Reviewer’s report

Title: Burden of paediatric rotavirus gastroenteritis (RVGE) and potential benefits of a universal Rotavirus vaccination programme in Spain

Version: 1 Date: 27 November 2009

Reviewer: Mark Jit

Reviewer’s report:

Diez-Domingo and co-workers have estimated the burden of paediatric rotavirus gastroenteritis that is likely to be prevented by a vaccination programme using RotaTeq(R) in Spain. They use data from the REVEAL study as well as from neighbouring countries to estimate relevant epidemiological, health care and economic parameters. Overall, the analysis is well conducted and uses believable parameters, although there are some issues around a few of the parameters used.

Major essential revisions

1) The study is useful since it will provide evidence to decision makers about the benefit of a vaccination programme. However, it is not clear why the authors chose not to use their study to estimate the cost-effectiveness of RotaTeq(R) vaccination in Spain. This would make their analysis far more useful to decision makers, and appears to be a simple task, given that they have already collected most of the information they need for this. Utility values of rotavirus-related health states are readily available in the literature. The authors need to either clarify why they did not do this (perhaps they plan to do so in a separate manuscript), or add a section to their present work estimating the cost-effectiveness of vaccination. At the very least they should provide the health and economic benefit per person vaccinated.

2) Page 7, paragraph 1: In the French study by Floret and co-workers that is referenced, 34.6% of rotavirus gastroenteritis cases did not seek medical care. Hence it is not clear how the authors of the present manuscript used a figure of 41.4%.

3) Page 8: Infants only benefit from full vaccine protection after completing the full course of 3 doses (usually around age 6 months). It is not clear how this was taken into account.

4) Page 8, paragraph 2: It is not clear how the figure of 10% decrease in vaccine efficacy after 2 years was derived. The REST trial reported that second season vaccine efficacy against any G1-G4 RVGE was 62.6% (compared to 74.0% in the first season) and 88.0% for severe RVGE (compared to 98.0% in the first season). There are a few issues here. Firstly, second season is not the same as second year – this will depend on the timing of vaccination. Secondly vaccine protection is likely to wane further after the second season, and so the decline
needs to be extrapolated. Hence it is more realistic to assume an exponential rate of waning and apply it based on when an infant will be vaccinated.

5) Page 25: It would be useful to conduct multivariable sensitivity analysis as well. If all the parameters could be sampled from their distributions, then an overall 95% credibility interval could be given for the burden avoided due to vaccination.

Minor essential revision

1) Page 9, paragraph 1: The figure of 0.26 workdays lost per episode only applies to episodes not involving medical care, and is already mentioned in page 10, paragraph 2.

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

**Quality of written English:** Acceptable

**Statistical review:** Yes, and I have assessed the statistics in my report.

**Declaration of competing interests:**

I declare that I have no competing interests.