

Memo

To: Marcellus Shale Safe Drilling Initiative Advisory Commissioners

From: Brigid Kenney

Date: November 21, 2014

Re: Potential Impact of Marcellus Shale-Related Jobs on Health Care Infrastructure

Background

Considerable concern has been expressed about the impact of the arrival of many additional gasfield workers on the public health infrastructure. Newspaper articles and internet sources have reported that levels of crime, sexually transmitted infections (STIs), mental illness and substance abuse have risen in areas where there was a large influx of workers into rural areas. Similar sources have reported that hospitals have difficulty dealing with the number of emergency room visits and suffer financially because many of the transient workers lack health insurance.

Data and Discussion

Garrett County and part of Allegany County have been recognized to be medically underserved areas. MIAEH (2014) reported that "Allegany County is a designated Health Professional Shortage Area (HPSA) for primary care for low-income populations, mental health care for Medical Assistance populations, and dental care for Medical Assistance populations. Allegany County has a critical need for specialty providers including vascular surgery, urology, as well as dentists willing to provide care for adults with no insurance or Medical Assistance. Garrett County is a designated HPSA for primary and mental health care, and dental care for Medical Assistance populations."

According to the University of Maryland School of Public Health (MIAEH, 2014), "A handful of studies that have been conducted indicate that extractive industry workers place similar demands on health care infrastructure as local residents, with an increased demand on emergency department services." (Citations omitted.) Their study, however, did not quantify the increased demand, other than to compare the number of new workers to the existing permanent population. No mention was made of the large number of vacationers who come to the Garrett County area during the summer and the ski season.

To estimate the burden on emergency, urgent care, and trauma care, one can refer to statistics supplied by the United States Government through the Centers for Disease Control and Prevention (CDC) and National Institute for Occupational Health and Safety. The annual occupational fatality rate for oil and gas workers has historically been higher than those for workers generally. The CDC reported the averages for the period 2003-2009 as follows:

Category	Fatalities per 100,000 full time workers
Oil and Gas Workers	27.5
All US Workers	3.9

Table 1. Annual occupational fatality rate

Source: CDC, 2012.

The leading causes of deaths for oil and gas workers included highway motor vehicle crashes (29 percent); workers being struck by tools or equipment (20 percent); explosions (8 percent), workers caught or compressed in moving machinery or tools (7 percent), and falls to lower levels (6 percent). (CDC, 2012).

In contrast, the non-fatal injury rate has been lower than the United States average.

Category	Non-fatal injuries per 100 full time workers
All oil and gas job extraction	1.2
Oil and gas support activities	1.9
Oil and gas drilling	3.3
All US workers	3.5

Table 2. Annual nonfatal injuries rate

Source: CDC, 2012

The Regional Economic Studies Institute at Towson University, in an evaluation of the economic impact of Marcellus Shale gas development, considered two potential development scenarios of different intensities (RESI, 2014). For each scenario, the number of direct jobs in the oil and gas industry and the number of “spinoff” jobs were projected for Allegany County and Garrett County. The peak year for Garrett County is 2021 and the peak year for Allegany County is 2024.

County	Peak year for jobs	Direct jobs	Spinoff jobs
Allegany	2024	442.5	465.5
Garrett	2021	1185	1239.7

Table 3. Numbers of jobs in peak year

Source: Revised RESI study, Figures 97 and 108

Applying the fatality rate of 27.5 per 100,000 workers to oil and gas workers and the rate of 3.9 per 100,000 workers in spinoff jobs yields the following projection for the peak year:

County	Fatalities (direct jobs, peak year)	Fatalities (spinoff jobs, peak year)
Allegany	0.12	0.02
Garrett	0.33	0.05

Table 4. Number of fatalities in peak year

Because the number of jobs in each category (all oil and gas extraction, oil and gas support activities, oil and gas drilling) is not known, for purposes of estimating the number of nonfatal injuries, the highest rate, 3.3 per 100 full time workers, will be applied to the direct jobs. The spinoff jobs are assigned the rate for all United States workers.

County	Injuries (direct jobs, peak year)	Injuries (spinoff jobs, peak year)
Allegany	14.6	16.3
Garrett	39.1	43.4

Table 5. Number of nonfatal injuries in peak year

In the peak year, assuming all the direct and spinoff jobs were filled by workers moving in from out of County, the number of direct and spinoff jobs for Allegany County would represent an increase of 1.2 percent over the 2010 census population of 75,087. For Garrett County, the number of workers in the peak year, assuming all the jobs were filled by persons moving into Garrett County from elsewhere, would represent an increase of 8.1 percent over the 2010 census population of 30,097. Garrett County, however, experiences an influx of non-residents throughout the year. The number of person-trips was estimated in a tourism study as exceeding 1.1 million person-trips from August 2008 to July 2009 (Deng et al., 2010):

Seasonal person-trips are estimated at 402,388 for summer, the largest of all seasons, accounting for 36.0% of total person-trips for the survey year. Winter season was also popular with the total person-trips being 310,733, followed by fall (240,315 person-trips) while spring season was the least attractive with the total person-trips being 164,308.

On September 25, 2014, Rodney B. Glotfelty, Garrett County health Officer, provided written testimony to the Garrett County Marcellus Shale Advisory Committee on the MIAEH report. Mr. Glotfelty did not agree with the conclusions drawn by the authors of the study, who predicted that “an increase in health care utilization, regardless of whether workers are insured or uninsured, would strain the existing healthcare infrastructure, likely leading to decreased quality, availability, and access to services” (MIAEH, 2014). He wrote:

While our health system may be challenged in serving an influx of relatively young people working in the gas development industry, in general we feel it is resilient enough to meet the increased demand without jeopardizing public health. In late fall or early winter, a new satellite office of Mountain Laurel Medical Center (FQHC) will be opening in Grantsville. This means additional providers will be recruited to serve Garrett County residents. The new CEO of the hospital has also been very aggressive in recruiting new physicians and services to the community and in developing strategic planning processes that can allow the hospital to rapidly respond to changing conditions. Finally, the Garrett and Allegany Health Departments provide mental health, substance abuse, and STI clinics that can be augmented to meet increased need. There will also be many opportunities to integrate mental health services with somatic care in the next few years in local provider offices. Certainly the pace of natural gas development in Garrett County, if it ever occurs, will determine how rapidly changes to the delivery system must be made.(Glotfelty, 2014).

A different challenge is likely to be faced by the Environmental Health Division of the County Health Departments. If drilling does occur in Western Maryland, there will be pre-drilling sampling as well as ongoing monitoring of drinking water wells in the vicinity of the well pad. Pre-development sampling may identify wells that have existing contamination. In a recent background study in North Carolina, the USGS found that “Concentrations of nitrate, boron, iron, manganese, sulfate, chloride, total dissolved solids, and measurements of pH exceeded federal and state drinking water standards in a few samples. Iron and manganese concentrations exceeded the secondary (aesthetic) drinking water standard in approximately 35 to 37 percent of the samples” (USGS, 2014). Citizens having questions about the testing results are likely to contact the Environmental Health staff in their counties. In addition, residents that perceive any change in the appearance, taste or odor of their well water may request that the Counties test their water. Analyzing water samples can be expensive and responding to citizen complaints can be very time consuming for the staff.

References:

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