

LONGITUDINAL FOLLOW-UP OF COAST GUARD DEEPWATER HORIZON RESPONDERS

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Background: Little is known about health effects from oil spills on response workers, despite the frequency of these events worldwide. The Deepwater Horizon (DWH) disaster was the largest oil spill in U.S. history. The response, led by the U.S. Coast Guard, involved over 7,000 Coast Guard workers, who carried out a wide range of clean-up activities. Of the few studies that have evaluated the human health consequences of oil spills, most have been cross-sectional. Respiratory symptoms, including cough and shortness of breath, and neurological, hematologic, psychological, genotoxic and endocrine effects have been reported. Benzene, a major component of crude oil, is a known hematotoxin and carcinogen, even at low exposure levels.

Methods: We have designed a study to follow up the cohort of Coast Guard DWH responders to elucidate the health consequences of oil spill exposures by capitalizing on existing, detailed data. The key sources of these data include an exit survey completed by each responder, which provides self-reported task, location, exposure, and health data; personal monitoring data on a subset of responders; and pre- and post-deployment clinical data from Coast Guard electronic health records and ICD-9 coded diagnostic data. The objective of our study is to identify clinical and subclinical health effects among Coast Guard DWH responders by analyzing the clinical and self-reported data and comparing pre- and post-deployment disease rates. This study will also lay the groundwork for future nested studies of selected outcomes and for targeted studies of biomarkers of adverse biological effect using banked pre- and post-spill serial serum samples available for all responders. By carefully following up this cohort, we may help to mitigate long-term health consequences among these workers and provide much-needed insight into the health effects from oil spills.