Annual Progress Report 2007
Submitted by

The Government of

People's Republic of China

Date of submission _May 2008_____

Please return a signed copy of the document to:
GAVI Alliance Secretariat; c/o UNICEF, Palais des Nations, 1211 Geneva 10, Switzerland.

Enquiries to: Dr Raj Kumar, rajkumar@gavialliance.org or representatives of a GAVI partner agency. All documents and attachments must be in English or French, preferably in electronic form. These can be shared with GAVI partners, collaborators and general public.

This report reports on activities in 2007 and specifies requests for January – December 2009

Signatures Page for ISS, INS and NVS

For the Government of People's republic of China..……

Ministry of Health:

Title: ……

Signature: ……

Date: ……

We, the undersigned members of the Inter-Agency Co-ordinating Committee endorse this report, including the attached excelsheet. Signature of endorsement of this document does not imply any financial (or legal) commitment on the part of the partner agency or individual.

Financial accountability forms an integral part of GAVI Alliance monitoring of reporting of country performance. It is based on the regular government audit requirements as detailed in the Banking form.

The ICC Members confirm that the funds received from the GAVI Funding Entity have been audited and accounted for according to standard government or partner requirements.

Name/Title	Agency/Organisation	Signature	Date
Dr. Ren Minhui Director General	Ministry of Health, China Department of International Cooperation		
Dr. Hao Yang Deputy Director General	Ministry of Health, China Department of Disease Control		
Dr. Yang Weizhong Deputy Director	Chinese Center for Disease Control and Prevention		
Dr. Hans Troedsson WHO Representative, China	World Health Organization (WHO)		
Dr. Yin Yin Nwe Representative, UNICEF-China	United Nations Children's Fund (UNICEF)		
Dr. Stephen Hadler Co-Manager	Ministry of Health/GAVI Project Office		

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Text boxes supplied in this report are meant only to be used as guides. Please feel free to add text beyond the space provided.

1. Report on progress made during 2007

1.1 *Immunization Services Support (ISS)* – Not applicable for China

1.1.4. ICC meetings – please see below

How many times did the ICC meet in 2007? Please attach all minutes.
Are any Civil Society Organizations members of the ICC and if yes, which ones?

The ICC met one time (Sept 2007) The GAVI Project Operations Advisory Group (OAG) met twice (May, June, 2007)

1.2. GAVI Alliance New & Under-used Vaccines Support (NVS)

1.2.1. Receipt of new and under-used vaccines during 2007

When was the new and under-used vaccine introduced? Please include change in doses per vial and change in presentation, (e.g. DTP + HepB mono to DTP-HepB) and dates shipment were received in 2006.

Hepatitis B vaccine had been introduced into routine immunization management in 1992 and fully integrated into routine immunization 2002 with the support from GAVI. Since 1992, HepB monovalent vaccine was used. In 2007, 5,355,755 person doses of hepatitis B vaccine (total 16,067,265 doses) have been procured from Chinese manufacturers and distributed to GAVI project areas.

Vaccine	Vials size	Doses	Date of Introduction	Date shipment received (2007)
Hep B	1 dose	16,067,265	2002	continuously distributed

Please report on any problems encountered.

None.

1.2.2. Major activities

Please outline major activities that have been or will be undertaken, in relation to, introduction, phasing-in, service strengthening, etc. and report on problems encountered.

a. GAVI Operational Advisory Group Meeting on May 30, 2007 (attachment 1)

Purposes were to finalize the Memorandum of Understanding (MOU) amendment to extend the project through December 2009; to review progress in GAVI project during 2006 and 2007 to date; and to discuss options of utilization of 2004 GAVI surplus funds.

1) Dr. Liang Xiaofeng, the Deputy Director of GAVI office described the continued implementation of project, including full provision of funds by GAVI and MOH, and co-funding by provinces. Five provinces did not provide AD syringe co-funding in 2006, and 8 provinces did not provide operations funding. Vaccine and AD syringe procurement and distribution, training and supervision all continued without major problems. In 2006, 6 provinces did catch-up immunization, with 8 million vaccine doses distributed. For GAVI project, provinces estimated that 1.9 million person doses of vaccine are still required to complete catch-up vaccination of children born 2002-2006. Program review in October in 11 provinces showed that most hospitals are now achieving over 90% timely birth doses, but with a few notable exceptions at each level. Success of delivering timely birth doses to children born at home averaged about 55%, and still needs improvement.

Reported data showed continued increase in HepB vaccine doses administered in GAVI project counties, with gap between DTP and HepB narrowing, and further increase in GAVI indicators during 2006 (HepB3/DTP3 [92 %] and HepB1on-time [to 81%]). Overall, the project has achieved both goals (85% hepB3/DTP3; 75% hepB1 on-time). Three provinces (Tibet, Guizhou, Yunnan) do not yet meet HepB1 on time goal. In addition, 545 counties still have not met the timely birth dose goal.

2) Discussion of draft MOU Amendment

The GAVI MOU amendment was initially developed during fall 2006, reviewed at the GAVI Board meeting in November 2006, and text agreed upon by December 2006. However, in March, 2007, the China MOH proposed to make several changes in the draft amendment, after receiving notification of the new national government allocation of RMB 2.5 billion (over $300 million) to support purchase of 12 vaccines for all Chinese children. Main proposed changes were that the Government of China will purchase all hepB vaccine and AD syringes for all EPI vaccinations for all children in GAVI project counties beginning in 2007. December 2009 is the date for utilization of all remaining GAVI project funds. The original MOU

signed in June 2002 will still apply for all specific topics not covered by the MOU amendment. Several issues, including exact amount of government purchase of hepB vaccine and AD syringes, still needed to be clarified with the Ministry of Finance before the MOU can be finalized.

The agreed procedure for finalizing and signing the MOU will include preparing final English and Chinese versions for clearance by the Chinese government and GAVI Secretariat, submitted formally by WHO China office to China MOH through DIC for final clearance by government departments. Respective versions will be signed by each party in respective countries, and then exchanged for co-signature.

3) Plans for Utilization of 2004 GAVI Surplus Funds

Approximately 38 million RMB remain available from 2004 GAVI savings, of which about 5 million RMB have been utilized for the national hepatitis B serosurvey in Western provinces. The GAVI project team distributed an option paper on use of GAVI surplus funds, which listed 11 options for OAG consideration. Dr. Yu Jing Jin recommended that before allocating additional GAVI savings funds for any specific project, that the GAVI project team and Ministry of Health develop clear information on the total amount of savings remaining over the 5 years of the project, and a complete list and costing of options, so that a better informed decision can be made. These would include: (1) Summary of savings from 2002-2004, and estimated savings for 2005 and 2006; (2) Expenditures from GAVI savings to present and (3) Options for use of GAVI savings, with best estimates of target populations and costs.

4) Implementation of Proposal for Use of 2002-2003 GAVI Surplus Funds

Implementation of 2002-2003 funding commenced in November 2006, with provincial training/orientation on Dec 18, 2006. AD syringes have been procured, and HB vaccine is available for catch-up vaccination (regular purchased vaccine).

5) The GAVI Secretariat has agreed that Dr. Mark Kane should continue to represent the Secretariat on the OAG, based on his experience in China and expertise in hepatitis B.

b. GAVI Operational Advisory Group – Follow-up Meeting on June 13, 2007 (attachment 2)

Purposes of this OAG meeting were to finalize plans for clearance and signing of GAVI Project MOU amendment by China government and GAVI Secretariat; and to discuss options for utilization of GAVI Savings funds (2002-2006).

1.Discussion of draft MOU Amendment

It was agreed that the current draft (dated June 6) of MOU amendment is ready for formal clearance with Ministry of Health and GAVI Secretariat. Dr Hadler will coordinate the clearance and signing

2. Plans for Utilization of GAVI Project Savings Funds

Dr. Cui Fuqiang, GAVI project team, summarized available information on GAVI project savings, spending of funds and options for future utilization of funds. Approximately 41and 38 million RMB are available from 2002-2003 and 2004 GAVI savings, respectively; about 5 million RMB have been utilized for the national hepatitis B serosurvey in Western provinces. Approximately 37 million RMB are estimated to be available from GAVI 2005 project savings, and up to 40 million RMB from 2006 savings. Dr. Cui Fuqiang distributed a list of options for use of GAVI surplus funds. Decisions were made to support two options, and defer decisions on the remainder:

1) Hep B vaccine for school enterers - estimated cost of RMB 36 million for target population of 2.4 million unvaccinated school children in 2007, and up to 31.5 million RMB in 2008. The OAG agreed this use of funds should be supported only in Western provinces, and agreed that budgeting 15 RMB per child fully vaccinated (9 RMB vaccine and AD syringes; 2 RMB/dose for vaccinators) was reasonable estimate of budget. Feasibility to implement in 2007 needs to be explored
2) Demonstration projects to improve timely birth dose in rural counties - It was agreed that this activity should be supported, and should target 1-2 prefectures each in up to 3-5 provinces that have not previously conducted demonstration projects (eg. Guizhou, Yunnan, Xinjiang, Sichuan, etc.).
3) Purchase of AD syringes for measles vaccination campaigns – Decision was postponed, until clear needs for such purchase are defined
4) Purchase HepB vaccine for vaccination of older children – This proposal was postponed until 2008, after implementation of hepB vaccine purchase for school enterers.
5) Operations funds for underperforming counties – Additional funding support for this activity not approved, as it is being partially funded with 2002-2003 GAVI Savings funds.
6) Support for HepB Serosurvey – Not supported since have just completed national serosurvey.

Conclusion: It was agreed that the GAVI project team will develop expanded costing and implementation proposals for options # 1 & 2.

c. ICC Meeting - October 9, 2007 – Attended by MOH EPI/ China CDC NIP, WHO China, UNICEF China, JICA China representatives (see attachment 3)
Purpose: To review the progress on national immunization programme, to share the experience on vaccine preventable disease control, and to discuss the priority issues in coming months.

Major topics included status of maintaining polio-free status; progress in measles control; progress in viral hepatitis control; progress in meningococcal meningitis and Japanese encephalitis control; update on monitoring routine immunization coverage and vaccine adverse events (AEFI), and status of the polio and measles laboratory networks.

Information most relevant to GAVI project included announcement of completion of the national epidemiological serosurvey of hepatitis B in September 2007, final report to be submitted to MOH shortly. It was noted that preliminary data indicate adjusted HBsAg prevalence was about 7% in the entire population and 1% among children < 5 years of age. Other hepatitis related activities include monitoring of GAVI project, catch-up campaigns, and expanded surveillance for hepatitis B.

UNICEF, WHO, and JICA made comments and outlined plans for 2008. Among key comments were that Chinese immunization programme has achieved remarkable achievement, and that cooperation projects have been very successfully implemented. For hepatitis B control, congratulations on very successful work, but emphasis that strong efforts are still needed in some western areas that have high prevalence of HBsAg and low timely birth dose coverage of hepatitis B vaccine, such as Yunnan, Guizhou, Xinjiang and other provinces. It was suggested that the ICC meetings should be held more frequency.

Dr. Hao Yang, Deputy Director-General of the Department of Disease Control and Prevention, MOH, said he was grateful to WHO, UNICEF, JICA and other international organizations for support of China's NIP. Although China has achieved some accomplishments in the immunization programmes, it still faces enormous challenges, especially the expanded EPI programme put forward by Premier Wen Jiabao this year. In China, the NIP work still needs to be strengthened, not only with regards to funding, but also in technical issues. Dr. Wang Yu, Director of CCDC, pointed out that NIP not only has done a excellent job in planning for routine work, but also carried out some scientific research; for example, the epidemiological investigations shows that the prevalence of HBsAg declined from the 10 % in 1992 to 7%. Therefore, immunization programmes plays a important role in the work of scientific research, cooperation and technical guidance from international organizations has also contributed.

d. Signing of GAVI MOU Extension

The proposed MOU for a China GAVI project extension was developed and reviewed by OAG meetings in May 30, 2007 and June 13, 2007. *In August 2007, both China Ministry of Health and GAVI Secretariat signed the China GAVI project MOU amendment.*

To define the conditions for extension of the China – GAVI project beyond the initial 5 years duration, and for the utilization of remaining GAVI Funds provided for the project, the Amendment to Memorandum of Understanding between Ministry of Health, People's Republic of China and the GAVI Alliance was finalized, agreeing that the China - GAVI Hepatitis B Vaccination Project will be extended through December 2009. The primary purpose is to continue the successful collaboration to improve infant hepatitis B immunization programs and immunization injection safety in Western China and poverty counties in middle provinces of China.

The geographic scope of the project extension will include all counties in 12 Western provinces and national poverty counties in 10 middle provinces. Funds remaining from GAVI Fund support provided from 2002-2006 will be utilized during this extension, with no additional financial contribution by GAVI. It is expected that all remaining funds will be fully utilized by December 2009. During this extension, the GAVI funds will be utilized to support infant and childhood hepatitis B vaccination and immunization injection safety in the defined project counties. Specific uses of the funds may include, but are not limited to: purchase of hepatitis B vaccine for infants and/or children through age 14 years; purchase of AD syringes for infant and childhood vaccinations, including for measles vaccination campaigns; operations costs to improve timely hepB vaccine birth dose and full HepB3 coverage (supervision, IEC; training); special projects to improve timely hepB vaccine birth dose and full HepB3 vaccination coverage (supervision, IEC; training), and improving immunization injection safety; and evaluation of vaccine coverage and effectiveness in preventing hepatitis B carriage in children. Other uses of funds to improve hepatitis B prevention and injection safety in children may also be considered per suggestions of the Government of China and OAG members.

The central government of China will purchase of all hepatitis B vaccine and AD syringes for routine immunization in all GAVI project areas beginning in 2008.

e. Supervision review

After the commencement of the MOH/GAVI project in 2002, the coverage of hepatitis B (HepB) vaccination has increased substantially. Although the coverage of 3 dose of HepB vaccine (HepB3) has already reached a high level in all provinces (except Tibet), the coverage of timely birth dose of HepB vaccine (HepB1) remained at lower levels in Tibet, Guizhou, Yunnan, Xinjiang, Gansu, Sichuan and other western provinces. To understand the constraints of MOH/GAVI projects, MOH/GAVI project office conducted supervision in Gansu and Sichuan provinces in November 2007. In Wushan County and Xigu District of Gansu Province, from January to August of 2007, the coverage of HepB3 was 98.2%， and the coverage of HepB1 was 74.1%. The supervision found that the coverage of HepB1 for children born in home was low (less than 60%) in Wushan County. The reasons were as followed: first, the low rate of delivery in hospital, only 53.3 %. Furthermore, there was not enough HepB vaccine stored in the village immunization sites, so that most infants born at home could not receive timely HepB vaccine. Secondly because difficulties in management of the out-of-family-planning children, the floating population and transient populations. The health departments could not know exactly the numbers of these groups of children, and hence providers lacked baseline data of the number of target children. And third, too strict standards of vaccine contraindications for HepB vaccine. At Sichuan Province Maternity Hospital, the reason for low coverage of HepB1 was too strict contraindications for vaccination of HepB, such as premature and low birth weight infant that were not being inoculated with HepB vaccine within 24 hours.

Recommendations were to continue to improve the coverage of timely birth dose of HepB1 in the weak areas of western region, especially for the floating children and infants delivered at home. Specifically, these included (1) to do refresher training work and enhance IEC, so that parents and health staff have the correct knowledge of HepB vaccination contraindication in order to improve the coverage of timely birth dose of HepB1. (2) To enhance new immunization worker training at the lower level CDC. (3) To continue to regulate the management of syringes distributed by GAVI project, improve the registration warehousing, and make inventory report periodically.

f. Catch-up Immunization with Hepatitis B vaccine

During 2007, 3 provinces (Anhui, Henan and Heilongjiang) have conducted catch-up campaigns for children born 2002 or later and missed by previous hepB vaccination. 1.17 million doses of hepatitis B vaccine were given.

g. Relevant activities in collaboration with partners

In September 2007, China GAVI office conducted an evaluation of the sustainability of the Huangnan, Qinghai project (conducted in 2005) to improve timely birth dose. Data from supervision showed that the project was sustainable after completion of project funding by MOH, WHO and Ausaid. The timely birth dose coverage was increased from 46% for children born in 2004 to 82% for children born in 2006; among children born in hospital, the coverage reached 97%, but among children born at home, the coverage was 65%. All increases were sustained during 2006 and the first 8 months of 2007. The hospital delivery rate also increased after project, from 33% in 2004 to 52% in 2006.

h. Utilization of GAVI Saving funding

Proposals for use of GAVI saving funding were developed and reviewed by OAG meetings in May 30, 2007 and June 13, 2007 ,and included estimates of remaining funding (see attachments 1,2). MOH made additional arrangements with provinces during national disease control conference in June and national immunization programme meeting in November 2007. All the activities relevant to utilizing saving funds from 2002-2003 have been finalized, and implementation started in late 2006 and continuing in 2007 and 2008.

The total amount of GAVI saving fund which has been approved for implementation by the OAG and MOH is 54 million RMB (about $ 7 million), which includes all funds from 2002-2003 and some from 2004. The key activities include funding to conduct catch-up campaign in national poverty counties for children born in 2002 or later; support for training, supervision, and IEC in counties with poor achievement in hepB vaccination; demonstration projects to improve timely HepB1 birth doses in 13 prefectures (2 each in Guizhou, Yunnan, Xinjiang, Sichuan and one each in Chongqing, Gansu, Ningxia, Guangxi, and Qinghai; and support for the national serosurvey in 2006. The first and last activities were initiated in late 2006, and the 2nd and 3rd in early 2008; all will be completed in 2009. Proposals for spend saving fund of 2005 and 2006 will be developed and presented to the MOH and GAVI OAG before the end of 2008.

i. National Hepatitis B Serosurvey - This survey, funded primarily by the Chinese government, was

supported with $550,000 of GAVI project savings, to help conduct the survey in Western provinces. The survey covered over 80,000 persons, including more than 16,000 children < 5 years (born 2002-2005) in all provinces. Results announced by the Ministry of Health in April 2008 showed that HBsAg prevalence among children < 5 years is now about 1%, a 90% reduction compared to prevalence in this age group in the 1992 serosurvey. The survey also validated high immunization coverage, but which continues to be lower in the Western provinces and rural areas. Manuscripts summarizing results in greater detail have been prepared and will be submitted to medical journals in 2008.

j. Articles summarizing progress in GAVI Project and hepatitis B immunization China through 2006
Summary articles on progress in hepatitis B vaccination in GAVI project from 2001 through 2006 were published in the Morbidity and Mortality Weekly Report and WHO Weekly Epidemiologic Record (MMWR 2007; 56(18): 441-445) (WER, 15 June 2007, 82(24):209-224) (JAMA, 2007, 298(5) (Reprinted): 506-509) (See attachment 4).

k. Issues and Challenges - 2007
Data from 22 provincial annual reports shows that in 2007 the hepatitis B vaccine full series coverage has reached 92% in GAVI project provinces and counties, and timely birth dose has reached 83%. All provinces have reached the goals of 85% for 3 doses and 75% for timely birth dose by provinces except Tibet (72% and 18%), Guizhou (98% and 57%) and Yunnan (98% and 65%). However, 20% of counties have not attained the goal for the full vaccine series and 30% of counties have not reached the goal for timely birth dose in 2007. More efforts need to be done in 2008 to improving timely birth dose in these remaining weak areas. The demonstration projects in 13 prefectures supported with GAVI Savings in 2008 (see h. above) will directly address timely birth doses in key prefectures and counties, and help increase provincial expertise to expand these strategies to other weak prefectures and counties.

1.2.3. Use of GAVI funding entity support for the introduction of the new vaccine

These funds were received on: 2003, as part of full GAVI project package

Please report on the proportion of introduction grant used, activities undertaken, and problems encountered such as delay in availability of funds for programme use.

All funds from both GAVI and government were received by the end of 2006.

The GAVI Project office hired one full time staff in 2007 on GAVI project, and two temporary staff have also been working for GAVI project in 2007. These persons were funded by the GAVI office. The domestic co-manager, who is the staff of National Immunization Program (NIP) under China CDC, works part time for the project. The national EPI experts and other staff under the NIP, China CDC participated the GAVI supervision and other project activities. An international co-manager, Dr Stephen Hadler has supported the GAVI office since June 2005 and spent about 50% time working in GAVI office. The detailed expenses were the following (RMB):

Table 1 Expenses of MOH/GAVI Project Office funding in 2007

Items	Expenses (RMB)
Rent	154,485.00
Personnel	261,882.38
Equipment	32,439.10
Supervision	22,173.00
Conference	37,908.76
Operational expenses	75,659.45
Transportation	15,311.40
Other	4,901.60
Total	604,760.69

Except for the one full and two part-time staff funded by GAVI office, the other staff including directors of Project office and local and international co-manager are not funded by the project

1.2.4. Effective Vaccine Store Management/Vaccine Management Assessment

Not applicable to China

1.3 Injection Safety

1.3.1 Receipt of injection safety support

Received in cash/kind between 2002 and 2006.

Please report on receipt of injection safety support provided by the GAVI Alliance during 2007 (add rows as applicable).

Injection Safety Material	Quantity	Date received
No new support received		

Please report on any problems encountered.

None

1.3.2. Progress of transition plan for safe injections and management of sharps waste.

If support has ended, please report how injection safety supplies are funded.

In 2007, 56,528,131 0.5 ml and 4,468,390 0.1 ml AD syringes have been procured and distributed to GAVI counties to ensure safe injections. After 2007, all the vaccines and AD syringes for all children will be funded by central government.

Please report how sharps waste is being disposed of.

In 2007, among 174,181 immunization sites in GAVI project area, 171,756 (98.6%) used AD syringes for hepatitis B vaccination, and 147,529 (84.7%) used AD syringes for other vaccines of national immunization programme. Among these immunization sites, 37.29% used safety box or needle cutter, and others used the burning method for AD and other syringe disposal.

Please report problems encountered during the implementation of the transitional plan for safe injection and sharps waste.

Not applicable

1.3.3. Statement on use of GAVI Alliance injection safety support in 2007 (if received in the form of a cash contribution)

The following major areas of activities have been funded (specify the amount) with the GAVI Alliance injection safety support in the past year:

Not applicable to China

2. Vaccine Co-financing, Immunization Financing and Financial Sustainability

Beginning in 2008, the central Government of China now directly provides all funding to purchase 12 vaccines and AD syringes for all children in China. These vaccines include BCG, OPV, DTaP, MMR, hepatitis B, Japanese encephalitis, meningococcal meningitis polysaccharide A + C, and hepatitis A. All these vaccines must be given to all children at no cost to parents.

Other program costs are shared between central government, provincial governments and local governments.

3. Request for new and under-used vaccines for year 2009

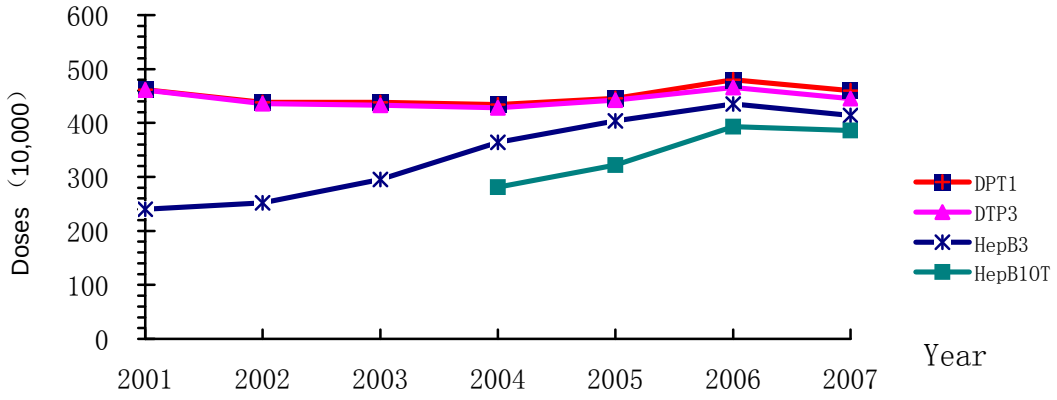
Section 3 is related to the request for new and under-used vaccines and injection safety for 2009.

3.1. Up-dated immunization targets

Confirm/update basic data approved with country application: figures are expected to be consistent with those reported in the WHO/UNICEF Joint Reporting Forms. Any changes and/or discrepancies MUST be justified in the space provided. Targets for future years MUST be provided.

The data reported below is from GAVI project in China, not entire country data.

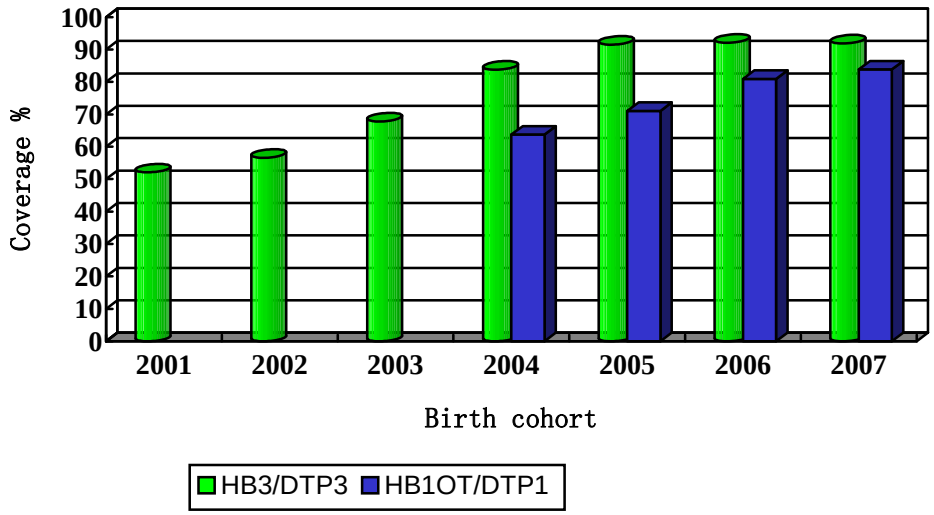
Figure 1. EPI Vaccine Doses Administered in GAVI Project Counties - 2001-2007



Progress in delivering hepatitis B vaccine to infants in project provinces and counties is best measured by tracking of doses administered of hepatitis B vaccine (HepB3 – three dose series; HepB1 on time), and doses of DTP vaccine.

Comparison of the reported doses administered for project counties for HepB and DPT by year clearly shows the progress in increasing the number of children receiving hepatitis B vaccine since project inception. Between 2002 and 2006, the numbers of children receiving all vaccines have increased slightly, but declined slightly in 2007. The gap between hepB3 and DTP3 has been steadily reduced to < 10%. The gap between hepB1 and DTP1 is now very small, and between hepB1 on-time and DTP1 has continued to decrease steadily through 2007.

Figure 2. GAVI Project Indicators for all GAVI Project Counties - 2001-2007



The GAVI project indicators also have steadily improved. By 2007, HepB3/DTP3 has reached a plateau at 92%, and HepB1-OT/DTP1 continued to increase, to 83 %, substantially higher than 64% first measured in 2004. All provinces have reached the goals of 85% for 3 doses, and all except three reached 75% for timely birth dose (Tibet, Guizhou and Yunnan). Through 2007, use the HepB3/DTP3 and HepB1-OT/DTP1 as indictors, still 20% of counties have not attained the goal for the full vaccine series and 30% of counties have not reached the goal for timely birth dose in 2007.

Table 2: Update of immunization achievements and annual targets. Provide figures as reported in the JRF in 2007 and projections from 2008 onwards.

Number of	Achievements and targets									
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
DENOMINATORS										
Births	5412930	5406975								
Infants' deaths										
Surviving infants										
Infants vaccinated till 2007 (JRF) / to be vaccinated in 2008 and beyond with 1st dose of DTP (DTP1)*	4797997	4598161								
Infants vaccinated till 2007 (JRF) / to be vaccinated in 2008 and beyond with 3rd dose of DTP (DTP3)*	4664330	4450316								
NEW VACCINES **										
Infants vaccinated till 2007 (JRF) / to be vaccinated in 2008 and beyond with 1st dose of HepB (HepB1/DTP1)* ..... *(new vaccine)*	4882445 (>100%)	4601392 (98.8%)								
Infants vaccinated till 2007 (JRF) / to be vaccinated in 2008 and beyond with 3rd dose of HepB (HepB3/DTP3) *(new vaccine)*	4348369 (92.1%)	4144327 (91.9%)								
Infants vaccinated with hepB1 timely birth dose (HepB1OT/DTP1)* ..... *(new vaccine)*	3934766 (81.0%)	3855681 (83.9%)								
INJECTION SAFETY****										
Pregnant women vaccinated / to be vaccinated with TT										
Infants vaccinated / to be vaccinated with BCG	4862833	4620868								
Infants vaccinated / to be vaccinated with Measles (1st dose)	4718487	4464881								

* Indicate actual number of children vaccinated in past years and updated targets (with either DTP alone or combined)
** Use 3 rows (as indicated under the heading NEW VACCINES) for every new vaccine introduced
*** Indicate actual wastage rate obtained in past years
**** Insert any row as necessary

3.2 Confirmed/Revised request for new vaccine *(to be shared with UNICEF Supply Division)* for 2009

Not applicable to China

3.3 Confirmed/revised request for injection safety support for the year 2009

Not applicable to China

4. Health Systems Strengthening (HSS)

Not applicable to China

5. Checklist

Checklist of completed form:

Form Requirement:	Completed	Comments
Date of submission		
Reporting Period (consistent with previous calendar year)		
Government signatures		
ICC endorsed		
ISS reported on		
DQA reported on		
Reported on use of Vaccine introduction grant		
Injection Safety Reported on		
Immunisation Financing & Sustainability Reported on (progress against country IF&S indicators)		
New Vaccine Request including co-financing completed and Excel sheet attached		
Revised request for injection safety completed (where applicable)		
HSS reported on		
ICC minutes attached to the report		
HSCC minutes, audit report of account for HSS funds and annual health sector evaluation report attached to report		

6. Comments

ICC/HSCC comments:

Although China has made many accomplishments in the immunization programme, it still faces enormous challenges, especially the expanded EPI programme put forward by Premier Wen Jiabao in 2007. In China, the NIP work still needs to be strengthened, not only in the funding issue, but also in technical issues. China should improve work quality and operational capacity.

NIP has done an some job in planning for routine work, and also carry out some scientific research; for example, the epidemiological investigations shows that the prevalence of HBsAg declined from the 10% in 1992 to 7%, and among infant < 5 years is now about 1%. We should establish a scientific models and statistical formula to predict how many more years HBsAg prevalence can be decreased to a low hepatitis B epidemic level. Therefore, immunization programmes play an important role in the work of scientific research, cooperation and technical guidance from international organizations has also contributed much.

An important challenge still is to improve hepatitis B vaccination in the Western provinces and poorer, rural counties where many births delivered at home.

A major challenge will also be to complete utilization of GAVI project funds by end 2009, to best utilize these funds to ensure highest protection against hepatitis B among infants and children, and to ensure injection safety for all immunization injections.

~ End ~

Attachment 1

GAVI Operational Advisory Group Meeting
May 30, 2007

Purposes:

- To finalize the Memorandum of Understanding (MOU) amendment to extend the project through December 2009
- To review progress in GAVI project during 2006 and 2007 to date
- To discuss options of utilization of 2004 GAVI surplus funds

Attendees: Dr. Yu Jing Jin, Deputy Director, DDC, MOH; Dr. CuiGang, Director, EPI, DDC, MOH; Dr. Yang Weizhong, Deputy Director, China CDC; Dr. Liang Xiaofeng, NIP, China CDC; Dr. Cui Fuqiang, Dr., GAVI Project team, Divison 2, NIP; Dr. XingJun, DIC, MOH; Mr. Wang Hui, Depart of Finance, MOH; Dr. David Hipgrave, Dr. Xu Zhu, UNICEF; Dr. Stephen Hadler, WHO, China GAVI project international advisor.

I. Review of recent progress in 2006 – presented by Dr. Liang Xiaofeng

Dr. Liang described the continued implementation of project, including full provision of funds by GAVI and MOH, and co-funding by provinces. Of note is that 5 provinces did not provide AD syringe co-funding in 2006, and 8 provinces did not provide operations funding. Vaccine and AD syringe procurement and distribution, training and supervision all continued without major problems. In 2006, 6 provinces did catch-up immunization, with 8 million vaccine doses distributed. For GAVI project, provinces estimated that 1.9 million person doses of vaccine are still required to complete catch-up vaccination of children born 2002-2006, and 2.48 million person doses would be needed to support school entry vaccination in 2007. Program review in October in 11 provinces showed that most hospitals are now achieving over 90% timely birth doses, but with a few notable exceptions at each level, even among prefecture hospitals (Xinjiang). Success of delivering timely birth doses to children born at home averaged about 55%, and still needs improvement.

Reported data showed continued increase in HepB vaccine doses administered in GAVI project counties, with gap between DTP and HepB narrowing, and further increase in GAVI indicators during 2006 (HepB3/DTP3 [92 %] and HepB1-ontime [to 81%]). Overall, the project has achieved both goals (85% hepB3/DTP3; 75% hepB1 on-time). All middle provinces now meet both GAVI indicators; however, 3 provinces (Tibet, Guizhou, Yunnan) do not yet meet HB1 on time goal. In addition, 545 counties still have not met the timely birth dose goal.

The greatest project challenge continues to be improving timely birth doses, particularly for children born at home. Key problems include insufficient attention to the project from prefectures and counties, shortage of operations funds, need to strengthen management of vaccine and AD syringes, and need for stronger supervision.

II. Discussion of draft MOU Amendment

Dr. Yu JingJin opened the discussion by reviewing progress in development of the MOU amendment. This had been developed during fall 2006, reviewed at the GAVI Board meeting in November 2006, and text agreed upon by December 2006. However, in March 2007, the China MOH requested to reconsider the MOU language, after receiving notification of the new national government allocation of RMB 2.5 billion to support purchase of 12 vaccines for all Chinese children. Subsequently, the government proposed to make several changes in the draft amendment, notably:

a. Government of China will purchase all hepB vaccine for all children in GAVI project counties beginning in 2007 (Article V)
b. Government of China will purchase all AD syringes for all EPI vaccinations in GAVI project counties beginning in 2007 (Article V)
c. Purchase of AD syringes for measles SIAs should be included as an option for use of GAVI savings

Dr. Cui Gang reviewed the reasons for large savings from the project. Dr. Hadler reviewed several key aspects of the draft amendment, pointing out that December 2009 is the proposed date for utilization of all remaining GAVI project funds. He emphasized that the GAVI Secretariat is in full agreement with the current text of the MOU amendment, but is very concerned that the MOU amendment be completed and signed by both parties as soon as possible, since the current MOU is due to expire this year. He also noted that the original MOU signed in June 2002 will still apply for all specific topics not covered by the

MOU amendment.

Further discussion addressed two issues:

a. Text of MOU amendment article V – Dr. Yu raised the question of whether the MOH and Ministry of Finance have fully approved the government to provide all funds for hepB vaccine and AD syringes for all EPI vaccines in GAVI project areas beginning in 2007, or should the words in the MOU should be revised to previous version, which committed to MOH funding of 50% vaccine and 30% AD syringes. Dr. Cui Gang will consult with MOH and MOF on this issue and propose revised language.
b. Procedure for finalizing and signing the MOU. It was agreed that after resolving the above issue, Dr. Hadler would prepare a final version for clearance by the Chinese government and GAVI Secretariat, including both English and Chinese versions. These will be submitted formally by WHO China office to China MOH through DIC for final clearance by government departments. Respective versions will be signed by each party in respective sides, and then exchanged for co-signature. All this should begin by end of this week, and be completed as soon as possible.

Dr. Hadler will coordinate the final edits in the MOU amendment and preparation of letter requesting final clearance by the government.

Action:

- Clarify preferred language in MOU amendment (Article V) about national government procurement of hepB vaccine and AD syringes for EPI in GAVI project areas beginning in 2007. MOH – Dr. Cui Gang
- Prepare final drafts MOU in English and Chinese for submission to Government China and GAVI Secretariat, and complete signing of agreement. Dr. Hadler and Dr. Cui Fuqiang

III. Plans for Utilization of 2004 GAVI Surplus Funds

Approximately 38 million RMB are available from 2004 GAVI savings, of which up to 5 million RMB have been utilized for the national hepatitis B serosurvey in Western provinces. The GAVI project team distributed an option paper on use of GAVI surplus funds, which listed 11 options for OAG consideration.

Substantial discussion was held about the proposal that GAVI savings funds be allocated at this meeting to support hepB vaccination of school enterers beginning in fall 2007, with an estimated cost of RMB 37.5 million for target population of 2.5 million unvaccinated school children. A decision would have to be made quickly in order to implement this by fall 2007; however, the required discussions to involve the Ministry of Education and provinces would likely not be completed in time to implement.

Dr. Yu JingJin recommended that before allocating additional GAVI savings funds for any specific project, that the GAVI project team and Ministry of Health develop clear information on the total amount of savings remaining over the 5 years of the project, and a complete list and costing of options, so that a better informed decision can be made. These would include:

1. Summary of savings from 2002-2004, and estimated savings for 2005 and 2006.
2. Expenditures from GAVI savings to present, for 2002-2003, and 2004
3. Options for use of GAVI savings, with best estimates of target populations and costs.
4. Clarification of provision of national government funds for purchase of hepB vaccine and AD syringes for EPI in GAVI project counties beginning in 2007 (Article V in MOU amendment)

It was agreed that this information should be prepared by the GAVI project team, and discussed within two weeks with key members of the OAG (MOH, GAVI project team, WHO, UNICEF). Proposed dates for this meeting were June 12 during JICA project inauguration meeting.

Action:

- Prepare summary of GAVI savings accrued (all years); GAVI Savings expended to date; and options for uses of GAVI savings.
- Schedule meeting between MOH, GAVI Project team, and UNICEF to discuss this information and develop plan for use of funds.

IV. Other Issues

a. Implementation of Proposal for Use of 2002-2003 GAVI Surplus Funds

Implementation of 2002-2003 funding commenced in November 2006, with provincial training/orientation on Dec 18, 2006. AD syringes have been procured, and HB vaccine is available for catch-up vaccination (regular purchased vaccine), but will need to be replaced with

new procurement using the GAVI savings. However, operations funds have not been allocated, nor implementation monitored. The status of implementation should be further discussed as part of planning for use of remaining GAVI savings.

b. Nomination of Dr. Mark Kane to continue as representative of GAVI on GAVI Project OAG.

The GAVI Secretariat has agreed that Dr. Mark Kane should continue to represent the Secretariat on the OAG, based on his experience in China and expertise in hepatitis B. Dr. Hadler will further discuss with GAVI Secretariat potential financial arrangements to allow Dr. Kane to participate in OAG meetings and GAVI project reviews.

c. Submission of GAVI Annual Report 2006

The GAVI Annual report for 2006 was due to GAVI Secretariat on May 15, 2007. The draft report has been prepared by the GAVI Project office, and is being reviewed by China CDC before being submitted for approval to the Ministry of Health. This should be completed and signed as soon as possible in order to submit to GAVI Secretariat in time for project review in Geneva beginning June 15.

Attachment 2

GAVI Operational Advisory Group – Follow-up Meeting
June 13, 2007

Purposes:

- To finalize plans for clearance and signing of GAVI Project MOU amendment by China government and GAVI Secretariat
- To discuss options for utilization of GAVI Savings funds (2002-2006)
-

Attendees: Dr. Yu Jing Jin, Deputy Director, DDC, MOH; Dr. CuiGang, Director, EPI, DDC, MOH; Dr. Yang Weizhong, Deputy Director, China CDC; Dr. Liang Xiaofeng, NIP, China CDC; Dr. Cui Fuqiang, Dr., GAVI Project team, Division 2, NIP; Dr. Stephen Hadler, WHO, China GAVI project international advisor.

I. **Discussion of draft MOU Amendment**

Dr. Hadler confirmed with Dr. Cui Gang that the current draft (dated June 6) of MOU amendment is ready for formal clearance with Ministry of Health and GAVI Secretariat. Dr. Hadler will assure that a formal request is submitted by WHO China office with the draft MOU amendment to both parties this week.

II. **Plans for Utilization of GAVI Project Savings Funds**

Dr. Cui Fuqiang, GAVI project team, summarized available information on GAVI project savings, spending of funds to present and key options for future utilization of funds. Approximately 41and 38 million RMB are available from 2002-2003 and 2004 GAVI savings, respectively; about 5 million RMB have been utilized for the national hepatitis B serosurvey in Western provinces. Approximately 37 million RMB are estimated to be available from GAVI 2005 project savings, and up to 40 million RMB from 2006 savings. Thus, a total of up to 156 million RMB may be available from GAVI project savings. Dr. Cui Fuqiang distributed a list of 8 options for use of GAVI surplus funds.

1. Hep B vaccine for school enterers - Substantial discussion was held about the proposal that GAVI savings funds be allocated to support hepB vaccination of school enterers beginning in fall 2007, with an estimated cost of RMB 36 million for target population of 2.4 million unvaccinated school children in 2007, and an additional up to 31.5 million RMB in 2008. Following these allocations, no additional funds would be required to support school entry, as in subsequent years all school enterers would be born after 2002 and would be covered by national government funding.
   All members of the group agreed this use of funds should be supported, but only in Western provinces, and agreed that budgeting 15 RMB per child fully vaccinated (9 RMB vaccine and AD syringes; 2 RMB/dose for vaccinators) was reasonable first estimate of budget.
2. Demonstration projects to improve timely birth dose in rural counties - It was agreed that this activity should also be supported, and should target 1-2 prefectures each in up to 3-5 provinces that have not previously conducted demonstration projects (eg. Guizhou, Yunnan, Xinjiang, Sichuan, etc.). It was also agreed that GAVI Savings funds could be used for two related options: to expand timely birth dose projects already conducted in other provinces (Qinghai, Gansu, Ningxia), and to combine with support to improve injection safety by providing needle cutters to all immunization sites.
3. Purchase of AD syringes for measles vaccination campaigns – Decision to use funds for this purpose was postponed for present, until clear needs for such purchase are defined (i.e. timing of measles vaccination campaigns in 2008 and later). Then, a full costing for funding through Dec 2009 should be completed.
4. Purchase HepB vaccine for vaccination of older children – This proposal was also postponed until 2008, after implementation of hepB vaccine purchase for school enterers.
5. Operations funds for underperforming counties – Additional funding support for this activity not approved at this time, as it is being partially funded with 2002-2003 GAVI Savings funds.
6. Support for HepB Serosurvey – Not supported at present, since have just completed national serosurvey, with GAVI Savings funds supporting the survey in GAVI project areas.
   Conclusion: It was agreed that the GAVI project team will develop expanded costing and implementation proposals for options # 1 & 2, which will then be presented to the full GAVI OAG for decision for fund utilization this year. Preparation of funding and operations plans should include consultation with provinces re. size of target populations and feasibility of implementation for school entry vaccine purchase this year.

III. Action items:

- Submit the current draft GAVI MOU for final clearance by China government and GAVI Secretariat - Dr. Hadler
- Prepare complete costs and implementation plans for options 1 & 2, for discussion at next GAVI Project OAG meeting. To optimize chance to implement school entry hepB vaccination during 2007, this plan should be completed within the next month, and should include consultation with provinces about how to implement this year – GAVI Project team

Attachment 3

Minute of the ICC Meeting
Date: October 9, 2007

Venue: 4th floor meeting room in China CDC

Purpose: To review the progress on national immunization programme, to share the experience on vaccine preventable disease control, to discuss the priority issue in coming months.
Major topics and comments:

1. All divisions under NIP introduced the progress since 2007 and future plan.
1.1 Maintain polio-free status: NIP of China CDC (CCDC) have carried out two rounds of OPV Supplementation Immunization Activities (SIA) in December 2006 and January 2007. VDPV case that occurred in Shandong province has been investigated appropriately. In response to the wild polio virus events in Myanmar, in collaboration with Yunnan province, CCDC had taken the effective strategies to prevent the virus circulation. Intensified polio surveillance in 6 provinces also have been established to monitor the AFP cases. In Anhui, special activities had been done to look at the polio virus carrier status of primary immunodeficiency disease (PID) patient.
In order to strengthen the AFP surveillance system, and maintain the wild poliovirus free status and limit VDPV emergence in the regions with lower OPV coverage, CCDC has made a plan to improve the quality of AFP surveillance system, arranged the OPV SIAs and finished the RCC report in the coming winter and spring.
1.2.The progress of Measles control: In 2007, data showed that overall incidence rate of measles has declined rapidly after MV SIAs in Sichuan, Shanxi and Hebei provinces. In the next steps, Chinese MOH and CCDC will develop a plan to conduct MV SIAs in high incidence provinces and enhance the SIAs ASAP. CCDC should modify the national measles surveillance system. Research relevant to adult measles, atypical measles, rubella and congenital rubella syndrome should be carried out with the provincial CDCs.
1.3. The progress of Viral Hepatitis control: Chinese MOH and CCDC have finished a national serum epidemiological survey of hepatitis B in September 2007, final report will be submitted to MOH shortly. The monitoring of hepatitis B has continually been carried out in 18 Hepatitis B sentinel counties. For the GAVI project, 5,355,753 doses of HepB and 60 million syringes purchased by GAVI project have been distributed, and some provinces have carried out the HepB Catch-up campaigns and initiated hepatitis A control. CCDC will continue to maintain the surveillance for hepatitis B, follow-up HBsAg carriers which were found in 2006 hepatitis B serosurvey, activities for hepatitis A control and integrated hepatitis A vaccine into EPI also has been considered. GAVI project office have developed the protocol for saving funds and will implement activities soon, to conduct the training, supervision, and IEC, held meeting about improving the timely birth dose coverage of HepB.
1.4. Incidence of meningococcal meningitis had dropped 25% than the same period last year, the incidence of JE had dropped 41% compared with last year. CCDC had established the national monitoring network for JE and meningococcal meningitis control. Other ongoing cooperation projects have also been done such as the meningococcal meningitis and JE monitoring, and JE sequelae assessment studies.
1.5. Monitor the routine immunization coverage: Mature method for evaluating the routine immunization programme is needed, to validate the estimation methods for vaccination coverage provided by WHO, and to integrate the direct reporting system and the case reporting system on vaccination report forms. On the implementation of the vaccination information management system, vaccination management, AEFI management and the JE management module has been developed smoothly, further work to promote the implementation of major vaccination information management system, resolving the problems at current system will be needed in the next step. In terms of the AEFI monitoring, the NRA assessment has been carried out, methods for the identification of the abnormal reactions, seminar for county-level AEFI monitoring has also been conducted.

2. Xu Wenbo, the Director of the Polio (poliomyelitis) Laboratory, introduced the laboratory network status, which has been running well.

3. Yang Feng , Deputy director of department of NIP, MOH, introduced the updated progress of the Enlarged Programme on Immunization in 2007.

4. Dr Stephen Hadler, the Medical officer of WHO Office in China said this ICC meeting provided a lot of information to learn about the many organizations and division's progress of the work and found a lot of valuable resources. In the future, the ICC should be held more frequency. In the control of measles and polio, may seek more help outside. In hepatitis B control, a very successful work, the prevalence of HBsAg among children under 5 year is nearly 1%, should continue to do well in some western areas where have high prevalence of HBsAg and low timely birth dose coverage of hepatitis B vaccine, such as Yunnan, Guizhou, Xinjiang and other provinces. In the monitoring of hepatitis B, should be further promote monitoring in Ningxia and Gansu Province, resolve the existing problems about the case reporting. The new introduced vaccine, JE and meningococcal meningitis vaccine will be integrated into the routine immunization through external support by continuing its cooperation projects. WHO will also support work on the Hib vaccine, such as the promotion work experience. WHO may provide financial support on these new vaccines in the future. WHO and the United States have given great support on China's CDC measles control, training and studying to be held in Atlanta in the United States is very helpful; we need to strengthen cooperation to help China achieve its goals ASAP. In summary, China's current work on immunization planning progressed very quickly, a lot of new vaccines will be integrated into routine immunization within a very short time. We will discuss this work in the future, which will help us to continue to maintain the step of success.

5. David Hipgrave, UNICEF Medical officer, thinks that Chinese immunization programme achieved remarkable achievement, cooperation project also very successful implemented. UNICEF's project in China (16 counties in four provinces) has proceeded well. In the new vaccine into immunization programmes work, he suggested that the project counties should not run too fast, and should work to improve mainly routine immunization. If HPV, Rotavirus, and HiB vaccine will be integrated into EPI in China, the cost-effectiveness studies should been carried out. UNICEF will present a $ 3.7 million funding to support the work of measles SIAs, but expect project for Measles SIAs could be finished before December 31, 2007.

6. Toru Chosa, the Chief Representative of JICA Beijing Office believes that NIP in 2007 has done outstanding jobs. Currently the main activities in this field as poliomyelitis, measles, hepatitis B and JE control have also been implemented. Based on current progress of work, it has already exceeded the anticipated. Future work should be adjusted to meet the current progress, but developed plan in the early this year will be continued. On the 12th September the JICA project meeting will be held to discuss the work next year. According to the implementation plan on measles control by WHO and UNICEF, this year's measles SIAs has been done in Sichuan, 38 million yen (about 2.5 million yuan) will be used to support the cold chain system. Follow-up activities in Xinjiang and Gansu can also be supported. At present, the support of the measles lab has not been fully reflected. In hepatitis B field, JICA currently most concerned about is HepB vaccination, especially to improve the timely birth dose. In the upcoming project meeting will discuss such support. In JE work, the JICA training will be carried out, in starting production of DVD and training materials. The training of clinical diagnosis for MMR for the grass-roots level will be held.

7. Hao Yang, Deputy Director-General, Department of Disease Control and Prevention, MOH, said he was grateful to WHO, UNICEF, JICA and other international organizations for supporting on China's NIP. Although China has achieved some accomplishments in the immunization programmes, it still faces enormous challenges, especially the enlarge EPI programme put forward by Premier Wen Jiabao this year. In China, the NIP work still needs to be strengthened, not only in the funding issue, but also in technical issues. He hopes that in future work, we should improve work quality and operational capacity. He said he would provide stronger support for NIP.

8. As a closing statement, Wang Yu , Director of CCDC, pointed out that today's meeting all the speakers gave a very good speech. NIP not only has done a excellent job in planning for routine work, but also carry out some scientific research; for example, the epidemiological investigations shows that the prevalence of HBsAg declined from the 10 % in 1992 to 7% currently, we should establish a scientific models and statistical formula to predict how many more years HBsAg prevalence can be dropped to a low hepatitis B epidemic levels. Measles prevention and control work is the same as hepatitis B. Therefore, immunization programme plays an important role in the work of scientific research, cooperation and instruction from international organizations also contributed a lots.

9. Liang Xiaofeng, Director, NIP, China CDC said in conclusion that all the speakers' advice is very valuable in ICC meeting today, he remarked that NIP will actively adopt expert's advice and do best for national immunization programme.

Participants:

Hao Yang	Deputy Director, Department for Disease Control and Prevention, MOH
Cui Gang	Director, National Immunization Program (NIP) Division, DDC, MOH
Yang Feng	Deputy Director, NIP, DDC, MOH
Wang Yu	Director, China Centers for Disease Control and Prevention (CDC)
Liang Xiaofeng	Director, NIP, China CDC
Stephen Hadler	Team leader, EPI, WHO office in China
K. Lisa Cairns	Medical Officer, EPI, WHO office in China
Zuo Shuyan	Programme Officer, WHO office in China
David Hipgrave	Director, Division of Health and Nutrition, UNICEF office in China
Zhu Xu	Programme Officer, Division of Health and Nutrition, UNICEF office in China
Toru Chosa	Chief Advisor, JICA office in Beijing
Xu Wenbo	Institute of Virology, China CDC
Zhang Yong	Institute of Virology, China CDC
All staff of NIP, CCDC	

Attachment 4

MMWR™
Morbidity and Mortality Weekly Report

Weekly May 11, 2007 / Vol. 56 / No. 18

Hepatitis Awareness Month — May 2007

May 2007 marks the 12th anniversary of Hepatitis Awareness Month. This issue of *MMWR* highlights public health measures to vaccinate and protect children from hepatitis B virus (HBV) infection in China and to monitor the characteristics of persons with chronic hepatitis B in San Francisco, California.

Worldwide, 370 million persons have chronic HBV infection, and 500,000–700,000 persons die annually from HBV-related liver disease; approximately 75% of HBV infections occur in Asia (World Health Organization, unpublished data, 2006). In the United States, approximately half of the 1 million persons with chronic HBV infection are Asians/Pacific Islanders, most of whom became infected with HBV before arriving in the United States, including many who remain unaware of their infection (*1*). The HBV-related death rate among Asians/Pacific Islanders is seven times greater than the rate among whites (CDC, unpublished data, 2007).

Persons with chronic HBV infection are at risk for premature death from liver cirrhosis and cancer. Hepatitis B vaccination of infants worldwide will protect successive generations from chronic HBV infection and associated liver disease. Persons already infected with HBV can benefit from HBV screening, care, and treatment to protect their health and prevent transmission to others.

Reference

1. CDC. Screening for chronic hepatitis B among Asian/Pacific Islander populations—New York City, 2005. MMWR 2006; 55:505–9.

Progress in Hepatitis B Prevention Through Universal Infant Vaccination — China, 1997–2006

Hepatitis B virus (HBV) infection is a leading cause of illness and death in China. Approximately 60% of the population has a history of HBV infection, and 9.8% of persons in China are chronically infected with HBV and at risk for premature death from liver disease (*1*). Each year, an estimated 263,000 persons in China die from HBV-related liver cancer or cirrhosis, accounting for 37%–50% of HBV-related deaths worldwide (*2*). Because most HBV infections occur during infancy or early childhood, when HBV infection is most likely to become chronic, vaccination of infants beginning at birth is the key strategy for preventing chronic HBV infection. This report describes China's progress in increasing coverage among infants with hepatitis B vaccine (HepB) and timely administration of the HepB birth dose (i.e., within 24 hours of birth). Infant vaccination coverage with both the timely birth dose and the complete vaccine series was substantially higher among children born during 2003 than among those born during 1997; timely birth-dose coverage increased from 29.1% to 75.8%, and HepB series completion increased from 70.7% to 89.8%. Furthermore, in economically disadvantaged

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DEPARTMENT OF HEALTH AND HUMAN SERVICES
CENTERS FOR DISEASE CONTROL AND PREVENTION

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populations in western and middle provinces* targeted by the China-Global Alliance for Vaccines and Immunization (China-GAVI) project, reported coverage with timely HepB birth dose increased from 64% in 2004 to 81% in 2006, and coverage with the complete HepB series increased from 52% in 2001 to 92% in 2006. China has established a goal to reduce chronic HBV infection among children aged <5 years to <1% by 2010 (*3*). Achieving this goal will require continued commitment to increasing vaccination coverage in impoverished regions and ensuring that infants born at home are vaccinated within 24 hours of birth.

Hepatitis B Immunization Program

HepB was first recommended for routine vaccination of infants in China in 1992, with the first dose to be administered within 24 hours of birth and subsequent doses at ages 1 and 6 months. However, because of high vaccine prices and user fees charged to parents by local health departments for vaccine purchase and administration, until 2002, infant vaccination occurred primarily in large cities of the wealthier eastern provinces.† Beginning in 2002, infant hepatitis B vaccination was added to China's National Immunization Programme. Also in 2002, the China Ministry of Health began a project with the GAVI Alliance§ (formerly known as the Global Alliance for Vaccines and Immunisation) to ensure HepB availability in China's poorest provinces and counties. The 5-year China-GAVI project provides free HepB, targeting approximately 5.6 million children born each year in 12 western provinces and in government-designated poor counties in 10 middle provinces, covering approximately 36% of China's child population. In 2005, a new vaccination regulation abolished all charges and user fees for all nationally recommended vaccines, including hepatitis B; the vaccine is now free to all children in China.

To estimate national 3-dose HepB coverage and timely (i.e., within 24 hours of birth) HepB birth-dose coverage and to describe the effects of province and location of birth (e.g., home versus hospital) on vaccination coverage levels, data from two national vaccination coverage surveys conducted by the China Ministry of Health in 1999 and 2004 were reviewed. In both 1999 and 2004, parents were interviewed

* China-GAVI–funded western provinces: Chongqing, Gansu, Guangxi, Guizhou, Neimenggu (Inner Mongolia), Ningxia, Qinghai, Shaanxi, Sichuan, Tibet, Yunnan, and Xinjiang; middle provinces with GAVI funding in government-designated poor counties: Anhui, Hainan, Hebei, Heilongjiang, Henan, Hubei, Hunan, Jiangxi, Jilin, and Shanxi.

† Eastern provinces: Beijing, Fujian, Guangdong, Jiangsu, Liaoning, Shandong, Shanghai, Tianjin, and Zhejiang.

§ Additional information regarding the GAVI Alliance is available at http://www.gavialliance.org.

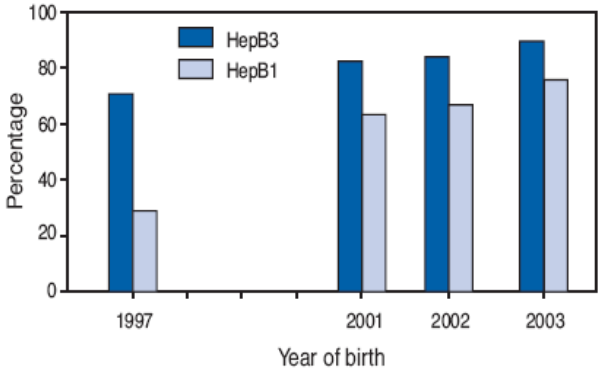
in house-to-house surveys regarding the vaccination status of eligible children born during the study periods. Sampling of households in each province was conducted using the probability proportional to size (PPS) method. In the 1999 survey, counties in each province were divided into four economic strata, and PPS sampling was conducted within each strata. In 2,173 counties in 31 provinces, parents of 25,878 children born during 1997 were interviewed (*4*). In the 2004 survey, 273 counties were selected randomly from all counties throughout the country, including at least three counties in each province, and PPS sampling was conducted in each county; parents of 171,188 children born during 2001–2003 were interviewed (*5*). For both surveys, 3-dose HepB and timely HepB birth-dose coverage were measured by dividing the number of children receiving 3-dose HepB and timely HepB birth dose, respectively, by the number of children surveyed, taking into account the PPS sampling design.

To examine in more detail the impact of the China-GAVI project, routine immunization-reporting–system data from 2001 through 2006 for China-GAVI–funded provinces were reviewed. In this national reporting system, the numbers of children targeted for and receiving each dose of routinely recommended vaccines are compiled by each immunization clinic and reported monthly to provincial and national immunization programs. For this analysis, 3-dose HepB and timely HepB birth-dose coverage in China-GAVI–funded provinces were measured by comparing the ratio of the number of children receiving doses of HepB to the number of children targeted to receive doses of diphtheria, tetanus, pertussis (DTP) vaccine, because the latter represents the most accurate local estimate of the number of children requiring routine childhood vaccination. Timely HepB birth-dose coverage could only be analyzed from 2004 through 2006 since reporting of HepB birth-dose timing was not required by the China Ministry of Health until 2004. A mathematical model was used to calculate hepatitis B disease burden before inception of the vaccination program and to estimate the number of deaths prevented through vaccination (*1,2*).

National Vaccination Coverage Survey

Comparison of the two national vaccination coverage surveys indicated that estimated 3-dose HepB coverage increased substantially overall, from 70.7% among children born in 1997 to 89.8% among children born in 2003 (Figure 1). Timely HepB birth-dose coverage also increased, from 29.1% among children born in 1997 to 75.8% among children born in 2003 (Figure 1). During 1997–2003, estimated national 3-dose DTP coverage remained level (93%). The difference between 3-dose HepB coverage and 3-dose DTP coverage was reduced from 20% in 1997 to 3% in 2003.

FIGURE 1. Estimated infant vaccination coverage with 3 doses of hepatitis B vaccine (HepB3) and timely* administration of the HepB birth dose (HepB1), by year of birth — China, 1997 and 2001–2003



SOURCE: China Ministry of Health national vaccination coverage surveys, 1999 and 2004.
* Within 24 hours of birth.

In the 2004 survey, estimated coverage was substantially lower in western provinces (68.0% for 3 doses of HepB and 49.5% for timely birth dose) than in middle provinces (91.8% for 3 doses of HepB and 72.7% for timely birth dose) or eastern provinces (94.1% for 3 doses of HepB and 81.9% for timely birth dose) (Figure 2).

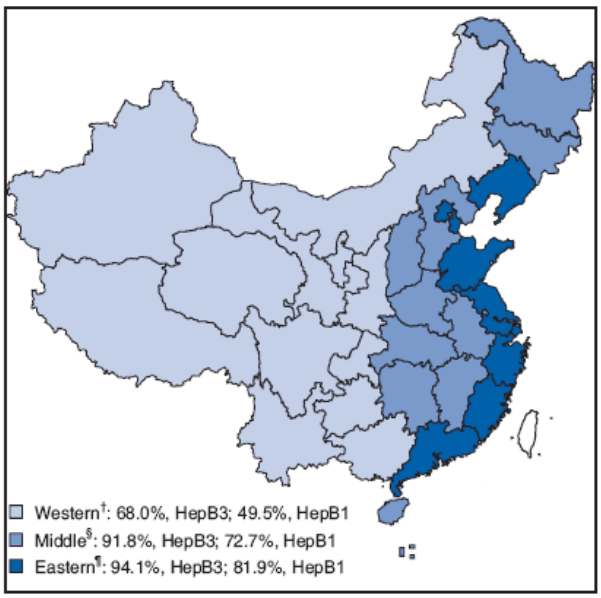
Timely birth-dose coverage among infants born at home during 2001–2003 was less than half that of those born in hospitals. Among children born in 2004, timely birth-dose coverage for infants born in township hospitals was only two thirds that of those born in county, provincial, or national hospitals.

China-GAVI Project

For the period 2003–2006, 3-dose HepB coverage and timely HepB birth-dose coverage increased in the 12 western provinces and in the counties in 10 middle provinces supported by the China-GAVI project. In 2006, the ratios of 3-dose HepB/3-dose DTP coverage and timely HepB birth dose/first-dose DTP coverage were 92% and 81%, respectively (Figure 3). During 2003–2006, approximately 15.4 million children in China-GAVI project counties received the 3-dose HepB series, preventing an estimated 1.47 million chronic HBV infections in children and 265,000 future deaths attributable to chronic HBV infection.

Reported by: *FQ Cui, MD, XJ Wang, MD, L Cao, MD, XF Liang, MD, China Center for Disease Control and Prevention, Beijing; Y Lu, MD, Shaanxi Provincial Center for Disease Control and Prevention, Xian, Shaanxi; YS Hu, Qinghai Provincial Center for Disease Control and Prevention, Xining, Qinghai; SC Hadler, MD, World Health*

FIGURE 2. Estimated infant vaccination coverage with 3 doses of hepatitis B vaccine (HepB3) and timely* administration of the HepB birth dose (HepB1), by region — China, 2001–2003



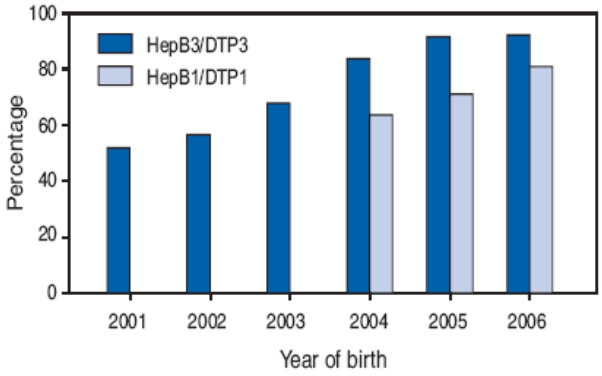
SOURCE: China Ministry of Health national vaccination coverage survey, 2004.
* Within 24 hours of birth.
† China-GAVI–funded western provinces: Chongqing, Gansu, Guangxi, Guizhou, Neimenggu (Inner Mongolia), Ningxia, Qinghai, Shaanxi, Sichuan, Tibet, Yunnan, and Xinjiang. (GAVI was formerly known as Global Alliance for Vaccines and Immunisation.)
§ Middle provinces with GAVI funding in government-designated poor counties: Anhui, Hainan, Hebei, Heilongjiang, Henan, Hubei, Hunan, Jiangxi, Jilin, and Shanxi.
¶ Eastern provinces: Beijing, Fujian, Guangdong, Jiangsu, Liaoning, Shandong, Shanghai, Tianjin, and Zhejiang.

Organization Office in China, Beijing, China. CN Shapiro, MD, ST Wiersma, MD, JW Ward, MD, Div of Viral Hepatitis, National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention, CDC.

Editorial Note: China has made substantial progress in implementing universal, timely hepatitis B vaccination for infants and in reducing disparities in coverage between the poorest and wealthiest parts of the country. The support from the China-GAVI project has improved vaccination coverage and helped prevent chronic HBV infection in children. During 2003–2006, approximately 15 million children in China-GAVI–funded provinces and approximately 42 million children nationwide received HepB.

Since 2002, implementation of universal infant hepatitis B vaccination in China has focused particularly on improving timely administration of the birth dose. Approaches used to

FIGURE 3. Estimated infant vaccination coverage with 3 doses of hepatitis B vaccine (HepB3)/3 doses of DTP* vaccine (DTP3) and timely† administration of the HepB birth dose (HepB1)/ first dose of DTP vaccine (DTP1), by year of birth — China-GAVI§–funded provinces and counties,¶ China, 2001–2006



SOURCE: Routine Immunization Reporting System, China Center for Disease Control and Prevention.
* Diphtheria, tetanus, pertussis.
† Within 24 hours of birth.
§ Formerly known as Global Alliance for Vaccines and Immunisation.
¶ China-GAVI–funded western provinces: Chongqing, Gansu, Guangxi, Guizhou, Neimenggu (Inner Mongolia), Ningxia, Qinghai, Shaanxi, Sichuan, Tibet, Yunnan, and Xinjiang; middle provinces with GAVI funding in government-designated poor counties: Anhui, Hainan, Hebei, Heilongjiang, Henan, Hubei, Hunan, Jiangxi, Jilin, and Shanxi.

increase timely birth-dose coverage have included 1) increasing the percentage of births that occur in hospitals; 2) improving vaccine availability in hospitals and township health facilities; 3) building collaboration among delivery services (i.e., maternal and child health programs and obstetrics) and between vaccination services (i.e., immunization programs and pediatrics) in hospitals and township health centers; 4) increasing the awareness of the importance of timely birth-dose administration among providers and parents; 5) intensifying training, supervision, and monitoring of county, township, and village health workers; and 6) providing subsidies to village doctors to provide vaccines.

Disparities in vaccination coverage continue to exist by region and by location of birth. Despite the China-GAVI activities, during 1997–2006, children from eastern provinces had substantially higher coverage than those from middle or western provinces, as did children born in hospitals versus those born at home. Income levels continue to be highest in China's eastern provinces and lowest in the western provinces; residents in eastern provinces generally have greater access to and ability to pay for health care, including hospital care for childbirth. Children born in hospitals generally have better

access to immunization services and can be vaccinated more easily within 24 hours of birth. In western China, children are more likely to live in remote, mountainous areas and have less access to hospital delivery and immunization services. The China Ministry of Health is implementing programs to increase births in hospitals nationwide by expanding and improving obstetric care in health-care facilities throughout China and providing incentives to give birth in hospitals.

Prevention of chronic HBV infection in China is integral to global initiatives to reduce the burden of HBV infection. In 1992, the World Health Assembly passed resolution 45.17, which called for all World Health Organization (WHO) member states to integrate cost-effective new vaccines, including HepB, into national immunization programs where feasible. The same year, WHO recommended that HepB be included in routine vaccination schedules for all children in all countries (*6*). During 2000–2006, the GAVI Alliance has provided support for HepB introduction to 51 less developed member states (i.e., countries with less than [U.S.] $1,000 per capita gross national income), and these countries have made substantial progress in introducing HepB into their vaccination schedules (*7*). As of 2005, a total of 154 (80%) of 192 WHO member states reported having integrated HepB into their routine infant vaccination schedules; global coverage with 3-dose HepB had increased from 32% in 2001 to 55% in 2005, with 2005 coverage varying by WHO region (South-East Asia: 27%; Africa: 39%; Eastern Mediterranean: 74%: Europe: 76%; Americas: 85%; Western Pacific: 87%) (*8*). The advances in hepatitis B vaccination have led countries and WHO regions to set goals for the elimination of HBV transmission. The WHO Western Pacific Region has committed to reducing chronic HBV infection in children aged <5 years to <2% by 2012.

The findings in this report are subject to at least two limitations. First, the design of the national surveys conducted in 1999 and 2004 differed in how counties were stratified before PPS sampling, which might limit comparability of the two surveys. Second, for the analyses using data from the routine immunization reporting system, the precise number of children requiring vaccination at local levels is not known because some children might not be registered; hence, the use of children targeted to receive DTP vaccine as a surrogate for total number of children might result in overestimation of reported vaccination coverage.

Despite China's progress in increasing hepatitis B vaccination coverage and timely administration of the birth dose, challenges remain to reaching the national goal of <1% chronic HBV infection among children aged <5 years by 2010. Achieving this goal will require increasing 3-dose HepB coverage to the same level as 3-dose DTP coverage and increasing timely HepB birth-dose coverage to 90% in all provinces. The greatest challenge is to increase administration of the birth dose among children born at home. Three provinces (Guizhou, Tibet, and Yunnan) and 42% of China-GAVI project counties still have timely birth-dose coverage levels of <75% and are most in need of targeted interventions. Although most hospitals now are achieving >95% timely birth-dose coverage for infants born in hospitals, strategies are needed to ensure that false contraindications to vaccination, including low birth weight and unstable medical condition at birth (*9*), do not delay administration of the birth dose. Innovative measures also are needed to reach infants born at home, particularly through linking prenatal care and birthing-care providers with immunization program staff at township and village levels. With these improvements, China can reduce substantially the burden of hepatitis B.

Acknowledgments

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