

Reviewer's report

Title: Geographic risk modeling of childhood cancer relative to county-level crops, hazardous air pollutants and population density characteristics in Texas

Version: 1 **Date:** 25 June 2008

Reviewer: Veronica Vieira

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Major Revisions

1. Include a table with numbers of cases and diagnosis year for each histotype.
2. The authors stated children born between Jan 1990 and Dec 2002 were included and followed through Dec 2002. Although they mention that time for follow-up varies, they should elaborate on the latency of these cancers and the implications of including children that may not have lived long enough for diagnosis of the disease on the results.
3. In cancer analyses, the time can be defined in different ways (birth year, diagnosis year, latency). The authors should clarify the term Year in their model.
4. There needs more discussion on the correlation among histotypes and spatial covariance. Also, mention it in your conclusion.
5. Address the choice of geographic unit – why not use census tracts?
6. Address the possibility of confounding by other confounders, for example, SES variables available in census data.
7. The definition of extensive cropping (20% area coverage of 4 crops) and high-intensity (>100,000 kg) seems ad hoc based. Were these definitions used in other studies? If so, please cite them. If not, how were these cut offs chosen and was the analyses repeated with other cut offs?
8. The line graphs of 19 cancer histotypes are unreadable. They all appear to decline over time. The authors should consider separating the steadier AML and “other leukemias” to see this trend. The axes should be labeled.
9. There should be more discuss on the interpretation of the temporal trends.
10. Add more discussion about Hodgkin lymphoma and why there may be reduced risk in rapidly growing counties. Also, the text should include that the reduced risk has 95% credible sets <1.

Minor Revisions

1. Comma is missing from Abstract Methods section, last sentence.
2. Remove periods (or add where missing) from Methods section subheadings for consistency.
3. Spell out MCMC on page 9.

4. Bar graphs should include % on axis and labels.
5. Use tonnes consistently for HAP units.
6. Osteosarcoma was specifically mentioned on page 14 – was a separate analysis done for osteosarcoma in addition to grouped malignant bone cancers?

Level of interest: An article of limited interest

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.