasize that all climate advocacy actions are relevant. They produce a **double benefit** by also reducing air pollution
- Work individually and through national organizations to urge EPA to reduce the PM2.5 air pollution standard from 12μg/M^3 to at least 5μg/M^3

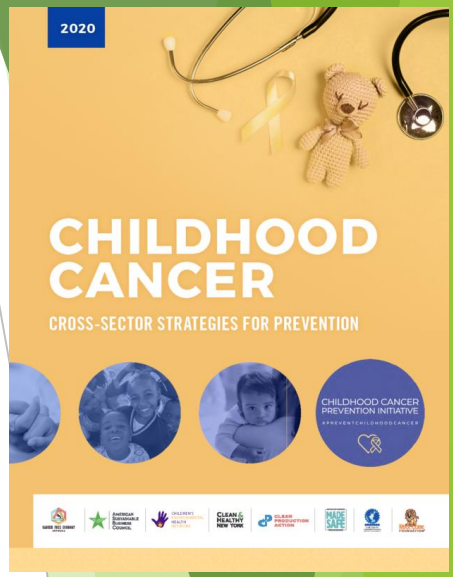
Case Examples

- Minnesota, Washington State, NYS CEH Centers
- Recommendations
  - Uncertainty should not impact actions. Any identification of negative health effects should mobilize action (Precautionary Principle)
- Working across silos to find better solutions and increase needed capacity
- Policies that facilitate environmental health at the local level are very impactful (reducing the burden to individual community members)
- Recommendations to EPA –
  - Working with key community partners is vital
  - Champion incubation (leveraging existing programs)
  - Expand/build upon resources in other parts of the country to better met capacity needs in regions over the country (Regional CEH)
- Investing in people - Building the workforce!!
  - Regulatory authority needs for health departments to do their work

Balancing Uncertainty & Prevention

- Incentivizing the production of chemicals versus not
- Business economic cases for safer chemicals
  - Ex. Making the Case for Safer Chemicals
  - Ex. Investor letter for prevention childhood cancer
- Raising the consciousness of the public
- Regulatory risk assessment with training at community level
- Opportunity to gain lessons from outside the U.S. (REACH, Biomonitoring for Europe Example)
- Opportunity to ensure responsible business leaders are heard
- Opportunities within existing laws to expand protections
- Intentional work toward safer alternatives
- Ensuring policy leaders are equipped with prevention-oriented strategies/case examples/economic benefits for child-protective legislation (especially at the state level)

Driving Innovation to promote and protect children's health through OCHP's national platform!



Health Equality

- “The route to achieving equity will not be accomplished through treating everyone equally. It will be achieved by treating everyone justly according to their circumstances.”
  - Paula Dressel, Race Matters Institute

Contact Information

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Thank you!!

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