

**Consolidated Executive Summary on  
China Child Survival Strategy Studies  
(Preliminary Report)**

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# China National Survival Strategy for Children aged 0-6 years old

## EXECUTIVE SUMMARY

### I. Background

Children are the hope of families and the future of our country and nation. Childhood is a critical period for lifelong development. Providing opportunities for child survival, development, protection and participation, and meeting children's needs for development, protection and participation will fulfill their full potential and provide a solid foundation for lifelong development. Improving child health status and reducing child mortality rate also reflects the realization of child right on survival and development.

The Government of China always attaches great attention to the improvement of women and children's health. Reducing maternal and child mortality rates has always been the priority for the Government agenda. To achieve the Millinium Development Goal (MDG) 4, the government adopted a set of well-targeted strategies and interventions, with great outcomes achieved. Over the past years, child health has been improved tremendously in China. From 2000 to 2014, the infant mortality rate (IMR) dropped from 32.2/1,000 live births to 8.9/1,000 live births and the under-five mortality rate (U5MR) was down from 39.7/1,000 live births to 11.7/1,000 live births. Although continuous progress has been made, the number of child deaths remains high given the large population size of China. Moreover, there are still gaps in terms of children's health between urban and rural areas, across geographical regions, and among sub-population groups. According to health statistics data, in 2014, the neonatal mortality rates (NMR) in rural and urban areas were 6.9/1,000 live births and 3.5/1,000 live births respectively, and U5MR in rural and urban regions were 14.2/1,000 live births and 5.9/1,000 live births respectively. The risk of death among newborns

and children under 5 years old living in rural areas were 1.97 times and 2.41 times of their peers from urban areas. At sub-national level, the U5MR in provinces with the worst situation was 8 times higher than the province with the lowest mortality rate. If the lowest rate could be achieved across the country, 268,000 more children would have survived each year. The major causes of under five death in 2014 include preterm birth/low birth weight, pneumonia and neonatal asphyxia, each of them accounts for 15-20% of total under five death. Among all under 5 deaths, over 50% occurred during neonatal period. However, 75% of maternal and child deaths are due to causes or diseases that could have been prevented or cured.

The international community has attached great attention to selecting comprehensive evidence-based interventions for women and children's health over the past years. In 2003, the Bellagio Study Group on Child Survival called for actions to "translate knowledge into action and improve equity in child health", and emphasized the significance and possibility of preventing child deaths through interventions worldwide, and proposed 23 interventions for child survival based on reviews and evaluations conducted against the three criteria of coverage, feasibility and outcomes. In December 2011, WHO released a report called *Essential Interventions, Commodities and Guidelines for Reproductive, Maternal, Newborn and Child Health*, laying down 60 interventions (37 for women's reproductive health, 10 for children and 13 for newborns) with well-demonstrated impact. The report categorized the essential interventions by level of settings for service provision (home/community, primary health care facility, and hospital) and stage of lifecycle, with a comprehensive framework of lifecycle- and level of care-based interventions on maternal and child health. The framework is well-targeted and very practical. The report aims to forge further global consensus, more efficient resource allocation, and scaling up and adoption of cost-effective interventions.

Interventions such as exclusive breastfeeding for 6 months (EBF), early initiation of breastfeeding (EIBF), kangaroo mother care (KMC), oral rehydration solution (ORS) to

diarrhea and neonatal resuscitation have been proved to be cost-effective and highly effective in reducing NMR. However, the coverage of these highly recommended interventions are uneven in China, with relatively low coverage in poor and less developed areas. Therefore, the promotion of such essential interventions with low cost and high impact should be the priority of the Chinese government in the near future. To further improve child health status in China, the study aims to present the child health status in China, propose a set of child survival strategies and interventions which are suitable in China settings.

## **II. Objectives**

The objectives of the study is as following: (1) Based on the high-effective and low-cost intervenitons recommended by international community, propose a set of interventions to further reducing child mortality and improving child health status for the period of 2015-2020, with consideration of China context; (2) Analyze of facilitating factor and barriers for intervention adoption, the supporting environment and resources needed; (3) Develop indicators and tools to monitor and evaluate the effectiveness of strategy implementation; (4) Develop the national child survival strategy for government adoption and policy development.

## **III. Methodology**

### **(I) Data source**

Data are mainly collected from the websites of China Maternal and Child Mortality Surveillance System (MCMS), UNICEF, National Health and Family Planning Commission, and the databases of *China Health Statistical Yearbook* and *China Statistical Yearbook*. Text materials mainly come from CNKI, VIP, Wanfang, EBSCO, ProQuest, PubMed, and other Chinese or bilingual databases. Interventions covered here are those proposed by WHO, UNICEF, or other international research institutes,

which have been proved to be viable and effective.

## **(II) Methodology**

1. Literature review: desk review of literatures, policy documents, operational research proposals and reports. The current situation of child health in China and the existing challenges were reviewed, interventions of current available interventions in China were summarized and compared with international recommended lists, and appropriate interventions are recommended based on the review.

2. Focus group discussion: focus group discussions (with 10-15 experts in maternal and child health at each session) were arranged to learn experiences, to collect opinions, suggestions and creative ideas from experts. Based on the results of desk review and five sessions of focus group discussion, a study proposal was developed, a package of essential maternal and child health interventions was proposed, and a bottleneck analysis was conducted, and monitoring and evaluation indicators were drafted.

## **IV. Key Findings and Conclusions**

A comprehensive analysis including an equity focus of the child health status in China, current coverage, access and utilization of child health interventions, national policies and social determinants of child health, was assessed against internationally recommended interventions and conditions of local settings, leading to the development of China's Child Survival Strategy.. A summary of Key Findings is provided below.

### **(I) Child health status**

China has made great progress in reducing MMR and child mortality rate. The maternal, neonatal, infant, and under 5 mortality rates have all been going down over years. However, the share of newborn deaths in under 5 deaths is still high (50.4%). The main causes of newborn deaths in China are preterm birth/low birth weight and neonatal asphyxia, with the former growing from 29.1% of total newborn deaths in 2000 to 30.0% in 2014. In 2014, the main causes of deaths among children 1-11

months old were congenital malformation (23.6%), pneumonia (22.5%), unintentional injury (14.3%), and diarrhea (7.6%). Causes of deaths for children aged 1-4 years were unintentional injury (48.6%), non-infectious chronic diseases (15.0%), pneumonia (11.0%), and congenital malformation (8.6%). In 2013, the overall, urban, and rural birth defect incidence was 145.06/10,000 live birth, 162.11/10,000 live birth and 127.31/10,000 live birth respectively. In 2010, the mortality rate of injury was 84.2/100,000 among children under 1 year old in China and was 32.8/100,000 among children aged 1-4. The top five causes of injury-related deaths of children under 1 year old were suffocation, drowning, road traffic accidents, falls and poisoning. The top five causes of injury-related deaths of children aged 1-4 were drowning, road traffic accidents, falls, poisoning and burns. The two most common infectious diseases among children under 5 in China are acute respiratory infection (ARI) and diarrhea. In 2008, the two-week incidence among children under 5 was 17.4% and 2.4% for ARI and diarrhea respectively. China has made great progress in reducing preventable communicable diseases. The prevalence of serum hepatitis B surface antigen (HBsAg) positivity among 1-year-old group and the 5-year-old group reduced from 9.67% and 10.22% in 1992 to 1.08% and 1.61% in 2006 respectively, resulting in changing China from a high hepatitis prevalence country to a medium hepatitis prevalence nation. In 2011, the reported incidence of measles nationwide was 0.74/100,000 population, 87.67% reduction from 2000. The incidence of epidemic encephalitis in China has been declining since the 1980s and in 2009 it was down to a relatively low level of 0.047/100,000 population. In 2012, a total of 879 cases of phenylketonuria (PKU) and 5,004 cases of congenital hypothyroidism (CH) were identified through neonatal screening, representing an incidence rate of 0.66/10,000 live birth and 3.77/10,000 live birth respectively. Among children under 5, the stunting rate was 9.9%, 50.5% reduction from 2000. Child overweight is increasingly important in China, especially in urban areas. The prevalence of overweight among children under 5 increased significantly, especially in rural areas from 3.9% to 6.5% from 2005 to 2010.

Urban-rural gap and regional gaps remain in maternal mortality and neonatal mortality. The mortalities in rural and less developed areas are higher comparing to other regions. From 2000 to 2010, the urban-rural gap in nutritional status among

children under 5 was prominent. The stunting rate in rural areas was three to five times of that in urban areas, and the stunting rate in poor rural areas was doubled comparing to rural average level. Generally, the coverage of safe drinking water and sanitary latrines are significantly lower in rural areas than in urban areas. A survey shows that the two-week diarrhea incidence, two-week suspected pneumonia incidence and stunting rate among children under 3 were higher among migrant children than residential children. The stunting rate among left-behind children in rural areas is significantly higher than that of their peers, resulting in overall poorer growth/development status compared with the urban counterparts.

### **(II) Access to and utilization of maternal and child health services**

From 2000 to 2014, the coverage of home visits for newborn care nationwide increased from 85.6% to 93.6%, with coverage in urban and rural areas as of 94.3% and 93.0% respectively. In regarding to infant feeding practices, the rates of EIBF and EBF were 41% and 28% respectively, the average breastfeeding duration was 10.1 months only. The full-course immunization rates for Bacillus Calmette–Guérin (BCG), polio, Diphtheria-tetanus-pertussis (DTP) and measles (or known as the “four vaccines”), and BCG, polio, DTP, measles and hepatitis B (HBV) (known as the “five vaccines”) were 98.75% and 98.74% respectively. In 2008, 97% of children under 5 with illness in the last two weeks and accessed to health services. From 2000 to 2014, the share of children under five who didn’t access to health services before death declined among all under 5 deaths, though the proportion remained as high as 10.6% in 2014. The accessibility of maternal and child health services, as well as the quality of newborn health services, were still low in some remote areas.

### **(III) Determinants**

Determinants of child survival mainly include child malnutrition, maternal health, water, sanitation, hygiene, and health literacy. Child malnutrition also includes micronutrient deficiencies such as iodine deficiency, vitamin A deficiency and zinc deficiency. Disease incidence and uptake of health services were examined under



maternal health. In 2014, the hospital delivery rate nationwide was 99.6%, the coverage of antenatal care and postnatal care was 96.2% and 93.9% respectively, and the average prevalence of severe anemia (Hb < 100g/dl) among pregnant women was 7.4%. According to a UNICEF supported survey conducted in 2010, among all health facilities which provide delivery services in China, only 48.5% of them can provide comprehensive obstetric care, and another 20.1% can only provide basic obstetric care. In 2008, the access to tap water in rural China was 42% while access to unsafe drinking (from rivers, lakes, ponds, canals, or ditches) accounted for 14.2% of the total. By the end of 2011, the coverage of sanitary latrine was 69.18% in rural areas. Research finds that endemic diseases, lead poisoning, parasites, trachoma, and indoor air pollution all affect the health and growth of children to some extents. Also, infant and child health is directly influenced by the capacity of women and other family members to identify danger signs of during pregnancy and childhood, the knowledge and skills of optimal infant feeding of caregivers, the awareness and identification of risk factors for child injury, and personal hygiene behaviours of caregivers.

#### **(IV) Enabling environment**

China has established comprehensive system of laws and policies on maternal and child health and protection, and have issued key legal and policy documents such as the Law on Women and Children Healthcare, the National Plan of Action for Women and the National Plan of Action for Children. Meanwhile, a set of national health policies and dedicated laws and regulations on women and children's health have been released. The Health Sectoral Reform, National Essential Public Health Program and National Prioritized Public Health Program conducted in China have further strengthened the maternal and child health (MCH) system, improved the health status of women and children. Over years of efforts, a China-specific MCH system has been established and well-functioned, which is characterized as: the MCH facilities play the leading role on maternal and child health, community-based health facilities serve as the fundamental agencies for service provision, and comprehensive hospitals, research

and teaching institutes provide technical support to MCH related issues. It provides women and children with people-friendly and comprehensive continuum of care. The information systems for maternal and child health, communicable disease reporting, and injury surveillance are further improved; surveillance on birth defects, maternal mortality, under 5 mortality, child communicable diseases and child injury is being strengthened. Data from the information system are being used for evidence-based decision making. At national level, procurement and supply chain management has been strengthened throughout the process, such as procurement, storage, transportation, distribution, and fund management for medicines, vaccines and Ying Yang Bao (micronutrient sachets). Meanwhile, monitoring and evaluation on service provision have been strengthened at all levels, to ensure fully implementation of national policies at local levels.

#### **(V) The package of essential MCH interventions**

The national Child survival strategy and MCH intervention package is developed as part of the study products. The intervention package covers six stages of lifecycle, namely adolescence, pre-pregnancy, pregnancy, childbirth, newborn/postnatal period, infancy, and childhood, with a total of 106 interventions identified. The interventions are delivered through eight levels (service provision channels), which including families, village clinics/community health care stations, township hospitals/community health service centers, hospitals at or above county level, communities, schools, media and enterprises, as well as government departments such as water resources, agriculture, environment protection, and health.

### **V. Recommendations**

(I) The national child survival strategies and MCH intervention package were developed based on the internationally recognized low-cost and high-impact interventions which are suitable for China local settings. The year of 2014 was critical

for the formulation of the 13<sup>th</sup> Five-year Health Development Plan. It is recommended that key MCH interventions proposed in this report are to be included in the 13<sup>th</sup> five-year plan, with relevant costs to be gradually covered by the government. It will be of great significance for further reduce child mortality rates and improve child health outcomes in China.

(II) This Report clearly defines the responsibilities of different sectors in adoption and implementation of proposed interventions, which including families, village clinics, hospitals at the township and higher levels, communities, schools and kindergartens, media, and government departments of agriculture, water resources, environment protection, transportation etc. Accordingly, collaboration and coordination between different levels and different departments shall be strengthened throughout the implementation.

(III) To maximize the impact of the national child survival strategies and MCH intervention package, the following recommendations are made for potential issues that may arise during the implementation.

### **1. Strengthen policy and financial support**

Formulate laws and regulations on adolescent health in a timely manner, improve policies on (out of school) insurances for children, and protect the reproductive health of children; issue policies on free premarital medical checkup, improve the coordination between Sectors of Civil Affair and Health and Family Planning to promote premarital checkups; incorporate newborns in the new rural cooperative medical scheme, and the medical insurance program for urban residents; medical insurance should be provided for the newborns with the cost covered by the government during the year of birth and the insurance reimbursement ratio of the medical bill should be increased; paediatric medicines should be developed to fill the gap, including zinc (treatment of diarrhoea) in the national essential drug list; implement policies supporting infant feeding in poor areas; continuously strengthen the implementation of regulations, polices and working standards on immunization

planning at community level; implement laws and regulations related to child injury, improve the coordination of government, media, enterprises, public security department, communities, hospitals etc.; establish injury surveillance and reporting system; further develop national technical guidelines for maternal and child health services; provide financial support for maternal and child health promotion and capacity building for MCH personnels.

## **2. Improve quality of care in the west of China and at community level**

Formulate standard on-the-job training packages for MCH personnels, improve quality of training for the healthcare workers in the west of China and at community levels, create an efficient referral mechanism covering hospitals of different levels. Hospitals should have child health outpatient clinics to improve the accessibility of child health services; equipment and reagents for laboratory tests should be available at community-level hospitals for the detection of HIV, syphilis, and hepatitis B, as well as disinfected delivery kit, equipment for safe delivery, other obstetric equipment and drugs, and devices for neonatal resuscitation; improve the capacity of health facilities to ensure higher proportion of health facilities providing delivery services can provide comprehensive obstetric and neonatal care; strengthen capacity building for health staff working at county and above level to ensure no less than one neonatal intensive care unit in every county, city or district with a population of over 500,000; referred near-miss newborns from lower level shall be accepted at comprehensive hospitals to effectively reduce NMR. More paediatric outpatient clinics should be established at community levels.

## **3. Expand the coverage of effective MCH interventions**

Further expand the coverage of adolescent healthcare, premarital healthcare, antenatal care and diagnosis of pregnancy complications, neonatal healthcare; increase the coverage of interventions to prevent mother-to-child transmission of HIV, syphilis, and hepatitis-B; adopt safe delivery techniques and management of postpartum haemorrhage at community level; improve the quality of basic and

comprehensive obstetrics and neonatal care; strengthen disease prevention, health counselling and support during newborn, infancy and childhood; promote the coverage of vaccination under the Expanded Program for Immunization in remote areas; expand the coverage of quality-ensured central water supply and sanitary latrines where hand soaps are provided.

#### **4. Maintain more pregnant women and children in the continuum of care**

Strengthen health promotion targeting on migrant pregnant women and people living in relatively poor areas, promote sexual and reproductive health education for adolescents, and promote continued utilization of MCH services; strengthen the health education and counselling on infant feeding for mothers and other caregivers to help them learn knowledge, skills and optimal practices of child feeding, increase the rate of EIBF, EBF for 6 months and timely introduction of supplementary feeding for children over six months old; increase the full-course immunization coverage under the national Expanded Program for Immunization.

# China Child Health Account

## EXECUTIVE SUMMARY

### I. Background

Child health is a requisite and basis for the sustainable development of human beings. China has achieved great progress in children's health, yet challenges remain. Child mortality in terms of absolute quantity is extensive, with huge disparities among regions; there are increasingly complex child health influencing factors, ranging from child obesity, injury and mental health disorders to the newly emerging issues with migrant children and children left-behind by migrating parents.

Tackling the new and old issues requires strengthening the health system and greater policy, technology, funding and human resource commitment and support. Increased investment and policy commitment in children's health requires that policy makers fully understand the issues and the scale of available resources. For example, they need to assess whether current child health resources focus on interventions that are effective for child survival; they need to determine sources of funding and to understand how funds flow within the health system. There is also a need for information on the financial burden of child health expenditure on households. All these details provide the necessary evidence to make informed decisions, allocate resources between competing needs, help set strategic priorities and ensure sustainable funding for child health programmes and strategies.

### II. Objectives

A child health account can be used in various ways to inform child health policy-making and programming. It provides answers to specific questions regarding child health financing; for example, a child health account reveals how much is being

spent, who is paying and what services and products are purchased for whom. The analyses within a child health account can be compared among countries (if produced under the framework of a National Health Account and if produced at regular intervals). A child health account enables the tracking of expenditure, the monitoring of patterns of resource use and the assessment of achievements towards child health programme goals. Ultimately, child health accounts can be used to inform and adjust the financing of strategies to scale up key child survival interventions. The Government of China already produces an annual National Health Account report, but a child health account, which is urgently needed to understand the situation on child health financing, was not available to date.

With support from UNICEF China, the China National Health Development Research Center conducted a study with a sole focus on children's health expenditure to produce the first ever China Child Health Account, which will provide the needed information for child health policy-making and resource planning.

### **III. Methodology**

The China Child Health Account was developed under the framework of the System of Health Account (SHA) 2011 and adapted to the China context. Looking at expenditure for 2012 and focusing only on data relating to children younger than 5 years, in line with the World Health Organization's Child Health Account, the study covered the primary dimensions of health providers, health functions and health financing schemes as well as beneficiary characteristics (age group, sex and disease). Once the current health expenditure aggregate in 2012 was obtained, then parameters from sample institutions were used to divide the aggregate, such as the proportion of children younger than 5 years in total outpatient visits, equivalent work-person times and treatment expenditure.

The field investigation employed a multistep and multistage stratified sampling method. The first step involved area sampling to select the sites, with Fujian Province, Jilin Province, Gansu Province and Tianjin municipality finally chosen. In the second

step, institutions at the administrative level to be surveyed were selected in each sample area. The study surveyed 318 institutions, most of which were medical service providers. Different investigation tools were used according to the type of institution and the type of services provided (medical care and/ or prevention services). In terms of medical care, data were mainly collected from hospital information systems; an equivalent person work time questionnaire was used for the data on prevention services.

The study encountered some limitations: Collective health functions, such as prevention services and administration services, failed to be distributed by beneficiary characteristics, especially for diseases, due to the lack of recognized standards.

#### **IV. Key Findings and Conclusions**

Child health expenditure in 2012 in China was 175.3 billion RMB (\$27.8 billion), accounting for 7.1 per cent of the current health expenditure nationwide and representing 0.4 per cent of the country's gross domestic product. In terms of per capita expenditure, children consumed more health resources per capita nationally on average. Of all child health expenditures, 64.5 per cent was spent on curative care and 23.5 per cent on prevention services.

Child health financing relied heavily on household out-of-pocket payments, with more than 55 per cent of child health expenditure covered by households (at 96.7 billion RMB), compared to 42% for overall health expenditure. Public financing schemes covered 36 per cent of the child health expenditure (63.3 billion RMB), which was lower than what was spend for public health financial protection for the whole population.

In terms of medical expenditure according to the Global Burden of Disease classifications, communicable, perinatal and nutritional disorders accounted for 56.9 per cent of child health expenditure, while non-communicable diseases, injury and other disorders absorbed 30.8 per cent, 4 per cent and 8.2 per cent, respectively.



According to the 10th revision of the International Classification of Diseases, respiratory tract infections accounted for 40.4 per cent of child health expenditure—much more than any other disease expenditure, followed by certain conditions originating from perinatal period, at 11.6 per cent.

Through the above results, the following important conclusions could be summarized as below.

(I) Household out-of-pocket payments have a large presence in child health financing, reflecting weaknesses in the financial protection of children's health. This large contribution is largely a result of health insurance policies. In China, urban children are enrolled in the Urban Resident Basic Medical Insurance (URBMI) scheme, and children in rural areas join the New Rural Cooperative Medical Scheme (NRCMS). Both schemes, however, are designed mainly for major medical spending and inpatient services and thus have a low level reimbursement for outpatient services. However, outpatient cost accounts for 30.5% of the total child health expenditure, which are normally due to common child illness such as respiratory tract infections and diarrhoea, these diseases don't require inpatient care. The reimbursement rate is often reduced even further due to the conflict between the county-wide pooling of insurance policies and beneficiaries seeking medical care outside their local area or because reimbursement procedures are typically complex. In some areas as well, it is difficult for children younger than 1 year to be covered by an insurance scheme. Additionally, a serious illness insurance targeting children doesn't prevail well, and fails to contribute to the financial protection of children who suffer serious illness.

(II) The allocation of child health expenditure between curative care and preventive care is irrational. The potential of preventive care in child health should be explored as a government priority. Of the total child health expenditure in 2012, 65 per cent was directed to curative care. In child curative care expenditure, respiratory system diseases and certain conditions originating in the perinatal period accounted for 57 per cent of expenditure, most of which could have been avoided through prevention efforts, such as the change of the social environment and household lifestyles and with the enhancement of antenatal diagnoses and maternal screenings.

Since the initiation of a new round of health care system reform, the basic public health services programme has been implemented nationwide, and the importance attached to child public health has greatly increased. Although achievements have been made, there is a disparity of prevention service utilization among regions and between rural and urban areas because of fiscal decentralization and the huge gap in economic development and living standards among regions. As much as 45.7 per cent of preventive care services for children in 2012 was financed by government schemes, while 26 per cent still depended on out-of-pocket payments. To serve the public interest, government should assume its responsibility absolutely and should not shift the child health prevention responsibility to households.

(III) The majority of the child health expenditure in 2012 occurred in hospitals, with little at the village or community level, which reflects the weak capacity of the latter in providing child health care services as well as current issues in the child health service system. The field investigation found that within primary health care institutions, paediatric departments had become marginalized and bed resource allocations had shrunk due to their characterization as high risk with low economic return. This was also why private hospitals did not establish paediatric departments but obstetrics departments. A shortage of staffing plus the low income level has led to a brain drain problem in primary health institutions, which has further impaired the provision of health care.

## **V. Recommendations**

(I) Efforts to strengthen medical security and medical care policies for children are needed to resolve households' high financial burden. In particular, health insurance policies targeting children younger than 5 years should be established and encompass illness and hospitalization. They should also consider compensation for outpatient fees for common diseases, as cost of repetitive common illness episodes can amount to catastrophic expenditure.

(II) Efforts to improve child health should enhance the financing for preventive

services and improve cost effectiveness for child health services. Preventive care for children should be treated as an important function of government and guaranteed by government investments so as to reduce the reliance on household out-of-pocket payments. Government at all levels should expand investment to child preventive services, especially in poverty-stricken areas. Preferential protection policies should be developed to increase the subsidy level for vulnerable populations. Additionally, further expansion of the scope of free child preventive care is needed.

(III) The health prevention and treatment system for children should be strengthened with expanded professional training. To resolve the weaknesses in paediatric department resources at the local level and resolve the problem of overcrowding in general hospitals or children's hospitals, the design of the health system at the national level needs to plan for the distribution of paediatrics departments and children's hospitals rationally to meet the increasing demand of children seeking medical care. Additionally, investment for diagnostic equipment to paediatric departments should be increased and the working conditions for health professionals in paediatrics departments should be improved, and thus the training of professional talent should be intensified. When common diseases can be treated at primary health care institutions for children, the strain on the urban centred hospitals and on households due to the high cost of medical care (as a result of poor access) can be relieved.

(IV) More efforts should be focused on vulnerable populations, especially for migrant children and children left behind in rural areas by migrating parents. With the rapid development of the regional economies, the migrant population is growing in China, which subsequently will lead to more migrant children and more children left behind by migrating parents—the very children who tend to utilize a low level of basic health care services. Health care management and immunization programmes for disadvantaged children has been the priority and challenge for child preventive care, especially for rural children left behind by migrating parents, such as nutrition, disease prevention and mental health care. Particular attention and preferential policies should be developed to ensure their access to preventive care services.

# Indicator System for Women and Children's Health in China

## EXECUTIVE SUMMARY

### I. Background

Indicators for women and children's health are not only the most basic health indicators that have gained international recognition but also important indicators for socio-economic and human development. Common indicators used to compare the health situation and progress across countries include maternal mortality rate (MMR), under 5 mortality rate (U5MR), infant mortality rate (IMR), antenatal care (ANC) coverage and hospital delivery rate (HDR). It is of great significance to obtain accurate and reliable data on women and children's health indicators.

The current MCH information system in China needs to be strengthened. First, some indicators commonly used in the world are not included in China MCH information system, or their definitions are different from the international calculations. It makes the international comparison very difficult. Second, there is a variety of MCH indicators in China, with some of them having complicated definitions and calculation method, or even no consensus on how to calculate them. Third, information of progress against MCH indicators derives from a range of sources, such as from health facilities at various levels and communities health workers. In some regions, the personnel responsible for data collection and reporting have not received proper training and are likely to misunderstand the indicators and/or calculate them in an inappropriate way.

In 2013, the Ministry of Health and National Family Planning Commission was merged into the National Health and Family Planning Commission (NHFPC). The MCH Department under NHFPC is responsible for information system of MCH, family planning techniques and services. To promote communication between personnel working on MCH information and to enable them to accurately understand the

definition of indicators, it was necessary to comprehensively review the indicators used in the MCH information system.

In 2011, the Ministry of Health issued national health data standards, including health metadata directories, coding for value domain of health data elements, basic indicator sets for maternal care and child care. However, it is not enough to standardize MCH and family planning data collection, reporting and analysis. Further standardization is needed so as to facilitate and regulate the management of information system on MCH. Thus, it became essential to review the current MCH and family planning indicators, define the definition and calculation method for each indicator, and standardize the analysis and utilization of related information. The study is also aimed at further strengthening the current MCH information system and serves as a reference for data sharing and exchange.

## **II. Objectives**

This study aimed to determine the framework of MCH indicator system, to review the current MCH and family planning indicators, to clarify the definition and calculation methods of the indicators concerned and to standardize the utilization in routine work.

## **III. Strategies**

### **(I) Determine the framework of the indicator system and identify the indicators to be included**

Develop China MCH indicator framework and identify indicators to be included, based on the current MCH and family planning work in China, the international framework on health indicators, and results of MCH indicator review. The selection criteria of indicators is based on necessity, scientificity, comparability, feasibility and stability of relevant indicators.

### **(II) Clarify the meaning of MCH indicators**

The meaning of the selected indicators, including the names, definitions, calculation formula, descriptions, data sources, means of verifications, units of measurement and remarks, should be in line with international descriptions, national metadata preparation standards and local situation.

## **IV. Methodology**

### **(I) Literature review**

Chinese and international publications on health indicator system from the past decade were selected through literature retrieval tools, such as the China Science and Technology Journal Database, MEDLINE and PubMed, and through the websites of UNICEF, the World Health Organization (WHO) and the National Health and Family Planning Commission. Desk review was conducted for publications selected.

### **(II) Focus group discussion**

Before and during the research, focus group discussions were arranged with experts from UNICEF, WHO, experts on maternal and child health, family planning, reproductive health, health management, epidemiology and health statistics. Study proposal, the indicator framework and individual indicators were discussed, and suggestions on how to present the study results and the structure of final report were collected.

## **V. Key Findings**

By studying the health indicator system frameworks developed by WHO, the European Union and the Canadian and Chinese health-related statistical yearbooks, through reviewing indicators in the selected literatures and by considering the experts' opinions, we established the framework of the MCH indicator system with selected indicators. Tier-1 category includes determinants of health, health status, coverage of health interventions, and health system input and output. Tier-2 category includes 14 subgroups, such as demographic and behavioural factors, illness

and mortality indicators. A total of 121 MCH indicators were selected, including 40 core indicators and 81 alternative indicators.

The indicators were selected according to the following criteria: (1) meet the needs of MCH and family planning work of China; (2) consider the health indicators frequently used for international comparisons; (3) exclude indicators which are not universally applicable in China due to geographic disease concentration (such as malaria) or coverage already achieved (such as water); and (4) exclude indicators which are only used in specific areas, such as indicators about management of moderate and severe child malnutrition, registration and management of children with mild anaemia, management of rachitic children, which are only requested in the Standards of Child Nutrition-related Disease Management and thus were not included in the indicator system.

The core indicators were determined according to the grades given by the consulted experts in terms of the necessity, scientificity, comparability, feasibility and stability of each indicator. When there was disagreement on specific indicators, the experts discussed further to reach consensus. The name, definition, formula, description, data source, means of verification and measurement unit have been defined for the 121 MCH indicators in the study.

**Table of Women and Children’s Health Indicators**

Tier-1 category	Tier-2 category	Core indicators (√)	Serial No.	Indicator
Determinants of health	Demographic factors	√	1	Number of live births
		√	2	Number of children under 3
		√	3	Number of children under 5
		√	4	Number of children under 7
		√	5	Number of women in reproductive age
		√	6	Number of married women in reproductive age
			7	General fertility rate
		√	8	Total fertility rate
			9	Fertility rate among girls aged 15–19 (adolescent fertility rate)
		√	10	Sex ratio at birth
	Behavioural factors	√	11	Exclusive breastfeeding under 6 months
			12	Breastfeeding under 6 months
			13	Early initiation of breastfeeding
			14	Introduction of complementary feeding for infants 6–8 months of age
		√	15	Contraceptive prevalence among married women of reproductive age



			16	Composition of contraceptives used by married women of reproductive age
Health status	Illness		17	Prevalence of anaemia among pregnant women
		√	18	Prevalence of moderate and severe anaemia among pregnant women
		√	19	Prevalence of anaemia among children under 5
		√	20	Prevalence of moderate and severe anaemia among children under 5
		√	21	HIV prevalence among pregnant women
			22	Syphilis prevalence among pregnant women
			23	HbsAg-positive rate among pregnant women
			24	Prevalence of cervical cancer
			25	Prevalence of breast cancer
			26	Prevalence of common diseases in women
			27	Disease detection rate through premarital check-ups
			28	Incidence rate of neonatal tetanus
			29	Incidence rate of birth defects
			30	Incidence rate of neural tube defects
		Death	Death	√
	32			Distribution of causes of death among pregnant women
√	33			Under-5 mortality rate
√	34			Infant mortality rate
	35			Neonatal mortality rate

			36	Distribution of causes of death among children under 5
			37	Proportion of neonatal deaths among under-5 child deaths
			38	Perinatal mortality rate
			39	Rate of foetal deaths and stillbirths
			40	Rate of neonatal death from tetanus
	Growth and development	√	41	Stunting rate among children under 5
			42	Prevalence of low weight among children under 5
			43	Prevalence of low birth weight
			44	Prevalence of wasting among children under 5
			45	Prevalence of overweight among children under 5
			46	Prevalence of obesity among children under 5
			47	Rate of foetal macrosomia
				48
Intervention coverage	Maternal health care		49	Registration rate of pregnant women
		√	50	Coverage of antenatal care in the 1 <sup>st</sup> trimester
		√	51	Antenatal care coverage
		√	52	Antenatal care coverage—at least five visits
		√	53	Postnatal care coverage
		√	54	Rate of systematic management for pregnant women
		√	55	Institutional delivery rate
		√	56	Caesarean section rate

		57	Non-institutional delivery births attended by skilled birth attendance
		58	Proportion of high-risk pregnant women
		59	High-risk pregnant women management rate
		60	Proportion of institutional delivery within high-risk pregnant women
		61	Haemoglobin testing rate for pregnant women
	√	62	HIV testing rate among pregnant women
	√	63	Syphilis testing rate among pregnant women
		64	Hepatitis B testing rate among pregnant women
	√	65	Proportion of HIV-infected pregnant women received antiretroviral therapy for PMTCT
		66	Proportion of syphilis-infected pregnant women received treatment for PMTCT
		67	Antenatal screening rate
		68	Proportion of high-risk pregnant women received antenatal screening
		69	Diagnosis rate of antenatal birth defects
		70	Confirmed diagnosis rate of antenatal birth defects
		71	Proportion of pregnant women taking folic acid
Child health care	√	72	Coverage of neonatal care (household visits) for babies within 28 days
	√	73	Rate of systematic management for children under 3
		74	Rate of health management for children under 7
		75	Haemoglobin testing rate among children under 5

	√	76	Hypothyroidism screening rate among newborns
	√	77	PKU screening rate among newborns
	√	78	Hearing screening rate among newborns
	√	79	Antiretroviral therapy rate among HIV-exposed children for PMTCT
	√	80	Coverage of treatment among syphilis exposed children for PMTCT
	√	81	Hepatitis B immunoglobulin immunization rate
		82	Prevalence of two-week suspected pneumonia among children under 5
		83	Prevalence of two-week diarrhoea among children under 5
		84	Proportion of oral rehydration therapy among children with diarrhea
		85	Hepatitis B full immunization rate (HepB3) among children under 1 year old
		86	Immunization rate of 1 <sup>st</sup> dose hepatitis B within 24 hours
		87	BCG immunization rate among newborns
		88	Measles immunization rate among children under 1 year old
		89	Poliomyelitis immunization rate among children under 1 year old
		90	DTP3 immunization rate among children under 1 year old
Birth certificate management		91	Rate of 1 <sup>st</sup> issue of birth certificate

Common diseases in women	√	92	Cervical cancer screening rate
	√	93	Breast cancer screening rate
		94	Screening rate of common diseases for women
		95	Diagnosis rate of cervical cancer at early stage
		96	Treatment rate of cervical cancer
		97	Diagnosis rate of breast cancer at early stage
		98	Treatment rate of breast cancer
Prenatal health care	√	99	Rate of prenatal medical examination
		100	Counselling rate of prenatal health
		101	Percentage of specified infectious diseases in diagnosed diseases
		102	Proportion of sexually transmitted diseases in infectious diseases
		103	Percentage of serious genetic diseases in diagnosed diseases
Family planning		104	Number of family planning operations (birth control operations)
		105	Incidence of family planning surgical complication
		106	Proportion of certain family planning surgery service
		107	Number of induced abortions
		108	Induced abortion ratio (induced abortions per 100 live births)
	√	109	Rate of induced abortions
		110	Quantity of contraceptives devices distributed

			111	Number of women having pre-pregnancy eugenic tests
			112	Percentage of inpatient care obstetric and gynaecological admissions due to abortion complications
			113	Birth policy compliance rate (family planning rate)
			114	Proportion of one-child families
			115	Proportion of two-child families
			116	Proportion of families with three or more children
Health system input	Human resources		117	Number of midwives per 1,000 population
	Health facilities		118	Number of obstetric beds per 1,000 population
			119	Number of paediatric beds per 1,000 population
Health system output	Medical service availability and equality		120	Medical insurance coverage among pregnant women
			121	Medical insurance coverage among children under 5