

# Coast Guard Headquarters

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*Semper Paratus – Always Ready*

## Deepwater Horizon Surveillance Efforts



CDR Erica Schwartz, MD, MPH  
DHB Meeting 8 Mar 11

Unclassified

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## A Day in the Life of The Coast Guard

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A Day in the Life of the  
U.S. Coast Guard

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## Team Coast Guard

- Active Duty = 42,971
- Reserve = 8,109
- Civilians = 8,358
- Auxiliarists = 36,692



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## Team Coast Guard



Army  
Navy  
Marines  
Air Force  
Coast Guard



PHS Commissioned Corps



NOAA Commissioned Corps



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## Unified Area Command



### Assets & Personnel:

- 48,000 personnel
- 10,000 Vessels of Opportunity
- 125 aircraft

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## Unified Area Command



### Coast Guard Personnel:

- ~7500 Coast Guard personnel deployed (~14% of Coast Guard workforce)
- Assumed command & control within a few short hours of the event

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## Deepwater Horizon Operations



In situ burns



Beach cleanup

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## Deepwater Horizon Operations



Dispersant Application



Decontamination Ops



Booming & Skimming Ops

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## Levels of Worker Exposure from the Point Source



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*Courtesy of NIOSH*



## Potential Hazards

### DEEPWATER HORIZON RESPONSE

#### Summary of Potential Hazards to Deepwater Horizon Response Workers

Potential Hazard	Risk Assessment	Evaluation Criteria	Recommendation
<b>Cardiovascular Disease</b>	Pre-placement physical: BMI*, BP, pulse	Physician's evaluation	For excess risk, assign to light duty, low demands, air conditioned environment
<b>Heat Stress</b>	Temperature, humidity, work load	Health surveillance	Training program, acclimatization, monitored hydration, work-rest regimen
<b>Traumatic Incident Stress</b>	Mental and emotional health	Physical complaints, thinking problems, changes in behavior, mood, irritability	Maintain adequate nutrition, hydration, rest; work in pairs to look out for buddy
<b>Fatigue</b>	Work hours and schedules	Management of hours worked	Shifts < 10 hours; 2 rest days after 3 12-hour shifts or 4 10-hour shifts or 5 8-hour shifts; frequent rest breaks
<b>Chemicals</b>	Air sampling, monitoring symptoms	OELs, reported symptoms, irritation	Organic vapor cartridge respirators, protective clothing, protective eyewear
<b>Particulate</b>	Air sampling, monitoring symptoms	OELs, visual observation, reported symptoms	P100 air-purifying respirators, protective eyewear
<b>Odor</b>	Sense of smell	Workers bothered by odors	Voluntary use of carbon-impregnated P95 filtering facepiece respirator



## NIH Gulf Study

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- **Prospective cohort study of potential short- and long-term health effects associated with workers and volunteers (>55,000) involved in DWH clean-up activities**

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## NIH Gulf Study

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- **Genotoxicity**
- **Changes in immune response & function**
- **Adverse reproductive effects**
- **Chronic respiratory effects**
- **Neurobehavioral effects**
- **Depression, other mental health changes**
- **Biological aging (telomere shortening)**
- **DNA damage and repair, other biomarkers of exposure and effect**
- **Cancer, Mortality**

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## Coast Guard Deepwater Horizon Cohort Study

- To identify potential short- and long-term health effects from oil spill response work exposures by analyzing data from exit surveys.
- The Coast Guard cohort study will have the ability to compare objective health data (post spill and pre spill) for a population with exposure data collected.

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## Coast Guard Responders – Data Sources

- Compiling comprehensive list of responders
- Inventory (Survey)
  - Time & site of response
  - Mission(s)
  - Exposures
  - Health Effects
- Occupational Medicine Surveillance Evaluation Program (OMSEP) - Subset of responders with baseline physical examinations

	All of the time	Most of the time	Sometimes	Rarely	Never
How often was any part of your body submerged in the spilled crude oil or oily water?	<input type="radio"/>				
How often did you breathe the spilled crude oil or oily water?	<input type="radio"/>				
How often did the spilled crude oil or oily water come in direct contact with your skin?	<input type="radio"/>				
How often did you inhale vapors from the crude oil or oily water?	<input type="radio"/>				
How often were you in the vicinity of crude oil burning?	<input type="radio"/>				

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## Coast Guard Responders – Data Sources

- **Medical encounters**
  - Coast Guard Electronic Health Record
  - Defense Medical Surveillance System (DMSS)
- **Quantitative exposure measurements (personal monitoring on sample of responders)**
  - Benzene, cyclohexane, ethyl benzene, petroleum distillates, propylene glycol, toluene, trimethyl benzene, xylene, oil mist mineral, 2-butoxyethanol
  - Negligible, low levels found
- **DoD Serum Repository –**
  - Pre-spill serum samples from HIV testing
  - DNA adducts??

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## Questions?

