Reviewer's report

Title: Spatial-temporal analysis of non-Hodgkin lymphoma in the NCI-SEER NHL case control study

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Reviewer: Jared Aldstadt

Reviewer's report:

This manuscript applies generalized additive models to a case-control study with residential history information. The research question appears to be important and novel. The paper is well written. The clear and concise descriptions of data and methodology leave little doubt with regard to the replication of results. The fair and inclusive comparison between this technique and alternative procedures for addressing this type of data further enhances the contribution of the manuscript. I do not see any flaws that suggest major compulsory revisions, but have included minor suggestions below.

Minor Essential Revisions

1. There is a clear discussion of the overall number of cases and controls included in the analysis and the exclusion criteria used to arrive at this number. I did not find the number of cases and controls included for analysis at each SEER center. I think this should be included in the manuscript. How does the sample size at each center relate to the ability to find clusters in each area?

Discretionary Revisions

2. The authors note that the time periods used in the analysis are, “...in a time frame of etiologic relevance.” More support for this statement would make for a stronger contribution, but I realize that it may not be possible. I know that latency and exposure for most cancers are complex and highly variable. Issues in data reliability and availability are a factor as well. However, seeing the result that residence at 20 years prior to diagnosis is the most significant spatial predictor, naturally makes one curious to see the analysis repeated for 25 or 30 years prior to diagnosis.

Level of interest: An article of importance in its field

Quality of written English: Acceptable

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

Declaration of competing interests:
I declare that I have no competing interests