

Double Jeopardy in Houston

Acute and Chronic Chemical Exposures Pose Disproportionate Risks for Residents

HIGHLIGHTS

This report examines the health risks of exposure to toxic air pollution to people living in different Houston neighborhoods that abut high-risk chemical facilities—as well as their potential exposure to unplanned chemical releases. Our analysis compares risks and exposure within two predominantly Hispanic and low income east Houston communities to those within two primarily white and wealthier west Houston communities.

We found that Harrisburg/Manchester and Galena Park in east Houston face disproportionately high levels of toxic air pollution—and risks from their attendant health effects—compared to the two west Houston communities, West Oaks/Eldridge and Bellaire, as well as to the Houston urban area. The east Houston communities also contain more high-risk facilities, and have a higher proportion of their population in close proximity to these dangerous facilities.

Numerous previous reports have documented that people of color and those living in poverty are exposed to higher levels of environmental pollution than whites or people not living in poverty. Studies have also found that, compared to national averages, a significantly greater percentage of African Americans, Latinos, and people living at or near poverty levels tend to live near industrial facilities that use large quantities of toxic chemicals and present a risk of major chemical disasters. The disproportionate health impacts on these communities from environmental degradation are amplified by other negative socioeconomic and health determinants such as the lack of access to health care, public transportation, and healthy foods; lack of political representation; and stress from unemployment, poverty, and crime, among other factors. Addressing these issues and factors holistically is an important component of environmental justice, the movement that works to ensure that all people are able to enjoy equally high levels of environmental protection.

This report builds on that past work with a focus on Houston residents in four communities and assesses whether they are at disproportionate risk from major chemical accidents at neighboring industrial facilities that produce, use, or store significant quantities of toxic and flammable chemicals. Accidental releases of toxic chemicals from industrial sources into surrounding communities are all too common. The Environmental Protection Agency (EPA) estimates that approximately 150 “catastrophic accidents” occur each year in regulated industrial facilities—accidents that pose a risk to neighboring communities and workers because they result in fatalities, injuries, significant property damage, evacuations,



Due to a lack of comprehensive zoning laws in Houston, many fence-line communities lie directly next to chemical facilities, and hence are exposed to high levels of air pollution and risk of catastrophic accidents. Compared to the Houston urban area, neighborhoods such as Harrisburg/Manchester and Galena Park comprise a larger percentage of African Americans, Latinos, and people living at or near poverty levels.

sheltering in place, or environmental damage. Less severe accidents occur even more frequently.

In addition to these “fenceline” communities’ proximity to chemical facilities, with the constant threat of accidents and spills, these communities are also exposed to high amounts of daily air pollution from polluting industries. We analyzed whether these fenceline communities that are surrounded by polluting industrial facilities are impacted by chronic, everyday exposure to high levels of toxic air pollutants and suffer a greater risk of cancer and the potential for respiratory illnesses.

Proximity to Dangerous Chemical Facilities

For our analysis, we focused on four communities within the Houston urban area: two lower-income east Houston communities, Harrisburg/Manchester and Galena Park, and two higher-income west Houston communities, Bellaire and West Oaks/Eldridge. Using the EPA’s Risk Management Plan database, we found that Harrisburg/Manchester and Galena Park house many more industrial facilities subject to the EPA’s program than do Bellaire and West Oaks/Eldridge. Ninety percent of the population of Harrisburg/Manchester and almost 40 percent of the population of Galena Park lives within one mile of these dangerous facilities, in contrast to less than 10 and less than 15 percent of people living in Bellaire and West Oaks/Eldridge, respectively.

Ninety percent of the population of Harrisburg/Manchester lives within one mile of these dangerous facilities.

Chronic (or Everyday) Chemical Exposure

Using the EPA’s Risk Screening Environmental Indicators data, we found that overall toxicity levels of chemical exposures in Harrisburg/Manchester are 12 and more than three times higher than in West Oaks/Eldridge and Bellaire, respectively, and exposures in Galena Park are 17 and almost five times higher. While several of the most highly toxic chemicals are present in the air of all four Houston communities, we found substantially higher levels for many of these chemicals in the Harrisburg/Manchester and Galena Park communities.

For example, the concentration of 1,3-butadiene, which causes cancer and a host of neurological symptoms, in Harrisburg/Manchester was 174 times and 29 times greater than the levels in West Oaks/Eldridge and Bellaire, respectively, and levels in Galena Park were 228 times and 38 times greater.

Cancer Risks and Potential for Respiratory Illnesses

We used the EPA’s National Air Toxics Assessment data to assess whether there is a disproportionate health risk for these Houston communities from chronic exposure to toxic air pollution from a broad spectrum of sources. Our analysis shows that the higher levels of toxic chemical exposures in the lower-income east Houston communities pose an increased risk for adverse health impacts among residents compared to the more affluent west Houston communities. Residents of the Harrisburg/Manchester community have a 24 to 30 percent higher cancer risk and those of Galena Park have a 30 to 36 percent higher risk, when compared to Bellaire and West Oaks/Eldridge, respectively. The potential for residents’ to suffer from respiratory illnesses in Harrisburg/Manchester and Galena Park was 24 and 43 percent higher than in Bellaire and West Oaks/Eldridge, respectively.

Conclusion

The east Houston communities of Harrisburg/Manchester and Galena Park experience a “double jeopardy” from disproportionately high levels of toxic air pollution and health risks when compared to two predominantly white and relatively affluent west Houston communities, combined with their close proximity to a larger number of facilities that pose a substantial risk of a potentially catastrophic chemical release.

Recommendations

Significant and rapid improvements in regulatory and public policy are needed at the national, state, and municipal levels to address the health and well-being of at-risk communities in Houston and elsewhere. Revisions to the EPA’s Risk Management Plan rule for chemical facilities have the potential to improve the safety of chemical facilities and the ability of communities to prepare for, and respond to, accidents at these dangerous facilities.

The first four recommendations below aim to improve the safety of high-risk industrial facilities, expand communities’ access to information about the acute hazards posed by



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Communities like Galena Park in east Houston need stronger health and environmental policies at municipal, state, and federal levels to protect residents from toxic air pollution and potential chemical release from nearby chemical facilities.

nearby facilities, and improve communities’ preparedness for responding to a toxic chemical release. They may have the additional benefit of reducing the daily load of toxic air pollution that impacts these communities. The last two recommendations address both the acute risks of chemical facility accidents and the risks from daily chronic exposure to toxic air pollution.

REQUIRE CHEMICAL FACILITIES TO USE SAFER CHEMICALS AND TECHNOLOGIES.

Switching to inherently safer chemicals and technologies wherever feasible is the most effective way to prevent deaths and injuries from chemical disasters. In revising its Risk Management Plan rule, the EPA should require chemical facilities to assess the use of safer processes and adopt them wherever feasible.

ENSURE THAT FACILITIES SHARE INFORMATION AND THEIR EMERGENCY RESPONSE PLANS WITH THE FENCELINE COMMUNITIES.

The EPA should ensure that communities have access to information on hazards and emergency planning under the EPA Risk Management Plan program, as well as information on facility hazards submitted to states under the Emergency Planning and Community Right-to-Know Act. Local residents,

trained health care professionals, emergency responders, and health-care providers need this information to prepare for and effectively respond to a chemical disaster, should one occur. Communities should be consulted and included in emergency response planning and implementation. Emergency response facilities and measures devised under these plans should be ready for operation should a chemical release occur.

REQUIRE LARGE CHEMICAL FACILITIES TO CONTINUOUSLY MONITOR AND REPORT THEIR FENCELINE-AREA EMISSIONS AND HEALTH HAZARDS.

Unplanned releases of toxic chemicals are often a precursor to more serious incidents at chemical facilities and may themselves directly impact the health of people living in these fenceline communities. People living in fenceline areas should be able to easily access information (based on validated continuous monitoring) on the toxic emissions coming from industrial facilities, along with information about the chemicals’ health hazards. The EPA should expand current benzene fenceline monitoring requirements for oil refineries to include other toxic air pollutants and other major industrial sources. This information can help communities advocate for vigorous enforcement of regulatory requirements by relevant authorities; push companies to use safer chemicals;

alert and educate friends, family members, and community members; and encourage the media to report on polluting facilities in their areas.

PREVENT THE CONSTRUCTION OF NEW OR EXPANDED CHEMICAL FACILITIES NEAR HOMES AND SCHOOLS AND, CONVERSELY, THE SITING OF NEW HOMES AND SCHOOLS NEAR DANGEROUS CHEMICAL PLANTS.

The siting of new chemical facilities or expanding existing ones in close proximity to homes, schools, and playgrounds significantly increases the possibility that an incident will result in a disaster. Similarly, new homes and schools should not be sited near dangerous chemical plants. Municipal authorities should adopt and enforce local ordinances that require an assessment of the potential health and safety risks when siting homes, schools, and other public facilities. Requiring a buffer zone between homes and schools and polluting sources also reduces residents' daily exposure to toxic chemical pollution.

REQUIRE PUBLICLY ACCESSIBLE, FORMAL HEALTH-IMPACT ASSESSMENTS AND MITIGATION PLANS TO GAUGE THE CUMULATIVE IMPACT OF HAZARDOUS CHEMICAL EXPOSURES ON FENCELINE COMMUNITIES.

Environmental and public health agencies in Houston, in Texas, and at the federal level should assess the potential impact of unplanned chemical releases and the cumulative impacts of daily air-pollution exposures on the health of fence-line

communities. A focus on cumulative impacts is a cornerstone of environmental justice. Agencies and elected officials should provide the affected communities with the tools and resources they need to fully engage in the assessment process, and the EPA should review hazard assessments of these communities. Emissions permits should be strengthened where necessary to account for the cumulative impact of air-pollution emissions on fence-line communities and provide the air-pollution reductions necessary to protect public health.

STRENGTHEN THE ENFORCEMENT OF EXISTING ENVIRONMENTAL AND WORKPLACE HEALTH AND SAFETY REGULATIONS.

Congress should increase funding to the EPA and the states for expanding inspections and the enforcement of environmental and workplace health and safety laws in order to identify problems in chemical facilities before they lead to disasters. Better oversight and enforcement will also help agencies and the public hold companies accountable if they fail to address identified hazards and emissions of toxic pollution. Communities facing some of the greatest threats from chemical facility incidents and toxic air pollution need strong governmental policies to protect them, including strict permitting requirements and reliable inspection and enforcement of these requirements. If state and municipal governments are not providing adequate protection, it is essential that the EPA engage to defend these communities' right to a safe environment.

FIND THE FULL REPORT ONLINE: www.ucsusa.org/DoubleJeopardy

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Texas Environmental Justice Advocacy Services

Texas Environmental Justice Advocacy Services (t.e.j.a.s.) is dedicated to providing community members with the tools necessary to create sustainable, environmentally healthy communities by educating individuals on health concerns and implications arising from environmental pollution, empowering individuals with an understanding of applicable environmental laws and regulations and promoting their enforcement, and offering community building skills and resources for effective community action and greater public participation.

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