

**Medical Director's Report
Tompkins County Board of Health
February 2012**

Hydrofracking

Washington, D.C. Conference

I was sorry to miss your last Board meeting. On that date I was attending a conference on hydrofracking entitled, "The Epidemiologic and Public Health Considerations of Shale Gas Production: The Missing Link". The conference was an assemblage of researchers, scientists, public health officials, and epidemiologists from many areas of the country to discuss what course future studies regarding the public health effects of hydrofracking might take. The sponsors for the conference were: Physicians, Scientists and Engineers for Healthy Energy, and the Mid-Atlantic Center for Children's Health and the Environment. The format was that of presentation and workshop. A keynote presentation by Dr. Vikas Kapil, Chief Medical Officer and assoc Dir for Science, CDC highlighted the afternoon. His focus was on the need for meaningful studies to evaluate exposures, and adequate funding to provide resources to do so. The CDC has been collaborating with the EPA on the latter's study of fracking and drinking water (they participated in the Pavillion, WY study also).

A couple of basic take home messages from this conference were as follows:

- Air quality issues will be as important as water quality issues in regards to human health. This is due to the chemicals and pollutants released into the air, as well as noise conducted by air to nearby people.
- Pipelines and the compressors needed to generate pressure to convey the gasses will be a very important component of the public health piece. The issues center around the noise generated by these generators running 24 hours a day, 7 days a week, as well as the pollutants released, not only from the engines that drive them, but also from the various tanks and fluids that are involved which have potentially significant public health impacts. Recent articles in Dec. in the Philadelphia Inquirer highlight that 10,000 to 25,000 miles of pipeline will be needed in Pa. Most of this mileage is not regulated other than by the industry itself. Since these lines operate at high pressure and flow rates their risks are much greater than gas pipelines from conventional wells whose lines are lower pressure.
- The meeting confirmed what we generally knew - that there is a dearth of studies which have explored whether and to what extent there are public health impacts. The Garfield County study of Colorado was truncated early due to a mix of political pressure and economic pressure. It was meant to be a health impact assessment for the community. Its funding

was cut prematurely, before it could go into a longer term phase doing more detailed assessments. The study was being conducted by the Colorado School of Public Health. The funding came from the Garfield County and it was that body that decided to cut off funding. The investigators were able to generate several recommendations with regard to air pollution issues, water pollution, spacing of wells from domiciles, schools, etc. However, there was no data from that study such that we can use it to compute hard numbers for what would be expected for disease rates, such as cancer, asthma etc. in our state.

The intent was that after the conference attendees will collaborate on formulating and conducting studies and surveys. A presentation of surveys conducted to date indicated that there is a high rate of respiratory, neurological and stress related complaints in the study areas. It was also pointed out that the studies are challenging to conduct, but can be done in an intelligent way and yield meaningful data.

Deborah Rogers Presentation

I attended a presentation by Deborah Rogers whose background is in financial analysis of corporations who presented at the Unitarian Church in Ithaca on economic aspects of hydrofracking. Ms. Rogers retired from the corporate financial analysis world to a family farm in Texas which sits over the Barnett Shale.

Hydrofracking has occurred all around her thus, she became interested in the dynamics of the fracking industry. Using public reports such as the ones companies are required to file with state, federal, and investment agencies she delved into the economic world of hydrofracking. The following points were key ones that she made:

- Lifetime of fracking wells shorter than predicted - while predicted to be 20-40 years in the Barnett Shale the experience has been that wells last about 6-7 years. She has been told that there is no reason that the experience in the Barnett Shale is not transferable to other formations such as Marcellus.
- The initial production of these wells is greatest in the initial 18 months and then drops off precipitously thereafter.
- The number of economically profitable productive wells is 20% or less of those that are drilled - 80% are losers. The reasons for this are not completely understood and a majority of companies fracking do not have the geological expertise and resources to more intelligently target the most profitable locations for wells. As we know gas wells are drilled on a grid pattern, with close proximity of one well to the other for maximum yield. But most of the land fracked is not profitable.

- Many of the companies require a significant cash flow to service the debt burden that they carry. Therefore aggressive schedules for drilling of wells to maintain cash flow is important to remain financially solvent.
- The price per million BTU's of natural gas is currently about \$2.50 in the United States. In Asia and European countries the price is \$15.00 per million BTUs. The companies have applied to the EPA for permission to convert liquefied gas facilities designed for the importation of LPG on the coast and turn them into export facilities. (One approval has been obtained and 8 more are pending.) These export facilities would allow gas companies to transport gas to markets at which the \$15.00 per million cubic foot price pertains. (The difference in pricing has to do with the fact that in the other global communities the gas price is indexed to petroleum pricing rather than being free floating as it is the States).
- Gas pipeline issues are significant in Texas. Left unregulated in Texas, lines have been run within 200 feet of public schools and in one case in Fort Worth between two hospitals. When calculations of the blast envelope were made by the Texas government, based on the pressure and flow rates, it was determined that the blast envelope would encompass parts of two hospitals between which the line ran. Gas line rupture occurs and explosion happens when a weld gives way or a line is struck with a backhoe, or rust, corrosion and deterioration occur.
- Given the short well life and the number of wells drilled and the chemicals used in the process each pad site becomes a contaminated site. Her statement was each site "would become the equivalent a superfund site". The question then arises "what are the provisions for cleaning up these sites after the fracking". She stated that typically the mode is that a well is capped and the equipment and the rest of the pad would be left abandoned. Given the short well lives and production life of the well, the amount of land affected and the long term potential public health effects of chemical laden pads we must consider what requirements should be imposed on the gas company at the decommissioning of the well, and what will fall to society. The scale of such an operation is not likely to be well handled by the multiple private landholders of limited means.

Take away messages at the conclusion of this conference included the following:

- The status of the site after fracking is important to us in public health. Risks are present by virtue of the contaminated soils and materials at the site unless totally restored to its original condition or other means taken to contain their hazards. Future use of these lands is compromised unless they are restored to their pre-drilling condition – i.e. total remediation.

- Flaring of gas at the time of well drilling is a major source of air pollution along with the release of gases in the process. It was stated by Ms. Rogers "that flaring of gas is only done because of historical practice; there is no need for this in modern gas extraction". It would be wise to prohibit it.

Conclusion:

I would suggest that the Board of Health should make some statement with regard to well pad conditions at the end of fracking and should advocate for the DEC and the State of NY to require total restoration of well pad sites back to their prior environmental status with all that would entail with terms removal of chemicals and contaminates.

I don't think we can shrink away either from detailing for the public the balance between the use of the land for a 6-7 year period of gas production versus decades long issues of what that land will be able to be used for in the future given the public health risks that well pad contamination would present.

Other Activities

Otherwise my month was devoted to the usual review of policies and procedures for the department and the attendance at immunization coalition meetings. I met with the Director of Visiting Nurse Service to discuss medication reconciliation after discharge from a hospital in order to further coordinate medication usage and reduce medication errors and hazards.