In 2018, GSK’s PHiD-CV and HRV vaccines would have averted 10 severe infections every minute and a child death every 3 to 4 minutes.

Since their launch, GSK’s PHiD-CV and HRV vaccines are estimated to have protected over 440M children, averting more than 33M severe cases and up to 870,000 child deaths.

**Background**

- In 2000, over 1.3M deaths in children ≤59 m were estimated to be attributed to rotavirus and Streptococcus pneumoniae.
- In recent years estimates more than halved, with 215,000 attributed to rotavirus (2013) and 317,300 to pneumococcus (2015).
- Increased availability and use of vaccines significantly contributed to the reduction.

**Objective**

- To estimate the overall number of children protected and the direct effect of HRV (GSK) and PHiD-CV (GSK) delivered to countries until 2019, from 2004 and 2009 respectively.

**Methods**

- Two decision tree models, estimating the direct impact of PHiD-CV and HRV in children ≤59 m.
- Disease burden estimates for morbidity and mortality, vaccine doses delivered, efficacy and effectiveness, schedule and wastage: populated for each country separately.
- Partial schedules conservatively not considered.
- Streptococcus pneumoniae related endpoints: community acquired pneumonia, streptococcal meningitis and non-pneumonia non-meninngitis invasive disease, based on global estimates from 2000 and 2010. Vaccine efficacy applied based on a randomized control trial.
- Rotavirus gastroenteritis: annual mortality based on the average of published global estimates for 2013. Morbidity based on published severe diarrhoea cases and proportion attributable to rotavirus in different World Bank income groups. Effectiveness of HRV based on a systematic literature review of post licensure data (2006-16).
- Internal data on doses shipped associated with country of delivery, all other parameters based on published literature.
- Over 1.15B doses of PHiD-CV and HRV delivered up to 2019.
- Probabilistic sensitivity analysis was run to address parameter uncertainty. Uncertainty ranges based on 90% intervals of 10,000 bootstrap simulations.
- Aggregated estimates derived for HRV and PHiD-CV, since 2004 and 2009 respectively.
- Outcomes presented as overall figures and for 73 Gavi-eligible low-income countries separately.

**Estimated impact of pneumococcal nontypeable Haemophilus influenzae polysaccharide protein D conjugate vaccine (PHiD-CV) and human rotavirus vaccine (HRV) on child morbidity and mortality**

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