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Impact of the UK meningococcal B and ACWY immunisation programmes and genotypic enhanced surveillance of IMD in England

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In September 2015, the United Kingdom became the first country to introduce the novel, multi-component protein-based meningococcal B (MenB) vaccine, 4CMenB, into the national infant immunisation programme. Infants received the vaccine at 8 and 12 weeks of age with a booster on their first birthday. Within 10 months of the programme, there were rapid reductions in MenB disease in vaccine-eligible infants. Three years on, large declines in MenB disease continue in all cohorts eligible for the vaccine, with significant reductions observed in infants, one year-olds and two year-olds, with more than 60% of cases prevented during the first three years of the progamme. The vaccine is associated with an increased risk of fever when administered with other routine infant immunisations. This risk can be reduced significantly with administration of paracetamol prophylaxis, with the first dose given around the time of infant vaccination. So far, more than 5 million doses of 4CMenB have been administered, with no major safety concerns identified.

At the same time as the 4CMenB infant programme, the UK also implemented an emergency adolescent meningococcal ACWY conjugate vaccine programme for teenagers in order to combat a national increase in group W meningococcal (MenW) disease due to a hypervirulent strain belonging to clonal complex 11 since 2009. The vaccine was offered to 13-18 year-olds over three years, along with replacement of the MenC vaccine with the MenACWY conjugate vaccine for 13-14 year-olds in the routine immunisation programme and for new university entrants. Four years on, large and significant declines were observed for both menW and group Y meningococcal (MenY) disease across all age groups because of the direct and indirect (herd) protection offered by the emergency immunisation programme. So far, more than 3 million doses have been given, with no safety concerns identified; MenACWY conjugate vaccine failure is extremely rare.

The recent implementation of two meningococcal vaccines into the UK immunisation programme has played a major part in reducing the burden of meningococcal disease in the UK. Continued use of both vaccines in the targeted age groups will further reduce disease incidence in the coming years. Important questions that require additional study include host and pathogen characteristics of children who develop meningococcal disease despite appropriate vaccination and the protection offered by 4CMenB against other meningococcal serogroups.