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Public Health Nursing-Environmental Health: Lessons Learned Regarding Emerging Health Issues Related to Unconventional Natural Gas Drilling

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Presenter Disclosures

Lenore K. Resick, PhD, CRNP, FNP-BC, FAANP, FAAN

No relationships to disclose

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Environmental Health Project

- The Southwest Pennsylvania Environmental Health Project (EHP) is a nonprofit environmental health organization created to assist and support Washington County residents who believe their health has been, or could be, impacted by unconventional natural gas development (UNGD).
- Since the beginning of the project, EHP has grown to assist a wider region than Washington County, PA.

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Acknowledgments

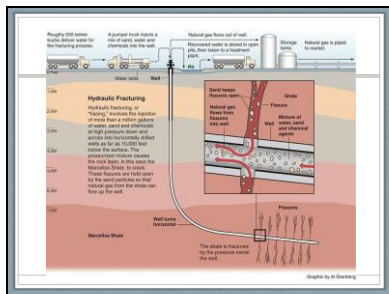
- The data analysis of the cases reviewed in this presentation was completed by members of EHP's Connecticut and Maine teams including David Brown, Beth Weinberger, Ceia Lewis and Leslie Walleigh.
- Health assessment data were gathered by EHP's past family nurse practitioners, Suann Davison and Denise DeJohn.
- Portions of the slides were developed by Ryan Grode.

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Objectives

- Discuss the most common symptoms and physical findings of individuals living in and near communities experiencing the proliferation of **unconventional natural gas development (UNGD)**
- Describe five lessons learned by a nurse practitioner working with individuals living near UNGD activities

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EHP Outreach

Communities that reach out to us:

- Regional watershed groups
- Clients/groups concerned about the placement of UNGD in their communities
- Clients/groups specifically concerned about the placement of UNGD near schools

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EHP Health Assessments Include:

- Full health history of client;
- Recording of vital signs and symptoms;
- Documentation of occupational and household exposures; *and*
- Recommendations for further medical consultations and/or steps to cut off pathways of exposure (air, water, or soil).

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EHP Data Collection

- With residents/community permission, EHP collects aggregate data on health, air, and water impacts.
- EHP seeks to establish strong associations between the presence of surrogate chemicals, particulate matter (PM) and health impacts that are associated with the chemicals identified as part of UNGD.

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Episodic Air Exposures

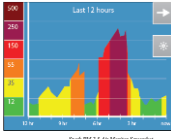
Residents experience symptoms that come and go (e.g. respiratory problems, headaches, nausea, skin rashes, etc.). Factors that might contribute to this include:

- Variable emissions
- Homes surrounded by multiple sites
- Weather causing further patterns of variability

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Review of Reported Symptoms

- Symptoms might be persistent, transient, or intermittent. These variations in symptom presentation are consistent with the changing and episodic* nature of exposures.
- Cases are based on concern of a resident or evidence of exposure potential, not a random survey of all residents in Washington County.



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Symptoms temporally related to the onset of UNGD activities within 1 kilometer (.6 miles) and are not potentially explained by other exposures or medical conditions.

n=54
(see next slide)

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Lessons Learned

- Both chemical and non-chemical exposures pose health risks to human and animal residents of gas production areas.
- Rapid change introduced into rural communities carries risk of social disruption and mental health consequences.



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Lessons Learned

- Individuals living near UNGD activities are at risk for undiagnosed conditions related to environmental exposures.
- Health care providers need to be aware of potential for emerging environmental health issues in their communities.

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Lessons Learned

- Nurses play a vital role in the health of individuals and communities experiencing a proliferation of UNGD
 - Clinical Practice
 - Research
 - Advocacy

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