

Birnbaum highlights human health effects at Gulf oil spill conference

By Kelly Lenox

NIEHS and NTP Director Linda Birnbaum, Ph.D., led the Institute's delegation to the 2014 Gulf of Mexico Oil Spill and Ecosystem Science Conference Jan. 26-29 in Mobile, Ala.

Opening the Jan. 28 session on "Public Health, Ecology, and Society in the Context of Resilience," Birnbaum distinguished between information collected to guide immediate response efforts, and research needed to address longer-term questions.

"Review of the available literature and health information indicated a clear need for prospective research to understand the health effects to workers, the community, and especially, to sensitive populations," she said.

The session, whose chairs included [Dale Sandler, Ph.D.](#), head of the NIEHS Epidemiology Branch, and [Symma Finn, Ph.D.](#), health scientist administrator for the Division of Extramural Research and Training Population Health Branch, was the only one during the four-day conference to focus on human health impacts. Other conference topics included fisheries, coastal ecosystems, physical processes, future ecosystem monitoring, oil transport, dispersants, education, socioeconomics, and data management.

NIEHS participants focus on public health

Speakers in the public health session included Sandler, who presented "Factors Associated with Current Chemical Exposures in Gulf Residents," and [Richard Kwok, Ph.D.](#), staff scientist in the NIEHS Chronic Disease Epidemiology Group, who discussed "Mental Health Symptoms Among GuLF STUDY Participants Involved in the Deepwater Horizon Oil Spill Clean-up."

NIEHS activity was rounded out by two presentations in the associated poster session. NIEHS Senior Medical Advisor [Aubrey Miller, M.D.](#), shared an exhibit on disaster health research, and [Joseph \(Chip\) Hughes](#), director of the NIEHS Worker Education and Training Program (WETP), addressed the spill's mental health consequences.

Assessing mental health among clean-up workers

NIEHS researchers shared some preliminary indications from the GuLF STUDY (see side bar) - a longitudinal, or long-term, study of nearly 33,000 clean-up workers. Initiated in June 2010, the GuLF STUDY was designed to be a 10-year project.

Because there is a prevailing concern over anxiety and depression among residents of communities damaged by the spill, as a first step in the study, researchers started assessing mental health concerns. Preliminary data indicates that the prevalence of depression and anxiety may be somewhat higher among workers directly involved in clean-up operations than among the general public.

Good news on contaminants in blood

Researchers also measured concentrations of heavy metals and certain volatile organic compounds (VOCs) in the blood of study participants. "For the majority of our study participants, we found that levels of metals and VOCs in blood were similar to those levels in the general U.S. population," Sandler said. "This is good news."

Birnbaum noted that WETP trained nearly 150,000 responders in the early days of the spill response, hoping to minimize health risks to clean-up workers. WETP continues its involvement in research and training among responders and health care professionals.

Lessons learned improve disaster research preparedness

The Deepwater Horizon tragedy highlighted the need for well-designed research in anticipation of, during, and after an emergency, Birnbaum noted. "Previous disasters have clearly underscored the need for timely human health research to help answer pressing questions and concerns," she said. For example, to gather baseline and early impact data, authorities must be



"The GuLF STUDY is a tremendous resource for longitudinal data on workers, who are also community members, with the greatest potential for exposure to crude oil, dispersants, and other conditions present during the response efforts," Birnbaum said, addressing the conference in Mobile, Ala. (Photo courtesy of Steve McCaw)



able to rapidly mobilize researchers and efficiently authorize research funding.

Recognizing this concern, NIEHS developed the new NIH Disaster Research Response Project, which was the subject of Miller's poster. The project's goals focus on data collection tools and protocols, the creation of networks of experts trained as research responders, and integration of the effort into federal response plans for future disasters.

In closing, Birnbaum said, "The combined efforts of federal, academic, and community partners continue to serve as a vital platform for future research, demonstrating a productive and coherent strategy to combine multidisciplinary groups and community-based research activities in response to a disaster."



Sandler is head of the NIEHS Chronic Disease Epidemiology Group, which oversees the GuLF STUDY and other large prospective cohort studies looking at the impact of environmental and lifestyle exposures on population health. (Photo courtesy of Steve McCaw)



Kwok is co-lead on the GuLF STUDY, which is conducting research on the health of individuals involved in the oil spill clean-up efforts, due to their greater potential for exposure to oil and dispersants. (Photo courtesy of Steve McCaw)

NIEHS GuLF STUDY tracks health of clean-up workers

Kwok is scheduled to provide an overview of the [GuLF STUDY](#) at a Mar. 20 Duke Global Health Exchange lecture.

- Largest-ever prospective study of oil spill clean-up workers, involving nearly 33,000 adults involved in oil spill clean-up or support.
 - Enrolled March 2011 to March 2013
 - Baseline telephone interview on jobs, symptoms, health, lifestyle, and socioeconomic factors.
- In-home clinical assessment and biospecimen collection - 11,210 workers and residents of the Gulf states.
 - Now developing a job-exposure matrix for exposure assessment.
 - Unique platform to study a geographically diverse population impacted by the oil spill and other environmental contaminants.
- Next phase:
 - Telephone interview every 2-3 years.
 - Subgroup with repeated mental health and resiliency assessments.
 - Linkage to vital records and cancer registries.
 - More comprehensive clinical exams, in Alabama and Louisiana, of about 4,000 participants, to assess neurobehavioral, respiratory, renal, and mental health effects.

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