Reviewer's report

Title: Social equity in Human Papillomavirus vaccination: A natural experiment in Calgary Canada

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Reviewer: Loretta Brabin

Reviewer's report:

This is an important article because it underlines the importance of delivering HPV vaccination in school in order to reduce social inequalities. It is encouraging to learn that the data was also used successfully to influence local policy.

Minor Essential Revisions

There were some challenges to be overcome in data analysis. The authors acknowledge the limitations of the Pampalon deprivation index which is as an indicator of a marker of SES at the neighbourhood level, but still tended to treat it as an individual marker (cf P9 in methods). I would have liked a descriptive table that provided a clearer description of the SES differences between school types. I struggled with Table 1. For example in the Catholic Community model column it was not obvious that the percentage of 65.9% was 257/390. How was the 44.4% (n=1000) in the line below derived? I could not tally Table 1 with Figure 1 – completed vaccination is given as 24.9% in the table and 37.5% in the figure. I think the problem is that the 37.5% in figure 1 is derived from the total number who had community delivery -not specifically the Catholic ones, as indicated by the lower box. There were small numbers in some categories. I would have liked to know the total numbers in Grades 5 and Grade 9. Grade was used as a proxy for age, when ages would surely have been easy to obtain and likely to have been an important discriminator? Did the analysis look at the number of siblings from the same family and was it similar in Catholic/public schools? Please could the authors clarify some of these points.

Despite this, the discussion is well written and the conclusions seem justified. Another factor that could have influenced vaccine uptake is information provided to parents. There is no mention of whether any standardised information was sent to all parents, the possible effect on students of having school nurses provide additional information (If the authors felt this to be relevant).

The results section in the abstract does not fully capture the salient points referred to in the discussion and should be revised.

The title of the paper is not informative and referring to the study as “a natural experiment” is not a suitable description.

Level of interest: An article whose findings are important to those with closely
related research interests

Quality of written English: Acceptable

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.

Declaration of competing interests:

No interests to declare.