The estimated cost-effectiveness of paediatric rotavirus vaccination in the Kingdom of Saudi Arabia

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**Background:** Rotavirus gastroenteritis is a major health burden in young children worldwide. This study investigates the cost-effectiveness of universal paediatric rotavirus vaccination with RIX4414, a two-dose human rotavirus vaccine, in the Kingdom of Saudi Arabia (KSA).

**Methods:** A Markov cohort model with a cycle time of one month is constructed in Microsoft Excel. A hypothetical birth cohort estimated at 562,400 infants is entered into the model and followed over an average life expectancy with acute rotavirus events measured up to the age of 5 years. Probabilities, utility scores, and costs for hospitalisations, hospital acquired rotavirus infection, medical consultations, emergency visits and deaths are taken from published sources, databases, and after consensus from experts. Costs and benefits are discounted at 3% per year and compared between vaccinated and unvaccinated cohorts from a societal perspective.

**Results:** Estimated number of rotavirus-related diarrhoea events per year is between 129,358 (min) and 168,728 (max). Total cost without vaccination is estimated between SAR 85 (min) and 192 million (max) per year, of which direct medical costs account between 77%-81% and indirect costs between 19%-23%. Vaccination (96% coverage) reduces the number of gastro-enteritis events with 65-66% between 43,609-58,709 and number of medical visits from 112,486-140,600 per year to 14,745-18,900. Total cost, including cost of vaccination, in the vaccinated cohort is estimated at SAR 100 to 116 million per year, saving SAR 76 million or causing an extra cost of SAR 10 million per year compared with no vaccination, for a vaccine price per dose of SAR 75 + SAR 7 per administration. Compared with a 3 dose vaccine, cost savings will occur between SAR 6 to 9 million per birth cohort.

**Conclusion:** Paediatric vaccination against rotavirus with a 2 dose vaccine (RIX4414) would improve health outcomes in KSA and may save up to 5 SAR (best scenario) or being an extra cost of 1.16 SAR per child at risk (worst scenario), the latter still being very cost-effective.

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Investigation of malaria outbreak in Basti Mungwani, District Muzaffar Garh, October 2010

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**Background:** On 24 October 2010, EDO (Health) office received a call from local member council about two deaths due to high grade fever at Basti Mungwani. Four similar cases were also reported from the same area. A six-member team was sent to investigate the outbreak and recommend control measures. Basti Mangwani was flood-affected and consisted of about 42 houses with a population of 206.

**Methods:** A descriptive study was conducted from 24 to 30 October 2010. Based on the preliminary finding a case was defined as a resident of Basti Mangwani, regardless of age and sex, having fever with chills within October 18th to October 30th 2010. The patients fulfilling the case definition were enrolled by the house to house survey. Blood samples were taken for microscopy and rapid tests.

**Results:** There were 39 cases with a mean age of 17.5 years (range: 01-45). Females were 62%. Age group 1-20 years was most affected (n = 25). Besides fever and chills, vomiting was the present in 28% cases. All cases were confirmed on microscopy and 95% (n = 37) were positive on rapid test. Plasmodium falciparum was positive in 59% (n = 22) while rest were positive for Plasmodium vivax.

**Conclusion:** Stagnant water pond was the major mosquito breeding site and the probable cause of the outbreak. Residual sprays, treatment of pond by larvicidals, provision of bed nets and prophylactic treatment with chloroquin were able to control the outbreak. No new cases were reported after October 30th 2010.

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Visceral leishmaniasis in North Khorasan province, north east of Iran

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**Background:** Visceral Leishmaniasis (VL) is a Zoonotic infection, is caused by Leishmania infantum in the Mediterranean area and...