Session 016: Human Health Effects of Oil Spills and Other Disasters: What Do We Know, What Don’t We Know, What Do We Need to Know, and How Can We Get There?
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Session Overview
The Gulf of Mexico is one of the most threatened areas in the United States for natural and technological disasters. Each disaster has significant and long-lasting negative effects on the health of people who live, work, or recreate along the Gulf coast. Also important are the repetitive and cumulative effects of multiple disasters. This session of 12 presentations focused on what we have learned and still need to know about disaster impacts on people of the Gulf of Mexico.

Session Highlights
- Play behavior of young children at the beach, including wading and digging, may contribute to higher risk of exposure to oil spill chemicals and perhaps to contaminants including infectious bacteria in tar balls as compared to adults. Exposed skin abrasions on children, which were mostly due to scratched insect bites, may increase exposure risk. Adherence of beach sand to children’s skin differs by beach and by sex and age, ultimately affecting their exposure risk.
- Television is the dominant medium by which people affected by a disaster track what is happening. Other media such as radio, internet, social media, and word of mouth are also used, and media channel preferences remain relatively stable across disaster phases.
- Rural community members heavily reliant upon natural resources were most affected by, and vulnerable to, disaster-associated stress and to increased depression, anxiety, and alcohol misuse. In some cases, strong community attachment appeared to help people mitigate impacts, strengthen resilience, and enhance recovery.
- Mental health outcomes and stress effects can be slow to present and long lasting (5-20+ years). Flooding is associated with lingering and persistent mental health impacts including post-traumatic stress one year after flood mediated by worry.
- The combined burden of endocrine disrupting chemicals in the environment, including obesogens, to which people are exposed daily potentially reduces their resilience to major disasters. DOSS, a component of dispersants used in oil spill response and in consumer products, has been identified as a possible obesogen.

Gaps/Challenges
- Information is needed about chemicals and concentrations children are likely to encounter in the nearshore environment and potential for exposures to harmful bacteria such as Vibrio vulnificus. Additional research should include children <1 yr old and epidemiological studies after beach play.
- Larger sample sizes and need for longitudinal, prospective survey panels.
- Better understanding of methods to ameliorate stress effects and improved measurements of seafood safety and assessments of trade-offs between positive health benefits of seafood consumption and risks of low-level toxicant consumption are needed.
- Lack of baseline data on mental, physical, and community health before disasters but also during and continuing long after, including effects of acute, chronic, and cumulative stress. Filling this gap requires an ongoing, continuously operating health observing system that systematically collects those data from a representative sample of the GoM population. Also needed are options to prevent or ameliorate poor mental health outcomes.
Greater understanding of the potential human health effects of DOSS and other environmental obesogens as well as policy and regulatory steps to appropriately limit their use.