



Development of the ODA Program Model for Maternal and Child Health

Nami Hwang



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<http://www.kihasa.re.kr>

ISBN: 978-89-8187-895-5 93510

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Chapter

01

Project Introduction Background



Chapter 1

Project Introduction Background

I. Program Introduction Background

Korea's Maternal and Child Health(MCH) program was officially launched as the business of health center as the 'Health Center Act' was legislated in 1956. As mother and newborn mortality continuously rose, pregnant women were recommended to ensure a safe delivery. In addition, the need for the control of newborn diseases was raised, thereby allocating MCH workers to health centers across the nation, assistant deliveries that may have threatened the lives of mothers and babies, and implementing a vaccination program for infants. However, the services were not sufficient in terms of quantity and quality.

In the early 1960s, the Korean government judged that rising birth rates following the end of the Korean War in 1953 acted as a significant obstacle to national economic development, being likely to pass poverty to next generations. As a result, the family planning program was introduced as a national scheme, giving priorities to the MCH program in terms of national policy. Identifying the fact that high birth rates came from high infant mortality rate, the government started to more actively execute the MCH program.

II. Program Goals and Policy-making Processes

In accordance with the 'Maternal and Child Health Act' enacted in 1973, the goals of the MCH program were designed to protect the lives and health of mothers, to promote the safe delivery and healthy growth and development of children, and thereby to contribute to enhancing national health.

As the national health insurance coverage expanded to include the general public as a whole in 1989, the permanent protection of MCH services was reinforced, setting up the value system of a smaller number of children. In response, the government decided not to limit the goals of the national MCH program to the health management of pregnant women and infants, with the goals thereof expanding to promote the reproductive health of teenagers and mothers, to prevent the disabilities in newborns, and to raise the quality of life through health promotion. Specifically, the objectives thereof can be summarized as follows: 1) to promote the health in physical, mental and social status of pregnant and fertile women; 2) to secure next-generation health resources through proactive investments for health; 3) to form a social environment for pregnancy/delivery/child rearing; and 4) to establish the support and delivery system for the MCH program. Furthermore, setting up a healthy society for mothers and children was presented as a vision. In response, the scope of motherhood expanded to include not only pregnant women but also fertile women, by revising the Maternal and Child Health Act in 2008.



Chapter

02

Implementation System and Methods of Maternal and Child Health Policies



Chapter 2

Implementation System and Methods of Maternal and Child Health Policies

I. Implementation Methods of National MCH Programs

1. Establishment of Program Infrastructure Through Legislation of the Mother and Child Health Act

In accordance with the Health Center Act legislated in 1956, the government installed health centers by city/county across the nation, officially launching the MCH program as the business of health centers. Pregnant women were encouraged to ensure a safe delivery, with the need for the disease control of newborns also being raised. As a result, the government allocated health workers to health centers across the nation, ensuring maternity aids that are closely related to the lives of mothers and children and executing a vaccination program for infants.

The business for mother and child health was transferred to the MCH center under the direct control of the Deputy Minister of Health and Society in 1972. In the following year (1973), the MCH program listed in the Health Office Act was strengthened by enacting and announcing the Maternal and Child Act, a separate and independent Act. The Maternal and Child Health Act was designed to establish institutional devices focusing on family

planning, but which had a special meaning in terms of devising business objectives, identifying the target and scope of the business, and thereby establishing an institutional framework for financing.

By revising the Mother and Child Health Act in 1986, an institutional device was devised for the establishment of a pregnancy reporting system, health checkup for pregnant women and infants, and the issuance of mother and child health notebooks. Furthermore, all of the medical institutes were required to report stillbirths and the deaths of pregnant & parturient women and newborns, setting up an information system for national MCH care. The government revised the Act again in 1999, introducing a registration and medical support system for high-risk newborns such as preterm babies and newborns with birth defects, and setting up an institutional framework for promoting mother and child health and welfare.

On the other hand, the Communicable Diseases Prevention Act was enacted in 1954, thereby designating epidemics that should be controlled at a national level due to high contagiousness and severity as nationally notifiable infectious diseases and implementing a free vaccination program against diseases that can threaten lives in early childhood.

2. Continuous Reinforcement in Management through the Development and Use of Mother and Child Health Notebooks

In accordance with the Mother and Child Health Act revised in 1986, MCH handbooks developed by the government were

distributed to women reporting pregnancy, promoting a safe delivery and recording the status of education and health care required to manage the health of newborns. The notebooks were also distributed to private hospitals and clinics in order to enable them to offer the notebooks to pregnant women therein. However, because private institutes have already developed and used separate mother and child health notebooks by using the data developed individually or by academic societies, most (92.5%) of those who experienced pre-delivery treatments owned the notebooks. Health Centers also used mother and child health notebooks developed by the government

In response, after going through the process of integrating different notebooks developed by private institutes, which contain a diversity of health service data, the government developed a unified maternal and child health notebook based on essential service information. In order to deliver flawless health knowledge and information, to enable mothers to benefit from standardized services from the period of pregnancy to early childhood regardless of health and medical institutes, and to consistently maintain records, the government gathered the opinions of experts and organized a notebook where essential services and the status of individual health can be recorded. In order to strengthen national support in mother and child health, to promote cooperation with the private sector, and to ensure continuous health management between pregnancy and early childhood, the government set up a new maternal and child health notebook distribution system in connection with pregnancy reporting.

However, the fact that the use of the notebooks was low between early childhood and school age was raised as an issue. Against this backdrop, in order to enable the notebooks to be used as a means to ensure the continuity of the school health program, the government revised the School Health Act in 2005. In accordance with mother and child health notebooks containing vaccination records, etc. must be submitted when a child enters elementary school.

3. Goals and Incentives in Maternal and Child Health by City / County

In 1967, the government introduced an incentive system where the workload of midwives in health centers was allocated, with incentives being offered depending on job performance. In 1976, the target load system in mother and child health was introduced, allocating the load to health workers in the field (between 1976 and 1981, 23 cases per worker in pregnant women registration, 11 cases per worker in delivery attendance, and 35 cases per worker in infant registration, on a monthly basis). With respect to the implementation of the system, the Ministry of Health and Society determined the annual target load and equally allocated it to each health worker, considering the number of workers by city or province. However, as a diversity of issues were raised including a failure to reflect regional characteristics, the target load system was abolished where the load was allocated based on the same workload per worker. Instead, focusing on those not experiencing proper care before delivery and those exposed to an unsafe delivery as target women managed by the government,

the target load was determined and allocated. In other words, the central government set the target load, considering population and birth rates by region, with city and provincial governments identifying and applying the ratio of those expected not to experience proper care for adjusting the target load. Then, the load is finally allocated to districts (eups or myeons). KIHASA assessed the achievement of the goal in quantity and quality in order to enhance the quality of maternal and child health services, after going through several revision and modification processes. In quality evaluation, in case pregnant women were registered within 12 weeks after pregnancy, additional points were given in order to highlight the importance of early registration and management. In addition, follow-up services for high-risk group care were also given points. The target load was evaluated by quarter, monitoring business processes and improving the fairness and reliability of the assessment through annual onsite checkup. In accordance with the assessment, distinguished health centers and workers were awarded prizes, reflecting the performance in promotion process, motivating them to work harder, and promoting a sense of responsibility.

4. Reporting of the Deaths of Pregnant Women / Newborns and Stillbirth and the Mandatory Submission of Birth Certificates

In accordance with the Maternal and Child Health Act revised in 1986 in order to produce national statistics on mother and infant mortality for implementing the program based on evidence, health centers and private medical institutes were required to

report to administrative agencies the occurrence of stillbirths and deaths of pregnant women and newborns.

Pursuant to the Family Registration Act revised in 1991, when births were reported, birth certificates prepared by delivery attendants had to also be attached. Midwives or doctors who took care of delivery had to prepare birth certificates where the health status (including weight) of newborns was recorded, in order to raise the accuracy of birth reports by preventing the omission of births from the early death of newborns and delay in birth reporting.

5. Customized program Planning and Implementation Meeting the Requirements of Regional Communities

Changing the Health Center Act to the Community Health Act in 1995, the government tried to enhance the health of community residents by leading metropolitan and local governments to devise regional health plans suitable for local circumstances, developing health programs meeting the health needs of community residents, and improving the quality of services.

Based on the regional health plan for maternal and child health care, diverse demands for maintaining mental and social well-being had to be met, not being satisfied with simply preventing the deaths and diseases of mothers and children. As a result, in order to prepare strategies that can meet the health demands of mothers and children with limited financial and human resources, the leading programs for mother and child

health were implemented for 22 health centers for three years from the year 1999, developing 14 types of health management programs based on key health issues by life cycle (Figure 1). Because the leading program in maternal and child health care was expanded to include not only pregnant women but also fertile women, the name thereof was changed to 'the program for the health of women and children', with the program being expanded and applied to health centers across the nation. These centers carried out diagnosis on of health problems, implementing the leading program in maternal and child health where 1~3 programs with first priority needs and demands out of the 14 types of programs were selected, setting goals and enforcing/evaluating the program. In relation thereto, a feedback management system was also established and implemented.

[Figure 1] The Operation Program of Health centers Leading MCH programs

Pregnancy	Early Childhood	School Age / Adolescence	Fertile	Middle Age
Pregnant Women Health Management				
Mother/Child Health Training Materials and Information Center				
Breast-feeding Guide and Campaign				
	Management of Preterm Babies and Infants with Birth Defects			
	Infant Growth & Development Screening			
		Health Checkup for Children aged 18 Months and 3 Years		
		Unbalanced Diet Correction and Counseling for Obese Children		
		Checkup for Preschool-Age Children		
		Health Care at Childcare Facilities		
		Health Checkup at School and High-risk Children Management		
		Reproductive Health Caret Program		
			Family Planning Counseling and Unwanted Pregnancy Prevention Service	
			New and Healthy Marriage	
				Health Care for Middle-age Women

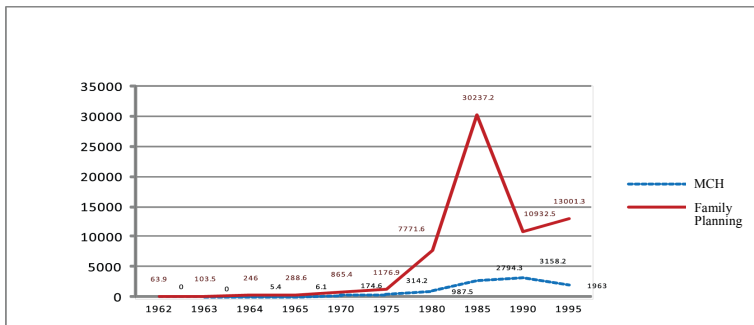
II. Financing

The budget for the national MCH program in Korea was allocated from the year 1964, being separated from the family planning program. The budget then amounted to only 5.4 million

won, accounting for 1/50 of the family planning budget so that the mother and child health services in the public sector were relatively insignificant. However, after the Maternal and Child Health Act was enacted in 1973, the budget for the scheme in 1975 rose to 314 million won, accounting for 1/4 of the family planning budget. Thanks to the continuous reinforcement of the program, the budget for 1985 soared to about tenfold from a decade ago (Figure 2).

The national budget for mother and child health was the biggest in 1996, amounting to 3.158 billion won because infant vaccination was integrated into maternal and child health services from the year 1990, reflecting the vaccination budget on the MCH program. The vaccination budget was separated from the MCH program in 1997.

[Figure 2] Trends in Budget for MCH and Family Planning : 1962~1995





Chapter

03

Details of Maternal and Child Health programs



Chapter 3

Details of Maternal and Child Health Programs

I. Installation of Management Organization and program Implementation

In 1963, the government established the Department of Maternal and Child Health in the Bureau of Health in the Ministry of Health and Society, which consisted of the Mother and Child Health Team and the Family Health Team. As the third five-year economic development plan was initiated in 1972, the MCH program for preventing the deaths of infants was raised as a key policy issue in order to control fecundity from high infant mortality and thereby to enhance the performance of population control policies. In order to handle such an issue, the government upgraded the Department of Maternal and Child Health to the Office of Maternal and Child Health Care under direct control of the Deputy Minister of Health and Society.

In accordance with the government's policy to abolish and integrate organizations, the Department of Maternal and Child Health and the Department of Family Planning were integrated into the Department of Family Health in 1981, with the program being controlled by the Maternal and Child Health Team in the Department of Family Health. In 1999, the department was changed to the Department of Regional Health in order to include

comprehensive planning regarding the health of community residents. Thereafter, due to the policy direction for integrating maternal and child health into women's welfare, the program was managed by the Department of Women Welfare. However, as the policy showed its limits in-depth services for communities, it was transferred to the Department of Regional Health again. Likewise, in relation to Korea's MCH program, responsible departments have continuously changed for the effective and efficient delivery of services, depending on priorities by age.

The Family Planning Evaluation Group was also installed in the Department of Mother and Child Health in order to analyze and assess the family planning program of the government and thereby to ensure the effective implementation thereof.

In local contexts, the Teams of Mother and Child Health in the Bureau of Health by city and province monitored and evaluated the MCH program of health centers, in relation to the target load from the Central Government, being responsible for providing the program-related administrative support.

On the other hand, national MCH programs were implemented, relying on health centers across the country. In 1962, a family planning counseling center was also installed to reinforce the family planning program. In 1966, for the effective birth control for residents in areas without doctors, mobile treatment teams for family planning were installed and operated. Judging that the operation of one health office by county could not ensure the geographical access of residents thereto, health office branches were established by eup or myeon in 1967.

II. Establishment of Key Policies and Strategies

1. Home Visits for Health Management of Pregnant Women and Delivery Set Distribution

In order to prevent infant tetanus that may be incurred when pregnant women in vulnerable areas featuring low access to medical facilities give birth, the government developed a delivery set for sanitary birth in 1963, leading health workers or community health center workers to visit the homes of expectants for the distribution of the sets. In 1982, it offered nutritional supplements to low-income pregnant women with anemia. Amid a rise in the number of households with phones in the 1970s, in case health workers could not visit the homes of pregnant women, the health status of pregnant women was checked by using phones, leading them to execute postnatal family planning programs and delivering necessary information. At that time, midwives and nurses accounted for 7.8% and 11.8% of health workers, respectively, with the percentage of qualified health workers failing to reach 20%. Nurses' aides lacking qualification took up more than 80% of the total health workers. In order to offer high-quality services and cultivate specialized delivery attendants, the government led delivery institutes to train health workers to make them fully qualified as nurses.

Since the year 1984, the serological test for syphilis has been conducted for pregnant women registered in health centers (or MCH centers) in order to prevent fetuses from being infected.

2. Vaccination

A. Free Vaccination for Infants

The government gave top priority to the vaccination program for infants in order to prevent the expansion of epidemics such as diphtheria, pertussis, polio, measles, and Japanese encephalitis, from which tens of thousands patients have suffered since the 1960s. Health centers across the nation started vaccination against polio in 1965, Japanese encephalitis in 1971, measles in 1980, and MMR (measles, mumps, rubella) in 1985, gradually expanding the free inoculation program for infants. The vaccination budget grew about tenfold between 1980 and 1990. The vaccination program for infants that had been implemented as part of the efforts to prevent epidemics was absorbed into the MCH program in the year 1990 in order to enable infants and children to be inoculated on time by using health notebooks. On the other hand, in the mid-1980s, the infant health management program focusing on vaccination was expanded to include breast-feeding, supplementary food, infant health checkup, growth/development screening, and testing for inborn errors of metabolism.

B. Rubella Vaccination for Female High School Students for the Prevention of Deformed Child Delivery

In case pregnant women are infected with rubella in the early stage of pregnancy, 50~80 percent of pregnant women deliver low birth weight infants and babies with the congenital rubella

syndrome (glaucoma, cataract, and congenital heart diseases). Against this backdrop, the government recognized the importance of vaccination against rubella and implemented the rubella vaccination for female high school students in 1992. In 1995, the inoculation was executed for females in their first year of high school. For females aged 15 excluded from the school environment, health centers implemented the vaccination program. As a result, 70.4% of females aged 15 were vaccinated against the disease for free. As the rubella testing was included in the health insurance benefits in the year 2004, each health office conducted the program, depending on its own judgment.

3. The Movement for Enhancing Breastfeeding Rates

The breastfeeding rate in Korea was relatively high in the 1960s. However, as Korea advanced into an industrialized society throughout the 1970s, the breastfeeding rate sharply fell from 59.0% in 1985 and 48.1% in 1988 to 11.4% in 1994. Such a trend can be attributed to the healthy baby contest held by milk powder companies, the distorted promotion of milk powder such as exaggerated advertisement, and milk powder promotion at obstetrics clinics.

In response, the government prohibited healthy baby contests. Furthermore, it actively took part in the international regulations regarding breast-milk substitutes sales (WHO), revising related Acts in order to give penalties to exaggerated advertisement and to prevent hospitals/clinics from conducting the free promotion for bottle-feeding products. It also actively designated as

baby-friendly centers promoted by UNICEF hospitals and clinics that formed an environment favorable to breastfeeding and recommended breastfeeding.

In terms of insurance policy, breastfeeding nursing fees were set in order to encourage women to conduct breastfeeding immediately after giving birth, leading hospitals and clinics to be equipped with a rooming-in system and requesting medical staff to actively promote breastfeeding. Health centers provided mother's milk facilitators, with workers being educated about the benefits of breastfeeding and developing and distributing breastfeeding promotion materials. The government actively promoted breastfeeding helping private organizations hold breastfed babies contests.

4. Health Checkup for Pregnant Women and Infants

Pursuant to the Mother and Child Health Act revised in 1986, the government implemented health checkups for pregnant women and infants registered in health centers. It was designed to ensure a safe delivery and the health of mothers and infants by detecting pre-delivery high-risk factors early and to minimize after-effects by quickly identifying the health problems and high-risk factors of infants aged six and 18 months.

Originally, specialist doctors were supposed to conduct the general health checkup but due to budgetary constraints (national and local funds), health centers (maternal and child health centers) and health branches were designated as primary treatment institutes. For those who needed complete medical checkups,

private hospitals were requested to conduct secondary health checkups. The health office organization was evaluated as lacking not only medical devices but also knowledge and skills for health checkups for six month-old infants. As a result, the diagnosis service for six-month-old babies was changed to the medical checkup for preschoolers aged six, with tests being conducted for teeth, eyesight and hearing ability.

In relation to pregnant women and infants whose health should be checked, considering that primary service recipients account for about 1% of the low-income population, target loads were allocated depending on the population size by health office. Secondary service recipients were set to take up 10% of primary ones. When the program was initiated in 1986, primary diagnosis costs were set at 5,000 won per pregnant woman and 2,000 won per infant, while secondary ones were set at 5,000 won per pregnant woman or infant. The services were offered to beneficiaries for free. However, as low diagnosis costs were allocated per person, specialized health checkups were hardly expected.

Health checkup items for pregnant women included blood pressure, weight, edema, glucose level and albuminuria testing, blood type testing, hemoglobin, serological tests for syphilis, hepatitis B antigen/antibody testing, fetus location, and doppler testing. The items for infants were as follows: blood type (ABO type, Rh type), hemoglobin testing, urine testing (protein, diabetes testing, etc), and teeth/eyesight testing (aged 3 and 6).

5. Medical Checkup for Inborn Errors of Metabolism

In 1991, the government introduced the program that identifies the inborn errors of metabolism in order to detect and treat early the mental retardation from the inborn errors of metabolism that do deadly damage to the brain and body due to the fact that necessary enzymes do not exist from birth. About 30,000 newborns of pregnant women registered by health office across the nation were screened for the disease for free. Health office workers informed expectants subject to registration of the need for the test within seven days after giving birth, providing free testing information to them. They were screened at hospitals/clinics or at home after being discharged for the disorder.

National and local funds or social welfare program funds were used for the testing, estimating that 0.1% of target newborns are vulnerable to the ailment and securing a budget for offering special milk powder and medication services for one year for effective follow-up management (Table 1).

Medical tests were conducted for hypothyroidism, phenylketonuria, homocystinuria, maple syrup urine diseases, and histidinemia by 1994, excluding galactosemia, for which high testing costs are incurred. Because the incidence rate of the diseases among newborns was very low, controversies were raised by some experts over whether top priorities as a public program should be given to the scheme. As a result, in 1995, the medical tests were implemented only for hypothyroidism and phenylketonuria, whose incidence rates were relatively higher than the others.

A new population policy was introduced in 1996. In order to enhance the quality of the next-generation population, the government has offered free testing services for all infants in 1997. Since then, testing services for two types of diseases had been delivered. However, since the year 2006, the testing services have expanded to include six types of diseases with high incidence rates among Koreans (phenylalaninemia:phenylketonuria, hypothyroidism, homocystinuria, maple syrup urine disease, galactosemia, congenital adrenal hyperplasia). In case positive reactions were incurred following the testing, even secondary testing expenses were paid by the government. If disorders were found, the costs for purchasing special milk powder were provided to patients from low-income classes (less than 200% of the urban household income). On the other hand, testing institutes were checked four times each year in order to control the quality of testing.

<Table 1> Performance of and Financial Sources for Medical Checkup for Inborn Errors of Metabolism

Classification Year	1991	1992	1993	1994	1995
Number of Test Subjects (Persons) <Newborns with the diseases>	29,325 <23>	20,302 <7>	35,094 <5>	50,191	95,804
Total (1,000 won)					
Testing	297,600	320,000	544,160	757,600	837,400
expenses (1,000 won)	240,000	281,400	491,360	702,674	766,432
Follow-up management(1,000 won)	57,600	38,600	52,800	54,926	70,968
Financial sources	Social welfare program funds	National subsidy, Social welfare program funds	National subsidy, Social welfare program funds	National subsidy, Local funds, Social welfare program funds	National subsidy, Local funds, Social welfare program funds

Sources: Ministry of Health and Welfare, Family Health program Information by Year

6. Medical Expenses Support for Preterm Babies and Infants with Birth Defects and Registration / Management

Preterm birth, low birth weight and birth defects can be regarded as three major causes of infant deaths. The percentages of preterm birth and low birth weight infant were estimated at 5.8% and 4.9% of newborns as a whole, respectively. If preterm babies and infants with birth defects are not duly treated in a prompt manner, the risk of death or disability increases. This may in turn lead to a mounting burden for both the child and the family, as well as for the society. Therefore, top priorities were given to preterm babies and infants with birth defects in order to prevent their deaths and disabilities.

Based on the Maternal and Child Health Act revised in 1999, the government since 2001 has provided financial assistance for medical expenses to the households with high-risk newborns such as preterm babies and infants with birth defects. The scheme was designed to prevent low-income classes from giving up treatments for their preterm babies or infants with birth defects due to excessive medical expenses and thereby incurring deaths or disabilities. The beneficiaries included families with income less than 200% of the national poverty threshold and families with their third or higher-parity child born preterm or with birth defects, regardless of their income. The other cases requiring national assistance were determined within the scope of budget, depending on the judgment of mayors/gun-governors/gu-presidents (or health office chiefs).

Furthermore, by requiring maternity hospitals or clinics to

quickly report preterm babies and infants with birth defects to responsible health agencies, the basic information was secured, identifying the needs for intensive care and linking the cases to proper NICUs (Neonatal Intensive Care Unit) by region. Health workers conducted home visits to inform mothers delivering preterm babies or infants with birth defects of medical support systems, to provide counseling services, and to monitor the health status and growth of newborns.

7. Cultivation and Training of Human Resources for Maternal and Child Health

A. Cultivation of Integrated Health Care Workers and Capability Reinforcement

As it converted the program for family planning, MCH, and tuberculosis control into an integrated health program, the government actively implemented integrated health training for health workers by district (eup's/myeon's) in the year 1978. However, due to the limited budget and lack of training resources, only the short-term (1~2 weeks) training was provided. Because most workers were nurse aides, the qualification of workers was still unsatisfactory in executing the integrated family health management program on maternal and child health, family planning, and tuberculosis control. The issue was resolved by introducing loans from IBRD from 1981 to 1985.

Between 1981 and 1985, the government provided 14 week-long training services to a total of 3,877 health workers including

nurses(449) and nurses' aides (3,428) who were responsible for family planning, MCH, and tuberculosis control. In spite of that, lack of qualification in maternal and child health was continuously pointed out.

B. The Development of Human Resources for Medical Treatment

Under the slogan of the 'Health for All by the Year 2000', WHO in 1978 has proclaimed primary health care as the essential rights of all human beings in the world. Primary health care has been defined as "essential health care based on practical, scientifically sound and socially acceptable methods and technology made universally accessible to individuals and families in the community through their full participation and at a cost that the community and the country can afford to maintain at every stage of their development in the spirit of self-reliance and self-determination". The type of care involves 'health education', 'nutrition', 'the sufficient supply of safe water and basic environmental sanitation', 'the prevention and treatment of common diseases', 'the proper treatment of common diseases and injuries', 'the preparation and supply of essential drugs', and 'traditional medical services', as well as 'mother and child health and family planning including vaccination against key epidemics'.

In order to implement the primary health care program including family planning and MCH, the government had to develop human resources who could provide primary health services. As a result, in December 1980, the government enacted the Special Act for Health Care in Fishing and Farming Villages, nurturing health

workers with a nurse or midwife license and allocating them to farming and fishing villages.

Cooperating with sub-health centers established for community participation, they visited homes in the areas of responsibility, informing residents of the needs for mother and child health management, offering normal delivery and infant vaccination services. In relation to family planning, they provided counseling and promotion services, distributing contraceptive devices and finding and handing over sterilization operation candidates to health centers.

8. Establishment and Operation of Maternal and Child Health Centers

In 1980, Korea's institutional delivery rate was estimated at an average of 56.9% at a national level, but which was just 26.5% in rural areas, showing a significant gap between urban and rural areas. Judging that medical facilities did not exist in rural areas, the government negotiated with IBRD in 1979 for the introduction of population loans¹⁾, promoting the establishment of maternal and child health centers in rural areas. The loans from IBRD were meant to be used for MCH programs and limited to buildings and medical equipment. The government allocated US\$34 million, about 30% of the loans, to MCH programs.

Between 1981 and 1984, a total of 89 maternal and child

1) The loans had to be repaid over 17 years with an annual interest rate of 7.95%, including four years of the term unredeemed.

health centers were established in remote rural areas across the country. For the efficient use of their staffs, the centers were installed in health center buildings or within 500 meters away from health centers.

Public health doctors who were supposed to work in vulnerable areas in health (fishing and farming villages) were allocated to the centers, securing 100% of the required staff. (However, only 35.7% of the required midwives were secured in 1984.)

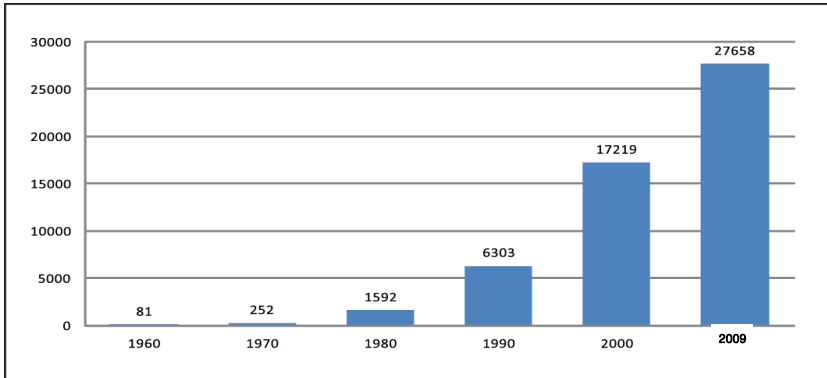
9. Economic Development

The MCH program was enhanced, maintaining a close relationship with social development. The success of the five-year economic development plan (called an economic and social development plan from phase 5) promoted over seven phases from the year 1962 elevated the standard of living of the general public. Korea's per capita GNI was estimated at US\$81 in 1960, which rose to US\$1,590 in 1980 and US\$6,300 in 1990 (Figure 3). As a result, the access of pregnant women and infants to medical facilities continuously improved, functioning as a main factor that enhanced the level of maternal and child health.

Furthermore, thanks to the success of the five-year economic development plan, environmental hygiene was improved, with the water supply rate rising from 16.8% in 1960 to 42.4% in 1975 and to 78.5% in 1990. Securing safe drinking water for mothers and infants led to the prevention of epidemics as well as a fall in the number of deaths.

[Figure 3] Trends in Per Capita GNI of Korea: 1960~2009

(Unit: US\$)



Source: Statistics Korea, Korea's Social Indices, 1960~2010

III. Policy Changes Reflecting Changes in Requirement at Home and Abroad

1. Cultivation of Integrated Health Care through Training of Dedicated Human Resources for Maternal and Child Health

From the early stages of the MCH program, Korea had to recommend mothers to participate in the family planning program. Against this backdrop, due to the close relationship between MCH and family planning, the possibility of their integration was discussed. In the early 1980, as the opinion prevailed that not only MCH and family planning but also tuberculosis control should be integrated into a single program in order to enhance the efficiency of the public health programs, the government decided to implement

an integrated health program, a multiple-purpose health program that comprehensively dealt with family planning, MCH, and tuberculosis control by district(Gun). As a result, the jobs of health workers, which were classified into family planning, MCH and tuberculosis control, were integrated to cover the three areas as a whole. Depending on the number of health workers, areas of responsibility were segmented to enable them to comprehensively cope with the health program as a whole by area.

2. New Population Policy

As most households had one or two children thanks to the success of the birth control policy actively promoted since the 1980s, the total fertility rate dropped to the level of population replacement. Furthermore, in terms of MCH policies, the government focused on pre-delivery management and reproductive health program. As the health insurance system expanded to include the people as a whole and the standard of living was elevated, the institutional delivery rate reached about 95%. In response, public policies were established to prevent women and children from suffering from diseases and disabilities and to enhance the reproductive health of women of childbearing age. In other words, by introducing a new population policy in 1996, the main focus of policies was shifted from contraceptive distribution or prenatal care, delivery attendance and vaccination services to the enhancement in the reproductive health of fertile men and women. Related key programs included sex education for teenagers, the prevention of induced abortion, the expansion

of social initiative for correcting sex-ratio imbalance, and medical aid for low birth weight babies and congenitally deformed babies of low-income families.

The programs were executed in order to enhance family welfare.



Chapter

04

Assessment of Maternal and Child Health programs



Chapter 4

Assessment of Maternal and Child Health Programs

I. Program Assessment

1. Health Services for Pregnant Women and Infants

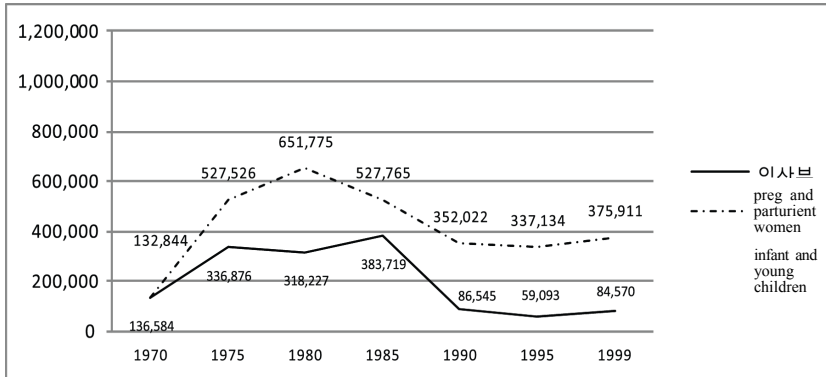
The number of pregnant women and infants registered and managed by MCH workers in health centers ('workers for multi-purpose health care,' after 1980) reached its peak around 1980 and has fallen rapidly since 1990, as the national health insurance expanded to cover all Koreans in 1989 (Figure 4).

Given that most of the MCH workers were nurse aides, they had to face some limitations in providing quality health services. Furthermore, in the 1980s, the budget for glucose level and proteinuria testing was able to cover only 1/2 of estimated pregnant women in farming villages, with pregnant women having difficulties in benefiting from one uroscopy service. Mother and child health workers were not able to visit homes, carrying blood pressure gauges.

Most infants were registered and managed in relation to vaccination. As health centers delivered free vaccination services, more than 50% of infants were registered and immunized, with residents being highly satisfied with the service.

[Figure 4] Number of Pregnant Women and Infants Registered in Health centers: 1970~1999

(Unit: persons)

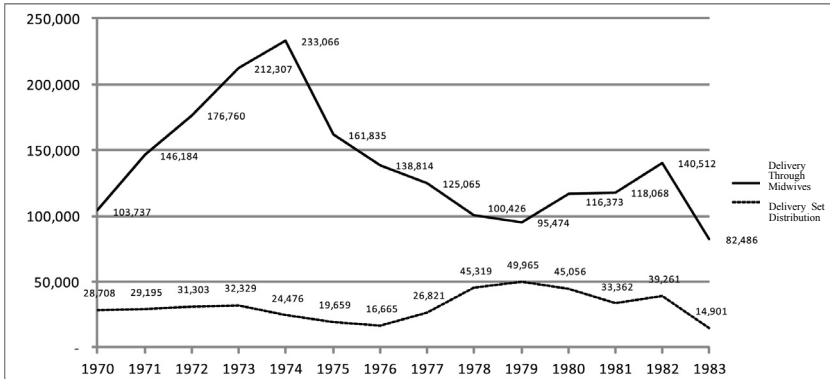


2. Institutional Delivery Rate

As health centers managed the registration of pregnant women and distributed delivery sets from the 1960s to the early 1980s, sanitary deliveries at home were enabled (Figure 5). The number of safe delivery cases by midwives of health centers reached its peak in the 1970s but as MCH centers were set up and operated in 1981 and the national health insurance was expanded to include all of the people in Korea in 1989, institutional delivery rates have soared (Figure 6).

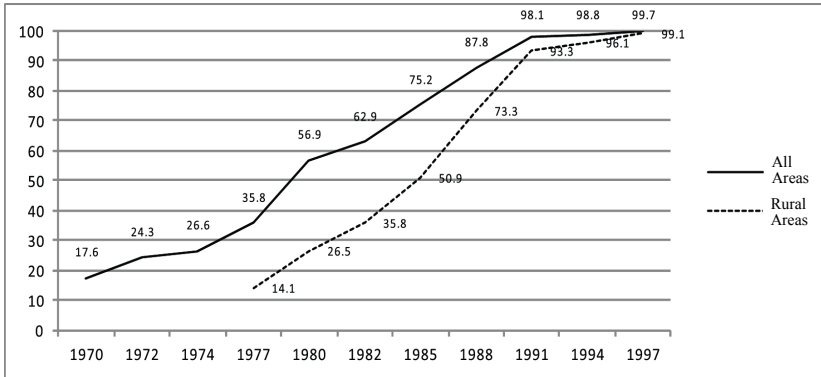
[Figure 5] Performances in Delivery Management (Health Office) :
1970~1983

(Unit: Person)



[Figure 6] Trends in Institutional Delivery Rates (Newborns): 1970~1997

(Unit: %)

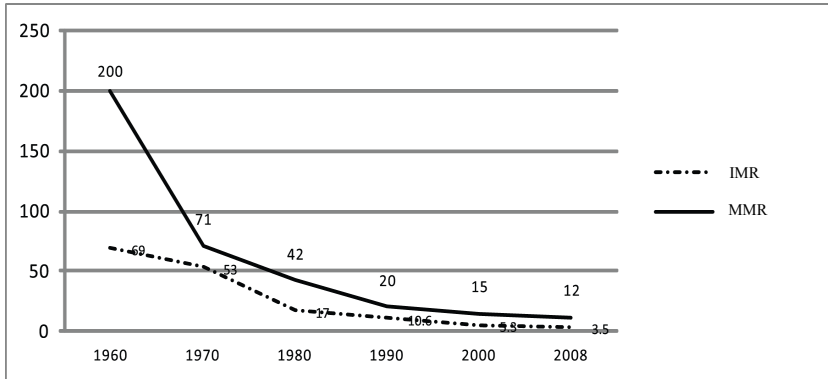


3. Mother and Infant Mortality

The ultimate goal of the MCH program was to reduce the mother and infant mortality. In the 1960s, the number of maternal mortality ratio was estimated at 100~200 per 100,000 livebirths, which was gradually reduced to about 42 in 1980. In accordance with nationwide survey in 2000, the figure sharply dropped to 15 per 100,000 livebirths. The infant mortality rate fell from 9.9 per 1,000 livebirths in 1993 and 7.7 in 1996 to 6.2 in 1999.

Such an improvement can be attributed to national MCH programs, the expansion of private medical facilities (since 1990s), and the cultivation of more medical staff through the further establishment of medical schools. The facilities and staff for the national MCH program led by health centers were responsible for only part of primary care in terms of MCH service delivery, with most secondary or tertiary care such as high-risk patient treatment and emergency operation being allocated to private hospitals. As a result, the mother and infant mortality declined. In addition, mother and infant deaths were closely related to a diversity of factors including national economic development, and improvements in living standards, sanitation and public hygiene.

[Figure 7] Infant and Maternal Mortality in Korea: 1960~2008

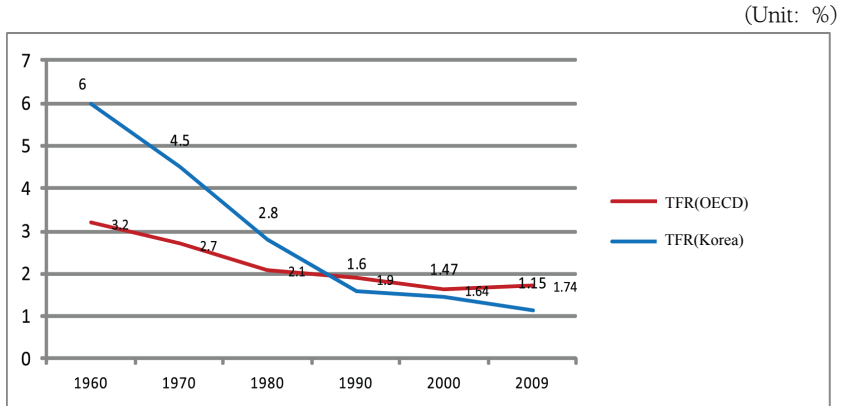


Note: Infant mortality rate means the number of infant deaths per 1,000 livebirths.
 Maternal mortality ratio refers to the number of maternal deaths per 100,000 livebirths.

4. Institutional Delivery Rate

Thanks to the family planning program actively executed by the government since the year 1962, the total fertility rate (TFR) dropped from 6.0 in 1960 to 3.5 in 1975, which further fell to 2.1 in 1983, the level of population replacement. The distribution of contraception services and falling TFR contributed to promoting the reproductive health of mothers, helping families emerge from poverty and enhancing the economic access to medical facilities. Ultimately, they made contributions to reducing the mother and infant mortality (Figure 8).

[Figure 8] Comparison in Total Fertility Rate of OECD Nations and Korea: 1960~2000



Source: Statistics Korea, Korea's Social Indices, 2009

5. Equality in Service Delivery among Regions

MCH centers were set up from the year 1981 through the introduction of loans from IBRD in order to reduce the mother and infant mortality by offering safe delivery facilities and delivering health care services to pregnant women and infants in remote rural villages who did not benefit from essential health care services. The institutional delivery rate in 1982, before MCH centers were operated, was 62.9% in national average and 35.3% in rural areas, a significant gap between urban and rural areas. However, as 89 MCH centers were set up and operated, the facility delivery rate in rural areas soared to 73.3% in 1988, reducing the gap with the national level(87.8%). MCH centers played a significant role in reducing the difference between urban

and rural areas and ensuring equality in mother and child health services.

6. Efficiency in Resources for Maternal and Child Health

The leading program for mother and child health implemented from the year 1999 set up a service delivery system based on key health issues by life cycle, contributing to ensuring the continuity of services. Furthermore, in order to meet diverse community needs, each health office selected programs with high demand and needs based on community diagnosis, devising program plans and implementing activities linking to private professional resources. As a result, the knowledge and skills of program staff were enhanced, raising the quality of services. Namely, in order to resolve community issues, bottom-up policies reflecting field circumstances were established, giving top priorities to continuity. The initiative is evaluated to have improved the effectiveness and efficiency of the program. Furthermore, each health center planned programs based on needs, presenting guidelines for setting goals in national maternal and child health.

II. Analysis of Success Factors

The success factors of Korea's MCH program can be summarized as follows. First, along with the family planning program, the MCH program was chosen as a national program, enabling active political leadership to be implemented. Therefore,

making the best of the government administration networks led by the Ministry of Health and Welfare, all of the related ministries such as the Ministry of Public Administration and Security and the Ministry of Education, Science and Technology cooperated with one another to support the initiative and produce such performance.

Second, an integrated approach was executed along with the family planning program. A delivery set was provided to expectants, visiting the homes of pregnant women for postpartum management and focusing on the expansion of contraception to prevent unwanted pregnancies. In particular, for residents in remote areas, promotion and operation vehicles were introduced to deliver contraceptive services and to check the reproductive health problems of mothers who had difficulties in geographical access.

Third, as the Communicable Diseases Prevention Act was introduced in 1954, free vaccination programs were implemented for infants and young children, strengthening epidemic prevention. Such a scheme contributed to protecting the lives and health of mothers and infants. With the legislation of the Parasite Prevention Act in 1966 and the Tuberculosis Prevention Act in 1967, public health services were reinforced, contributing to preventing and eradicating the diseases of children and mothers through community and school health care. Thanks to such efforts for improvement of public health, the status of MCH has improved.

Fourth, led by the Women's Association for Saemaeul, which was organized as part of the Saemaeul program in 1970. Basically Saemaul Movement is a movement for well-being. It can't be

done by someone from outside, nor by guide of government officials. It should be done by people in the local communities from their daily life. Rural area is usually inferior to cities in income, living conditions, welfare and health care. And the health centers composed of women, health education and promotion services were offered to community residents in relation to family planning and health care services for mothers and children. The scheme served as an active opportunity for mothers to benefit from MCH services. Furthermore, the 'Community Health Practitioner Post's Operation Association' consisting of residents for the continuous and efficient operation of CHP Post formed local governance, meeting community needs and promoting a sense of ownership of health facilities in communities.

Fifth, for program activation, the government introduced an incentive system. For communities with a contraceptive practice rate of 100%, program management expenses were paid in order to promote competition among communities. Likewise, a diversity of incentive systems was introduced, improving program performance. The conversion of contract-based workers to regular employees was also implemented. At the same time, setting yearly goals for maternal and child health, responsible employees in distinguished communities and health centers were awarded state prizes and given compensation in order to help them more actively implement program activities. On the other hand, free delivery services were provided to mothers who planned permanent contraception after having two children, with medical services for babies in early childhood being offered for free. By doing so, the government tried to ensure the conversion from high

deaths and high births to low deaths and low births.

Sixth, the primary health care program that was introduced in the 1980s has directly contributed to enhancing the level of MCH. By allocating public health doctors and health workers to vulnerable fishing and farming villages for primary health care, the needs for health and medical services in fishing and farming villages featuring lack of doctors and nurses were able to be satisfied. The MCH centers established as primary health care facilities in rural areas lacking delivery equipment, through the financial assistance of IBRD, have made contributions to enhancing the level of mother and child health in vulnerable regions.

Seventh, the National Health Insurance extended to cover the entire population in Korea in 1989, setting up more private medical facilities. As a result, It was easy to economic and geographical access to such facilities, enhancing pre-natal care and institutional delivery rates. In order to meet medical needs expanded due to the introduction of the National Health Insurance, more medical schools were established, cultivating more medical experts. Also, the number of private medical facilities rose sharply, contributing to raising the level of maternal and child health services.

Lastly, the financial and technological assistance of the international community played a big role in the success of the MCH program in Korea. At that time, Korea formed a partnership with international organizations, reinforcing technological capabilities. The international agencies helped Korea implement a diversity of programs including the establishment of MCH centers, training of multi-purpose health workers, development

of Community Health Practitioner for introduction to primary health care system in communities, and the set-up of research institutes for health program planning, monitoring, and evaluation. Among them, the MCH centers were set up because IBRD required the Korean government to allocate 30% of the loans to health programs. Likewise, the wise strategies of international organizations played a significant role in the success of Korea's MCH program.

On the other hand, low illiteracy rates among women and the high enthusiasm for education can be presented as indirect factors for the enhancement of Korea's maternal and child health. The social status of women was regarded as low, but most of them were able to read and understand texts, making it easier to provide health education to them. Unlike some other developing countries, Korea used a single and unified language, reducing difficulties in health education and health information delivery. Furthermore, Korea had a tradition of putting emphasis on blood, regarding the birth of babies (especially sons) who carry on a family line as an important occasion to celebrate and recognizing the importance of perinatal period. For example, for three weeks after delivery, mothers were told neither to go out nor to conduct outside activities, based on Korea's long tradition (3.7 days system), in order to prevent mothers and newborns from being infected.



Chapter

05

Implications



Chapter 5

Implications

I. Lessons from Cases in Korea

Korea's MCH program has been implemented and developed for more than 50 years since the 1960s, based on family planning and contraception services, with the family planning program being executed simultaneously with economic development for extreme poverty and hunger eradication (Figure 9).

Most nations in Africa and South Asia, Korea's key partners for the Official Development Assistance (ODA) program, are characterized by high birth rates, high infant mortality and extreme poverty and hunger, whose circumstances are very similar to those of Korea in the 1960s. Against this backdrop, Korea's knowhow in enhancing the maternal and child health certainly has comparative advantages. Therefore, Korea's experiences will contribute to improving the performance of the ODA program. However, given that Korea implemented, expanded and promoted the contraception education program mostly for males, some restraints may be incurred in Islamic nations where the number of newborns is not restricted, with men determining the number of children or births. In accordance with the research of Harvard University (the US) conducted in Zambia, the authority in decision-making of women at home was in inverse proportion to the number of children. Accordingly, the right to choose birth control, namely reproductive

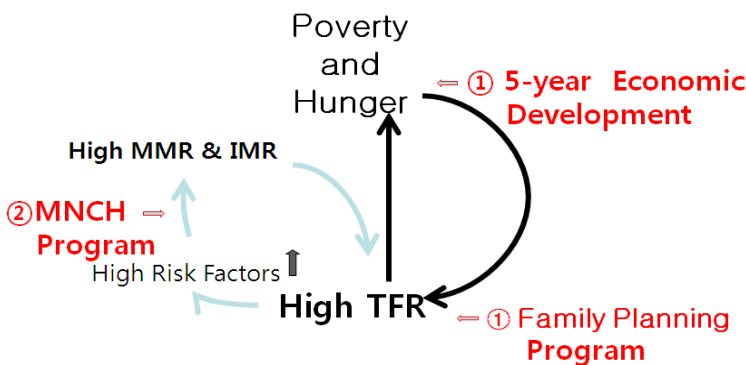
right should be given to women. However, nations featuring high birth rates can be regarded as male-dominated societies, with the result that Korea's intervention may cause resistance. Therefore, helping the developing countries improve their socio-cultural system to ensure women's right to life at a national level needs to be set as the core of Korea's MCH program.

The key drivers of Korea's MCH program can be summarized as follows. Dedicated teams were set up in central and local governments, devising institutional devices such as the legislation of the Maternal and Child Health Act. As necessary facilities and financial sources were secured, the continuity of services was able to be maintained. In addition, in relation to lack of financial resources, the expansion of resources in quantity was enabled through the assistance from the international community, with high-quality services being delivered. In this regard, the willingness of a recipient nation for the establishment of an institutional framework and the employment of financial resources cannot be overemphasized. In order to preventing mother-to-child transmission (MTCT) of hepatitis B, PMTCT program was implemented at a national level, accumulating knowhow in management strategy. However, in relation to malaria or HIV that is prevalent in developing nations, knowledge, technology and experiences have yet to be sufficiently accumulated, which may function as a weakness in implementing the program. In addition, communities or medical facilities do not have enough experiences in taking care of pregnant women infected with malaria or HIV, suffering from lack of capabilities to control such diseases. Taking into account that most developing countries

other than Vietnam, Mongolia and Uzbekistan in central Asia have suffered from the prevalence of malaria or HIV, the strategies to eradicate such common diseases should be executed through collaboration with the international communities.

The programs for eradicating parasites, preventing/controlling tuberculosis, and preventing epidemics, which were implemented along with the MCH program in the 1960s, acted as key factors in controlling common diseases in Korea. Therefore, it should be noted that the MCH program executed along with the public health program comprising primary health care made contributions to enhancing the nutritional status and health level of mothers and infants. If the parasite eradication program had not been enforced simultaneously, the use of nutritional supplements or medical care for the nutritional enhancement of mothers and infants would not have produced desirable effects in health care.

[Figure 9] Implications of Korea's MCH program Strategy for Developing Countries



The national health insurance system for people as a whole was prepared and established when Korea's per capita GNI amounted to US\$5,300 (1990) after implementing pilot programs for vulnerable areas for more than a decade. Therefore, the introduction of it will function as an opportunity factor to expand maternal and child health services.

Conclusively, because the maternal and child health in Korea was not enhanced through a single policy or program, an integrated approach will be required to improve program performance. Considering Korea's experiences, in relation to the approach for the ODA program, health goals and related programs should be devised and implemented, respectively, at a national level, in order to protect the lives of mothers and children. Maternal and child health is closely related not only to a health and medical system but also to various areas such as socio-structural, institutional and cultural circumstances. Therefore, as the program is executed, top priority should be given to intersectoral collaboration. In particular, developing countries should pay special attention to eradicating extreme poverty and hunger (MDG 1), achieving universal primary education (MDG 2), and promoting gender equality and empowering women (MDG 3), as well as combating HIV/AIDS, malaria, and other diseases (MDG 6) and ensuring environmental sustainability (MDG 7). Given that the MCH program should be enforced for society as a whole, its performance cannot be continuously maintained only with perinatal management or a single program in health and medicine. Therefore, the program should be implemented at a national level, along with social development policies.

II. Proposal for MCH program Model in Developing Nations

1. Direction of ODA program for Maternal and Child Health

The ODA program for mother and child health focused on integrative regionalization in order to maintain the continuity of services and improve access thereto. Namely, by classifying life cycles into pre-pregnancy, pregnancy, birth/newborns and infants, the processes of prevention-early detection-treatment were led to be implemented in a sequential and integrative manner, focusing on health issues that existed in developing nations. In order to resolve health issues by region through such package services, the Ko-SIRI (Korea-Strategies for Integrated and Regionalized Intervention) model was developed.

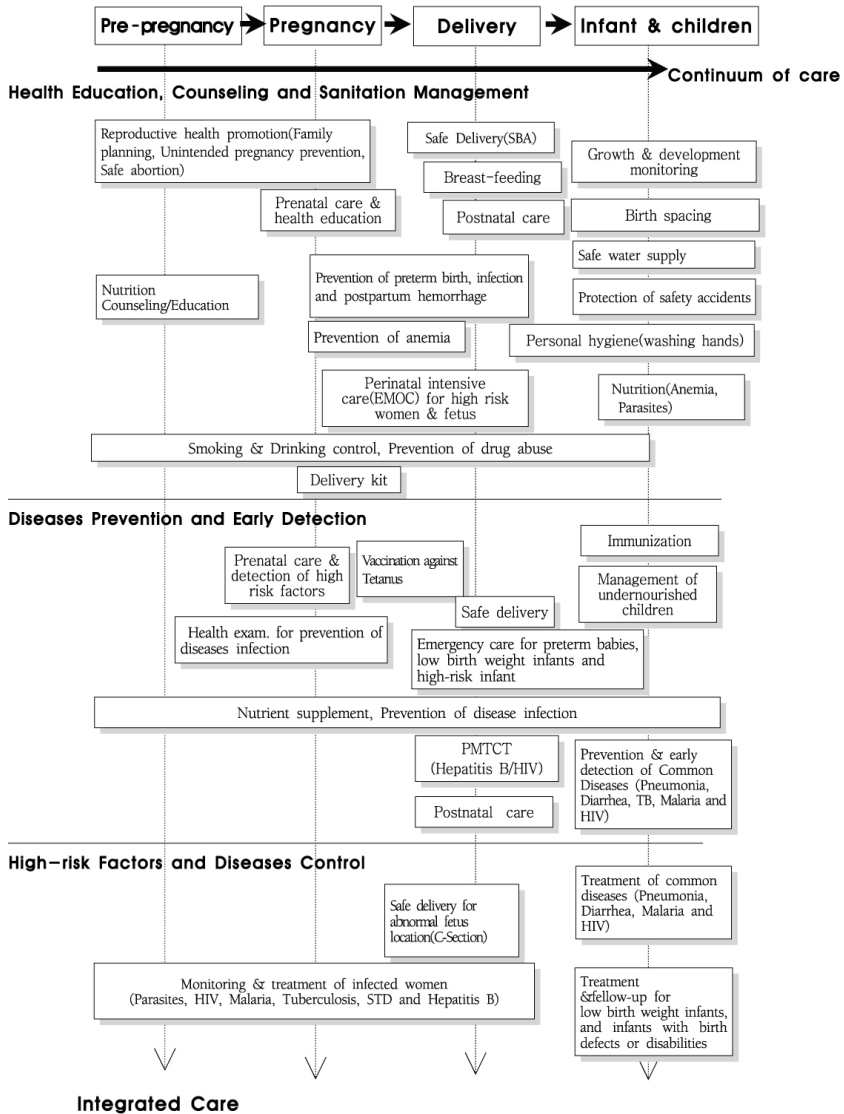
2. Model Proposal

The Ko-SIRI model was designed to efficiently use the limited resources of developing nations. Then, after identifying essential services by the life cycle of fertile women and children for developing countries, the level of care was set, classifying services into two or three categories (primary, secondary and tertiary, or primary and secondary depending on regional resources). The services were regionalized in order to enable them to access maternal and child health facilities and to ensure smooth transfer and care.

A. Level of Care

After identifying essential services by life cycle of mothers and infants and required services by regional characteristic, services by home and community for the early detection and treatment of high-risk factors or complications are determined. Then, considering the availability of HR and equipment, the roles and functions of maternal and child health facilities are set out. Finally, services are classified into two or three categories (primary and secondary, or primary, secondary and tertiary), setting the level thereof (Figure 10).

[Figure 10] Essential MCH services for continuum of care in Developing Countries



B. Regionalization

In order for services from communities, maternal and child health facilities and hospitals to be delivered by level in a certain area, service regionalization and geographical access should be upgraded. Through the assessment of pregnant women in regional communities and in terms of the access to primary mother/child health facilities, the residential areas of mothers are classified into a 90-minute zone, a 90 minute to 3 hour-zone, and a more than 3-hour zone, considering that the common means of transportation is used. Likewise, the access to mother/child health facilities is mapped, allocating necessary resources.

C. Referral System

In order to efficiently deal with difficult issues by phase or high-risk factors, regardless of time or place, a referral system that enables the sharing of clearly defined roles and information should be set up.

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