

# UK immunization highs and lows

Public health scientists in the UK are suffering a fate of one step forward, two back, in terms of the country's immunization program. Only days after announcing that the effort to wipe out cases of meningitis C with a new vaccine has proved to be the most successful immunization campaign for 40 years, government health officials were forced last month to counteract fresh media scares over the measles-mumps-rubella (MMR) vaccine in order to stop take-up levels dropping to an all-time low. In addition, supplies of the BCG tuberculosis vaccine have fallen so low that routine nationwide immunization has been stopped in all regions outside London.

Group C meningococcal infections have surpassed the more common group B infections in recent years in the UK. Thus, with the development of a new vaccine for the C strain, Britain became the first country in the world to introduce an immunization program against the infection in children and teenagers in November 1999. Figures show a drop of 90% in vaccinated cases under 1 year of age and a 75% drop in the 15–17 age group. Spain and Ireland are beginning similar programs.

However, a tabloid newspaper recently reported that a new study to be published by Andrew Wakefield of the Royal Free Hospital in London will show the MMR vaccine to be unsafe.

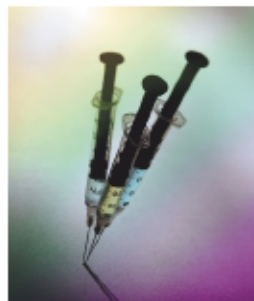
This triggered a defensive press conference by the Department of Health (DoH) to announce that the Committee on the



Safety of Medicines had re-reviewed the licensing data for the vaccine and confirmed its safety. David Salisbury, head of immunization at the DoH,

told *Nature Medicine*, "...every review that has been undertaken has shown that this vaccine is safe and the reason for [our] announcement is the publicity that has been given to a still unpublished piece of work that is causing public anxiety."

In 1998, Wakefield published data suggesting that MMR vaccination is linked to autism (*Lancet*, 351, 637; 1998). MMR rates fell from 93% to 87%. Wakefield also suggested that the vaccines should be given separately in intervals of one year. "We believe that is a program that is destined to put children at risk," says Salisbury. "If you assume 10% of infants are delayed and



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you have the first immunization at age 1, the second at 2 and the third at 3, that means you've built up at least 150,000 susceptibles over two years." Data from a large study in Finland supporting the safety of the MMR vaccine is published in a recent issue of the *Pediatric Infectious Disease Journal* (19,

## Polio outbreak threatens eradication program

An outbreak of polio on the Caribbean island of Hispaniola has cast a shadow on the World Health Organization's (WHO) efforts to certify the world as polio-free by the end of 2005. Olen Kew at the US Centers for Disease Control and Prevention (CDC) in Atlanta has confirmed cases of polio caused by attenuated type 1 poliovirus—one of the three attenuated strains included in the Sabin oral polio vaccine (OPV). The outbreak calls into question the idea of stopping polio immunization once the disease has been eradicated.

The reverted strain shows both neurovirulence and transmissibility, which the live-attenuated strains in OPV have lost, says Bruce Aylward, director of WHO's Global Polio Eradication Initiative. Since the cases have been identified, the sites involved—the Dominican Republic and Haiti—have responded with door-to-door vaccination efforts. Taking such swift action makes it unlikely that the area will lose its International Certification Commission's certification as a polio-free region, even though Donald Henderson of the Johns Hopkins University School of Public Health and chairman of the Technical Advisory Group Program of Immunization for the Americas, says there are an additional 39 suspected cases.

Although it is the first in the western hemisphere in almost a decade, this is not the only vaccine reversion and outbreak. Data published in the 26 January issue of *Mortality and*

*Morbidity Weekly Reports* shows that a reversion of the type II strain of poliovirus from OPV led to an outbreak of 32 cases of polio in Egypt between 1988 and 1993, according to Stephen Cochi, director of the CDC's polio eradication activities. Sequencing data suggest that virus might have circulated in the population for as long as 11 years. Cochi believes a less well-documented outbreak probably occurred in China several years ago.

The present outbreak probably resulted from a strain that reverted 18 to 24 months before it was identified. As polio causes flaccid paralysis in less than 1% of infected children, Henderson points out that infection can spread without becoming manifest. Moreover, the level of immunization is better in most of the Americas than it is in the Dominican Republic and Haiti, he says, setting the stage for transmission of a reverted strain.

Under the current WHO plan, developing countries would go from using OPV to using no polio vaccine at all, but the evidence for OPV-revertant outbreaks threatens this strategy. Alternatives include taking virus strains away from OPV in a stepwise fashion or switching to the Salk inactivated polio vaccine (IPV) for 3 to 4 years before phasing out vaccination. However, IPV is not presently manufactured on a sufficiently large scale and requires injection, both of which make it more complicated and expensive to deliver than OPV.

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