



Protecting, maintaining and improving the health of all Minnesotans

March 18, 2008

Dr. Howard Frumkin, Director
NCEH/ATSDR
1825 Century Boulevard
Atlanta, GA 30345

Dear Dr. Frumkin:

Thank you for explaining the decision of the Agency for Toxic Substances and Disease Registry (ATSDR) to delay the release of the draft document, *Public Health Implications of Hazardous Substances in the Twenty-Six U.S. Great Lakes Areas of Concern*, in the telephone conference call of March 4, 2008. The Minnesota Department of Health (MDH) supports ATSDR's decision to delay the release of the draft until a more scientifically defensible version can be written. We further support your decision to have the Institute of Medicine review the original draft document, the appropriateness of ATSDR's decision to stop release of the draft, and the new draft.

The original draft is riddled with specious reasoning, juxtapositions that seem to imply connections between environmental and health data without actually asserting that there are connections, and inappropriate use of scientific jargon. This is obvious from the very first paragraph of the Executive Summary. (For purposes of this letter, the Executive Summary on the ATSDR website was consulted. There is a shorter, apparently slightly older version on the Center for Public Integrity website.)

The first sentence asserts that the report is "an informational resource to describe the patterns of morbidity and mortality along with potential sources of hazardous waste within the AOCs." This is misleading and wrong by turns given that no mortality data aside from infant mortality (obtained from county health data and not from death records) are used, and that health data and some environmental data are county-wide; the AOCs are within the counties and not the other way round.

The second paragraph explains that the report was "developed" in response to a request from International Joint Commission (IJC). The paragraph does not say exactly what the IJC requested, but it does state that the request was made in order to fulfill one of the objectives of the Agreement between the USA and Canada. This seems to imply that the request was to fulfill this objective, but it may mean (and probably does mean) that the IJC needed the report as one of several elements to be used for achievement of the objective (mentioned in the third paragraph): "...to define 'the threat to human health from critical pollutants' found in the Great Lakes basin." In fact, the IJC request is not spelled out until the Conclusions (see below).

The fourth paragraph states that the report should not be construed as a “traditional analytic epidemiologic evaluation.” In fact, the report is not an epidemiologic evaluation, analytic or not, traditional or not. (Readers do not learn that the draft is “a descriptive report” until Section 1.5.) The paragraph then explains that the report is “an assessment to identify co-occurrence of elevated patterns of morbidity and mortality and environmental contamination that may merit further hypothesis-based epidemiologic study.” It would be accurate to describe such a report as an ecological study. An ecological study cannot be used to show a causal relationship between environmental contamination and health effects, but it could be used to generate a testable hypothesis. However, an ecological study must in fact study co-occurrence of health and environmental data: i.e., the geographical areas of the environmental impact and the population studied must correspond. Examples of possible ecological studies are investigations of health in a population served by a contaminated municipal water supply or living in the immediate vicinity of a lead smelter.

The central problem of this draft is that it has the appearance of a study of co-occurrence, without actually being such a study. This lack of co-occurrence is revealed in the fifth paragraph of the Executive Summary. In this paragraph we learn that data from over 100 hazardous waste sites in 54 counties were reviewed, along with county-wide health outcome data, and data from facilities in the 54 counties reporting to the Toxic Release Inventory (TRI) or having National Pollution Discharge Elimination System (NPDES) permits. All of these data are overlain on Geographic Information System (GIS) maps. Inputting data representing different spatio-temporal characteristics into a GIS is not a demonstration of co-occurrence. Such a demonstration does not occur in this report.

The fourth paragraph, characterizes the report as “a comprehensive evaluation of patterns of environmental contamination and the demographics of vulnerable populations in the 26 AOCs.” However, the fifth paragraph implies that residents of counties containing the hazardous release sites (i.e., the people whose health outcome data are overlain in a GIS map) are “vulnerable populations.” Then in the ninth paragraph, “vulnerable populations” are defined as people residing within one mile of a hazardous waste site. Despite these 3 definitions (people within an AOC, people within a county, people living within one mile of a hazardous waste site), the report reveals (Chapter 1, paragraph 4) that ATSDR defines populations within one mile of a hazardous waste site as “potentially vulnerable.”

In the tenth paragraph readers are informed that AOC county health measures compare unfavorably with peer counties and U.S. data and “merit further attention.” The relevance of county health data are apparently assumed, despite the lack of correspondence between county health data and “vulnerable populations” living within one mile of a hazardous waste site, as defined in the preceding paragraph.

County health data were reviewed for 26 counties (paragraph 10) and “elevated” rates were observed for infant mortality in 21 counties, low birth weight in 6, premature births in 4, elevated breast cancer mortality in 7, colon cancer in 16, and lung cancer in 12.

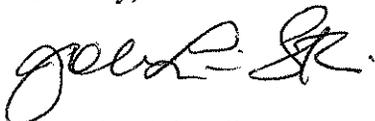
Given that "elevated" is described as a rate above the median of "peer counties" these are unremarkable findings. The conclusion that these "elevated rates of disease "merit further attention" applies equally to the peer counties which will also each have multiple instances of rates "above the median."

In the body of the report there is no discussion of the lack of correspondence between the Great Lakes AOC's and the counties which contain them. Further, there is no discussion of the likelihood of health impacts from exposures to chemicals released in AOCs on people living within one mile of contaminant releases: the "vulnerable populations," or more accurately the potentially vulnerable populations. There is also no discussion of the reliability of TRI data (which are generally calculated from mass balance analyses and are not based on actual measurements). Finally, there is no real justification of why TRI, NPDES and county health data are included in this report beyond the desire "to provide a fuller perspective of potential impacts on environmental burdens and public health" (Chapter 1, paragraph7). It is apparently assumed that emissions of facilities in counties containing an AOC are of relevance for "a comprehensive evaluation of patterns of environmental contamination and demographics of vulnerable populations" as stated in the Executive Summary, paragraph 4.

In the Conclusions (Chapter 7) readers finally learn that the IJC requested that ATSDR identify evaluated waste sites, their hazard categories, relevant demographic information on populations at risk and IJC critical pollutants in completed exposure pathways. The draft report would have been valuable if it fulfilled the IJC's request. As it is, the report is useless for developing recommendations for investigation and cleanup of sites or other sources of contamination, and for communicating realistically about health or environmental impacts with local governments and communities. It is also useless as a "hypothesis generating" tool to guide research.

In short, it is regrettable that delaying the release of a scientifically indefensible document has created so much controversy. However, we believe that release of the document would have caused even more harm to the credibility of ATSDR, and could have seriously impaired the ability of MDH to convey the best public health advice to local government agencies and to people in communities who live near contaminated areas in the vicinity of Lake Superior. We suggest that ATSDR go back to the health assessment documents written by Cooperative Agreement states and by the ATSDR Division of Health Assessment and Consultation, and build on this excellent source of material for a response to the IJC.

Sincerely,



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