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February 18, 2020

Administrator Andrew Wheeler United States Environmental Protection Agency 1200 Pennsylvania Ave, NW Washington, DC 20460

Re: Recommendations for improving EPA risk communication for children's health risks

Dear Administrator Wheeler:

The Children's Health Protection Advisory Committee (CHPAC) commends the Environmental Protection Agency (EPA) for its commitment to prioritize and improve risk communication across the Agency. We appreciate your recognition that risk communication "goes to the heart of EPA's mission of protecting public health and the environment."¹ Thank you for the opportunity to lend our expertise to communication strategies specifically targeted toward children's environmental exposures and health risks.

In general, successful children's environmental health risk communication:

- Addresses the special vulnerabilities that children face because of their unique behaviors, exposure routes, developing bodies and dependence on adults for their care.
- Is culturally-informed, accessible, and actionable.
- Is conducted as a two-way iterative process with impacted communities that both gathers and disseminates information.
- Is developed in collaboration and coordination with strategic partners to better engage a diverse audience, create consistency and amplify the Agency's efforts.

Charge Question 1: What is risk communication as it relates to this charge?

EPA defines risk communication as "the process of informing people about potential hazards to their person, property, or community."² Starting from this general definition, CHPAC directs EPA's attention to four specific aspects of children's environmental health risk communication.

¹ E&E News. *Wheeler's surprise priority: Risk communication*. <u>https://www.eenews.net/stories/1060089069</u>. ² U.S. Environmental Protection Agency. *Risk Communication Overview*. <u>https://www.epa.gov/risk/risk-</u>

communication.

Children's Health Protection Advisory Committee is a Federal Advisory Committee for the U.S. Environmental Protection Agency under the Federal Advisory Committee Act http://yosemite.epa.gov/ochp/ochpweb.nsf/content/whatwe_advisory.htm

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First, risk communication about children's environmental health must account for the unique vulnerabilities that children face, including: faster breathing and metabolic rates; higher intake of food and water per body weight; larger ratio of skin surface to body size; rapidly dividing and differentiating cells; developing organs and physiology; a breathing zone that is closer to the ground; more contact with dirt and flooring; frequent hand-to-mouth activity and other unique behavioral patterns that may put children at special risk. EPA should ensure that its risk communication strategies include appropriate attention to these factors.

Second, CHPAC encourages EPA to view all risk communication, including those concerning children's environmental health as a continuum between two different, but interrelated modes: planned communication and emergency communication. EPA's planned communications increase awareness of children's environmental health risks so that target audiences can make informed choices or take protective actions. EPA's emergency communications occur under situations of high stress, high public concern, or controversy (*e.g.,* wildfires or contaminated drinking water). These two aspects of risk communication are reinforcing: the more that EPA views planned risk communication as an opportunity to build trust relationships with partners, the more reliably EPA will be able to mobilize those partners to support emergency risk communication needs.

Third, conducting risk communication as a two-way conversation in which EPA informs and is informed by affected community members is appropriate for planned and emergency communications. Centering the need for a two-way flow of information will help EPA take advantage of currently untapped opportunities to gather, rather than merely disseminate, information about environmental health risks to children. Input from community partners can help EPA refine its own understanding of risks, assess how those risks should be prioritized, and determine how the Agency can most effectively communicate about those risks and inform development of risk messaging that is actionable by the target community. Community partners can also help EPA identify important priorities for further research on the topic.

Finally, risk communication must ensure that information can be accessed, understood, and used by all audiences. For example, it is not only important for parents to know about the risk of an environmental agent, but also to understand how they can translate that knowledge into action. Whether the risk is related to lead dust, perfluoroalkyl substance exposure, extreme weather, or another threat, EPA should view risk communication as an opportunity to empower potentially impacted communities and individuals to take positive action.

Charge Question 2: Identify key characteristics, strategies, measurements and tools that EPA could adopt to maximize effectiveness of children's environmental health risk communication and outreach efforts.

Characteristics

When environmental hazards impact children, this fundamentally heightens perception of risk.³ As a result, EPA needs to employ intentional, children's environmental health-tailored strategies to optimize the effectiveness of its risk communication approaches. Effective children's environmental health risk communication should include information that is: 1) accessible; 2) consistent; and 3) results-oriented. In addition, EPA must consider that children are dependent on parents and other caregivers, including schools and daycares to protect them in the places where they live, learn, and play. Communication strategies must engage the audiences in a position to act on the messaging on children's behalf.

³ Paul Slovic, *Perceptions of Risk,* 236 SCIENCE 280 (Apr. 17, 1987).

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Strategies

1) Strategies for Making Children's Environmental Health Risk Communication Accessible:

Risk communication about children's health should be clearly stated and easily understood by the public. Information development should consider principles of basic health literacy and varying capacity to access, understand, and use health information. Materials should account for audience diversity—messages or media that work well for well-educated, techsavvy parents may not work for parents who are not English-literate or those who rarely use the internet. In short, EPA should 'go to' its target audiences.

- CHPAC recommends that materials feature culturally informed images and photographs to communicate to persons of variable educational and language backgrounds. Because good design is essential to successful delivery of these messages, EPA should use staff and consultants skilled in these kinds of communications.
- CHPAC also encourages EPA to create FAQ sheets and short videos that are more suited to mobile phone access on their landing pages for each children's environmental health issue. Over 50 percent of internet traffic is conducted over mobile phones.⁴
- CHPAC encourages EPA to develop 'train the trainer' programs in collaboration with state agencies, Pediatric Environmental Health Specialty Units (PEHSUs), and other key partners that help EPA deliver messages.
- CHPAC recommends that EPA develop and apply multi-faceted strategies for delivering risk communication that includes: direct communications; posters in public places; effective use of social media; and web-based materials. See Appendix 1. Social media can be a particularly effective tool for reaching certain target audiences, including teens, young mothers, and millennials.

2) Strategies for Making Children's Environmental Health Risk Communication Consistent and Culturally Appropriate:

CHPAC recommends that EPA build capacity and expertise for risk communication on children's environmental health issues, preferably within EPA's Office of Children's Health Protection (OCHP). This may include hiring additional risk communication specialists to implement best practices for communicating about children's environmental health issues. Part of capacity building would include developing and maintaining networks with risk communication practitioners at state, tribal, local, and community levels, hosting webinars and sponsoring occasional conferences to support best practices. To expand capacity to oversee effective risk communication, EPA should:

- Integrate children's environmental health risk communication as a core topic across all relevant EPA programs. Tap into EPA's Regional Children's Health Coordinators to facilitate this integration at the ten regional offices.
- Incorporate information on children's unique environmental health risks across different EPA program websites. Per the Office of Inspector General recommendation,⁵ EPA should establish a regular schedule for updating online information to keep pace with new information and policy changes.

⁴ Statista. Mobile internet usage worldwide-statistics & facts. <u>https://www.statista.com/topics/779/mobile-internet/.</u>

⁵ U.S. Environmental Protection Agency. Office of Inspector General, Management Alert - Certain Risk Communication Information for Community Not Up to Date for Amphenol/Franklin Power Products Site in Franklin, Indiana. Report #19-N-0217, June 27, 2019.

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- Task a risk communication specialist in OCHP with coordinating information about children's environmental risks to ensure that the public has access to consistent, accurate, and timely information.
- Clarify roles and responsibilities of OCHP and EPA program staff involved in drafting, reviewing, testing, and clearing messages about children's environmental health. Establish an agency-wide repository of risk communication materials concerning children's environmental health in order to make such materials available across the Agency.

EPA should take steps to "speak with one voice" about children's risks. A lack of consistency undermines public confidence in risk messaging. Children's environmental health risk communication needs to consider processes and procedures in addition to the content to be effective. CHPAC recommends that EPA develop a children's health checklist. This checklist should be part of all risk communication strategies to ensure that risks are appropriately and consistently addressed. CHPAC recommends that the following elements be included on the checklist:

- Who are the stakeholders/audiences (including youth themselves)?
- What do you want recipients to do with the information (e.g., goals and objectives)?
- Are children particularly vulnerable: because of their physiology; behavior; etc.?
- What is the most effective way to reach the intended audience: internet; social media; poster in a public space; health care providers; or community organizations?
- What can be done to reach diverse linguistic and cultural audiences: *e.g.*, should the messages be in multiple languages; can the messages be tied to something culturally significant?
- What is the target audience's level of interest: is the intended audience already interested in the message; how important is it that they be concerned?
- Which partners can help EPA reach the intended audiences and advise the Agency on how to do so?

While consistency of the risk communication message is essential, CHPAC encourages EPA to work with partners to produce linguistically and culturally appropriate materials to communicate that message. A diverse array of risk communication materials is necessary to ensure that messages are delivered in a manner that meets the needs of multiple target audiences. CHPAC has previously provided detailed advice about how EPA can bridge cultural barriers in risk communication on children's health issues. Please revisit our recommendations in our December 2016 letter on the Agricultural Worker Protection Standards.⁶

3) Strategies for Making Children's Environmental Health Risk Communication Actionable:

In developing risk communication messages about children's environmental health, CHPAC recommends that EPA consider the ability of the target population to affect change. When developing a children's environmental health message addressed to an audience that is struggling economically, EPA should identify actions that can be taken at little to no financial cost. For example, caregivers cannot fix the ventilation or plumbing system of their rental

⁶ U.S. Environmental Protection Agency. *Children's Health Protection Advisory Committee*. <u>https://www.epa.gov/sites/production/files/2016-</u>12/documents/2016.12.08 chpac farmworker protection letter final.pdf

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property, but they can crack open a window after taking a shower and use Design for the Environment or Safer Choice cleaning supplies to reduce mold growth that exacerbates their child's asthma.

4) Strategies for Making Children's Environmental Health Risk Communication Results-Oriented:

The practice of evaluating risk communication for effectiveness and appropriateness should be a routine part of EPA's risk communication strategy. Ideally, evaluation will be done while there is still time to feed the results back into the communication process in order to make any needed midcourse corrections. Focus groups, for example, are a well-established method for evaluating the efficacy of educational or communication materials in a specific population before the release of materials. To that end, CHPAC recommends that EPA standardize a protocol for developing outcome indicators for assessing whether target audiences receive and understand the children's environmental health information that EPA communicates. These protocols should also assess whether the risk communication helped target audiences make choices about how to avoid, mitigate, or respond to children's environmental health risks.

Specifically:

- Evaluation methods should be appropriate to the scale and importance of the risk communication effort. In general, more formal resource-intensive evaluation methods will be appropriate for larger scale risk communication efforts. However, EPA should look for opportunities to develop and use quick and easy evaluations of all its children's environmental health risk communication.
- The specific outcome indicators might vary depending on the target audience for a risk communication, and attention to these variations will be essential to achieving environmental equity.
- The Centers for Disease Control's (CDC) evidence-based assessment of tobacco prevention and control programs might serve as a model for how to identify and evaluate key outcome indicators.⁷

Charge Question 2a: Are there previous risk communication efforts on children's environmental health that have worked well?

EPA's Integrated Pest Management (IPM) in schools website⁸ is an example of an accessible, actionable program. It contains clear, well-written, and consistent materials that are useful and easily understood. These materials include checklists and concrete objectives, as well as links to further information about pests and pesticides. The IPM in Schools webpage has direct contact information for relevant Agency staff, an easy sign-up for the School IPM listserv, and permanent links to on-demand IPM webinars for schools. This website is clear, easy to use, and has a lot of information. A school can easily access this information, put it into practice, follow up with questions, and improve the school environment to protect children's health in a meaningful way.

https://www.cdc.gov/tobacco/stateandcommunity/tobacco_control_programs/surveillance_evaluation/key_outcome/p_dfs/FrontMaterial.pdf.

⁷ U.S. Centers for Disease Control and Prevention. *Key Outcome Indicators for Evaluating Comprehensive Tobacco Control Programs*. (2005).

⁸ U.S. Environmental Protection Agency. *Introduction to Integrated Pest Management*. <u>https://www.epa.gov/managing-pests-schools/introduction-integrated-pest-management</u>.

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EPA's 2019 Wildfire Guidance⁹ is an example of successful collaboration. Over nearly two decades, EPA has successfully worked with other federal agencies, multiple state health officials, PEHSUs, and other public health experts to produce smoke-related guidelines. These long-standing collaborations give EPA relationships it can leverage to plan proactively for the increase in climate change-driven wildfires. This collaboration also identified important information gaps about the effects of wildfires on children, and controversies about appropriate mitigation measures for children, giving EPA the opportunity to investigate further through a working group or through funded research. EPA can build on these relationships to further develop scientific and policy consensus that ensures consistent health communication messages about wildfires and can serve as a template for addressing other similar complex and emerging issues.

Charge Question 2b: What are examples of prior risk communication efforts or products that have not worked well?

EPA's handling of PCBs in schools highlights the importance of consistency and clarity as well as the need for better coordination among EPA regional offices and headquarters. Different regions produced different guidance and engaged in inconsistent enforcement actions for managing PCBs in schools. Schools in different regions were held to different standards. The public could see these inconsistencies, and this undermined the Agency's credibility, magnifying public perceptions of risk. In Region 2, EPA risk communication on this issue was not successful. Confusing and incomplete information contributed to increased panic in parents and school staff, while in other regions, the dialogue and website information provided informative and beneficial guidance to parents and schools. EPA missed an opportunity to produce a consistent, understandable message that might have promoted sensible resolution of this fraught topic.

Although Spanish is the predominant language in Puerto Rico and 13 percent of U.S. households speak Spanish at home,¹⁰ the EPA website is mostly written in English. There is limited Spanish language search capability, and the translated pages are written at a technical level unsuitable for the majority of the population. There are few links to further Spanish-language information or to other credible children's health sources. Actionable material addressing parents, teachers, and community leaders on topics relevant to children's environmental health is either absent or difficult to find. In order to avail itself of a key opportunity to reach this large, currently underserved population, EPA should develop a full parallel website in Spanish.

Charge Question 2c: What can EPA learn from other federal and state agencies?

EPA can learn from CDC and National Institutes of Health (NIH) approaches to communication that emphasize language accessibility. In addition to a comprehensive parallel website in Spanish. CDC also provides key information in a multitude of languages including major world languages such as Chinese and Russian, as well as less common languages such as Hmong. NIH provides full Spanish translation for its website from a link at the top of any page. EPA should take steps to ensure that key children's health information is readily available in multiple languages. Many state, tribal, and local agencies have long-standing partnerships with

⁹ U.S. Environmental Protection Agency. *Wildfire Smoke A Guide for Public Health Officials.* (2019). <u>https://www3.epa.gov/airnow/wildfire-smoke/wildfire-smoke-guide-revised-2019.pdf.</u>

¹⁰ U.S. Census. *American Community Survey for U.S. Residents Over the Age of 5.* (2017) <u>https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_17_5YR_DP02&src=pt.</u>

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community groups that can help bring EPA's messaging to language minorities that may be difficult to reach.

Currently, EPA's website needs much more children's environmental health risk communication content that is practical, science-based, culturally-appropriate, and written at a proper health literacy level. EPA can learn from CDC which has developed many effective risk communication materials that pertain to children's health. These range from the Zika posters in Puerto Rico,¹¹ to the Zombie Pandemic graphic novel,¹² to coloring pages on various disaster-related topics.¹³ These communication devices are creative, visually engaging, and take the Agency message into communities that might not otherwise have access. EPA's website and social media platforms represent promising tools for public education and risk communication. From CDC, EPA can learn how to expand the Agency's reach with simple messages that resonate with the full range of audiences. This information must be readily available at a low-literacy level in multiple languages.

EPA can also learn from NIH which has clear, practical risk communication pages such as "Cancer Clusters: What is a cancer cluster?"¹⁴ This page gives clear information on a topic that causes a great deal of fear and uncertainty. It builds agency credibility to communicate what is known, and where uncertainties lie.

Local, tribal, and state agencies are often the first to identify and respond to emerging environmental health threats. As such, EPA should seek out local expertise at the state and local level when developing and implementing its own risk communication activities. To maximize mutual learning between state/local and federal partners, EPA should coordinate risk communication networks on important children's environmental health topics. For example, many public health departments and state and local environmental agencies have programs that support school environmental health. OCHP should work with EPA regional offices to identify key staff and develop networks of state, local, and tribal programs. These networks could help EPA identify major needs for public health advice and help with development of messaging. These networks could also help disseminate and implement that advice. EPA could also strengthen existing networks with state and local partners (*e.g.*, Federal-state Toxicology Risk Analysis Committee, Local Government Advisory Committee).

Charge Question 3: Which priority stakeholders or audiences should children's environmental health risk communication messages target? In what way can EPA improve its coordination with partners to identify the most appropriate messengers and to enhance communicating children's environmental health risks to its key stakeholders?

Each risk communication activity, whether related to emergency or planned communications, will necessarily involve its own set of stakeholders—the people whose knowledge and concerns should be incorporated into the development of risk communication. Many state, tribal, and local agencies have long-standing partnerships with community groups that can help communicate EPA's messaging to populations that may be difficult to reach, such as rural communities far

¹¹ U.S. Centers for Disease Control and Prevention. *Recursos Para Imprimir*. <u>https://www.cdc.gov/zika/es/fs-posters/index.html.</u>

 ¹²U.S. Centers for Disease Control and Prevention. *Zombie Preparedness Graphic Novel*. <u>https://www.cdc.gov/cpr/zombie/novel.htm</u>.
¹³U.S. Centers for Disease Control and Prevention. *Ready Wrigley Books*.

¹³ U.S. Centers for Disease Control and Prevention. *Ready Wrigley Books*. <u>https://www.cdc.gov/cpr/readywrigley/books.htm</u>.

¹⁴ National Institutes of Health. *Cancer Cluster: What is a cancer cluster?* <u>https://www.cancer.gov/about-cancer/causes-prevention/risk/substances/cancer-clusters-fact-sheet</u>.

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from an EPA regional office or specific ethnic/religious groups. Therefore, CHPAC recommends that EPA develop a risk communication process that begins with stakeholder identification. Within that approach, CHPAC encourages EPA to develop a risk communication strategy that addresses two distinct but related audiences:

1) Those directly affected: EPA should increase its capacity to communicate about risk directly with families and communities, keeping in mind that youth are stakeholders in their own health, as are their families, caretakers and community. The more that EPA engages in planned direct communications with families, the better EPA will become at delivering children's environmental health messages to diverse audiences. Building these relationships also increases the likelihood that EPA's risk messaging will be effective under conditions of high stress, high concern, or uncertainty.

2) Trusted partners and messengers: EPA should work collaboratively with a wide array of trusted partners, such as PEHSUs, schools, and nurses that serve schools and the community. PEHSUs, in particular, have been key partners with EPA's Regional Children's Health Coordinators for over 20 years. CHPAC believes there are untapped key partners and recommends that EPA use the list in Appendix 2 to broaden its reach. In addition to maintaining existing partnerships, CHPAC can be a vital tool for helping EPA develop new partners. Trusted partners provide channels of trusted risk communication that EPA can use to deliver children's health messages to affected individuals and communities; and can also be sources of expert information for EPA on myriad aspects of the environmental health risks that children face.

Regarding both target groups, EPA should examine its existing communication networks to identify strengths and weaknesses. Specifically, EPA should identify the points where there is a lack of consistency or gaps in coverage. EPA can then use that information to fill gaps in networks by bringing in new partners, and to build deeper relationships with existing partners, including other federal agencies, state, tribal, and local agencies, as well as PEHSUs, nurses, schools, and local community groups. For example, the American Academy of Pediatrics (AAP) Council on Environmental Health provides advice on childhood lead monitoring and prevention of lead exposure and is a natural partner for Agency risk communicators on issues of lead. OCHP and EPA's Regional Children's Health Coordinators can play a pivotal role in identifying the appropriate stakeholders and audiences, and in tailoring risk communication to the issue at hand. Involving OCHP in these collaborative endeavors will promote continuity within the Agency and enable EPA to center children's health in its overall risk communication processes.

- CHPAC recommends that every EPA region have a Regional Children's Health Coordinator as a point person for coordinating both planned and emergency risk communications related to children's environmental health. This coordinator should organize regular meetings with key partners and stakeholders to establish lines of communication and build working relationships. Such a coordinator can help identify key stakeholders for each risk communication activity.
- Emergency-related communication is particularly challenging. EPA should task expert emergency risk communicators to work closely with local and state agencies to develop risk communication materials and to coordinate changes in risk messages as new information is gathered. This will ensure that these partners incorporate children's environmental health messages into their current activities across a wide range of communities. The more practical, simple, and specific these messages are, the more likely the local agencies are to adopt them and the more likely that solutions can be implemented—even if small in scope.

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- EPA should make a long-term investment in relationship-building with credible, culturally informed local organizations as well as the key partners identified in Appendix 2. These respectful, two-way relationships with diverse groups will facilitate risk communication in moments of crisis and provide EPA with critical information about the unique environmental health risks that children face.
- As part of this investment in relationship building, CHPAC urges EPA to pay close attention to the way that partners bring both vouching (trust) and networks to the partnerships. CHPAC encourages EPA to leverage existing networks, and to consider new technologies to reach beyond the existing footprint of interaction.
- CHPAC recommends that EPA use working groups to coordinate risk communication within different parts of the Agency, and with other agencies to deal with specific issues concerning children. See the response to charge question 2 regarding wildfires for a good example of how to do this effectively.

Thank you again for the opportunity to advise on the development of communication strategies to reduce and prevent children's environmental exposures and health risks. CHPAC appreciates EPA's focus on improving and expanding their risk communication strategies and messaging. We look forward to your response and to seeing and hearing about your progress in connecting with the American people.

Sincerely,

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Barbara Morrissey, M.S. Chair

cc: Jeanne Briskin, Office of Children's Health Protection Nica Louie, Office of Children's Health Protection Madeline Beal, Office of Public Affairs

APPENDIX 1. ALTERNATIVE WAYS THAT EPA COULD REACH TARGET AUDIENCES

- Visual outreach about various topics in places where people congregate, such as airports and other transportation centers, vital records (where people go to obtain birth certificates), county health offices, Departments of Motor Vehicles, movie theaters, shopping centers, co-ops in rural America (especially for messaging the effects of pesticides on children), schools, libraries, or religious institutions.
- Online videos, such as CDC's Zombie Pandemic, that can be shared on social media and potentially translated into many languages.
- Expanded delivery methods through strategic digital communication.
- Train state and local agency personnel directly through regional EPA offices, including developing toolkits with suggested messaging, social media postings, and public statements (*e.g.,* EPA's Safer Choice toolkit).
- Make learning about complicated topics fun, with online videos and games/activities focused on children.
- Incorporate environmental topics into English Language Learning curricula, such as about lead, mold, pesticides, cancer/carcinogens and early exposure to children
- Children's environmental health curricula for early childhood, K-12, and post-secondary education.

APPENDIX 2. RELEVANT STAKEHOLDERS AND AUDIENCES

General Public and Community Groups

- Schools and childcare facilities
- Parents/caregivers, adolescents, and children via public service ads or social media
- Religious organizations and community groups
- Non-governmental and community organizations active in public health or environmental issues
- Rural, municipality, or state community groups such as the rural community assistance partnership, a national network of non-governmental organizations (NGOs) working to ensure that rural and small communities have access to safe drinking water, and groups focused on specific issues, *e.g.*, ground water, soil cleanup, or conservation
- Tribal community organizations
- Immigrant/refugee community and service organizations
- Farmworker organizations
- Free national health text messaging services, *e.g.*, Text4Baby, which aims to provide timely information to pregnant women and new mothers
- Environmental justice organizations (national and local)
- Parent Teachers Associations (PTAs)

Scientific and Health Care Community

- Professional Organizations, including, but not limited to:
 - American Academy of Pediatricians (AAP, local chapters and national)
 - o Association of Women's Health, Obstetric and Neonatal Nurses (AWHONN)
 - o State medical associations
 - American College of Obstetricians and Gynecologists (ACOG, local chapters and national)
 - Pediatric Environmental Health Specialty Units (PEHSUs)
 - o American College of Occupational and Environmental Medicine (ACOEM)
 - American Medical Association (AMA)
 - American Academy of Family Physicians (AAFP)
 - National Indian Health Board
 - o National Association of Community Health Centers
 - o American Association of Poison Control Centers
 - o Alliance of Nurses for a Healthy Environment
 - National Association of School Nurses
 - American Association of Poison Control Centers
 - Migrant Clinicians Network

Public Health and Environmental Professional Organizations (national, state, tribal, or local)

- American Public Health Association
- National Environmental Health Association
- Environmental Council of States (ECOS)
- Association of State and Territorial Health Officials (ASTHO)

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Health Care Systems (including birthing classes and education for new parents) and Hospital Associations

- Rural Health associations
 - National Rural Health Association
- University programs (Degree-granting programs for medicine, public health, nursing, environmental science, *etc.*)
 - State Cooperative Extensions
- Individual providers via continuing education courses on children's environmental health

State, Tribal, and Local Government

- Health Departments
- Human Services Agencies
- Education Departments
- Agricultural Departments
- Offices of the governor, tribal leadership, or mayor
- Environmental Agencies
- City Councils and Planners (e.g., climate change resiliency, floods, fires, etc.)
- Water and Soil Conservation Districts
- Housing Authorities and Agencies

Within Health or Environmental Departments (programs/titles may be agency or location-specific)

- Public Health Laboratories
- State Toxic Free Kids Programs (WA, OR, VT, NY)
- Maternal and Child Health programs (including Family Home Visiting, Special Supplemental Nutrition Program for Women, Infants, and Children (WIC), Child and Teen Check-up)
- Environmental Public Health Tracking Programs (including those associated with CDC)
- Biomonitoring Programs
- Programs focused on indoor air, climate and health, and site assessment/consultation
- Asbestos or Lead Compliance or surveillance
- Fish Consumption Advisory Programs
- Centers of Health Equity, Community Engagement, or Community Health Works
- Centers for Public Health Practice (Public Health Nurse Consultants program)
- Child and Teen Checkups Programs
- Offices of Rural Health
- American Indian Health Programs
- School safe siting programs
- School bus idling programs

Other Relevant Professionals

- Realtors (re: radon, lead-based paint, wells, etc.)
- Plumbers
- Contractors, water treatment specialists
- Environmental laboratories that accept household water, radon, soil, samples etc.
- Local property maintenance boards
- Others, depending on the specific issue