Health Research Article:
Unconventional Gas and Oil Drilling Is Associated with Increased Hospital Utilization Rates

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Peer Reviewed Article Abstract:

Background
Over the past ten years, unconventional gas and oil drilling (UGOD) has markedly expanded in the United States. Despite substantial increases in well drilling, the health consequences of UGOD toxicant exposure remain unclear.

Objectives
This study examines an association between wells and healthcare use by zip code from 2007 to 2011 in Pennsylvania.

Methods
Inpatient discharge databases from the Pennsylvania Healthcare Cost Containment Council were correlated with active wells by zip code in three counties in Pennsylvania. For overall inpatient prevalence rates and 25 specific medical categories, the association of inpatient prevalence rates with number of wells per zip code and, separately, with wells per km² (separated into quantiles and defined as well density) were estimated using fixed effects Poisson models. To account for multiple comparisons, a Bonferroni correction with associations of p<0.00096 was considered statistically significant.

Findings

- **Cardiology** inpatient prevalence rates were significantly associated with number of wells per zip code (p<0.00096) and wells per km² (p<0.00096)
- **Neurology** inpatient prevalence rates were significantly associated with wells per km² (p<0.00096).
- Evidence also supported an association between well density and inpatient prevalence rates for the medical categories of dermatology, neurology, oncology, and urology.

Discussion
These data suggest that UGOD wells, which dramatically increased in the past decade, were associated with increased inpatient prevalence rates within specific medical categories in Pennsylvania. Further studies are necessary to address healthcare costs of UGOD and determine whether specific toxicants or combinations are associated with organ-specific responses.

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