17 October 2011

The Honorable Maurice Hinchey
U.S. House of Representatives
2431 Rayburn House Office Building
Washington, D.C. 20515

Dear Congressman Hinchey:

Thank you for your continuing strong dedication to the health of the people of New York. Your interest in the rates of disease found among people who live near chemically contaminated sites is greatly appreciated and will help address similar problems for other populations throughout the United States.

In 2005-2006 my colleagues and I published several papers reporting a high rate of hospitalization for various diseases among people living in zip codes that abut the Hudson River. This data was obtained from the New York State Department of Health (“SPARCS” data), which reports diseases identified in hospital records upon patient discharge. We reported a significantly elevated rate of hospitalization for cardiovascular disease (CVD), myocardial infarction (Sergeev and Carpenter, 2005), stroke (Shcherbatyk et al., 2005) and hypertension (Huang et al., 2006) for people living near to the Hudson River as compared to those in zip codes that did not contain a PCB-contaminated waste site in the rest of New York State.

In October of 2006 you requested that the Agency for Toxic Substances and Disease Registry, in collaboration with the New York State Department of Health, conduct a Health Consultation to evaluate the results published by my colleagues and me. The Health Consultation has now been completed and published on June 16, 2011.

The Health Consultation study is good science, but the design is so different from ours that it cannot be used to either refute or support our findings, as is acknowledged by the authors. It reports studies of rates of hospitalization of residents of block groups in proximity to the Hudson River, and of residents living within ½, ½ to 1 mile and in the same county but more than 1 mile from the River. They find that individuals living in block groups adjacent to or within 1/2 mile of the Hudson are of lower socio-economic status (SES) than other residents of the county, and also have higher rates of hospitalization for cardiovascular disease. They attribute the high rates of hospitalization for cardiovascular disease to the lower SES, but even after adjustment for SES still find “relatively small but statistically significant elevations of CVD hospitalization risk for residents of block groups in close proximity to the Hudson River”.

The Health Consultation attributes our results to a failure to adequately control for SES. This is not the case. We reported, based on US Census data, that zip codes adjacent to the Hudson have higher, not lower, SES than do uncontaminated zip codes in the rest of the state (Kudyakov et al., 2004). All of our results were adjusted for SES by using median household income in each zip code. Both we and they used the same SPARCS data, but we studied populations living in different geographic areas for both those living close to the Hudson and the comparison groups. Thus both results are valid and neither is a result of inadequate SES control.
Our publications show that living in a zip code (not a census block) adjacent to the Hudson poses an elevated risk of cardiovascular disease, and support the hypothesis that this is a consequence of exposure to PCBs, not SES. We suggested that air-borne PCBs coming from the River might be responsible for these elevations in disease, since we also found that people living in zip codes along the Hudson had a higher income, smoked less, had more frequent exercise and ate more fruits and vegetables. Our more recent studies provide strong evidence in support of this conclusion. We have obtained measurements of blood pressure and serum PCB levels from 758 residents of Anniston, Alabama who live near to the Monsanto plant that manufactured PCBs (Goncharov et al., 2010; 2011). When we compared those persons with the highest to those persons with the lowest third of PCB concentration, we found that people with elevated PCBs were at 5.26 times greater risk of having hypertension after adjustment for age, body mass index, gender, race, smoking and physical activity. Additional support for use of SPARCS data comes from our work on diabetes, where we first demonstrated elevated rates of hospitalization for diabetes among residents living in zip codes adjacent to the Hudson River (Kouznetsova et al., 2007) and later found the same relationship among Native Americans in relation to their serum levels of fasting glucose and serum PCBs (Codru et al., 2007). There is other evidence that concentrations of PCBs in air are elevated over a distance of about three miles from a contaminated site (Hermanson et al., 2007). This distance is more compatible with zip codes than it is with either census blocks or being ½ mile from the River.

In my judgment the presentation and conclusions in this Health Consultation are unjustified. The authors find statistically significant associations between living near to the Hudson River and cardiovascular disease hospitalization which they basically ignore. They minimize not only our previous work but also the outstanding study by Ha et al. (2007) that demonstrates a strong relationship between exposure to PCBs and cardiovascular disease using the NHANES data, a national study of the US population, and reported a strong association between exposure to PCBs and cardiovascular disease. While certainly more study is appropriate, the overall body of evidence supports the conclusion that living near to the Hudson River poses an elevated risk of cardiovascular disease.

It is imperative to recognize the enormous public health significance of the relationship between close residential proximity to areas of PCB contamination and the subsequent development of life-threatening cardiovascular disease, and then to take steps to reduce exposure.

Yours sincerely,

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References:


