Student Name

Course

Instructor

Date

Policy Brief

Topic: CANCER CAUSING TOXINS

City: Covington, GA

County: Newton

Representative: Mr. Sal

**Description:**

In 2007, a company BD Brad which was a sterilization plant for the medical devices reported releasing a hazardous gas called ethylene oxide. Its quantity was more than 9000 pounds in the air and it had been affecting people in the residential areas as well. Ethylene oxide is used in majority of the medical products in the United States for the purpose of sterilization. It is also used in the production of other chemicals such as antifreeze etc. In 2016, U.S. Environmental Protection Agency (EPA) established though its research that ethylene oxide is much more dangerous than scientists had thought previously. EPA report transferred ethylene oxide to the list of chemical that are cancer causing. In 2018, EPA published a periodic report National Air Toxics Assessment (NATA) that analyzed the health risks caused by the releases of airborne toxins in the United States. It flagged 109 highlighted points across the country where the risk of cancer was extremely higher due to exposure to airborne toxins and majority of risks were driven by a harmful chemical gas; ethylene oxide.

Georgia had three different census tracts, two in Smyrna and one in Covington. Ethylene oxide was the cause of 114 cancer cases in every million people in Smyrna while in Covington, it caused 214 cases in every one million. EPA labelled it as one of the most dangerous and unacceptable cancer toxin due to airborne pollution. There are a large number of companies that release ethylene oxide in air and are a constant cause of cancer among people. Georgia Comprehensive Cancer Registry state that one type of cancers that is related to ethylene oxide is non-Hodgkin’s lymphoma (Bulka et al.). Its prevalence is increased significantly among men over the last ten years in the 30014 ZIP area.

The vulnerability zone miles (VZM) is the range of the potential risk of the chemicals released in specified number of miles from that facility and the vulnerability zone census population (VZCP) is the residential population that resides within vulnerability zone. In Covington, there are a number of facilities that release harmful chemicals in the environment. Cornish Creek Water Treatment facility releases chlorine at 0.90 VZM and 659 VZCP. Covington Wastewater Treatment Plant releases chlorine at 2.50 VZM and 1984 VZCP. Covington Water Treatment Plant also releases chlorine at 0.90 VZM and 839 VZCP. MeadWestvaco Corporation Paperboard Operations releases chlorine dioxide at 4.84 VZM and 8119 VZCP (Orum et al.).

**Analysis:**

The state guidelines for Georgia has established the guidelines that any company that seeks a permit for its operations here, it must demonstrate the amount of gases emissions or waste water release that goes directly in the environment and become the cause of cancer. At present, the current biological mechanisms that deal with cancer suggest that almost all cancers originate from genetics and the environmental factors. There are a number of risk factors that are frequently associated with cancer. These include age, family history, viruses and bacteria as well as other harmful substances. Cancer is a global economic calamity that has affected many sectors starting from social to economic issues. According to US Cancer Statistics Working Group (2013), cancer is a global health problem, making it one of the biggest causes of death in human beings. This fact is especially true especially when compared to other killer diseases such as tuberculosis, HIV/AIDS and malaria. Moreover, with the industrialization and their waste material polluting the environment with cancer toxins trigger the oncogenes in human body.

In the United States, the cancer toxins such are chlorine oxide, ethylene oxide etc have more effects on men than women. Possible signs observed to be cancer indication comprises of a new lump in the body, the disease involves dangerous infection that affects a greater part of the world. Among all types, breast cancer is one of the leading causes of deaths among cancer patients. While most types of cancers are non-curable, the curable ones are extremely expensive to treat. Thus, it is the role of environmental scientists as well as other healthcare professionals to aid with the research that can help with the overall decline of the disease by finding out the causable agents, their levels in the water, air and food. EPA has published various reports to raise awareness among the medical community and general public about cancer causing toxins.

**Conclusion:**

There can be many possible ways to solve this problem. Lists of hazardous and dangerous chemicals should be made and checked regularly and it should be obligatory for the agencies to review the lists properly and make new additions of the chemical appropriately through proper policy-making and a proper schedule. The agencies will be enabled to keep pace with the ever-changing system of chemical use in the commercial industry. However, another better approach for this is to make use of the characteristics of chemical hazards and basic thresholds for triggering the requirements. It can be the same as there was a case of hazardous inventory reporting under the Emergency Planning and Community Right-to-Know Act. This approach would prove to be helpful in ensuring that the largest number of chemicals and the facilities are covered and planned in a consistent manner.

There should be such facilities that have safer alternatives that would be effective and affordable. Knowledgeable inspectors should be made responsible to check the demonstrations, auditing, covering of costs, and other monitoring. Chemical facilities should be properly used by the government agencies for the identification of the hazardous materials and their effects. These hazardous materials should then be replaced by the existing safer alternatives and prevented through proper management, control, and other strategies (Propper et al.). The people who are exposed to such dangerous chemicals should be knowing about the consequences of these chemicals and the safer alternatives to them. Government agencies should adopt way to provide awareness to the people about these chemicals, their effects, and alternatives.

**Works Cited**

Bulka, Catherine, et al. “Relations between Residential Proximity to EPA-Designated Toxic Release Sites and Diffuse Large B-Cell Lymphoma Incidence.” *Southern Medical Journal*, vol. 109, no. 10, 2016, p. 606.

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 US Cancer Statistics Working Group. "United States cancer statistics: 1999–2010 incidence and mortality web-based report." *Atlanta: US Department of Health and Human Services, Centers for Disease Control and Prevention and National Cancer Institute*, 2013.