

As Oil Spill Grows, So Does Need For Data On Health Effects

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NASA's Aqua satellite captured this image of the Gulf of Mexico on April 25, 2010 using its Moderate Resolution Imaging Spectroradiometer (MODIS) instrument. With the Mississippi Delta on the left, the silvery swirling oil slick from the April 20 explosion and subsequent sinking of the Deepwater Horizon drilling platform is highly visible. The rig was located roughly 50 miles southeast of the coast of Louisiana. Credit: NASA.gov

Since the Deepwater Horizon drilling rig exploded on April 20, spewing untold millions of gallons of oil into the Gulf of Mexico, cleanup crews have been working feverishly to mop up oil at sea and prevent the slick from reaching Louisiana, Mississippi, Alabama and Florida shores. It's hot, dirty, heroic work, but toxicologists and health professionals say it's not the only work that needs to be done.

This week, dozens of experts in public [health](#) and environmental medicine gathered in New Orleans at a symposium hosted by the Institute of Medicine to discuss how to mitigate the human health effects from the Gulf [oil](#) spill. As the clean-up effort stretches from weeks into months with no end in sight, experts at the conference warned that little is known about how long-term exposure to oil and fumes can affect human health.

“The current scientific literature is inconclusive with regards to the potential hazards resulting from this spill,” said U.S. Surgeon General Regina Benjamin during her opening remarks at the conference. “Some scientists predict little or no toxic effects while others express serious concerns about the potential for short and long-term health impacts,” she said.

This conflict reflects in part a historical lack of public health studies and monitoring after oil spills. In the past 50 years, 38 supertanker accidents have unleashed hundreds of millions of barrels of oil into the world’s oceans.

“The ecological consequences of these spills were well documented, but human health effects were only studied in seven out of the 38 events,” said Blanca Laffon, a toxicologist at the University of A Coruña in Galicia, Spain.

These studies mainly evaluated acute, short-lived physiological and psychological symptoms such as respiratory distress, skin rashes, depression and anxiety, she said.

Efforts at conducting long-term studies after previous oil spills like the Exxon Valdez disaster off the coast of Alaska in 1989 have been thwarted by sheer logistics - setting up a rigorous scientific study in the wake of a disaster is a daunting task - and by the threat of litigation.

“Litigation can be a barrier for a number of reasons,” said Lawrence Palinkas, a medical anthropologist at the University of Southern California in Los Angeles who spoke at the IOM conference. “The threat of a lawsuit calls into question the objectivity of research both in terms of who’s collecting the data and who’s providing the funding.”

The unprecedented nature of the Gulf spill - the largest and longest ongoing influx of oil into U.S. waters - makes predicting the potential health impacts of these effects even more difficult.

“As much as we can, we ought to look at past [oil spills](#) and learn from them, but we need to keep in mind that this is a very different kind of event,” said LuAnn White, a toxicologist at Tulane University in New Orleans, Louisiana. “The Exxon Valdez spill was very close to shore,” she said. “This is 50 miles offshore and the oil has days to weather before it reaches beaches.”

Weathering reduces harmful toxins in the oil and so far, testing of tar balls washing up on shore has not raised any red flags, she said.

But despite the low-level toxicity detected in the tar balls, “with the volume of oil that’s out there and the large number of people who could be exposed I think we need to be diligent,” she said. “Everybody in contact with the oil needs to be monitored for symptoms because there’s a lot we don’t know.”

The composition of petroleum can vary from source to source, but it is generally made up of a toxic brew of substances that can be dangerous to human health, including chemicals like benzene that are known to cause cancer in humans and others that are toxic to the brain and central nervous system, such as polycyclic aromatic hydrocarbons. So far, neither benzene nor PAH’s have been detected in alarming levels in the Gulf oil. Skin contact and inhalation of crude oil and its vapors can cause

dizziness, nausea and skin rashes in the short term. Long-term risks may include respiratory, kidney and nervous system damage, as well as DNA damage and cancer.

This time around, scientists have no intentions of missing another opportunity to study the potentially adverse [health effects](#) of spilled oil. Several government and non-profit agencies including Gulf state [public health](#) departments, the Centers for Disease Control and Prevention and the American Association of Poison Centers have said they will conduct long-term surveillance on health issues related to the spill.

So far, in first three weeks' surveillance, the hospital-based monitoring and public hotlines system run by the Louisiana Department of Health and Hospitals has gotten what State Health Officer Jimmy Guidry called “a robust response.” Complaints from the public, clean up workers and volunteers have included headaches, nausea and throat irritation due to exposure to oil and fumes, as well as reports of heat stress and injuries sustained by workers during cleanup.

With the leak not yet plugged it's impossible to say how long this monitoring will need to go on or how dire the health consequences will prove to be, Guidry said.

“Right now the Gulf is a giant research lab. This is more than a spill and there are a lot of unknowns,” he said.

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