

# Setting the Stage for Health: Why Fracking, Why Now?

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Identifying Key Issues That Are Unique And Potential Priorities

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# Purpose of the Workshop

- Use shale gas extraction as a case study
- Describe the technology
- Demonstrate how the health impact assessment process can be used to mitigate potential health impacts

# Health Impact Assessment

- An HIA is an approach to incorporating public health into decision-making processes
- As opposed to costly retrofitting and remediation, HIAs are proactive and preventive
- Potential to save health care costs in the long-term

IMPROVING  

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HEALTH  

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IN THE  

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UNITED STATES  

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**The Role of  
Health Impact Assessment**

NATIONAL RESEARCH COUNCIL  
OF THE NATIONAL ACADEMIES

# Underlying Principles

- Identify ways to mitigate adverse health effects
- Apply the best state of the science
- Consider direct and indirect health risks and solutions from a cradle-to-grave approach
- Draw from analogous conditions when data is incomplete
- Identify vulnerable populations and stakeholders
- Describe research questions, data sources, data gaps, and how to address uncertainty

# Process for Health Impact Assessment

- Screening: Is there a likelihood that hydrofracking could have health effects?
- Scoping the problem
- Assessment (baseline and potential impacts)
- Recommendations
- Reporting
- Monitoring and evaluation

# Scoping an Issue

- Potential Health effects
- Establishing who might be affected
- Who should do the assessment and who are the stakeholders
- Data sources and methods
- Alternatives to the proposed action
- Output of the process



**Geographic Footprint**



**Community Impact**

**Health Impact Assessment**



**Water Quality**



**Occupational Risks**



**Air Quality**



# Example of a Table for Rating Importance of Health Effects

Magnitude of Impact		Likelihood of Occurrence of a Health Impact		
		Low	Medium	High
Health impact rating	Description	Unlikely to occur	Likely to occur sometimes	Likely to occur often
0	None	No significance	No significance	No significance
1	Low	Very low significance	Low significance	Medium significance
2	Medium	Low significance	Medium significance	High significance
3	High	Medium significance	High significance	High significance

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# Geographic Footprint

- What are the health concerns related to dust, noise pollution, light pollution, seismic activity?



# Occupational Exposures

- How many workers?
- Major occupational risks?
- Health and safety oversight?
- Surveillance systems?



# Community Impacts

- The proximity of drilling and gas production to homes, recreational areas, and schools
- Vulnerable populations
- Exposure to air contaminants



- Exposure to chemicals used in the hydraulic fracturing process through soil or water
- Potential increased risk of fires, explosions and/or motor vehicle crashes
- Harm to wildlife
- Changes in community “livability”
- Lack of community engagement



# Air quality

- Airborne volatile organic compounds
- Diesel emissions
- Particulate matter
- Climate, population and geography factors



# Water Quality

- Slickwater: Adding chemicals to water to increase the fluid flow
- Disposal of waste water
- Risks to drinking water from diesel fuels and other chemicals



# Assessment of the Science and Next Steps: Outcome of Workshop

- What evidence links adverse health effects and hydrofracking?
- What can be done to minimize adverse health effects as the technology evolves (e.g., best practices)?
- Where is there uncertainty (appropriate metrics)?
- What are the next steps for stakeholders?