theHibinitiative
TAKING ACTION TO PREVENT CHILDHOOD PNEUMONIA & MENINGITIS

FACT SHEET

Haemophilus influenzae type b (Hib) in the Eastern Mediterranean Region (EMR)

Haemophilus influenzae *type B (Hib) is a bacterium that causes severe pneumonia, meningitis and other life-threatening conditions in children under five years old. Although safe and effective Hib vaccines exist, they are under-utilized in developing countries.*

Hib disease is a serious threat for children globally and in the Eastern Mediterranean Region (EMR)

- The World Health Organization estimates that globally over 1000 children > 5 years old die daily from Hib disease.
- Although EMR is a diverse region, studies show moderate to high burden of Hib disease. [1,2]
- Recognizing this threat, 16 of 22 countries in the Arab region have introduced, or will soon introduce, the Hib vaccine into routine immunization programs.

Hib, the leading cause of endemic bacterial meningitis in Arab countries (pre-vaccine), is often significantly underestimated by routine surveillance

- Despite limitations, laboratory-based surveillance for both meningitis and pneumonia is still important to refine local estimates of disease burden and measure vaccine impact.
- In Egypt, a recent surveillance study found that Hib and *Streptococcus pneumoniae* were the two most common causes of bacterial meningitis.[3]
- Hib, once the leading cause of meningitis in children under 5 years of age, has become rare since the introduction of conjugate Hib vaccination in UAE in 1999.[4] Since 2000, there have been no cases reported, demonstrating the immunisation program's effectiveness.

Hib vaccine helps prevent pneumonia, the leading cause of infectious death in children <5 years old

- Pneumonia kills more than measles, malaria, and HIV combined.
- Multiple studies[5,6,7] demonstrate Hib vaccine effectiveness in preventing x-ray confirmed pneumonia.
- Probe studies have demonstrated significant reductions in clinical disease and suggest that Hib is a significant cause of pneumonia.[8]

Hib vaccine is safe, effective and recommended for all children

- Routine use of Hib conjugate vaccines have virtually eliminated Hib in industrialized and developing countries.
- WHO recommends that Hib conjugate vaccines be included in all infant immunization programmes. [9]
- WHO stresses that lack of local surveillance should not delay introduction, especially in countries where regional evidence indicates high disease burden.[9]
- A recent study of Hib vaccine effectiveness against Hib meningitis in Uganda showed a drop in Hib meningitis by 85% within 4 years of vaccine introduction and fell to zero in the fifth year. Inclusion of Hib vaccine in the Ugandan immunization programme annually prevents almost 30,000 cases of severe Hib disease and 5,000 deaths in children under 5 years of age. [10]
- A study in Lombok, Indonesia showed that Hib vaccine prevented a statistically significant portion of clinical pneumonia[11]

A sustainable and more affordable supply of Hib vaccine exists for resource-constrained countries

- Hib vaccine has been available for >15 years, but most children in developing countries remain unprotected.
- Two suppliers currently produce pentavalent DTP-HepB-Hib vaccines which fit well into current EPI schedules.
- Because current prices of pentavalent vaccine are relatively high for the poorest countries, the GAVI Alliance provides funding for eligible countries to purchase Hib-containing vaccines with a small country co-payment. This allows countries with the greatest need to begin protecting children without price being the barrier to saving lives.
- Prices of Hib-containing vaccines will decline significantly over the next several years as predictable demand increases and new suppliers are pre-qualified to produce more vaccine.

- Almost half of the countries in the EMR have introduced Hib into their national programs. Other countries are considering Hib vaccine in the very near future. As around the world, the Hib vaccine has had a proven impact in Bahrain, Qatar, Kuwait, Saudi Arabia, and United Arab Emirates.
- A 2007 Tunisian study found the Hib vaccine would prevent 189 meningitis cases, 12,451 pneumonia cases and 146 deaths every year in children less than 5 year.[12] Compared to the Tunisian GDP per capita of US$ 8,000, costs per DALY averted of US$ 79 should be considered a highly cost-effective intervention.

The Hib Initiative is here to help provide focus and support for country efforts to take evidence-informed decisions regarding the use of Hib vaccine.

The Hib Initiative

- The Hib Initiative aims to guide countries in making informed decisions regarding introduction or continuation of Hib vaccine programs in the context of other health problems and offers technical assistance and support in the following areas:
  - Research and surveillance, planning coordination in decision making and implementation, and advocacy and communication support for GAVI-eligible countries
- The Hib Initiative unites experts from Johns Hopkins Bloomberg School of Public Health, the London School of Hygiene and Tropical Medicine, the World Health Organization, and the Centers for Disease Control and Prevention (CDC)
- The Hib Initiative is supported by a 4-year grant from the GAVI Alliance (www.gavialliance.org)

Consider the evidence and take action to reduce childhood meningitis and pneumonia today!

Visit the Hib Initiative at www.HibAction.org or contact your local or regional WHO immunizations representative for more information

References

[1] Feikin DR,et al.. Rapid assessment tool for Haemophilus influenzae type b disease in developing countries. Emerg Infect Dis; 2004 10 (7): 1270-6.

[2] Wenger J el al. Introduction of Hib conjugate vaccines in the non-industrialized world: experience in four 'newly adopting' countries. Vaccine; 2000 18: 736-742.

[3] Afifi S. Laboratory-based surveillance of patients with bacterial meningitis in Egypt (1998-2004). Euro J Clin Microbiol Infect Dis. 2007 May;26(5):331-40.

[4] Dash N et al. Epidemiology of meningitis in Al-Ain, United Arab Emirates, 2000-2005. Int J Infect Dis; 2007 Jul; 11(4):309-12.

[5] Adegbola RA, et al. Elimination of Haemophilus influenzae type b (Hib) disease from the Gambia after the introduction of routine immunization with a Hib conjugate vaccine: a prospective study. Lancet 2005; 366:144-150.

[6] Levine OS, et al. Defining the Burden of Pneumonia in Children Preventable by Vaccination against Haemophilus Influenzae Type b. Pediatr Infect Dis J 1999; 18, 1060-64.

[7] Baqui A, et al; Effectiveness of *Haemophilus influenzae* type b (Hib) conjugate vaccine on Hib meningitis and radiologically confirmed pneumonia in <2 year old Bangladeshi children: A case-control study; submitted for publication

[8] Gessner B et al. Incidences of vaccine-preventable *Haemophilus influenzae* type B pneumonia and meningitis in Indonesian children: hamlet-randomized vaccine probe trial. The Lancet 2005; 365: 43-52.

[9] WHO Position Paper on *Haemophilus Influenzae* type B conjugate vaccines. Weekly Epidemiological Record, in press (Nov. 24, 2006); www.who.int/wer

[10] Hyun-Ju Lee E, Lewis R, Makumbi I, Kekitiinwa A, Ediamu T, Bazibu M, Braka F, Flannery B, Zuber P, Feikin D. Haemophilus influenzae type b conjugate vaccine is highly effective in the Ugandan routine immunization program: a case-control study. *Trop Med Int Health*. 2008 Apr; 13(4):495-502.

[11] Gessner BD, et al. Incidences of vaccine-preventable *Haemophilus influenzae* type b pneumonia and meningitis in Indonesian children: hamlet-randomised vaccine-probe trial. *Lancet* 2005; 365(9453):43-52.

[12] Griffiths et al: Cost-effectiveness of delivering Hib vaccine as part of routine childhood immunization services in Tunisia, Hib Init.9/07

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