

Information Sheet

New York Air Brake Area Health Outcomes Reviews: Cancer and Birth Outcomes Watertown, Jefferson County, NY

September 2024

BACKGROUND

The New York State Department of Health conducted this health outcomes review in response to community concerns about the health of Watertown area residents in the neighborhoods surrounding the New York Air Brake facility. Two separate reviews were conducted. One review examined adverse birth outcomes among people living near the facility and the other evaluated cancers diagnosed among people living near the facility.

New York Air Brake operated a foundry, a die-cast facility, a machine shop, a hydraulic testing facility and other small operations in support of the air-brake manufacturing process for the rail-road industry. Use of chlorinated solvents, metals, and polychlorinated biphenyl (PCB) containing equipment has contributed to onsite and offsite contamination. The facility itself is contaminated with chlorinated solvents, metals, and PCBs. Off-site contamination has included metals and PCBs found in Kelsey Creek and Oily Creek, and chlorinated solvents found in groundwater. Measures are in place to control the potential for contact with subsurface soil and groundwater contamination. Areas near Kelsey Creek and Oily Creek were mitigated during 2017-2019. People are not drinking the contaminated groundwater because the area is served by a public water supply that is not affected by this contamination. Volatile organic compounds (VOCs) in the groundwater may move into the soil vapor (air spaces within the soil), which in turn may move into overlying buildings and affect indoor air quality. This process, which is similar to the movement of radon gas from the subsurface into the air of buildings, is referred to as soil vapor intrusion. Sub slab depressurization systems (systems that ventilate/remove the air beneath the building) have been installed in on-site buildings and one off-site structure to prevent the indoor air quality from being affected by the contamination in soil vapor beneath the buildings. Sampling indicates soil vapor intrusion is not a concern for other off-site buildings. Prior to the sale of the business in 1991, the US EPA Toxic Release Inventory identified fugitive air emissions of VOCs from the site, specifically trichloroethylene and xylene. In more recent years the Toxic Release Inventory data show small amounts of copper and lead (less than 2 pounds per year), and no VOCs.

METHODS

A health outcomes review examines a particular group of people as a whole to see how the group compares to a group not living in the area of concern. This type of group-level review is useful for understanding levels of adverse birth outcomes and cancer in the study area community. However, it cannot prove that a specific environmental exposure caused a change in the rate of a specific health outcome within the community, and it cannot tell us anything about an individual and their health problems.

The adverse birth outcome review included birth defects and other birth outcomes such as low birth weight and preterm births for people living in the area from 1995 to 2013. We compared the rates of these adverse birth outcomes in the New York Air Brake study area to rates for people in New York State, excluding New York City. The cancer review included all types of cancer diagnosed among residents of the area from 1996 to 2019. We compared the numbers of cancer cases diagnosed among people living near the facility to the numbers of cases we would expect to find, if cancer incidence rates in the study area were the same as those among residents of New York State (excluding New York City).

RESULTS

Cancer: Numbers of total cancers as well as 18 separate types of cancer for women and 16 types for men were reviewed and compared to the expected numbers based on rates for people in New York State, excluding New York City. Overall, the total number of cancers observed in males was statistically significantly higher than the number expected. There were also statistically significant elevations in colorectal, liver, and lung cancer cases among males, and in colorectal, ovarian, and urinary bladder cancer among females. As for pancreatic cancer (a concern among community members), there were no statistically significant differences between the observed and the expected among either males or females.

Birth Outcomes: The analyses of birth outcomes showed moderately low birth weight births and small for gestational age (SGA) births were significantly elevated when compared to New York State excluding New York City. None of the 47 specific birth defects studied were statistically significantly elevated in the study area, nor were total birth defects statistically significantly elevated. This is noteworthy due to community concerns about and reports of craniosynostosis, a birth defect in which the bones of the skull join together too early. We reviewed the medical records of all cases of craniosynostosis in the study area and the area immediately surrounding the study area but did not find any unusual patterns to suggest a common cause.

CONCLUSIONS

Cancer: This study found that the total number of cancers among males in the study area was statistically significantly elevated. This elevation is due in large part to the excesses in colorectal and lung cancers. The total number of cancers among females was not significantly elevated. There was a statistically significant excess number of cases of colorectal cancer among males, as well as among females. There were more cases of this cancer diagnosed in most of the 10-year age groups, but none of the age-groups had a statically significant excess. There was a statistically significant excess number of cases of cancer of the liver/intrahepatic bile duct in males, but not in females. The most common risk factor is chronic infection with hepatitis B or hepatitis C viruses. There was a statistically significant excess number of cases of lung cancer among males, but not in females. This excess may be part of an area-wide pattern, possibly related to smoking habits. There was a statistically significant excess number of cases of bladder cancer among females, but not in males. This excess could also possibly be related to smoking habits. There was a statistically significant excess number of cases of ovarian cancer among

females. Most of the excess was in the oldest age group, 85 years and older. Pancreatic cancer, which was of concern to community residents, was not elevated in either males or females.

Birth Outcomes: The primary driver of this report was the reporting of craniosynostosis among infants born to area residents. While the elevation of craniosynostosis cases in the study area was not statistically significant, we also identified additional cases in the surrounding community. The analyses also found that some adverse birth outcomes, specifically moderately low birthweight births and small for gestational age births, were elevated in the study area. The birth outcome analyses adjusted for factors including race, prenatal care, and mother's education, but there are other risk factors that may play a role for which we did not have complete or high-quality individual level data for. Such factors may include smoking and family medical history, for example. Maternal smoking, which was reported at a higher rate on birth certificates of children born in the study area, has been linked to an increased risk of several of the outcomes observed here including small for gestational age, low birth weight, and craniosynostosis.

RECOMMENDATIONS

Of particular note in this evaluation were estimated rates of maternal smoking and low utilization of prenatal care in the area. Both of these are risk factors for adverse birth outcomes. Information is provided here about prenatal services and tobacco prevention programs available in the Watertown area.

There are a number of community-based Maternal and Child Health programs available to women in the Jefferson County area. The North Country Prenatal/Perinatal Council provides home visiting program services to Watertown and surrounding areas. In addition, the regional perinatal system overseen by New York State Department of Health supports enhanced collaboration and referral/transfer agreements between hospitals to ensure women in need of specialty care can access it at the closest regional perinatal center. The report includes additional information on these and other Maternal and Child Health services in the area. Despite these programs, local provider shortages have (and continue to) increase gaps in prenatal care provider availability in the service area.

The Regional Center for Tobacco Health Systems at St. Joseph's Hospital is one of eight New York State Department of Health Bureau of Tobacco Control grant-funded programs working to reduce tobacco use and dependence. Their area covers Jefferson County and they are working on a multi-year disparity project regarding prenatal/perinatal smoking, due to the higher rates of smoking among that population in the Central New York region. The project completed in 2016 included a needs assessment of their entire 14 county catchment area regarding this specialty population. Out of the 11 key findings, it was noted that cessation is a high priority among providers, but the assist rates are low and additional training and skill development are needed for health systems to provide tobacco dependence treatment and supports. In their assessment, St. Joseph's noted a perceived lack of support for funding resources targeting tobacco dependence treatment among this population by local organizations. As a result, they distributed resources and hosted webinars to support evidence-based treatment. See the full report for additional information of these and other tobacco cessation services in the area.