the Hib initiative
TAKING ACTION TO PREVENT CHILDHOOD PNEUMONIA & MENINGITIS
NEWSLETTER

Volume 2, Number 3 | July 2007

IN THIS ISSUE

NOTE FROM THE DIRECTOR

As the Hib Initiative enters its third year, it is very exciting to witness the significant momentum that is currently taking place with regards to Hib vaccine and new vaccine introduction: between January and April 2007, seventeen additional countries, with a total birth cohort of about 17 million children, have submitted new applications to GAVI for pentavalent vaccines, thus increasing the proportion of children who would have access to these vaccines in GAVI eligible countries from 26% to 39%. A landmark study from Bangladesh was just published, revealing the significant burden of Hib disease in South Asia that had been underestimated all along. As has also been demonstrated with other recent data from Asia, the myth of "unclear disease burden in Asia" no longer exists! More studies continue to come from Africa, highlighting once again the significant impact of Hib vaccine on rates of bacterial meningitis in children (see paper from Ghana, below) and the high level of cost-effectiveness of these vaccines, as demonstrated in a recent paper from Kenya. These studies provide additional support to the revised WHO position paper (Nov. 2006), which recommended that "Hib conjugate vaccines should be included in all routine infant immunization programmes" and that "lack of local surveillance data should not delay the introduction of the vaccines, especially in countries where regional evidence indicates a high disease burden." In addition, these studies serve as powerful tools to help decision makers in countries that have not yet made the decision to introduce Hib vaccine to move quickly and to take advantage of the current financing opportunities available. We look forward to continue working with all our partners in the coming year, and to expand even more rapidly the population of children who will have access to all underutilized and new life saving vaccines.

Rana A. Hajjeh, MD

Events

August 15-17
Tanzania Pediatric Association meeting
Dar es Salaam, Tanzania

August 25-30
25th International Congress of Pediatrics
Athens, Greece

October 8-10
World Vaccine Congress
Lyon, France

October 23-25
Regional Child Pneumonia and Meningitis Advocacy Workshop
Co-sponsored by the Hib Initiative and Pneumo ADIP
Dar Es Salaam, Tanzania

October 28-29
EMRO
GAVI Eastern Mediterranean Regional Working Group Meeting
Tripoli, Libya

November 7-8
Meningitis Research Foundation International Conference
London, UK

November 15-17
World Society for Pediatric Infectious Diseases Conference
Bangkok, Thailand

Announcements & Deadlines

September 28
Deadline for applications to GAVI

Vaccine Hunters: the groundbreaking TV documentary is available on CD from the Hib Initiative. Please contact Latia Brinkley at lbrinkle@jhsph.edu to request a copy.

BANGLADESH TO INTRODUCE HIB VACCINE INTO EPI IN 2008

Bangladesh study demonstrates the value of Hib vaccine in Asia

Study shows that the Hib vaccine reduced a substantial portion of child pneumonia

Published in the July issue of the Pediatric Infectious Disease Journal (PIDJ), a new study conducted in Bangladesh shows that over one-third of life-threatening child pneumonia cases could be prevented with the use of the Hib vaccine. In addition, the study showed that approximately 90% of Hib meningitis cases could be prevented. The evidence of both the incidence of Hib disease and the impact of the Hib vaccine in Asian countries is mounting. At this time, more Asian countries including Bangladesh, Pakistan, Sri Lanka, Bhutan and Afghanistan have applied for GAVI support for Hib vaccine introduction. Others, including India, are now discussing this option. Delay in introduction has been due to a number of factors including perceptions that Hib is not prevalent or not the major cause of pneumonia or meningitis in Asia, perceptions due in part to the difficulty and expense of accurately diagnosing Hib pneumonia and meningitis. The study provides findings that dispute the claims that Hib disease is rare in Asia and with studies in Chile, The Gambia, Brazil and Indonesia, builds the evidence of the real burden of Hib pneumonia and meningitis, that the proportion of pneumonia and meningitis prevented by the Hib conjugate vaccine is significantly higher than what can be detected through routine surveillance.

Researchers, led by Dr. Abdullah Baqui, associate professor at the Johns Hopkins Bloomberg School of Public Health, conducted the case control study in Dhaka, Bangladesh in a birth cohort of approximately 60,000 children aged less than two years to assess the effectiveness of Hib vaccine in preventing bacterial meningitis and radiologically confirmed pneumonia. DPT was replaced with combined Hib-DPT vaccine at a 3-dose immunization schedule given at 6, 10, and 14 weeks of infancy. Four community controls were matched on age, sex, season, and distance and two hospital controls per case were used. The vaccine was introduced in selected immunization centers, both government and non-governmental organizations, in a large area of Dhaka city without additional resources being used. Further, the study demonstrated the value of case control methodology to estimate disease burden.

Highlights of the study:

The preventable fraction of radiographically confirmed pneumonia using community and hospital controls was 34% and 44% respectively.

The preventable fraction of confirmed Hib meningitis using community and hospital controls was 89% and 93% respectively, and 71% and 83%, respectively for probable bacterial meningitis.

With one of the highest rates of infant mortality in the region, the government of Bangladesh continues to improve its commitment to child survival. The government recently signed an MOU (Memorandum of Understanding) with three UN agencies for a $31 million donation to reduce maternal and neonatal deaths in Bangladesh. Introduction of the Hib vaccine into its routine EPI is an important step toward these goals. "Bangladesh views Hib vaccine as an integral tool in our mission to improve child survival in Bangladesh," said Dr. Md. Abdul Quader Mian, Deputy Director EPI and Programme Manager Child Health & LCC, Ministry of Health, Bangladesh.

Findings confirm burden of Hib pneumonia grossly underestimated in Asia

"These data are clear - Hib vaccine is an important addition to immunization programs through out Asia. Supply studies tell us quality manufacturers from developing countries are coming into the market very soon and prices for this vaccine will be coming down in the very near future. Now is the time for additional Asian countries to make this important addition to the EPI programs," commented Dr. Kent R. Hill, Assistant Administrator, Global Health.

Abdullah H. Baqui A. B., El Arifeen, S., Saha, S.K., Persson, L. Å, Zaman, K., Gessner, B. D., Moulton, L. H., Black, R. E., Santosham, M. (2007). Effectiveness of *Haemophilus influenzae* type B conjugate vaccine on prevention of pneumonia and meningitis in Bangladeshi children. *Pediatr Infect Dis J*, Jul;26(7):565-571

News coverage of study results include more than 50 stories in Bangladesh, India, Pakistan, Malaysia, Indonesia, and global media

OPINION EDITORIAL

A New Milestone in Pneumonia Prevention

By Dr. Nitin K. Shah, Dr. Zulfiqar Bhutta, and Dr. M.R. Khan

Throughout South Asia, newspapers often highlight the risks posed by HIV/AIDS, malaria, and tuberculosis. But among our children, a graver threat remains ignored by the headlines. In our region, pneumonia kills more children under 5 than the rest of these diseases combined, yet it continues to receive only a fraction of the attention.

Globally, pneumonia is responsible for the deaths of 2 million children each year, more than one third of whom live in South Asia. But one of the most pressing challenges in fighting pneumonia has been identifying its cause. For years, doctors have suspected that *Haemophilus influenzae* type B (Hib), and *Streptococcus pneumoniae* – two pneumonia causing bacteria – were major contributors to child mortality. The truth remained unclear because routine surveillance could not always detect what caused specific cases.

Today, the answer is becoming clear. A new study published this week in the *Pediatric Infectious Disease Journal* finally confirms that Hib is responsible for a significant portion of severe childhood pneumonia. Similar data from a 2002 study in India demonstrated that Hib is a major cause of childhood pneumonia there as well.

Now that this study has confirmed that Hib is a major killer, it is time for governments across South Asia to move quickly to adopt a promising Hib vaccine that has the potential to save millions of lives. The Hib vaccine has the potential to significantly lower infant mortality rates. In South Asia, it could prove highly effective in preventing pneumonia and reducing the impact of bacterial meningitis, another deadly disease caused by the Hib bacteria, which, if untreated, can lead to death or permanent disabilities in young children.

There is little doubt this promising vaccine works. In the new study published this week, more than 68,000 children in the Bangladeshi capital, Dhaka, were given the vaccine, which was shown to prevent one-third of life-threatening pneumonia cases in children under the age of 2. The Hib vaccine also prevented approximately 90 percent of Hib-related meningitis.

The international community supports Hib vaccination. Last year, the World Health Organization issued an official position paper recommending that all countries implement Hib vaccine programs. Bangladesh, Pakistan and other South Asian countries – including Afghanistan, Sri Lanka, Nepal and Bhutan – have now taken the lead in introducing Hib vaccination. They have applied for funding from the GAVI Alliance, an international vaccine donor, and are working to introduce the vaccine in their countries.

India is currently considering whether to adopt the Hib vaccine, but it has not yet made a decision. We hope India soon follows the lead of its neighbors. This new study should motivate all South Asian nations to adopt the Hib vaccine and to work with advocates and international donors to implement vaccination programs as quickly as possible.

Childhood vaccination programs are a crucial step toward eradicating diseases. Hib vaccination has been identified as an important preventive tool for reducing child mortality in developing countries. Vaccines can help our nations ensure the health of our children and move us closer to reaching the United Nations Millennium Development Goal to reduce childhood death by two-thirds before the year 2015. Together we can take dramatic strides toward reducing child mortality across the region.

Though we are pediatricians of different nationalities we share a common duty to protect the health and safety of our children. Diseases know no borders, and to halt infections, every country must contribute to the global effort to stop disease. By working together to implement programs like Hib vaccination, we are all protecting the health of our most vulnerable citizens.

Dr. Nitin K. Shah was the 2006 President of the Indian Academy of Pediatrics. Dr. Zulfiqar Bhutta is the Chairman of the Department of Pediatrics at Aga Khan University in Karachi, Pakistan. National Professor Dr. M.R. Khan is the Director of Pediatrics at the Institute of Child Health in Dhaka, Bangladesh.

Deadline for applications to GAVI: 28 September 2007

The GAVI Alliance invites applications for New and Under-used Vaccine Support (NVS). Guidelines, application forms and co-financing levels are available online from the GAVI Alliance at:

http://www.gavialliance.org/support/how/index.php
and http://www.gavialliance.org/support/what/nvs/index.php

New and Under-Used Vaccines Support (NVS) is available to all governments in GAVI Alliance eligible countries to help introduce new and under-used vaccines that have been identified as priorities for the routine infant immunization program by the country.

Hib-containing vaccines, in addition to pneumococcal, rotavirus, yellow fever, and measles vaccines, are available for a small co-payment starting at 10 to 30 U.S. cents per dose depending on country category (fragile states, poorest, intermediate, and least poor).

Record number of applications for GAVI funding

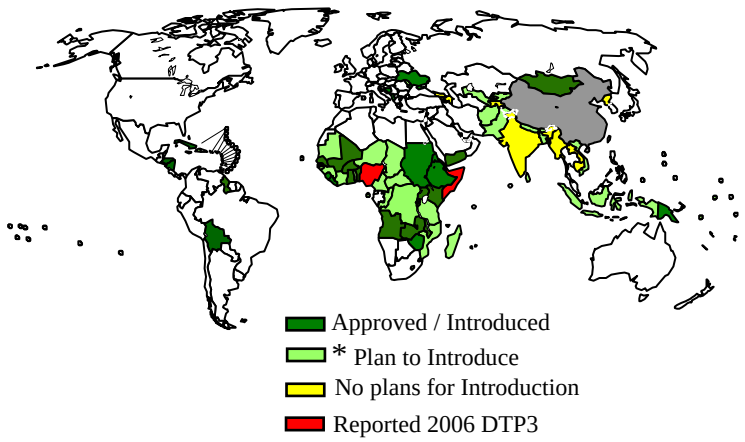
In 2007, seventeen countries have applied for the Hib vaccine for GAVI phase II funding support of New and Under-Used Vaccines. This is a significant increase in the number of countries making the decision to introduce the life-saving vaccine. Applications for GAVI support and funding were received from the following countries:

Afghanistan	Guinea Bissau	Pakistan
Bangladesh	Kiribati	Solomon Islands
Bhutan	Liberia	Sri Lanka
Cameroon	Madagascar	Sudan
Central African Republic	Mozambique	Togo
Cote D'Ivoire	Niger	

Afghanistan, Côte D'Ivoire, Central African Republic, Liberia and Sudan, nations defined by GAVI as fragile states, have applied for funding support

Although the Hib vaccine has been available for more than 17 years, in 2006 only 26% of the world's children had access to the vaccine. Now in 2007, potentially an additional 17 million children from GAVI eligible countries, plus several million children from other countries will have access to life-saving Hib vaccines, thus increasing the proportion of children with access to Hib vaccine to 39%. Such progress could not be achieved without coordinated global and local efforts from the child health community.

Status of Hib Vaccine in GAVI Eligible Countries – May 2007



*Countries that have applied and no decision has been made on the application; clarification approvals; conditional approvals; and Hib in the cMYP

Hib vaccine is a highly cost-effective intervention: an economic evaluation from Kenya

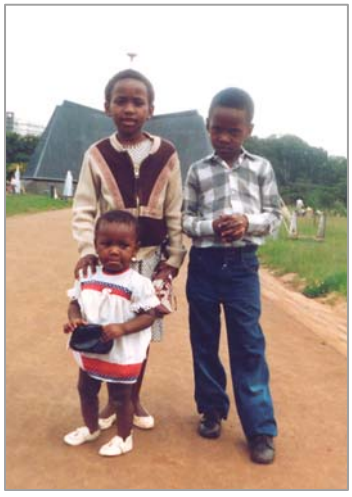
A recent study by researchers from Kenya and the United Kingdom sought to evaluate the cost-effectiveness of Hib vaccine delivery in routine infant immunization services. Specifically, the objective was to estimate the incremental costs per case, death and DALY averted from the Hib vaccine. Published in the July issue of the WHO Bulletin, the study found that when using the 2004 UNICEF price of US$3.65 per dose of pentavalent vaccine, the costs per discounted death averted amount to US$1,197 and the costs per discounted disability adjusted life year (DALY) averted amount to US$38.

Use of the vaccine saves the Government of Kenya approximately US$871,539 each year in averted treatment costs

Ms. Angela Akumu and research colleagues used extensive hospital surveillance data on childhood bacterial diseases from Kilifi district both before and after the Hib vaccine introduction to estimate the disease impact. These data were combined with the vaccine introduction costs and the costs of treating meningitis and pneumonia to show that the delivery of the Hib vaccine as part of Kenya's Expanded Programme on Immunization (KEMRI) is highly cost effective. The researchers estimated that without the Hib vaccine the Government of Kenya would spend approximately US$871,539 each year on hospitalizations and outpatient care of infants with invasive and non-invasive Hib disease.

The study supports Kenya's decision to continue use of the vaccine

The study shows that each year the Hib vaccine is preventing 4,033 meningitis and 10,166 pneumonia cases and is saving the lives of approximately 5,408 children less than 5 years of age.



Model estimates of cases and deaths from Hib disease with and without Hib vaccine delivery in the 2004 Kenyan birth cohort

	Hib cases and deaths **without Hib vaccine**		Hib cases and deaths **with Hib vaccine**	
	Total cases	Total deaths	Total cases	Total deaths
Total	**27 347**	**6112**	**3149**	**704**

(Table 1 from the study is not shown here in its entirety; only totals have been provided)

Ulla Griffiths, economist and co-author of the study, comments on the results, "There is no doubt that an intervention that prevents a death for just over US$1,000 must be considered very cost-effective. This level of cost-effectiveness is comparable with other interventions that we normally regard as cost-effective, such as bednets for malaria prevention. In addition, we must remember that Kenya for the first five years of Hib vaccine use received the vaccine free of charge from the GAVI Alliance. From the viewpoint of the Government, the vaccine has therefore been cost-saving, as its use has led to a decrease in the pressures on the public health services."

In 2001, Hib-conjugate and Hepatitis B vaccines were introduced into the EPI schedule in Kenya combined with diphtheria, Pertussis and tetanus (DPT) antigens as a pentavalent vaccine. The pentavalent vaccine was provided under Phase I of the GAVI Alliance funding support, which was due to end in 2006. Recently, GAVI extended funding to Kenya through 2015 and in June 2007, the Kenyan government committed government funds through to 2011 for co-financing of the vaccine. With this new study it is confirmed that this funding allocation is a highly cost-effective use of scarce resources.

Akumu, A. O., English, M., Scott, J. A. G., Griffiths, U. Economic evaluation of delivering Haemophilus influenzae type b vaccine in routine immunization services in Kenya. *Bulletin of the World Health Organization*. July 2007, 85(7).

Hib Conjugate vaccines significantly reduce bacterial meningitis in Ghana

A study from Ghana reports that there was a significant reduction of bacterial meningitis in infants due to immunization with the Hib vaccine. Ghana introduced the pentavalent vaccine in January 2002 and this study reviews the first three years of a pediatric bacterial meningitis surveillance program which ran from 2001 to July 2004. This new study from researchers from the University of Ghana Medical School, the Ministry of Health Ghana Health Service, and WHO-Kenya studied the impact of a pentavalent vaccine that includes Haemophilus Influenzae type b (Hib) conjugate vaccine on bacterial meningitis in all children between 1 month and 5 years of age admitted to a teaching hospital in Accra. Researchers found that there was a significant reduction, P = 0.042 and 0.017, in percentage of purulent meningitis in children younger than 1 year, comparing the first year when the vaccine was introduced, to the second and third years, respectively. The report, published in the April 2007 issue of The Pediatric Infectious Disease Journal, shows the impact of the vaccine in reducing morbidity and potentially mortality from bacterial meningitis in infants.

Number of Children with Identified Organisms

Age of Children and Year of Study	Organism			
	Haemophilus influenzae Type b	*Streptococcus pneumoniae*	*Neisseria meningitidis*	Other Organisms
1 mo to <1 yr				
Year 1	4	1	1	3
Year 2	0	1	0	3
Year 3	0	2	2	5
1 yr to <5 yr				
Year 1	1	3	0	2
Year 2	2	0	2	6
Year 3	0	2	0	2

Year 1, Aug 01 to July 02; year 2, Aug 02 to July 03; year 3, Aug 03 to July 04.

Table 2 from the study

Renner, L. A., Newman, M. J., Ahadzie, L, Antwi-Agyei, K. O., Eshetu, M. Introduction of *Haemophilus Influenzae* type b Conjugate Vaccine Into Routine Immunization in Ghana and its Impact on Bacterial Meningitis in Children Younger Than Five Years. *Pediatr Infect Dis J*, Volume 26(4).April 2007.356-358

Serum Institute of India obtains Hib vaccine license

Earlier this spring the Serum Institute of India Ltd announced the launch of indigenously developed Hib vaccine and has obtained a license from the Government of India for production. The pilot process technology know-how came from the Netherlands Vaccine Institute (NVI). The Serum Institute has a capacity to produce over 100 million doses of the vaccine and currently has both monovalent and pentavalent Hib products in various stages of development. The institute will supply the vaccine to GAVI Alliance, PAHO (Pan American Health Organization) and UNICEF. As with the decrease in cost of Hepatitis B vaccine in the 1990's, it is expected that with the imminent availability of additional Hib vaccine products from emerging manufacturers there will be a reduction in the price of the vaccine in the next few years.

Poland to give Hib vaccine to all infants

Poland will include the Hib conjugate vaccine in its routine infant immunization schedule for 2007. Since 2004, the country provided the vaccine to only high risk groups, to infants from orphanages or to infants from families with more than three children. The Hib vaccine will now be offered free to all infants. Poland is one of the last European Union (EU) countries to introduce the universal Hib vaccine. With infants now receiving 12 injections during five visits, the Polish government has increasingly recognized that the need for the introduction of combined vaccines was necessary.

Country-level advocacy programs build awareness and support for sustained introduction of Hib vaccine

The Hib Initiative is currently supporting pilot programs for communication and advocacy in Tanzania, Kenya, and Vietnam. Local consultants, working with local stakeholders, the Hib Initiative, the Center for Communication Programs, GAVI and partners are working on advocacy and communication initiatives designed to meet local advocacy and communication needs for Hib and future new vaccines. Locally developed and endorsed plans of action may include formative research (e.g. Kenya), support of meetings (Pediatric Association of Tanzania), development of materials to brief local decision makers and one-on-one meetings (Vietnam, Tanzania). By bringing stakeholders together and involving them in the plan to achieve accelerated results, capacity for future in-country advocacy and communication should be strengthened. The Hib Initiative is also partnering with the Pneumo ADIP to pilot a regional advocacy workshop in Dar es Salaam, 23-25 October to build coalitions for child pneumonia and provide participants with formal advocacy training. This pilot program will be conducted in Dar es Salaam. For more information please contact Katie Frank (Kfrank@jhuccp.org).

The Hib Initiative at the Rotary International Convention

The Hib Initiative was represented at the 98th Rotary International Convention, held from June 17-20 in Salt Lake City. Rotary International has a membership of over 1.2 million from over 200 countries, and with over 16,500 Rotarians in attendance, the convention provided the Hib Initiative with the opportunity to create awareness and inform business and professional leaders from over 174 nations. Rotary International is a worldwide organization that provides humanitarian service and works to address various community and international service needs.

The Hib Initiative provided material which was displayed in a project booth at the convention. Material included a large poster covering both Hib and pneumococcal diseases and what can be done to prevent them.

Vaccine Hunters – groundbreaking TV documentary

They are cheap, easy to use, and save millions of lives – vaccines. So begins Vaccine Hunters, the 4-part series on modern vaccines and what it takes to deliver the vaccines around the world to the children who need them. The documentary was aired by BBC World in February 2007 and is now available on CD and can be requested through the Hib Initiative. The CD includes the full 4-part series as well as a 5-minute promotional version.

The *Vaccine Hunters* documentary is available on CD through the Hib Initiative. Please email Latia Brinkley at lbrinkle@jhsph.edu to request a copy.

The Hib Initiative unites experts from Johns Hopkins Bloomberg School of Public Health, the London School of Hygiene and Tropical Medicine, the U.S. Centers for Disease Control and Prevention and the World Health Organization to advance evidence-informed decision-making regarding the introduction and use of Hib vaccination in the developing world.

Hib Focus newsletter

Rana Hajjeh
Director, the Hib Initiative

Lois Privor-Dumm
Director, Communication Strategy

Judy Heck
Editor

Subscribe

Subscribe to the Hib Focus newsletter: www.hibaction.org/news/newsletter/index.php

We would like to hear from you

What topics would you like us to address in this newsletter? We appreciate your feedback, questions or suggestions. Please contact: Judy Heck at jheck@jhuccp.org

Thanks

Photos courtesy of Photoshare-The INFO Project: