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Routine Immunisation Virtually Eliminates Major Killer of Young Children in The Gambia New Study Confirms

*** No cases of *Haemophilus influenzae* type b (Hib) meningitis detected since 2002 ***

London, UK, 29th June 2005 – *The Lancet* has today published online new research from a team led by the UK Medical Research Council's Richard Adegbola showing that routinely vaccinating infants against *H. influenzae* type b (Hib) – a bacterium that causes deadly diseases including pneumonia and meningitis – has virtually eliminated Hib meningitis in The Gambia.

The Gambian study shows that the vaccine is highly effective (94% efficacy with two doses) and that, even with moderate coverage and sub-optimal conditions, Hib vaccination can benefit all children because herd immunity¹ is significant.

“Hundreds of thousands of young children are dying of Hib disease because of a lack of national Hib immunisation programmes”, said Dr. Patrick Zuber of the Vaccines and Biologicals division of the World Health Organization (WHO). “This study proves that routinely immunizing children with Hib conjugate vaccine in developing countries is practical and will save lives – helping in the efforts to achieve a two-thirds reduction in the under-five mortality rate, a Millennium Development Goal.”

“What makes this even more remarkable is that the virtual eradication of Hib disease has been achieved despite less than optimal circumstances,” said lead study author Dr. Adegbola of the MRC. “There were interruptions in vaccine supply, less than 70% of children received the complete schedule of immunisations, and vaccine doses were often received late. This makes the Gambian findings particularly relevant to the real-life situation in other developing countries, especially in sub-Saharan Africa.”

¹ Members of a community who are not immune to a disease are still protected from it provided sufficient numbers of people in that community are immune

The study also showed that Hib carriage² has also been virtually eliminated in The Gambia – in both vaccinated and unvaccinated children. Before vaccination 12% of children between one and two years old carried the infectious bacteria, now the rate is less than half of one percent and difficult to detect. The negligible carriage rates contribute to the herd immunity effect – unvaccinated children are protected because of reduced likelihood of transmission. This means that routine Hib conjugate vaccination is a highly effective way of preventing death and severe disability related to Hib disease in young children.

The WHO (which part-funded the Gambian study) estimates that Hib causes 400,000–700,000 deaths each year – the majority of these deaths occur in children under five in the developing world. Children that survive Hib disease can be left severely disabled – bacterial meningitis can cause permanent deafness, seizures, or mental retardation. Before the introduction of a national vaccination programme, The Gambia – like the rest of the developing world – had a high disease burden from Hib. Only 45% of Gambian children recovered fully from invasive Hib disease and 30% of those that contracted Hib meningitis died.

Routine Hib vaccination was introduced in The Gambia in 1997 as part of the country's expanded programme on immunisation (EPI). The new MRC/WHO study confirmed that since 2002 no cases of invasive Hib disease have been detected. Before any use of the vaccine the annual incidence of Hib meningitis alone was over 200 per 100,000 children under 12 months of age and 60 per 100,000 in children younger than five.

The study's supporters hope that these results drive countries in sub-Saharan Africa that have not yet introduced *Hib* vaccination to do so, and encourage those that have done so to sustain their efforts.

“The results of the Gambian study are incredibly encouraging because they show that elimination of Hib disease is achievable,” said Julian Lob-Levyt, Executive Secretary of the Global Alliance for Vaccines and Immunization (GAVI). ‘What is needed now is a dedicated effort to ensure the rapid adoption of national Hib immunisation programmes throughout the developing world to reduce the burden of death and disability associated with this disease.’”

[ENDS]

² The harmless presence of the bacteria in the nose and throat of children, which can be passed on to cause disease in others

The Gambia Hib Vaccine Study

Aiming to determine the effectiveness of the PRP-T conjugate Hib vaccine EPI programme, the study collated disease surveillance data from western Gambia, with a focus on Hib meningitis. The study looked primarily at Hib meningitis because it is much more difficult to determine the cause of pneumonia. The study also assessed carriage rates of Hib in a sample of 1–2 year-olds attending health centres for vaccination. The study was funded by the WHO and the MRC, and was supported by a broad range of international partners. The following institutions participated in, or contributed to, the study: Sibanor WEC Mission Hospital, The Gambia; Royal Victoria Teaching Hospital, Banjul, The Gambia; MRC Laboratories Hospital; Department of Central Statistics, Banjul, The Gambia; the Expanded Programme on Immunization; and the London School of Hygiene and Tropical Medicine.

Hib Disease

Haemophilus influenzae type b (Hib) is not a disease itself, but a bacterial microorganism that causes several serious, often life-threatening, illnesses in young children. Hib infection is the most common cause of bacterial meningitis (an inflammation of the membranes protecting the brain and spinal cord), and one of the most common causes of pneumonia, in children aged under five. There are six different subtypes of *H. influenzae* (a-f) but 95% of invasive disease is caused by type b (Hib). In the developed world, Hib vaccination programmes have all but eliminated this disease, however, it is still common in developing countries and causes hundreds of thousands of deaths a year. Children that survive Hib disease can be left severely disabled – bacterial meningitis can cause permanent deafness, seizures, or mental retardation. Most cases of Hib disease are in infants between four and 18 months old. The disease rarely occurs after the age of six as natural immunity develops.

The Medical Research Council (MRC)

The Medical Research Council (MRC) is a national organisation funded by the UK tax-payer. Its business is medical research aimed at improving human health; everyone stands to benefit from the outputs. The research it supports and the scientists it trains meet the needs of the health services, the pharmaceutical and other health-related industries and the academic world. MRC has funded work which has led to some of the most significant discoveries and achievements in medicine in the UK. About half of the MRC's expenditure of £450 million is invested in its 40 Institutes, Units and Centres. The remaining half goes in the form of grant support and training awards to individuals and teams in universities and medical schools.

London School of Hygiene and Tropical Medicine (LSHTM)

The London School of Hygiene and Tropical Medicine is Europe's leading school of public health. Its mission is to contribute to the improvement of health worldwide through the pursuit of excellence in research, postgraduate teaching and advanced training in national and international public health and tropical medicine, and through informing policy and practice in these areas.

World Health Organisation (WHO)

The World Health Organization is the United Nations specialized agency for health. It was established on 7 April 1948. WHO's objective, as set out in its Constitution, is the attainment by all peoples of the highest possible level of health. Health is defined in WHO's Constitution as a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.

The Global Alliance for Vaccines and Immunization (GAVI) and The Vaccine Fund

The Global Alliance for Vaccines and Immunization (GAVI) is a public-private partnership focused on increasing access to vaccines among children in poor countries. Partners include national governments, UNICEF, WHO, The World Bank, the Bill & Melinda Gates Foundation, the vaccine industry, public health institutions, and NGOs. The Vaccine Fund, a 501(c)3 non-profit organization, is the financing resource created to support the GAVI immunization goals, providing financial support directly to low-income countries to strengthen their health delivery and immunization services and to purchase new and under-used vaccines.

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