

# NIOSH Report of Deepwater Horizon Response/Unified Area Command Illness and Injury Data (April 23 – July 27, 2010)

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# **NIOSH Report of Deepwater Horizon Response/Unified Area Command Illness and Injury Data (April 23 – July 27, 2010)**

## **Background**

This report is designed to provide a basic overview of illness and injuries recorded by Unified Area Command (UAC) safety officials that occurred to workers involved in the Deepwater Horizon response. Injuries and illnesses were coded and categorized utilizing the Bureau of Labor Statistics (BLS) Occupational Injury and Illness Classification System (OIICS). This report will be updated on a regular basis as new data becomes available. The data used to produce this report were provided to NIOSH by UAC safety officials, who are sharing their health and safety incidents database with CDC/NIOSH. The database is comprised of the information recorded by UAC safety officials on an incident form that is filled out for any event leading to injury or illness which was believed to be work-related. It includes incidents which occurred to BP employees, UAC contracted workers, federal/state/local responders, and volunteers. There may be some local (parish) workers involved in response efforts who do not fall under the supervision of the Unified Area Command, and thus would not be included in this database. The incident forms are filled out by UAC safety officials, as opposed to healthcare personnel, and do not contain strict medical diagnoses of injury or illness. This method of employer-generated data collection is standard occupational safety and health practice. It should be noted that because the data used for this report are being collected by UAC, NIOSH cannot independently verify the accuracy and completeness of the database.

NIOSH is producing this report of illness and injuries to promote public health through enhanced awareness of the risks associated with response work in the Gulf. The objective of this report is to provide actionable information to those in a position to reduce the risk of future injuries and illnesses among cleanup workers, such as UAC, OSHA, state and local health authorities and others. By pointing to patterns of injury and/or illness, this report may assist interested parties in identifying targets for training, intervention, and other prevention activities. NIOSH welcomes your feedback on the utility of this report and suggestions for future reports. Additional information about specific occupational risks will be reported by NIOSH through health hazard evaluations which will be conducted independently by NIOSH personnel in the field.

Note that portions of this same database are also reported on OSHA's website at <http://www.osha.gov/oilspills/DeepwaterData.pdf>. This website provides line listing data for the OSHA reportable injuries.

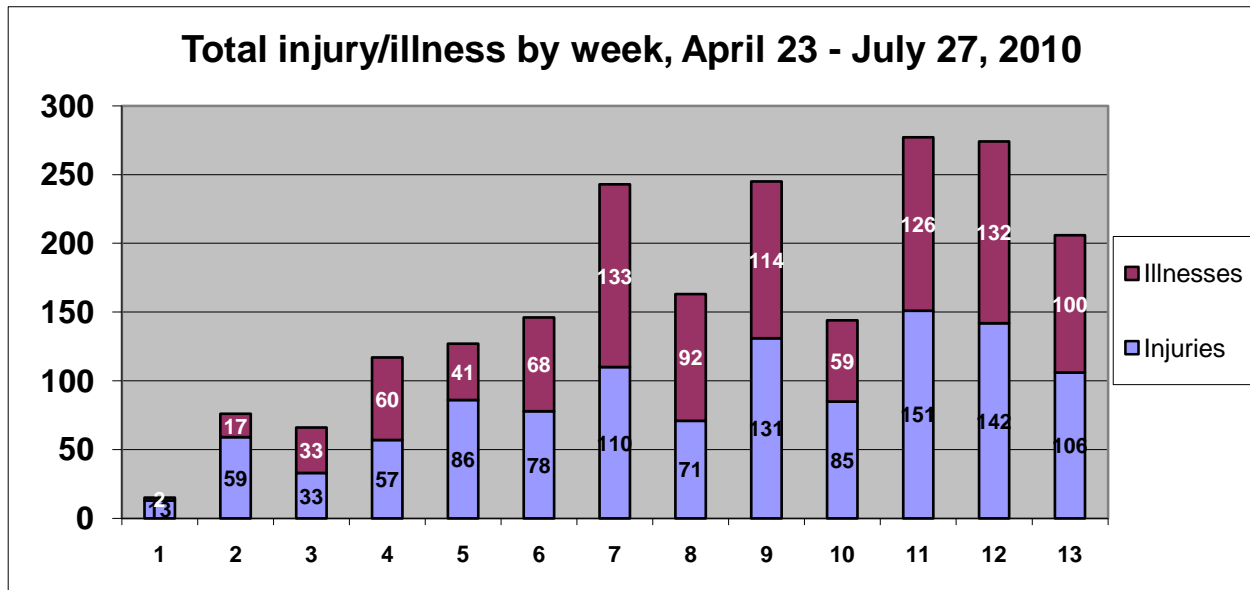
**Table 1**

<b>Summary of injuries and illnesses, April 23 – July 27, 2010</b>					
<b>Characteristic</b>	<b>Injuries</b>		<b>Illnesses</b>		<b>Total</b>
	<b>Number</b>	<b>%</b>	<b>Number</b>	<b>%</b>	
<b>Total<sup>a</sup></b>	<b>1136</b>	53.3	<b>994</b>	46.7	<b>2130</b>
<b>First Aid cases</b>	<b>959</b>	51.9	<b>888</b>	48.1	<b>1847</b>
<b>OSHA-recordable cases<sup>b</sup></b>	<b>175</b>	62.3	<b>106</b>	37.7	<b>281</b>
<b>Missed or Restricted Duty cases</b>	<b>28</b>	70.0	<b>12</b>	30.0	<b>40</b>
<b>Command Center<sup>c</sup></b>					
Houma, Louisiana	<b>751</b>	55.5	<b>602</b>	44.5	<b>1353</b>
Mobile, Alabama	<b>342</b>	47.6	<b>377</b>	52.4	<b>719</b>
Houston/New Orleans	<b>8</b>	53.3	<b>7</b>	46.7	<b>15</b>
Source	<b>32</b>	86.5	<b>5</b>	13.5	<b>37</b>
<b>Worker Type</b>					
BP employee	<b>6</b>	60.0	<b>4</b>	40.0	<b>10</b>
Contractor	<b>1090</b>	53.2	<b>960</b>	46.8	<b>2050</b>
Federal/State/Local	<b>32</b>	64.0	<b>18</b>	36.0	<b>50</b>
Volunteer	<b>0</b>	0.0	<b>1</b>	100.0	<b>1</b>
Unspecified/To be determined	<b>8</b>	42.1	<b>11</b>	57.9	<b>19</b>
<b>Age Group<sup>d</sup></b>					
18-25	<b>99</b>		<b>121</b>		<b>220</b>
26-35	<b>148</b>		<b>118</b>		<b>266</b>
36-45	<b>94</b>		<b>68</b>		<b>162</b>
46-55	<b>76</b>		<b>49</b>		<b>125</b>
56-65	<b>35</b>		<b>15</b>		<b>50</b>
66-75	<b>2</b>		<b>0</b>		<b>2</b>

**Notes:**

- a. The incident type (injury vs. illness) was not able to be determined for 28 cases.
- b. OSHA-recordable cases are defined as those cases which led to missed day of work, restricted duty, or required medical treatment beyond first aid. Two cases had insufficient information to determine if they were OSHA-recordable. Note that counts of recordable/first aid cases may differ from previous reports as information and decisions regarding OSHA-recordable injuries and illnesses change.
- c. Command Center refers to the UAC safety commands which geographically divide responsibility and oversight over Safety concerns. The “Source” category denotes the location responsible for source control activities (i.e. a vessel). Command center was listed as “to be determined” for six cases.
- d. Age Group data was first collected beginning late June, 2010, and was available for 840 of the 2130 total cases in the current database (39%). Fifteen cases did not contain sufficient information to determine if they were a case of injury or illness.

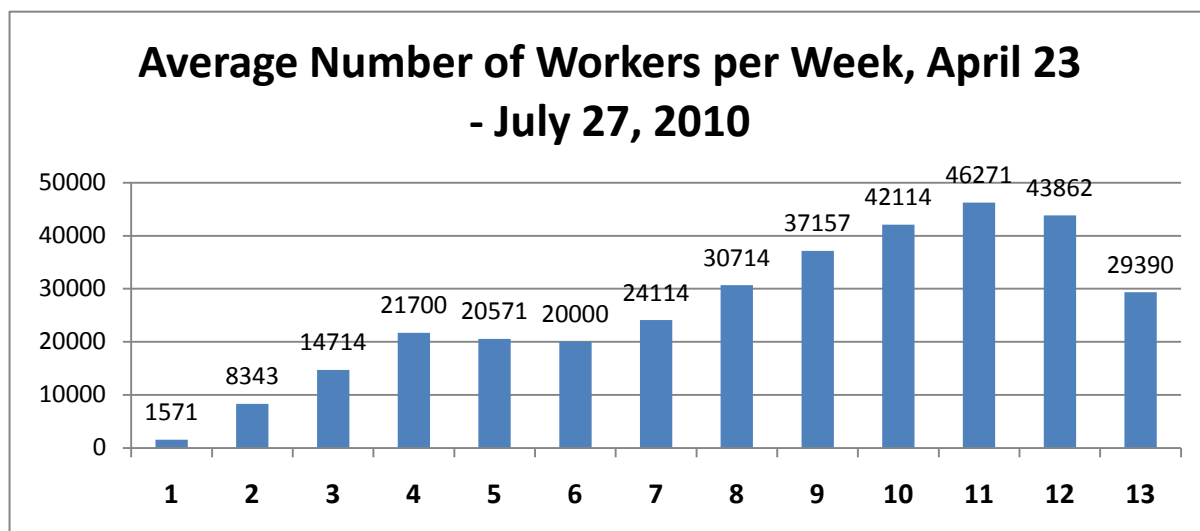
**Graph 1a**



**Notes:**

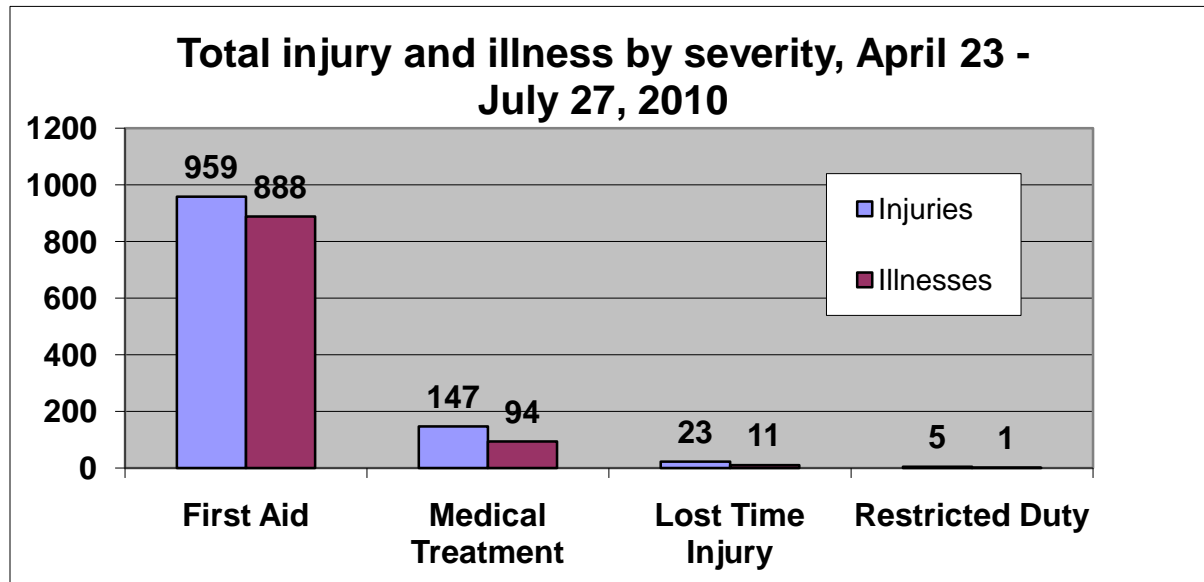
- Week 1 is defined as Monday April 26 -Sunday May 2, 2010. Each subsequent week begins on the following Monday.
- Week 14 is not included in this graph, because it contained less than 7 days of data (31 cases total).

**Graphs 1b**



- Data based on daily worker totals published by the National Incident Command (NIC).

**Graph 2**



**Notes:**

- Medical Treatment refers to any case requiring treatment beyond first aid, but which did not result in restricted duty or lost time.
- Two cases had insufficient information to include in this graph.

**Table 2**

Injury and illness frequencies are presented below stratified by location of their occurrence: onshore vs. offshore. This distinction may ultimately be useful in identifying important exposures that vary by location or identifying specific worker groups at risk. Injury and illness frequencies may vary by onshore/offshore location for a variety of reasons, including the nature of tasks performed on the shore vs. on the water; the number of workers employed in each setting; varying degrees of exposure to crude and weathered oil and dispersants; and workers' access to medical facilities or medical care when they feel ill or sustain an injury.

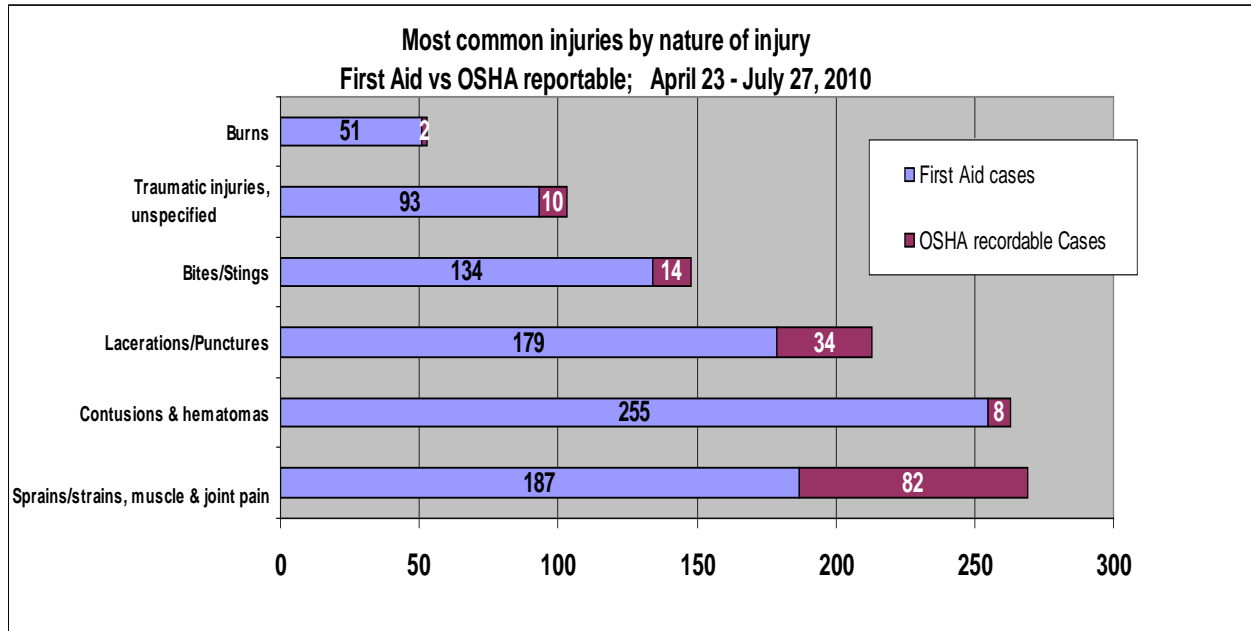
<b>Breakdown of injuries and illnesses by location, April 23 – July 27, 2010</b>					
<b>Characteristic</b>	<b>Onshore</b>		<b>Offshore</b>		<b>Total</b>
	Number	%	Number	%	
<b>Total<sup>a</sup></b>	1450	68.1	679	31.9	<b>2129</b>
<b>Injuries<sup>b</sup></b>					
First Aid Cases	601	62.7	357	37.3	<b>958</b>
OSHA-recordable cases	115	65.7	60	34.3	<b>175</b>
<b>Illnesses</b>					
First Aid cases	654	73.6	234	26.4	<b>888</b>
OSHA-recordable cases	79	74.5	27	25.5	<b>106</b>
<b>Command Center<sup>c</sup></b>					
Houma	797	58.9	555	41.1	<b>1352</b>
Mobile	633	88.0	86	12.0	<b>719</b>
Houston/New Orleans	15	100.0	0	0.0	<b>15</b>
Source	0	0.0	37	100.0	<b>37</b>
<b>Selected Injuries/Illnesses</b>					
Heat Stress	141	73.4	51	26.6	<b>192</b>
Multiple Symptoms	133	77.8	38	22.2	<b>171</b>
Lacerations/Punctures	109	51.1	104	48.9	<b>213</b>
Sprains/Strains & Muscle Pain	197	73.2	72	26.8	<b>269</b>



**Notes:**

- a. One case did not contain sufficient information to define its location onshore vs. offshore.
- b. Case severity information missing for two injuries.
- c. Command Center refers to the UAC safety commands which geographically divide responsibility and oversight over Safety concerns. The “Source” category denotes the location responsible for source control activities (i.e. a vessel). Command center was listed as “to be determined” for six cases.

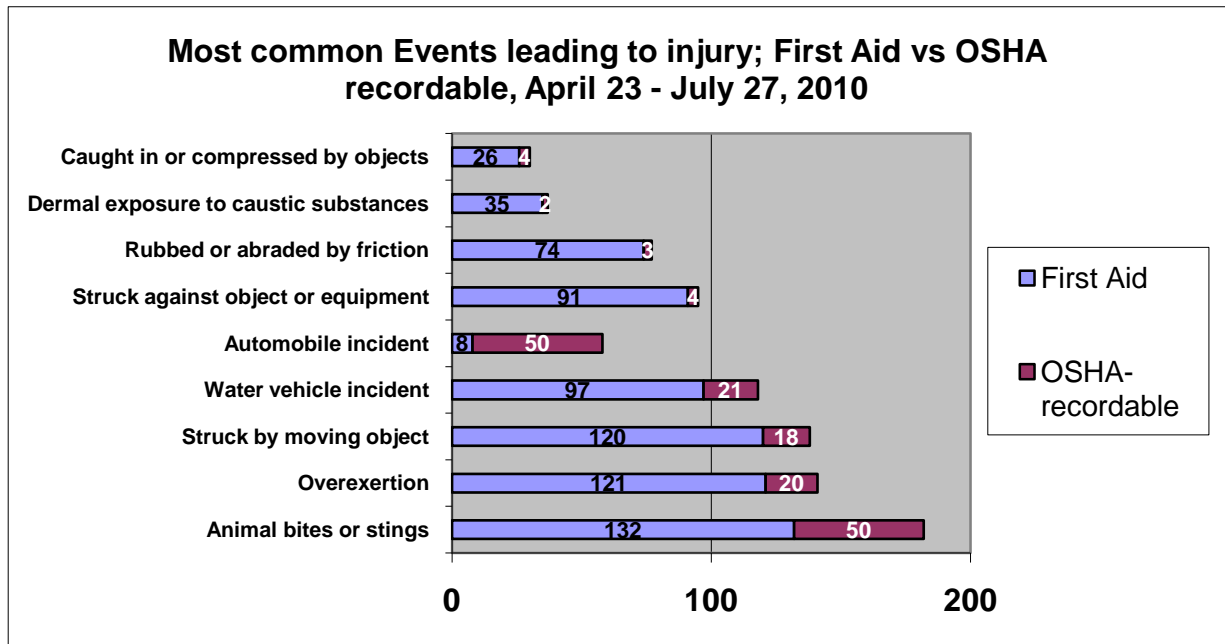
**Graph 3**



**Notes:**

- OSHA-recordable cases are defined as those cases which led to missed day of work, restricted duty, or required medical treatment beyond first aid.
- “Traumatic injuries, unspecified” are defined as those cases in which the data were not sufficient to provide a more specific description of the nature of the traumatic injury. For example, the case description could read, “worker slipped and injured leg” but it is not clear what type of injury resulted, e.g. sprain/strain, contusion, or laceration.

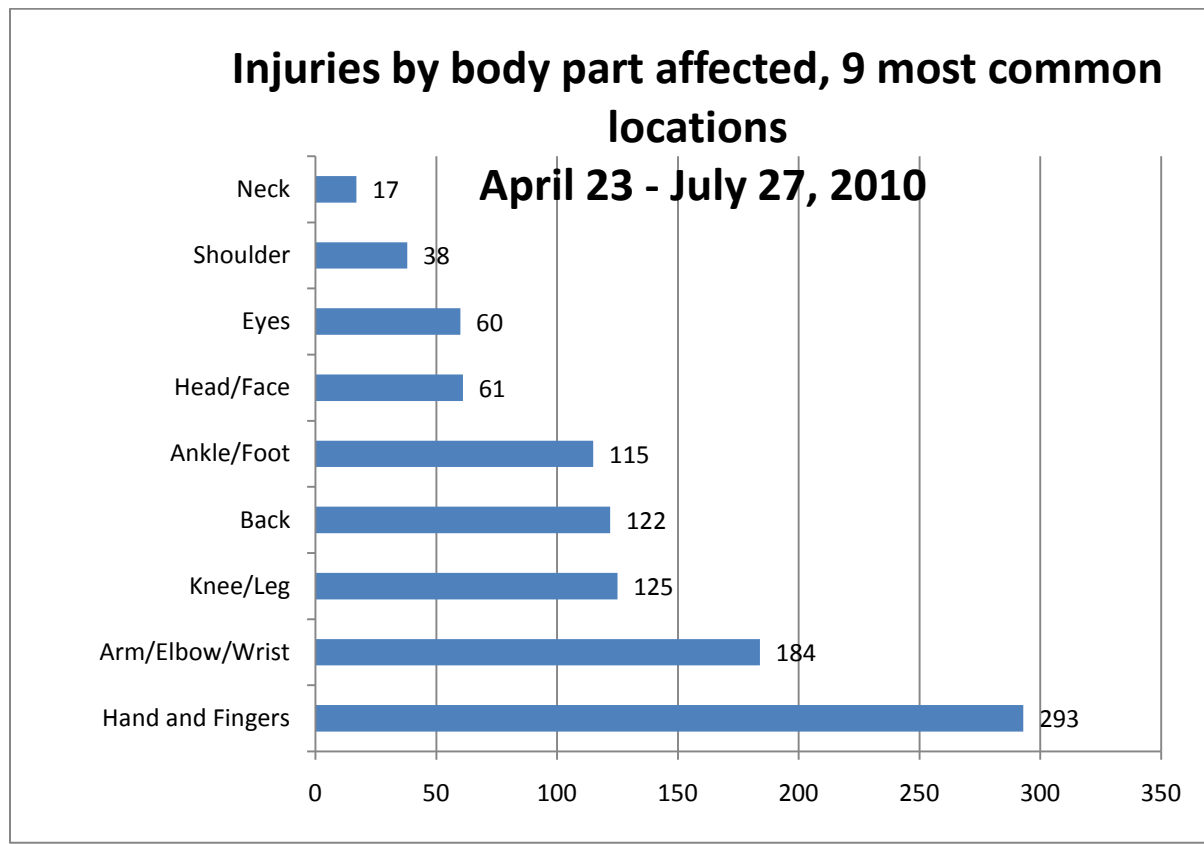
**Graph 4**



**Notes:**

- OSHA-recordable cases are defined as those cases which led to missed day of work, restricted duty, or required medical treatment beyond first aid.

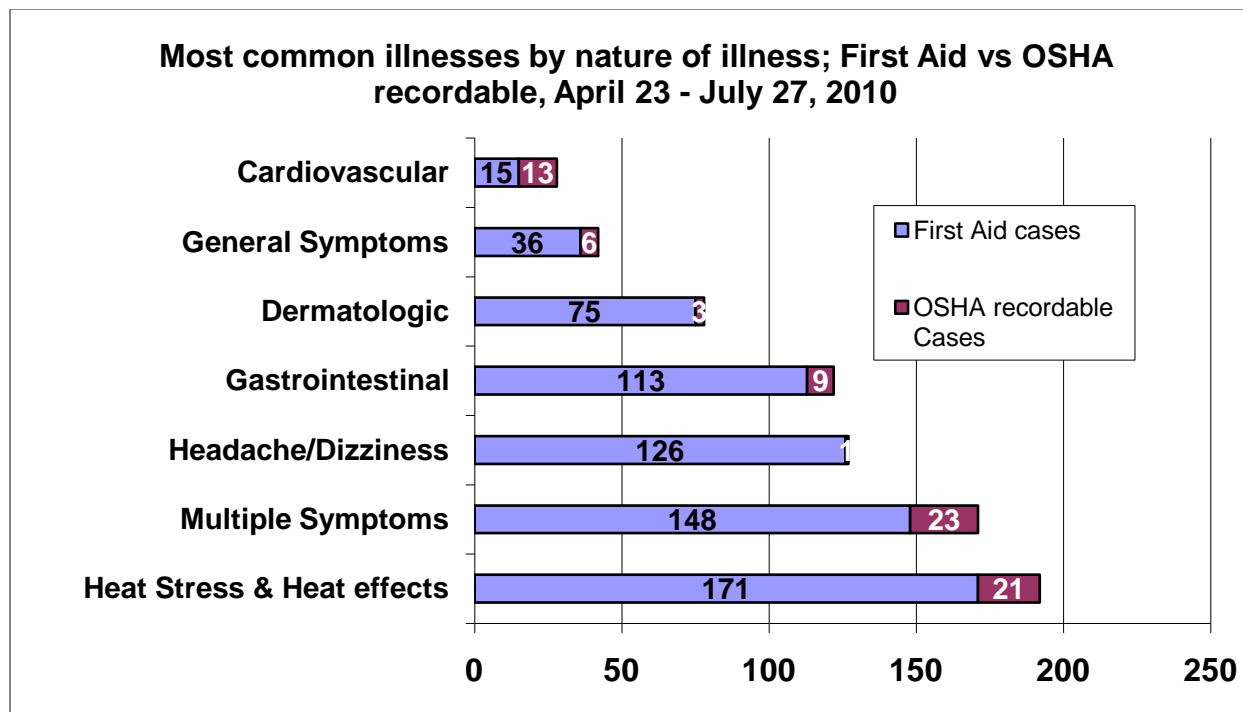
**Graph 5**



**Notes:**

- Head/Face category excludes the “eyes” category.

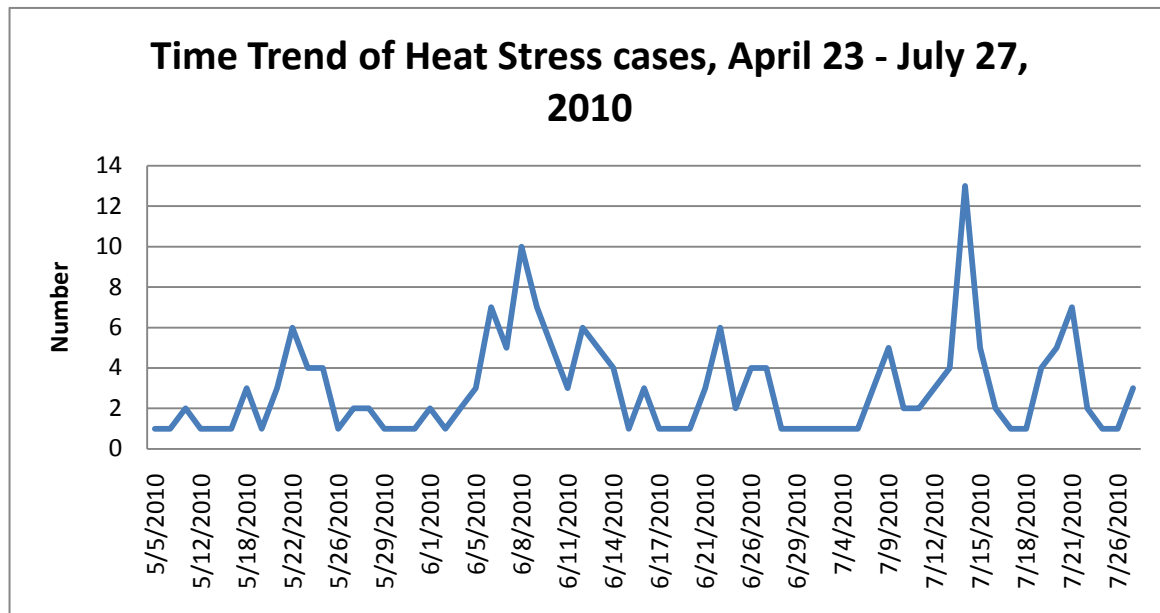
**Graph 6**



**Notes:**

- Multiple Symptoms refers to symptoms occurring in more than one organ system for a given case which were not attributed to a single, specific underlying cause (such as heat stress).
- General Symptoms refers to cases in which the symptoms described were not specific enough to be placed within a specific organ system or systems. This includes cases of malaise, fatigue, and non-specified allergic reactions.
- OSHA-recordable cases are defined as those cases which led to missed day of work, restricted duty, or required medical treatment beyond first aid.

**Graph 7**



## **Observations**

### **Illnesses**

#### ***Heat Stress***

- 141/192 (73%) Heat stress illnesses occurred “Onshore.” Based on job title information provided in the data, 110 of the 141 onshore heat stress cases occurred among laborers such as beach cleanup workers, boom decontamination workers, heavy equipment operators, and general laborers.
- Of the 192 Heat stress illnesses, 21 were OSHA-recordable, and of these, 2 were listed as resulting in restricted duty or a missed day of work. Of the 171 heat illness cases recorded as being treated by “First Aid”, four were listed as being “transported to hospital”, but according to best available information, were transported for evaluation only.

#### ***Multiple symptoms***

- “Multiple symptoms” designation refers to symptoms occurring in more than one organ system for a given case which were not attributed to a single, specific underlying cause. Examples from the database include cases of:
  - a. nausea, vomiting, headache, and dizziness
  - b. stomach ache, dizziness, stiff neck
- The majority of all “multiple symptoms” cases occurred onshore (133/171, 78%), as opposed to offshore where exposure to oils vapors and dispersants is considered greater or more likely.
- Of the 23 OSHA-recordable cases involving multiple symptoms, 16 occurred onshore. Many of these had symptoms consistent with heat stress, but were not identified as such in the database. Of the 7 recordable cases which occurred offshore, none reported exposure to oil, dispersant, or other chemicals.
- Of the 148 multiple symptoms cases listed as treated by First Aid, 117 occurred onshore. Of the 31 which occurred offshore, 7 were from a cluster of fishermen whose cases are part of a NIOSH HHE investigation. Of the remaining 24 cases, none reported exposure to oil, dispersant, or any other chemical exposures.

#### ***Gastrointestinal***

- There were 122 gastrointestinal cases recorded in the data, with 87 (71%) occurring onshore. Sixty-eight of the 87 cases reported as “onshore” occurred among the following three job titles: beach workers, laborers, and technicians. Eleven of all 122 GI cases reported diarrhea among their symptoms of nausea and/or vomiting, with 55% of those cases occurring onshore. One of these cases was explicitly attributed to oil exposure, and none to dispersant exposure.

### ***Dermatologic***

- There were 78 dermatologic illness cases recorded between April 23 and July 27, 2010, of which 74 were listed as a case of “Dermatitis”. Four of these 74 dermatitis cases were attributed to oil or dispersant exposure. Sixty of the 78 dermatologic illness cases occurred onshore. Of the 60 onshore cases, 22 were listed as onshore “laborers”, 3 were listed as “beach workers”, and 17 as “technicians”. Ten dermatitis cases overall were attributed to the use of sunscreen wipes, which appeared to cause an allergic/irritant skin reaction in these cases; seven were attributed to heat rash; and three to skin infections.

### ***General Symptoms***

- There were 42 cases which were coded using the OIICS classification system under codes for “general symptoms”. General Symptoms refers to cases in which the symptoms described were not specific enough to place within a specific organ system or systems. This includes cases of malaise, fatigue, and non-specified allergic reactions. Thirty-one of the 42 cases occurred “onshore”, and 36/42 (86%) cases required only first aid for treatment.

### ***Cardiovascular***

- There were 28 cardiovascular cases recorded in the data, with 20 of these cases involving the symptom of chest pain. Nearly half of the cases were OSHA-recordable (13/28), with four of these cases leading to missed days of work. The most common job titles of these cases were technicians (11) and laborers (9).

### ***Respiratory***

- Thirteen cases were recorded that were respiratory in nature, ten of which occurred onshore. The thirteen cases could be grouped into four categories: 4 cases of obstructive airway symptoms consistent with asthma, six with multiple general respiratory symptoms (primarily shortness of breath), and 3 cases of respiratory infection. 3/13 required medical treatment, and 2 of these led to a missed day of work or restricted duty. In none of these cases was oil or dispersant exposure recorded.



### ***Illnesses resulting in Missed or Restricted Duty***

- There were 12 cases total which resulted in missed or restricted days of duty. Six reported symptoms consistent with heat stress illness, or were identified as heat stress illness, and four of the twelve cases reported chest pain.

### **Chemical Exposures**

#### ***Crude/weathered oil/dispersants***

- Oil and/or dispersants were explicitly mentioned as a contributing factor in a total of 13 cases, all 13 of which were treated by first aid alone. Nine of the cases occurred offshore. Six cases were dermatologic in nature, four led to injury (such as slipping on oily surface), and three were attributed to oil or dispersant vapor exposure.

### **Injuries**

#### ***Injuries resulting in Missed or Restricted Duty***

- There were 28 cases which led to missed or restricted duty (23 which led to missed days of work, 5 resulting in restricted duty). The most common injury types in this category were back pain (8 cases), sprain/strain (8 cases), and lacerations/punctures (3 cases).