Costs, Consequences and Budget Impact of Implementing a 2-Dose or 3-Dose Rotavirus Vaccine in the United Kingdom

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BACKGROUND AND AIMS

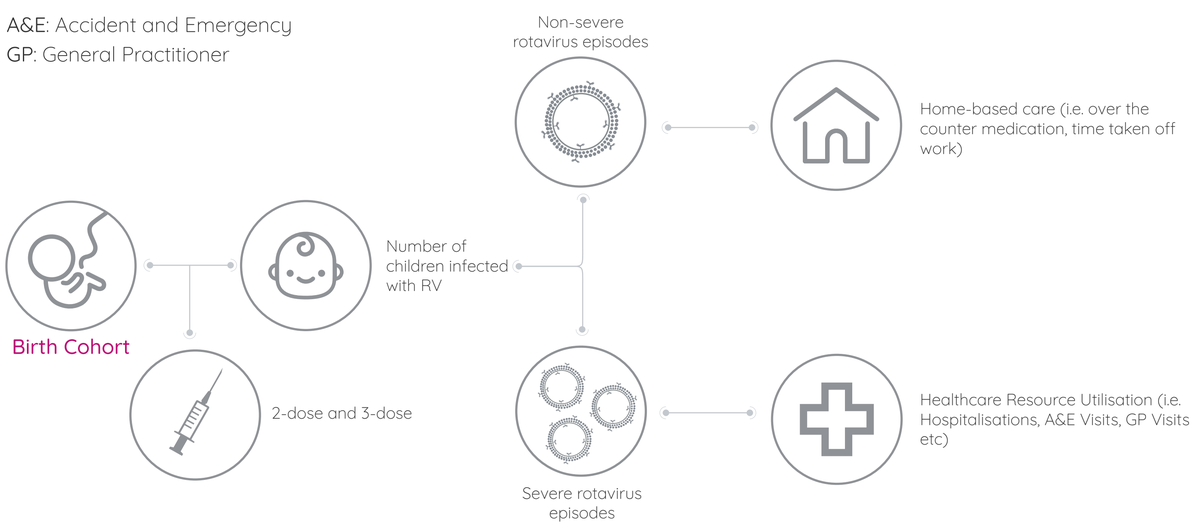
- Acute gastroenteritis (AGE) due to rotavirus (RV) is one of the leading causes for mortality and morbidity amongst children younger than 5 years.
- RV vaccines can be administered according to a 2- or 3-dose schedule to help prevent RV-related AGE.
- In the United Kingdom (UK), 2-dose RV vaccination is included in the National Immunisation Programme (NIP) since 2012.

We aimed at assessing the hypothetical budget impact of replacing the existing 2-dose schedule with a 3-dose RV vaccination.

METHODS

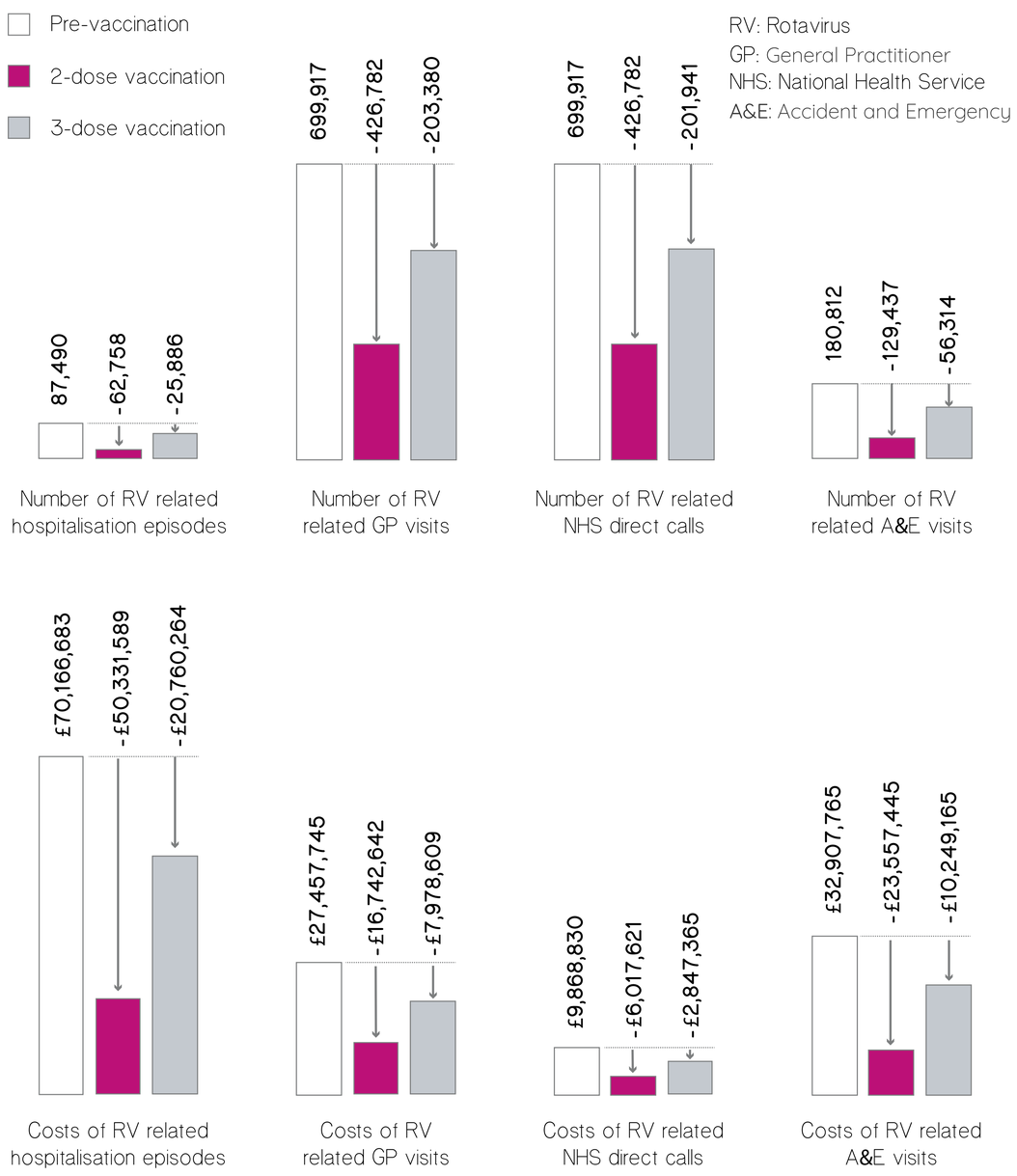
A cost-consequence based budget impact model was developed. Using this model we first quantified the pre-vaccine era burden and then estimated costs and consequences of implementing a 2-or 3-dose RV vaccine schedule.[1] Finally, the cost savings were calculated between implementing a 2-dose or 3-dose RV vaccine schedule in the total population.[2]

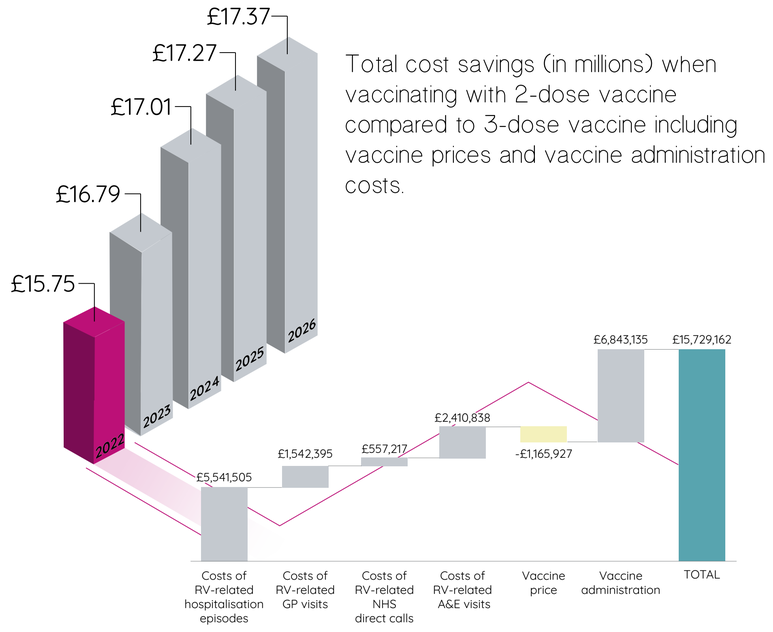
A&E: Accident and Emergency
GP: General Practitioner



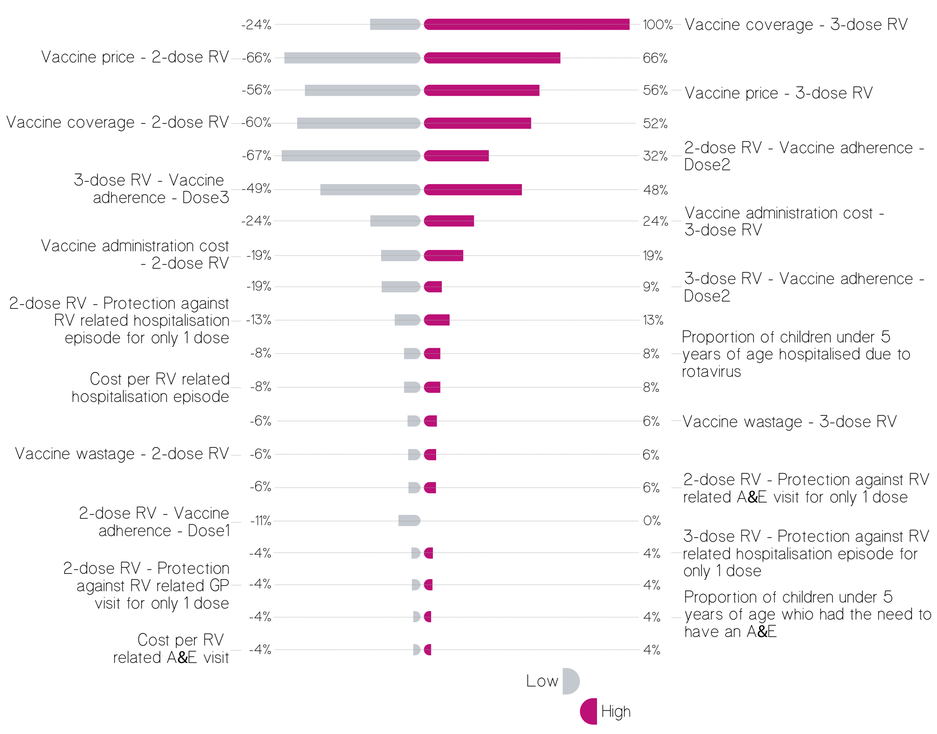
POPULATION	Theoretical UK birth cohorts from 2023 to 2028 that would be eligible as part of the NIP
INTERVENTION	2- or 3- dose RV vaccines
COMPARATOR	No vaccination
OUTCOMES	Total reductions in healthcare resource utilisation and difference in total costs between 2- or 3-dose RV vaccine implementation
STUDY TYPE	Cost-consequence based budget impact analysis
PERPECTIVE	Healthcare decision maker (vaccine costs, administration, health service resource use costs with managing the disease)
TIME HORIZON	5 years
DISCOUNTING	No
PRICE	Price parity was assumed between 2- and 3-dose RV vaccines based on the published list price of a 2-dose vaccine
SENSITIVITY ANALYSIS	Univariate

RESULTS





Costs and consequences were most sensitive to vaccine coverage and compliance, vaccine price, and administration costs.



CONCLUSIONS

Hypothetically, if the UK implemented 2-dose RV vaccination compared to 3-dose RV vaccination, a total £101.5 million could be saved in total over the next 5 years.

On average, this would translate to a hypothetical annual budgetary saving representing approximately 3-4% of the total public health budget allocated to vaccines and countermeasures.

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