Reviewer's report

Title: Estimation of HPV prevalence in young women in Scotland; monitoring of future vaccine impact

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Reviewer: Martin Steinau

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The manuscript by Kavanagh et al. describes HPV typing and prevalence among 20 to 21 year old women in Scotland. The data will be useful as baseline for futures assessments on vaccine efficacy. As the authors point out, Scotland might be particularly interesting since HPV testing was implemented in the school vaccination program warranting high uptake. The paper is written clearly and sufficiently explain the methods applied (exceptions see below).

Major Compulsory Revisions

My may point of critic is the incorporation of alternative sampling methods.

1.1) While specimens were predominantly collected as residual liquid cytology samples, additional self-collected swabs and urine samples were also evaluated from women not attending cervical screening programs. The objectives here are not well described. Were these collected to increase representativeness, to identify differences in HPV prevalence between the screening population and defaulters or to evaluate different specimen types for HPV testing?

1.2) Major parts of the manuscript are organized to compare results between the 3 sample types. However, this is not indicated in the title nor introduced in the Abstract background; neither pays the Discussion appropriate tribute to this aspect.

1.3) A key question seems to be if the sample population that did not attend screening was generally different in HPV prevalence. It is not clearly stated in the results, but the numbers in Table 2 and comments in the discussion indicate that there were significant discrepancies. From the study design it cannot be assessed to which extend these are due to true differences in these populations or to different sampling methods. One would expect a conclusion here – is it worth sampling the defaulters at all or, are results from cytology samples sufficient to monitor HPV prevalence representatively?

2.) Were any positive and negative controls incorporated into DNA extraction and HPV testing to control for contamination and sensitivity?

Additional Minor Essential Revisions

3.) Although referenced in part in the text, the precise sampling materials (kit, media) should be mentioned.

4.) Some information about the geographical representativeness of the sample
population attending cytology screening would be useful. Which cities or regions were included? Was representation evaluated.

5.) A breakdown of the data would be helpful; by: participants enrolled, specimens received, tests completed and adequate data used for analysis for each sample type.

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

**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