



# ***Coast Guard Headquarters***

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## **Deepwater Horizon Surveillance Efforts**

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

**Unclassified**

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*Semper Paratus*



# *A Day in the Life of The Coast Guard*

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*Semper Paratus*



# 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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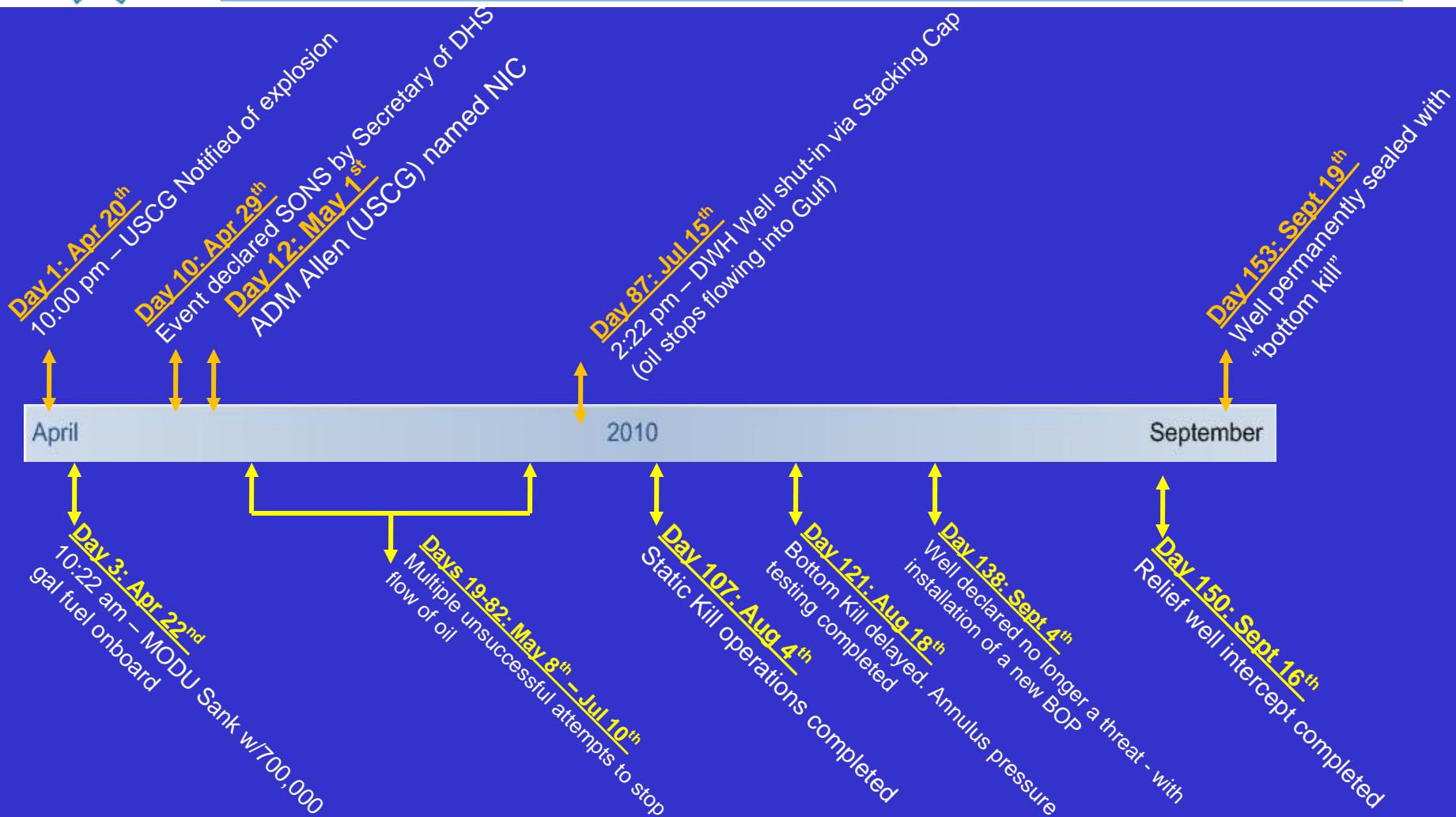
# *Deepwater Horizon*



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# Timeline & Key Events





# *Unified Area Command*



## Assets & Personnel:

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





# *Unified Area Command*

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## Coast Guard Personnel:



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





# *Deepwater Horizon Operations*

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## **In Situ Burns**



## **Beach Clean-up**



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# Deepwater Horizon Operations

## Dispersant Application



## Decontamination Ops

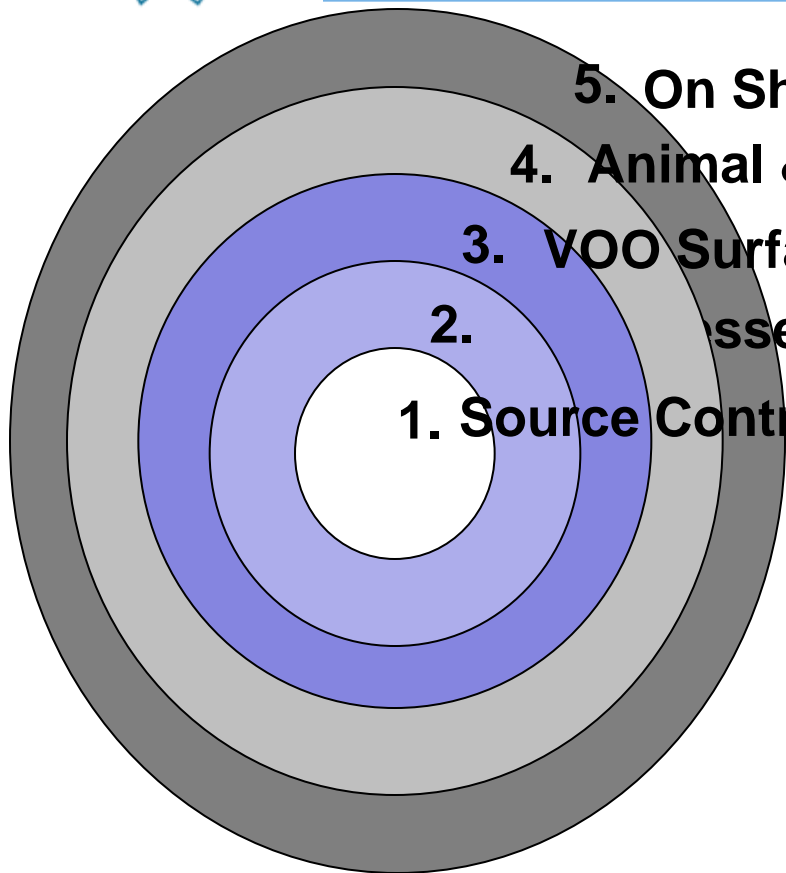


## Booming & Skimming Ops

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# Levels of Worker Exposure from the Point Source



1. Source Control
2. Vessel Surface Control (booming/skimming)
3. VOO Surface Control (booming/skimming)
4. Animal & Equipment Decon Workers
5. On Shore Cleanup Workers





# 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**



# *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**



# *Coast Guard Deepwater Horizon Cohort Study*

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- **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.**



# Coast Guard Responders – Data Sources

- **Compiling comprehensive list of responders**

- **Inventory (Survey)**

- Time & site of response
- Mission(s)
- Exposures
- Health Effects

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

Back Progress:  Next

- **Occupational Medicine Surveillance Evaluation Program (OMSEP) - Subset of responders with baseline physical examinations**





# Coast Guard Responders – Data Sources

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- **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??

# Questions?

