COCA Call: Deepwater Horizon Oil Spill: Public and Occupational Health Surveillance.
Date/Time: December 7, 2010 (1:00 PM- 2:00 PM ET)
Presenters:
Dr. Fuyuen Yip
Epidemiologist, National Center for Environment Health – CDC

Dr. John Halpin
Medical Epidemiologist, National Institute for Occupational Safety and Health – CDC

Coordinator: Welcome and thank you for standing by. At this time, all participants are in a listen-only mode. During the question and answer session, please press star 1 and record your first and last name to ask a question.

Today's call is being recorded. If you have any objections, you may disconnect at this time. And now I would like to turn the call over to host, Ms. Loretta Jackson-Brown. Ma'am, you may begin.

Loretta Jackson-Brown: Thank you (Chase). Good afternoon. I'm Loretta Jackson-Brown and I'm representing the clinician outreach and communication activity -- COCA -- with the emergency communication system at the Centers for Disease Control and Prevention.

I'm delighted to welcome you to today's COCA conference call, Deepwater Horizon Oil Spill: Public and Occupational Health Surveillance. We are pleased to have with us today Dr. Fuyuen Yip and Dr. John Halpin with the Centers for Disease Control and Prevention here to discuss possible oil spill related health effects among response workers and populations residing in the Deepwater Horizon oil spill affected areas.

During today's call, you will hear the presenters referring to slide in their PowerPoint presentation. The PowerPoint slide set is available from our

COCA Website at emergency.cdc.gov/coca. Click on conference calls. The slide set can be found under the call-in number and call pass code.

The objective for today's call are that participants will be able to identify key health effects potentially associated with Deepwater oil spill exposure, discuss approaches to conduct surveillance to said health effects associated with the potential environmental exposures from Deepwater oil - horizon oil spills, discuss the range of occupational hazards facing responders involved in the Deepwater Horizon response, and discuss the patterns of injuries and illnesses that were evident based on occupational health surveillance conducted during the Deepwater Horizon response.

Following the presentation, you will have an opportunity to ask our presenters questions. Dialing star 1 will put you into the queue for questions. In compliance with continued education requirements, all presenters must disclose any financial or other relationship with the manufacturers of commercial products, suppliers of commercial services or commercial supporters, as well as any use of an unlabeled product or products under investigational use.

This presentation will not include the discussion of the unlabeled use of a product or product under investigational use. CDC, our planners and our presenters wish to disclose that they have no financial interests or other relationships with the manufacturers of commercial products, suppliers of commercial services or commercial supporters. There is no commercial support for this presentation.

Our first presenter, Dr. Fuyuen Yip is a Lieutenant Commander in the U.S. Public Health Service and an epidemiologist in the National Center for Environment Health Centers for Disease, Control and Prevention. Trained in

environmental epidemiology with an emphasis on air pollution related exposures and respiratory health, Dr. Yip served as lead epidemiology and surveillance in the CDC's Emergency Operation Center during the Deepwater Horizon response.

Dr. Yip holds an MPH from Yale University, New Haven, Connecticut, and a PhD from University of Michigan, Ann Arbor, Michigan. Our second presenter is Dr. John Halpin. He's a Lieutenant Commander in the U.S. Public Health Service and a Medical Epidemiologist in the National Institute for Occupational Safety and Health -- NIOSH -- Centers for Disease Control and Prevention.

Deployed to Houma, Louisiana for two weeks as part of NIOSH response doing the Deepwater Horizon response, Dr. Halpin leads NIOSH efforts to produce periodic reports of occupational injury and illness during the Deepwater Horizon response. Dr. Halpin holds a Doctorate of Medicine from Loyola-Stritch School of Medicine and an MPH from University of Illinois School of Public Health, Chicago, Illinois.

If you're following along on this slide, you should be on Slide 7. Again the PowerPoint slide set is available from our COCA Website at emergency.cdc.gov/coca. At this time please welcome the first presenter, Dr. Yip.

Dr. Fuyuen Yip: Thank you so much. Good afternoon. This afternoon I'll be talking about the public health surveillance activity we conducted for possible health effects among populations residing in the oil spill affected areas. So we'll begin on Slide 8.

On April 12, an explosion occurred at the Deepwater Horizon mobile offshore drilling unit that was located in the Gulf of Mexico, 40 miles south of the Louisiana Coast. There were 11 reported deaths and the event was determined to the largest marine petroleum release in history. It was estimated that over 4.9 billion barrels of oil escaped into the gulf over the next three months and there was concern regarding potential health impact.

In response to the oil spill, CDC hosted a call on May 4 with state epidemiologists in the five Gulf States to design a surveillance approach to monitor potential health effects from the oil spill. Two days later, the CDC Emergency Operation Center was activated and epidemiology and surveillance desk was led by NCEH -- the National Center for Environmental Health, and ATSDR -- the Agency for Toxic Substances and Disease Registry.

On Slide 9, the main objectives of our surveillance activities were to monitor for potential health threats related to exposures to the oil spill and to help monitor for early indications of health impacts on potentially exposed populations.

The next slide shows a summary of previous oil spill events. Much of the toxicological evidence and health effects observed in epidemiologic studies from these events were used to help identify potential effects that may be associated with such an exposure. Also in comparison to previous events, with respect to oil spill size, the Deepwater Horizon event was the most significant.

On Slide 11 is a table summarizing symptoms and complaints. Most studies that we reviewed focused on acute health effects and many reported health effects that were nonspecific in nature. We focused our surveillance efforts on

capturing symptoms and complaints most likely to be associated with the primary route of exposures including dermal, inhalation and ingestion.

In addition to acute health effects that have been historically observed, we also considered other potential health effects specific to this event as outlined in the next slide. Specifically there were efforts to reduce the amount of oil in the water through burning and through the use of dispersants, and these activities could pose potential health impacts for those who were exposed.

There were concerns that the coastal population could be exposed to high levels of air pollutants such as particulate matter or PM, and volatile organic compounds or VOCs, when the oil was burned, and these exposures could lead to the exacerbation of respiratory and cardiovascular conditions.

Similarly, large quantities of dispersants were utilized to break up the oil and there was potential for symptoms and complaints through dermal, ocular and inhalational exposure especially among those who handled the dispersants.

To gain a better understanding regarding the potential levels of exposures from these two sources, the U.S. Environmental Protection Agency or EPA conducted ongoing monitoring of PM and VOCs in the air and components of the dispersants in the water.

Another consideration that arose was the consumption of potentially contaminated seafood. There were concerns regarding the safety of seafood that was harvested from the impacted area. The FDA and NOAA or the National Oceanic and Atmospheric Administration oversaw efforts to monitor the safety of the seafood.

After identifying the potential health outcomes that needed to be monitored, we then identified surveillance systems that could best capture this information to assist us in detecting increases in healthcare visits prompted by health complaints that are possibly oil spill related.

In Slide 13, two national surveillance systems are highlighted. BioSense is a program that conducts electronic syndromic surveillance monitoring chief complaints and final diagnosis syndromes, which are groupings for signs and symptoms. Itprovides very rapid information on chief complaints, including the symptoms and complaints that were highlighted in the previous slide.

For this event, BioSense collected information from its participating coastal facilities in the five Gulf States. Our BioSense program summarized the data from these facilities and developed daily state specific reports to the health departments. They also alerted the health departments if they saw a significant increase in any particular syndrome that may warrant a follow up.

The second system that was used was the National Poison Data System or NPDS, asystem that tracks all calls to the 60 Poison Control Centers in the United States. After the oil spill, NPDS began to assign any calls related to the oil spill a temporary code, be it exposure related calls or informational calls. Calls concerning dispersants and seafood contamination were also highlighted. The call information was also summarized and provided to the five health departments.

In the next slide, in addition to these national data systems, CDC also worked with the coastal states to collect state level data to monitor for acute health conditions as summarized in this slide. These systems aimed to assist public health authorities in detecting possible oil spill related health impacts on communities.

Surveillance efforts utilized the existing systems and included enhanced data collection from EDs. It also included targeted drop in healthcare surveillance. Specific forms were developed and used and the summary of visits were generated on a daily basis using these forms. The State Health Departments also utilized information from the state level Poison Control Centers and syndromic surveillance system.

Slide 15 illustrates these surveillance activities for each of the participating states. As mentioned earlier, each state utilized existing systems or conducted a drop in surveillance. If any of these surveillance systems identifed groups of people with symptoms, state and local public health officials followed up as needed to investigate whether there is an association between these symptoms observed and the oil spill.

The state shared the data they collected from these surveillance systems to CDC on a weekly basis. And as illustrated in the next slide, the data were summarized and posted on the CDC oil spill Website through September. From this health surveillance link on this Website, the viewers are guided to a page as illustrated on the next slide where they can click on the individual states to get a summary of their surveillance information for the week or two week period.

The next slide – and the next several slides shown-- will be the displays from various states' data systems. So on Slide 18, there's a summary from Louisiana on the number of exposure-related visits to participating facilities. There was an increase in the number of visits related to potential exposures early after the oil spill event. Louisiana also separated these visits by workers and the general population.

The next slide illustrates data summarized by Alabama. It provided trend data on the number of patients who indicated potential exposure to oil. These exposure-related visits, as illustrated by the bars, consistently represented less than 1% of all the visits to the participating facilities. The data provided to generate this graph also included a summary of symptoms that presented to the participating facilities each day.

Slide 20 highlights the number of calls concerning the oil spill to the Poison Control Centers in the Gulf States. In the months after the oil spill, BP had provided a medical support hotline that was managed by a Poison Center as illustrated by the blue portion of the bar. Those calls were included in this chart with the oil spill related calls to the other Poison Control Centers.

Again as mentioned earlier, if any of these surveillance systems identified groups or clusters of people with specific symptoms, state and local public health officials followed up as needed to investigate whether there was an association between the symptom and the oil spill.

In addition to acute symptoms and complaints, concerns surrounding the mental health of the population were also addressed as illustrated in the next slide. In addition to providing information on the Website, CDC's BRFSS Program or Behavioral Risk Factor Surveillance System Program, an ongoing telephone health survey system that tracks health conditions and risk behaviors in the U.S., partnered with state and local health officials to survey for mental health and other associated conditions on an ongoing basis, and the information collected will be used to help guide public health officials.

In addition to ongoing assessment using BRFSS, the next slide summarize a rapid needs assessment that was conducted in response to a request from Alabama and Mississippi. A mental - a CASPER or Community Assessment

for Public Health Response was conducted in coastal counties of Alabama and Mississippi to assess potential mental health issues from the oil spill.

In August, a team of epidemiologist went to conduct a questionnaire on a representative sample of households. They inquired about exposures and physical behavioral and mental health symptom, and they found an increase in negative quality of life indicators and social contact outcomes when compared to state and national BRFSS survey data before the oil spill.

And some questions included: how many days during the past month was your mental health not good? And in the past two weeks, how many days did you feel nervous, anxious or on edge? And how often did you worry or stress about having enough money to pay for rent, mortgage or food?

For an event such as this, health surveillance is a complex and challenging process and there are both strengths and limitations as highlighted in Slide 23. The surveillance systems that were used to provide a rapid detection -- excuse me -- a rapid detection of possible exposures among groups of people with symptoms.

Furthermore both the national and the state level systems provided us with a more comprehensive picture of the population in the affected areas. At the same time, we also recognize that the exposures are self reported and whether a person has truly been exposed to any oil was difficult to determine.

Second, the case definition for oil spill related health outcomes are particularly difficult to develop. Common exposures to multiple coexistent and ubiquitous exposure sources combined with different exposure routes can result in a broad spectrum of potential health effects.

Surveillance will continue to be a very critical component for any similar future event as outlined in the next slide. Recognizing signs and symptoms that may be associated with exposures are important. And from this event, we learned that these signs and symptoms are influenced by the route of exposure as well as the dose of exposure. And also based on previous events as well as this one, we appreciate the importance of addressing symptoms related to mental health.

Clinicians have consistently played a critical role in these surveillance activities, especially in identifying potential populations at risk and the information provided are especially useful in identifying groups of individuals with common symptoms and can be used during follow up activities. And that concludes my part of the presentation. Thank you.

Dr. John Halpin: Thank you Dr. Yip. This is John Halpin from the National Institute for Occupational Safety and Health. And in my section I'm going to discuss the activities that NIOSH was involved in to perform occupational health surveillance during the Deepwater Horizon response.

On Slide 26, I give a graphic overview of some of the many different types of occupational hazards that were present during this response. These included physical hazards such as the one portrayed on the left involving lifting of heavy objects such as boom type activities, the physical hazards involving that, the chemical hazards involved with the oil and dispersants and other chemicals that were in the water particularly on the right, the particular matter hazards involved in in-situ burning in the sensor, and environmental hazards such as the heat for those who were working on the beach depicted in the bottom right and near shore in the bottom left.

On the next slide, I gave an overview of the potential occupational hazards that were present - that were grouped in terms of type of hazards that - the type of risk assessment that could be done for that hazard, the criteria that would be used to evaluate those hazards and some of the recommendations that we had to mitigate those hazards. They included cardiovascular disease, heat stress, traumatic incident stress, fatigue, chemicals, particulate matter and odors.

On the next slide I also described some of the other occupational hazards that I want to highlight, such as the types of musculoskeletal injuries that could occur from your typical slips, trips and falls that can occur when people are doing the hard type of work that they are doing on the beach and on the boats and in other places, the cuts and scratches that can occur during that type of work as well as wild life clean up work.

A couple of other environmental exposures I wanted to highlight are UV exposure and sunburns and the issue of lighting strikes, which is always an issue out near the water in open areas working on boats. Motor vehicle incidents is always a hazard that one should be aware of during any emergency response. Insect bites and stings proved to be a significant occupational hazard during this response, and there are also issues with noise as an occupational hazard during this response.

Now on Slide 29, I gave - I displayed the two types of sources of occupational surveillance data that NIOSH was able to obtain and analyze. First was data that NIOSH obtained from BP and the unified command from their safety teams out in the field. This was a collaborative effort between NIOSH, the unified command and the BP safety teams in the field throughout the area.

NIOSH and HHS was involved in the development of the safety incident report forms that were used by safety officials out in the field, and the data for those forms was extracted into electronic format by BP safety officials, and this data was later used to produce both internal data reports to the unified command, as well as periodic reports to various stakeholders including the public, and this was done by NIOSH and was placed on the CDC Website.

NIOSH was also involved in health hazard evaluations, with part of that involving conducting surveys of injury and illness amongst the targeted worker populations that they were focused on during those health hazard evaluations.

On the next slide -- Slide 30 -- I described some of the methodology that was used for the NIOSH periodic reports of injury and illness. When the data was obtained from BP's safety officials, it was first reviewed for duplicate entries and any other type of errors that might have occurred. One of the things that we had to do was to clarify incidents in which multiple responders had been injured or become ill during the same response and make sure it was clear just how many - that individual responders were involved in the individual event.

After that step was done, the data was then sent to the surveillance division of NIOSH where that data was coded for a system known as OIICS Coding System, which stands for the Occupational Injury and Illness Classification System. This is a system which codes for part of body, the nature of injury illness, the source of injury, and the event leading to injury.

So we were able to add those categories in a systematic manner to this data and we also assigned a code for whether or not the injury or illness was OSHA recordable. This coded data was then arranged in the tables and graphs and trend analysis was performed to give a fairly basis descriptive analysis of

the data and this is what was reported in our periodic reports of injury and illness on the web.

On the next slide, I wanted to make a couple of other comments about this OIICS System. The OIICS System was developed by the Bureau of Labor Statistics -- BLS -- back in the early 1990s, and they used this system in a couple of key places and it makes the data that was developed in the periodic reports of injury knows by NIOSH comparable to data found in other places, such as the Survey of Occupational Injuries and Illnesses -- SOII -- and the Census of Fatal Occupational Injuries -- CFOI.

The OIICS System has a hierarchical structure of coding, which allows for varying levels of specificity depending on the level of detail available. Meaning the amount of detail available in the original forms can vary, and you're able to use varying levels of coding detail to determine just what type of code you want to give depending on the amount of information that happens to be available for each event.

On the next slide I begin to show some of the results from a report that covered a period from April 23 through July 27, 2010. On the upper table or graph, what is described there is the total number of injuries and illnesses that occurred on a weekly basis, starting with week 1 and ending in week 13 of that response. In red are the illnesses and in blue are the injuries, and you're seeing a general trend upwards throughout the weeks with a slight decline then during week 10 and on week 13.

And we wanted to show this against the total number or the average number of workers on weekly basis during this same period, so that we could get a sense of whether or not the total number of injuries and illnesses appear to be related to the total number of workers that were present during the response.

As you can see here, there does seem to be a distinct correlation between those two variables, such that it seems that the overall rates of injury and illness - we didn't calculate it exactly, but from this we can crudely tell it appeared to stay relatively stable throughout the response.

On the next slide is a table that was used in the report to give an overview summary of the injuries and illnesses. For instance, it demonstrates that during that period there were 2,130 total injuries and illnesses, and it gives the breakdown of how many those were injuries, how many were illnesses and further breaks down whether or not those were first aid cases, in particular OSHA recordable cases and those cases that involved Restricted duty.

We also gave a breakdown of the worker type. And I would like to point out there you can see there that the great majority workers that were recorded in this database were contractors as opposed to BP employees, federal, state, local workers or volunteers.

For approximately 40% of the data, we had information on the age of the person who was injured or ill. And we have a breakdown there which shows the distribution, which is a rough estimate because only 40% of the workers had this type of data available, but it gives us some idea of the age groups that were participating in this response.

In the next graph is where - Slide 34 is where we broke down injury by a sort of proxy for severity. Whether or not the injury was listed as being treated by first aid which was per OSHA definitions, whether it involved medical treatment beyond first aid, and then if it required that type of medical treatment, if it in fact also lead to loss time or restricted duty. And you can see

that a great majority of the injuries and illnesses in this database were first aid in nature.

On the next slide we gave a breakdown of the most common injuries by nature of injury which is one of the OIICS codes that we used. And you can see here that sprain strains, muscle and joint pain, and contusion and hematomas predominated. What's interesting is that the sprain strains, muscle and joint pain had a higher percentage of cases that were OSHA recordable in relation to contusions and hematomas.

Lacerations and punctures were the third most common. Animal bites and stings fourth most common. Unspecified nature of traumatic injury was next, and burns followed that up as the most - the sixth most common types of injuries that were seen in our data for the responders in this response.

On the next slide is where we were able to use the OIICS coding for event, and what we listed here were the most common events that led to injury and whether or not that injury was treated by first aid or was OSHA recordable. Now, what you see here is that the most common event as a group was animal bites or stings. That predominated. Overexertion was the next one. Struck by moving object. Water vehicle incidents and automobile incidents were next.

And then the last or the various types that I think if you categorized those together as sort of traumatic injuries, that might be a larger number but in terms of breaking all these different ones down, struck against objects or equipment was lower down, rubbed or abraded by friction was one of our lesser common ones, and caught in or compressed by objects led to many of those contusions and sprains and strains that we saw in the earlier graph.

And the next slide -- Slide 37 -- is where we have a breakdown of the most common illnesses that occurred and a breakdown of whether or not those illnesses were treated with first aid or were OSHA recordable cases. You can see here that heat stress and effects of heat was the number one illness that we saw amongst responders in this database.

The second category -- multiple symptoms -- refers to a constellation of symptoms that fit more than one organ system. An example of that would be somebody who listed for example, nausea, vomiting, headache and dizziness, but this is not something that could be attributable to heat because of a lack of further information and those were the second most common illness.

Headache and dizziness was third, followed by gastrointestinal illnesses. Dermatologic was next. General symptoms are those that could be not bebased on the amount of information we had. It could not be attributed to a specific organ system. And cardiovascular were amongst the less common illnesses that we saw, although there was a higher percentage of OSHA recordable cases in that category.

Now in the next slide, we present a table - this is Slide 38 in which we break down a number of the injuries and illnesses in broad categories and then for selected injuries and illnesses, but whether or not that injury or illness occurred in an offshore setting or an onshore setting. So we did that for the first eight cases and the OSHA recordable cases for injuries and illnesses. We did it by the command center in which those injuries and illnesses were a part of that command.

And then most interestingly which I'll highlight there, we showed a few selected injuries and illnesses to highlight, and what I wanted to point out here in this circle in red is the heat stress and multiple symptoms category in which

you can see that in both cases, a majority of these cases occurred onshore as opposed to offshore. We have a strong suspicion that the multiple symptoms cases likely were heat stress as well, but there simply was not enough information to make that determination definitively.

On the next slide -- Slide 39 -- is where we show our time trend analysis of the heat stress cases that occurred between April 23 and July 27, which shows that in early June and in mid July there was somewhat of a spike in the number of cases that occurred.

And so what we did on the next slide -- Slide 40 -- is to get a little bit more information about those heat stress cases to determine what might have been involved. The first issue that comes to mind as being a strong factor involved in that is the weather and the environmental conditions.

So what we did is, in this slide you can see how we can geographically located the heat stress cases throughout the gulf and that is indicated in red, and you can see they're fairly uniformly distributed around these three state gulf areas. And then we've also pinpointed a number of NOAA weather stations located approximately in those areas, and we were able to obtain environmental data from those, I believe, five weather stations so we can compare environmental conditions to where these heat stress cases were occurring.

On the next slide -- Slide 41 -- is where we compare the trend of heat stress cases with the environmental conditions in that general area in the gulf. And what we found was fairly interesting and possibly expected in that with the yellow line, you'll see the daily average heat index which is a combination of the temperature and the humidity to give you a heat index that's the overall for the 24 hour period. And then we in blue depicted what the heat index was

during more standard working hours -- 6:00 am to 9:00 PM -- to get a sense of what it was like during - basically during the day.

And what we saw there is as one might expect, that there was a significant uptrend in the heat index that was in correlation with increased number of cases of heat stress. So it does seem that as we expected environmental temperature and humidity was highly correlated with the number of heat stress cases that occurred.

On the next slide I included -- Slide 42 -- a red line which indicates the daily high for those days to see if there is any difference there, and again there seems to be a correlation between the environments and how hot it was out there basically and the number of heat stress cases that occurred.

So you can see in the middle of this graph though, that where the environmental conditions persisted as being quite high, the number of heat stress cases then began to come down presumably as things were changed to compensate for the fact that it was getting so hot out there, and they changed some of that - the rules that they had to deal with heat issues out there.

Now Slide 43 is where I begin to represent some of the results from our health hazard evaluations where they did symptom surveys amongst these workers. One of the groups of workers that they did an evaluation on was those involved in the dispersing operation.

And what they found in terms of their symptom survey was that very few workers reported illness, injury or behavioral issues amongst those workers involved in this activity. Some of the workers tested did report headaches, fatigue and skin symptoms, but these symptoms were similar to those reported

by a comparison group of response workers that were not involved in dispersant operations.

On the next slide is a result of the symptom survey from in-situ burn operations in which these workers involved in corralling oil on the surface within boom, and then under the right conditions setting that oil on the surface on fire so it could be burnt off.

And what they found is that the symptoms reported by workers surveyed during these operations were similar to those reported by response workers who were not exposed to hazards related to in-situ burning as a control. Their frequency of symptoms might have been similar but the range of symptoms that they reported were very similar to controls.

The next slide is sort of an overview of the symptoms survey results where shore operations were targeted, all those involved in beach clean up and other shore related activities. This involved a large of number workers; 1,899 workers at 36 shore cleaning sites were able to complete the health symptom survey and as a comparison group, they used 103 workers at Venice operations center who were not involved in the actual shore activities.

These workers utilized PP such as safety glasses, hats, gloves, rubber toed boots and the variable use Tyvek suits to give you a sense of what they were wearing in relation to the environmental conditions that they faced. Now the symptoms reported most frequently were headaches, coughing, musculoskeletal ache in the hand, shoulder and back, and some reported psychosocial symptoms such as being worried, pressured or depressed.

Now on the next slide, I show a table from this symptom survey where I point out where there are some significant differences between the reporting of

symptoms by shore cleaning workers versus those in the control unexposed category Venice operation center. Here you can see that things like feeling faint, dizziness, fatigue, exhaustion or weakness was reported amongst 22% offshore cleaning workers and only 13% of shore workers who weren't involved in shore activities. Other activities that showed a significant difference were itchy eyes, nose irritation, headaches which should be included there, and trouble breathing.

On the next slide, this is a continuation of that same table. You can see there were also significant differences between shore activity responders and those in the control group for itchy skin, hand, shoulder or back pain and the category of feeling worried or stressed and pressure. So it wasn't able to be determined exactly what were the types of exposures that led to these symptoms.

And it's probable that these symptoms were related to a variety of different factors, both occupational and non-occupational. But it's interesting to note that there were some differences here between symptoms reported by shore workers and those in the control group.

Now to finish this up, what I'd like to point out is a Website on the CDC emergency preparedness and response Website, which provides guidance for healthcare providers who might be involved in treating workers. The link for this Website is at the bottom of this slide.

And on the next slide -- Slide 49 -- I show some of the categories that are covered in this guidance. It includes what providers should know about the health hazards that were faced by responders in the gulf, what to consider when providing clinical care, what providers should know from the results of environmental and health surveillance.

A review of the federal efforts to support health and medical needs for local residence and responders, and the section on links to further resources that is available to clinicians involved in the care of workers. This again is available at the link at the bottom of this slide. That concludes my presentation. I'll give it back to you, Loretta.

Loretta Jackson-Brown: Thank you Dr. Yip and Dr. Halpin for providing our audience with such a wealth of information. I will note that the link that Dr. Halpin referred to will be included on the COCA Website under this call-in information. Please check the COCA Website in a few days for that link. We will now open up the lines for the question and answer session.

Coordinator: Thank you. And at this time if you would like to ask a question, please press star 1. Please remember to unmute your phone and record your first and last name when prompted. And to withdraw the question, you may press star 2.

Once again to ask a question, please press star 1. One moment for the first question please. Our first question comes from Joel Greenspan. Your line is open.

Joel Greenspan: Thank you. A very nice presentation. I'm curious to know whether based on both of your findings, those in the general population and in workers that, is there expected to be a long-term follow up of either general population or workers similar to the follow up that was required after the 911 clean up in New York City.

Dr. John Halpin: Well, this is John Halpin from NIOSH. During the response, one of the major NIOSH activities was a roster of all workers involved in the response. And that roster had over 50,000 workers that were trained and a certain percentage

of those were actually involved in the response. And this population of workers, this cohort is going to be utilized by the National Institute of Health -- NIH -- and their Institute for Environmental Health Services in a long-term study of workers involved in the response using the NIOSH roster as part of their ways of identifying workers involved in the response, as well as controlled groups. And this is a long-term health study that is being developed as I say by the NIH and will be conducted in the near future.

Coordinator: And at this time there are no further questions in queue.

Loretta Jackson-Brown: I would ask Dr. Halpin and Dr. Yip to discuss again their particular surveillance system that was unique in utilizing the chief complaint information for patients who participated in hospitals in the gulf.

Dr. Fuyuen Yip: This is Dr. Yip. Yes. We used the BioSense syndromic surveillance system to monitor chief complaints in the participating hospitals in the gulf coast. And they used an algorithm to detect any increases in specific syndrome basically groupings of symptoms to inform the public health officials if they needed to - if it warranted follow ups.

So a clustering of dermal related exposures or rash for example, or collectors or groupings of respiratory related illnesses. That syndromic surveillance or BioSense was able to detect that in the participating facilities.

Loretta Jackson-Brown: Thank you. Operator, do we have any further questions at this time?

Coordinator: No, ma'am. At this time there are no further questions.

Loretta Jackson-Brown: On behalf of COCA, I would like to thank everyone for joining us today with a special thank you to our presenters, Dr. Yip and Dr. Halpin. If you have additional questions for today's presenters, please email us at coca@cdc.gov. Put Dr. Yip or Dr. Halpin in the subject line of your email and we will ensure that your email is forwarded to them for a response.

Again that email address is coca@cdc.gov. The recording of this call and the transcript will be posted to the COCA Website at emergency.cdc.gov/coca within the next few days. Continued education credits are available for this call.

Those who participated in today's COCA conference call and would like to receive continued education credits should complete the online evaluation by January 14, 2011 using course code EC1648. That is E as in Echo, C, as in Charlie and the numbers 1, 6, 4, 8. For those who will complete the online evaluation between January 15, 2011 and January 14, 2012, use course code WD1648. That is W, as in Walter, D, as in Delta and the numbers 1, 6, 4, 8.

All continued education credits and contact hours for the COCA conference calls are issued online through TCE online. The CDC training and continuing education online system at www.2a.cdc.gov/tceonline. To receive information about upcoming COCA calls, subscribe to COCA by sending an email to COCA at cdc.gov and write, "Subscribe," in the subject line. Thank you again for being a part of today's COCA conference call. Have a great day.

Coordinator: Thank you for participating in today's conference call. You may all disconnect at this time.

END