IN NEW YORK...

ADDRESSING HEALTH IMPACTS ASSOCIATED WITH THE EXTRACTION, PRODUCTION, TRANSPORT AND USE

Larysa Dyrszka MD
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June, 2016
NEW YORK...ADDRESSING HEALTH IMPACTS ASSOCIATED WITH THE EXTRATION, PRODUCTION, TRANSPORT AND USE OF FOSSIL FUELS

- Impacts on people and animals
- Theo Colborn
- Varied messages, but united
- GASLAND
- Home rule
- SEQRA process in NYS
- Letters to Governor Cuomo
- The medical community
- Demand HIA
- Research
- Citizen science
- CHPNY Compendium
- Ban on fracking
- but...O&G infrastructure proliferating
People and animals around gas exploration and production sites were getting sick

List of the Harmed compiled by Jenny Lisak, Co-director of PACWA Pennsylvania Alliance for Clean Water and Air

21,557 impacted as of March 25th, 2016
Land in NY was being leased
Theo Colborn documented chemicals used at gas exploration sites
American Academy of Pediatrics, District II, New York State
Dedicated to the Health of All Children

Contact: Elie Ward, Director of Policy & Advocacy
eward@aap.net
518-441-4544

June 7, 2010

Memo of Support
A. 10490/S. 7592

An act to establish a moratorium on conducting hydraulic fracturing for extraction of natural gas or oil in New York State until 120 days after the Environmental Protection Agency issues a report on the effects of hydraulic fracturing on water quality, air quality and other public health impacts.

The American Academy of Pediatrics, District II, NYS, representing more than 6,000 pediatricians and the millions of children we care for across the state, strongly supports A10940/S7592.

This legislation provides an opportunity for the EPA to study the potential public health impacts of hydraulic fracturing, and for New York State’s leaders to have that information before it makes any decision about permitting hydraulic fracturing in our state.

AAP, District II, NYS membership is concerned about the potential negative impacts on water, air, soil contamination, increased traffic and possible spills of contaminated materials in areas where many children and families live. Allowing time for the EPA study will allow our state leaders to move forward on this issue fully informed about whether hydraulic fracturing is a good public policy for our state.

We urge the legislature to pass this legislation now, imposing the moratorium to provide the time to for our state leaders to have the latest EPA data to inform our decisions going forward.
- Citizen groups with varied messages and methods...
NONVIOLENT CIVIL DISOBEDIENCE
• ...but united in opposition to fracking
The medical community was among them, raising concerns in this first letter to the NYS Health Commissioner.
- GASLAND mobilized citizens and communities
...dozens of communities across New York passed moratoriums and bans on fracking, and in June, (2014) the state’s highest court, the Court of Appeals, ruled that towns could use zoning ordinances to ban fracking.

SEQRA process in NYS was important, but lack of adequate attention to health in the SGEIS led health professionals to question the Governor and Commissioners about the study.
Over 250,000 comments sent in to NYS DEC on the SGEIS

http://frackwire.alternativeslink-regular.com/
...and with a little help from our friends...

Congressman Hinchey sponsored the FRAC Act and secured funds for the EPA to study the impacts of HF on water

Health professionals wrote letters to NY’s Health Commissioner and Governor, joined by health and environmental orgs, and maintained a presence in Albany to educate policymakers.

Since Governor Cuomo’s inauguration in January 2010, hundreds of health professionals and organizations from across the state of New York have called on his administration to conduct an independent, comprehensive Health Impact Assessment. The letters can be found at http://concernedhealthy.org/letters-to-governor-cuomo/

October 14, 2015
May 29, 2014
February 27, 2013
October 4, 2012
March 16, 2012
December 12, 2011
October 5, 2011
March 26, 2011
February 28, 2011

The Honorable Andrew M. Cuomo
Governor of New York State
NYS State Capitol Building
Albany, NY 12224

Health Commissioner Howard A. Zucker
New York State Department of Health
Corning Tower
Empire State Plaza,
Albany, NY 12237

Dear Governor Cuomo and Health Commissioner Zucker,
Role of Public Health Advocates—When an Activity That May Impact Human Health, Such as Gas Drilling, Is Contemplated, or Already in a Community...Assess and Advocate

• The U.S. Institute of Medicine has defined the field of public health as "what we do as a society to assure the conditions in which people can be healthy." See Addressing the Social Determinants of Health Inequities: Learning from Doing. American Journal of Public Health, Vol 95(4) 553-555
DETERMINANTS OF HEALTH

Source: Dahlgren and Whitehead, 1991
We knew that COMMUNITY IMPACTS may be associated with health effects

- traffic and road safety
- worker safety
- housing, community character, schools
- crime, sexually transmitted infections and substance abuse
- economic issues such as employment, value of home
- health infrastructure including availability, insurance, cost
- justice concerns such as vulnerable populations, equality
- cumulative effects of multiple stressors
- loss of viewshed, foodshed and watershed

Public Health Risks of Shale Gas Development by John L. Adgate, Bernard Goldstein, and Lisa M. McKenzie
http://sites.nationalacademies.org/xpedio/groups/dbassesite/documents/webpage/dbasse_083235.pdf

http://www.maneyonline.com/doi/abs/10.1179/2049396713Y.0000000024?token=00501af2d2efc5546541333c4a2f7a3fa5e2c494147767667774f6d62222c227e372530332976198 and
http://www.marcellus.psu.edu/resources/PDFs/ImpactsKelsey.pdf and

http://pubs.cas.psu.edu/freepubs/pdfs/ee0020.pdf
...and ENVIRONMENTAL STRESSORS existed as well

- air pollution
- water contamination
- chemical mix
- radiation
- waste

People and communities...
- in areas mining silica
- where gas is extracted, processed and transported
- near pipelines, power plants and storage facilities
- who receive their water from gas drilling areas
- who are downwind of gas producing or processing areas
- whose regions receive gas drilling waste
- Marcellus shale gas consumers
- who are workers in the gas industry
- whose health is already compromised, or who are vulnerable, as well as animals, water, air and crops
There is a process which brings public health to the table and which can inform land use decisions and should be used prior to the development of regulations and before permitting. It is particularly important in the case of gas exploration and production.

HEALTH IMPACT ASSESSMENT

“HIA IS A SYSTEMATIC PROCESS THAT USES AN ARRAY OF DATA SOURCES AND ANALYTIC METHODS AND CONSIDERS INPUT FROM STAKEHOLDERS TO DETERMINE THE POTENTIAL EFFECTS OF A PROPOSED POLICY, PLAN, PROGRAM, OR PROJECT ON THE HEALTH OF A POPULATION AND THE DISTRIBUTION OF THOSE EFFECTS WITHIN THE POPULATION. HIA PROVIDES RECOMMENDATIONS ON MONITORING AND MANAGING THOSE EFFECTS.”

“IMPROVING HEALTH IN THE UNITED STATES: THE ROLE OF HEALTH IMPACT ASSESSMENT”
HTTP://WWW.NAP.EDU/CATALOG.PHP?RECORD_ID=13229
CHARACTERISTICS OF THE HIA

• It is meant to be prospective, preventive and proactive

• The timing of an HIA is best when it is done before a policy, process or regulation is implemented

• It focuses the attention of decision-makers on the health consequences of projects and policies that they are considering

• It identifies vulnerable groups and stakeholders

• An HIA uses existing data sources such as population data, surveys, risk assessment, literature review, expert opinions and stakeholder input to predict the impact on a population from a particular land use decision by considering direct and indirect health risks and solutions from a cradle-to-grave approach

• It is a decision support tool and not intended to simply evaluate a decision after it is made

• It offers recommendations for further study, and does not necessarily include the studies; it draws from available information in similar conditions when data is incomplete

• It has the potential to save healthcare costs in the long run
THE MAJOR STEPS IN CONDUCTING AN HIA ARE SIMILAR TO THOSE OF AN EIS

• Screening (identify projects or policies for which an HIA would be useful)

• Scoping (identify which health effects to consider)

• Assessing risks and benefits (identify which people may be affected and how they may be affected—baseline and potential impact; identify vulnerable groups)

• Developing recommendations (suggest changes to proposals to promote positive health outcomes and mitigate adverse health effects)

• Reporting (present the results to decision-makers)

• Evaluating (determine the effect of the HIA on the decision)

from http://www.cdc.gov/healthyplaces/hia.htm
REASONS AN HIA IS USEFUL IN LAND USE DECISIONS

• The practice of Health Impact Assessment (HIA) elevates the role of health in decision-making

• HIAs are a practical tool that can provide a structured process to determine a policy or project’s impact on health

• HIAs bring both immediate and long term health benefits

• HIAs ensure project dollars are used efficiently to provide the highest benefit to communities

• They help create healthier communities by addressing the root causes of many significant health problems

• HIAs have demonstrated success in a variety of issue areas, ranging from land use and transportation to housing policies, labor standards, natural resource extraction, education and economic policies
HIA IS A HELPFUL TOOL FOR THE MEDICAL COMMUNITY

- Advocacy and leadership

- HIA is unique in that health is brought into decisions and policies which may not have previously considered health implications

- Involves coordination, cooperation and communication among stakeholders, policymakers and health professionals

- Integrates best research with clinical expertise in order to make informed decisions about the health of a community

- HIA includes developing recommendations to minimize adverse health effects

- Influences patient care because the practitioner will be more aware of a particular land use, and its potential health impacts

- Understanding how HIAs work and how they can inform a decision integrates medical knowledge with environmental policies
The process of HIA been used less than a handful of times in the US to inform proposed gas drilling regulations or policy—
in Battlement Mesa CO,
North Slope AK,
by the Univ of Maryland for the State of Maryland,
by the Univ of Michigan for the State of Michigan
The medical community advocated for a comprehensive Health Impact Assessment.
Support for a Health Impact Assessment in NYS budget

March 16, 2012

The Honorable Andrew M. Cuomo
Senate Majority Leader Dean Skelos
Assembly Speaker Sheldon Silver

Dear Governor Cuomo, Senate Majority Leader Skelos, and Speaker Silver,

As you negotiate the budget, we urge you to include a Health Impact Assessment on gas exploration and production using high-volume, slick water, horizontal hydraulic fracturing in the New York State 2012-2013 budget. The New York State Assembly included such a health impact assessment in their 2012-2013 budget resolution.

The medical community across New York has become increasingly concerned about the health impacts of hydraulic fracturing. Throughout the country health impacts ranging from loss of smell, memory problems, and headaches to a number of serious respiratory illnesses and cancers have been associated with high-volume, slick water, horizontal hydraulic fracturing. In October 2011, 250 physicians and medical professionals joined together in calling for a comprehensive public health impact assessment http://www.psehealthyenergy.org/resources/view/198813. On December 10, 2011 Dr. Sandra Steingraber, Lois Gibbs and Fran Drescher echoed that call with nineteen NY-based cancer advocacy groups in a letter asking for the same assessment http://www.psehealthyenergy.org/resources/view/198831.

Experts in the federal government are also asking that more research be done on the health impacts of fracking, including Christopher Porter, the Director of the National Center for Environmental Health at the Centers for Disease Control and Prevention in Atlanta, Georgia. As one of the most respected researchers on health issues, Porter stated, "More research is needed for us to understand public health impacts from natural gas drilling and new gas drilling technologies." To go forward in New York without a proper health impact assessment is therefore unacceptable. We respectfully request that an appropriation be made for this study.

Sincerely,

Robert F. Kennedy, Jr.  Sandra Steingraber PhD
Elie Ward, American Academy of Pediatrics District II, NYS  MaryBeth Carlberg MD
Broome County Medical Society  John Cooke MD
Medical Society of the County of Tompkins  James C. Macnillan MD
Familycare Medical Group, Syracuse, NY  Suzanne Anderson MD
Ramon Murphy MD  Rhonda Peterson MD
Lila Kalmich MD  William Klepack MD
Judith Maidenbourn PhD  Dr Christine Durbak
Eric London MD  D. Barry Crittenden, MD
David Gould MD, MBA  Amy Freeth MD
Kenneth Jaffe, MD  Adam Law MD
Kathleen Nolan MD, MSL  Jeff Sneedek MD
Maya Shetreat-Klein MD  Connie A. Jastremski RN MS MBA
Michelle Bamberger PhD  FCCM
Donna Flayhan PhD  Michael Jastremski MD
James Dalton MD  Larysa Dyrska MD
Janet Corson-Rikert MD  Paul Bermanzohn, MD
Beth Olearzyczky MD  Brent White, MD
Richard Weiskopf, MD
Medical Society of the State of New York

High Volume Hydraulic Fracturing

New York State physicians have expressed concern about potential short term and long term health consequences of hydraulic fracturing. MSSNY's Preventive Medicine and Family Health Committee (PMFHC) was charged with studying the subject and forming MSSNY policy on hydraulic fracturing.

The MSSNY Council adopted a policy on December 9, 2010 (Position Statement #90.992) to "support a moratorium on natural gas extraction using high volume hydraulic fracturing in New York State until valid scientific information is available to evaluate the process for its potential effects on human health and the environment.

Following the publication of the Draft Supplemental Generic Environmental Impact Statement (draft SGEIS) by the Department of Environmental Conservation (DEC) in September 2011, MSSNY responded to the request for comments on November 22, 2011. This letter reiterated MSSNY's concerns about human health consequences and the impact on the environment. In addition, MSSNY recommended ongoing monitoring and analysis, including a Health Impact Assessment which should be conducted by the New York State Department of Health or a different, non-governmental, health organization.
Hydraulic fracturing Health Impacts Assessment

The New York State Nurses Association (NYSNA), representing the interests of registered nurses and the patients they serve, strongly supports the requirement of a Health Impacts Assessment on gas exploration and production using high-volume, horizontal hydraulic fracturing, prior to the issuing of any drilling permits in New York State. The Assembly budget proposal has set aside $100,000 for a study by a school of public health within the state university system to accomplish the assessment.

The study would include research into other states' experiences with hydraulic fracturing; estimated costs of any health impacts to the state, local governments, insurers, employers and the healthcare system; and a long-term plan for monitoring and mitigating health impacts. The purpose of this study is to inform New Yorker’s of any and all potential public health impacts posed by hydraulic fracturing and to provide an analysis of those impacts. Analysis and information from this study will then be used to help facilitate informed decisions regarding actions to be taken with respect to such activities in the state.

The expansion of hydraulic fracturing is irresponsible until more research is done to ensure the safety of the water supply and the quality of the air in New York. Other states, including Pennsylvania and Wyoming, have found that hydraulic fracturing has contaminated groundwater with synthetic chemicals, some of which are known to cause genetic abnormalities and stillbirths. In a study conducted by the Environmental Protection Agency, chemicals associated with gas production and hydraulic fracturing fluids were found inside deep water wells in Wyoming (Dilouhy, 2011). Regulators in Pennsylvania also determined that gas drilling led to contaminated water and found an increased incidence of heavy metals toxicity among farm animals. (Griswald, 2011).
Concerned Health Professionals of New York released Compendia of health effects of fracking
Number of publications that assess the impacts of UNGD per year, 2009–2015

http://journals.plos.org/plosone/article?id=info:doi/10.1371/journal.pone.0154164
FRACKING COMPRENDIUM UPDATE

Dozens of new studies
“clarify, corroborate, and further explicate intractable problems”

December 11, 2014:
Health professionals release major update to the
Compendium of Scientific, Medical, and Media Findings
Demonstrating Risks and Harms of Fracking
COMPENDIUM OF SCIENTIFIC, MEDICAL, AND MEDIA FINDINGS
DEMONSTRATING RISKS AND HARM OF FRACKING
(UNCONVENTIONAL GAS AND OIL EXTRACTION)

Third Edition
October 14, 2015

http://concernedhealthny.org/compendium/
Dr Zucker’s review boiled down to a simple question: Would he want his family to live in a community where fracking was taking place?

His answer was no.

It “would be reckless to proceed [with HVHF] in New York until more authoritative research is done.”

“We cannot afford to make a mistake,” he said. “The potential risks are too great.”

- focus in NY now on gas infrastructure;
- potential impacts and health concerns are similar to those from fracking, and the environmental stressors include:

  - CHEMICAL EXPOSURE /
  - RADIOACTIVITY /
  - WATER WITHDRAWAL, CONTAMINATION /
  - GAS STORAGE / WASTE DISPOSAL /
  - PROCESSING AND FOSSIL FUEL PLANTS /
  - AIR EMISSIONS /
  - PIPELINES AND COMPRESSORS / OIL TRAINS / EXPORT TERMINALS
  - CLIMATE CHANGE
June 9, 2015 -- The American Medical Association (AMA) adopted a resolution, “Protecting Public Health from Natural Gas Infrastructure,” that states, “Our AMA recognizes the potential impact on human health associated with natural gas infrastructure and supports legislation that would require a comprehensive Health Impact Assessment regarding the health risks that may be associated with natural gas pipelines.”
• Natural gas is methane, a greenhouse gas that is 86X more potent than carbon dioxide over a twenty year period. “The footprint for shale gas is greater than that for conventional gas or oil when viewed on any time horizon, but particularly so over 20 years.” 2011 Howarth, Santoro and Ingraffea.

• Natural gas systems are the single largest source of anthropogenic methane emissions in the U.S., representing almost 40% of total emissions. EPA 2011 data.

• Global climate change costs significant healthcare dollars 2009 Sheffield and Landrigan.

• The threats to health posed by climate change are multiple, and increasingly severe. 2014 PSR

• Threats posed by climate change include air pollution, waterborne diseases, vector-borne diseases, agricultural losses, heat waves, extreme weather events and rising sea levels, and the impacts of a combination of these threats. 2014 PSR
RADIOACTIVITY

- The radioactive elements found in Marcellus shales include uranium, thorium, radium, polonium and radon.
- Federal exemption for radioactive waste exists.
- Radon travels with methane through the pipelines.
- Radium and radon levels from the Marcellus shale are significantly elevated.
- Radionuclides, the decay products of radon, such as Lead-210 and Polonium-210 can be found in pipeline scrapings as well as sludge accumulating in tank bottoms, gas/oil separators, dehydration vessels, compressor facilities, liquid natural gas (LNG) storage tanks and in waste pits.

PIGS
Pipeline Inspection or Intervention Gauge/Gizmo/Gadget
CHEMICAL MIX
~IS CONSIDERED PROPRIETARY
~INCLUDES KNOWN OR SUSPECTED CARCINOGENS, MUTAGENS, ENDOCRINE DISRUPTORS, NEUROTOXINS, HAZARDOUS AIR POLLUTANTS
~MANY OF THE CHEMICALS IN THESE PRODUCTS HAVE EFFECTS AT LOW DOSES, AND CHILDREN AND PREGNANT WOMEN SHOULD NOT BE EXPOSED TO SOME AT ALL.

- Dr Theo Colborn first described the chemicals associated with gas drilling operations; many are endocrine disruptors
- A University of Missouri School of Medicine study linked fracking with dangerous hormone-disrupting chemicals in the water near gas drilling sites, including the Colorado River
- In this recent study of a large cohort, an association was observed between density and proximity of natural gas wells within a 10-mile radius of maternal residence and prevalence of congenital heart defects and possibly neural tube defects.
- Developmental and reproductive effects of chemicals associated with unconventional oil and natural gas operations are described

Some of the chemicals used in gas drilling and hydraulic fracturing that are toxic to human health:
- Benzene (known carcinogen)
- Toluene (causes miscarriages, placenta previa)
- Diesel (recently classified by WHO as a carcinogen)
- Naphthalene (neurotoxin; carcinogen)
- Polynuclear aromatic hydrocarbons (PAHS) (carcinogens)
- Formaldehyde (known carcinogen)
- 2-Butoxyethanol (2BE)

Oil and gas activities contaminate surface and ground water from

- spills
- injection
- storage
- well casing failure
WASTE DISPOSAL

- waste from fracking is extremely high in TDS and barium
- hazardous with current disposal methods
- waste contains radioactive elements, brine and gases
- exempt from federal oversight
- disposal in underground injection wells can, and has caused earthquakes.
COMMUNITY IMPACTS

- air and water impacts
- community tension
- traffic and road safety problems
- abandonment by officials
- crime, sexually transmitted infections and substance abuse
- housing, community character, schools
- economic issues such as value of homes
- cumulative effects of multiple stressors
- worker safety
- noise
- loss of viewshed, foodshed and watershed
- “Solastalgia”
Children are especially vulnerable to air pollutants because their lungs are developing and growing, they breathe at a higher rate than adults, and they spend more time playing outdoors, often being very physically active. Childhood exposure to ozone and particulate matter causes well-documented health effects. Ozone exposure may lead to a number of adverse health effects in children, such as shortness of breath, chest pain when inhaling deeply, wheezing and coughing, temporary decreases in lung function, and lower respiratory tract infections.

Childhood exposure to particulate matter has been associated with respiratory symptoms, decreased lung function, exacerbation of asthma, and development of chronic bronchitis. Rates of preterm births, low birth weight, and infant mortality are increased in communities with high particulate levels. Exposure to particulate matter is also associated with increased school absences, emergency room visits and hospital admissions.
AIR POLLUTANTS

- Methane (CH₄)
- BTEX - Benzene, toluene, ethylbenzene, and xylene
- Nitrogen oxide
- Sulfur Dioxide
- Formaldehyde
- Particulate matter
- Carbon monoxide
- VOCs
- Radon, polonium and lead

SOURCES

- Emissions and waste from transport vehicles, combustion at compressor stations, storage and condensate tanks, metering stations, processing plants, pipelines
- Flaring, venting, blowdowns and leaks

90% of individuals reported experiencing odor events from these facilities
**COMMON COMPLAINTS NEAR COMPRESSORS**

Most common COMPLAINTS of residents living near compressors:
- Skin rash or irritation
- Eye irritation
- Gastrointestinal problems such as pain, nausea, vomiting
- Respiratory problems such as difficulty breathing or cough
- Upper respiratory problems such as congestion, sore throat and nosebleeds
- Neurological problems such as headaches, movement disorders, dizziness
- Psychological problems such as anxiety, depression, stress, irritability

Possible long-term consequences:
- Cardiovascular such as heart attack and high blood pressure
- Respiratory such as exacerbation of asthma, COPD
- Neurological such as stroke and cognitive deficits in children
- Birth defects
- Cancer
- Premature mortality
REVIEW OF REPORTED SYMPTOMS

At SWPA-EHP, the clinicians were observing symptoms in people living near gas development, and those symptoms could be persistent, transient, or intermittent. These variations in symptom presentation are consistent with the changing and episodic nature of exposures. The graph is a screen shot of a Speck particulate matter monitor 12-hour report. One would expect that symptom severity correlated with the height of the PM measurement.

**AND IT DID...**

**PM 2.5 Peaks vs. Number of symptoms (N=17)**
MINISINK: PILOT PROJECT

SUMMARY OF AIR MONITORING AND HEALTH ASSESSMENT AT 8 RESIDENCES
DATA COMPILLED BY CELIA LEWIS PHD

- Community coordinator
- Health assessments of 8 families
- PM$_{2.5}$ monitoring with Speck monitors
- VOC sampling with summa canisters

The predominant health impacts reported were:
- **Respiratory problems**
- **Neurological problems**
- **Dermatological problems**

- Overall “quality of life” levels were below normal for half of the respondents when compared to a national standard (SF36).

http://www.environmentalhealthproject.org/researchers/resources
EPISODIC HIGH LEVELS OF PM$_{2.5}$ OUTSIDE MULTIPLE HOMES OCCURRED WITHIN SIMILAR TIME FRAMES SEVEN TIMES OVER 59 DAYS.

RESULTS ARE BASED ON HOURLY AVERAGES OF UG/M$^3$ VALUES.

<table>
<thead>
<tr>
<th>Date of Peak event</th>
<th># of monitors showing a peak out of # in use</th>
<th>Recorded peak levels</th>
<th>Daily AQI average</th>
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<td>10/30</td>
<td>3/4</td>
<td>31, 90, 426</td>
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<td>11/5</td>
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<td>12/17</td>
<td>3/5</td>
<td>99, 162, 229</td>
<td>9.9</td>
</tr>
</tbody>
</table>
There is no public health agency in the United States that is routinely seeking and compiling information about people who have been adversely impacted by shale gas development...not on the local, county, state, or federal level.

- Most of the literature on health impacts has been published in the last 3-4 years, and usually not in the mainstream general medical literature, and the results have not been included in the regulatory process
- Federal exemptions limit information at the national level
- Doctors are not adequately trained to recognize, nor do they have time to investigate, environmental exposures

Instead...

- Non-disclosure agreements are common, and prevent important information-sharing

http://climate-connections.org/2013/08/02/range-resources-attorney-seeks-gag-order-on-7-and-10-year-old-in-pittsburgh-area-shale-gas-case/

http://www.fractracker.org/2013/03/pacwas-list-of-the-harmed-now-mapped-by-fractracker/
CITIZEN SCIENCE

Breathe Easy
Susquehanna County

The Agency for Toxic Substances and Disease Registry is a federal agency which is tasked with “taking responsive public health actions and providing trusted health information to prevent harmful exposures and diseases related to toxic substances.” The Agency’s Public Health Assessment has empowered communities with health and community interventions and changes to State and Federal policies.

Any citizen can submit a Petition for a Public Health Assessment to ATSDR.

http://www.atsdr.cdc.gov/

- Damascus Citizens for Sustainability Natural Gas Exploration and Production survey of environmental and health impacts is a tool to get help for impacted people. It can be found at http://www.damascuscitizensatsdr.org/

- The Agency for Toxic Substances and Disease Registry will receive information about impacts, as well as a petition for a Public Health Assessment, from households in a survey impact area.

- Dimock, PA

- ATSDR Health Consultation for PM2.5 at Central Station in Brooklyn Township Susquehanna County, PA, and at the Brigich Compressor in Chartiers Township, Washington County, PA

- ATSDR’s mission requires them to consider your petition.
Dear Governor Cuomo and Health Commissioner Zucker,

We, the undersigned health experts and scientists representing Physicians for Social Responsibility nationally and in New York, and Concerned Health Professionals of New York, write to share the third edition of our major compilation and analysis of scientific and health findings related to the impacts of unconventional oil and gas development, particularly high volume hydraulic fracturing (HVHF or “fracking”). In considering the scientific evidence leading up to and following New York’s ban on HVHF, we applaud you for your leadership in relying on solid scientific and medical research and protecting the public health and safety of New Yorkers.

While New York has protected public health and safety from the hazards of HVHF, there is an influx of numerous proposals to expand gas infrastructure. On this topic, for the first time, this edition of our report also compiles and concisely summarizes the evidence pertaining to the impacts of natural gas infrastructure, including transmission pipelines and compressor stations. Considering this new information, we urge New York to use its power in the permitting process to put on hold and deny permits to expand gas infrastructure while assessments of public health and environmental impacts can be undertaken.

We bring your attention primarily to two of our conclusions. First, the new report, Compendium of Scientific, Medical, and Media Findings Demonstrating Risks and Harms of Fracking, Third Edition, shows that New York State was right in concluding that “[e]ven with the implementation of an extensive suite of mitigation measures considered...the significant adverse public health and environmental impacts from allowing high-volume hydraulic fracturing to proceed under any scenario cannot be adequately avoided....” (NYS DEC Findings Statement, p. 5). More than 100 new peer-reviewed studies on the impacts of drilling and fracking have been published since New York’s high volume fracking ban was announced in December 2014. Overwhelmingly, these studies find significant risks and adverse impacts, as do the more than 400 studies that we had reviewed in the previous edition of the Compendium. These research results are compelling, and we are therefore urging the governors of other states to follow your lead.

Second, the evidence compiled in our report makes clear that New Yorkers are at risk from gas infrastructure projects. As with hydrofracking, the evidence available to date confirms that New York’s DOH and DEC were right to note the potential for harmful air impacts, environmental impacts, and other risks from infrastructure. (DOH Health Review p. 5 and Findings Statement p. 27) Compressor stations and pipelines are both major sources of air pollutants, including benzene and formaldehyde, that create serious health risks for those living nearby while offering little or no offsetting economic benefits. Compressor stations – used along regular intervals of most pipelines – in particular, are semi-permanent facilities that pollute the air 24 hours a day and expose nearby residents to levels of noise pollution known to induce negative health effects. Moreover, emerging data show that their day-to-day air emissions are highly episodic and create periods of potentially extreme exposures.

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COMPREHENSIVE SOURCES OF HEALTH INFORMATION

- PSE for Healthy Energy PSE STUDY CITATION DATABASE on Shale Gas & Tight Oil Development [http://www.psehealthyenergy.org/site/view/1180#sthash.CHp8vErJ.dpuf](http://www.psehealthyenergy.org/site/view/1180#sthash.CHp8vErJ.dpuf)


- Southwest Pennsylvania Environmental Health Project [www.environmentalhealthproject.org](http://www.environmentalhealthproject.org) 724.260.5504 [info@environmentalhealthproject.org](mailto:info@environmentalhealthproject.org)

- Physicians for Social Responsibility [www.psr.org](http://www.psr.org)

- Fracktracker Alliance [www.fracktracker.org](http://www.fracktracker.org)