Expert panel calls for public health research on natural gas drilling

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Groundwater and air quality testing before, during, and after natural gas drilling – which includes hydraulic fracturing—should be key components of efforts to ensure the safety of communities near these sites, according to an expert panel convened to weigh in on public health research needs associated with unconventional natural gas drilling operations (UNGDO). The panel also urges that any research conducted should use "community-based participatory research principles" so that the concerns of the many stakeholders involved in these activities can be addressed.

A group of environmental health researchers, led by Trevor Penning, PhD, director of the Center of Excellence in Environmental Toxicology (CEET) at the Perelman School of Medicine, University of Pennsylvania, published their findings this month in *Environmental Health Perspectives*.

UNGDO, which includes hydraulic fracturing and horizontal drilling, supplies an energy source which is potentially cleaner than liquid or solid fossil fuels and may provide a route to energy independence for the U.S, say proponents. However, significant concerns have arisen due to the lack of research on the public health impact of this type of energy extraction.

"The working group was convened following presentations on the potential of natural gas drilling to adversely affect public health at the 2012 Annual Environmental Health Sciences Core Centers [EHSCC]

meeting at Harvard School of Public Health," states Penning.

Sixteen of the twenty EHSCCs funded by the National Institute of Environmental Health Sciences (NIEHS) joined the working group to review the literature on the potential public health impact of UNGDO and to make recommendations for research.

The Inter-EHSCC Working Group concluded that a potential for water and air pollution exists that might endanger public health and that the social fabric of communities could be affected by the rapid emergence of drilling operations. The working group recommends research to inform how potential risks could be mitigated.

Some of the key suggestions are:

- Baseline ground water quality data should be taken before drilling begins and be monitored over the lifetime and abandonment of the gas-producing well.
- Ambient and occupational air quality should be measured at active drilling sites and be compared with baseline measurements in adjacent areas without drilling operations.
- An environmental epidemiological study should be performed to determine whether an association exists between health outcomes data and water quality in private drinking wells in communities with and without hydraulic fracturing.
- An environmental epidemiological study should be performed to determine whether air pollution associated with UNGDO increases the incidence of respiratory illness and cardiovascular disease.
- Community-based participatory research principles should be embraced in designing and conducting studies on environmental and health impacts of UNGDO so that a range of community perspectives are addressed. All stakeholders

(individual/community/industry/advocacy groups/decision makers) should be engaged early to foster multi-directional communication and accountability.

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